

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

**IN THE MATTER** of the Resource Management Act 1991

**AND** of appeals under clause 14 of the First Schedule of the Act

**BETWEEN** **SOUTHWOOD EXPORT LIMITED, KODANSHA TREE FARM NEW ZEALAND LIMITED AND SOUTHLAND PLANTATION FOREST COMPANY OF NEW ZEALAND LIMITED (ENV-2018-CHC-046)**

**Appellants**

**AND** **SOUTHLAND REGIONAL COUNCIL**

**Respondent**

**AND** **CAMPBELL'S BLOCK  
S 274 PARTIES**  
(as continued on next page)

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**WILL SAY OF GRAEME MANLEY**

**Dated: 25 November 2021**

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AND PETER CHARTRES  
AND DIRECTOR-GENERAL OF CONSERVATION  
AND FEDERATED FARMS OF NEW ZEALAND  
AND ROBERT GRANT  
AND RAYONIER NEW ZEALAND LIMITED  
AND ROYAL FOREST AND BIRD PROTECTION SOCIETY  
OF NEW ZEALAND INCORPORATED  
AND STONEY CREEK STATION  
AND THE TERRACES LIMITED

1. My name is Graeme Manley.
2. I am the general manager of Southwood Export Limited (SWEL). SWEL owns and manages its own plantation forest in the Southland region. It also manages plantation forest on behalf of several other entities including the other appellants Kodansha Tree Farm New Zealand Limited and Southland Plantation Forests Company of New Zealand Limited.
3. I am based in the head office of Southwood export Ltd at Invercargill.
4. I hold a New Zealand forest service certificate in forestry which was awarded to me in 1967 following the completion of a four year Ranger training program. I have been continuously involved in New Zealand's forestry sector since obtaining that qualification.
5. My evidence is based on my experience in plantation forestry operations in Marlborough, Northland, Southland & South Otago. I have extensive experience of managing both new forest development, re-establishment, forest growth and harvesting.
6. My qualifications as an expert are set out above. I confirm that the issues addressed in this statement are within my area of expertise.
7. I have read the Environment Court's code of conduct and agree to comply with it, but note that although I am an employee of the Appellant, I believe my expertise may assist the parties to resolve this dispute and I can maintain impartiality.

#### **Scope of statement**

8. I have reviewed the will say statements for Rayonier New Zealand.
9. SWEL owns and operates a different plantation forest management program as the predominant species planted is Eucalyptus.
10. I consider that much of the information provided by Rayonier New Zealand is generally relevant to the management of plantation forestry and I broadly agree with the statements made. Therefore, I do not repeat the points made by those experts but instead where my opinion differs, I set out the reasons for holding a different opinion below and make additional comments where it is relevant to explain the differences between the management of plantation eucalyptus forest and plantation pine forest.
11. I have also reviewed the Regional Council's proposed wording for the Regional Plan Rule 25 and definition of "cultivation".

12. I consider that the issues in our Appeal as it relates to aerial spraying are resolved by this revised wording. However, issues in respect of soil erosion are still unresolved. Therefore, my statement addresses the topic of changes to the definition of "cultivation" and rule 25 as it concerns the issue of soil erosion only.

### **Background**

13. SWEL was established in 1981 to process indigenous logs into chip for export to pulp and paper mills in Japan.
14. SWEL has been managing plantation forests in Southland since 1985, when it began establishing eucalyptus plantations to provide an alternative hardwood fibre resource to the indigenous resource it was processing at that time. In addition to its own estate, SWEL manages the plantation forest estates of Southland Plantation Forest Company of New Zealand Limited (SPFL) and Kodansha Tree Farm New Zealand Limited (KTNZ).
15. The mill was updated in 2010 and currently processes on a single shift 350,000 GMT of logs annually. All wood chip is stockpiled and exported through the port of Bluff.
16. All forest estates managed by SWEL are located in Southland or South Otago and have a total current net stocked area of approximately 11,900 ha.
17. Approximately 80% of the land planted is on land with a slope of 10° or greater. A small proportion of plantation forest occurs on land with a slope of 25° or more.
18. The Company's forest management plan is to provide for high yielding crops on the most economic basis, whilst ensuring that in doing so there are no serious adverse effects on the environment.
19. In July 2004, SWEL attained FSC® Chain of Custody certification for its mill and port operations (NC-COC-001257). SWEL also has attained FSC® Chain of Custody certification in association with its forest certification.
20. In 2017 SWEL also attained Forest Management Certification from PEFC (Program for the Endorsement of Forest Certification) for its forest management practices. Annual PEFC and FSC audits provide an

intensive assessment of SWEL's forest management performance to measure compliance with the global certification programmes.

21. SWEL is required to develop and adhere strictly to plantation forestry management plans. A key objective of the ISO audit framework and the plantation management plans is to ensure the health and wellbeing of the ecosystem, and this includes waterways and aquatic life forms.

### **Context of Southland Forestry**

22. Typical forestry terrain in Southland comprises flat plains – rolling topography and hillsides with steep slopes (>20° gradient).
23. The plains and hillsides in Southland have been classified as low-risk of soil erosion under the National Environmental Statement - PF<sup>1</sup>. Therefore, the majority of the areas under forestry management by SWEL are low-risk.

### **Overview of eucalyptus plantation forestry life-cycle**

24. The management of SWEL's eucalyptus forest is different to a typical pine forest. Although SWEL grows both species, eucalyptus is the predominant species grown.
25. The Eucalypt forests managed SWEL by are established to provide a supply of export hardwood fibre on a 15-20 year growth cycle which is shorter than typical 26-30 year regime for Pines.
26. Soil structure remains intact for the majority of the forest lifecycle, and the forest contributes positively to the environment in terms of eco system health and well-being, particularly as hillsides are protected from erosion during the planting and growth phases.
27. Site preparation and harvest activities do not mean that the entirety of hillside soils are laid bare to the elements for long periods. The vegetative matter remains as a litter layer and the litter layer is laid out by stick raking (wind rowing). This is then followed by re-planting.

### **Avoiding Soil Erosion in Southland**

28. It is my opinion that the impact of plantation forestry has positive benefits for avoiding soil loss within the Southland region particularly in relation to

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<sup>1</sup> [https://mpi\\_nes.cloud.eaglelegis.co.nz/NESPF/](https://mpi_nes.cloud.eaglelegis.co.nz/NESPF/)

significant weather events as the forest root system is binding the soils preventing soil loss, particularly on steep slopes. Following harvest the impact of those positive benefits reduce for a period and then return as the new growing forest becomes established.

29. It should not be assumed that erosion is inevitable post-harvest. The goal is to ensure an appropriate and practical land preparation technique is applied to avoid soil loss.

### **The learning from the 'Far North' of Northland**

30. Soils in the far North are varied in type and quality. Some of the poorest heavy clays require deep ripping (to give drainage & aerate / breakup the soils) and have fertiliser applied to grow Pines.
31. Typically large dozers fitted with 1 or 2 rippers would rip to 60 cm in depth. Some tunnel erosion occurred and a survey I did over an area of moderate to steep rolling country indicated 19 degrees seemed to be the critical slope angle, beyond which scouring occurred.
32. To prevent both the tunnelling and achieve break-out of the soils in the ripped line the rippers were fitted with a large plate to provide sufficient upward force to achieve break-out of soil and discs were fitted following the ripper to pull the broken out soil back into the ripped line and leave a crowned surface that kept water from forming a drain along the rip line. To prevent scouring tractors were fitted with a simple angle indicator so drivers could keep the rip angle below 19 degrees.
33. That eliminated the potential for scouring of ripped & cultivated planting lines and became the standard ripping/cultivation technique over more than 5000 ha of forest establishment on clay soils.
34. On steeper slopes where ripping was required – for safety reasons the tractors ripped steeper than 19 degrees but the ripper was completely withdrawn after about 25 metres to leave a short uncultivated gap of a few metres before repeating the process as it travelled down the slope.
35. Again this procedure caused no issues of scouring although such slopes were of lesser frequency and size.

### **The Southland Experience**

36. Eucalypts respond to good soils and site preparation and don't like wet feet.

37. For SWEL's forest establishment the Far North technique was brought to Southland to give adequate cultivation & drainage and provide a 'sure start' for what was a new forestry venture based on a short rotation fibre Eucalypt crop.
38. It has been my experience that using this technique has prevented any significant erosion from deep cultivation of planting lines over a wide range of topography across most properties SWEL has established in Southland / South Otago. Certainly, it is my experience that significant erosion from such cultivation has not occurred on forestry land managed by SWEL. That is primarily because we ensure that the use of mechanical tools is appropriate for the task and carefully managed to avoid or minimise any incidence of erosion. This outcome is assisted by the fact that soils present in Southland hills & plains where the plantation forestry is occurring are not prone to erosion.
39. SWEL has applied this cultivation over approximately 85% of its Eucalypt areas. It follows that its stump lines are not contoured parallel to the slope for reasons mentioned prior.
40. The purpose of this commentary about cultivation (i.e. ripping/discing) is that experience has shown that sediment movement can be controlled in forest cultivation above 20 degrees, and where ripping/discing lines are angled down across the slope (i.e. not contoured)
41. I consider that stick raking which is an above ground operation, is not considered to be cultivation (see cultivation definition) and is the main land preparation tool to clear land for replanting poses no reason to be restricted by slope limits. Further, it is essential to stick rake windrows in accordance with the direction of planted lines as illustrated in 34. above and not be restricted to contour.

#### **Issues regarding proposed definition of cultivation**

42. I am concerned that plantation forestry in Southland which is a land use with low impact and low frequency of soil disturbance is being held to a higher standard than is reasonably justified.
43. Southland is low risk (green/yellow zone) environment as defined by the NES-PF. The region is not prone to the effects of soil erosion, and therefore the impact of mechanical land preparation in the Southland region is significantly less than other parts of New Zealand.

44. I consider that a more appropriate option to achieve the objectives and policies of the SWLP is to better accept the good practice plantation forestry activities and exclude those good practice activities from the requirement for resource consents.
45. In this regard the NES-PF has undergone national debate and consideration by a wide audience including as I understand from councils.
46. Above I set out my opinion as to why the stick raking for plantation forest is a low impact and low frequency activity. It is my view that stick raking and forming windrows running other than contour to the slope should not require a resource consent but would best be controlled by provisions of the NES – PF.
47. As I understand the currently proposed SWLP rule on cultivation would permit stick-raking but require contour windrows for slopes over 10 degrees.
48. In contrast, agriculture can proceed as permitted activity up to a 20 degree slope, and perpendicular to the contour without any express requirement for mitigation other than a setback distance from waterways.
49. SWEL is therefore seeking as its relief that mechanical land preparation for plantation forestry is governed exclusively through the NES-PF due to the low impact, low frequency and low risk characteristics of this activity in Southland. SWEL is proposing that stick raking is a permitted activity when it is undertaken in compliance with the NES rules and regulations.

**DATED** 25 November 2021



Graeme Manley