

31 October 2017

Proposed Afforestation: Mākareao, Dunback

Wilding Tree Risk Assessment

Background

Ngai Tahu Forest Estates Limited (NTFE) is applying for resource consent to establish a Pinus Radiata forest on approximately 900 hectares of land on a 1264 hectare property at Mākareao, Dunback.

The Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017 (NES-PF) defines “Afforestation” as a permitted activity if regulations 10, 11, 12, 13 and 14(1) and 14(2) are complied with.

Compliance with regulation 11 of the NES-FP requires a “wilding tree risk” score of 11 or less for the afforestation area. If regulation 11 is not met (the wilding tree risk score is 12 or more), then afforestation under the NES-PF becomes a restricted discretionary activity with territorial authority and regional council discretion under regulation 17 restricted to—

- (a) the level of wilding tree risk;
- (b) the mitigation proposed to restrict wilding conifer spread, including the species to be planted;
- (c) the effects on the values of the significant natural area or outstanding natural feature or landscape;
- (d) the information and monitoring requirements.

Regulation 11(1) and (2) sets out the requirements to calculate a “wilding tree risk” score and defines the qualifications and experience required of the person completing the assessment. I confirm I satisfy the requirements of a competent person under regulation 11(2) of the NES-PF.

This report utilises the “Wilding Tree Risk Calculator” issued on the 27 Sept 2017 from the Ministry for Primary Industries website for implementation of the NES-PF together with guidelines prepared by Scion (Version 07011: June 2012). The Wilding Tree Risk Calculator can be found at: <https://www.mpi.govt.nz/growing-and-harvesting/forestry/national-environmental-standards-for-plantation-forestry/wilding-tree-risk-calculator/>

Wilding Tree Risk Assessment

The calculation of the Wilding Tree Risk requires an assessment of multiple sites across the proposed plantation area.

The proposed plantation area of the Mākareao property has been subdivided into 3 distinct Blocks containing 18 assessment Sites. Block “A” contains 9 perimeter sites, Block “B” contains 5 perimeter sites and Block C contains 4 sites. The location of these Blocks and Sites are set out in Figure 1 appended to this report.

The Wilding Tree Risk assessment calculates the susceptibility of wilding spread on adjoining land within two kilometres downwind of the Site in question (as required by the guidelines).

The Wilding Tree Risk calculator requires the assessment of 5 indicator variables for each site. These are discussed with reference to the guidelines as follows:

1. Indicator 1: Spreading Vigour of Species

The Applicant intends to plant *Pinus radiata*. This species is assigned a low spreading risk score of 1 (out of a possible score of 5).

2. Indicator 2: Palatability of Species

The palatability of *Pinus Radiata* is assigned a low risk score of 1 (out of a possible score of 4).

3. Indicator 3: Siting of New Plantation relative to prevailing wind.

This indicator requires an assessment of the prevailing wind direction (and seed spread risk) during the late summer, autumn and early winter months when cones mature and release seed.

Climate data for Dunedin City indicate prevailing winds are experienced from the South-West and Northerly directions. The South-West (southerly) winds will be driven into and over the southern faces of the Razorback Range whereas the northerly winds will flow over the property onto intensive farmland.

The southern boundaries of the proposed planting area (on Blocks A & B) are categorised as having “lee slopes” relative to northerly winds “with strong gusts” yielding a risk score of 2 and in some cases 3.

The northern boundaries of the proposed planting area (on Block C) do not fit neatly into one of the four available categories. The planting boundaries directly below the Razorback Range (Block C: Sites 15, 16, 17 & 18) cannot be described as “elevated take-off sites” or “sloping land, fully exposed to strong/prevaling winds”. The proposed planting boundaries are mid to lower slope, and partially sheltered by the southern foothills. The planting avoids the elevated ridges and are located at an altitude approximately 200m below and over 1.0 km in distance away from the tops of the Razorback Ridge. Notwithstanding this, the Wilding Tree Risk assessment tool assigns the northern boundaries of Block C a risk score of 4.

4. Indicator 4: Downwind Land Use - Grazing.

This assessment requires each proposed planting Block (A, B, and C) to be assessed independently. For instance, Block A is assessed assuming the existing landuse of Block B and C continues to be grazed farmland. The assessment however considers the wilding tree risk of withdrawing grazing on the 155 hectares of grassland, tussock and scrubland above Block C and below the Razorback Range.

The Applicant proposes to withdraw grazing on this 155 hectares to enable regeneration and full coverage of native bush and tussock on this area. Sites 15 to 18 on Block C therefore incur a risk score of 4 (No Grazing) with the remainder of sites on Blocks A & B scoring between 0 and 3 (reflecting “intensive grazing on developed pasture” to “extensive grazing only” on unimproved grassland).

5. Indicator 5: Downwind Land Use – Vegetation Cover.

The 155 hectares of unplanted area below the Razorback Range is categorised as “Forest/ scrubland/tussock/grassland with few gaps”. This is a forward looking assessment based on the removal of grazing and spraying upon commencement of afforestation of the lower slopes. The risk score for Block C sites is therefore 2. Blocks A & B incur risks scores between 0 and 2.

Combined Total Score

The combined Wilding Tree Risk score for each site is shown on the table below.

		1	2	3	4	5		
Block	Site	Spread Vigour of Species	Palatability of Species	Siting of Plantation (Wind*)	Downwind Land use (Grazing)	Downwind Vegetation Cover	Total Risk (Max 21)	* Wind Risk
A	Site: 1	1	1	2	0	2	0	Southerly
	Site: 2	1	1	2	2	2	8	Southerly
	Site: 3	1	1	2	2	2	8	Southerly
	Site: 4	1	1	2	3	2	9	Southerly
	Site: 5	1	1	2	3	2	9	Southerly
	Site: 6	1	1	2	0	0	0	Northerly
	Site: 7	1	1	2	0	0	0	Northerly
	Site: 8	1	1	2	0	0	0	Northerly
	Site: 9	1	1	3	0	0	0	Northerly
B	Site: 10	1	1	2	2	2	8	Southerly
	Site: 11	1	1	2	2	2	8	Southerly
	Site: 12	1	1	2	2	2	8	Northerly
	Site: 13	1	1	2	0	0	0	Northerly
	Site: 14	1	1	2	0	0	0	Northerly
C	Site: 15	1	1	4	4	2	12	Southerly
	Site: 16	1	1	4	4	2	12	Southerly
	Site: 17	1	1	4	4	2	12	Southerly
	Site: 18	1	1	4	4	2	12	Southerly
Note: If Indicator 1, 4, or 5 = 0, then total risk equals zero								

Discussion

The Applicant proposes to plant 3 Blocks on the Mākareao property.

Blocks A & B have a wilding tree risk score of between 0 and 9 and under the NES-PF comply with regulation 11(3) as a permitted activity.

Block C has a wilding tree risk score of 12 and under the NES-PF becomes a restricted discretionary activity. Block C achieves a score of 12 because the Applicant proposed to cease grazing on the adjoining 155 hectares of depleted scrubland and manage this area for native bush reversion. In interpreting a wilding tree risk score of 12 out of a possible risk score of 21, the guidelines note that *Pinus radiata* is a reluctant spreader above 6-700m. The Applicant does not propose to continue grazing the 155 ha simply to achieve a permitted activity status.

The proposal to plant Block C and to cease farming on the adjoining 155 ha is a restricted discretionary activity under the NES-PF with territorial authority and regional council discretion under regulation 17 restricted to—

- the level of wilding tree risk;
- the mitigation proposed to restrict wilding conifer spread, including the species to be planted;
- the effects on the values of the significant natural area or outstanding natural feature or landscape; and
- the information and monitoring requirements.

Prepared by **Edwin Jansen,**

BSc, BForSci (H), Dip Bus Studies (Acct).

Email: edwin.jansen@ngaitahu.iwi.nz

DDI: 03 377 8268; Mobile: 021 229 4135

Figure 1: Blocks A, B, and C, Sites 1 to 18

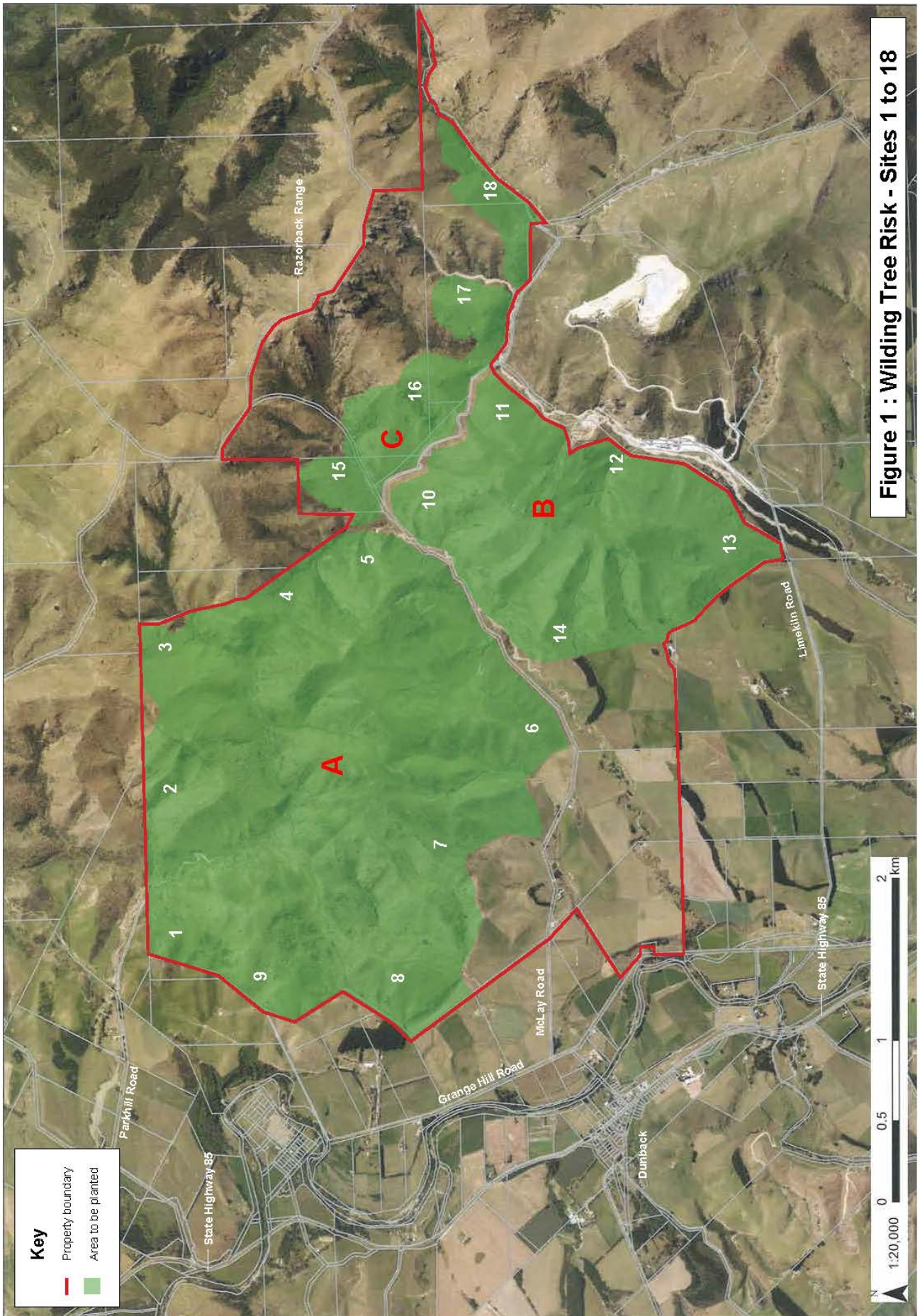


Figure 1 : Wilding Tree Risk - Sites 1 to 18