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# Biosecurity Management Plan for Southland Wind Farm

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Contract Report No. 6656I

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# Biosecurity Management Plan for Southland Wind Farm

**Contract Report No. 6656l**

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## 1.0 Introduction

### 1.1 Overview

The objective of this Biosecurity Management Plan (Plan) is for all people involved in the Southland Wind Farm Project (Project) to be aware of, and implement, procedures that will avoid the spread or introduction of pest plant and animal species (collectively **organisms**), and diseases of indigenous plants and animals within the Project Site as a result of Project-related activities (as per Conditions EC40 to EC42).

A range of pest mammal species are present at the Project Site; however, pest plant species are largely limited to wildling conifers at Matariki Forest. Wildling conifers are not present at Jedburgh Station, so it is critical that construction activities in Matariki Forest do not facilitate their spread into unaffected parts of the Wind Farm Site. The management of pest plants and animals already present at the Project Site is addressed in the Habitat Restoration and Enhancement Management Plan (HREP).

This Plan addresses the potential threats of invasive organisms that are not currently present in the Project Site, or in the case of wildling conifers, currently restricted to Matariki Forest. Photographs of key pest species are included in Appendix 1.

The Plan addresses the inadvertent introduction of invasive plants to parts of the site where they are currently absent. It does not address invasive animals. We do not consider the inadvertent introduction of invasive reptile species (e.g. plague skink/*Lampropholis delicata*) and invertebrates (e.g. Argentine and red imported fire ants) as a key risk at the Project Site, given the climate is currently too harsh for these organisms to establish. The likelihood of introducing novel mammalian pests to the Wind Farm Site during earthworks is considered to be negligible, noting the already widespread presence of mammalian pests.

### 1.2 Responsibilities for biosecurity compliance

Compliance with this Biosecurity Management Plan is the responsibility of the Environmental Manager, and will liaise with respective technical experts and contractors as required.

The Environmental Manager, Project Ecologist(s), site manager, site engineer(s) and lead earthworks contractor must read and understand the biosecurity management requirements so that the protocols are adhered to correctly during construction works. The responsibilities of the Environmental Manager include but are not limited to:

- Reading and understanding the relevant biosecurity protocols;
- Implementing training requirements as required to personnel to identify biosecurity risks; and
- Communicating discovered biosecurity risks within the Project Site to the Project Ecologist(s) and mana whenua.

The Environmental Manager is responsible for alerting the Consent Holder to new biosecurity risks that have relevance to the Project Site that arise during the construction period. The Environmental Manager must ensure that Environment Southland and the Ministry for Primary Industries are notified.

## 2.0 Pest Plant Management

### 2.1 Overview

Pest plants are detrimental to human health, the economy and the environment. Pest plants continue to invade and spread in New Zealand, and invasion pathways tend to be facilitated by human mediated dispersal and other anthropogenic activities. In addition, with the onset of climate change, it is predicted that the rate of pest plant naturalisation in New Zealand is likely to increase.

The construction of access roads can result in the introduction of novel pest plant species (e.g. boneseed/*Chrysanthemoides monilifera* subsp. *monilifera*). The inadvertent introduction of soil onto the site, or movement of soils between different parts of the site (such as in tyre tread or on dirty vehicles and equipment), also has the potential to spread pest plants, and seeds may remain viable in soils for decades. Pest plants have the potential to smother, shade or outcompete indigenous vegetation.

Wilding conifers such as radiata pine (*Pinus radiata*) and Douglas fir (*Pseudotsuga menziesii*) are a particular threat to scrub, shrubland, and bog habitats on the Jedburgh Plateau. They can significantly alter the plant communities they invade, turning indigenous grasslands and shrublands into dense woody thickets with little to no habitat resources for indigenous species. Wilding conifers also create a fire risk.

Radiata pine, Douglas fir, and macrocarpa (*Hesperocyparis macrocarpa*) are grown commercially at Matariki Forest, a portion of which is included in the Wind Farm Site. None of these species have been recorded at the Plateau so far, and it is likely that a large valley of southern rātā-kāmahi forest and dense scrub above it provides an effective buffer between the plantation forest and Jedburgh Plateau. Also, strong winds from the south-west will carry wilding conifer propagules away from the Plateau.

### 2.2 Management of key pest plant species

#### Overview

To ensure pest plant prevention and control in relation to construction activities is undertaken safely and effectively, pest plant monitoring and management will be undertaken under the following requirements:

- Southland Regional Pest Management Plan 2019-2029 (SRPMP); and
- Biosecurity Act (1993).

Three plant species specified as pests are classified under 'Exclusion' in the SRPMP: boneseed, Chilean needle grass (*Nassella neesiana*), and Nassella tussock (*Nassella trichotoma*) – none of which are currently present at the Project Site. If any of these species are discovered or suspected to be present on site, the Environmental Manager and Project Ecologist should be notified. The Environmental Manager must ensure that Environment Southland and the Ministry for Primary Industries (through the Exotic Pests and Diseases hotline (0800 80 99 66)) are notified, and that a photo of the plant(s), and date, is recorded.

If any wilding conifer seedlings or saplings are discovered at Jedburgh Station, they must be removed/killed immediately and the Environmental Manager must be informed. The control of wilding conifers should continue at Jedburgh Station during the wind farm construction period and for 12 months following the completion of construction activities at Matariki Forest.



Monitoring and control of wilding conifers in wetlands and indigenous-dominated terrestrial habitats on the Project Site will continue for the duration of the operation of the Southland Wind Farm.

#### *Cleaning plant and vehicles*

- Any vehicles, machinery, or equipment to be used on site should be inspected carefully for any seeds or soil and cleaned before being brought onto site.
- All machinery or equipment should as far as practicable also be sourced from the local area or within the Southland Region. Plant sourced from outside Southland is to be water blasted and cleaned prior to arriving to site.
- Any vehicles, machinery, or equipment which has operated at Matariki Forest should be inspected carefully for any seeds or soil and if required cleaned, before being operated at Jedburgh Plateau. Machinery or vehicles which travel through Matariki Forest should be water-blasted before accessing Jedburgh Plateau during autumn, winter, and spring.<sup>1</sup>
- It is preferable that the area where machinery and vehicles are washed consists of a concrete pad or gravel area that be inspected frequently for new vegetation growth.
- During construction and for two years after completion of the civil works, Contact Energy will conduct minimum two weed spray programs per year on areas disturbed during construction.

## 3.0 Freshwater Biosecurity Management

### 3.1 Overview

There are no records within the Ministry for Primary Industries Database for the invasive alga didymo (*Didymosphenia geminata*) in the Mimiha Stream and Mokoreta River catchments, although it has been recorded in the Maitai River. The introduction of didymo to these catchments therefore poses a significant biosecurity risk. Information on the presence of other invasive freshwater species in the area, for example, mare's tail (*Equisetum arvense*) is less available, however, care should be taken to prevent the introduction of any new freshwater invasive species to the streams in the area.

### 3.2 Discovery protocol and management approach

If didymo is discovered within waterways directly affected by the Project's construction and operation, the Environmental Manager and Project Ecologist should be notified immediately. The Environmental Manager must ensure the Ministry of Primary Industries is notified through the Exotic Pests and Diseases hotline (0800 80 99 66) within 48 hours. Photos of the affected area(s) should be taken and supplied to the relevant authorities upon request. The affected waterways should not be entered, as this may increase the spread of the pest.

Machinery brought to the Project Site from elsewhere may bring in new pest species (e.g., didymo). All machinery or equipment which will work in or around waterways must be thoroughly checked for sediment, algal, or plant matter, cleaned, and dried (Table 1) before being brought on site, and once in-stream works are complete. If machinery or equipment is to be used in multiple watersheds on site, then it must be thoroughly checked, cleaned, and dried between works.

**Check** - remove any plant matter from any equipment, machinery, and clothing and leave it at the site. Do not wash plant material down the drain.

<sup>1</sup> Douglas fir seed is dispersed in autumn and winter, and radiata seed germinates in spring

**Clean** - soak or scrub all items using one of the below treatments.

**Dry** - ensure all equipment and gear is completely dry to touch, inside and out, then leave to dry for at least another 48 hours before you use it. Didymo can survive for months on moist gear.

**Table 1** – Cleaning methods for freshwater biosecurity management.

Cleaning option	Amount	Duration
Dishwashing detergent or nappy cleaner	<b>10% mix (1 litre to 10 litres of water)</b>	Soak or spray all surfaces and leave wet for at least 10 minutes
Bleach	2% mix (200mls to 10 litres of water)	Soak or spray all surfaces for at least 1 minute
Hot water above 60°C	Soak entire item	Soak for at least 1 minute
Hot water above 45°C	Soak entire item	Soak for at least 20 minutes
Freezing		Until solid

**Note:** 60° C is hotter than most tap water; 45°C is uncomfortable to touch. Allow longer times for absorbent items.

All fishing required for instream works will follow biosecurity protocols to be outlined in the Construction Environmental Management Plan, including the Earthworks Management Plan. For example, unless being redeployed in the same sub-catchment, all nets and/or traps used will be cleaned, sterilised and allowed to dry for no less than one week prior to use ensuring that all plant material (seeds or plant material that is able to regenerate) is either removed or dead, reducing the risk of transferring freshwater pest plants including the pest organisms didymo and mare's tail to new locations. Any pest fish caught will be humanely euthanised using clove oil (50 mL per 10 L of water).

## 4.0 Myrtle Rust

### 4.1 Overview

Myrtle rust has not been identified to date in the Southland Region and is assumed absent from the Project Site. As a precautionary measure, however, biosecurity protocols to reduce the risk of myrtle rust entering the site as a result of restoration planting and construction activities on site are outlined below.

### 4.2 Discovery protocol and management approach

If myrtle rust is discovered on site during the construction of the wind farm, the Environmental Manager and Project Ecologist should be notified immediately. The Environmental Manager must ensure that the Ministry for Primary Industries is notified through the Exotic Pests and Diseases hotline (0800 80 99 66), and that a photo of the infected plant is recorded within 48 hours. The infected plant should not be touched, as this may increase the spread of the disease.

If vegetation is not required to be cleared for construction purposes, infected plants do not need to be removed. The plant can be left in place and progress of myrtle rust on the infected plant monitored at the discretion of the Project Ecologist.

If infected vegetation is required to be cleared for construction purposes:

- Bury the infected material on site (at greater than 50 cm depth), or
- Take the infected material to a landfill or transfer station provided that it is securely enclosed in a sealed bag or other container during transport and is disposed as general waste (and not green waste).

Southern rātā is likely to be the species most vulnerable to the effects of myrtle rust. Mānuka, the most common myrtle species on Jedburgh Plateau, has to date shown greater resistance to the disease in other parts of the country. The risk to southern rātā should not preclude its selection as an enrichment plant species for the proposed fenced Jedburgh Station Ecological Enhancement Area (refer to Table 3 in the HREP). However, the nursery or nurseries supplying the plants should be required to complete the 'Plant Pass' voluntary Biosecurity Certification Scheme, which is a specific module for plant producers growing Myrtaceae species<sup>1</sup>.

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<sup>1</sup> <https://nzppi.co.nz/Management-of-myrtle-rust-in-the-nursery/19776-7a0d2cf2-6fdb-4d14-be4f-670395185961/>



## Appendix 1

### Photographs of key pest plant species



**Plate 1** – Wildling Douglas fir saplings in tussock. Photo credit: Department of Conservation.



**Plate 2** – Boneseed foliage and flower. Photo credit: John Sawyer.





**Plate 3** – Chilean needle grass. Photo credit: Otago Regional Council.



**Plate 4** – Nasella tussock. Photo credit: Otago Regional Council.



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