

Wilding Risk Assessment Example

Wilding Risk Assessment

(This section is not required for applications planting only indigenous species)

Blocks 3, 4 & 5 (Manga Manga Blocks)

Calculating Wilding Spread Risk From New Plantings ^{a,b}

Applicants must calculate the risk of wilding conifers based on the land type and the species proposed to be used. Use the section below to calculate your total wilding risk score. Applications must score below 12 to be eligible.

1. SPECIES – GROWTH (score for one species only)

Spreading vigour varies with species

Redwoods, Leyland cypresses, cedars and spruces (very low risk – no need to proceed further)	0
Radiata (<i>P. radiata</i>) and ponderosa (<i>P. ponderosa</i>) pine, Lawsons cypress (<i>C. lawsoniana</i>)	1
Muricata (<i>P. muricata</i>) and maritime (<i>P. pinaster</i>) pine and larches (<i>Larix spp.</i>)	2
Corsican (<i>P. nigra</i>) and mountain/dwarf mountain (<i>P. uncinata/mugo</i>) pine	3
Douglas-fir g (<i>Ps. menziesii</i>), Scots pine (<i>P. sylvestris</i>)	4 ^g
Lodgepole/contorta pine (<i>P. contorta</i>)	5
Enter score (0, 1, 2, 3, 4 or 5) here	1

2. SPECIES – PALATABILITY

Palatability varies with species

Radiata, maritime and ponderosa pine	1
Lodgepole and muricata pine and European larch	2
Scots and mountain/dwarf mountain pine and Douglas-fir	3
Corsican pine	4
Enter score (1, 2, 3, or 4) here	1

3 SITING OF NEW PLANTING ^{c, d}

Trees are located on

Sites well sheltered from prevalent and strong winds	0
Flat sites (<100), partially exposed to strong/prevalent winds	1
Lea slopes where strong eddy gusts are likely	2
Flat sites (<100), fully exposed to strong/prevalent winds	3
Either elevated "take-off" sites, (ridge-tops, or base of exposed slopes >100) or sloping land, fully exposed to strong/prevalent winds	4
Enter score (0, 1, 2, 3, or 4) here	2

4. DOWNWIND LANDUSE – GRAZING

Wilding establishment influenced by grazing (particularly with sheep)

Intensive grazing on developed pasture	0 ^d
Regular mob stocking with sheep ^e	1 ^d
Semi-improved grazing (sheep/cattle)/ occasional mob stocking with sheep	2 ^d
Extensive grazing only ^e	3 ^d
No grazing	4 ^d
Enter score (0, 1, 2, 3, or 4) here	2

5. DOWNWIND VEGETATION COVER (if Douglas-fir involved see g in Notes)

Wilding establishment influenced by competition from existing vegetation

Plantation forest, developed pasture (intensive grazing)	0 ^d
Native forest, shrubland/tussock/grassland with a continuous and dense vegetation cover	1 ^d
Forest/shrubland/tussock/grassland with few gaps	2 ^d
Open forest and/or scattered patches of dense shrubland/tussock/grassland with many gaps	3 ^d
Open slips/rockland and/or light, low-stature shrubland/tussock/grassland	4 ^d
Enter score (0, 1, 2, 3, or 4) here	

TOTAL WILDING RISK SCORE 0

(See Assessment Notes below for interpretation) 6

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Wilding Risk Assessment Notes

- A score of 12 or more indicates a high risk of spread from the planted site.
- BUT, if a score of "0" is obtained in 1. SPECIES – GROWTH, or 4. DOWNWIND LANDUSE – GRAZING, or 5. DOWNWIND VEGETATION COVER, the total score automatically becomes "0" (i.e., there is no risk of wilding spread). Although, note the need to test long distance spread risk from exposed sites (scoring 3 or 4 in 3 - Siting)

A high risk does not necessarily mean that trees should not be planted. A change of species, or siting, or downwind land management can significantly lower spread risk. Conversely, a change of species when replanting after harvesting might increase spread risk. If there is a risk of wilding spread, then a commitment to wilding removal should be made - this may not be onerous, particularly for scattered trees (often outliers from distant spread).

NOTES:

- a** Multiple calculations. As the above score sheet indicates, there are a range of factors influencing the risk of spread. The impact of these will vary from site to site, both within a single forest and on the surrounding land. Therefore, spread risk will need to be calculated not just once, but a number of times in order to accommodate the range of sites represented within and outside the forest.
- b** Risk assessment location. This DSS was compiled primarily for use in the drier hill and high country areas of the eastern South Island, where low-stature grasslands (and to a lesser extent, shrublands) often dominate, and where opportunities for wilding establishment are greatest. Wilding spread risk is considerably less in the warmer, wetter parts of New Zealand (mostly present in the North Island), due to higher-stature vegetation covers being more vigorous and complete, and to poorer seed production in some species (such as Douglas-fir).
- c** Altitude. The coning ability of some species drops off quickly with increasing altitude. Contorta and mountain pine will readily establish and cone above native treeline. Scots pine and Douglas-fir will establish at tree line. Corsican pine and Douglas-fir coning drops off quickly above 800 and 1100 m respectively – the limit for Scots pine coning is unknown. Radiata pine is a reluctant spreader above 6-700 m, except on the warmer sites. The altitudinal establishment and coning limits for muricata pine and larch are unknown.
- d** Long distance spread. This is quite possible if a score of 3 or 4 is scored in "Siting" (in 3) especially if Douglas-fir, larch or Corsican, contorta, mountain or Scots pines are involved (all have light seed which is readily dispersed greater distances by wind). In these circumstances, the risk of spread relative to grazing (4) and vegetation cover (5) needs to be scored out to beyond the "fringe" area, to a distance of 2 km. ("Fringe" infers a distance from seed source of 1 – 200m)
- e** Regular mob stocking. If the pasture is only semi-improved and the seed rain is heavy, such as alongside mature conifers (particularly Corsican pine – the least palatable conifer), regular mob stocking may not prevent wilding establishment over the long term.
- f** Light grazing. This will reduce wilding establishment, but given enough time, some wildings will eventually grow to above browse height. Palatability of introduced conifers is (in decreasing order): radiata > ponderosa > contorta > larch > Scots pine > Douglas fir > Corsican pine.
- g** Douglas-fir.
 - i) This species is more shade tolerant than the other common conifers. Therefore, it is more likely to invade under forest canopy gaps and within low-stature (<2m tall) shrublands.
 - ii) Douglas-fir requires some drought stress during bud formation in late summer to ensure cone buds are formed in the following season; otherwise they become vegetative buds. Hence, coning is significantly less in moister (and often warmer) parts of NZ (e.g., much of N. Island, west coast of S. Island). Therefore, in these areas, Douglas-fir should be given a score of "1" (not "4") in "SPECIES – GROWTH".
- h** Native forests .v. plantations of introduced trees. Man-made plantations are much more likely to have a continuous canopy cover, than are existing native forests, where disturbance and canopy gaps are a normal part of the natural succession cycle

Further guidance on how to calculate wilding spread risk can be found in the following document:

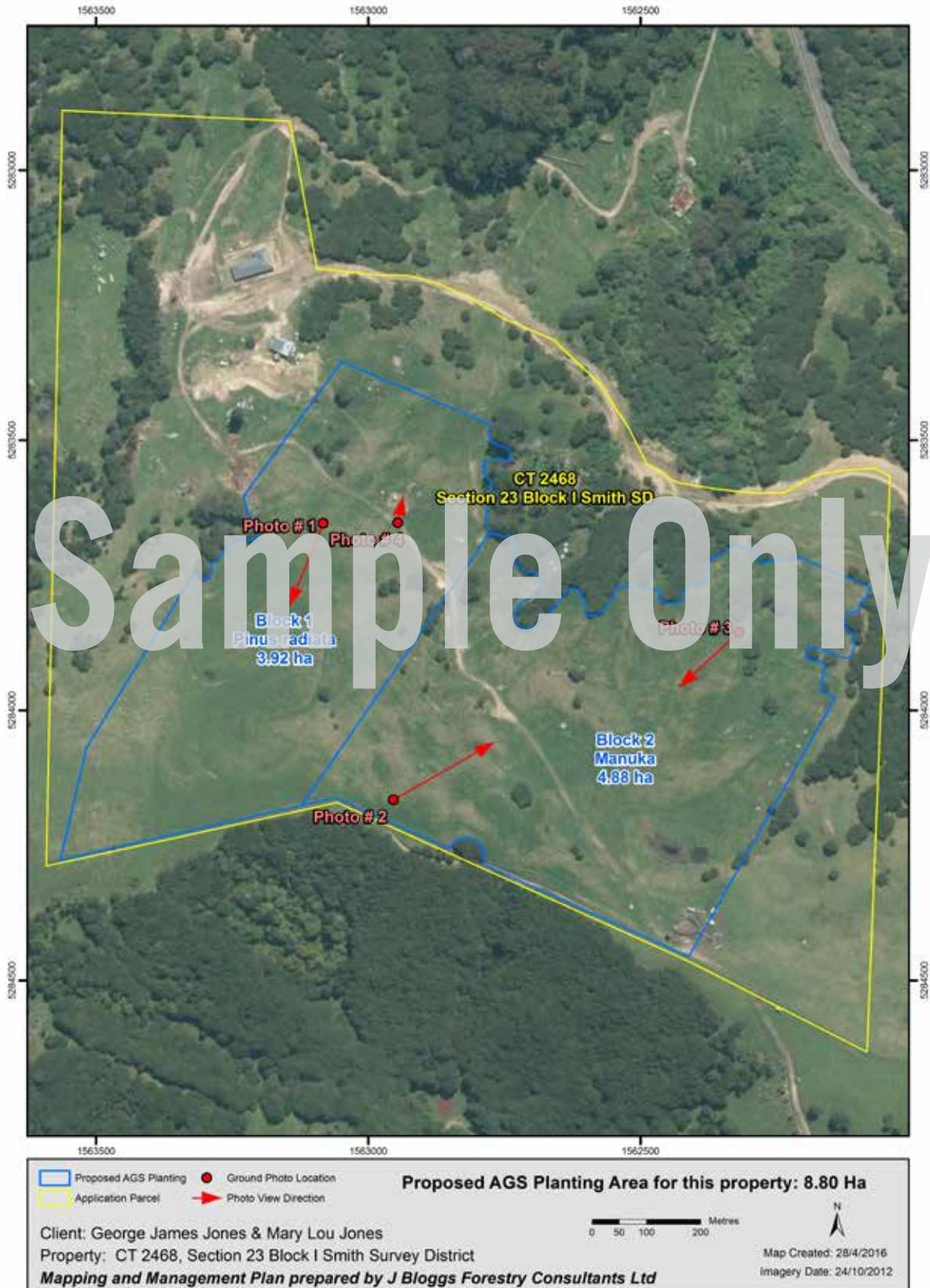
http://www.wildingconifers.org.nz/images/wilding/articles/Strategy/Guidelines_for_using_the_DSS_for_new_forest_plantings.pdf

Map Examples

Supporting Documentation

Site Plan – Blocks 1 & 2

Afforestation Grant Scheme - Proposed 2017 Planting GJ & ML Jones – Blocks 1 & 2



Map Examples

Supporting Documentation

Site Photos - Blocks 1 & 2 (Date of site photos: 21 January 2016)

Block 1 – Radiata (photo 1)



Photo 4 – slip

Map Examples

Supporting Documentation

Block 2 – Manuka (photo 2)



Sample Only

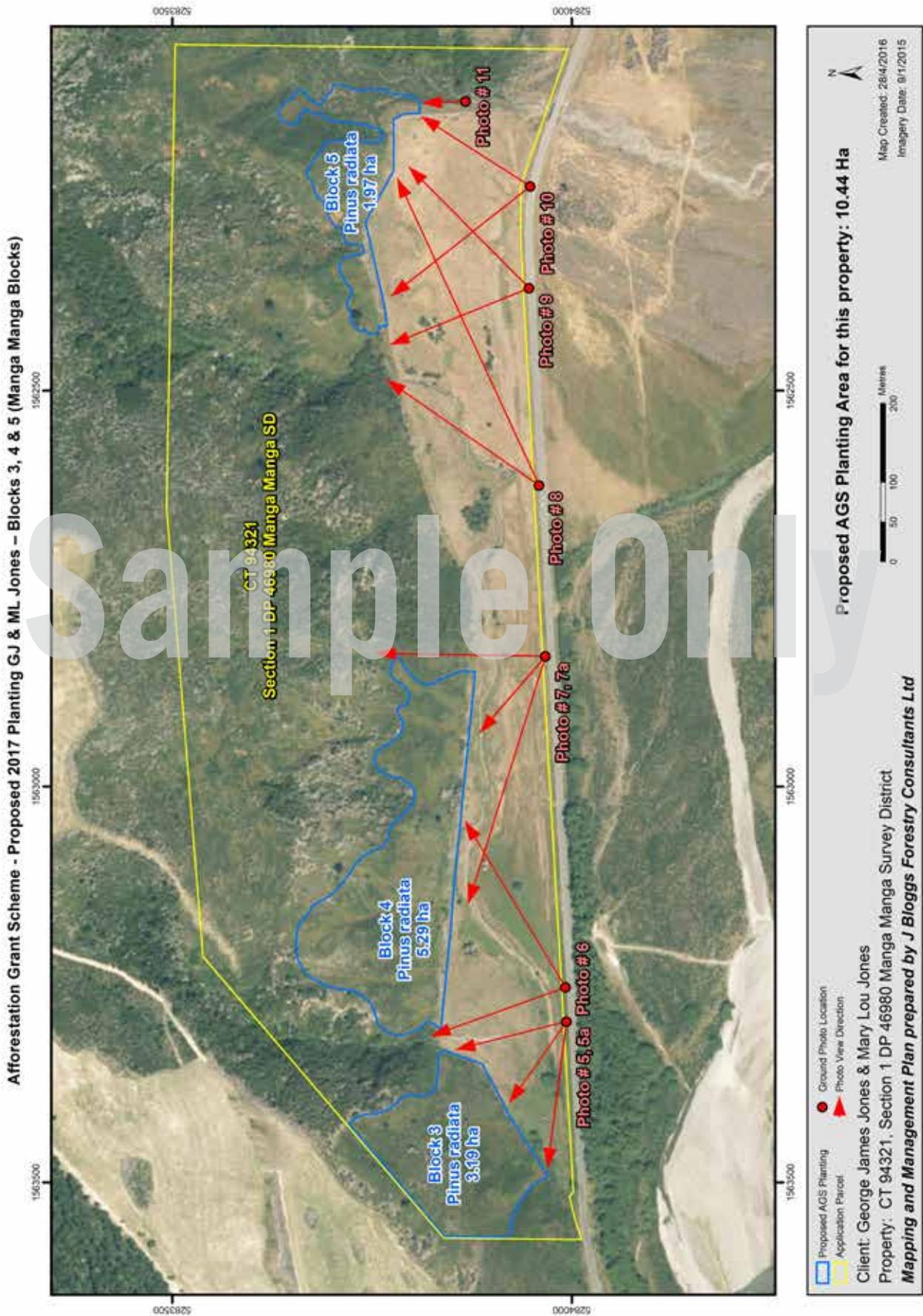


Block 2 – Manuka (photo 3)

Map Examples

Supporting Documentation

Site Plan – Blocks 3, 4 & 5 (Manga Manga Blocks)



Map Examples

Supporting Documentation

Site Photos Blocks 3, 4 & 5 (Date of site photos: 2 April 2016)

Photo 5 -Block 3 – inset Photo 5a -Block 3



Map Examples

Supporting Documentation

Photo 6 – Block 4



Sample Only

Map Examples

Supporting Documentation

Photo 7 - Block 4 – inset Photo 7a -Block 4



Map Examples

Supporting Documentation

Photo 8 – Block 5



Map Examples

Supporting Documentation

Photo 9 – Block 5



Map Examples

Supporting Documentation

Photo 10 – Block 5 and inset Photo 11 – Block 5



Sample Only