

MID-TERM REVIEW

MID-DOME WILDING CONIFER CONTROL STRATEGY 2014-2024

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July 2018

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INTRODUCTION

In March 2018, the Mid Dome Wilding Trees Charitable Trust (“the Trust”) engaged R&D Environmental Ltd to undertake a mid-term review of its Mid Dome Wilding Conifer Control Strategy 2014-2024 (“the Strategy”).

The review was undertaken a year ahead of the planned 2019 review date in order to provide an up-dated assessment of progress to the Ministry for Primary Industries’ National Wilding Conifer Control Programme (NWCCP).

The Terms of Reference were to:

1. Review the current Strategy objectives, and determine whether they are being achieved
2. Provide advice on how the Strategy objectives could be improved.

BACKGROUND

The Strategy listed the following hierarchy of goals and objectives.

VISION

Mid Dome’s mountainous scenery, conservation reserves and high value pastoral lands shall be restored to preserve and protect Southland’s economy and natural beauty.

GOALS

1. The occurrence of *P. contorta* and *P. mugo* throughout the Mid Dome project area has been reduced to such a level by 2024, that zero density of both species is able to be sustained by the relevant landowners/land managers, with a medium-term aim of eradicating both species from the project area.
2. All relevant landowners and land managers are actively committed to and involved in the on-going protection of the Mid Dome project area from *P. contorta* and *P. mugo* by 2024.
3. No other wilding conifer or tree weed species have been able to establish and emerge as a significant threat to the project area during the term of the Strategy.

OBJECTIVES

- 1a. Successful (>85%) initial control of the Secondary Seed Source Area has been completed by 30 June 2017.
- 1b. Successful (>85%) initial control of the Primary Seed Source Area has been completed by 30 June 2017.
- 1c. An incidence of less than 5 coning *P. contorta* and *P. mugo* per hectare is sustained in the Maintenance Control Area throughout the term of the Strategy.
- 2a. The Trust and landowners/land managers within the project area are able to reach mutual agreement as to when the on-going control of *P. contorta* and *P. mugo* on each property is able to be handed back for self-management.
- 2b. The Self-Management Area encompasses the entire project area by 2024.

2c. Following handover, landowners/land managers are able to sustain zero density of coning *P. contorta* and *P. mugo* on their properties.

3a. All conifer and tree weed plantings within and adjoining the project area that pose a significant threat of wilding spread within the project area have been identified by 30 June 2015.

3b. Voluntary agreement has been reached with the owners of all conifer and tree weed plantings that pose a significant threat of wilding spread on ways to eliminate or mitigate this risk by 30 June 2016.

3c. No new plantings of conifers or tree weed species that will pose a significant threat of wilding spread has occurred within and adjoining the project area during the term of the Strategy, except where satisfactory mitigation measures have been instituted.

METHODOLOGY

In reviewing progress against the Strategy Objectives, interviews were conducted with the Trust's Programme Manager, Boffa Miskell Ltd, with Trustees and with the Department of Conservation (DOC).

Mapping of control areas and up-to-date aerial photography was provided by Boffa Miskell. It was planned to correlate the control progress against the Primary and Secondary Seed Source Areas, as mapped by DOC in 2014 for the Strategy. However, DOC was unable to locate the mapping files and therefore only an estimate of progress was possible. These Areas have been re-defined as part of this Strategy review.

CURRENT STATUS

1a. Successful (>85%) initial control of the Secondary Seed Source Area has been completed by 30 June 2017.

The Secondary Seed Source Area represents the untreated spread from the original Mid Dome Soil Conservation Reserve, which has formed closed-canopy wilding infestation around the Tomogalak Stream, Cattleflat and DOC reserves.

In the current Strategy, these areas were primarily the DOC 3, DOC 4 and Cattleflat 3 management units, but also parts of Cattleflat 2 and Five Rivers 2.

The Trust undertook aerial boom spraying of these areas progressively from 2014-15.

A kill rate of 90% is sought, but the success of most of these operations will not be able to be determined for another two years.

Assuming that the recent operations are successful, it is estimated that there are about 242ha of closed canopy Secondary Seed Source Area still to treat (Appendix 1), which should be largely undertaken by 30 June 2019 with second-year funding from the NWCCP.

1b. Successful (>85%) initial control of the Primary Seed Source Area has been completed by 30 June 2017.

The Primary Seed Source Area represents the original Mid Dome Soil Conservation Reserve, which was planted in about 250ha of *Pinus contorta* (contorta pine), supplemented by some *Pinus mugo* (dwarf mountain pine) (Ledgard, 1999). In the current Strategy, this encompassed the steep western faces of LINZ 1 and LINZ 2, and part of Five Rivers 1, representing areas around the Parawa Ridge, Red Duster and Tank Creek catchments.

The Trust undertook aerial boom spraying of these areas progressively from 2014-15, with the bulk of the work undertaken in 2017-18 with the support of the NWCCP.

A kill rate of 90% is sought, but the success of most of these operations will not be able to be determined for another two years.

Assuming that the recent operations are 100% successful, it is estimated that there are at least 61ha of Primary Seed Source Area still to treat (Appendix 1), most of which have been previously unsuccessfully treated, although no timeframe for this control is yet confirmed.

1c. An incidence of less than 5 coning *P. contorta* and *P. mugo* per hectare is sustained in the Maintenance Control Area throughout the term of the Strategy.

The Maintenance Control Area represents all operational areas that have received initial control west of the Maitara River, comprising approximately 25,588ha, and are being managed as maintenance control with the aim of handover back to the relevant landowners/land managers.

In the current Strategy, this encompassed Flagstaff 1 & 2, Nokomai 1, DOC 1,2,5 & 6, Cattleflat 1 & 2, and Five Rivers 3.

The Strategy recommended a combination of qualitative estimation of wilding conifer density, such as through visual assessment, and targeted quantitative sampling, such as belt transects and monitoring plots, be used to verify performance against Strategy objectives and in the lead-up to handover.

At this stage, no quantitative monitoring of coning trees is being undertaken by the Trust, and neither is this within the scope of the Programme Management Agreement. Therefore it is difficult to accurately assess progress towards this objective. Qualitative assessments by the Project Manager suggest that parts of the following operational areas hold less than five coning trees/ha:

- Flagstaff 1
- Flagstaff 2
- Nokomai 1
- DOC 2
- DOC 6
- Cattleflat 1
- Five Rivers 3

However, no operational area is entirely at a density of less than five coning trees/ha. In fact, in all operational areas, there are patches exceeding 20 coning trees/ha.

It is also noted that, in 2017-18, the Dome Burn/Moonlight areas were included within the Maintenance Control Area, due to the presence of wildings in that area.

2a. The Trust and landowners/land managers within the project area are able to reach mutual agreement as to when the on-going control of *P. contorta* and *P. mugo* on each property is able to be handed back for self-management.

At the time of the current Strategy, handovers had been completed east of the Maitara River, encompassing Glenlapa 1, Glenary, Nokomai 2 and DOC 7.

No further handovers have been proposed to date within the term of the Strategy.

2b. The Self-Management Area encompasses the entire project area by 2024.

This objective reflected the Strategy Goal that “the occurrence of *P. contorta* and *P. mugo* throughout the Mid Dome project area has been reduced to such a level by 2024, that zero density of both species is able to be sustained by the relevant landowners/land managers”.

However, as noted above, no handovers have been conducted to date within the term of the Strategy.

2c. Following handover, landowners/land managers are able to sustain zero density of coning *P. contorta* and *P. mugo* on their properties.

At present, handover has been achieved with Glenlapa 1, Glenary, Nokomai 2 and DOC 7. At this point, landowners and land managers are subject to the provisions of the Southland Regional Pest Management Strategy (RPMS) to manage *P. contorta* and *P. mugo* on their properties, with Environment Southland (ES) the responsible party to ensure those obligations are met.

ES monitoring of progress involves an aerial inspection of the properties subject to handover every second year, and continued liaison with landowners. Monitoring suggests the landowners are largely meeting their obligations under the RPMS.

3a. All conifer and tree weed plantings within and adjoining the project area that pose a significant threat of wilding spread within the project area have been identified by 30 June 2015.

In 2016, a student at Southern Institute of Technology, Kate Dunlevey, assessed the risk of wilding conifer spread from conifer plantings on adjoining land into the Mid Dome project area (Dunlevey, 2016). The report identified 178 conifer stands across 22,000ha to the north and west of the Mid Dome project area, with *P. radiata* and *P. menziesii* most commonly planted, but *P. contorta* also identified. Twenty-six sites were deemed high-risk, using the Wilding Tree Risk Calculator (Ledgard, 2008).

3b. Voluntary agreement has been reached with the owners of all conifer and tree weed plantings that pose a significant threat of wilding spread on ways to eliminate or mitigate this risk by 30 June 2016.

No follow-up action has been undertaken or is yet scheduled with the landowners or land managers that have high-risk sites.

3c. No new plantings of conifers or tree weed species that will pose a significant threat of wilding spread has occurred within and adjoining the project area during the term of the Strategy, except where satisfactory mitigation measures have been instituted.

No new high-risk plantings have been undertaken during the term of the Strategy to date, that the Trust is aware of.

DISCUSSION

CONTROL OBJECTIVES (1A-1C)

None of the three control objectives has been achieved to date.

In the Mid Dome context, the primary constraints to successful and timely delivery over the course of the programme have primarily been:

- Lack of funding, or inconsistent funding
- Contractor capacity and capability
- Availability of effective and cost-efficient control methods.

Over the past four years, during the term of the Strategy, there has been an improvement in contractor capacity and capability. The appointment of Boffa Miskell Ltd as contracted Programme Manager, the tendering of a multi-year aerial boom spraying contract and the expansion of the ground contractor market are all indications of this. There has also been on-going refinement of aerial control methods, particularly TDPA, which has enhanced operational delivery considerably.

The primary constraint in delivering programme objectives, therefore, has been programme funding. The Trust needs to be able to access considerable funding in order to achieve its objectives; it needs to be able to access the funding in a timely manner, as the cost of doing nothing will increase the overall control cost rapidly; it needs to be able to 'front end' the funding in order to address seed source issues promptly; and it needs to be able to ensure follow-up funding for all sites.

In the initial four years of the current Strategy, operational funding of \$3.7m (\$0.925m annual average) has been available, of which NWCCP funding has been the major contributor. The latest modelling of programme costs as provided to MPI in May 2018 suggests that a further \$9.2m (\$1.53m annual average) will be required over the remaining six years of the current Strategy.

Without this level of support, it is almost inevitable that control objectives will slip further.

On the assumption that further NWCCP funding is available from 2019/20 onwards, it should be possible to achieve the control objectives 1a & 1b by June 2022.

The achievement of objective 1c is predicated on sufficient and continued funding, but also on the requirement to be able to do multiple control sweeps at suitable intervals over each operational area in order to pick up successive wilding regeneration and on the ability to manage off-site seed sources. As such it is unlikely that the control objective will be fully achieved in the term of the Strategy, and that the Strategy should recognise progressive achievement towards this objective.

HANDOVER OBJECTIVES (2A-2C)

No further handovers have been initiated or completed within the term of the Strategy to date, although it is anticipated that some management areas will be promoted for handover within the term of the Strategy. Flagstaff 1 & 2, and DOC 6, are the most probable initial candidates. The timeframe of 2024 for full handover is clearly too ambitious. A timeframe to complete handover by 2030 is considered more realistic, based on the latest modelling of programme costs as provided to MPI in May 2018.

As further handovers are contemplated, and the Self-Management Area increases, more effort will be required to engage with land owners and to validate that, following handover, the target of zero density is being maintained.

PREVENTION OBJECTIVES (3A - 3C)

Good progress has been made on mapping existing risk areas adjoining the Project Area. However, follow-up to this mapping is required, in the form of engagement with landowners to discuss ways to remove or mitigate the impacts of high-risk plantings.

Ideally, such advocacy should be supported with a regulatory overlay, of which both Regional Pest Management Plans, under the Biosecurity Act 1993, and the Resource Management Act 1991.

The existing Southland Regional Pest Management Strategy is currently under review, to be replaced with a 10-year Regional Pest Management Plan. This review process provides an opportunity to seek stronger rules that allow removal of existing high-risk species, such as *P. contorta*, thorough the region, and of a wider range of wilding species in particular high-risk areas.

During the term of the Strategy, the National Environmental Standards for Plantation Forestry have been developed under the Resource Management Act, and came into force in May 2018. These provide guidance for all new plantings and at sites that were harvested more than five years previously.

Under the Standards, the plantings are a permitted activity so long as they score less than 12 on the Wilding Tree Risk Calculator, and are not in a Significant Natural Area or Outstanding Natural Landscape, or Visual Amenity Landscape if rules permit this in the relevant Plan.

The Standards have not yet been tested in the Mid Dome context, but are considered to have weakened the protections previously in place through the Southland District Plan. As such, they limit the potential for the Trust to safeguard its operations through preventive actions in the future and therefore present a risk to Strategy goals.

RECOMMENDATIONS

1. That the Strategy objectives be updated to the following:
 - 1a. Successful (>85%) initial control of the Secondary Seed Source Area has been completed by 30 June 2020.
 - 1b. Successful (>85%) initial control of the Primary Seed Source Area has been completed by 30 June 2022.
 - 1c. An incidence of less than 5 coning *P. contorta* and *P. mugo* per hectare is progressively achieved in the Maintenance Control Area throughout the term of the Strategy.
 - 2a. The Trust and landowners/land managers within the Project area are able to reach mutual agreement as to when the on-going control of *P. contorta* and *P. mugo* on each property is able to be handed back for self-management.
 - 2b. The Self-Management Area encompasses the entire Project area by 2030.
 - 2c. Following handover, landowners/land managers are able to sustain zero density of coning *P. contorta* and *P. mugo* on their properties.
 - 3a. All conifer and tree weed plantings within and adjoining the Project area that pose a significant threat of wilding spread within the Project area have been identified by 30 June 2015.
 - 3b. Voluntary agreement has been reached with the owners of all conifer and tree weed plantings that pose a significant threat of wilding spread on ways to eliminate or mitigate this risk by 30 June 2020.
 - 3c. No new plantings of conifers or tree weed species that will pose a significant threat of wilding spread has occurred within and adjoining the Project area during the term of the Strategy, except where satisfactory mitigation measures have been instituted.
2. The Trust add the Dome Burn/Moonlight operational area into the scope of the Strategy.
3. The Trust seek adequate and continued funding in order to safeguard its progress towards its control objectives.
4. The Trust engage with landowners to seek voluntary and co-operative management of high-risk seed sources adjoining the Project area, based on the findings of Dunlevey (2016).
5. The Trust advocate for appropriate rules within the new Southland RPMP to manage the risk of high-risk seed sources adjoining the Project area.
6. The Trust advocate for review of the National Environmental Standards for Plantation Forestry in order to have more ability to manage high-risk plantation forestry within and adjoining the Project area.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the time and advice given by the following people in the preparation of this Strategy:

Trustees (Ali Timms, Richard Bowman), Department of Conservation (David Miller), Environment Southland (Randall Milne, Adam Brown), Southland District Council (Bruce Halligan), Boffa Miskell Ltd (Marcus Girvan, Brian McAuslan) .

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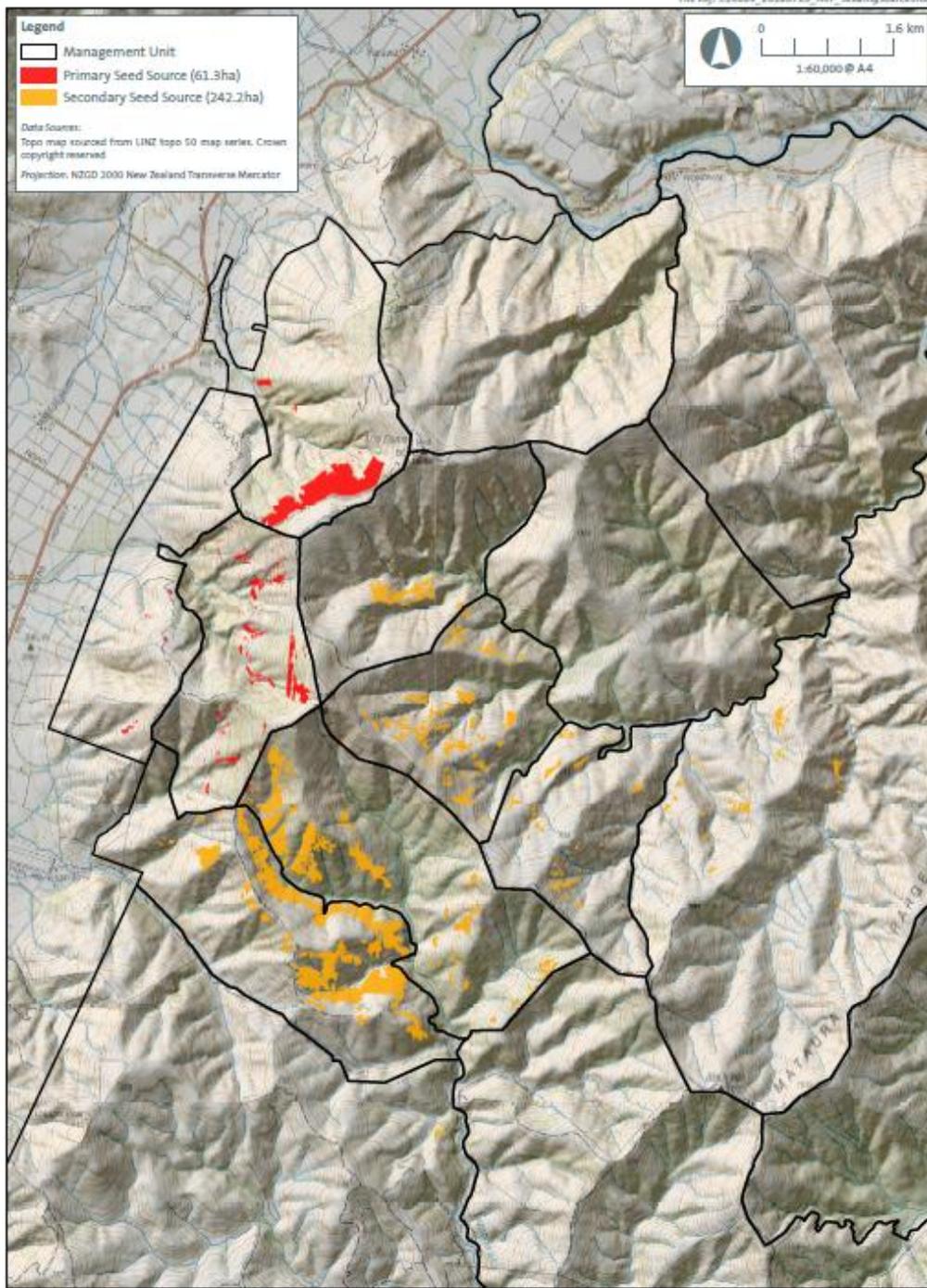
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APPENDIX 1: MAP OF PRIMARY AND SECONDARY SEED SOURCE AREAS (JULY 2018)



MID DOME WILDING TREES MANAGEMENT
 Seeding Tree Status 2017/18

Date: 06 July 2018 | Revision: 0

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