



NEW ZEALAND
FOREST OWNERS' ASSOCIATION INC.

**SUBMISSION ON A PUBLICLY NOTIFIED PROPOSED REGIONAL PLAN UNDER CLAUSE
6 OF THE FIRST SCHEDULE TO THE RESOURCE MANAGEMENT ACT 1991**

- Submission to:** Chief Executive
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- Submission on:** Proposed Canterbury Natural Resources Regional Plan
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1. INTRODUCTORY COMMENTS

NZ Forest Owners Association thanks Environment Canterbury (ECAN) for the opportunity to comment on the Proposed Canterbury Natural Resources Natural Resources Regional Plan (PNRRP).

NZ Forest Owners Association is concerned that at no stage did ECAN consult with the National body that represents commercial growers of plantation forest in Canterbury or New Zealand.

NZ Forest Owners Association is concerned that a disturbing and environmentally indefensible precedent may be set in Canterbury which may creep to other regions of New Zealand

Land use regulation in the headwaters is illogical if the problem is too much irrigation lower down in a catchment. Where is the incentive on irrigators to use water responsibly if the cost of maintaining water in the catchment falls on someone else? To the extent that upland forest owners are being used to address problems created by someone else, they are facing a loss not for the common good, but for the private benefit of others.

Forest owners are surprised that at the same time ECAN is proposing its controls on plantation forests (tall vegetation) to maximise water yield for irrigation, the Government is proposing to remove large areas of high country tussock grassland from grazing, so it can eventually revert tall vegetation.

Separately, Central Government has recently announced a funding package aimed amongst other things at increasing the areas of permanent forest in New Zealand as mitigation for this country's emissions of Greenhouse gases."

It would be a bitter irony indeed if land owners were restricted from making economic use of their land because big chunks of the high country were reverting to gorse and broom.

1.1 General Principles

There are a number of "first principles" upheld by NZ Forest Owners Association that must be made explicit to ECAN, to assist with the interpretation of our submissions:

Principle 1: Ownership of land is underpinned by critical property rights.

Fundamental to those property rights is unfettered access to key natural resources, being solar radiation that falls on the land, Carbon Dioxide (CO₂) in the air that blows over the land, and precipitation that falls over the land and enters the soil. In respect to the latter resource, water only becomes available for allocation to others when it percolates below the root zone, and enters the groundwater system, or a stream system.

Principle 2: Councils ought to ensure *equitable treatment* of all land uses. To that end, land uses should be treated fairly and without prejudice. Where a land use is a polluter by waste discharge to air, soil or water, then the general equitable principle is that the polluter should pay.

Principle 3: Councils ought to focus on the controlling of the identified adverse *effects* of activities, and where regional councils control land use under s30 it ought to be with recognition of the multiple functions of particular land uses.

Principle 4: Councils ought to provide an *enabling* planning environment that allows resource users, through education, encouragement and the provision of workable mechanisms, to make their own environmentally-informed decisions on their land without recourse to either unnecessary consent processes or unnecessary restrictive rules.

Principle 5: Any identified issues, objectives, policies and methods provided by councils ought to be *based on objective, technically correct data and logic*. This requirement is integral to section 32 analysis. Consideration of alternatives, costs and

benefits requires reference to more than one source of information, with early and complete consultation undertaken by staff without prejudgment.

Principle 6: Councils ought to display a strong understanding of the context of land use issues, and particularly how s30 (c) issues are *integrated* in order to achieve the purposes of the Act.

Principle 7: Councils ought to *understand the spatial and temporal dynamics of land use*, and avoid a focus on restricting change on the basis of some prejudged ideal. Not all change is “bad”, as not all that is current is “good”.

SUBMISSION 1

GENERAL SUBMISSION – RELATING TO ALL CHAPTERS 4 THROUGH 8

NZ Forest Owners Association submits that Chapters 4 through 8 of the PNRRP constitute a highly deficient plan which will actually work against the purpose of the RMA. A number of things have contributed to the disappointing result:

- There is an apparent **lack of understanding of the priority environmental management issues** facing the Canterbury region, particularly relating to intensive land use, water quality, soil degradation, and biological diversity.
- There is a **lack of a coherent vision of what land use patterns and practices will be required to achieve sustainable management as required under s 5 of the RMA** in the Canterbury region, particularly how land use relates to “*sustaining the potential of natural and physical resources*” and how they must be managed to “*safeguard the life-supporting capacity of air, water, soil, and ecosystems*” as required under s 5 (2) a & b. The role of woody vegetation in both sustaining the potential of natural and physical resources, and in safeguarding a functional landscape that provides life support seems to be misunderstood by ECAN, (for instance, the ECAN reference to the rationale to restrict forestry planting because of the supposedly adverse effects on stream ecosystems, when the reality is that plantation forest streams have a quality that is very close to that of indigenous forests, and considerably higher than stream quality in either extensive or intensive farmland). It is ironic that elsewhere in the country forestry is being advocated because of its highly beneficial effects on intensive-agriculture sourced stream pollution (in association with Central North island lakes, including Taupo), and has again demonstrated how it provides the same standard of protection as indigenous forest for the erodible hill country and downstream floodplain communities during the southern North Island floods of early 2004. Meanwhile, in Canterbury, the regional council has chosen to disadvantage forestry and through its actions provide tacit support for downstream land use intensification and pollution.
- There is an apparent **lack of understanding within ECAN policy of the effects of woody vegetation on environmental outcomes** involving water quality, soil conservation, terrestrial biodiversity, aquatic biodiversity (where the effects are the opposite of what ECAN apparently assume), natural hazards, woodland soil water storage, soil water percolation and infiltration vs. overland flow, correlations between woody vegetation and exceedingly low artificial chemical inputs and nutrient output, the cleansing effects of forested riparian zones on streams, water yield patterns, CO₂ sequestration, and processes of landscape

ecology, etc. ECAN not only shows a lack an understanding of any of these particular issues related to woody vegetation, they also show a lack of understanding of the complex interrelationships that exist *between* these structures, processes and functions associated with woody vegetation.

- There is a **lack of integrated management of the natural and physical resources** of the region as they relate to water quality, soil conservation, natural hazards, biodiversity, water quantity, and aquatic ecosystems, **as expressly required under s30 of the RMA**, to ensure the purpose of the Act is achieved. In particular, the multiple and beneficial functions of trees in the landscape relating to natural hazards, discharges of pollutants, biodiversity, soil conservation, water cleaning and regulation of stream flows have been either ignored, or played down. For ECAN to claim that the PNRRP is ‘integrated’ is not demonstrated by their treatment of activities without consideration for their whole range of environmental effects.
- There is a **highly partial and prejudged evaluation** of the objectives, policies and methods as they relate to woody vegetation which has resulted in a serious inequity. This inequity is compounded by the prejudgment being directed at an extensive land use such as forestry while the same restrictions and prejudgments do not apply to more intensive land uses whose detrimental environmental effects are well documented. Woody vegetation is associated with low chemical inputs, low run-off, better biodiversity, increased structural complexity in the landscape including sub-canopy and forest margin shrubland regeneration, tall grasses and wetlands, recreational benefits, and other benefits to air, soil and water, while intensive land uses are associated with detrimental effects on recreation, air, soils and streams. This fact is undeniable, yet ECAN has chosen to tacitly encourage precisely those intensive and highly polluting land uses that work directly against sustainable management by its differential treatment and active discouragement of woody vegetation. The prejudgment of woody vegetation is highlighted by the analysis of PNRRP references (including their s 32 evaluations) to trees and forests provided in the section below. There is very little said about woody vegetation that is positive in either the water quality or soil conservation chapters. This is extraordinary.
- There is a **lack of consideration of the environmental and social costs** of discouraging extensive woody vegetation **as required under s 32**. Together with a lack of understanding of the effects of woody vegetation on low flows – particularly the lack of consideration of the implications of high overland flow, lower infiltration rates and lower wetland and soil water storage associated with more intensive land uses – there is a **lack of consideration of other alternatives** as required by s 32 to achieving water objectives. Very little emphasis is given to the requirement for, or even encouragement of, irrigation efficiency, the buy back of over-allocated water rights, the storage of non-summer flows, and a stronger requirement for wetlands and soil conservation to retain water storage potential in the land. Restriction of woody vegetation is the singular focus of the PNRRP as a response to a problem whose cause is related to abstraction.
- the Plan fails to achieve integrated management of the natural and physical resources of the Region. The Plan seeks to protect and promote the abstractive use of the region’s water resources to the detriment of soil conservation and water quality. In doing so, the Plan ignores two fundamental principles:

- The PNRRP **ignores the principle of Exacerbator (or Polluter) Pays**. The Act is predicated on the principle of exacerbator pays. The taking, use, damming or diverting of water, any discharge to land, air or water, or any disturbance to the bed of a watercourse require a resource consent unless expressly allowed by a rule in a Regional Plan. In comparison, the use of land is a permitted activity unless it contravenes a rule in a Regional or District Plan. As with any discharge to the environment, abstractive users can not assume the right to take water beyond an individual's reasonable domestic needs or the needs of an individual's animals. If there is insufficient water to meet instream values then, as with assimilative capacity for a contaminant, the use of the water should cease
- The **independent role of science has been seriously undermined** by ECAN's apparent direction of research funding to answer particular questions relating to water yield, without regard for other mitigating and contributing factors that have considerably more bearing on the purpose of the Act. Much of the research basis for the decisions appear to be selective and placed out of context. The concern is further highlighted by the fact that much is made about the 'use' of water by forests, including within riparian zones, yet little is made of the benefits that are gained. By contrast, the highly inefficient nature of some types of irrigation (eg border dyke irrigation on light soils) is not so subject to critical science, nor is the efficient use of water in some sectors (500 to 1000 litres of irrigation per litre of milk), and – again – the other considerations that are relevant to the overall context of that land use – such as soil degradation and major water pollution – are not linked with this inefficient water use¹. Forestry is put forward as the major and inefficient water user, with mitigating factors inequitably played down, ignored within the PNRRP, isolated from the context by reference to other chapters, or left as considerations for the resource consent process. The target is apparently plantation forests, and ECAN's research questions appear to have been framed to suit, particularly by removing forests from the wider sustainable land management context relating to the Canterbury region. Information has also been presented in such a way that makes forests have a greater apparent effect than is the reality. For instance, transpiration recorded for plantation forests grown on the Canterbury Plains are presented for summer months as high, when research indicates that pasture transpiration is as high or higher during the same period, especially where irrigated (Tim Davie, pers. comm. though no pasture comparisons were provided), and the research was carried out in areas which were not representative of 'water short' catchments, being in highly exposed plains areas (Hororata) where rainfall is lower and evaporation is higher.
- ECAN has displayed **an authoritative, top-down approach to 'consultation'** with the resource users and owners, which has compromised its wider understanding of land use and sustainable management. Consultation with forest growers by the council began relatively late when compared with other councils, and forest owners do not feel they had the opportunity to present their views until well after the position of ECAN was firmly set. 'Consultation' after direction is set could be perceived to be a failure to meet the requirements of the Act. It does not meet the requirement to fully evaluate their objectives, policies and methods under s 32 of the Act.

¹ Parliamentary Commissioner for the Environment. 2004. *Growing for good: intensive farming, sustainability and New Zealand's environment*. Wellington: Parliamentary Commissioner for the Environment

- ECAN have chosen to use a **restrictive and regulatory approach** to resolve a perceived problem of water yield by focusing on one land use as a target. Forest growers will, in effect, have to “prove their innocence” despite the highly beneficial effects of the land use on sustainable management. This regulatory approach is all the more offensive when the core problems of land use are recognised as relating to **water quality, soil degradation and soil loss by wind, and the loss of biodiversity in the landscape**, as highlighted by the Parliamentary Commission for the Environment report on farming². These effects are all the consequences of intensive land use which does not share the regulatory focus ECAN has loaded on forest growers, and are all effects that are mitigated, remedied and avoided by woody vegetation which **is** regulated. ECAN’s claims to be working toward the purpose of the Act is hard to defend when the whole context of land use is considered. Existing use rights are not a relevant defense for protecting intensive land use when there is arguably a major land use activity change from extensive dryland to intensive irrigated land use.
- ECAN apparently **overlooks the fact that its engineering control works for its braided rivers is based on dense riparian plantings** of hygrosopic species (willows and poplars). Summer water use in these plantations is undoubtedly greater per hectare than in any upland forest, but presumably because these plantations protect the land asset of intensive plains farming operations (many of which rely on irrigation) ECAN ignores reference to them.

Conclusion of General submission

The PNRRP as it stands is working against the purpose of Resource Management Act, is inequitable in its treatment of forestry particularly with regard to its comparative treatment to known polluting land uses (for which forestry rather than the polluter is expected to pay), makes no attempt to provide an overall integrated context for various land uses as required under section 30, is regulatory rather than effects-based with regard to water yield (though not for key issues such as soil conservation where other land uses are implicated), relies on prejudged positions rather than fair, objective and considered information relating to land use issues, including the consideration of alternative, and environmental, social and environmental costs and benefits relating to their proposed objectives, policies and methods, as required under section 32.

Decision Sought by NZ Forest Owners Association

NZ Forest Owners Association Inc submits that the Proposed Natural Resources Regional Plan be withdrawn because of the deficiencies, inequities, and inconsistencies with regard to their requirements under the Resource Management Act. The PNRRP should be redrafted to provide a more science based and workable plan with a far stronger focus on section 5 (sustainable management as the purpose of the Resource Management Act).

NZ Forest Owners Association seeks that in a replacement Plan, Council:

1. Significantly simplify the structure of the Plan so that it integrates the management of the various sections/chapters; and

² Parliamentary Commissioner for the Environment. 2004. *Growing for good: intensive farming, sustainability and New Zealand’s environment*. Wellington: Parliamentary Commissioner for the Environment.

2. Ensure that a reasonable, equitable, and effects based permitted baseline is clearly established in the objectives, policies, and rules; and
3. Ensure that the Permitted activity conditions are clear and easily interpreted by all potential Plan users; and
5. Remove any activity based regulation.

SUBMISSION 2.

Chapter	Section	Identifier	Page #
Water Quantity	5.4.2	Impacts of vegetation Change on water yield	5 – 22 to 5 - 30

NZ Forest Owners Association opposes the above parts of the Plan Change

This section of the PNRRP is factually incorrect or provides an interpretation of the hydrological impacts of vegetation change which is not supported by the wider hydrological community. Specifically:

- The PNRRP makes a number of statements about rooting depth. NZ Forest Owners Association is not aware of any scientific study done on the role of rooting depth in relation to water use and how it varies with tree size. We also note that there is no cited literature given. Unpublished data suggests pines and pastures have similar rooting depth for the majority of water gathering roots. The main control over transpiration (which is being considered in this part of the text) is canopy conductance not rooting depth. Pasture has a far higher canopy conductance than forest (Dr T Davie, Landcare Research, pers. comm.). For rooting depth to be important, you need a rainfall regime in which it is dry enough for deep roots; wet enough for water to be there; and adequate soil structure for deep rooting. This is by no means universal in upland (flow sensitive) catchments.
- The figure of 50% reduction in total water yield from plantation forestry is high. It falls within the range of experimental data in small NZ catchments but is at the high end of the spectrum. Other sites that could be considered relevant are closer to 30-40%
- The interception properties of matagouri have never been studied. However the statement that “matagouri has a lower ability to intercept and transpire water than other types of woody vegetation” is highly disputable. In the absence of measurements, it is reasonable to use theoretical understanding to infer its interception properties. Although it may have a relatively low leaf area, anyone who has walked through matagouri after a rain shower will tell you that it is quite capable of intercepting a significant amount of water that is then available of evaporation. More importantly, matagouri undoubtedly has a high aerodynamic roughness and it is this that is by far the most important control on the interception rate. Therefore, it is reasonable to assume that the interception properties of matagouri are high (as with other scrub species).
- The definition of grassland (not included in the definitions section of the PNRRP) includes ”short tussock” and low-density scrub. This suggests that they have

similar hydrological characteristics. They do not and should be treated separately in any hydrological analysis.

- The statement concerning spring-fed streams being an exception infers that streams in the Canterbury foothills (not normally considered spring fed) have no access to groundwater. This is clearly not the case.
- The statement “interception effects will be greatest for trees planted in areas of highest rainfall” is incorrect. It may lead to higher amounts of interception but this does not equate to a larger effect. In fact it is frequently the opposite.
- The PNRRP is inconsistent. On page 5 – 26 it states “vegetation change outside the low flow producing area will probably not directly alter low flows” but then goes on to say it will “speed up onset of low flows” and increase the duration, frequency and severity of those flows”.
- The statement that “7DMALF discharge contours will provide an estimate of the volume of water required to replace lost runoff” does not take into account natural variability on flows. It assumes every year is an average year.
- There is constant reference to consultancy and unpublished technical reports that are not readily available and have not gone through the full scientific peer review process. This is not adequate for a public policy development and has the potential to enshrine flawed science in regulation.

The decision NZ Forest Owners Association seeks from the Council is:

1. Delete section 5.4.2, Impacts of Vegetation Change on Water Yield or, in the alternative;
2. Rewrite the section taking into account sound hydrological and agrometeorological theory through full and wide consultation with the Hydrological community.
3. Hydrological analyses be redone using median flow rather than mean flow and a full analysis done to consider whether 7DMALF is the appropriate low flow measure.

SUBMISSION 3

Chapter	Section	Identifier	Page #
Water Quantity	Policy WQN6	Controlling Plantation Forestry in flow sensitive catchments	5 – 56 to 5 - 59

NZ Forest Owners Association opposes the above parts of the Plan Change

Policy WQN6 is inappropriate, inequitable, not effects based, potentially onerous, and could render an interest in land incapable of reasonable use.

In the case of Tasman v Carter Holt Harvey Ltd (W07/98) the Environment Court acknowledged that the evidence had established that the Moutere gravel terrain was a

“special case”. Clearly this case was not intended to set a precedent for other areas – it was a special case unique to the Moutere gravel aquifer system.

Without limiting the foregoing:

- Policy WQN6.1(a)(ii). The reference to exotic tall vegetation is not relevant to the stated issue. The stated effect is for all tall vegetation regardless of origin.
- Policy WQN6.1(a)(iii) and Policy WQN6.3(d). Neither the Plan or the Section 32 Report has provided any clear evidence that new planting up to 20% of hydrologically sensitive areas will cause any measurable reduction in 7-day MALF in medium- or large-sized catchments. Furthermore, the areas subject to consent requirements in the NRRP appear to include parts of catchments which do not contribute to 7-day MALF. Hydrological instrumentation is not accurate enough to detect a “five percent reduction in seven-day mean annual low flow”; at best you might detect a 7-10% change. When a more reasonable analysis of the hydrological data is used it is clear that it is not possible to detect any change in flow at less than 20% of land area change and, even then, it is questionable that the change will have the stated effects.
- Policy WQN6.2. Wide-spaced plantings are unlikely to control deep-seated erosion. Tree stockings of > 400 stems/ha have been shown by experience & research to be necessary on active deep erosion surfaces. Policy WQN6.2 seeks to protect abstractive use to the detriment of the environment and contrary to sound integrated catchment management practice.
- Policy WQN6.3(b)(ii). The limit of 12 months to map and notify Council of any areas of tall woody vegetation is unreasonable and fails to recognise the continued spread of tall woody weeds such as gorse and broom in the Region. The subsequent conversion of these areas of tall vegetation to plantation forests will have no or minor adverse effects and should be a permitted activity regardless of when ‘application’ is made.
- Explanation and principal reasons (paragraph 2). The statement that plantation forestry is “the land use activity that is likely to have the greatest impact on water yield due to the scale and density of planting and the speed at which canopy closure is reached” is not based on any published science we are aware of. Scotch broom and gorse are two species that may achieve full canopy closure and height > 2m just as rapidly if not more rapidly than as radiata pine. Furthermore, Council has not provided a risk assessment comparing scale of new afforestation with scale of woody brushweed reversion in sensitive catchments that would justify the rules of the Plan in terms of the obligations under section 32.
- Explanation and principal reasons (paragraph 4). The addition of any addition of catchments to schedule WQN15 must be through a notified Plan change.

The decision NZ Forest Owners Association seeks from the Council is:

Delete Policy WQN6 or, in the alternative:

1. Amend Policy WQN6.1(a)(i) to read:

“the planting and replanting of existing areas of plantation forest.” Or words of like effect.

2. Delete the word "exotic" from Policy WQN6.1(a)(ii).
3. Amend Policy WQN6.1(a)(iii) to read:
"the planting of new areas of plantation forest unless a comprehensive integrated catchment study has determined that the control of Plantation forestry will achieve effective and efficient integrated resource management." Or words of like effect
4. Delete Policy WQN6.1(b);
5. Delete Policy WQN6.1(c);
6. Amend Policy WQN6.2 to read:
"In those areas of flow-sensitive catchments where soils are susceptible to deep-seated forms of erosion, such as tunnel gully, gully, slip, slump or earthflow, the establishment of new areas of plantation forestry for slope stabilisation that do not meet the requirements of (1) shall be approved where the purpose of the planting is to manage erosion" or words of like effect.
7. Delete the word "exotic" from Policy WQN6.3(b).
8. Delete Policy WQN6.3(b)(ii)
9. Delete WQN6.3(c);
10. Delete WQN6.3(d);
11. Delete paragraph 2 Explanation and principle reasons.
12. Amend paragraph 4 Explanation and principle reasons to make it clear that any new catchment will be added to Schedule WQN15 through a notified Plan Change.

NZ Forest Owners Association wishes to be heard in support of this submission.

NZ Forest Owners Association would be prepared to consider presenting a submission in a joint case with others making a similar submission at any hearing.

Rob McLagan
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NZ Forest Owners Association Inc