

**IN THE ENVIRONMENT COURT  
AT AUCKLAND**

**I TE KŌTI TAIAO O AOTEAROA  
KI TĀMAKI MAKĀURAU**

**Decision [2024] NZEnvC 189**

IN THE MATTER OF

an application for enforcement  
orders under s 316 of the  
Resource Management Act 1991  
(**the Act**)

BETWEEN

GISBORNE DISTRICT  
COUNCIL

(ENV-2023-AKL-159)

Applicant

AND

CHINA FORESTRY GROUP  
NEW ZEALAND COMPANY  
LIMITED

First Respondent

YUXIA SUN

Second Respondent

WOOD MARKETING  
SERVICES LIMITED

Third Respondent

MANA TAIO TAIRĀWHITI

Interested Party

Court: Environment Judge MJL Dickey  
Environment Commissioner IM Buchanan  
Environment Commissioner G Paine

Hearing: 8 July 2024

Last case event: 31 July 2024

Appearances: D Allen and E Bennett for China Forestry Group New  
Zealand Company Limited  
A A Hopkinson and R C Zame for Gisborne District  
Council  
Dr J Forret for Wood Marketing Services  
A Limmer KC for Mana Taio Tairāwhiti



Date of Decision: 9 August 2024

Date of Issue: 9 August 2024

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## DECISION OF THE ENVIRONMENT COURT

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A: We make the Enforcement Orders as set out in **Annexure B** to this decision.

B: Costs are reserved.

## REASONS

### A: Background

[1] The Council seeks various Enforcement Orders in respect of woody debris and sediment from commercial forestry which has migrated from the Kanuka Forest at Waimata Valley Road, Gisborne.

[2] A series of rainfall events in recent years resulted in woody debris (including felled trees, windthrow trees, slash, harvesting debris) and sediment from commercial forestry in the Gisborne region migrating from forests into the region's waterways and onto its beaches.

[3] Kanuka Forest is but one of the forests the Council alleges is responsible for this migration, and this proceeding is the first of a number of enforcement proceedings it has commenced in an endeavour to guard against repeat events.

[4] The issue of debris migration in Gisborne first arose in 2012 but has intensified since 2018. Since 2018 there have been six large-scale forestry debris mobilisation events. In the week prior to the hearing a further forestry debris mobilisation event occurred following heavy rain, resulting in beaches and bridges in Gisborne City being inundated with woody debris again.

[5] The region's susceptibility to extreme weather events has exacerbated the

problem of harvesting residue left behind on steep and highly erodible soils, gradually migrating into steep gullies and forest streams. Often accumulations of harvesting residue are concentrated around forest landing sites (also known as skid sites) and roads, meaning failure of forest infrastructure can have greater impacts on watercourses below than slope failures elsewhere.

[6] The debris mobilisation events in early 2023 led to a Ministerial inquiry into land use (**MILU**). The MILU panel was appointed in late February 2023 and in March 2023 the Panel convened an 8 March community hui and approximately 50 smaller hui with local organisations. Its report was published in May 2023 and is titled “Outrage to Optimism”.<sup>1</sup>

[7] The Panel found:<sup>2</sup>

... that lives and livelihoods were put at risk. People were isolated, and suffered trauma to their social, emotional and mental health. Woody debris and sediment caused destructive debris flows and resulted in widespread damage to properties, infrastructure and ecosystems. These symptoms of failure, weaponised by cyclonic winds and weather bombs, have created an emergency and require urgent clean-up action.

[8] It also found that:<sup>3</sup>

... the forest industry has lost its social licence in Tairāwhiti due to a culture of poor practices – facilitated by GDC’s capitulation to the permissiveness of the regulatory regime – and its under-resourced monitoring and compliance. Together, these factors have caused environmental damage, particularly to land and waterways, and may have put the health and safety of people and their environment at risk.

[9] In determining this application, we bear in mind that the Kanuka Forest is just one of the forests in the region that has contributed to the migration of forestry debris and our focus can only be on the respondents’ responsibilities for that forest. We observe that they have responsibility for ensuring, as far as it is possible to do so, that events such as those experienced in the region after Cyclones Hale, Gabrielle and more recently in early July are not repeated.

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<sup>1</sup> <https://Environment.govt.nz/What-government-is-doing/areas-of-work/land/ministerial-inquiry-into-land-use/>.

<sup>2</sup> MILU Report, at [1].

<sup>3</sup> MILU Report, at [27].

[10] All involved in this proceeding agree that the problems that have occurred in recent years are unacceptable. China Forestry Group and Mr Sun (together **CFG**) and Wood Marketing Services Limited (**WMS**) all accepted that orders are desirable. There was, however, disagreement on the correct parties for the orders and the scope of those orders.

**B: Amended enforcement orders**

[11] Relying on various provisions of the Act, including ss 15, 17, 314(1)-(5) and 315(2) and (3), the Council seeks various orders.

[12] In summary, the sections on which the Council relies, and which enable the Court to make enforcement orders are as follows:

- (a) Section 314(1)(a)(i) to require a person to cease anything that contravenes or is likely to contravene the Act and under (a)(ii) is likely to be noxious, dangerous, offensive or objectionable so as to have adverse effect on the environment.
- (b) Section 314(1)(b)(i) to ensure compliance by or on behalf of a person with the Act and under (b)(ii) that is necessary to avoid, remedy or mitigate a likely adverse effect on the environment caused by or on behalf of that person.
- (c) Section 314(1)(c) to remedy or mitigate any adverse effect on the environment caused by or on behalf of that person.
- (d) Section 314(1)(da) to do something that is necessary to avoid, remedy or mitigate an adverse effect on the environment relating to land of which the person is the owner or occupier.
- (e) Section 15 prohibits the discharge of contaminants unless they are expressly allowed by a rule in a plan, national environmental standard or other regulation or a resource consent.

- (f) Section 17 imposes a general duty to avoid, remedy or mitigate the adverse effects of an activity.
- (g) Section 315 enables a person, with the Court's consent to comply with orders on behalf of another person against whom orders are made and who fails to comply with them.

[13] We must satisfy ourselves on the balance of probabilities that grounds exist to make the orders. We accept that for an application for a s 314(1)(da) order to succeed there must be a causative link between the respondents as owners or occupiers and the adverse effects even if that link is not the sole operative cause of the adverse effects.<sup>4</sup>

[14] Section 319(1) states that the Court has a discretion to make any appropriate order subject to the limitations in s 319(2). That subsection, which is subject to subsection (3) prevents an order being made if a person is acting in accordance with a rule in a plan, a resource consent or designation and the adverse effects were recognised by the person who approved the plan or designation or granted the resource consent. Section 319(3) provides that orders may be made if the Court considers it is appropriate having regard to the time that has elapsed and any change in circumstances after the approval or the person was acting in accordance with a resource consent that was later changed or cancelled.

[15] The orders sought have been amended twice since the application was filed, but the underlying theme remains the same under six broad headings.<sup>5</sup> The first relates to ceasing the discharge of woody debris and sediment. Others relate to slash removal and stabilisation works, water controls, slash catchers

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<sup>4</sup> *Waitakere City Council v Britten* [2010] NZEnvC 12 at [5].

<sup>5</sup> We record that orders were sought regarding Mangatu Incorporation's land, but as works then occurred to address the Council's concerns, the application for those orders was withdrawn. Further, while the orders originally sought focussed on wholesale removal of woody debris from slopes and skid sites, the updated orders focus on specific measures that are intended to de-risk the forest and avoid further mobilisation of woody debris.

(debris traps), monitoring and maintenance, and reporting. A seventh and new order relates to retirement of part of the Forest.

[16] The fundamentals of the Amended Orders sought are as follows:<sup>6</sup>

A. The intent of the following enforcement orders is to eliminate (or if that cannot be achieved, minimise) discharges of woody debris from commercial forestry (including felled trees, windthrow trees, slash, harvesting debris) and/or sediment from commercial forestry activities into streams within Kanuka Forest and to ensure there is no further migration of woody debris from commercial forestry beyond Kanuka Forest.

1. Respondents are required to:

(a) Cease discharging woody debris from commercial forestry (including felled trees, windthrow trees, slash, harvesting debris) or sediment onto or into land where it may enter water.

***Slash removal and stabilisation works***

(b) Carry out the remedial works set out in the remedial plan and map at Appendix A of these orders by 30 October 2024.

(c) Obtain written certification from suitably qualified and experienced independent expert (approved in writing by Gisborne District Council) that the foregoing works in Order 1(b) have been carried out to a high standard and are sufficient to eliminate or minimise the risk of skid sites/landings and/or tracks and roads collapsing.

(d) Provide the foregoing certification (i.e. referred to in Order 1(c)) to Gisborne District Council by 15 November 2024.

***Water controls***

(e) Install water controls at all skids/landings and on all tracks and roads (including but not limited to the locations referred to in the remedial plan and map at Appendix A) by 30 October 2024 to eliminate or minimise the risk of erosion, skid site collapse, track collapse or road collapse.

(f) Ensure that the water controls installed under Order 1(e):

i. Accord with those hydrological principles and guidelines prepared under Order 1(i).

ii. Prevent ponding except in specified areas, e.g. sedimentation traps.

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<sup>6</sup> As at 19 July 2024.

- iii. Discharge runoff via diffuse/dispersed methods wherever possible.
  - iv. Direct water to solid/stable ground and generally planar or convex slopes.
  - v. Have discharges that are flumed, ideally with ‘socks’ or hard pipe flumes, with appropriate erosion control at both the break in slope and point of discharge.
  - vi. Direct water away from fill.
  - vii. Direct water away from skid sites/landings.
  - viii. Direct water away from the edges of skid sites/landings.
  - ix. Manage the accumulation of runoff so that it does not exceed the capacity and erosion resistance of drains and water tables.
  - x. Include an adequate number of appropriately sized and spaced culverts and cut-offs on tracks/roads, in accordance with the “*NZ Forest Road Engineering Manual – Operators Guide 2020*” (NZ Forest Owners Association, October 2012, updated February 2020).
  - xi. Include secondary flow paths for situations where the capacity of any drain or water table may be exceeded.
- (g) Obtain written certification from a suitably qualified and experienced independent expert (approved in writing by Gisborne District Council) that the foregoing works in Order 1(e) are fit for purpose, consistent with, or better than, industry best practice, and conform with Order 1(f).
- (h) Provide the certification referred to in Order 1(g) to Gisborne District Council by 15 November 2024.

### ***Slash Catcher Network / Woody debris catching devices***

- (i) Install a network of slash catchers at Kanuka Forest by 31 August 2025, in accordance with the following process:
  - (i) The respondents will engage a suitably qualified and experienced independent expert (approved in writing by Gisborne District Council) to prepare an assessment report for a proposed network of slash catchers (**the Slash Catcher Network**) to be installed at Kanuka Forest to ensure that woody debris from commercial forestry (including felled trees, windthrow trees, slash, harvesting debris) is minimised within the waterways in Kanuka Forest and will not migrate beyond the boundary of Kanuka Forest.
  - (ii) The assessment report for the Slash Catcher Network must address the following matters in detail:

- (1) Number and location of slash catchers;
  - (2) Catchment size that each slash catcher will service;
  - (3) Estimated volume of debris for each slash catcher location;
  - (4) Proposed design of each slash catcher. The proposed design of each slash catcher must be sufficient to address the estimated volume of debris, the hydraulic capacity of the waterway, its specific location and enable the objective of ensuring woody debris is minimised within the waterways in Kanuka Forest and does not migrate beyond the boundaries of Kanuka Forest;
  - (5) Effects on flows, erosion and river and bank stability;
  - (6) Potential impact if the slash catcher is overtopped or bypassed and how this risk will be mitigated;
  - (7) Access and maintenance, including proposed disposal areas; and
  - (8) The length of time the Slash Catcher Network is intended to be in place and to function, which must not be less than 10 years.
- (iii) The respondents will provide the assessment report for the Slash Catcher Network to Gisborne District Council by 15 November 2024.
  - (iv) If Gisborne District Council approves the Slash Catcher Network set out in the assessment report, the Respondents will lodge an application for a resource consent for the Slash Catcher Network within two months of receiving the Council's written approval.
  - (v) The Respondents will install the Slash Catcher Network within 12 months of receiving Resource Consent and in any event no later than 31 August 2025.
  - (vi) If the Slash Catcher Network assessment report is not approved by Gisborne District Council by 20 December 2024 and/or resource consent is not granted for the Slash Catcher Network by 1 April 2025, then Gisborne District Council can apply to the Court to vary these enforcement orders to either extend the timeframes stated above or require installation of an alternative Slash Catcher Network.
  - (j) Inspect the slash catchers in the Slash Catcher Network after every rain event when either 15mm/hr or 100mm/24-hours or more of rain is recorded at Gisborne District Council's gauge on the Waimata River at Monowai Bridge, and ensure that:



- (i) The slash catchers are regularly cleared of woody debris from commercial forestry (including felled trees, windthrow trees, slash, harvesting debris) and indigenous vegetation.
- (ii) Any damage to the slash catchers is repaired promptly.
- (iii) The slash catchers are effectively preventing woody debris from commercial forestry (including felled trees, windthrow trees, slash, harvesting debris) from migrating beyond the boundary of Kanuka Forest.
- (k) Obtain written certification from a suitably qualified and experienced independent expert (who has been approved in writing by Gisborne District Council) that the Slash Catcher Network referred to above in Order 1(i) has been appropriately installed in accordance with the assessment report referred to in Order 1(i)(ii) and provide this certification to Gisborne District Council by 1 October 2025.

***Monitoring and maintenance***

- (l) Carry out ongoing monitoring of the remedial works and water controls referred to in Order 1(b) and Order 1(e) and carry out any necessary maintenance to ensure those works and water controls remain effective and pose low risk of triggering erosion, landslides and/or debris collapses.
- (m) Carry out ongoing monitoring of all streams in Kanuka Forest and if any further debris is mobilised into any streams in Kanuka Forest, remove that debris and place it in a location where it cannot be re-mobilised, within 28 days of discovering that debris.
- (n) Ensure a suitably qualified and experienced independent expert (approved in writing by Gisborne District Council):
  - (i) inspects all of the remedial works and water controls referred to above in Order 1(b) and Order 1(e) every six months from 15 December 2024 to 15 December 2027 and then every 12 months from 15 December 2027;
  - (ii) inspects all of the remedial works and water controls referred to above in Order 1(b) and Order 1(e) following any rain event when 15 mm/hr or 100mm/24-hours of rain is recorded at Gisborne District Council's gauge on the Waimata River at Monowai Bridge;
  - (iii) prepares a further remedial works plan for any remedial works required to address issues identified in the inspections referred to in Order 1(n)(i) or Order 1(n)(ii) (which includes a timeframe for those works) and provides that plan to the Council for approval.
- (o) Carry out all remedial works set out in any approved further remedial works plan prepared under Order 1(n)(iii) within the

timeframe specified and provides written confirmation to Gisborne District Council's enforcement manager of completion of those remedial works, within seven days of completion.

- (p) Ensure a suitably qualified and experienced independent expert (approved in writing by Gisborne District Council) inspects the Slash Catcher Network referred to above in Order 1(i) by 15 May 2025 and every six months thereafter to assess whether the slash catchers are operating effectively and whether they are being appropriately cleared and maintained.

### ***Reporting***

- (q) Provide a written inspection report to Gisborne District Council's enforcement manager within seven days of:
  - (i) Each inspection by an independent expert referred to at Order 1(n) above confirming that the inspection has occurred, whether the remedial works and water controls are being appropriately maintained, and identifying whether any further remedial works or maintenance is required and, if so, the timeframe within which the remedial works or maintenance should be undertaken by the respondents.
  - (ii) Each slash catcher inspection referred to at Order 1(j) above confirming that the inspection has occurred and including descriptions of debris cleared, damage to the structure and any repairs undertaken.
  - (iii) Each slash catcher inspection by an independent expert referred to at Order 1(p) above confirming that the inspection has occurred and reporting on the condition of the three slash catchers at the time of inspection, and whether the slash catchers are being appropriately cleared and maintained.
  - (iv) Any inspection or debris removal referred to at Order 1(n) above.

### ***Retirement areas***

- (r) Take the following steps to permanently retire the area of Kanuka Forest specified on the map at Appendix B of these orders as a "retirement area", from commercial use as plantation forestry and ensure the trees in this area are never harvested:
  - (i) By 30 September 2024 the first respondent will register a covenant on the certificate of title for Kanuka Forest (Legal Identifier GS6B/625), which binds potential owners to this outcome;
  - (ii) Leave the existing radiata pine trees within the retirement area to grow until 1 May 2027 and then either:
    - (1) Poison those trees by drilling manually into each remaining

pine tree; or

(2) Removing the remaining pine trees by chainsaw.

- (s) Prepare a native revegetation plan for the permanent retirement area (which specified the species to be planted, the planting rate per hectare, and the timeframe for planting) and provide that to Gisborne District Council for approval by 15 November 2024.
- (t) If Gisborne District Council declines to approve that native revegetation plan, amend that native revegetation plan and resubmit it to Gisborne District Council within 28 days of Gisborne District Council declining to approve it.
- (u) Comply with the approved native revegetation plan on an ongoing basis.
- (v) Prepare a pest management plan for the permanent retirement area and provide that to Gisborne District Council for approval by 30 September 2024.
- (w) If Gisborne District Council declines to approve that pest management plan, amend that pest management plan and resubmit it to Gisborne District Council within 28 days of Gisborne District Council declining to approve it.
- (x) Comply with the approved pest management plan on an ongoing basis.

### ***Grounds of opposition***

[17] The respondents agree there is a need for orders but with some qualifications. In broad terms, they oppose any blanket requirement to cease discharging woody debris and sediment as that is not supported by the Act or the Resource Management (National Environmental Standards for Commercial Forestry) 2022 (**NES-CF**).

[18] There was general agreement on the following:

- (a) slash removal and stabilisation work.
- (b) scope of the remedial works required, although a staggered approach to remediation was suggested and for slash removal CFG sought to add options of mulching and crushing and provisos addressing safety,

among others;<sup>7</sup>

- (c) water controls, although it was suggested that it was cleaner and more certain to have water controls set out and linked to the action plan required.

[19] There was disagreement regarding the specifications and requirements for slash catchers. At the hearing the Council proposed that the catchers comply with a design known as Geobruigg and that they be installed by 1 May 2025 at three locations identified by CFG. The Orders provided for an alternative design if that were approved in writing by the Council. CFG and WMS suggested that the identification of the Geobruigg slash catcher pre-empted what might emerge from the resource consent process and that the design should be left for identification and consenting through that process. There was also disagreement as to by when the slash catchers should be installed.

[20] The Amended Orders proposed by the Council impose different requirements for the location and design of slash catchers that moves closer to the approach discussed in the hearing.

[21] There was general agreement on monitoring and maintenance requirements save that the respondents proposed a final date for maintenance and remedial work of 15 December 2029.

[22] The respondents proposed some minor amendments to the Orders in relation to reporting.

[23] In addition, at the hearing CFG proposed that, by 31 October 2024, an identified area in Kanuka Forest be retired from commercial use as plantation forestry. That proposal had general agreement from the parties, save that Mana Taio Tairāwhiti (**MTT**) were concerned to ensure that the area would be maintained following its ceasing to be used for forestry so as to ensure that

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<sup>7</sup> Concerns were also raised about the difficulty of removing slash from areas D1 and D2. The Council agreed and has amended the table of remedial works.

sediment wasn't mobilised from it. The Council incorporated that proposal into its Amended Orders.

[24] MTT had various comments on the first amended draft orders, but it would be fair to say that they supported the orders proposed by the Council and the retirement area proposed by CFG.

#### National Environmental Standards – Commercial Forestry

[25] The applicability of the NES-CF became an issue in the proceedings because the respondents asserted that some of the Orders sought by the Council, particularly those relating to prevention of any migration of woody debris and/or sediment from the forest, were not required by the Act under s 15 because a certain level of sediment and woody debris discharge is permitted by the NES-CF and/or the Tairāwhiti Resource Management Plan (**TRMP**).

[26] We received submissions from the parties on this matter and provide our findings later in this decision.

#### Respondents

[27] There was also an issue as to whether Mr Sun and WMS should be the subject of the enforcement orders.

[28] As to Mr Sun, CFG advised that having been a director of CFG, Mr Sun resigned from that role on 26 June 2024. It argued that Mr Sun was not involved in the company's forestry operations and that he now ceased to have a directorial role in the company. A new New Zealand-based director, Mr Liu, was appointed on the same day that Mr Sun resigned, but he was not a party to this proceeding. CFG argued that it would be unfair and inappropriate for Mr Liu to be the subject of any orders without having the formal opportunity to respond to an application. We address Mr Sun's involvement in this proceeding later in the decision, save to note here that in its Amended Orders the Council no longer seeks orders against him.

[29] WMS is the contracted forest manager for the Kanuka Forest. While supporting the broad nature of the orders, WMS argued that it was not responsible for the state in which the forest was left following harvesting, and that it therefore should not be the subject of any remedial orders. We were advised that harvesting of the forest was undertaken by PF Olsen Limited and that the company ended its contract with CFG and its involvement with the forest in September 2021. WMS assumed a managerial role for the forest in October 2021, where it has remained. We address its role in the proceedings later in this decision.

*Mana Taio Tairāwhiti*

[30] MMT is a group of concerned Gisborne citizens who incorporated to have a voice in the matter of how forest debris and forests in the region should be managed to avoid the events of recent years re-occurring. MMT supports the Council's application and outlined the hurt and damage inflicted on the people of Gisborne by the migration of forestry debris. They drew our attention to a petition signed by 10,000 people following Cyclone Gabrielle that asked the Council to do more to address the impacts of forestry in the region. They also referred to the outcomes of the MILU inquiry.

### **C. Evidence**

[31] The Council called extensive evidence in support of the application. It provided evidence from five compliance officers.<sup>8</sup> Aside from evidence given by Mr Andrew Shelton, who outlined the results of a site visit to the forest on 5 July 2024, the evidence of those addressing compliance issues at the forest was unchallenged. Evidence was also called from Dr Murry Peter Cave, the Council's principal scientist, who addressed debris analysis and risk, and Dr

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<sup>8</sup> Jamie Lee Botes, an investigator in the Council's monitoring and compliance team; Joanna Barbara Noble, Director, Sustainable Futures at the Council; Andrew Oliver Henri Shelton, Enforcement Officer; Bevan Ryan Blunden, who was employed by the Council as a Monitoring and Compliance Officer; Baylin Hiron Barrett, Enforcement Officer for Environment Canterbury; James Charles Dobson, Enforcement Officer employed by Canterbury Regional Council.

John (Jack) Allen McConchie, Technical Director (Hydrology and Geomorphology) at SLR Consulting (NZ) Limited, who gave evidence on hydrology and stability/risk. We also received evidence from David John Sluter, an environmental scientist – land and soil – for the Gisborne District Council, who addressed ecological effects. Finally, we received evidence from David Graham Battin, Chief Financial Officer employed by Mangatu Blocks Incorporation. Mr Battin outlined Mangatu Blocks Incorporation’s experience of debris mobilised in Kanuka Forest and being discharged onto the Mangatu Waimata West Block.

[32] For CFG, evidence was provided by Mr Vlasko Petrovic, CFG’s Central North Island Regional Manager. He has been in this role since December 2023.

[33] WMS called two witnesses: Mr Duncan Matthew Mills, a director and shareholder of WMS; and Mr Vincent Joseph Udy, who was the Environmental Planning Manager for WMS until 15 May 2024. He gave expert evidence on the company’s behalf.

[34] MMT called evidence from Mr Manu Stuart Caddie outlining the impact of discharges from forests in the Gisborne region on residents and property.

#### **D. Kanuka Forest and surrounding environment**

[35] As there was no dispute as to the nature and extent of the problem, we need only provide a summary of the events which have led to this point. That is not to minimise the magnitude of suffering caused by the mobilisation of forestry debris in Gisborne in recent years.

[36] A chronology of milestone events is attached as **Annexure A**.<sup>9</sup>

[37] The forest is a plantation pine forest located at Waimata Valley Road, Waimata. Most of the forest is in the red zone, being land defined in

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<sup>9</sup> We record that we were provided with a detailed chronology of events by the Council and the respondents. We focus only on milestone events in the interests of brevity.

Regulation 3 of the NES-CF as having an erosion susceptibility rating of “very high”.<sup>10</sup> A stream flows through the forest, which is a tributary of the Waimata River that flows to Gisborne City where it joins the Taruheru River and then flows into the sea at Waikanae Beach in Gisborne City.

[38] The tributary streams in Kanuka Forest are identified in Schedule G21 of the TRMP as protected watercourses and as tributaries of the Waimata River. Protected watercourses are areas that receive enhanced protection and are intended to be retired as part of vegetation clearance resource consents. The Waimata River is identified in Schedule G15A of the TRMP as a habitat and migratory pathway for indigenous fish species (red fin bully, long fin eel, inanga, common bully).

[39] *Pinus radiata* was harvested from 2014 to 2019 by PF Olsen Limited under a resource consent. The consent authorised the formation of 11km of forestry roads, construction of 23 landings (known as skid sites) and clear-fell harvesting of 245 hectares of trees in the forest. Following the conclusion of harvesting the forest was replanted with *pinus radiata*.

[40] From as early as 5 July 2019, if not before, the problem of forestry slash in waterways at the forest was identified by PF Olsen.

[41] Some two months later PF Olsen was replaced by WMS, whose management contract began on 1 October 2021.

[42] WMS obtained two reports on the Forest from Terra Consulting, in January and March 2022 but did not survey the Forest itself. Those reports did not note any significant failures, but noted and documented that numerous stems and windthrow trees had been left in the main gully system during harvesting and that debris remained lodged in the main gully watercourse or just above it. WMS commenced some maintenance works to improve drainage on

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<sup>10</sup> That zoning limits the area of land that can be harvested at any one time as a permitted activity.



the roads and to clear some slips.

[43] There was no evidence of any physical steps taken by CFG or WMS over the 2022 year to physically address any clearance of debris.

[44] Potential log jams in streams at the forest were identified in September 2022 and advised to WMS at the end of October 2022.

[45] A Council site inspection on 2 December 2022 revealed the following issues:

- (a) significant amounts of slash, felled trees and forestry waste were found to be blocking the stream in major log jams below skid sites 001 and 002. There were log jams in the stream in four main locations that ranged from 15m to 125m in length.
- (b) forestry debris, slash, logging waste and sediment had collapsed on at least two skid sites.
- (c) a number of skid sites were at risk of collapsing.
- (d) there were large amounts of forestry waste lying on slopes and in gullies in the forest (including felled trees) that had the potential to be mobilised into watercourses in rain events and/or if landslides occurred.

[46] Steps were taken by WMS to devise and implement a plan to address the debris, but on 22 December 2022 the Council issued abatement notices to CFG and Mr Sun, requiring removal of debris and other waste material, among others. Individuals associated with or working for WMS also received notices, but they were re-issued to WMS on 22 March 2023. None of the notices were appealed.

[47] Before any meaningful works to remove or stabilise debris could be carried out, Cyclone Hale struck on 10-11 January followed by Cyclone

Gabrielle on 13-14 February 2023, causing region-wide flooding and landslides.

[48] The consequences of those cyclones were described as follows:<sup>11</sup>

During these weather events large volumes of felled trees, slash, logging debris, waste logging material and wind thrown trees from commercial pine forests were mobilised and discharged into the Waimata River. This material flowed down the Waimata River causing damage to the downstream areas and infrastructure. Some of this mobilised material was ultimately deposited on Waikanae Beach in Gisborne City.

[49] It became clear on 21 March 2023 that the slash and logging debris that was damming the main stream in Kanuka Forest mobilised during Cyclone Gabrielle to an area outside the forest where the stream flowed into the Waimata River. That area was owned by Mangatu Incorporation.

[50] Further inspections were undertaken over the following months, causing Council officers to observe that while some works had been undertaken over the months from April 2023, by August 2023 issues remained with large amounts of harvesting waste still on steep slopes, ephemeral watercourses and streams remained choked with harvesting waste and windthrow, a number of debris dams remained, debris that had migrated beyond Mangatu remained, issues with berms on skid sites and sediment pits, blocked culverts, among others. It culminated in these enforcement proceedings being initiated on 9 September 2023.

[51] While work has continued at the forest, much work remains to be done. The extent of the work is not disputed.

#### **E. Management of off-site impacts of forestry slash including from legacy harvest operations**

##### ***Legacy***

[52] There is a substantial legacy issue to be dealt with in Tairāwhiti. There is frequent mobilisation of forestry slash with large volumes now deposited in

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<sup>11</sup> First affidavit of J Botes, 4 Septemebr 2023 at [58].

streams and making its way to the coastal environment. In some locations such as the Mangatokerau Road in the Waimatā catchment estimates of residual material are in the hundreds of thousands of tonnes. We received uncontroverted evidence that there is a very substantial volume of material that remains yet to be mobilised or is trapped in birds' nests (huge wood dams in steep gullies), where it will gradually migrate downstream in each significant weather event.

[53] Historically, mobilisation of woody debris and forestry slash was a periodic occurrence in Tairāwhiti. However, the region has experienced an increasing number of mobilisation events since 2012. These are the result of three fundamental issues:

- (a) the region's susceptibility to extreme weather events. Heavy localised rain events have been occurring more frequently. Extreme weather events will be more likely according to NIWA climate change projections for the region.
- (b) the region is susceptible to erosion. Steeper, more erosion-prone and slip-prone land is being harvested.
- (c) Since 2010 tens of thousands of hectares of plantation forestry have been harvested.

[54] The following issues were also identified:

- (a) the adopted harvest practices are not always suitable for the terrain.
- (b) the period or window of vulnerability post-harvest is up to ten years (or longer) after harvesting has concluded at a forest.
- (c) in some instances, there may be non-compliance with consent conditions and/or the national regulations in the NES-CF. However, due to the nature and wording of the national environmental standards, non-compliance can often only be proven once a 'failure' occurs.

- (d) the way the forestry industry is structured (relying heavily on contractors and subcontractors to carry out the harvest, working to slim margins, with limited security of work) and previous and current national policy settings also contribute to poor forestry practices and choices.

### ***Impacts of forestry***

[55] We received detailed evidence outlining impacts on:

- (a) freshwater and coastal ecosystems;
- (b) infrastructure and property;
- (c) livestock;
- (d) forests; and
- (e) rivers.

[56] The positive benefits of afforestation for water quality and environmental health while the forest is standing are well known. However, the combination of the high volume of earthworks required to install forestry infrastructure, and the discharges of sediment and debris that occur during earthworks and harvest, combine to degrade the quality of freshwater and coastal waters.

[57] When clear-fell harvest occurs the level of sediment in streams rises significantly. This accumulation of material causes physical changes to the terrestrial riparian and freshwater habitats.

[58] The primary impacts resulting from the physical movement of *pinus radiata* include the mobilisation of debris. This mobilisation drastically alters the physical habitat affecting plants, animal and fungal compositions of these systems. Many riparian plants are damaged or displaced by debris and silt deposition. The breakdown of this debris material also impacts the freshwater, coastal and riparian systems by delivering a significant amount of organic matter, and therefore nutrients, to environments where this is not naturally occurring.

[59] Impacts are felt most strongly by mana whenua communities, who often rely on natural freshwater for bathing and drinking, and who source kai from fresh waters and the sea. These communities are increasingly concerned and vocal about the impact of sedimentation on their awa and moana. The Council records that Te Aitanga a Hauiti at Tolaga Bay, Ngāti Porou hapū at Tokomaru Bay, Tikapa, around Tikitiki, and the Waimata, Rongowhakaata hapū at Waimata, Waikanae, Te Wherewhere and Te Awai and Ngāi te Mānuhiri hapū at Marae Taha in Te Wherewhere have been the most adversely affected to date.

[60] New public infrastructure such as bridges, culverts and roads have been affected by woody debris or destroyed. Central government or the Council pay the repair and clean-up costs. For example, the clean-up and repair costs for the winter storms in 2018 were estimated at over \$10 million, most of this due to damaged infrastructure and roading from woody debris.

[61] Woody debris continues to accumulate on beaches, either through storm events or incrementally over time as vegetation makes its way into the rivers and marine environment, and eventually onto beaches. The Council and forestry industry have undertaken beach clean-ups but this has been reactive, and the damage has already occurred to the receiving environments. Woody debris remaining in river catchments poses a risk to bridges and may exacerbate flooding in some catchments. Landowners affected by the deposition of woody debris are generally left to pay the costs of clean-up and remediation. This includes replacement of flood gates and fences and removal of debris from paddocks.

[62] The Council observed that the forestry industry's involvement in relation to removing logs and slash from Gisborne beaches has been inconsistent and sporadic. No forestry company has contributed to the Council's beach clean-up costs in the last two years, meaning those costs were borne by the Tairāwhiti region's ratepayers. However, on some occasions forestry companies have front-footed the clean-up of beaches. For example, in 2018 forestry companies undertook a large-scale clean-up of logs and slash at Tolaga Bay beach and

Gisborne City beaches.

## **F. Window of vulnerability**

[63] Effects from forestry harvesting can persist for up to ten years following completion of that harvesting, assuming the land is replanted immediately. This is sometimes referred to as the ‘window of vulnerability’. In some cases that window can remain open for more than ten years. Dr McConchie summarised the problem well. He said that it is, therefore, not a question of if harvesting forests on the steep hill country of the east coast will have adverse effects on runoff, erosion and sedimentation and the risk of slope instability. The question is when this will happen, and the magnitude of the adverse effects on the environment.

[64] It is for that reason there are a series of best practice guidelines published by the New Zealand Forest Owners’ Association to minimise and mitigate the risk from forestry. Failure to follow these guidelines increases the risk to both forestry infrastructure itself and to the environment. The nature and characteristics of slopes on the east coast means that often the effects of not following best practice extends a considerable distance downslope into adjacent watercourses, and potentially all the way to the coast.

[65] We heard that earthworks, forestry operations and other land use changes are directly related to the passage of runoff from the point rainfall lands on the ground surface to its sink – first in any local rivers or streams but ultimately at the coast.

[66] The total volume and timing of runoff includes three mechanisms:

- (a) overland flow (water flowing across the land surface);
- (b) through flow (water flowing through the soil or unsaturated zones);
- and
- (c) groundwater flow (water flowing through the groundwater or

saturated zones).

[67] Therefore, the potential effects of the earthworks associated with forestry need to be considered in the context of both runoff and the process of erosion. One of the hydrological effects of earthworks associated with forestry operations is an increase in the volume and velocity of surface runoff. To minimise the risk of erosion, both volume and velocity of runoff needs to be controlled.

[68] Dr McConchie noted that a five-to-ten-year window of increased risk of erosion and instability follows harvesting, because of the increased effect of rainfall and decreased strength of the material forming the slope as the roots first die and are then replaced. The rotting of the roots can also lead to the formation of macro-pores that act as ‘pipes’, providing very rapid flow of moisture through the regolith.

### ***Issues relating to Kanuka Forest***

[69] Dr McConchie observed that while the erosion in slope and infrastructure failures at Kanuka Forest were likely triggered by rainfall, there are a wide range of factors that contribute to slope instability. Many factors can be a direct effect of forest practices, especially those that are contrary to industry guidelines and best practice.

[70] In Tairāwhiti, the potential effects of and risks from previous poor practice are often inherited by a new operator or manager. For example, the lack of benches, over-steepened and overloaded slopes, and the failure to remove the original vegetation prior to placing fill or side-cast are all difficult to identify after construction has finished, and certainly once the slope has been replanted. All these practices pre-condition a slope to fail during some later rainfall event. Dr McConchie considered that it is unlikely that any of the erosion and slope and infrastructure failures he observed in the photographs and drone footage taken of the forest were the result of a single pre-condition or cause. Therefore, assigning responsibility for the failures involves

consideration of a range of factors that contributed to the failure and how these compounded to lead to failure. In his opinion, responsibility for the environmental effects of the erosion and slope and infrastructure failures increase as the number, severity, and duration of poor practices increases.

[71] Just because the slopes and infrastructure failed during what eventuated to be relatively large rainfall events does not mean that failure was the result of the maximum intensity and depth of rainfall experienced. For example, it appears that many of the slopes failed relatively early during the rainfall events, with the extent and depth of subsequent scour showing that considerable rain fell after the slope had failed. Dr McConchie observed that specific effects of what, in his opinion, poor design, construction and maintenance include are:

- (a) extensive slope failures, both upslope and downslope of the roads and skids;
- (b) tension cracks indicating the incipient failure of side-cast material;
- (c) uncontrolled and poor drainage and runoff from the roads and skids;
- (d) extensive erosion of side-cast material, resulting in the formation of rills and gullies which are hydraulically connected to the drainage network;
- (e) under-capacity culverts and stormwater management devices that are overhanging, have no energy dissipation devices, and result in scour and erosion downslope;
- (f) bunds on the edge of roads that direct runoff into side-cast and other areas susceptible to erosion;
- (g) the lack of erosion control measures e.g. grassing or planting on bare surfaces;
- (h) overloading of the edges of skids by side-cast material; and
- (i) overloading of the edges of the skids with logs and other woody



debris.

[72] Overall, it is Dr McConchie's opinion that the risk of slope and infrastructure failure at the forest is a persistent problem. If further collapses occur because of those issues, the felled trees, wind thrown trees and harvesting debris remaining on the slopes in the forest are likely to be entrained and mobilised into gullies and streams in the forest. These practices have had significant environmental effects over a wide area, including the scale and magnitude of slope failures and the consequential adverse environmental impacts. He is concerned that if measures are not undertaken to reduce these risks further, slope instability and its consequential and adverse environmental effects will continue.

[73] Dr McConchie confirmed that he provided input into the descriptions of remedial work required to address issues at the forest. He observed that sufficient water controls are critical to managing the ongoing risk of mobilisation of material at the forest. At his suggestion a separate section was added to the enforcement orders to address the key elements of water controls. He observed that, given that the focus of the enforcement orders is no longer on wholesale removal of woody debris from the forest, but rather on "pulling back" and removal (through burning) of slash at specific skid sites, and removal of debris from specified locations within watercourses, it is critical for robust water controls to be in place to adequately de-risk the forest and ensure the debris remaining on the slopes is not re-mobilised. Hand in hand, he considers that it is critical to have provision for ongoing monitoring and maintenance and, where necessary, remediation of those areas and water controls on an ongoing basis, particularly following storm events.

[74] Dr McConchie concluded his evidence by observing that while the measures set out in the enforcement orders cannot guarantee that no further discharges of slash, felled trees, harvesting debris or sediment will occur in streams within the forests and/or beyond, he considers that they will sufficiently reduce the risk in the forest to a more manageable level.

***Remedial works undertaken by CFG and WMS***

[75] In February 2024 the harvesting debris that had migrated from the Kanuka Forest to Mangatu's land was removed and placed in a location within the Kanuka Forest. Other remediation works have been undertaken in the forest and are outlined in the chronology attached to this decision. However, there is still significant remediation that needs to be undertaken to address the ongoing risk of slash, felled trees, harvesting debris or sediment discharging into streams within the forest and migrating beyond the forest.

[76] That further work has been identified by the Council and is generally agreed by CFG and WMS, save that the terms and conditions of that removal are not agreed.

**G. Matters remaining at issue**

[77] We now turn to address the primary matters remaining at issue. In evaluating these issues we record that CFG provided no expert evidence to assist the Court. It relied on submissions from counsel to query aspects of the Orders and in some cases on Mr Petrovic and WMS.

***Cease discharging woody debris ... or sediment onto or into land where it may enter water – Order 1(a)***

[78] The respondents suggest this order be deleted because it is not achievable at the present time. They also assert that the activities described in that proposed order are authorised by the NES-CF and the Tairāwhiti Resource Management Plan (**TRMP**).

[79] In response to the Council's argument that a clean earth standard is required due to s 15 of the Act, and that there is no discharge consent held, CFG responded that the orders are not required to provide compliance with s 15 as that obligation already exists. The Act does not require that every branch of slash and gram of sediment must be prevented from entering a waterway, no matter how minor its effect. Section 15 contains a proviso about the discharge

being expressly allowed by an NES or other regulations or a rule in a regional plan.

[80] For the NES-CF the issue relates not to harvesting but slash from harvesting and any sediment discharged following that harvesting. It notes that if harvesting was undertaken today, the NES-CF would allow for some slash to remain on the cutover, and where it is unsafe to remove it, in waterways. In relation to the rule in a regional plan referred to in s 15, it submitted that must be read in terms of rule 6.2.9(1) of the TRMP.

[81] CFG proposed a proviso to the order (1)(a) to add “beyond that permitted by a national environmental standard or other regulations, a rule in a regional plan, a rule in a proposed regional plan for the same region (if there is one), or a resource consent”.

[82] It said that its wording is designed to ensure that if the “cease discharge” type order were imposed it could be tied to an actual and relevant legal and/or regulatory instrument and would therefore be enforceable and achievable.

[83] CFG argued that it could be prosecuted for the discharge of a single twig or grain of sediment while the Council said that it must exercise its prosecutorial discretion in a reasonable and principled manner. It says it would not prosecute for a discharge involving a minute amount of a contaminant.

[84] The Council opposes deletion of or amendment to that order, noting that it reflects the requirements of s 15 of the Act. It denies that any of the activities presently occurring in the forest are authorised by the NES-CF or TRMP.

[85] All agreed that the cessation of discharges is what the work required by the balance of the orders is designed to achieve. The question then, for us, is whether there is any utility in making such an order.

[86] Given that the focus of this proceeding is on preventing further discharges of forestry debris and sediment, it is appropriate that there be an overarching

order to that effect.

[87] We consider the relevance of the NES-CF and the TRMP later in this decision.

[88] It is sufficient to note at this point and in regard to this Order the circumstances of past discharges, the likelihood of fresh discharges and the significant adverse effects that they can have are such that it is our finding that, even if aspects of the TRMP or NES-CF were found to authorise any of those discharges, s 319(2) of the Act does not prevent the Court from making such orders. That is because the adverse effects of forest debris and sediment migration at the magnitude seen in the region over the past years cannot be said to have been in the mind of those deciding on the TRMP provisions. Further, s 319(2) does not operate as a bar to the Court making orders in respect of activities that may be authorised by the NES-CF as it does not refer to such regulations.

### ***Purpose statement***

[89] CFG proposed that a purpose statement preface and inform the orders as follows:

The purpose of these orders is to de-risk Kanuka Forest by eliminating or minimising the offsite discharge of woody debris from commercial forestry activities (including felled trees, wind thrown trees, slash, harvest debris) or sediment from commercial forestry activities, recognising the obligations under s 36 of the Health and Safety at Work Act 2015. The orders relate to five steps to achieve the purpose, being:

- (a) Step 1 – slash removal and stabilisation.
- (b) Step 2 – water control.
- (c) Step 3 – slash catchers.
- (d) Step 4 – monitoring and reporting.
- (e) Step 5 – retirement.

[90] As an information tool we have no difficulty with a purpose statement.

We do not consider that it can provide a layer of interpretation on the Orders, however. That would be the effect of CFG's proposal given the reference to that statement in the orders requiring slash removal, among others.

[91] The Council proposed a statement of intention to preface the Orders as set out earlier in this decision. It is not to qualify the way in which the Orders are to be implemented. We find it helpful, however, to inform those reading the Orders of their intent and therefore include it.

***Slash removal and stabilisation works – Order 1(b)***

[92] While the remedial works are generally agreed, the date by which they must be completed is not. The Council has extended the time for the carrying out of the remedial works by one month, to 30 October 2024. It seeks orders that a suitably qualified and experienced independent expert should certify that they have been carried out to a high standard and are sufficient to eliminate or minimise the risk of skid sites/landings and/or tracks and roads collapsing.

[93] CFG proposed to divide the remedial works to require that the works in Catchments A1, A2, A3, A4, A5 and A6 be carried out as soon as possible but no later than 31 January 2025. It proposed that the remainder of the works be carried out as soon as possible but no later than 31 July 2025. CFG considers that additional time is required to ensure the works are completed to the required standard but noted that the addition of the words “as soon as possible” ensures that if the works can be done earlier than is set out in the Order they will be. It says that the removal of slash etc from steep slopes and across the site requires dry weather and ground conditions. That also applies to burning slash.

[94] We have no expert evidence from CFG that addresses the deadlines for carrying out remedial works. Any significant rainfall has the potential to further mobilise forestry debris and sediment from the forest and, as such, urgency is required. CFG raised issues of weather and safety as potentially impacting its ability to undertake the works.

[95] In answer the Council has proposed an extension of one month to the deadline it originally proposed, that is to 30 October 2024. It argued that is reasonable given the potential for further storms to impact the forest.

[96] More importantly it observed and we agree that the respondents have been on notice for many months of the nature and scope of the remedial works and have told us that the work is already underway. Further, safety must always be top of mind for forestry operators. That extended timeframe should allow for any delays necessitated by safety concerns.

[97] The Council sought to retain the ability to approve the expert who is to certify the works. The respondents' suggested certification is more appropriate.

[98] The nature of past and present problems is serious. It is important that the highest level of attention is paid to this matter, and the best advice received. We see no need to change the Order proposed by the Council.

***Water controls – Orders 1(c)-(h)***

[99] There is general agreement on the need for detailed controls, but each party has refined the Orders discussed at the hearing on this matter.

[100] CFG has proposed that a water controls remediation plan be prepared for certain sites only and relate to its Purpose Statement. It adopted certain hydrological principles outlined in the Council's orders.

[101] The Council disputed the restriction to certain sites and the reference to the 'Purpose Statement'. Observing that Dr McConchie was the only expert who gave evidence at the hearing, it argued that it is appropriate for him to develop the hydrological principles and guidelines and provide them to CFG. It also opposed a management/remediation plan approach to the issue, which had been discussed at the hearing.

[102] We are guided by the expert evidence we received. We find it is

appropriate for Dr McConchie to undertake the work required by the Council and in the manner foreshadowed in its amended orders, including with reference to the “NZ Forest Road Engineering Manual - Operators Guide 2020”.

[103] CFG also proposed that water control works be completed after slash removal and stabilisation works. The Council opposed that, stating that there is no justification for deferring water control works until after slash remediation, and arguing that the controls are critical and remediation work can be undertaken at the same time as removal works.

[104] We agree with the Council’s submission. We heard at the hearing that water control is one of the most critical aspects of forestry management after harvesting, and in terms of guarding against adverse effects on the environment. Water control works should not wait until after slash removal and stabilisation.

***Slash (Debris) catchers – Orders 1(i) – (k)***

[105] Debris catching devices require a resource consent under the TRMP as a controlled activity (Rule 6.3.2(13)). The Council has reserved control over several matters including:

- (a) the design, construction and maintenance of the device;
- (b) effectiveness of the device to mitigate the adverse effects of debris mobilisation and downstream deposition;
- (c) catchment size, characteristics and flow;
- (d) ecological effects, including fish passage;
- (e) effects of property and infrastructure;
- (f) alternative measures to manage debris mobilisation; and
- (g) effects on flows, erosion and river and bank stability.

[106] The Council has modified the Orders it sought at the hearing to ensure

that a more nuanced approach is taken to this matter.

[107] Given the way in which the hearing progressed, and the evidence provided by various Council witnesses and those for CFG and WMS, we agree that a different approach is needed to ensure that the location and design of slash catchers is carefully considered.

[108] At the hearing three locations were proposed by CFG, but it became clear that more locations may be needed to ensure that as much slash as possible can be captured. We heard that a cascade of catchers may be required to achieve that. In other words, what one cannot catch, others further downstream may.

[109] CFG in its reply also proposed changes, suggesting that a slash catcher plan be developed to achieve its purpose statement and subject to obtaining and complying with resource consent requirements.

[110] For the Council, those matters raised the spectre of uncertainty. The Council submits such an order is incapable of enforcement by a prosecution. Referring to a recent decision of *Turkington v Manawatu-Wanganui Regional Council*,<sup>12</sup> counsel noted there is a need for simple, clear orders where each element has to be proved beyond reasonable doubt. We agree.

[111] The Council's proposed orders set various milestones for establishing slash catchers and proposes end dates for installation of within 12 months of receiving resource consent, and in any event no later than 31 August 2025. No similar end point is proposed by CFG.

[112] Again, we find that certainty is preferable. The Council's orders require preparation and provision of an assessment report for the Slash Catcher Network to the Council by 15 November 2024. If it is approved, the Respondents are obliged to lodge an application for resource consent for the Network within two months of that written approval.

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<sup>12</sup> *Turkington v Manawatu-Wanganui Regional Council* [2024] NZDC 12781 at [103].



[113] As slash catchers are controlled activities under the TRMP we see no difficulty with those proposed orders – the Assessment Report will provide the framework for and inform the nature of the consent applications for the installation of slash catchers.

[114] The proposed orders require the Respondents to inspect slash catchers after every rain event when 15mm/hr or 100mm/24 hours or more rain is recorded to ensure prompt clearance and repairs. CFG proposed that the Council provide access to an e-text update in relation to the 15mm rain event and to its website for the 100mm event. The evidence we heard was that such data is publicly available. We see no need for a specific requirement to be placed on the Council.

***Monitoring, maintenance and reporting – Orders 1(l)-(p)***

[115] The Council's proposed Orders require ongoing maintenance of the remedied works and water controls, and undertaking any necessary maintenance to ensure those works and controls remain effective. In contrast, CFG proposes maintenance, monitoring and replanting be limited until 15 December 2029. That is to recognise that the 'window of vulnerability' for Kanuka Forest should have closed by then, as it would be over 10 years since the harvest was completed. The Council noted that Dr McConchie's evidence was that, while the window of vulnerability is for at least 10 years post-harvest, that does not mean there is zero risk following that period. We agree. We had no expert evidence to counter that view.

***Retirement of areas – Orders 1(r)-(x)***

[116] The Council proposed Orders about retirement of part of the forest from commercial forestry that provide a detailed programme to retirement and after.

[117] We prefer the Council's Orders to those of CFG on management of the retired area.

[118] A significant point of difference relates to implementation of a native revegetation plan for the area. CFG has not proposed this.

[119] Further, CFG proposed pest management only until 1 May 2027. The Council proposed there be no time expiry. We find that pest control should continue without an expiry date.

[120] Finally, the Council's Orders proposed the area be covenanted so as to limit future uses. We agree that that is sensible.

### ***Other orders – Orders 2-8***

[121] The Council proposed that the Respondents should be jointly and severally liable for the Council's actual and reasonable costs incurred in ensuring compliance with the Orders, including the costs of obtaining any independent expert's advice. We agree. The ratepayers of Gisborne should not have to bear those costs.

[122] Orders are sought to apply to the personal representatives, successors and assigns of the Respondents to the same extent they apply to the Respondents. We agree that is appropriate.

[123] Proposed Order 6 states that the Council can apply to the Court to vary the Orders if it later transpires that the orders do not prevent discharge of woody debris from commercial forestry or sediment into streams within or beyond the forest. We find it is appropriate to make that order.

[124] We agree with proposed Order 7, which is that if resource consent for the slash catcher network is not sought and granted by 1 April 2025, any party can apply to the Court to vary the deadline for compliance.

### ***Remedial works – Annexure A to the Orders***

[125] All sites requiring remediation are agreed.

[126] The method of remediation is not agreed in some circumstances. We rely on the Council and its experts to have properly identified the necessary works. Having heard no expert evidence to the contrary we accept the Council's recommendations.

[127] CFG argued that mulching/crushing is an alternate method of disposal in some circumstances. Dr McConchie disagreed, noting that it does not reduce the weight at all. All it does is change the size of the material you are dealing with and creates the same problems with instability. That is why burning was suggested. He added that if the weight cannot be reduced by burning it has to be end-hauled to a site that is stable. We record that end-hauling has been added to the alternatives available for the remedial works.

[128] CFG proposed that certain of the required remedial works be guided by the extent to which it is safe and possible to undertake them or in other cases that debris be removed or minimised. The Council responded noting that the wording needs to be clear and enforceable and that the qualifications affect that clarity.

[129] We agree, but we acknowledge that safety is an important issue and if it transpires that some remedial works cannot be carried out safely we would expect the respondents to make an application to the Court, supported by evidence to amend the Orders.

### ***Correct respondents***

[130] The Respondents challenged the appropriateness of enforcement orders being made against Mr Sun and WMS.

### ***Mr Sun***

[131] CFG argued that Mr Sun is no longer a director of CFG and therefore unable to influence the company's conduct. Mr Sun resigned a week and a half before the commencement of the hearing. No explanation for his resignation

was given and no evidence was provided as to his future role in the company, although it became clear that he is still working for CFG.

[132] In its reply and its Amended Orders, the Council has accepted that it is not appropriate for orders to be made against Mr Sun, given his resignation as director. Nevertheless, it is clear to us that Mr Sun was involved in the management of the company's forests. The forestry management contract that CFG had with WMS was signed by Mr Sun as director of CFGC Forest Managers (NZ) Limited, a related company of CFG.

[133] Also, we take notice of Mr Sun's LinkedIn profile that was provided to us by the Council in submissions. Mr Sun's profile confirms that he has been a director of CFG for seven years and that he is the "... director leading the New Zealand business". As a director of CFG his profile states:

My experiences and competencies span New Zealand and headquarters operations by leading New Zealand business as the director. My role includes people, strategy, business management etc. Key responsibilities are:

...

- **taking care of issues relating to the company's forest estate and communicating with the forest management company and other related clients**

...

- **internal compliance matters (including setting up the company's internal regulations and policies, setting up approval processes and flow, and overseeing the implementation of the policies and regulation, etc;**

- company's internal legal affairs.  
[emphasis added]

[134] We were told that Mr Sun has been replaced by Mr Liu as the New Zealand-based director responsible for forestry management. However, given Mr Sun's resignation so close to the hearing, no steps were taken to involve Mr Liu in these proceedings.

[135] We asked Mr Petrovic which members of the board of CFG he reported to. He indicated that aside from his New Zealand-based manager, any reports to officers of the company or instructions sought would be to Singapore or

China.

[136] We record our disappointment at the way in which matters relating to Mr Sun's tenure at the company have unfolded. Given we were provided with no explanation as to why he had resigned as director a week and a half prior to the hearing, it is difficult to conclude that it was not designed to frustrate the making of any orders against him.

[137] Other reasons were advanced to support arguments that Mr Sun should not be a party to the proceedings, perhaps the most important of which was the argument that CFG accepted the need for orders to be made and, aside from some disagreement as to matters of process, would ensure they were implemented.

[138] Arguments were also made to the effect that this Court has no jurisdiction to make orders against directors of a company in these circumstances. The Council relied on a number of decisions to support involving directors, and referred in particular to *Whangarei District Council v Sustainable Solvents Group Limited*<sup>13</sup> where Judge Kirkpatrick held that in addition to the companies, directors and shareholders should be subject to the same enforcement orders so that the people who control and own the companies are accountable in the same way.

[139] CFG argued that Judge Harland's decision in *Northland Regional Council v Udjur*<sup>14</sup> precludes the imposition of enforcement orders against CFG's directors. That case involved an application by the Council for interim enforcement orders requiring various parties to take steps to address potential contamination from an underground fuel storage tank. Interim orders were initially granted against one company. However, in a later decision the directors of that company opposed similar enforcement orders being imposed on them six months later. Judge Harland held that the prosecution provisions under s 340(3) of the Act

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<sup>13</sup> *Whangarei District Council v Sustainable Solvents Group Limited* [2020] NZEnvC 020 at [34].

<sup>14</sup> *Northland Regional Council v Udjur* [2010] NZEnvC 37 at [66].

cannot simply be imported to apply to applications for enforcement orders.

[140] CFG compared s 340(3), which states that “if a person other than a natural person is convicted of an offence against this Act, a director ... is guilty of the same offence if it is proved ...” to s 314. It noted that s 314 does not mention director liability and instead is directed at actions of a specific person or entity.

[141] We read ss 314 and 340(3) as being distinct from each other. Basically, s 314 enables the Court to make orders against persons, owners and occupiers to ensure adverse effects of an activity are avoided or remediated. Section 340(3) sets out the circumstances when a director is liable for offending by a company. Directors of companies have clear responsibilities under both the common law and the Companies Act legislation. Company directors are the face of a company and must, among others, ensure that a company fulfils its legal obligations. There may, therefore, be circumstances when it is appropriate to require a company and its directors to cease or take action to address adverse effects being caused by the company.

[142] CFG also argued that s 314 does not apply to Mr Sun because he has no personal knowledge of, or involvement in, the matters at issue, and none of the forestry activities undertaken by PF Olsen were on Mr Sun’s behalf. No evidence was provided to support those assertions. We find that Mr Sun did have involvement on behalf of CFG in the management of its forestry assets but can take the matter no further given the Council’s Amended Orders.

#### Wood Management Services

[143] WMS is the contracted forest manager for the Kanuka Forest and has been since October 2021. It is responsible for managing and operating the forest. It has not carried out any harvesting or other slash-generating activities within the forest. It acknowledges, however, that there is remedial work needing to be done within the forest and that it has worked cooperatively with CFG and the Council to de-risk the forest and avoid slash becoming mobilised and entering the wider catchment.

[144] WMS acknowledges that the forest it inherited under the contract contained harvesting debris that was poorly stored, and which was left on slopes where it could mobilise. In addition, there was harvesting debris in some of the stream beds within the forest. WMS submitted that the Council needs to acknowledge and accept its role in the history of events. The forest was harvested according to a resource consent granted to PF Olsen. WMS observed that there were no monitoring inspections, despite harvesting occurring during the period when large-scale debris mobilisation events intensified. Likewise there was no enforcement action or other compliance issues raised in respect of the harvesting land use consent.

[145] WMS considers that it should not be a party to the enforcement orders given that its access and management rights within the forest are entirely tied to its contract. That does not mean that it has no role in giving effect to the enforcement orders. As the contracted forest manager, it will be responsible for maintenance and remediation activities within the forest at the direction of the forest owner CFG. It argued that as its contractual term ends on 30 September 2026 it will be an unnecessary and inefficient process to require a formal release from the Court and a variation to the enforcement orders when the contractual term expires. Tying WMS to enforcement orders does not provide any enforcement rights to the Council that it does not already have, but neither does it afford any additional rights to WMS that may enable the company to comply with the orders after its contractual term.

[146] WMS has overseen the Kanuka Forest since 1 October 2021. Problems with debris formed part of advice from PF Olsen to CFG in July of 2019. Further problems became apparent from October 2021.

[147] It is clear that aside from engaging Terra Nova to inspect the forest in early 2022, it did not take any steps to undertake inspections itself. It took no steps to address debris management in 2022.

[148] We know from CFG's evidence that it relies on specialist forest management companies, who are engaged to manage its forests and undertake

harvesting and other forestry activities (including day-to-day management and maintenance). Aside from Mr Petrovic, WMS is CFG's 'face' at the Kanuka Forest and provides another point of contact for the Council.

[149] All agreed that further remedial works are required at the forest. We acknowledge that, as forest manager, WMS has undertaken remedial works to date. Mr Petrovic confirmed that budget would be made available to WMS to implement the remedial works as necessary.

[150] We see no basis on which to remove WMS as a respondent in this matter. We find that it is an occupier of the forest as that term is used in s 314(1)(da) of the Act but that it also has responsibilities to address the debris and sediment issues in the forest by virtue of its role as Forestry Manager since 2021, as problems with debris and sediment continue. If its contract should end in September 2026 and not be renewed, it can apply to the Court to vary the Orders.

### ***NES-CF and TRMP***

[151] CFG initially argued that changes are required to the enforcement orders to ensure they align or conform with the NES-CF.

#### *Permitted activities*

[152] CFG relied on the NES-CF regulations applying to harvesting.<sup>15</sup> Regulation 63 allows harvesting as a permitted activity provided certain conditions are complied with. It referred to regs 65 (sediment), 69 (slash and debris management) and 97 (discharge) and submitted that they allow those activities. It argued that those activities are permitted and/or that they can inform the extent of the Orders.

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<sup>15</sup> NES-CF, subpart 6 – Harvesting.



[153] In response, the Council advised that harvesting in the Kanuka Forest was undertaken pursuant to a resource consent issued in September 2014; that as the resource consent pre-dated the NES-CF<sup>16</sup> those regulations did not apply.

[154] Second, it submitted that harvesting activities could never have been permitted under reg 63 of the NES-CF. That is because reg 63 post dated harvesting and because most of the forest is red-zoned - that limits the amount of harvesting at any one time. It follows that it is not possible to import or rely on permitted activity conditions associated with harvesting so as to restrain or limit the enforcement orders being sought by the Council.

[155] It noted that reg 69 relating to slash and debris management is one of five permitted activity conditions that must be met if harvesting is to be undertaken as a permitted activity under reg 63.

[156] Further, to the extent the respondents may be arguing that remedial works at the forest fall within the definition of “harvesting”, such an interpretation is not correct. Harvesting is defined in reg 3 as follows:

**Harvesting**

- (a) means felling trees, extracting trees, thinning tree stems and extraction for sale or use (production thinning), processing trees into logs, loading logs onto trucks for delivery to processing plants; but
- (b) does not include:
  - (i) milling activities or processing timber; or
  - (ii) clearance of vegetation that is not commercial forest trees.

[157] The Council submitted that the required remedial works do not fall within that definition.

[158] Regulation 97 permits the discharge of some sediment into waterbodies. The Council submitted that CFG cannot rely on that. The activities to which the NES-CF apply are outlined in reg 5(1). The Council’s primary argument

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<sup>16</sup> Previously the Resource Management (National Environmental Standards for Planation Forestry) 2017 which came into force on 1 May 2018.

was that as the forest is not being harvested, discharges of sediment and forestry debris are not permitted under the NES-CF.

[159] It pointed out there is a more fundamental issue regarding the relevance of the NES-CF given that there is no reference to a regulation in s 319(2) of the Act. It submitted that if Parliament had intended a regulation to form part of the exemption it would have made that explicit. In any event, s 319(2)(b) provides the relevant qualifier that the adverse effects must have been expressly recognised at the time of granting the resource consent or approving the rule in the Plan or a designation, which is likely the reason why a more generalised instrument like a regulation is not included. It submitted that even if the NES-CF were relevant, the Court can still impose enforcement orders under s 314 without constraint.

[160] In its reply, CFG noted that its fundamental position is that given there is agreement between all the parties that enforcement orders are required, it is not necessary for the Court to determine whether or not the NES-CF applies. That is notwithstanding its submission that regulations are clearly relevant to the matters at issue, whether as useful guidance for crafting appropriate orders or as standards that directly apply to forestry activities occurring at the forest.

[161] While it argued that the Court does not need to make a decision on the applicability of the NES-CF, CFG did helpfully address the Council's submissions on this matter. It said to the extent that the Council submissions may have suggested that CFG's case was that the NES-CF apply retrospectively to harvesting activities, it says that is not its position. Nor does it seek to extend the NES-CF definition of harvesting beyond that set out in reg 3.

[162] Rather, its position is that harvesting occurred pursuant to a resource consent, was poorly performed, and that the Council's Orders seek a clean earth standard, whereas it simply seeks a degree of pragmatism. It proposed that the orders require it to "eliminate or minimise" the discharge of sediment and woody debris as opposed to ceasing it.

[163] We find that the NES-CF is not relevant to our determination. The Orders address required remedial works and do not relate to harvesting. If Order 1(a) were qualified with a reference to the NES-CF and the TRMP, that leaves open the matter of their applicability to discharges from the forest. It is clear from the nature of arguments raised in the hearing that there is a dispute as to the applicability or relevance of certain of the NES-CF and TRMP rules. An order of that nature would give rise to the same uncertainties as were expressed in the hearing.

[164] CFG also argued that, with respect to discharges of woody debris and/or sediment, the only relevant rule in the TRMP is rule 6.2.9(1) “diffuse discharges not provided for in another rule in this Plan”, which is a permitted activity rule with no permitted activity standards.

[165] On the issues raised regarding the TRMP, and its reference to rule 6.2.9(1), the Council argued that CFG’s submissions are incorrect. It notes that if they are correct, the rule would mean that all discharges of contaminants in Kanuka Forest are permitted. Putting to one side the implausibility of that proposition, it submitted that even if rule 6.2.9(1) did mean that all diffuse discharges at Kanuka Forest are permitted, that rule would not be an impediment to imposing enforcement orders under ss 17(1) and/or 314(1) and in terms of ss 319(2)(b) and 319(3) of the Act.

[166] For discharges of slash and felled trees at Kanuka Forest to not be subject to the prohibitions in s 15, they must be expressly allowed by a rule in a plan. The Council noted that discharge rule 6.2.9(1) does not expressly allow slash.

[167] Mr Hopkinson also observed that Ms Joanna Noble gave expert evidence that none of the discharges at or from the forest was expressly authorised by a rule in the TRMP. He noted that Ms Noble’s evidence was not challenged. That point aside, CFG has referred to the rule in isolation from other relevant rules. That is even though rule 6.2.9(1) applies to diffuse discharges not provided for in another rule in this plan.

[168] Counsel noted that there are several other rules that apply to diffuse discharges in the TRMP. One other relevant rule is 6.2.9(8), which provides that the following discharges are a discretionary activity:

Diffuse discharges that do not meet the permitted activity standards for the rules in s C6.2 or are not provided for by another rule in this Plan.

Note: This rule applies to diffuse discharges of stormwater from forestry roads and earthworks associated with plantation forestry. It prevails over regulation 97(1) in the Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017.

[169] Mr Hopkinson submitted that discharges of woody debris to streams are not diffuse discharges covered by rule 6.2.9(1) and do not meet the permitted activity standards in s C6.2. Diffuse discharge is defined as a non-point source discharge, which in turn is defined as “runoff or leachate from land onto or into land, waterbody or the sea”. Slash and woody debris do not fit this definition.

[170] Counsel also noted there are relevant rules within the Land Disturbance section 7 of the TRMP, including rule C7.1.6. In any event Mr Hopkinson argued that the Court does not need to make a determination on this issue given the parties are agreed that orders are required, the Court has unchallenged expert evidence that there are no rules in the TRMP expressly authorising the discharges and the legal submissions for the respondents did not identify all relevant rules.

[171] We find that no party identified a rule in the TRMP that authorised the nature and extent of the discharges that have and will occur if no remedial works are undertaken.

## **H. Outcome**

[172] We find that Enforcement Orders are necessary. Debris and sediment from commercial forestry activities remain an issue, and it is essential that they be prevented from leaving the forest.

[173] Orders are made under the following provisions of the Act:

- (a) s 314(1)(a)(i) and (ii) – to ensure that the discharge of contaminants ceases as it is contrary to s 15 and is, or is likely to be, dangerous and/or objectionable to such an extent that it has and is likely to have an adverse effect on the environment;
- (b) s 314(1)(b) – to ensure compliance with the Act and to avoid, remedy or mitigate any actual or likely adverse effects on the environment caused by or on behalf of the respondents, and in terms of s 314(1)(c) remedy or mitigate any adverse effects on the environment;
- (c) s 314(1)(da) – to amend, remedy or mitigate any actual or likely adverse effects on the environment relating to land of which the respondents are the owner or occupier.

[174] CFG was the owner of the Kanuka Forest and responsible for the works that have occurred at the Forest. It has employed two forest managers but retains ultimate control over the Forest.

[175] WMS has been responsible for management of the Forest since October 2021. While it did not undertake any harvesting activities, it has had responsibility for the Forest for nearly three years. It is appropriate to acknowledge that it did not create the forestry debris that was present in the Forest when it assumed management responsibilities/control. However, it has had several opportunities over the last three years to ascertain the extent of debris and plan for ensuring its safety or removal. First, prior to taking over responsibilities at the Forest. Second, once in control, to review the state of the forest. Third, having received advice from the Council about debris dams. It is also appropriate to acknowledge that it did take some steps having received that advice and has continued to be cooperative and helpful. The fact remains, however, that it is the forest manager and that role carries with it the obligation to comply with the Act and avoid, remedy, or mitigate adverse effects of discharges. We record again that CFG has said that it is responsible for funding WMS to undertake the necessary remedial works.

[176] For completeness, we find that the Court is not constrained by s 319(2) of the Act from making the orders. There is no doubt that the magnitude of destruction from forestry debris and sediment leaving harvested forests in the region could not have been in the minds of those involved in resource consenting or plan making.

[177] The respondents, in support of their stance on certain of the Orders, would have us look back to those who ‘caused’ the issues, with inadequate harvest, erosion and sediment control practices. They also look to apportion some blame to the Council for what has occurred, claiming that its monitoring or lack thereof contributed to events.

[178] While it is instructive to determine what led to the events experienced in Cyclones Hale and Gabrielle, among others, it does not assist in dealing with the problem that exists now.

[179] All agree that work needs to be done. We determine that a conservative and precautionary approach is required – one that ensures as far as is possible that works are undertaken under appropriate guidance and supervision to address the debris and sediment problem.

[180] If weather or safety concerns necessitate amendment of the Orders, application can be made. However, further delays cannot be countenanced.

[181] We make the Orders attached as **Annexure B** to this decision.

[182] Costs are reserved.

For the Court:




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**MJL Dickey**  
**Environment Judge**



### Annexure A

#### Chronology of Milestone Events

Date	Event
2013	CFG was incorporated and became the registered owner of Kanuka Forest.
March 2014	CFG engaged PF Olsen Limited ( <b>PF Olsen</b> ) as forest manager of Kanuka Forest.
15 September 2014	The Council issued CFG with resource consent LV-2014-106421-00 to enable harvesting activities to be carried out at Kanuka Forest.
2014-2019	Clear-fell harvesting was carried out at Kanuka Forest.
March-July 2019	<p>PF Olsen completes post-harvest work, including pulling debris back, post-harvest water controls and helicopter trial using grapple slung under helicopter.</p> <p>In July a debris dam was cleared on Mangatu Blocks Incorporation property. Debris remained on site and located in area where it could not be mobilised.</p>
5 July 2019	PF Olsen inform CFG that “we have completed all work that can be practicably and safely undertaken. As you will be aware it mainly involved excavator work on one or two landings and the heli/grapple/slash removal along parts of the waterway (at no costs as it was a trial). The feedback I have had is that it is not practicable or safe to remove any more slash from the waterways within Kanuka Forest but that a debris trap could be deployed at the lower reaches of the waterway as mitigation to future slash mobilisation. Mangatu Blocks has indicated that it does not support a debris trap on its land.”
December 2019	Expiry of resource consent LV-2014-106421-00.
September 2021	CFG engaged WMS to replace PF Olsen as forest manager of Kanuka Forest.
1 October 2021	Wood Marketing Services Limited begins managing Kanuka Forest.
October 2021 to August 2022	Three large log jams formed within streams at Kanuka Forest.
January-March 2022	WMS obtained reports from Terra Consulting documenting numerous stems and wind throw trees and debris in the main gully watercourse. It commenced some maintenance and drainage works.
September 2022	A Council scientist reviewed satellite imagery of pine forests near Te Karaka and identified potential log jams in streams at Kanuka Forest.
31 October 2022	GDC notifies WMS of potential debris jam.
3 November 2022	Council emailed images of suspected log jams and a map to CFG’s forest manager (Vince Udy of WMS).

Date	Event
2 December 2022	Council compliance inspection at Kanuka Forest identified significant non-compliance. Jamie Botes and Georgina Hollawy carry out a site inspection, including skid sites 001 and 002, and identify four log jams. Vince Udy and Neal Crane present. Subsequent review of Google images determines the log jams appeared after October 2021.
December 2022	Management plan of debris deposition in an unnamed tributary watercourse in the Kanuka Forest prepared.
22 December 2022	Council issued abatement notices to CFG and Mr Sun requiring removal of debris and other forestry waste material as well as a written remediation plan and requiring that the discharge of debris and other forestry waste material onto or into land that may enter water cease. Abatement notices were also issued to Neal Crane (Terra Contracting and Consulting, a forest management contractor) and Vincent Udy (the environmental planning manager for WMS).
10-11 January 2023	Cyclone Hale occurs, causing flooding and landslides in the Gisborne/Tairāwhiti region.
13-25 January 2023	Various steps taken to try and address issues hampered by lack of landowner consents, machinery shortages.
25 January 2023	WMS provided Council with a proposed management plan for complying with the abatement notices. Jamie Botes responds same day, stating “Thanks again for the submission of the management plan – we are happy with it.”
26 January 2023	Management plan provided to Mangatu for comment. Further comment sought on 6 March 2023.
13-14 February 2023	Cyclone Gabrielle occurs, causing flooding and landslides in the Gisborne/Tairāwhiti region.
7 March 2023	During an aerial survey of the forests in the Waimata River catchment, Council officers observed a large build-up of woody debris on Mangatu Block near the Waimata River.
16-21 March 2023	WMS undertakes 36 hours of clearing.
21 March 2023	WMS notified GDC that the debris dam within the main stream in Kanuka Forest had been mobilised during Cyclone Gabrielle.
22 March 2023	Council issued abatement notices to WMS requiring removal of debris and other forestry waste material as well as a written remediation plan and requiring that the discharge of forestry waste material onto or into land that may enter water cease. GDC approves debris management plan and Mangatu is informed.
22-24 March 2023	WMS undertakes 27 hours of clearing.
24 March 2023	Council compliance inspection at Kanuka Forest identified significant non-compliance.



Date	Event
25-28 March 2023	WMS clears slip material and undertakes 13 hours of clearing, and discusses debris management plan with Mangatu and the Council.
6 April 2023	Council check on remediation work, identified further material at risk of mobilisation.
28 April-23 May 2023	WMS provides updates to GDC on planning for works to manage debris on Mangatu Station.
30 May-6 June 2023	WMS carries out remedial work and work on water tables and 'coke bottle skid'.
14 June 2023	Council issued a field sheet to CFG and WMS recording the compliance concerns identified at Kanuka Forest during the 24 March and 6 April 2023 inspections.
Mid-June 2023	Neal Crane meets with Mangatu to discuss potential solutions. Mangatu Blocks proposes allowing a road to be built to remove the debris and relocate it to Kanuka Forest to allow it to be burned there.
26 June-July 2023	Digger established in forest to clear out river crossing, large culvert crossing cleared and cleaned, maintenance and rehabilitation work, remedial work on 'coke bottle skid'. Slash pulled back and drainage at top of the forest.
10 August 2023	Council compliance inspection at Kanuka Forest confirmed that there remained unaddressed compliance issues.
16 August 2023	An update on debris management was provided to Mangatu and GDC is provided with an update on maintenance and rehabilitation works, including photographs.
28 August 2023	Debris management on Mangatu Incorporation land at confluence of unnamed tributary of the Waimata River.
30 August 2023	A revised Debris Management Plan is provided to GDC and Mangatu. Rehabilitation works commenced to comply with GDC's request for maintenance works following the 10 August site inspection.
31 August 2023	Rework post-GDC compliance visit completed.
7 November 2023	November 2023 management plan satisfies compliance with the Environment Court enforcement orders number 3.
20 November 2023	Mangatu provides tentative approval of the 7 November 2023 Debris Management Plan.
14 December 2023	Council officers carry out compliance inspection of Kanuka Forest and discover two new log jams have formed in the Te Pahi Stream. One has been caused by ongoing mobilisation from the collapsed skid site 12. Woody debris remains on Mangatu's land.
January – March 2024	CFG and WMS remove approximately 2,000m <sup>3</sup> of material from Mangatu's land.

<b>Date</b>	<b>Event</b>
January 2024	Management Plan for achieving compliance with abatement notice 2022-A202 GDC-China Forestry Group New Zealand Company Limited, Kanuka Forest, January 2024.
20 March 2024	Council undertakes site inspection to inspect works on Mangatu land and confirms material has been removed.
30 April 2024	Council inspection of remedial works undertaken to date at Kanuka Forest. Kanuka Forest site visit to agree a way forward and establish a set of appropriate remedial measures for Kanuka Forest.
8 May 2024	Email from Andrew Shelton for GDC regarding the Mangatu works, stating “please take this email as satisfaction that you have met the requirements to remediate the site from the initial field sheet report”.
16 and 17 May 2024	Council officers undertake further inspections of Kanuka Forest to determine what areas remain at risk of collapse and require remedial work.
23 May 2024	Table of further remedial works sent to lawyers for WMS and CFG.
26 June 2024	Yuxia Sun removed as director of CFG.
5 July 2024	GDC scheduled to inspect Kanuka Forest.

**Annexure B**

**IN THE ENVIRONMENT COURT  
AT AUCKLAND**

**I TE KŌTI TAIAO O AOTEAROA  
KI TĀMAKI MAKĀURAU**

IN THE MATTER OF                      an application for enforcement  
order under s 316 of the Resource  
Management Act 1991

BETWEEN                                      GISBORNE DISTRICT  
COUNCIL

(ENV-2023-AKL-159)

Applicant

AND    CHINA FORESTRY GROUP  
NEW ZEALAND COMPANY  
LIMITED

First Respondent

YUXIA SUN

Second Respondent

WOOD MARKETING  
SERVICES LIMITED

Third Respondent

MANA TAIO TAIRĀWHITI

Interested Party

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**ENFORCEMENT ORDERS**  
(9 August 2024)

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A. The intent of the following enforcement orders is to eliminate (or if that cannot be achieved, minimise) discharges of woody debris from commercial forestry (including felled trees, windthrow trees, slash, harvesting debris) and/or sediment from commercial forestry activities into streams within Kanuka Forest and to ensure there is no further migration of woody debris from commercial forestry beyond Kanuka Forest.

1. That, pursuant to sections 15(1)(a), 15(1)(b), 17(3)(a), 17(3)(b), 314(1)(a)(i), 314(1)(a)(ii), 314(1)(b)(i), 314(1)(b)(ii), 314(1)(c), 314(1)(d), 314(1)(da), 314(2), 314(3), 314(4), 314(5), 315(2) and 315(3) of the Resource Management Act 1991 (RMA), **CHINA FORESTRY GROUP NEW ZEALAND COMPANY LIMITED and WOOD MARKETING SERVICES LIMITED**, (Respondents) are required, in respect of the forest known as “Kanuka Forest” at Waimata Valley Road, Gisborne (Legal Identifier GS6B/625) to:

(a) Cease discharging woody debris from commercial forestry (including felled trees, windthrow trees, slash, harvesting debris) and/or sediment from commercial forestry activities onto or into land where it may enter water.

***Slash removal and stabilisation works***

(b) Carry out the remedial works set out in the remedial plan and map at Appendix A of these orders by 30 October 2024.

(c) Obtain written certification from a suitably qualified and experienced independent expert (approved in writing by Gisborne District Council) that the foregoing works in Order 1(b) have been carried out to a high standard and are sufficient to eliminate or minimise the risk of skid sites/landings and/or tracks or roads collapsing.

- (d) Provide the foregoing certification (i.e. referred to in Order 1(c)) to Gisborne District Council by 15 November 2024.

***Water controls***

- (e) Install water controls at all skids/landings and on all tracks and roads (including but not limited to the locations referred to in the remedial plan and map at Appendix A) by 30 October 2024 to eliminate or minimise the risk of erosion, skid site collapse, track collapse or road collapse.
- (f) Ensure that the water controls installed under Order 1(e):
  - (i) Accord with the hydrological principles and guidelines provided by Gisborne District Council.
  - (ii) Prevent ponding except in specified areas, e.g. sedimentation traps.
  - (iii) Discharge runoff via diffuse/dispersed methods wherever possible.
  - (iv) Direct water to solid/stable ground and generally planar or convex slopes.
  - (v) Have discharges that are flumed, ideally with ‘socks’ or hard pipe flumes, with appropriate erosion control at both the break in slope and point of discharge.
  - (vi) Direct water away from fill.
  - (vii) Direct water away from skid sites/landings.
  - (viii) Direct water away from the edges of skid sites/landings.

- (ix) Manage the accumulation of runoff so that it does not exceed the capacity and erosion resistance of drains and water tables.
- (x) Include an adequate number of appropriately sized and spaced culverts and cut-offs on track/roads, in accordance with the “NZ Forest Road Engineering Manual - Operators Guide 2020” (NZ Forest Owners Association, October 2012, updated February 2020).
- (xi) Include secondary flow paths for situations where the capacity of any drain or water table may be exceeded.
- (g) Obtain written certification from a suitably qualified and experienced independent expert (approved in writing by Gisborne District Council) that the foregoing works in Order 1(e) are fit for purpose, consistent with, or better than, industry best practice, and conform with Order 1(f).
- (h) Provide the certification referred to in Order 1(g) to Gisborne District Council by 15 November 2024.

***Slash Catcher Network / Woody debris catching devices***

- (i) Install a network of slash catchers at Kanuka Forest by 31 August 2025, in accordance with the following process:
  - (i) The respondents will engage a suitably qualified and experienced independent expert (approved in writing by Gisborne District Council) to prepare an assessment report for a proposed network of slash catchers (the Slash Catcher Network) to be installed at Kanuka Forest to ensure that woody debris from commercial forestry (including felled trees, windthrow trees, slash, harvesting debris) is minimised within the waterways in

Kanuka Forest and will not migrate beyond the boundary of Kanuka Forest.

- (ii) The assessment report for the Slash Catcher Network must address the following matters in detail:
  - (1) Number and location of slash catchers;
  - (2) Catchment size that each slash catcher will service;
  - (3) Estimated volume of debris for each slash catcher location;
  - (4) Proposed design of each slash catcher. The proposed design of each slash catcher must be sufficient to address the estimated volume of debris, the hydraulic capacity of the waterway, its specific location and enable the objective of ensuring woody debris is minimised within the waterways in Kanuka Forest and does not migrate beyond the boundaries of Kanuka Forest;
  - (5) Effects on flows, erosion and river and bank stability;
  - (6) Potential impact if the slash catcher is overtopped or bypassed and how this risk will be mitigated;
  - (7) Access and maintenance, including proposed disposal areas; and
  - (8) The length of time the Slash Catcher Network is intended to be in place and to function, which must not be less than 10 years.

- (iii) The respondents will provide the assessment report for the Slash Catcher Network to Gisborne District Council by 15 November 2024.
  - (iv) If Gisborne District Council approves the Slash Catcher Network set out in the assessment report, the Respondents will lodge an application for a resource consent for the Slash Catcher Network within two months of receiving the Council's written approval.
  - (v) The Respondents will install the Slash Catcher Network within 12 months of receiving Resource Consent and in any event no later than 31 August 2025.
  - (vi) If the Slash Catcher Network assessment report is not approved by Gisborne District Council by 20 December 2024 and/or resource consent is not granted for the Slash Catcher Network by 1 April 2025, then Gisborne District Council can apply to the Court to vary these enforcement orders to either extend the timeframes stated above or require installation of an alternative Slash Catcher Network.
- (j) Inspect the slash catchers in the Slash Catcher Network after every rain event when either 15 mm/hr or 100mm/24-hours or more of rain is recorded at Gisborne District Council's gauge on the Waimata River @ Monowai Bridge, and ensure that:
- (i) The slash catchers are regularly cleared of woody debris from commercial forestry (including felled trees, windthrow trees, slash, harvesting debris) and indigenous vegetation.



- (ii) Any damage to the slash catchers is repaired promptly.
- (iii) The slash catchers are effectively preventing woody debris from commercial forestry (including felled trees, windthrow trees, slash, harvesting debris) from migrating beyond the boundary of Kanuka Forest.
- (k) Obtain written certification from a suitably qualified and experienced independent expert (who has been approved in writing by Gisborne District Council) that the Slash Catcher Network referred to above in Order 1(i) has been appropriately installed in accordance with the assessment report referred to in Order 1(i)(ii) and provide this certification to Gisborne District Council by 1 October 2025.

***Monitoring and maintenance***

- (l) Carry out ongoing monitoring of the remedial works and water controls referred to in Order 1(b) and Order 1(e) and carry out any necessary maintenance to ensure those works and water controls remain effective and pose low risk of triggering erosion, landslides and/or debris collapses.
- (m) Carry out ongoing monitoring of all streams in Kanuka Forest and if any further debris is mobilised into any streams in Kanuka Forest, remove that debris and place it in a location where it cannot be re-mobilised, within 28 days of discovering that debris.
- (n) Ensure a suitably qualified and experienced independent expert (approved in writing by Gisborne District Council):
  - (i) inspects all of the remedial works and water controls referred to above in Order 1(b) and Order 1(e) every six months from 15 December 2024 to 15 December 2027

and then every 12 months from 15 December 2027.

- (ii) inspects all of the remedial works and water controls referred to above in Order 1(b) and Order 1(e) following any rain event when 15 mm/hr or 100mm/24-hours or more of rain is recorded at Gisborne District Council's gauge on the Waimata River @ Monowai Bridge.
- (iii) prepares a further remedial works plan for any remedial works required to address issues identified in the inspections referred to in Order 1(n)(i) or Order 1(n)(ii) (which includes a timeframe for those works) and provides that plan to the Council for approval.
- (o) Carry out all remedial works set out in any approved further remedial works plan prepared under Order 1(n)(iii) within the timeframe specified in that plan and provides written confirmation to Gisborne District Council's enforcement manager of completion of those remedial works, within seven days of completion.
- (p) Ensure a suitably qualified and experienced independent expert (approved in writing by Gisborne District Council) inspects the Slash Catcher Network referred to above in Order 1(i) by 15 May 2025 and every six months thereafter to assess whether the slash catchers are operating effectively and whether they are being appropriately cleared and maintained.

### ***Reporting***

- (q) Provide a written inspection report to Gisborne District Council's enforcement manager within seven days of:
  - (i) Each inspection by an independent expert referred to at Order 1(n) above confirming that the inspection has

occurred, whether the remedial works and water controls are being appropriately maintained, and identifying whether any further remedial works or maintenance is required and if so, the timeframe within which the remedial works or maintenance should be undertaken by the respondents.

- (ii) Each slash catcher inspection referred to at Order 1(j) above confirming that the inspection has occurred and including descriptions of debris cleared, damage to the structure and any repairs undertaken.
- (iii) Each slash catcher inspection by an independent expert referred to at Order 1(p) above confirming that the inspection has occurred and reporting on the condition of the three slash catchers at the time of inspection, and whether the slash catchers are being appropriately cleared and maintained.
- (iv) Any inspection or debris removal referred to at Order 1(n) above.

### ***Retirement areas***

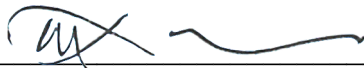
- (r) Take the following steps to permanently retire the area of Kanuka Forest specified on the map at Appendix B of these orders as a “retirement area”, from commercial use as plantation forestry and ensure the trees in this area are never harvested:
  - (i) By 30 September 2024 the first respondent will register a covenant on the certificate of title for Kanuka Forest (Legal Identifier GS6B/625), which binds potential future owners to this outcome.

- (ii) Leave the existing radiata pine trees within the retirement area to grow until 1 May 2027 and then either:
  - (1) Poison those trees by drilling manually into each remaining pine tree; or
  - (2) Removing the remaining pine trees by chainsaw.
- (s) Prepare a native revegetation plan for the permanent retirement area (which specified the species to be planted, the planting rate per hectare, and the timeframe for planting) and provide that to Gisborne District Council for approval by 15 November 2024.
- (t) If Gisborne District Council declines to approve that native revegetation plan, amend that native revegetation plan and resubmit it to Gisborne District Council within 28 days of Gisborne District Council declining to approve it.
- (u) Comply with the approved native revegetation plan on an ongoing basis.
- (v) Prepare a pest management plan for the permanent retirement area and provide that to Gisborne District Council for approval by 30 September 2024.
- (w) If Gisborne District Council declines to approve that pest management plan, amend that pest management plan and resubmit it to Gisborne District Council within 28 days of Gisborne District Council declining to approve it.
- (x) Comply with the approved pest management plan on an ongoing basis.

***Other orders***

- (1) The Respondents will comply with these enforcement orders from the time they are made and continue complying with these enforcement orders unless they are varied or cancelled by the Environment Court.
- (2) The Respondents will be jointly and severally liable for the actual and reasonable costs incurred by Gisborne District Council in ensuring compliance with these enforcement orders.
- (3) The Respondents will be jointly and severally liable for the actual and reasonable costs incurred by Gisborne District Council in engaging any independent expert to check compliance with these enforcement orders.
- (4) The foregoing orders will apply to the personal representatives, successors, and assigns of the Respondents to the same extent as they apply to the Respondents.
- (5) If it later transpires that the foregoing orders do not prevent discharges of woody debris from commercial forestry (including felled trees, windthrow trees, slash, harvesting debris) or sediment into streams within Kanuka Forest and/or do not prevent the migration of woody debris from commercial forestry beyond Kanuka Forest, Gisborne District Council can apply to the Court to vary these orders.
- (6) If a resource consent is not sought and granted by 1 April 2025 for the Slash Catcher Network (required in Order 1(i)), any party to these orders can apply to the Court to vary the deadline for compliance in Order 1(i).

- (7) The terms of these orders can later be varied by the Court on an application to the Court and/or by the filing of a consent memorandum by both parties.



MJL Dickey  
Environment Judge



## APPENDIX A: REMEDIAL PLAN FOR KANUKA FOREST

Item	Landing number/skid site	Description	Slash/debris volume (m <sup>3</sup> )			Environmental risk assessment	Remedial works
			Total	Remove <sup>17</sup>	Leave		
1	1	Big landing, major failure, slash pockets below landing.	900	850	50	Extreme	<b>1. Burn pockets of slash and old slash or end haul that slash.</b> <b>2. Use digger and long reach to pull back remaining slash to natural ground.</b> <b>3. Install water controls at and near landing, including controls to ensure water from the road leading to landing is cut off before reaching landing, and installing flumes at all discharge points that direct water to stable ground.</b>
2	1A	Sidecast landing, cracks in young trees.	200	180	20	Very high	<b>1. Pull back slash with digger.</b> <b>2. Install water controls at and near landing.</b>
3	1B	Processor waste and slash over side.	300	260	40	Extreme	<b>1. Use long reach to pull back slash.</b> <b>2. Install water controls at and near landing.</b>

<sup>17</sup> Namely by removing completely, burning, or pulling back to a location from where it cannot be remobilised.

4	2	Cow Paddock catchment. Slash over side moving.	500	450	50	Very high	1. Burn old slash or end haul that slash. Use digger and long reach to pull back remaining slash to natural ground. 2. Install water controls at and near landing.
5	3	Big windrow of slash.	2,000	1,950	50	Very high	1. Burn old slash or end haul that slash. Use digger and long reach to pull back remaining slash to natural ground. 2. Install water controls at and near landing.
6	Stream below skid 3	Log jam has formed in stream below skid 3.	?	?	?	Very high	Remove log jam from stream below this skid and burn log jam material or place it in a location where it cannot be mobilised.
7	3A	Slash over side.	200	180	20	Very high	1. Pull back slash with digger. 2. Install water controls at and near landing.
8	3B	Slash over side.	200	180	20	Very high	1. Pull back slash with digger. 2. Install water controls at and near landing.



9	<b>4</b>	Covered in young trees, old slash and debris over side.	300	250	50	Very high	<b>1. Pull back slash with digger.</b> <b>2. Install water controls at and near landing.</b>
10	<b>5</b>	South side, large cracks and slash over the side.	2,500	2,450	50	Extreme	<b>1. Burn slash on top or end haul that slash.</b> <b>2. Use digger and long reach to pull back remaining slash to natural ground.</b> <b>3. Install water controls at and near landing.</b>
11	<b>5A</b>	North side.	500	450	50	Very high	<b>1. Burn slash on top or end haul that slash.</b> <b>2. Use digger and long reach to pull back remaining slash to natural ground.</b> <b>3. Install water controls at and near landing.</b>
12	<b>6</b>	Old landing, overgrown, cracks and slash over side	500	450	50	Very high	<b>1. Use digger and long reach to pull back remaining slash to natural ground.</b> <b>2. Install water controls at and near landing.</b>
13	<b>7</b>	Southern-most landing, perched slash.	800	750	50	Extreme	<b>1. Burn slash on top or end haul that slash.</b> <b>2. Use digger and long reach to pull back remaining slash to natural ground.</b> <b>3. Install water controls at and near landing.</b>

14	<b>8</b>	Slash pile over edge of skid. Cracks in area of young trees. Small slip on north side.	250	200	50	Very high	<b>1. Pull back slash with digger. 2. Install water controls at and near landing.</b>
15	<b>8A</b>	Small, active slip on north side.	200	180	20	Very high	<b>1. Pull back slip soil/material with digger. 2. Install water controls at and near landing.</b>
16	<b>9</b>	New slump, old debris moving, earthflow area.	300	250	50	Very high	<b>1. Pull back slip soil/material with digger. 2. Install water controls at and near landing.</b>
17	<b>10</b>	Old slash over side, feeder gully at head of catchment, earthflow	350	300	50	Very high	<b>1. Use digger and long reach to pull back remaining slash to natural ground. 2. Install water controls at and near landing.</b>
18	<b>11</b>	Unused skid. Small slip.	20	20	TBC	Low	<b>1. Pull back debris from edge of skid with digger. 2. Install water controls at and near landing.</b>

19	<b>12</b>	Need to redirect water, north side failure, south slash pocket.	500	450	50	Extreme	<ol style="list-style-type: none"> <li>1. Burn southern slash pocket or end haul that slash.</li> <li>2. Pull back slash to hard ground.</li> <li>3. Install water controls at and near landing, including redirecting water away from active slip.</li> <li>4. Stabilise benched areas.</li> </ol>
20	<b>12A</b>	Unused skid. Check water controls	20	20	TBC	Low	<ol style="list-style-type: none"> <li>1. Pull back slipping material with digger.</li> <li>2. Install water controls at and near landing.</li> </ol>
21	<b>13</b>	Small amount of slash over side.	150	130	20	Very high	<ol style="list-style-type: none"> <li>1. Pull back debris from edge of skid with digger.</li> <li>2. Install water controls at and near landing.</li> </ol>
22	<b>14</b>	Large amount of slash on top and over side with cracks.	800	750	50	Very high	<ol style="list-style-type: none"> <li>1. Pull back slash from side of skid with long reach.</li> <li>2. Then burn all slash or move it to original planned location of skid 14.</li> <li>3. Install water controls at and near landing.</li> </ol>
23	<b>15</b>	Old landing, split levels, pockets of slash on eastern & southern sides.	500	450	50	Very high	<ol style="list-style-type: none"> <li>1. Pull back slash with long reach.</li> <li>2. Pull back unstable fill.</li> <li>3. Install water controls at and near landing.</li> </ol>

24	<b>16</b>	Old slash on top, slash over side with cracks to the south. Water ponding in areas of heavy machine tracking.	600	550	50	Very high	<b>1. Burn slash on top or end haul that slash.</b> <b>2. Use digger and long reach to pull back remaining slash to natural ground.</b> <b>3. Remediate channels and low points caused by machine tracking.</b> <b>4. Install water controls at and near landing.</b>
25	<b>16A</b>	Old slash to East slumping.	800	750	50	Extreme	<b>1. Burn slash on top or end haul that slash.</b> <b>2. Use digger and long reach to pull back remaining slash to natural ground.</b> <b>3. Pull back unstable fill.</b> <b>4. Install water controls at and near landing.</b>
26	<b>16B</b>	Slash on top, fresh slip, cracks in slash over the side.	800	750	50	Extreme	<b>1. Burn slash on top or end haul that slash.</b> <b>2. Use digger and long reach to pull back remaining slash to natural ground.</b> <b>3. Pull back unstable fill.</b> <b>4. Install water controls at and near landing.</b>
27	<b>PF Olsen dump</b>	Slash dumped on Mangatu's land.	1,200	1,200	0	Low	<b>Burn if Mangatu approves or move back into Kanuka Forest to location where it cannot be mobilised.</b>
28	<b>B</b>	Old landing with slash pushed into native vegetation.	500	450	50	Medium	<b>1. Pull back slash.</b> <b>2. Install water controls at and near landing.</b>
29	<b>1.1</b>	Slash birds nest below landing 1 - north patch.	150	140	10	Extreme	<b>Burn (or end haul that slash), and then bench if needed.</b>

30	1.2	Slash birds nest below landing 1 - south patch.	200	180	20	Extreme	<b>Burn (or end haul that slash), and then bench if needed.</b>
31	12.1	Slash birds nest below landing 12 - south patch.	500	480	20	High	<b>Burn (or end haul that slash), and then bench if needed.</b>
		<i>Total current slash volume on landings</i>	<i>16,740</i>	<i>15,650</i>	<i>1,090</i>		
32	Ford	6 – 8 windthrown trees in Horoweka Stream.	20	18	2	Very high	<b>Use machine with winch to pull out trees blocking the stream.</b>
33	Te Pahi Stream - DD1	Log jam in stream below landing 12.	300	250	50	Extreme	<b>Remove by helicopter with slash grapple and place in location where it cannot be re-mobilised.</b>
34	Te Pahi Stream - DD2	Log jam in tributary stream (200m east of DD1 and 300m upstream of forest boundary).	100	80	20	Extreme	<b>Remove debris from stream and place in location where it cannot be re-mobilised. (Removal can be by machine using winch rope or by helicopter.)</b>

35	<b>Te Pahi Stream - DD3</b>	New log jam in Te Pahi Stream (150m upstream of boundary). Some young trees speared in stream.	20	18	2	Extreme	<b>Remove 8 - 12 full stems from stream and place in location where it cannot be re-mobilised. (Removal can be by machine using winch rope or by helicopter.)</b>
36	<b>Debris in streams</b>	Debris is scattered in various streams in forest marked as D3 – D7 in Council *.kmz file.	80	70	10	Very High	<b>Use helicopter with slash grapple to pick out slash at locations marked “D3” to “D7” and place it in secure locations where it cannot be re-mobilised.</b>
7	<b>Stems on slope below skid 12</b>					Very High	<b>All woody debris that can be extracted by helicopter, or other means, should be removed from drainage lines and watercourses.</b>

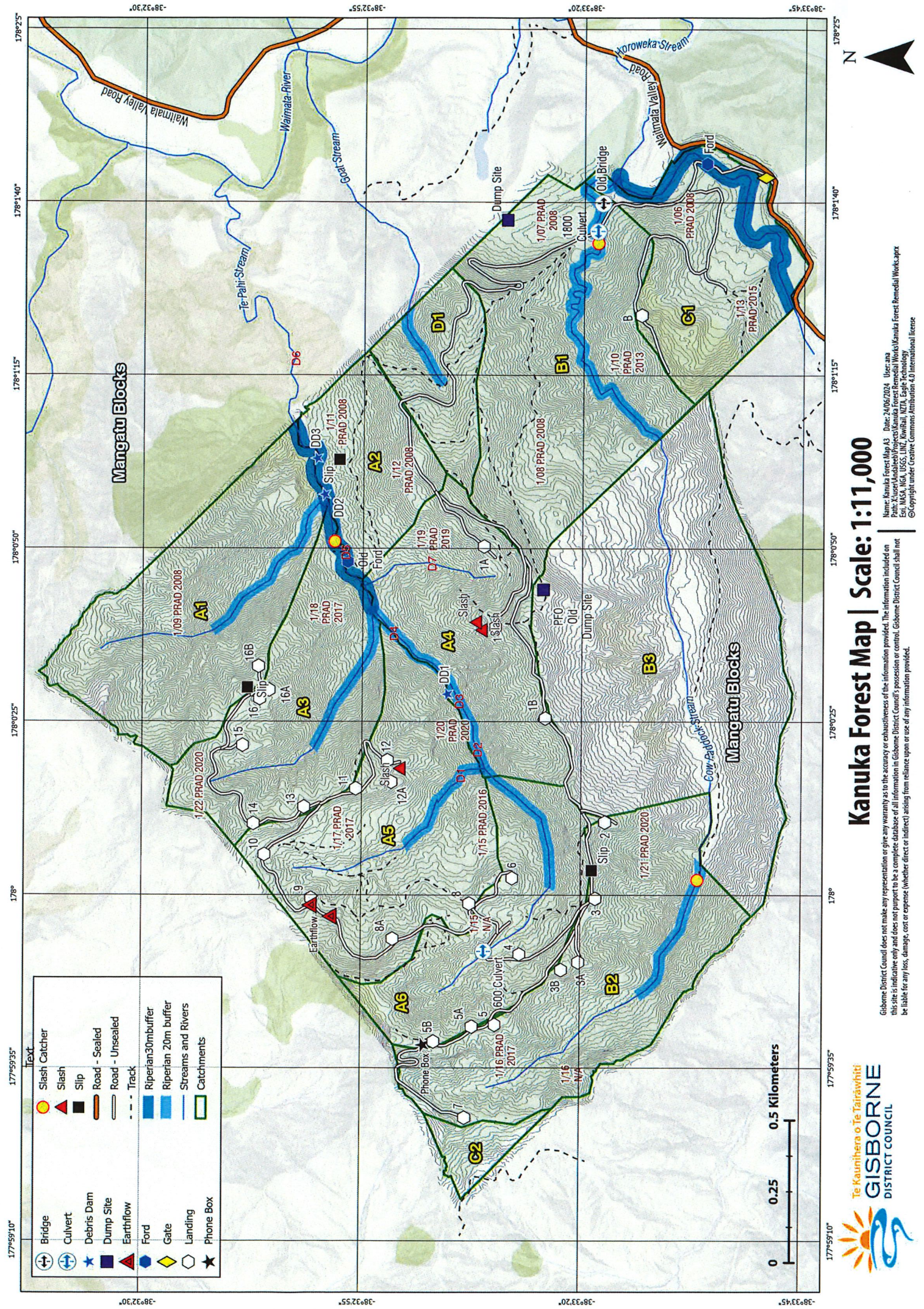
38	<b>Roading - various locations</b>						<ol style="list-style-type: none"> <li>1. Unblock the sediment sump between skid 16 and the top of the road.</li> <li>2. Unblock the water drain 100m along road from skid 15 towards skid 14.</li> <li>3. Remove slumped roadside fill from drain on road heading towards skid 14.</li> <li>4. Install culvert on road heading towards skid 14.</li> <li>5. Remove fill blocking the drain further 50 metres along road heading towards skid 14.</li> <li>6. Install additional water controls between skid 11 and skid 12 and install flume from culvert to divert water away from eroded area below culvert.</li> <li>7. Fix road culvert between skid 9 &amp; 10 so it is no longer perched and causing scouring of the slope below its outlet point.</li> <li>8. Reinstate and stabilise road culvert on road above skid 1.</li> </ol>
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39	<b>Skid 5B</b>	Slash over the edge on southeastern side of skid above standing trees-moderate risk of mobilizing.	200	180	20	Very High	<b>1. Pull back slash from edge of skid and burn or end haul that slash. 2. Install water controls at and near landing.</b>
40	<b>Cows paddock</b>	Five accumulations of slash/harvesting debris on floodplain.	TBC	TBC	TBC	High	Remove this material and place in a location where it cannot be mobilised.
		<i>Total current slash volume in stream</i>	<i>520</i>	<i>436</i>	<i>84</i>		
		<b><i>Total current slash volume in forest</i></b>	<b><i>17,260</i></b>	<b><i>16,086</i></b>	<b><i>1,174</i></b>		



## REMEDIAL PLAN MAP FOR KANUKA FOREST










**APPENDIX B: MAP OF KANUKA FOREST SHOWING  
RETIREMENT AREAS**





Mangatu Blk


Landing


Slash


Road - Sealed

Road - Unsealed

Track

Streams and Rivers

Retirement Area

Kanuka Forest Boundary

