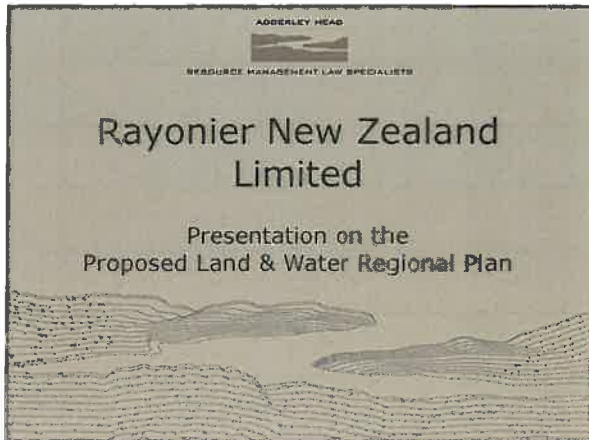
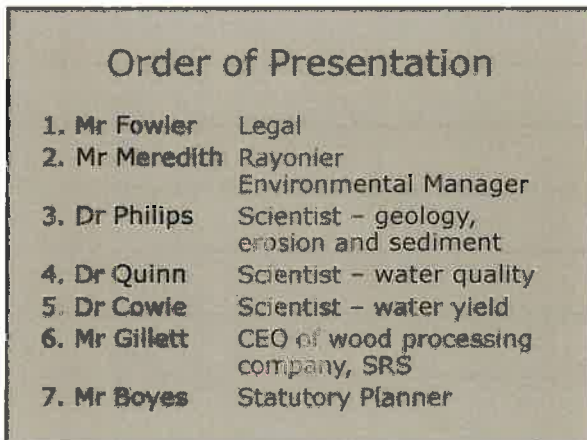
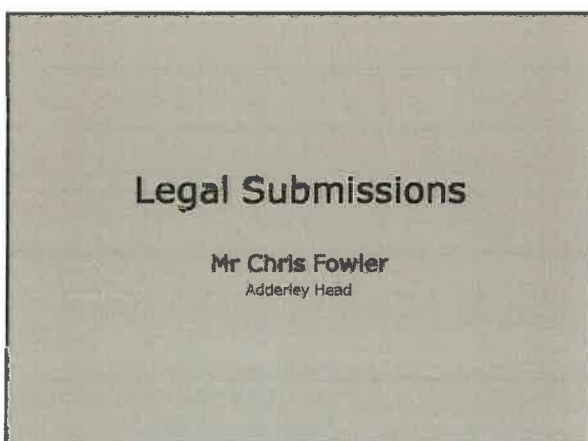








Overview

- Introduction and preliminary matters
- Plantation forestry and pLWRP:
 - sedimentation effects
 - flow-sensitive catchments
 - water bodies and riparian margins
 - storage of hazardous substances
 - erosion prone land
 - definitions
- Policy considerations
- Section 32 evaluation
- Conclusions

Introduction

- Rayonier significant forest owner
- Rayonier supports pLWRP objectives
 - Seeks permitted activity framework for routine forestry activities
- Proposed amendments
 - Account for cyclical nature of forestry
 - Recognise benefits provided by forestry
 - Support good management practice
 - Reduce compliance costs

Preliminary matters

- Potential scope issue
 - Some changes different from specific relief in Rayonier submission
 - However original submission requested
 - Changes to specific rules and
 - A separate forestry rule (cl 16) and
 - Any necessary consequential or additional relief (cl4.2)
 - Changes not beyond limits of submission and do not prejudice other parties

Preliminary matters

- Incorporation of documents by reference
 - Changes proposed refer to various external documents (ESCP, Harvest Plan, E-CoP Plantation Forestry, etc)
 - Rayonier seeks that these documents be incorporated by reference into pLWRP
 - Reliance on clauses 30 and 31, Part 3 of Schedule 1 RMA

Sedimentation effects

- Separate rule is justified because forestry has a different effects profile
 - Sediment effects beneficial over full rotation
 - Elevated sediment yield occurs during harvest phase due to scale, duration, and intensity of activity on sloping land
 - Good management practices (GMP) minimise sediment discharge during harvest
 - However forestry sector will have difficulty achieving compliance with proposed rules

Sedimentation effects

- Other relevant features that support a separate rule
 - Forestry sector has mature understanding of the importance and value of GMP
 - Long-term investment cycle of forestry
 - Undue RMA regulation influences choices
 - Corporate forestry is sensitive to RMA non-compliance
 - Undue RMA regulation imposes costs

Flow-sensitive catchments

- pLWRP contains the same rules that JFS successfully removed from the NRRP
- Rayonier frustrated to be re-litigating precisely the same issue again
 - No consultation prior to notification
 - No justification for reversal in s32 Report
 - Compares poorly with constraint on private plan changes
- Flow sensitive catchments provisions should not have been notified

Flow-sensitive catchments

- Case presented by JFS that NRRP-
 - Too inflexible
 - Limited large scale afforestation
 - Unduly expensive - rules not effects based
- CRC Commissioners agreed with JFS
- However...pLWRP reverts back to NRRP approach

Water bodies & riparian margins

- Rayonier seeks permitted activity framework for routine activities
 - Temporary culverts
 - Vegetation clearance in lakes and rivers
 - Vegetation clearance in riparian zones
 - Earthworks and cultivation in riparian zones

Storage of hazardous substances

- Mobile fuel tanks routine part of harvesting activity
- Rayonier seeks permitted activity status for
 - Large tanks (>2,000 litres)
 - Tanks serviced to meet HSNO regulations
- Avoids duplication and reduces compliance costs

Erosion prone areas

- About 10% of Canterbury forest estate within erosion prone areas
- Key areas of interest for Rayonier
 - Accurate mapping of erosion-prone areas
 - Spraying of agrichemicals
 - Harvesting using ground-based systems
 - Control over earthworks
 - Period of re-vegetation after clearance

Definitions

- Rayonier seeks amendment to/inclusion of following definitions-
 - Ecosystem Services
 - Erosion and Sediment Control Plan
 - Harvest Plan

Policy Considerations

- NPS–Freshwater Management
 - Enforceable quality and quantity limits
 - Regional rules to suit regional differences
 - 2nd Report LWF
 - Inherent variation in suspended sediment
 - 3rd Report LWF
 - Supports use of GMP
- PLWRP requires activities operate at best practice or better (Objective 3.23)

Section 32 evaluation

- Costs and benefits of forestry operating as a permitted activity
 - Limited effects of forestry managed appropriately
 - Avoids costs to foresters and regulators of notified pLWRP provisions
 - Maintains investor confidence in forest sector in Canterbury region
 - Ensures supply of logs to Canterbury wood processing industry

Section 32 evaluation

- Overall evaluation
 - Best available scientific research
 - Recognition of long-term cyclical nature of plantation forestry and benefits of forestry
 - Encourages use of GMP
 - Accords with s70(2) RMA and best practicable option
 - Modelled on Horizons One Plan
 - Water yield provisions supported by Dr Cowie who heard NRRP submissions

Conclusions

- Forest sector recognises importance of reversing NZ's declining water quality
- Rayonier changes encourage GMP and are consistent with NPS-Freshwater and pLWRP objectives
- Overall Rayonier changes better than other available alternatives

Industry Perspective

Mr Kelvin Meredith
Rayonier New Zealand Ltd

Overview

- pLWRP process & consultation
- Regulatory management of plantation forest
- Land use activities over a full rotation of plantation forestry
- Forestry sectors use of good practice guidelines
- Key issues

Key issues

- Sedimentation effects of plantation forestry
- Effects of plantation forestry on flow sensitive catchments
- Effects of plantation forestry on water bodies and riparian margins
- Storage of hazardous substances
- Effects of plantation forestry on erosion prone areas
- Definitions

Process and Consultation

- Despite what may be purported there was no consultation with the forest industry in drafting of the pLWRP rules
- Frustrated we are having to revisit the same issues following decisions previously made on the PNRRP
- Considerable expenditure by the forest industry (\$200k) on the PNRRP particularly related to flow sensitive catchments

Plantation Forestry Management

- Spatially and temporally unique as a land use
- Distinct effects profile focussed on the harvesting phase
- Effects can be managed via robust permitted activity conditions centred around good industry practice
- Resource consents often replicate PA conditions
- Forestry is seen as a medium to long term investment
- Investors seek certainty on the ability to realise this investment
- Undue regulatory restriction can impinge on investments
- Many large forests representing many interests managed by TIMO's
- Triple bottom line reporting is now common

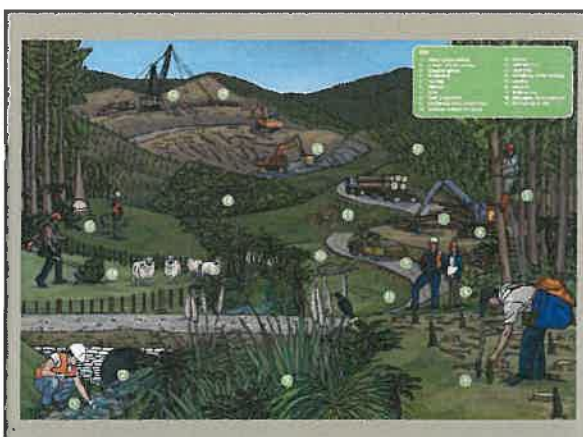
Benefits of Plantation Forestry

- Environmental services
 - soil and water protection
 - erosion control
 - carbon sequestration
 - recreational opportunities
 - biodiversity
 - indigenous habitats of significance
- Social services
 - employment
 - income generation
 - recreation
- Renewable resource
 - energy efficient
 - seismically responsive



A Full Forest Rotation

- Land Preparation
- Agrichemical application
- Planting
- Releasing
- Thinning
- Harvesting
- Construction of infrastructure



Establishment and tending



Infrastructure



Harvesting





Good Practice Guides

- Number of good practice guidance material developed by the industry for the industry
- Most companies have their own EMS
- Many contracts now contain direct reference to good practice documents
- Independent 3rd party certification such as FSC
- Will not support poor practice
- Robust permitted activity frameworks can help through reference to this material

Sedimentation effects

- Large machinery (>20t) and large trees (>2t)
- Point source sediment discharges relatively simple to control
- Non point source more challenging
- Relatively short duration impacts largely limited to the harvesting phase
- Adherence to good practice minimises effects



Flow sensitive catchments

- pNRRP rules appendices and Dr Brent Cowie
- Blunt tool as used in pLWRP
- Will limit growth of the sector
- Modified JFS model palatable



Effects on water bodies and riparian margins



Riparian margins

- Historically in many cases trees planted right down to stream edges
- Voluntary setbacks of 5m on all perennial waterways (permitted activity on this proviso in other regions)
- In many cases these are larger setbacks where they exist



Hazardous Substances

- No need to duplicate or go over and above what HSNO legislation requires
- Aggregate quantities of 2000 litres often exceeded in forestry
- Compliance with HSNO routine in our operations



Temporary culverts



- Maximum duration for a temp culvert to be in place is 4 weeks
- This would cater for approximately 30% of operations
- 3 months would capture almost 100% of operational requirements
- Difference in environmental effects no more than minor between 1 and 3 months (i.e. not 3x effects)

Erosion Prone Land

- Many forest have been planted on erosion prone specifically for the purposes of protection/production
- Often not practical to replant a forest within 6 months – seasonal constraints (harvested June cannot replant in December too dry)





- Many operations within Canterbury undertaken by steep slope harvesters (not suspension systems haulers)
- Arbitrary slope distinction for spraying on slopes nonsensical for forestry as area are sprayed contiguously

Erosion, Sediment & Forest Management

Dr Chris Phillips
Landcare Research

Overview

- Erosion susceptibility
- Plantation forestry in Canterbury
- Forestry and erosion
- Forest harvesting and erosion
- Mitigating erosion risk

Erosion susceptibility

- Varies in response to drivers
- Most susceptible land
- Least susceptible land
- Mass movement less common
- Historical mass movements



Plantation forestry in Canterbury

- Most relatively low erosion susceptibility
- MfE NES – moderate to low susceptibility
- Concerns regarding pLWRP definition of LH2
- Modelled sediment yields for plantations low
– $<100 \text{ t km}^{-2} \text{ y}^{-1}$



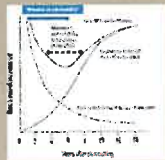
Forestry and erosion

- Forestry has positive effect on erosion
 - Root reinforcement
 - Evapotranspiration
- Extreme rainfall → landslides
 - forestry not immune
- No reports of widespread erosion in Canterbury forests
- Erosion also relates to soil disturbance
- Sediment greatest in lead up to and post harvest
- Sediment from harvesting, post harvest erosion & from roads and landings



Forest harvesting & erosion

- Period after harvesting is the most vulnerable to erosion
 - Hydrology
 - Root reinforcement
 - Soil disturbance
- In absence of extreme rain, erosion - relates to soil disturbance & rain
- "Window of vulnerability" managed by planting soon as, & at right density



Mitigating erosion risk

- Good practices
 - "Whole of forest" planning
 - Specialised harvest planning
 - good engineering design and implementation
 - Recognition of the risk
 - Utilising range of ESC measures
 - Training of staff and contractors
- Prevention vs cure
- Current standards & practices appropriate for Canterbury



Summary

- Erosion not a big issue in Canterbury
- Lack of NZ data and none in Canterbury
- Forestry can generate sediment
- Good practice can manage most sediment
- pLWRP should encourage and support best practice



Water Quality Effects

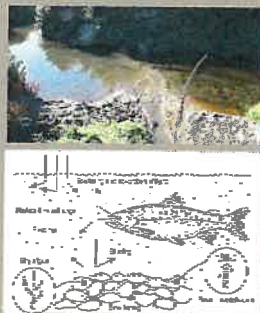
Dr John Quinn
NRWA, Hamilton

Overview

- Managing forestry impacts on water in the CRC LWRP
 - Sediment and water values
 - Forestry and water values
 - Harvest phase effects
 - pLWRP rule 5.72
 - Advantages of code of practice approach

Excessive sediment input

- Aesthetics
 - Clarity
 - Muddy beds
- Biodiversity
 - Habitat
 - Food prodn
 - Fish migration
- Infilling
 - Channels
 - Dams
 - Estuaries



Mid-late rotation forests & water values

- Water quality and fauna
 - close to native forest
 - better than pasture & urban land uses
 - Few animals (*E. coli* low)
 - Low nutrient input
 - High shade
 - Low erosion
- But water yield lower



Harvest phase effects

- Forest removal – period of
 - More runoff
 - Less evapotranspiration
 - More sediment input
 - Lower soil protection
 - Channel expansion
 - Earthworks, road runoff
 - Habitat disturbance
- Good forestry practice including riparian buffers can reduce harvest phase effects
 - NZFOA (2007) Environmental Code of Practice for Plantation Forest
 - Wellington Region's Erosion and sediment control guidelines



Forestry and pLWRP Rule 5.72

- Issues: Harvest may not comply & rule is **vague** on how compliance is measured
 - Schedule 5 clarity change <20-35%
 - 11 of 21 logged Coromandel sites had minimal clarity change
 - at 10 others annual median clarity declined
 - typical max drop in annual median clarity = 38%; worst 51%
 - influenced by catchment size, % catchment harvested/yr, buffers & storms
 - Recovery typically 2-3 y post logging
 - Logged streams 1- to 5-fold clearer than 3' pasture ones
 - Schedule 5 standards unclear on how diffuse effects of forest harvest would be assessed
 - At what temporal and spatial scales to test compliance?
 - Is compliance with pre-harvest or/and reference sites?

PLWRP Rule 5.72 issues

- Schedule 5 standards < MfE 1994 clarity change guidelines
 - 33-50% for waters other than Class A -waters where aesthetics particularly valued
 - May be to avoid cumulative effects?
 - This could be achieved by monitoring at an appropriate spatial scale
 - Recommend: <50% reduction in annual median clarity in small-medium sized catchments (<300ha) and <33% reduction elsewhere during/shortly after logging; or
 - One Plan approach of managing forestry via code of practice with monitoring compliance as backup to test effectiveness

Rule 5.72.6b SS standards

- Runoff SS <50 or 100 g/m³
- Reference river sites on Waimakariri (CH3) & Hurunui (CH1) can exceed these limits
- High background during rain should be allowed for *or* simply rely on schedule 5 clarity change standards (i.e., drop runoff standards)

River monitoring site	SSC exceedance of 50 g/m ³	SSC exceedance of 100 g/m ³
CH3	5%	5%
CH1	20%	15%

Practicality of monitoring SS in Rule 5.72.6b

- Measuring SS requires lab analysis of samples
 - Costs and time delay will reduce ability of forest managers to check compliance
 - c.f. clarity measured in field using black disc or clarity tube
- Recommendation:
 - If rule retained, couch it in clarity that is easily measured in field and strongly related to SS
 - Model for 4 Canterbury NRWQ sites gives:
 - SS 50 g/m³ = 0.24 m clarity as black disc visibility
 - SS 100 g/m³ = 0.14 m clarity as black disc visibility

Advantages of Code of Practice focus Approach

- Clarifies practices that are expected to produce desired environmental outcomes
 - Monitoring at appropriate level to check this
- Provides basis for:
 - Clear performance standards by operators/contractors carrying out forestry operations
 - Checklist/report card for assessing compliance
- Avoids unintended discouragement of forestry in the plan

Flow Sensitive Catchments

Dr Brent Cowie
Cowie Resource Management Ltd

Overview

- NRRP Process
- Relevant NRRP Decisions
- Operative NRRP
- pLWRP
- Targeting Effects & Criteria
- Officer Report
- Comments

The NRRP Process

- Chaired Panels that heard and decided submissions on Chapters 4-8 of the NRRP.
- Other panel members were elected members of ECan.
- Hearing process took 3 years with 34 separate topics covered by officer reports.
- The pLWRP effectively replaces Chapters 4-8 of the NRRP.

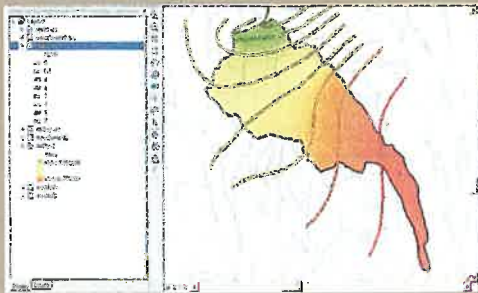
NRRP Decisions

- Proposed NRRP included controls on forestry on a per property basis in selected catchments. Consent required if new forest coverage were to exceed 5-20% of a property.
- Strongly opposed by Joint Forestry Submitters (JFS).
 - They suggested an alternative approach – controls to focus on catchment headwaters where most base flow generated.
- Agreed that per property controls not effects based as size and location of property has major effects on stream flows.
- Two initial decisions.
 - Forestry can significantly affect water yield in some catchments, so focused regulatory control necessary.
 - Controls only on catchments where forestry could reduce either 7dMALF by >5% and/or mean flow by >10%.

Operative NRRP

- Included 9 catchments with forestry controls.
- Replanting a permitted activity.
- Restricted discretionary consents if 95% 7d MALF or 90% average flow thresholds exceeded by new forestry plantings in the 9 catchments.
- Restrictions focus on catchment headwaters where most base flow generated – required detailed mapping of 9 catchments. Costly.
- One consent application granted under NRRP rule to afforest 770 ha in Waipara Catchment.

Te Moana Catchment



Te Moana Catchment

Area	LFPA	Balance
146 km 2	59 (40%)	87 (60%)

Flow contributions		
	7d MALF	Mean Flow
LFPA	76 %	51 %
Balance	24 %	49%

[illegible]

pLWRP

- pLWRP - return to per title controls in "flow sensitive" catchments, If > 15% to be forested consent required, irrespective of catchment size, property size and location.
- Approach ignores NRRP submissions & decisions by reverting to approach in the pNRRP.
- Is efficient to administer.
- But not effective - does not target the effect, i.e. retention of flows in sensitive catchments.
- Replanting still permitted.

Targeting & Criteria

- S9(2) RMA land use controls - should focus on effectiveness.
- Consistent with functions of RC's under s30(1)(c).
- Another ~20 catchments added to the 9 in the NRRP - more to be added as sections 6-15 developed.
- Unclear what criteria used to select additional catchments.
- Should be same criteria as for 9 catchments in NRRP.
- Officer Report - catchments added & deleted, but no clear reasons given.

Officer Report

- No changes to Policy 4.64 or Rule 5.109 - support this.
- Significant changes to Rule 5.110.
 - Changes part meet Rayonier concerns - rule would refer to total area planted in catchment
 - if <20%, planting provided for.
- Provides opportunity for significant afforestation as controlled activity on individual properties, which rule in PLWRP did not.
 - An improvement over proposed plan.

Comments

- Changes to Rule 5.110 still not effects based - effects depend where trees are planted.
- Based on efficiency, OR approach possibly justified in small catchments (<20km²).
 - Costs of mapping high - not justified in small catchments?
- In larger catchments not excusable to sacrifice effectiveness/ targeted regulation to protect water yield for administrative expediency.
- In stream values, downstream users, forestry interests deserve better.
- In larger catchments, effects based NRRP approach should be used.

Industry effects

Mr Paul Gillett
SRS New Zealand Ltd

Overview

- SRS Business Operations
- Log supply
- Canterbury Wood Processing Industry
- pLWRP discourages plantation forestry
- Benefits of plantation forestry

SRS Business Operations

- Largest wood processor in Canterbury
- Owns and operates state of the art sawmill
- Business statistics and figures

Log Supply

- Crucial for SRS to have continuity of log supply in Canterbury
 - Uneconomic to source logs from outside province
 - Transport costs
 - Low contribution grade
- To be competitive internationally and domestically needs scale

Canterbury Wood Processing

- NZ has 1.79 million hectares of net stocked forest area
 - Canterbury has 114,000 ha = 6.4 % of national total
 - Direct employment at Feb 2006 was 1321 full time employees
- Deforestation on Canterbury Plains
 - Dairy conversions
 - Subdivisions

pLWRP discourages forestry

- Without substantial amendment the pLWRP will discourage forestry in Canterbury as:
 - Uneconomic to conduct forestry in Canterbury
 - Post-harvest blocks won't be re-planted
- Will result in the decline and decay of the Canterbury forestry industry

Benefits of forestry

- Regional Benefits
 - Highest and best use of much of Canterbury foothills and Banks Peninsula
 - Better economic returns than other forms of farming
 - Forestry has a positive impact on water quality

Benefits of forestry

- National Benefits – economic
 - Total value of NZ forestry exports was \$4 billion
 - Widely held view: if forestry industry was more integrated and further production prior to export, the industry could earn more export dollars than dairy industry.
 - Approximately 6 times the economic value currently
- Other national benefits
 - NZ Climate Change Accord 2007
 - Afforestation Grant Scheme

Conclusion

- As a region we should develop forestry to a scale and manner which maximises its contribution to the national economic and social wellbeing.
- If the pLWRP does not recognise and provide for forestry in an appropriate manner the future of SRS is uncertain

Planning Considerations

Mr Nick Boyes
PlanZ Consultants

Overview

- Overview of relief sought
- Regulatory approach
- Key difference for forestry
- Amendments sought to the pLWRP

Relief sought

- Permitted activity status
 - Environmental Code of Practice for Forestry(2007)
 - NZ Forest Road Engineering Manual 2012
 - NZ Forest Road Engineering Manual - Operators Guide
 - Erosion and Sediment Control Guideline 2007 (prepared by ECan)

Regulatory Approach

- Horizons One Plan
- Key aspects:
 - Erosion & Sediment Control Plan; including
 - Harvest Management Plan
- pLWRP approach
- Balance required: "effective and efficient"

Key difference for forestry

- Ability for other land uses to be permitted where they adhere to industry codes of practice (where they exist).
- Forestry operators can adhere to all industry environmental codes and manuals yet may not be permitted.
 - *Time and spatial scales of forestry activity are different than other alternative land uses*
- pLWRP rules appear to be written to deal with traditional agricultural land use

Amendments sought to pLWRP

- Stormwater Discharge Rule 5.72 (now 5.72A)
 - New permitted activity for forestry
 - In accordance with evidence of Dr Quinn requires compliance with Schedule 5 water clarity standards when flows in receiving waters are below the median

Amendments sought to pLWRP

- **Flow Sensitive Catchments (Rule 5.110)**
 - Seek rules in line with those included in the NLRP.
 - Possible to include a 2 tier rule depending on area proposed to be planted.
 - Allows simple administration for smaller catchment areas (<20 ha) and a more detailed assessment for larger catchments
 - Rule for smaller catchments as per the Officer recommendation

Amendments sought to pLWRP

- **Structures (Rule 5.115(7))**
 - 4 week restriction overly stringent for plantation forestry operations
 - Rayonier propose a 3 month timeframe

Amendments sought to pLWRP

- **Vegetation in Lake and Riverbeds (Rule 5.143)**
 - historically plantings have been in beds of rivers.
 - Indigenous species often grow in under or around plantation species.
 - Damage to these species is often unavoidable during harvesting.
 - Relief sought to split condition 6 into 2 parts:
 - recognising that indigenous species is part of the under-storey of a plantation forest can be removed.

Amendments sought to pLWRP

- **Vegetation clearance and Erosion-prone Areas (Rule 5.150)**

- Forestry has had beneficial effects in terms of land stabilisation.
- Reference to be made to ESCP rather than ECOP.
- 6 month replanted requirement (condition 1) operationally difficult (planting season).
- Allow to re-vegetate naturally, before spraying and then replanting.

Amendments sought to pLWRP

- **Hazardous substances (Rule 5.162)**

- Mobile fuel tankers are commonly used in forestry operations
- Meet HSNO requirements
- Section 32 report specifically states that *"The PLWRP seeks to reduce the regional council requirements through placing greater reliance on the HSNO approval process...Overall, this is likely to result in considerably fewer resource consents"*.
- Rayonier seeks greater reliance on HSNO approval: deleting the 90 day time limit.

Amendments sought to pLWRP

- **Definitions**

- Ecosystem Services
- Erosion and Sediment Control Plans
- Harvest Plan
- Hill and High Country
- Plantation Forest

- **Mapping**

- Definition of soil erosion risk zones could be improved further beyond the deletion of the low and moderate erosion hazard zones.
- Slope threshold is too low.

Conclusion

- The proposed changes accordance with Objective 3.23 that requires all activities to operate at 'best practice'.
- Proposed amendments recognise the environmental benefits of plantation forestry, and the differing temporal effects profile.
- A key difference between forestry and other traditional land uses appears to be whether the adoption of best practice results in compliance with the pLWRP.
- More qualitative standards requiring ESCP and Harvest Plans are considered appropriate.
- Proposed amendments better achieve the objectives (and associated policies) of the pLWRP.
- Allow plantation forestry to establish without undue regulatory interference.

ADDERLEY HEARD

RESOURCE MANAGEMENT LAW SPECIALISTS

Thank you for the opportunity
to present today