

FOREST OPERATIONS GUIDELINE

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An Editorial Note in *N.Z. Journal of Forestry*, Volume 17 (1) drew attention to the fact that the Nelson Catchment Board was empowered in August 1971 to invoke Section 34 of the Soil Conservation and Rivers Control Amendment Act. Since that time a technical committee, with representatives from Government, Soil and Water authorities, the forest industry and the Loggers Association has drawn up the "Forest Operations Guideline" which is now to be applied on a trial basis for two years.

The Acts which lie behind the guidelines are the Water and Soil Conservation Act 1967 and the Soil Conservation and Rivers Control Amendment Act 1959. Section 21 of the first lays down rights to natural water: with some exceptions "the sole right to dam any river or stream, or to divert or take natural water, or discharge natural water or waste into any natural water, or to use natural water, is hereby vested in the Crown. . . ." Part II of the S.C.R.C.A. Act 1959 deals with safeguards against erosion and flooding. Section 34 states: "(1) The occupier of any land . . . shall carry out every operation affecting the land in such manner and by such methods as will conform to prudent land use practice, being practice which has proper regard to timing and circumstances and is likely to prevent so far as it is economically practicable, or (if prevention is not economically practicable) likely to mitigate soil erosion, and likely to promote soil conservation, the avoidance of deposits in watercourses, and the control of floods." And "(2) No person shall, without the consent of the Catchment Board or the Catchment Commission or the Council, as the case may require, do on or in respect of any such land any act or matter or thing which that Board or Commission or the Council has, by notice publicly notified within the immediately preceding 2 years, declared to be likely to facilitate soil erosion or floods or cause deposits in water courses."

Under Section 35 the "Council may . . . require any change, or the prohibition or restriction or regulation of any change, in the use of land affecting the conservation of soil, the stability of detritus, the depositing of materials in watercourses or flooding. . . ." Notice shall be given to the occupier, under subsection (2) which refers almost exclusively to agri-

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cultural practices: *e.g.*, stock numbers, type of cultivation, the use of fertilisers. Sub-section (d) prohibits the occupier from "selling or cutting or killing existing trees or shrubs" and may require the occupier to "plant or sow trees, shrubs. . . ."

Section 37 allows for compensation. "(1) Any person having an estate or interest in any land which is subject to a notice under Section 34 or 35 of this Act and which is injuriously affected or suffers any damage . . . shall be entitled to full compensation for the same . . . as if that person were injuriously affected by a public work."

Since 1971 other catchment authorities have invoked Section 34 and all will now apply the guidelines on a trial basis. The Waikato Valley Authority, however, intends to use the guidelines as the basis for a set of bylaws, also to be on a trial basis for a period.

P. C. Crequer, then President of the N.Z. Loggers Association, brought the matter to the attention of his 1975 A.G.M. in his presidential address. He pointed out that the guidelines refer to earth works (roads, tracks and landings), protection zones, timber extraction, and forest management. In regard to roads he felt that the guidelines "are really just a statement of commonsense and sound engineering standards. The aim is to keep unnecessary movement of soil to a minimum, prevent eroding of fill material — practices which any road building logger worth his salt would naturally follow. The guidelines in this respect are in effect self-regulating". He was not so happy about the provisions that tracks should run toward spurs, and main interceptor tracks run down spurs; "a logger . . . could give himself a downhill run to the main track and the net result would be a congregation of run-off down the spur rather than through natural drainage patterns, as would result with skidder trails leading to gully bottoms." In regard to landings, Mr Crequer felt that the "guidelines again are reasonable and the restrictions really only affect a logger who places a landing in a dry gully bottom — this becomes a watercourse if water flows intermittently. The provision to submit logging plans to the catchment authority to obtain a general authorisation for logging activity is laudable; but possibly a regional authorisation policed by random inspections would be better."

Mr Crequer was less happy about "protection zones". The guideline states that "these are desirable along watercourses that have important onsite and offsite effects. The aim shall be to manage, plant, or maintain vegetation adjacent to watercourses and to mitigate soil erosion". Sub-para. 4 is important from the point of view of interpretation. This states: "It is neither practicable nor necessary to provide protection zones

along all watercourses and the particular needs of the region or special characteristics of a watercourse should determine when and where they are provided." Mr Crequer's view is that "the leaving of buffer strips along streams is not 'on' in N.Z. plantation logging. The exposed buffer is so prone to windthrow that the stream to be protected would soon be full of the debris it was intended to avoid and a reclamation operation would be required. Tractor logging using a winch rope or felling shears should keep any stream of consequence free of falling debris."

The guidelines for extraction indicate a preference for cable systems; the main consideration is offsite effects. Mr Crequer points out that, where an area is equally suitable for skidder or cable operations, the additional cost of a cable system could be "1-2 cents per cubic foot" or up to \$450 per hectare for a mature stand of radiata pine. In his view consideration should be given, in these circumstances, to the cost of rehabilitation. If it is less than the additional logging cost, then rehabilitation should be preferred to cable logging.

Summing up the guidelines, Mr Crequer felt that, if they are applied in the spirit of the Act they are "eminently reasonable", but that if "strictures and constraints" are to be placed on the loggers' activities, then there must be an allowance for extra finance. There is also need to interpret the guidelines in the light of the particular circumstances of each operation. If they are applied "rigidly and nationally . . . they could become a disaster, reducing the forest estate and increasing materially the price of timber products produced."

At a course held in Rotorua in May 1975, similar views were put forward by most of the forest and logging managers attending. A. W. Grayburn, for example, felt that over-zealous application of the guidelines could "completely strangle logging and forestry operations", but that the logging fraternity could not take "any great exception to what is contained in them. . . . The subject of protection zones is the most controversial and from the logging point of view will be the most difficult to protect should they prove necessary". Similar opinions were expressed by P. Olsen, R. Symington, J. Henry and P. Fitzgerald.

Of considerable importance are the views of L. J. Slow, who has had practical experience of the application of the guidelines in Nelson. His views are as follows:

"My general impression is that there are no provisions to which a reasonable forest owner or forest manager could object. I see no difficulty in observing the guidelines in practice and consider that no significant increase in operating costs should occur except in areas with special erosion problems."

The guidelines provide a broad basis for meeting soil conservation and water management requirements. They could have been much more restrictive. There may be differing local interpretations by soil conservators, but with goodwill on both sides efficient and profitable forest management should not be adversely affected, except in localities with special problems.

"One of the difficulties has been to get staff, workers and contractors to accept the need for the guidelines, and to accept the fact that they can no longer do as they please." When this difficulty has been overcome "it is relatively easy to plan operations and to implement this planning to conform with the guidelines."

"Under our conditions I don't think riparian strips are necessary or will be demanded. We leave remnant areas of native forest when preparing land for planting. . . . Most of our gullies are non-stocked or understocked and if we were required to leave riparian strips the effect on volume production would not be catastrophic. I would prefer to leave them unplanted in the first place."

In regard to the effect of the guideline on operations, Mr Slow has this to say. "Many of the guidelines recommend techniques, particularly in the section on earthworks, which minimise normal maintenance costs, irrespective of soil and water considerations." Some initial difficulties in applying the guidelines to logging were "due to the terrain . . . slopes in Moutere country may be short but they are very steep; valley flat is almost non-existent. It was our practice to construct valley bottom logging roads and loading sites. Spoil and logging waste inevitably found its way into watercourses (few of which flow more than a few months in the year). . . . We are changing to uphill extraction with high lead systems" replacing rubber-tired skidders. "Operating costs are little more and we save on road and log truck maintenance because we avoid operating in bog holes during the winter months."

"One aspect of the guidelines which does cause additional expense is the provision of temporary bridging over all watercourses, even minor dry gullies. We have constructed wooden platforms which we move from place to place." The problem can mostly be avoided by uphill winch extraction. "We intend to try Armco culverts in these situations and the Nelson Catchment Board has agreed that they can be removed and used elsewhere. The fill left in the watercourses has to be removed by bulldozer during dry weather."

R. Macarthur, Chief Soil Conservator, Marlborough Catchment Board, who has also had experience in the operation of the Guideline, states: "We are getting good co-operation from contractors and land owners, but damage that could

be avoided still occurs because constant supervision is impossible." In his view "Catchment authorities will have to employ properly qualified, practical and experienced personnel to supervise the administration of this — not necessarily professional foresters, but certainly graduates with good backgrounds in soil and water resources; it may be better to have people outside the forestry discipline which in New Zealand today is so production oriented."

Forest owners have given the guidelines cautious approval and are willing to accept them provided they are interpreted and applied intelligently at the local level for individual situations. Owners would prefer the guidelines to remain as such, not be applied as bylaws which may be used in a more restrictive and doctrinaire manner; they believe that the application of guidelines should be a matter of agreement between soil conservation authorities and the land user. They also feel that there is insufficient acknowledgement on the part of the soil conservation authorities that damage from forestry operations is of short duration (usually with rapid recovery or abatement) and occurs very infrequently relative to agricultural use of land. In view of Section 35 of the Amendment Act 1959, forest owners also feel that guidelines should be applied equally to agricultural and pastoral land, whereas there appears to be no move on the part of soil conservation authorities to deal with this at present.

The areas of concern to forest owners are:

- Loss of production, which could amount to 10% or so, especially on the best (*e.g.*, streamside) sites.
- Annual costs (protection from fire and diseases, insurance, rates, interest payments, share of roading amortization and maintenance, supervision) for retired areas.
- Cost of managing and protecting reserved or retired areas.
- Additional logging costs due to restrictions on location of landings, roads, etc., and the obstruction offered by reserves.
- The need to buy additional land to make up reduced yields, which may be more expensive than the land reserved; coupled with additional transport costs of at least 4 cents/tonne/kilometre, since the land bought is likely to be more distant from manufacturing plants. The capital development costs (roads, fences) of the additional land is an added issue.

On the whole foresters will be in general agreement with the purpose and tenor of the guidelines, even though they may disagree on details. Section 8.1, which states that individual cases will need specific rules in order to achieve desired objectives, must be borne in mind. The whole crux of

the matter is really interpretation at the tree roots. If there is any conflict, I feel that the needs of people must take precedence over the needs of aquatic organisms. But foresters will also observe that the guidelines are in effect the velvet glove clothing the iron fist of the law as it now stands. They could be confronted by people who will try to invoke the law in its strictest letter; whereas it should be applied in such a way that reasonable people, going about their business with reasonable care, intelligence and honesty, are not subject to unnecessary or onerous constraints.

There is also the question of who pays for the increased protection provided. The public has become aware that produce from the land can be increased quite markedly, and seems to have reached the conclusion that this increase can be virtually infinite. The result is that the primary producer has found himself to be the recipient of mere residual values, while the ultimate buyers' standard of living (real take-home pay) has been declining. Those operating between the primary producer and the final purchaser (manufacturer, packer, transporter, wholesaler, retailer, and of course industrial unions) recoup their costs, profit margins and cost of living increases, while the primary producer at the end of the line gets what is left. This applies to the farmer at present, and it seems possible that the forest owner may find himself in the same position if a good deal of care and discretion is not exercised. In equity, if the community demands certain conditions which lead to increased costs, the community should pay. This can be done via the market, where the customer will pay more for the product, or additional payments can be made up by the taxpayer subsidising the operation; but subsidies are much easier to start than to stop.

Mr Macarthur points out that "a most significant feature of the guidelines" which has not yet been confirmed, however, "is the proposed subsidy assistance which is quite a major change in policy, and brings the forest owner into the orbit of the soil conservator in the same way as the farmer. This is probably a good thing and can at the least only increase communications and improve understanding."

In the case of forest operations, however, it may be very difficult to determine the additional costs which might be incurred following the imposition of the guidelines, or indeed if any additional costs are incurred. This is made more difficult in that the guidelines could be said to embrace the actions which an ordinarily prudent forest owner would follow in any case. The "commonsense" nature of the guidelines is agreed upon by almost all those involved, including Messrs Slow, Crequer, Macarthur and Grayburn.

EXOTIC FOREST RESOURCE POTENTIAL BY REGIONS

Planning District (1)	Land Availability (ha) (2)	Existing Productive	Current Annual Planting Rate (ha)			Internal Rate of Return (%) (7)	Maximum Annual Planting Rate (ha)			Years of Planting (11)
		Exotic Resource (ha) (3)	State (4)	Private (5)	Total (6)		1975 (8)	1980 (9)	1985 (10)	
Northland	172 000	16 900	1 800	1 000	2 800	12.1	2 800	3 800	4 900	39
Auckland	40 000	35 400	2 200	3 700	5 900	10.0	4 000	4 000	4 000	10
Coromandel	48 600					10.4	1 200	1 600	2 000	26
King Country	81 000					13.6	4 000	5 000	6 000	15
Rotorua	82 200	280 500	3 700	10 300	14 000	14.2	13 500	9 700	4 900	10 ⁵
Gisborne	122 300	11 200	2 100	100	2 200	14.8	2 500 ⁴	3 700	4 900	27
Hawke's Bay	61 000	18 800	2 100	1 300	3 400	14.0(est)	4 000	4 000	4 000	15
Wairarapa	36 400	9 000	300	400	700	13.2	1 600	1 600	1 600	23
Taranaki	12 100	22 400	1 000	1 400	2 400	12.5	1 200	1 200	1 200	10
Tongariro	53 400					12.7	1 600	1 600	1 600	82
Manawatu	13 000 ¹					11.4	1 000	1 000	1 000	13
North Nelson	62 300 ²	52 800	2 000	1 100	3 100	12.3	4 000	4 000	4 000	16
Marlborough	108 100	8 500	800	1 600	2 400	12.9	2 400	3 200	4 000	29
South Nelson/ Westland	81 000 ³	6 500	1 100	200	1 300		2 700	2 700	2 700	30
N. Canterbury	53 000	32 200	600	300	900	12.0	1 200	1 600	2 100	18
S. Canterbury	20 000	6 300	100	—	100	12.0+	800	800	800	25
Otago	216 700	31 000	2 200	700	2 900	10.9	3 200	3 200	3 200	68
Southland	183 100	14 500	1 000	500	1 500	10.8	2 400	2 400	2 400	76
Totals	1 446 200	545 800	21 000	22 600	43 600		54 100	55 100	55 300	

REGIONAL PLANTING RATES

Column (1) Auckland, Taranaki and Wellington Planning Districts have been subdivided into a total of 6 project areas for separate consideration.

Column (3) Includes productive stocked area in each region, both State forests and areas in other ownership.

Columns (4)-(6) New planting estimates for year ended 31 March 1974.

Column (11) Counting from 1975, the years remaining to plant the available land at the indicated planting rates.

LETTER TO THE EDITOR

Sir, — Regarding your recent editorial comment on the safety (?) of radiata pine in New Zealand, I hasten to assure you that I was not wearing rose-tinted glasses when I wrote my article on pests and diseases. I cannot agree in fact that our views conflict.

It is true that diseases such as western gall rust pose a very real threat to our exotic forests. It is also true that no country is as well organised as New Zealand to combat the introduction of such diseases. This is no reason for complacency, however; we have more to lose from the introduction of conifer rusts than any other country, and I think you are correct in pointing out the deficiencies in our plant quarantine procedures.

Indeed, no matter how efficient our quarantine becomes, we cannot afford to be complacent for the recent introduction of poplar leaf rust from Australia shows almost conclusively that rust spores can be blown across the Tasman to infect trees in New Zealand. So, in addition to the 40 000 passengers arriving at Auckland from North America each year, we should also be concerned with the much larger number arriving at Sydney and Melbourne.

There is little we can do about airborne invasions of forest diseases from Australia, but I would welcome any attempt to improve our own quarantine procedures along the lines you suggest. As we invest more and more money in radiata pine (and rightly so, I believe) it is only common sense to raise the premiums we are prepared to pay for insuring it.

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