

# THE FUTURE OF WEST COAST FORESTS AND FOREST INDUSTRIES

*Submission by New Zealand Ecological Society to  
the Hon. Minister of Forests*

**SUMMARY:** The Ecological Society supports in principle the reserve proposals being formulated by the Scientific Co-ordinating Committee for Beech Research and recognises the need for a continuation of the Committee's review of reserves. It doubts that proper notice has yet been taken of the needs of the indigenous avifauna or that typing of forests is sufficiently precise to ensure that representative areas can yet be delineated for reservation. The Society is emphatically opposed to reduction of existing and proposed reserve areas to meet short-falls in podocarp timber. The Society also endorses, in principle, parts of the new indigenous forest policy published by the Forest Service that relate to retention of native forest cover and sustained yield of podocarps and beech.

## INTRODUCTION

The New Zealand Ecological Society, with a membership of over 450, includes most professional ecologists engaged in university and government research and in teaching. We were not directly represented at the seminar held at Hokitika on June 27-July 1 1977, although many of our members attended in other capacities. However, our Society is deeply interested in several of the issues discussed, especially the wise use of natural resources and the retention of adequate reserves of natural ecosystems, and in 1973 prepared a detailed critique on ecological aspects of the Beech Utilisation proposals. Therefore, we respectfully submit our comments, as invited by the Minister of Forests.

The Society appreciates the clarity with which the Forest Service has documented and publicised its definition of possible options for the forest industries of Westland. It also acknowledges the improvement of this documentation in recent years which has emerged from studies by the Forest Service, Lands and Survey Department, D.S.I.R. and their collaborative agencies such as the Joint Land Use Survey group and the Scientific Co-ordinating Committee for Beech Research.

The primary purpose of our submission is to support the establishment of an adequate system of ecological reserves in Westland, and to affirm support for the clauses in the indigenous forest policy announced by the Director-General of Forests, relating to management of beech and terrace rimu forests for sustained yield.

## ECOLOGICAL RESERVES

The implications and statements made by repre-

sentatives of the sawmilling industry and others, to the effect that the reserves proposed by the Scientific Co-ordinating Committee are to serve as playgrounds for a few scientists, publishing esoteric papers of no economic or social value, shows a very limited understanding of the reasons underlying preservation. These purposes are discussed below.

1. The tall dense lowland forests are biologically and scenically different from the upland forests, and thus provide habitats and contain species of plants and animals that are not found, or are only sparsely represented, in protection forest, National Parks and most Scenic Reserves.
2. Lowland forests and other lowland types of vegetation have already been removed from most of New Zealand.
3. The lowland podocarp and beech-podocarp forests have no close equivalent outside New Zealand, although there is a degree of relationship to the forests of central Chile, the montane forests of Melanesia and New Guinea, and relict forest stands in eastern Australia. Their reduction to doubtfully viable remnants would be wisely deplored as unworthy of an enlightened nation.
4. The native lowland vegetation, especially the forest, is a part of our historical heritage. Not only can its lineage be traced through the fossil record for 200 million years, but it set the scene for our Maori and early European history.
5. New Zealand is firmly committed to protecting its native flora and fauna. Large reserves of virgin lowland forest are essential for meeting

- this commitment. Many native birds are heavily dependent on this habitat, and other species which typically inhabit upland forests in summer depend upon lowland forests in winter. Some lowland species of plants and animals have already become rare throughout most of the country because lowland forest reserves are generally too small to resist invasion by weeds, damage by stock and weather, and provide adequate habitat for the whole range of species which evolved in the native forests of pre-historic New Zealand. Much of our endemic invertebrate fauna is also threatened through destruction of their lowland habitats. Survival of these organisms is of an order of importance which goes far beyond the "comfortable middle-class pursuit of nature conservation". They are reservoirs of genetic material for breeding of plants as variable in use as timber trees and ornamental shrubs. They yield honey not only for their natural inhabitants but for commerce also. They are reservoirs of a vast range of compounds, including potentially useful drugs. They provide a natural laboratory for determining the soil processes and changes induced by conversion to pasture or exotic forests, and for understanding the natural processes of stability and biological energy flow. All these are of basic importance to a nation whose economic well-being is dependent upon the wise use of its living natural resources, and accordingly they cannot be dismissed lightly.
6. Certain types of reserves, particularly those described as "riparian strips", have profoundly important effects on the nutrient, temperature and flood characteristics of waterways and are thus extremely important to the survival and abundance both of commercially important fresh-water organisms (e.g. whitebait) and the inconspicuous species which, although economically unimportant, are non-the-less part of the indigenous ecosystem of which we are the present custodians.
  7. Adequate reserves of virgin forest are essential for gaining a better understanding of forest ecology, both in the "pure" and silvicultural aspects of the science. On the West Coast, protection of the boundaries between beech forest and podocarp-hardwood forest is especially important.
  8. Unmodified habitats are regarded as the best environment for many other kinds of scientific studies, and also for many teaching purposes.

9. Finally, and probably most important, most New Zealanders wish to see undisturbed native forest remain as a significant element in the lowland landscape; the West Coast is the last place this can still be achieved to a significant degree.

#### *Criteria for selecting reserves*

The Ecological Society, since its inception, has been active in identifying endangered communities of native flora and fauna, and recommending reservation of representative areas. In the Westland context, the criteria for reserves have been stated by the Scientific Co-ordinating Committee (e.g. in Beech Research News No.2). The main ones are as follows:

1. A reserve should represent the full range of land forms, vegetation and soil sequences, and flora and fauna of a region (we add that it is widely held that ideally at least 10% of the *original* extent of each vegetation and habitat type should be reserved).
2. A reserve should be large, with a minimum of 1000 ha. Adequate size ensures that species survive through the inevitable fluctuations in their numbers, maintains the genetic diversity that also protects species from extinction, provides habitats for greater numbers of species, and helps to fulfil the seasonal food requirements of migratory fauna.
3. It should be compact, include complete undisturbed catchments, and have boundaries clearly defined by natural features. These boundaries may be influenced by the character of adjacent lands which, if sufficiently secure to form a buffer zone, can greatly enhance the qualities of the defined reserve.

#### *Comment on the proposed reserves*

We affirm that we support the reserve proposals being formulated in principle, but stress that they should be regarded as the minimum areas that meet the needs of science and conservation. They already represent a compromise between these needs and the pressures for continuing logging and land clearing, and we would view most unfavourably any move to reduce either their total extent or content of individual types of vegetation and habitat.

The vegetation types which it is most essential to reserve adequately are those which are most threatened because of their high timber content or potential for clearing to farming or exotic forestry; and it is around these vegetation types that the opposition to the proposed reserves is concentrated.

We cannot stress too strongly that the Westland podocarp forests, together with smaller areas in the Central North Island, are the only extensive remnants of the dense podocarp forests that once covered much of lowland New Zealand.

We have been unable to obtain uniform statistics covering all five ranger districts of the West Coast, and are aware that some of the data are capable of different interpretations. However, we believe that the following statements are valid, and put the reserve proposals into perspective.

The total area of proposed ecological reserves under forest totals about 84 000 ha, which is about twice the area of metropolitan Christchurch, or equivalent to a large high country sheep run. It adds 5% to the 11 % of the total West Coast forest area already encompassed within National Parks and scenic and allied reserves. The proposed reserves cover 22 000 ha of merchantable forest, which is 18 % of the 120000 ha of merchantable State Forest that is still unlogged.

Much of this forest contains relatively low volumes of timber. The most significant comparisons are those which concern the remaining areas of dense podocarp forest, as these are where the short-term demands for timber conflict most strongly with the needs for ecological reserves and resource conservation. In South Westland 4 % of the 24000 ha of State-controlled, high-volume, terrace rimu forest (including rimu-kahikatea mixtures) is in National Park and Scenic Reserves; the proposed ecological reserves increase this to 28%. For North Westland, reserves of terrace rimu forest would increase from 40% to 55 %; but the total area there is 7 000 ha, as compared with 23 000 ha in State Forest in South Westland, and timber volumes per unit area are lower.

In South Westland, the reserves of kahikatea would be increased from 8% to 35%, but this is based on a State Forest total of only 4000 ha. In North Westland, Buller and Inangahua, dense kahikatea forest has diminished to 420 ha, 120 ha being in Scenic Reserves and 5 ha in proposed ecological reserves. The survival of this impressive type of forest is therefore precarious, even if the proposed reserves eventuate. Much is on Freehold land, Maori land, Crown Lease and unoccupied Crown Land, and on the first three of these tenures its destruction through logging and clearing is proceeding more rapidly than in State Forest. It is also subject to destruction by flooding and siltation—most of the 80 ha reserved in Westland National Park has recently been destroyed in this way. This hazard is inherent in the ecology of kahikatea, and should be taken into account when planning the size

and character of reserves.

The Society hopes to see a greater proportion of virgin kahikatea forest reserved and recommends that the Department of Lands and Survey as well as Forest Service accept responsibility towards achieving this.

Originally, mixed stands of tara, matai, kahikatea and rimu grew on well-drained alluvial flats, but nearly all have been cleared for farming. The Ecological Society urges that the State protects what remain under its control, and uses the new Reserves Bill to persuade land-owners to dedicate privately held remnants as reserves.

The forest in Buller and Inangahua (and the part of Westland north of the Taramakau River) is mainly beech and mixed beech-podocarp. While we do not have the data that would allow analysis of the reserve status of the various forest types, we point out that both the total of 32 000 ha of merchantable State Forest, and the 8 600 ha that have been recommended for Ecological Reserves, highlight the great reduction of lowland forest cover that has occurred. A specific example of this reduction is the valley floor podocarp and podocarp-beech forest of North Westland, estimated to have once totalled 65000 ha; only some 400 ha of unlogged forest of this type are included in proposed ecological reserves.

Ornithologists especially stress the need for large and continuous areas of native forest, including lowland stands, if the survival of the native bird fauna is to be assured. While the proposed reserves would provide core areas of undisturbed habitat, it is clear that much reliance will also need to be placed on the general retention of more-or-less modified native forest under the new Forest Service policy. In areas converted to exotics, green belts, amenity reserves and riparian strips will assume special importance, and should be planned to provide corridors for the movement of those species that do not adapt to *Pinus* forest.

The Scientific Co-ordinating Committee for Beech Research and the South Westland Land Use Planning team have drawn on the best available information in proposing reserve boundaries. Even so, this has meant relying on National Forest Survey data from the late 1940's and 1950's; more recent research has demonstrated that considerable refinements, and in some cases re-drawing of forest type boundaries, are required for ecological purposes. It is also apparent that the work of the Scientific Co-ordinating Committee in identifying reserve requirements should be continued. This would enable the Committee to examine more fully the reserve recommendations of the Wildlife Service, of the South Westland Land Use Study and other tentative

proposals (for example: in the Karamea district, in Mokihiinui State Forest, and along the beech-podocarp boundary in Granville State Forest). As well, there are some areas such as the Maruia district, in which no ecological reserves have yet been demarcated.

The Ecological Society therefore stresses that proposed reserve boundaries should at this stage be flexible enough to accommodate conservation needs that are indicated by continuing research. This applies especially to South Westland, where the reserves, although large and well-conceived in comparison with the unavoidably smaller and more fragmented northern West Coast reserves, rest on a less than adequate base of scientific information.

We accept that some boundary changes may also be needed to accommodate the legitimate needs of regional development; but repeat that we are strongly opposed to further compromises that would reduce the total areas of lowland forest types proposed for reservation.

#### MANAGEMENT OF FOREST FOR TIMBER

The Ecological Society favours management for sustained yield of both indigenous and exotic forests, provided it is conducted according to sound ecological principles, is backed by continuing research and provided adequate areas of virgin forest and, where appropriate, modified vegetation have been reserved for biological and other purposes.

##### *Selection logging of terrace rimu forests*

It is generally accepted that under foreseeable circumstances, the only significant sustained yield of rimu timber will depend on managed rimu forests. On the evidence available, the Society is optimistic that suitable logging techniques are being developed that also retain, in large measure, the structure and habitat values of the forest. However, there is a clear need for continuing studies of all aspects of management, with the problem of securing adequate regeneration of the podocarps being especially important.

It is clear that with 24 % of the virgin terrace stands of South Westland allocated to meeting minimal requirements for reservation, a viable cutting cycle presupposes rationing of the remaining trees, in line with the procedures outlined under the new Indigenous Forest Policy. The sawmillers request for heavier cutting of the terrace stands would destroy any chances for sustained yield; and the Ecological Society accordingly rejects it as an unacceptable option for the use of a valuable resource.

##### *Management of kahikatea*

There is a significant area of regenerating kahikatea forest in Westland, mainly in tenures other than State Forest. The Society favours encouraging silviculture of this relatively fast-growing podocarp. Where appropriate, farm forestry inducements should be offered as a possible means whereby kahikatea forestry might be encouraged. We suggest that kahikatea enclaves of this kind would be a very appropriate use of the normally poorly-drained land dominated by kahikatea. They would provide food and refuge for native pigeon, kaka, and other fruit-eating native birds, and valuable game bird habitat.

##### *Beech management*

Managing suitable beech forests for sustained yield of beech sawlogs (including hard beech) should help to alleviate the recognised short-fall of indigenous timbers, and eventually provide quality hardwood valued on its own merits. Nevertheless, the deficiencies in scientific and silvicultural knowledge that the Ecological Society drew attention to in its 1973 Critique (on Proposals for Use of Beech Forests) largely remain, and we recommend cautious beginnings and continuing research.

Accordingly, we consider that there should be greater emphasis on the management of beech forests whether or not the Jaakko Poyry proposals for use of beech in particle-board or for pulp are implemented. In this context, we draw attention to information presented at the Hokitika Seminar to the effect that chipping and pulping industries are not a pre-requisite for the successful management of beech forests for sawlogs, although under some (but not all) circumstances removal of defective logs for chipping may assist regeneration.

##### *Exotic forestry*

The Ecological Society does not object to the establishment of exotic forests in Westland, but is opposed in principle to conversion of cut-over native forests to exotics. Not only is conversion a policy of defeat in respect of management of indigenous timbers, but it makes severe inroads on the lowland forests that provide essential habitat for much of our fauna and flora. This is particularly critical in northern districts of the West Coast.

If some conversion to exotic species is considered to be unavoidable, it should involve the *minimum* area of cutover indigenous forest needed to sustain a viable sawlog supply. Any such conversions should avoid erosion hazards; retain enough green belts, amenity and riparian strip reserves to provide continuous corridors for migration of fauna; and only

proceed after the proposed conversion areas have been checked for species or natural communities that need protection.

We draw attention to two further points made in our 1973 Critique:

1. The pressure to convert to cut-over lowland forest on the more fertile soils can be lessened by extending planting to more difficult sites such as pakihis, and to under-developed land under tenures other than State Forest. We note that experience is being gained in afforestation of pakihis. It would also seem ecologically sound to experiment with a wider spectrum of tree species to find those best adapted to West Coast environments and to avoid the inherent dangers and disease management costs of a *Pinus* monoculture. At the same time, we emphasise that both natural and fire-induced pakihis have high scientific interest, and ecological reserves should include representative examples.
2. The view expressed in 1. notwithstanding, the economics of exotic plantations on the West Coast should be considered realistically in relation to planting in other districts; in the long term, uneconomic planting could prove expensive to the nation in resources such as non-renewable fuels and construction materials.

#### *Possible alternatives for meeting timber commitments*

The Director-General of the Forest Service has listed options, two of which the Ecological Society would reluctantly consider, if it is found that a short-fall of indigenous timber can only be met by encroaching on reserves, and that employment until sufficient exotics come "on stream" must be within the sawmilling industry.

1. Logging of podocarps from riparian strips, where it can be shown that there are no ill effects in terms of run-off, erosion or survival of aquatic and terrestrial fauna and flora, and provided that there is a firm obligation to regenerate or otherwise replace and tend the same podocarp species at similar stocking within the strip.
2. Extraction of podocarp logs from hilly podocarp-hardwood forests with low podocarp densities, beyond the 50% cut proposed under "partial logging", where this does not conflict with amenity values. As this would diminish the already doubtful potential for podocarp regeneration in this type of forest, such heavier logging should be followed by replanting of

podocarps and tending them to encourage their growth. Such harvesting should be planned in conjunction with Wildlife officers to minimise the risk of serious harm to long-term wildlife values. Planting of exotic species may also be acceptable, provided it is consistent with retaining an indigenous forest structure.

We suggest that there are two further courses of action, which should relieve the short-term pressure on the podocarp resource:

1. Beech logs cut during current operations should be considered as an integral substitute for podocarps, rather than being regarded as an "extra" to the current form of contract timber sales.
2. We strongly endorse the principle that since existing milling rates far exceed the sustained yield potential of existing podocarp forests, every effort must be made to reserve podocarp timbers for uses where their intrinsic properties are valued. Thus, the policy of providing the largest possible sustained yield of podocarps should also include setting prices which will encourage appropriate premium rather than wasteful uses and cover the costs of sustained yield management. We believe that the end-user must expect to pay the price of this premium material. We see nothing in principle against suggesting that higher stumpages should be paid by the logger to offset the costs of sustained yield management. Higher margins should also be available to the logger and sawmiller to compensate for the greater care and skills required both to remove timber without serious damage to remaining trees and to saw logs to maximise premium end uses.

#### SOCIAL ASPECTS

We sympathise with the feelings of imminent economic crisis which have been freely stated to prevail among many West Coasters. Nonetheless, we are firmly of the opinion that some of the propositions being pressed in the present controversy will leave Westland in particular, and New Zealand in general, ecologically, aesthetically and probably economically, at a long-term disadvantage compared with what could be achieved if a policy of resource conservation were to be adopted. We do not however, wish to make recommendations on sociological matters-it is outside the constitution and function of this Society-but wish to comment upon some of the "sociological" points raised in favour of the clear-felling and conversion of the remaining podocarp resources. In particular, we comment upon

some of the rather emotive statements by the New Zealand Sawmillers Federation and other Westland speakers at the Seminar, which have been widely publicised, especially as newspaper advertisements.

1. We disagree with the claim that Westland State Forests and unoccupied Crown Lands belong to West Coasters rather than equally to all New Zealanders. These forests are a National resource, and planning for their use, conservation or preservation must accordingly be considered in a national framework akin to those relating to "Bay of Plenty" geothermal steam, "Taranaki" natural gas, "Waitaki Valley" hydro-electric potentials, and all others.
2. Conflicting and emotive assertions that Westland's resources have been "raped" by outsiders or thoughtlessly wasted by local residents are entirely irrelevant to consideration of the wisest use/conservation/preservation of those which now remain. The past cannot be changed; our concern must centre around the present demand by the sawmillers to log volumes of podocarps which are far in excess of what the forests can sustain, thus perpetuating the worst traditions of exploitive use of resources.
3. The Ecological Society accepts that population levels and employment opportunities should be maintained in Westland if possible, to avoid disruption of the social and economic structure of the community. But we strongly disagree with the proposition that this should be achieved by cutting out the remaining podocarp resources, which are considered to be important for wildlife, scenic (and tourist and other recreational) and scientific values, and as a sustained source of timber reserved for appropriate uses and real needs. We believe that such a proposition equates a small short-term gain with a profound and virtually irreversible loss which would be keenly felt by both present and future generations of New Zealanders.  
 Similarly, we see little merit in the arguments advanced by some sawmillers that they have "rights" to more bush to payoff equipment which they have recently installed despite being aware that their present cutting contracts were coming to an end. We also question that forest industry employees can justifiably claim "rights" to obsolescent job opportunities within their present towns and villages which would distinguish them from any other occupations
- in New Zealand such as shearers, freezing workers, fishermen and many construction workers. Elsewhere in New Zealand, communities have flourished and declined since earliest settlement days, most recently and starkly those associated with the construction of hydro-electric schemes and other major engineering works. Such purported "rights" are therefore examples of fallacious special case pleading which can withstand only the most superficial scrutiny.
4. We consider it an important principle that Westland forests are a National resource and that maintenance and promotion of the economic and social well-being of Westland is a National responsibility. Forestry activities should not be considered in isolation when there are alternative employment opportunities based on renewable and non-renewable resources with which Westland is comparatively well endowed. Among such, are pelagic fishing (the concentration of foreign fishing fleets off Westland is robust evidence of a large resource useable by New Zealanders), renewable energy harvesting from large areas of cut-over forests which are often burned to waste in farm and exotic forest conversion programmes, coal mining and manufacture of special (including liquid) fuels, and intensification of some aspects of agriculture.
5. The reluctance of the timber industries to take initiatives to promote and use beech woods as alternatives to podocarps is particularly regretted. We strongly advocate that the Forest Service develops and demonstrates logging, processing and marketing techniques for beech, as it did with *Pinus radiata*.
6. Sawmillers' statements to the effect that because 91.8% of Westland forests are already dedicated to uses non-productive of timber and the implication that the remaining 8.2 % should therefore be committed to unrestricted logging are rejected by the Society. These statements deliberately attempt to obscure the facts that 66% of the forest is inherently steep-land protection forest that could not be logged under any circumstances, that much of the remainder is protected only by low merchantability, that scarcely 10000 ha of merchantable forest is in existing reserves and that this includes only some 3 500 ha of podocarp stands with medium to high timber volumes. Their argument is an attempt to

distract attention from the vital contemporary issue-adequate reservation of lowland ecosystems.

#### CONCLUSION

The New Zealand Ecological Society supports the principles of the new indigenous forest policy as they relate to the retention of native forest cover and of sustained yield of podocarps and beech. We also strongly support, in principle, the reserve proposals by the Scientific Co-ordinating Committee for Beech

Research, regarding them as the minimal areas of virgin lowland forest that would meet the needs of science and nature conservation. We would remind Government that if, in the future, the reservations are found to be needlessly generous in ecological, scientific, recreational, tourism and "conservation" grounds, the timber resource will still be available and be of even greater economic value than if it is imprudently cut now; on the other hand, to allow its destruction would be an irreversible expedient for which we would be harshly judged.