

**BEFORE THE ENVIRONMENT COURT
I MUA I TE KOOTI TAIAO O AOTEAROA**

IN THE MATTER of the Resource Management Act 1991 ('the Act')

AND

IN THE MATTER

of an appeal under Clause 14(1) of First Schedule to the Act

BETWEEN

RAYONIER NEW ZEALAND LIMITED

Appellants in ENV-2018-CHC-49, and section 274 party to appeals: ENV-2018-CHC-40 Federated Farmers of New Zealand, ENV-2018-CHC-46 Southwood Export Limited & Others, ENV-2018-CHC-50 Royal Forest and Bird Protection Society of New Zealand Incorporated

AND

SOUTHLAND REGIONAL COUNCIL

Respondent

EVIDENCE IN CHIEF OF HAMISH JOHN FITZGERALD

Date: 20 December 2021

Judicial Officer: Judge Borthwick

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MAY IT PLEASE THE COURT

INTRODUCTION

- 1 My full name is Hamish John Fitzgerald.
- 2 My current role at Rayonier Matariki Forests (Rayonier) is Regional Manager. I am based in the Rayonier office at Invercargill which manages forests in Southland and South Otago.
- 3 I hold the qualifications of Bachelor of Forestry Science and Bachelor of Science (Geography) from Canterbury University.
- 4 I have worked for 18 years in various positions in the forest industry in various locations in New Zealand. My evidence is based on my experience operating in Rayonier.
- 5 I have read the Environment Court's Code of Conduct and agree to comply with it. My qualifications as an expert are set out above. I confirm that the issues addressed in this statement of evidence are within my area of expertise.
- 6 My evidence is given on behalf of Rayonier in relation to an appeal and section 274 Notice filed by Rayonier New Zealand Ltd in relation to the Cultivation definition and Rule 25 Cultivation on sloping ground in the Proposed Southland Water and Land Plan (the **PSWLP**).

WILL SAY STATEMENT AND EXPERT CONFERENCING

- 7 I prepared a Will Say Statement dated 29 October 2021 regarding this matter which has been filed with the Court. For convenience, this document is attached as **Appendix A**.
- 8 I also participated in an expert conference regarding Topic B5 – Farming, as it relates to forestry and cultivation (the **Forestry topic**), on 29 November 2021 (the **Forestry conference**).
- 9 I am a signatory to the Joint Witnesses Statement that was signed by all participants at the Forestry conference (the **Forestry JWS**). The text of the Forestry JWS is attached as **Appendix B**.

- 10 The Forestry JWS records the forestry experts' answers to various technical questions identified during the first Planning conference. I support the Forestry JWS and have nothing further to add.
- 7 I am aware that a second Planning conference occurred on 9-10 December 2021 and which resulted in planning experts signing a joint witness statement regarding the Forestry topic (the **Planning (Forestry) JWS**).
- 8 The Planning (Forestry) JWS records that the cultivation definition in the PSWLP should be amended, and another definition to the PSWLP regarding stick raking or slash raking.
- 9 My understanding is that the purpose of these changes is to specifically exclude herbicide spraying and low-risk stick raking or slash raking activities associated with replanting a plantation forest from the cultivation definition.
- 11 The text of the agreed amendments is detailed in the Planning (Forestry) JWS attached as **Appendix C**. I have reviewed the agreed amendments and can support them. From my perspective, there are no outstanding issues arising.

CONCLUSION

- 12 As mentioned, I support the amendments to the definition of cultivation and the new definition of stick raking or slash raking agreed at the Planning (Forestry) JWS.
- 13 In my view the amendments respond appropriately to the points agreed in the Forestry JWS.
- 14 I am willing to answer any questions that the Court or other parties may have arising from the above matters.

Hamish Fitzgerald

Dated 20th December 2021

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SOUTHLAND REGIONAL COUNCIL

Respondent

WILL SAY STATEMENT OF HAMISH JOHN FITZGERALD

Date: 29 October 2021

Judicial Officer: Judge Borthwick

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INTRODUCTION

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- 5 I have read the Environment Court's Code of Conduct and agree to comply with it. My qualifications as an expert are set out above. I confirm that the issues addressed in this statement of evidence are within my area of expertise.

SCOPE OF EVIDENCE

- 6 In my evidence I address the following matters:
 - (a) an overview of the plantation forestry life-cycle;
 - (b) the National Environmental Standards for Plantation Forestry (the **NES-PF**);
 - (c) windrowing activities; and
 - (d) spraying activities.

CONTEXT

- 7 Rayonier manages approximately 116,000 ha (net stocked area) of plantation forests in New Zealand for Matariki Forests and has had a significant presence in New Zealand since 1988. Rayonier have owned and/or managed forests in Southland and South Otago since 1991.

- 8 Rayonier manages 24,000 ha of plantation forest in Southland Region, spread across 26 separate blocks of land. This equates to approximately 25% of the forest estate in Southland.

OVERVIEW OF PLANTATION FORESTRY LIFE-CYCLE

- 1 The stages of a plantation forestry life-cycle are:
- (a) Land preparation and windrowing;
 - (b) Agrichemical application (including spraying);
 - (c) Planting;
 - (d) Releasing;
 - (e) Pruning;
 - (f) Thinning;
 - (g) Harvesting; and
 - (h) Construction of infrastructure.
- 2 Typical rotation lengths by forestry species in Southland are *P.radiata* (25-28 years), *P.radiata* x *P.attenuata* hybrids (28-30 years) and Douglas fir (38-50 years). Note that Douglas fir is not currently deployed by Rayonier in New Zealand.

NATIONAL ENVIRONMENTAL STANDARDS FOR PLANTATION FORESTRY

- 3 The National Environmental Standards for Plantation Forestry (the **NES-PF**) were gazetted on 1 May 2018 introducing a range of new regulations that plantation forestry owners, managers and contractors need to comply with.
- 4 A major foundation of the NES-PF is the mandatory obligation to produce forestry earthworks management plans and harvest plans. The Ministry of Primary Industries (**MPI**) has developed various guidance documents on the implementation of the NES-PF including the regulations concerning the management of earthworks and harvest areas. As well as the MPI guidance, national forestry bodies such as the New Zealand Forest Owners Association

have developed their own standards for environmental management during forestry operations.

- 5 Rayonier also has its own environmental standards to guide environmental management during its operations.
- 6 Rayonier has regard to all of the available guidance when planning forest operations and in particular earthworks, river crossings and harvesting, activities which are often considered of highest risk to the environment.
- 7 A key tool in the NES-PF is the Erosion Susceptibility Classification (**ESC**) zoning. All of the land in New Zealand has been zoned according to one of the following classifications: green (low), yellow (moderate), orange (high risk), red (very high risk) or other (e.g. urban areas or glaciated areas). Land is zoned under one of these classifications based on topography, the dominant erosion process and the rock type.
- 8 The NES-PF is more or less permissive for forestry activities depending on the ESC zoning of the land involved in the forestry activities. For instance forestry activity in a red zoned area may require consent whereas the same forestry activity in a green zoned area may not. Generally put, plantation forestry activities in green and yellow areas are less likely to generate noticeable environmental effects and are therefore subject to less regulation under the NES-PF.
- 9 Rayonier does not own any forests with potential plantable area that is within an orange (high risk) or red (very high risk) ESC zone in the Southland Regional Council jurisdiction. The vast majority of Rayonier's potential plantable area is zoned green (74.5%), with the rest being zoned yellow (25.4%).
- 10 Despite the low risk nature of its forests, Rayonier is still required under the NES-PF to draft and implement environmental management plans, such as harvest and earthworks management plans. Formal notice of forestry operations must be provided to the relevant councils. The requisite management plans must also be provided to councils on request.

- 11 Under the NES-PF, Rayonier's forestry operations may also be monitored by the Regional Council, even if the operations are a permitted activity under the NES-PF.
- 12 In addition, Rayonier conducts its own audits voluntarily, such as a formal audit of its contractors at least once per annum, in addition to a pre-mobilisation meeting and a post-harvest audit being undertaken at each logging site.

WINDROWING ACTIVITY

- 13 Windrowing is undertaken differently for afforestation (first rotation) versus replanting (second or subsequent rotations). I will only discuss windrowing in the context of replanting as Rayonier's Southland operations do not include afforestation.
- 14 Windrowing occurs soon after a site has been harvested. Windrowing is the redistribution of logging slash, generally into parallel rows around 12-15m apart. The operation is generally completed using an excavator with a slash rake attachment. Windrowing is completed to:
 - (a) clear enough slash for the site to be replanted;
 - (b) to facilitate strong survival levels during the establishment phase of the forestry cycle; and
 - (c) enhance the growth and quality of the replanted trees over the long term.
- 15 Good forestry practice dictates that soil disturbance is kept to a minimum and a fine duff layer of slash and organic material should be left on the soil surface to protect the soil from erosion and promote early tree growth. The stumps and roots of the harvested trees are also left in the ground. Windrows, where safe and practical to do so, should be across the contour of the land and if downhill other mitigation measures should be installed.
- 16 As noted above at paragraph 3, the national forestry bodies have developed their own industry best environmental practices (**BEPs**). These include BEPs specific to mechanical land preparation and encompassing windrowing.

- 17 The photos attached as **Appendix A** demonstrate:
- (a) what a harvested forestry site looks like before windrowing has occurred (**Figure 1**);
 - (b) what a harvested forestry site looks like after windrowing has occurred (**Figure 1** and **2**);
 - (c) what a forestry site looks like two years' after windrowing has occurred (**Figure 3**).

Windrowing activities by Rayonier in the Southland Region

- 18 Rayonier typically windrows around 60% of the area harvested, averaging 500-600 treated hectares per annum over the last 5-years in Southland. Windrowing activity comes at a cost of \$500+ per hectare so the operation is only completed at sites where Rayonier determines it is necessary to ensure the successful establishment of the next crop.
- 19 Rayonier works closely with its contractors to ensure that windrowing and other forestry activities are carried out to minimise environmental impact. Rayonier provides its contractors with a prescription and maps for each windrowing operation and then reviews this documentation with the contractor in a formal pre-mobilisation meeting prior to commencement of windrowing. Rayonier instructs its contractors to minimise sedimentation/disturbance. For example the Rayonier prescription stipulates "Roottrakes must not drag topsoil into windrows. Small material should remain unmoved".
- 20 Rayonier has a number of mitigation measures within its "toolbox" to minimise the risk of sedimentation from windrowing which are deployed in Southland:
- (a) windrowing parallel to the contour of the slope, unless it is unsafe to do so. On the gentler slopes contour windrowing parallel to the contour has been safe to achieve. However, on the steeper faces, windrowing parallel to the contour is too unsafe and windrows running up and down the hillside must be used instead;
 - (b) berms/bunds of slash material at the top and/or bottom of the face, forming a single line parallel to the contour that will intercept runoff and sediment;

- (c) cut-outs – drains installed using the excavator rake parallel to the contour to control stormwater run-off; and
- (d) slash and other debris used to cover any bare soil on the face of the slope, ensuring water does not channel directly down the hill.

Windrowing and the NES-PF

- 21 Under the NES-PF there are new considerations that provide further emphasis on sediment control. Relevant to this case are provisions regarding mechanical land preparation, which includes windrowing, at subpart 7 of the NES-PF. The relevant provisions (e.g. Regulation 74) must be complied with in the green and yellow ESC zones in order for windrowing activities to be permitted under the NES-PF.
- 22 My understanding is that if the thresholds set out in the above NES-PF regulations cannot be met then Rayonier is required to obtain a resource consent for windrowing activity from the Regional Council.

Windrowing and proposed Rule 25

- 23 In Southland Rayonier replants an average of 815 hectares per annum over the last 5 years. Some of the replanted area will include land with a slope of over 20 degrees.
- 24 Therefore if the proposed definition for cultivation and the proposed Rule 25 were to be adopted as operative, both Rayonier and the Southland Regional Council would require significant resources (financial and time) to ensure compliance to the proposed rules. Rayonier would likely have to secure a resource consent for windrowing for each of the forest blocks it is replanting.
- 25 My main concerns regarding Rule 25 and the definition of cultivation, in the context of windrowing, are:
 - (a) uncertainty – firstly, would Rayonier be granted consent? Secondly uncertainty about the nature of the conditions imposed on the granted consents, and what impact the conditions would have on Rayonier’s crop, associated costs, and workload pressures on staff due to compliance requirements;

- (b) additional cost to Rayonier arising from Rule 25 when the same activity is already regulated under the NES-PF; and
- (c) delay in securing consent which could impact on Rayonier's ability to complete windrowing in a timely way so that replanting can occur during the winter planting season.

SPRAYING ACTIVITY

Spraying in the Southland Region

- 26 There are two discrete spraying operations completed during a forestry rotation, regardless of the species planted, as follows:
- (a) Pre-plant Spraying – the objective is to prepare the sites for planting to provide a site free of vegetative competition leading to successful crop establishment; and
 - (b) Release Spraying – the objective is to keep the growth of weeds in check for several months while seedlings are becoming established. Also ensuring that weeds don't compromise either crop survival or growth while maintaining conditions to produce a uniform crop with strong root development.
- 27 Aerial spraying (as opposed to manual, ground-based spot releasing) is the primary application method used by Rayonier, nationwide and in Southland, as it has several advantages over spot releasing. The application of agrichemicals for the control of weeds is part of the land preparation cycle and is used for the control of invasive competitive weeds such as broom and gorse.
- 28 Modern GPS technology and droplet applicator booms make the targeted application of the chemical via helicopter boom spray very accurate and efficient.
- 29 Agrichemical application is not covered by NES-PF however good forestry practice dictates that all chemicals are applied in general accordance with NZS 8409:2004 Management of Agrichemicals and applicators must hold Growsafe® certification or similar.

- 30 In addition Rayonier has internal protocols and 3rd party certification (FSC and PEFC) which promotes the responsible use of herbicides.
- 31 Spraying occurs in the first 2 – 3 years of plantation growth and then is not needed over the balance of the plantation forest cycle, until the start of the next crop rotation.

Spraying and proposed Rule 25

- 32 Rayonier has pre-plant sprayed approximately 910 ha per annum and released approximately 630ha per annum, on average, during the 5-year period of 2017-2021. This equates to around 6% of the net stocked Rayonier Southland estate being aerially sprayed each year.
- 33 All of the forests located in the Southland Region have patches of potential plantable area on slopes greater than 20 degrees.
- 34 Therefore if Rule 25 were made operative in its current form, Rayonier would be required to obtain a significant number of individual resource consents each year for spraying to ensure successful crop establishment.
- 35 This would give rise to the same or similar concerns I have expressed at paragraph 25 above in relation to windrowing and Rule 25.

EPHEMERAL STREAMS

- 36 The status quo, as per the Decisions version of the pSWLP, is that ephemeral streams are not protected by the Cultivation Rule 25.
- 37 Some appellants, such as Forest and Bird, have sought that ephemeral streams should be included in the ambit of the Cultivation Rule, so that they are protected in much the same way as intermittent and perennial streams.
- 38 My view is that ephemeral streams should not be included in the ambit of the Cultivation Rule.
- 39 Including ephemeral streams would substantially increase the geographical area that is affected by Rule 25. This could include a significant amount of Rayonier's forest estate that is currently not affected by Rule 25 or the NES-PF.

- 40 This would result in a large cost to Rayonier's operations, as Rayonier would have to obtain a resource consent for undertaking activities like spraying and windrowing within 5 metres of any ephemeral stream.
- 41 Alternatively Rayonier would need to comply with the riparian setbacks in Rule 25. This would have a major impact on replanting activity within these setbacks because without windrowing or aerial spraying operations the viability of new seedlings will be comprised.
- 42 In addition, it would be difficult for Rayonier to accurately identify the location of ephemeral streams within its plantation forest estate because the definition of what constitutes an ephemeral stream is fairly open-ended and will be difficult to apply at a practical level within the forest and manage operationally.

APPENDIX A – Images of windrowing



Figure 1 - An annotated photo of a harvested site at the Rowallan Forest in Southland, before windrowing has occurred (left hand side) and after windrowing has occurred (right hand side)



Figure 2 – a windrowed site at the Castledowns Forest in Southland shortly after replanting (windrows are typically 12 – 15 m apart)



Figure 3 –The same area as shown in Figure 2, two years later

Expert Conference – Forestry

Topic: Proposed Southland Water and Land Plan – Southland Regional Council





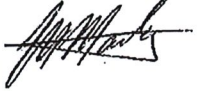
Date of conference: 29 November 2021

Venue: Remote AVL

Facilitator: Anne Leijnen

Recorder: Isabelle Harding

Attendees

Name	Employed or engaged by	Signature
Dr Greg Burrell	Southland Regional Council	
Hamish Fitzgerald	Rayonier NZ	
Dr Chris Phillips	Rayonier NZ	
Sally Strang	SWEL	
Graeme Manley	SWEL	

For ease of reference throughout this JWS, all experts had some relevant expertise in Forestry except the following:

- 1 Dr Burrell is an expert in freshwater ecology and water quality, including landuse impacts on freshwater ecosystems. He is not an expert in forest management or practice.

Environment Court Practice Note

- 2 All participants confirm that they have read the Environment Court Consolidated Practice Note 2014 and in particular Section 7 (Code of Conduct, Duty to the Court and Evidence of an expert witness) and Appendix 3 – Protocol for Expert Witness Conferences and agree to abide by it.

Experts' qualifications and experience

- 3 These are set out in each experts' statement of evidence.

Purpose of expert conference

- 4 The purpose of the conference is to assist the Court by responding to a series of questions, agreed by the experts as the conference progressed, relating to Forestry, and associated issues that the court may wish to consider when determining the appeals. For each question, the experts state matters on which they agree and on which they do not agree, with reasons.

Participants

- 5 This JWS is limited to those Forestry experts that have an interest and took part in the discussion.

Attachments to this JWS

- 6 List of questions for the Forestry experts

Conference outcomes

- 7 The Planning conference identified a number of technical questions to form the basis of the agenda for the Forestry experts. An outcome of this Forestry conference is the answering of these questions. These are attached.

Attachment: Questions to Forestry Experts:

Cultivation definition

1. ***What are the practical and operational implications associated with having to undertake windrowing parallel to contour when the slope is greater than 10 degrees¹? In what situations may this be unsafe?***

The key limitation is safety. To windrow across the slope requires a machine to drive across the slope which is more hazardous and unstable on steeper slopes.

The slope, ground conditions, soil makeup and weather conditions all influence the maximum slope that a machine can operate on. Depending on variables, the slope a machine can operate on is generally between 10 and 15 degrees. On steeper slopes, the safe operating practice is to drive up and down the slope, which means the windrows form in that direction. In addition for some crops, the windrows must follow the direction of the stumps of the previous crop to allow planting to take place in the old crop lines.

Stick raking/windrowing

2. ***Is stick raking/windrowing any different in terms of risk of sediment loss to other cultivation or slopes above 20 degrees?***

As a general principle, as slope increases, the potential for erosion increases. However, there are many factors that will contribute to how much erosion occurs and whether the eroded sediment reaches waterways. The risk of sediment run-off from stick raking is at the lower end of land preparation techniques. In comparison to agricultural cultivation and other forestry land management activities, stick raking is very low with regards to erosion risk. This reflects the low level of soil disturbance. In addition, stick raking occurs in a forestry cutover and the stabilising effects of the old stumps, roots and slash further reduce the potential for erosion and sediment loss.

Cultivation is essentially disturbing and breaking up the soil profile, stick raking does not do this. Stick raking is not cultivation.

3. ***What are the risks from sediment runoff from stick raking? How significant are these risks compared to other forestry and cultivation activities?***

Stick raking is a low-risk activity in terms of sediment run-off. In comparison to other plantation forestry activities (i.e earthworks, road construction, landing construction) it is low risk (See Question 8 below). In comparison to agricultural cultivation, stick raking is significantly lower risk.

4. ***What are the most effective measures to mitigate the risk of sediment runoff from stick raking?***

The most effective mitigation measure is to not disturb the soil. Good practice ensures that not all the branches are moved leaving a layer of fine material on the surface that helps to protect the soil from rain. This also acts as surface roughness elements to capture soil and material that may be moved by rain which forms barriers at the micro level. The preference where the slope permits is to put a windrow across the slope. If the slope is too steep to place windrows across the slope, you need to have a sediment barrier at the base of the slope, usually a windrow.

Reference for compliance with NES-PF, subpart 7, mechanical land preparation, Regulation 74, subclause 2.

¹ As per paragraph c. in the definition of cultivation in Environment Southland's tracked change relief.

5. Are the NES-PF controls for mechanical land preparation (including stick raking) considered to be effective in reducing the risks from sediment runoff?

Yes.

6. Are there circumstances in the Southland region that justify a more stringent approach than the NES-PF in relation to stick raking?

No. Southland has some of the lowest risk geology in NZ. Based on MPI's analysis of the landcover database, 96% of Southland's forests are on land with an erosion susceptibility classification under the NES-PF of low or moderate erosion risk.

7. Will application of the control in the NES-PF result in a reduction in sediment loss during stick raking/windrowing relative to what would occur under controls in Rule 25?

Expected to get the same result. The only difference would be the need to get a resource consent and the time and money involved in obtaining this. Following the NES-PF will produce the same result more efficiently.

Reference for compliance with NES-PF, subpart 7, mechanical land preparation, Regulation 74.

As a general comment it is desirable for the industry to maintain a consistent set of regulations via the NES-PF.

Critical source areas and setbacks²

8. What are the likely practical implications and costs associated with identifying 'critical source areas'³ within a plantation forest ()?

The concept of critical source areas is associated with farming activities. It is not to date a concept that has been used in forestry.

In forestry we can define where the most important areas for sediment generation are, which are not landscape features, as indicated by the Southland Plan definition of critical source areas.

In plantation forestry, potential sediment generating areas are often unrelated to landscape features and are generally in the following order of risk:

- Construction of earthworks,
- Roads and landings,
- harvest tracks,
- haul paths,
- other areas of bare exposed soil,
- covered material/stick raked areas
- sprayed areas

These risks in plantation forestry are managed through the harvest and earthworks plan and the erosion and sediment control plan. Stick raking is managed through a work prescription which falls outside the NES.

9. How effective are the following measures likely to be in terms of mitigating the risks from erosion and sediment runoff:

² Questions 6 to 8 relevant if Rule 25 applies to stick raking.

³ As per definition of critical source areas in Environmental Southland's tracked change relief.

- a. ***Establishing sediment detention when stick raking is undertaken in identified critical source areas⁴?***

The definition of critical source areas from the Plan appears to have been developed for farming. Stick raking will not be undertaken in the most significant sediment generating areas for forestry, as these are defined above (earthworks). Undertaking sediment controls in critical source areas as defined in the definition in the Plan will be ineffective because the most important areas to control in a plantation forestry setting are the roads, landings and earthworks.

- b. ***Graduated setbacks for all water bodies based on slope⁵?***

The NES-PF has graduated setbacks based on the type and size of the waterway (Regulation 74 (8)). The distances are the same in the NES and the Plan but the Southland Plan setbacks are based on slope. With sediment capture by a buffer it is the outer part of the buffer that is the most crucial because that is where most of the trapping happens. There is little need for a graduated buffer in terms of slope for stick raking due to the low risk it poses with respect to sediment generation.

10. ***What are the likely practical and operational implications associated with:***

- a. ***Establishing sediment detention when stick raking is undertaken in identified critical source areas?***

Refer above.

- b. ***Graduated setbacks for all water bodies based on slope?***

Refer above.

Herbicide spraying

11. ***What are the risks from sediment runoff associated with herbicide spraying within a plantation forest? How significant are these risks compared to other cultivation activities that physically disturb the soil?***

Very low. The activity of herbicide spraying is physically not disturbing the soil at all, hence has a low risk of generating sediment. Following spraying, plant material remains intact and forms a mulch and continues to capture sediment alongside the remaining debris on the cutover.

12. ***What, if any, mitigation measures can be used to manage the risks of sediment runoff from herbicide spraying within a plantation forest?***

None.

Critical source areas and setbacks⁶

13. ***How effective are the following measures likely to be in terms of reducing the risks from erosion and sediment runoff:***

⁴ As per Environmental Southland's tracked change relief for Rule 25.

⁵ As per Environmental Southland's tracked change relief for Rule 25.

⁶ Questions 11 and 12 relevant if amendments to the definition of cultivation not accepted.

- a. ***Establishing sediment detention when herbicide spraying is undertaken in identified critical source areas within a plantation forest⁷?***

As noted in the answers to question 11 above, herbicide spraying presents a very low risk in terms of erosion, less so than stick raking. Therefore, the same answers as those given in response to question 9 and 10 apply.

- b. ***Graduated setbacks for herbicide spraying within a plantation forest to all water bodies based on slope⁸?***

From a sediment discharge point of view, the level of risk from sediment discharge does not warrant additional setbacks based on slope. We understand there are rules in the Regional Plan governing aerial chemical application from point of view of protecting waterbodies.

14. What are the practical and operational implications associated with:

- a. ***Establishing sediment detention when herbicide spraying is undertaken in critical source areas (as per Environmental Southland's tracked change relief for Rule 25)?***

As per question 8, the most significant source areas for sediment generation in forestry are earthworks, forestry roads and landings which is managed through erosion and sediment control plans (as required by the NES-PF).

By its nature, herbicide application makes no difference to the potential sediment delivery from earthworks. A requirement to establish sediment detention in critical source areas for herbicide spraying is unnecessary.

- b. ***Graduated setbacks for herbicide spraying all water bodies based on slope (as per Environmental Southland's tracked change relief for Rule 25)?***

Answered in question 13 (b) above.

Supplementary question:

The question was raised, "what are the processes for documenting and checking compliance with the NES-PF rules for land prep?" It was confirmed that harvesting and earthwork plans, and associated erosion and sediment control plans are required under the NES-PF, must be available to the Council and can be monitored for compliance. These requirements do not apply to mechanical land prep due to the low-risk nature of that activity however there are regulations (Regulation 74) that cover these activities and the Council can monitor compliance.

⁷ As per Environmental Southland's tracked change relief for Rule 25.

⁸ As per Environmental Southland's tracked change relief for Rule 25.

Expert Conference – Planning (Forestry)**Topic:** Proposed Southland Water and Land Plan – Southland Regional Council**Date of conference:** 09-10 December 2021**Venue:** Remote AVL**Facilitator:** Commissioner Anne Leijnen**Recorder:** Isabelle Harding**Attendees**

- 1 Witnesses who participated and agreed to the content of this Joint Witness Statement (JWS) by signing it on 10 December 2021.

Name	Employed or engaged by	Signature
Ben Farrell	Southland Fish and Game Council	
Jerome Wyeth	Rayonier New Zealand	
Linda Kirk	Director General Conservation	
Matthew McCallum-Clark	Southland Regional Council	

- 2 Nga Rūnanga advised that their issues were now resolved and chose not to participate.

Environment Court Practice Note

- 3 All participants confirm that they have read the Environment Court Consolidated Practice Note 2014 and in particular Section 7 (Code of Conduct, Duty to the Court and Evidence of an expert witness) and Appendix 3 – Protocol for Expert Witness Conferences and agree to abide by it.

Experts' qualifications and experience

- 4 These are set out in each experts' Will Say statement.

Purpose of expert conference

- 5 The purpose of the expert witness conferencing is to enhance the efficiency of the court hearing process by providing for expert witnesses to confer and identify the issues on which they agree, with reasons. They are also to clearly identify the issues on which they do not agree and give reasons for their disagreement. This will enable the court to focus primarily on matters that remain in dispute, while understanding the basis for agreed matters.
- 6 And specifically, to address:
 - a) Topic B5 – Farming, as it relates to forestry and cultivation.

Key information sources relied on

- 7 The experts relied on the following key sources of information:
 - a) The Will Say statements of each planner and technical expert
 - b) The Council's preferred "track changes" relief, prepared in response to the tracked changes relief provided by the parties on 29 October 2021.
 - c) JWS signed by Forestry experts (29th November 2021)

Conference outcomes

- 8 The planners agreed that the cultivation definition should be amended, and another definition added, to specifically exclude low-risk elements of land preparation for replanting a plantation forest, as follows:

Definition - Cultivation

Preparing land for growing pasture or a crop by mechanical tillage, direct drilling, herbicide spraying, or herbicide spraying followed by over-sowing for pasture or forage crops (colloquially referred to as 'spray and pray'), but excludes: excluding any

- a. herbicide spraying undertaken solely for the control of pest plant species;
- b. herbicide spraying for the establishment or maintenance of plantation forestry;
- and
- c. stick raking or slash raking associated with a plantation forest, provided that the resulting windrows follow the contour of the land where the slope of the land is greater than 10 degrees.

Definition (new) - Stick raking or slash raking

Means the use of machinery to clear slash from harvested plantation forest to enable the replanting of trees. It does not include breaking up of the soil profile or the disturbance of the stumps of the harvested plantation forest trees.