UWF Grid Connection

Environmental Management Plan (2019)

Tab 4

Invasive Species Management Plan

INIS Environmental Consultants Ltd.

Suite 11,
Shannon Commercial Properties,
Information Age Park,
Ennis,
County Clare
Ireland.

October 2019

Quality Assurance

The findings outlined within this report and the data we have provided are to our knowledge true, and express our bona fide professional opinions. This report has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Code of Professional Conduct. Where pertinent CIEEM Guidelines used in the preparation of this report include the *Guidelines for Ecological Report Writing* (CIEEM, 2017), *Guidelines for Preliminary Ecological Appraisals* (CIEEM, 2015) and *Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine*, (CIEEM, 2018). CIEEM Guidelines include model formats for Preliminary Ecological Appraisal and Ecological Impact Assessment. Also, where pertinent, evaluations presented herein take cognisance of recommended Guidance from the EPA such as *Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports* (EPA, 2017), and in respect of European Sites, *Managing Natura 2000 sites. The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC* (European Commission, 2018).

Due cognisance has been given at all times to the provisions of the *Wildlife Act, 1976,* the *Wildlife (Amendment) Act, 2000*, the *European Union (Natural Habitats) Regulations. SI 378/2005*, the *European Communities (Birds and Natural Habitats) Regulations 2011,* EU Regulation on Invasive Alien Species under *EU Regulation 1143/2014*, the EU Birds *Directive 2009/147/EC* and *Habitats Directive 92/43/EEC*.

No method of assessment can completely remove the possibility of obtaining partially imprecise or incomplete information. Any limitation to the methods applied or constraints however are clearly identified within the main body of this document.

Version	**Date**		**Name**
1	13/09/2019	**Report prepared by:**	Donncha Ó Catháin MSc GradCIEEM
1	31/10/2019	**Report checked by:**	Chris Cullen DFE, HND Eng. ACIEEM
1	31/10/2019	**Report signed off by:**	Howard Williams CEnv, MCIEEM CBiol MRSB MIFM
Title		Invasive Species Management Plan, UWF Grid Connection project, County Tipperary	
Promoter		Ecopower Developments Ltd	

Notice

This report was produced by INIS Environmental Consultants Ltd. (INIS) on behalf of Ecopower Developments Ltd., the Promoter, for the specific purpose of the UWF Grid Connection project, and taking into account the Other Elements of the Whole Upperchurch Windfarm Project, with all reasonable skill, care and due diligence within the terms of the contract with the Promoter, incorporating our terms and conditions and taking account of the resources devoted to it by agreement with the Promoter.

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Contents

Executive Summary

This report documents site assessments of 45 no. locations where Japanese knotweed, Himalayan knotweed, Rhododendron, and Giant hogweed infestations were recorded by Inis field ecologists during habitat assessments as part of their work on the UWF Grid Connection project. Construction works or activities for UWF Grid Connection are proposed near 24 invasive plant infestation locations.

This report presents the results of the individual site assessments undertaken to estimate the severity of each infestation. The best practices methods and processes which will be implemented during construction works are detailed, which will make safe any infestation proximal to works. A list of general measures to be applied in respect of the protection of the Aquatic Environment and in relation to invasive animal species is also provided.

It is important to note that no biosecurity measures guarantee containment, and the effectiveness of any measure will be largely dependent on the standards with which it is executed, combined with skilled monitoring. To ensure the effective implementation of the biosecurity measures, an invasive species specialist will monitor each infestation location during all critical stages of construction works.

1. Introduction

In this Plan, Invasive Species relates to any animal or plant introduced (deliberately or accidently) by human activity to an area in which they do not naturally occur. Invasive Species, which are also referred to as 'invasive non-native species', or 'invasive alien species', are those non-native species that have the ability to spread rapidly and become dominant in an area or ecosystem, causing adverse ecological, environmental and economic impacts. Examples of the negative effects caused by invasive non-native species include economic cost, structural damage, environmental degradation, aesthetic degradation, biodiversity loss, loss of land function and access restrictions.

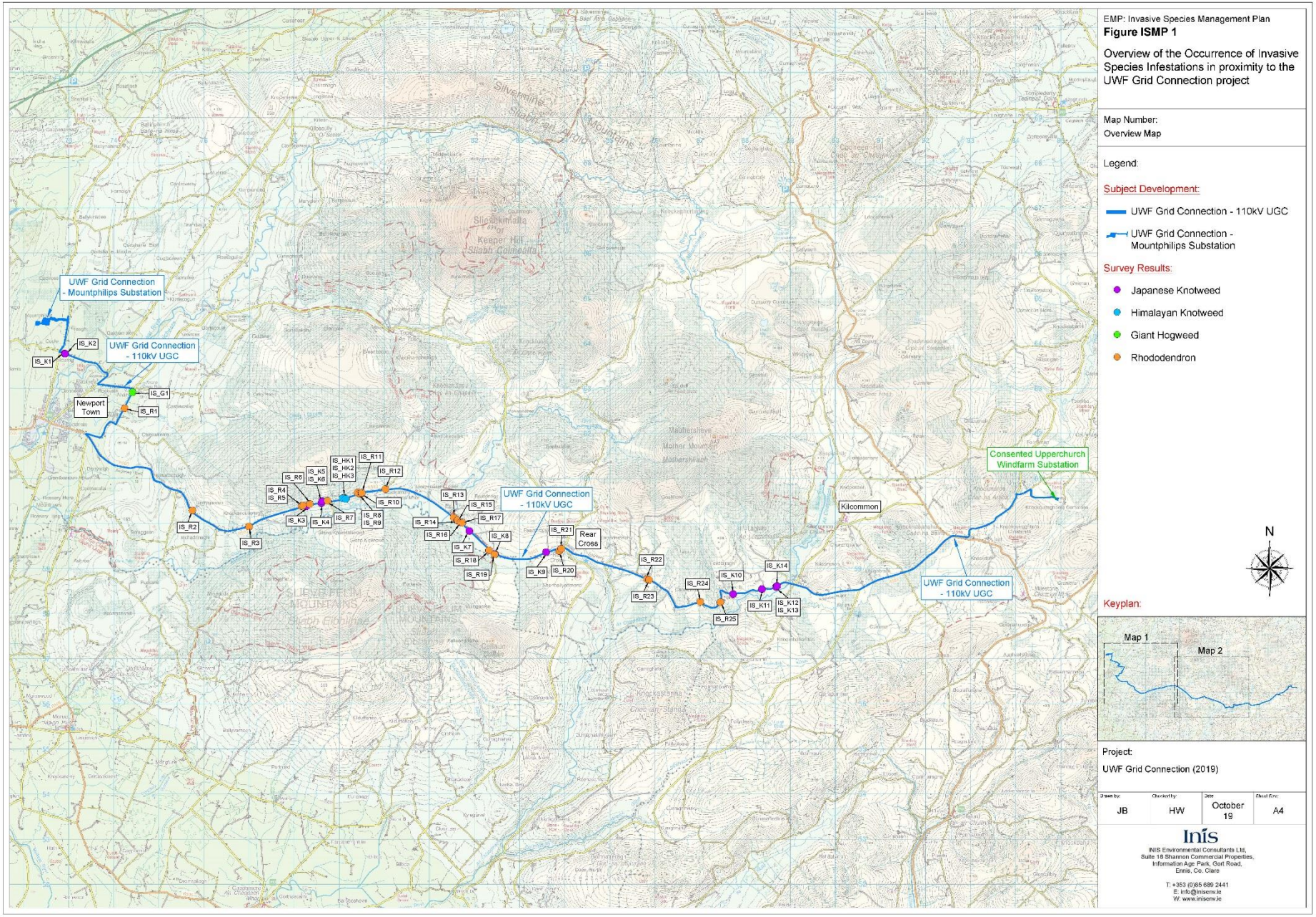
During fieldwork for the UWF Grid Connection project, Inis field ecologists identified a total of 43 invasive plant infestations – see **Figure ISMP 1**. It is important to note that only 24 No. of these will need direct management during the construction process – the other 19 No. infestations are at sufficient distance from the work area boundary not to pose a risk.

All 43 infestations are located on the route of the 110kV UGC. No infestations were recorded at the Mountphilips Substation site. Of the 43 locations along the route of the 110kV UGC, the site assessments by INIS ecologists confirmed the presence of Japanese knotweed (*Fallopia japonica*) at fourteen locations, Himalayan knotweed (*Persicaria wallichii*) at three locations, Rhododendron (*Rhododendron ponticum*) at twenty-five locations, and Giant Hogweed *(Heracleum mantegazzianum)* at one location. The results of the site assessments, which include descriptions of any notable infestation features, are presented in **Section 2: Results of Invasive Species Surveys**.

In relation to the Other Elements of the Whole UWF Project, there are 2 infestation of Japanese Knotweed in close proximity – one close to UWF Other Activities (Haul Route Activities) and one close to UWF Related Works (Internal Windfarm Cabling). These infestations, including their management, are described in **Section 3: Invasive Species Infestations at Other Elements of the Whole UWF Project**.

Invasive Species, such as Japanese knotweed, Himalayan knotweed, Rhododendron, and Giant Hogweed are regulated for control under legislation including under the requirements of the *European Communities (Birds and Natural Habitats) Regulations, 2011, S.I. No. 477*, which makes it an offence to *knowingly disperse or allow to escape* plant species listed in the Regulations.

A description of the biosecurity measures for Invasive Species which will be implemented during construction works are presented in **Section 4: Biosecurity Measures for the Containment and Management of Invasive Species** of this Plan. These measures are taken from the most relevant and current guidance in relation to the containment and management of non-native invasive plant species in construction projects. In addition to the above a list of general measures to be applied in respect of the prevention of spread of invasive species in the aquatic environment and the spread of invasive animal species in the terrestrial environment is provided.


EMP: Invasive Species Management Plan
Figure ISMP 1
Overview of the Occurrence of Invasive Species Infestations in proximity to the UWF Grid Connection project
Map Number:
Overview Map
Legend:
Subject Development:
UWF Grid Connection - 110kV UGC
UWF Grid Connection - Mountphilips Substation
Survey Results:
Japanese Knotweed
Himalayan Knotweed
Giant Hogweed
Rhododendron
UWF Grid Connection - Mountphilips Substation
UWF Grid Connection - 110kV UGC
Newport Town
Rear Cross
Kilcommon
Consented Upperchurch Windfarm Substation
N
Keyplan:
Map 1
Map 2
Project:
UWF Grid Connection (2019)
Drawn by: JB
Checked by: HW
Date: October 19
Sheet Size: A4
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2. Results of Invasive Species Surveys

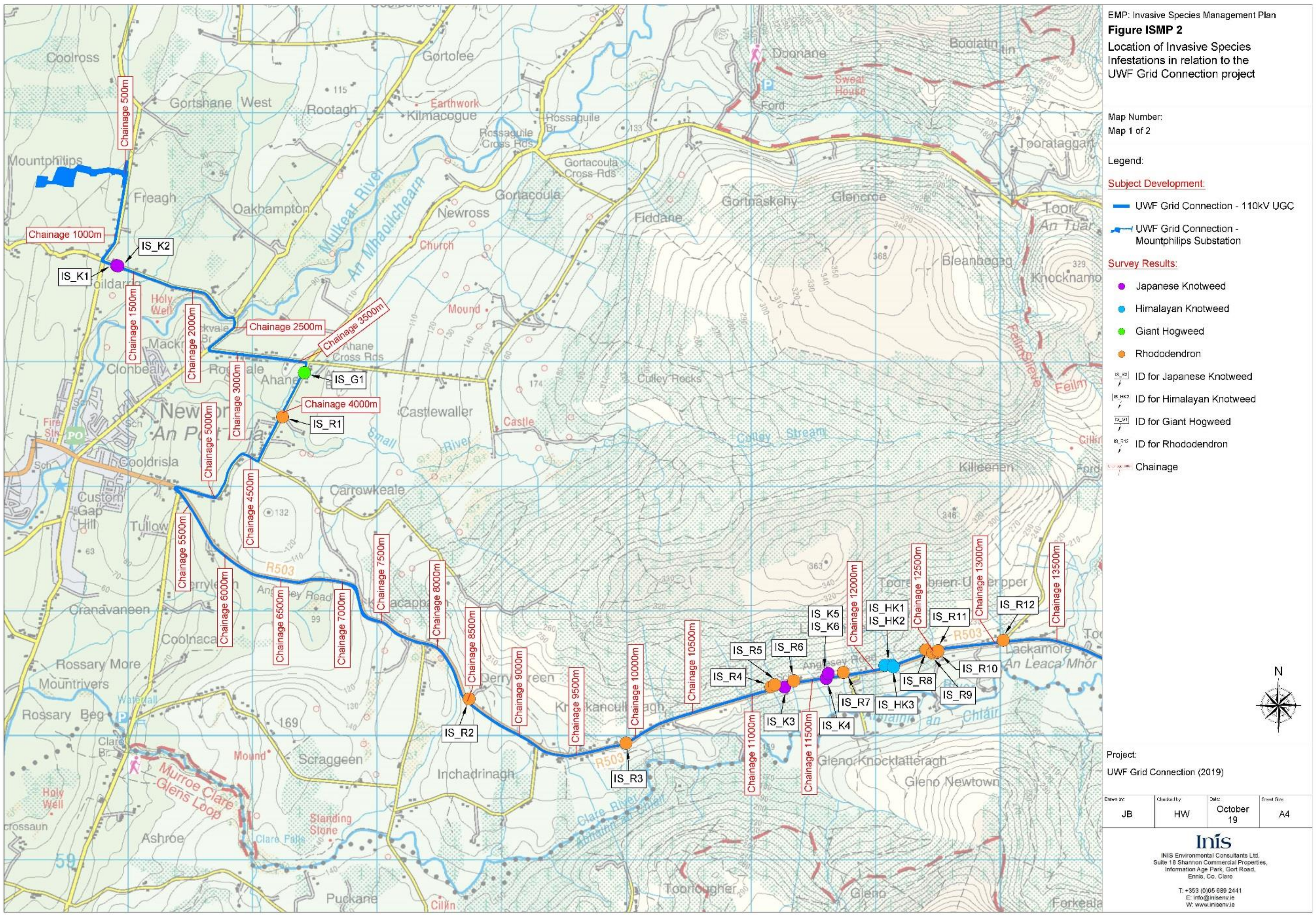
2.1 Presentation of Survey Results

Each Invasive Species infestation is identified with an ID code, and its location is identified on Figures ISMP 2 and Figure ISMP 3.

At each Infestation location the following data were gathered to assess the extent and severity of the 43 No. infestations:

- Species name;
- Grid reference of central point of infestation;
- Extent of infestation;
  Square meterage of each infestation.

A comprehensive list of biosecurity measures can be found in Section 4.1 – '*Biosecurity Measures for works proximate to Invasive Plant Species Infestations'.*


EMP: Invasive Species Management Plan
Figure ISMP 2
Location of Invasive Species Infestations in relation to the UWF Grid Connection project
Map Number:
Map 1 of 2
Legend:
Subject Development:
UWF Grid Connection - 110kV UGC
UWF Grid Connection - Mountphilips Substation
Survey Results:
Japanese Knotweed
Himalayan Knotweed
Giant Hogweed
Rhododendron
ID for Japanese Knotweed
ID for Himalayan Knotweed
ID for Giant Hogweed
ID for Rhododendron
Chainage
N
Project:
UWF Grid Connection (2019)
JB
HW
October 19
A4
Inis
INIS Environmental Consultants Ltd, Suite 18 Shannon Commercial Properties, Information Age Park, Gort Road, Ennis, Co. Clare
T: +353 (0)65 689 2441
E: info@inisenv.ie
W: www.inisenv.ie
Chainage 500m
Chainage 1000m
Chainage 1500m
Chainage 2000m
Chainage 2500m
Chainage 3000m
Chainage 3500m
Chainage 4000m
Chainage 4500m
Chainage 5000m
Chainage 5500m
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Chainage 6500m
Chainage 7000m
Chainage 7500m
Chainage 8000m
Chainage 8500m
Chainage 9000m
Chainage 9500m
Chainage 10000m
Chainage 10500m
Chainage 11000m
Chainage 11500m
Chainage 12000m
Chainage 12500m
Chainage 13000m
Chainage 13500m
IS_K1
IS_K2
IS_G1
IS_R1
IS_R2
IS_R3
IS_R4
IS_R5
IS_R6
IS_K3
IS_K4
IS_K5
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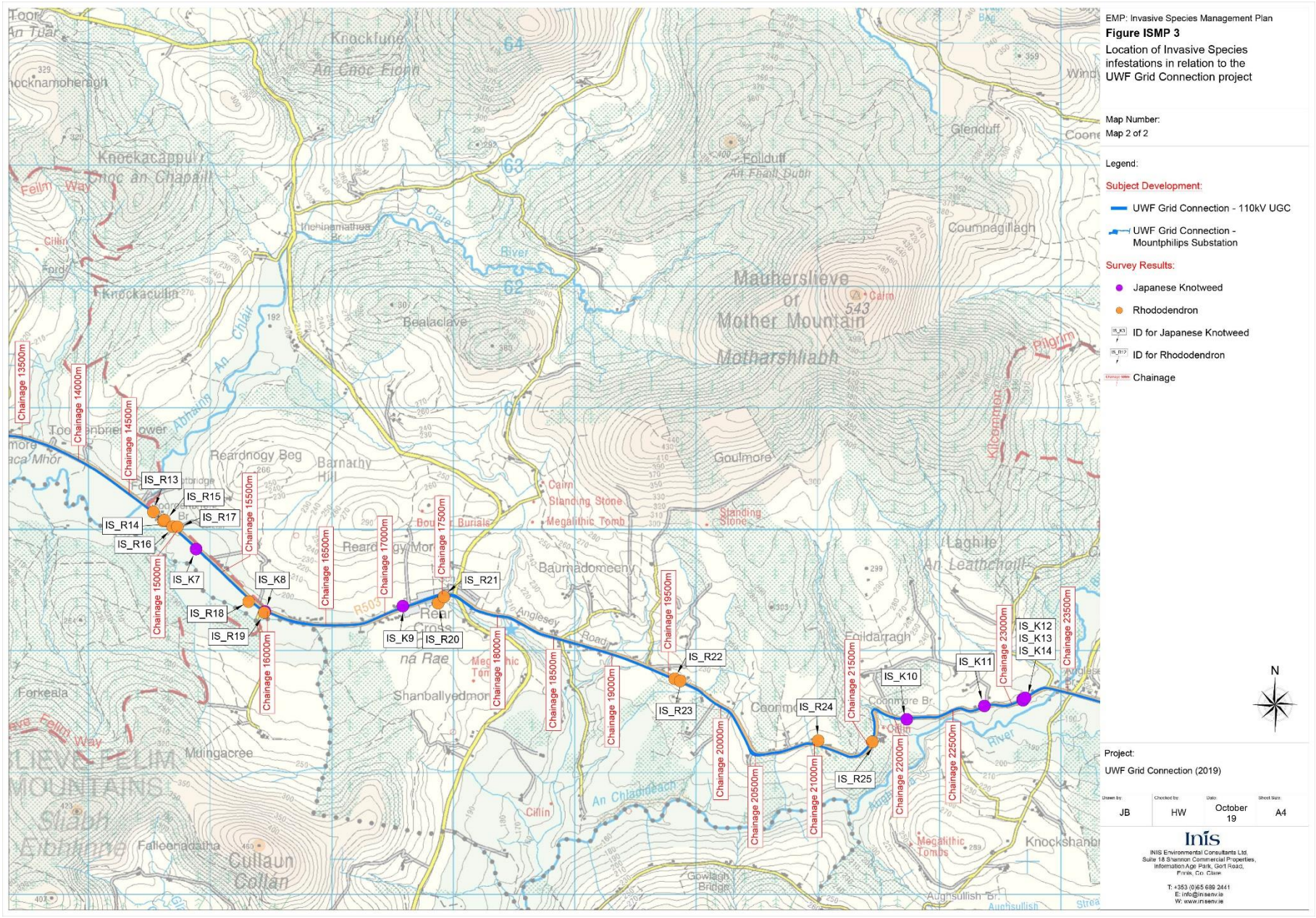
IS_R10
IS_R11
IS_R12


EMP: Invasive Species Management Plan
Figure ISMP 3
Location of Invasive Species infestations in relation to the UWF Grid Connection project
Map Number:
Map 2 of 2
Legend:
Subject Development:
UWF Grid Connection - 110kV UGC
UWF Grid Connection - Mountphilips Substation
Survey Results:
Japanese Knotweed
Rhododendron
ID for Japanese Knotweed
ID for Rhododendron
Chainage
Project:
UWF Grid Connection (2019)
Drawn by: JB
Checked by: HW
Date: October 19
Sheet Size: A4
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IS_R13
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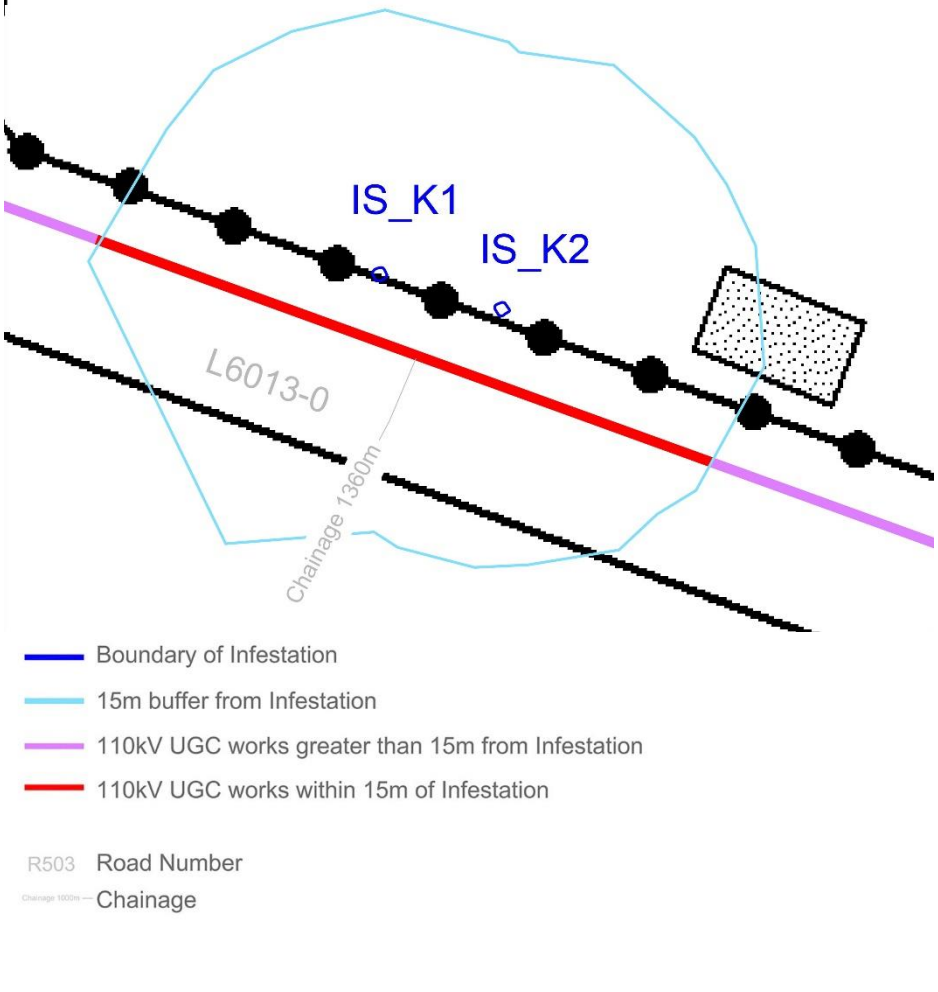
IS_R17
IS_R14
IS_R16
IS_K7
IS_K8
IS_R18
IS_R19
IS_K9
IS_R20
IS_R21
IS_R22
IS_R23
IS_R24
IS_R25
IS_K10
IS_K11
IS_K12
IS_K13
IS_K14
Chainage 13500m
Chainage 14000m
Chainage 14500m
Chainage 15000m
Chainage 15500m
Chainage 16000m
Chainage 16500m
Chainage 17000m
Chainage 17500m
Chainage 18000m
Chainage 18500m
Chainage 19000m
Chainage 19500m
Chainage 20000m
Chainage 20500m
Chainage 21000m
Chainage 21500m
Chainage 22000m
Chainage 22500m
Chainage 23000m
Chainage 23500m

2.2 Japanese Knotweed Infestations



Invasive Species Survey:

Infestation ID: IS_K1

ITM: 572876,663814

Infestation Type:
Knotweed Spp

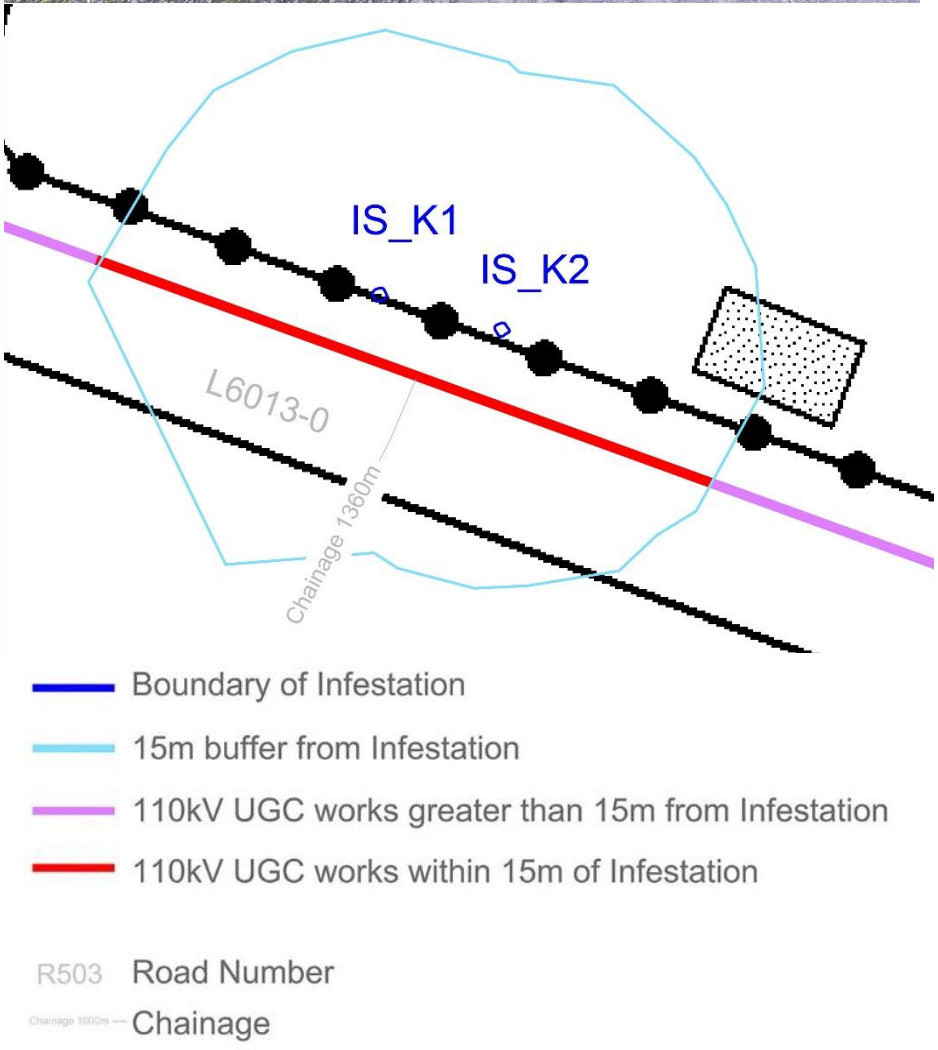
Dimensions of Infestation:
1m x 1m

Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures
(to be implemented under supervision of an invasive species specialist

High density polyethylene grass carpet terram covering the infestation during the preconstruction phase and maintained throughout the duration of works. The polyethylene grass carpet terram covering will only be placed on and removed from the infestation under direct supervision from an invasive species specialist

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Invasive Species Survey:

Infestation ID: IS_K2

ITM: 572883,663812

Infestation Type:
Japanese Knotweed

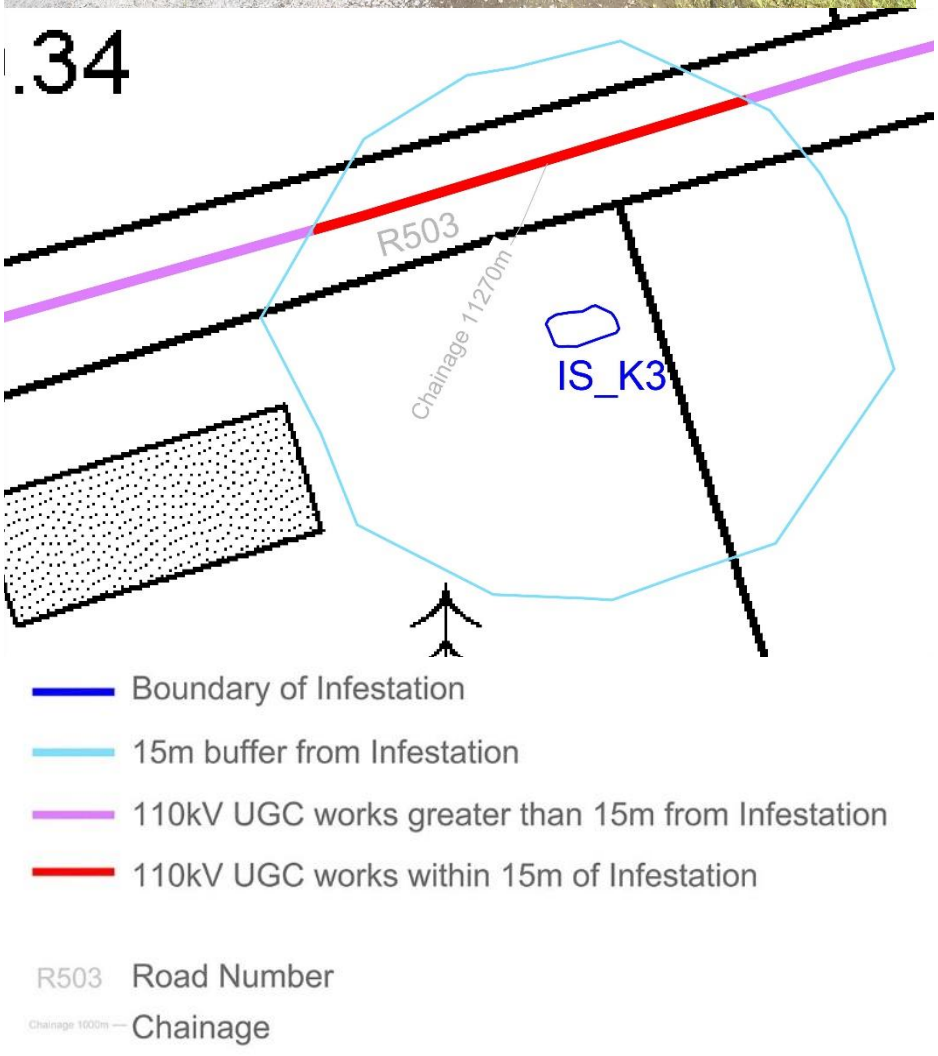
Dimensions of Infestation:
1m x 1m

Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures
(to be implemented under supervision of an invasive species specialist)

High density polyethylene grass carpet terram covering the infestation during the preconstruction phase and maintained throughout the duration of works.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Invasive Species Survey:

Infestation ID: IS_K3

ITM: 578237,660431

Infestation Type:
Japanese Knotweed

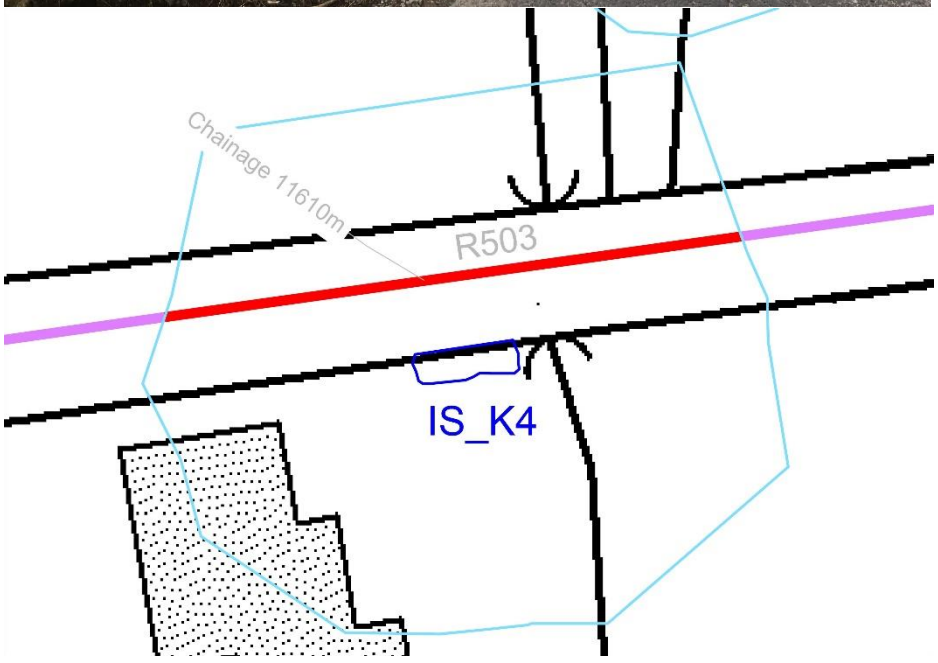
Dimensions of Infestation:
4m x 2m

Separation Distance**:** 6m ***(****from construction works****)***:

Infestation Specific Biosecurity Measures
(to be implemented under supervision of an invasive species specialist)

High density polyethylene grass carpet terram covering the infestation during the preconstruction phase and maintained throughout the duration of works.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Boundary of Infestation
15m buffer from Infestation
110kV UGC works greater than 15m from Infestation
110kV UGC works within 15m of Infestation

R503 Road Number
Chainage

Invasive Species Survey:

Infestation ID: IS_K4

ITM: 578572,660499

Infestation Type:
Japanese Knotweed

Dimensions of Infestation:
6m X 2m

Separation Distance**:** 0m - At Edge of roadway

Infestation Specific Biosecurity Measures
(to be implemented under supervision of an invasive species specialist)

High density polyethylene grass carpet terram covering the infestation during the preconstruction phase and maintained throughout the duration of works.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility..

Invasive Species Survey:

Infestation ID: IS_K5

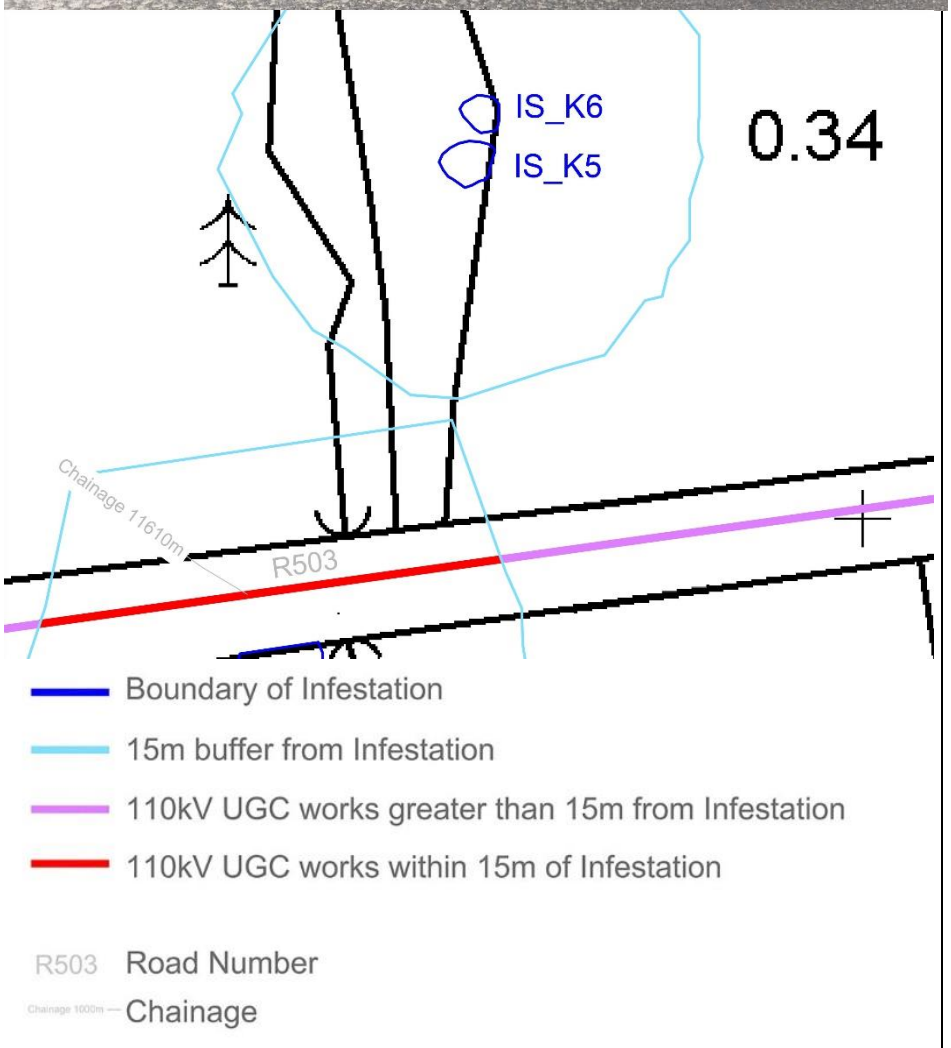
ITM: 578586,660536

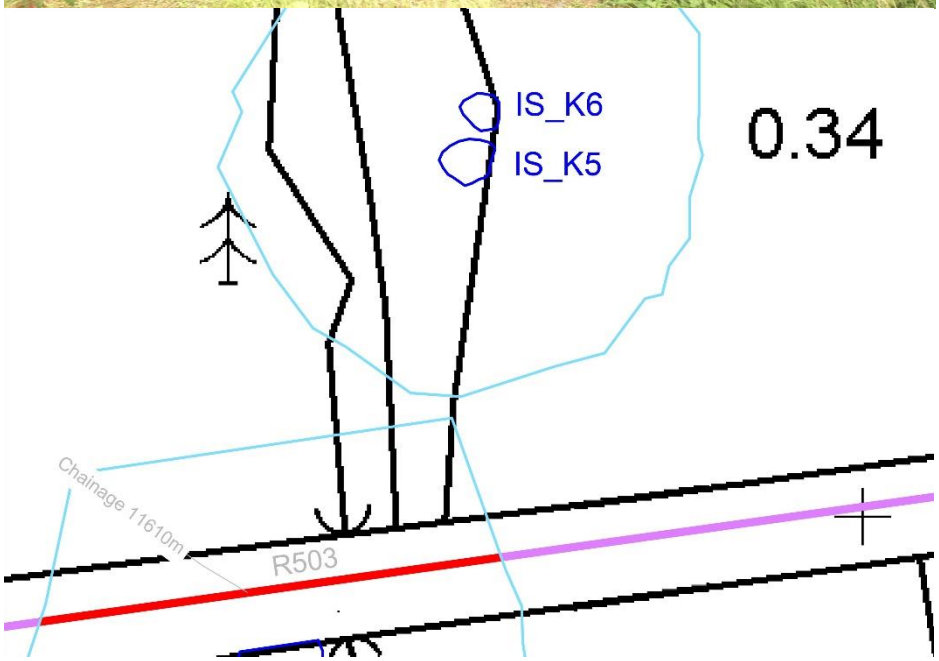
Infestation Type:
Japanese Knotweed

Dimensions of Infestation:
4m x 3m

Separation Distance: 26m

Infestation Specific Biosecurity Measures
No measures required due to distance from works





Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage

Invasive Species Survey:

Infestation ID: IS_K6

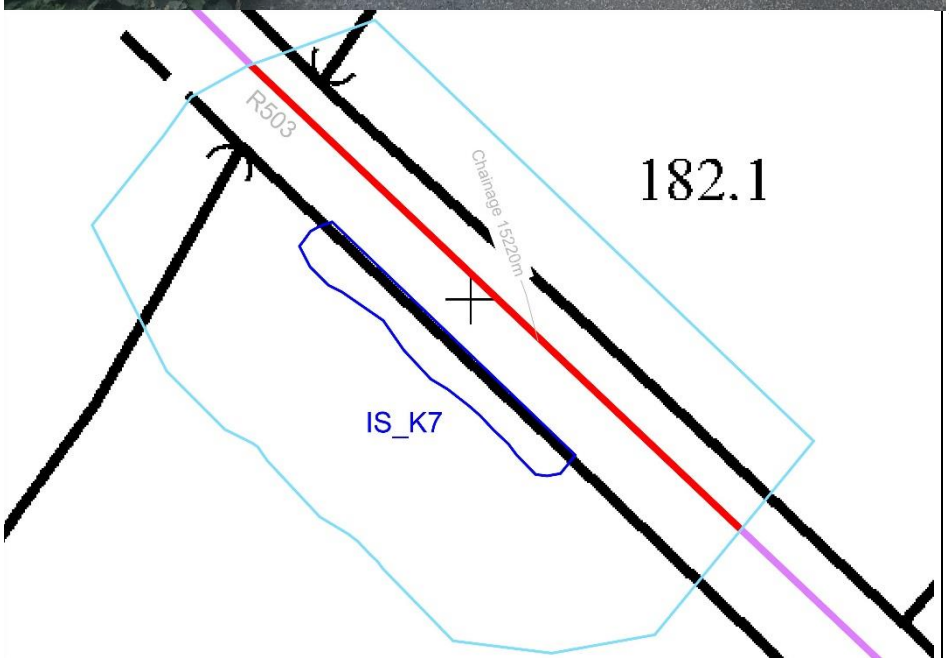
ITM: 578587,660540

Infestation Type:
Japanese Knotweed

Dimensions of Infestation:
3m x 3m

Separation Distance: 30m
(*from construction works****)***:

Infestation Specific Biosecurity Measures
No measures required due to distance from works



Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage

Invasive Species Survey:

Infestation ID: IS_K7

ITM: 581851,659882

Infestation Type:
Japanese Knotweed

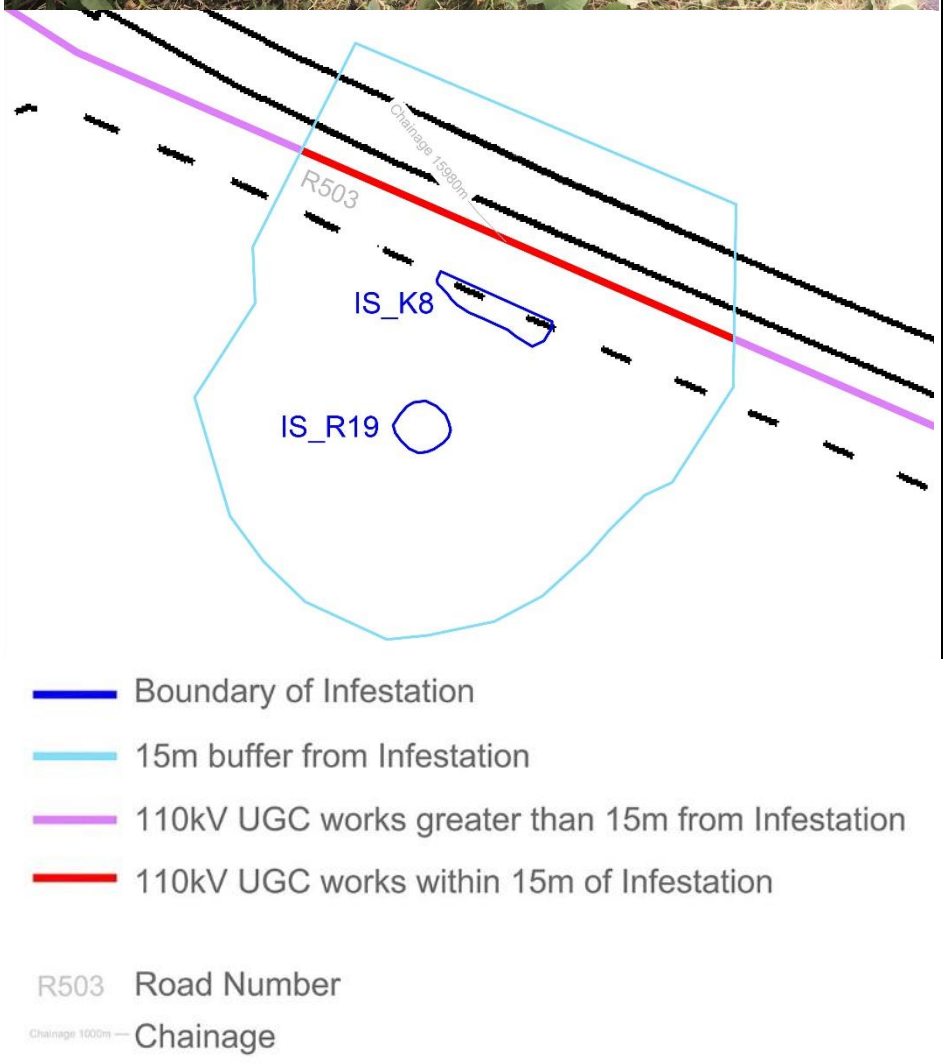
Dimensions of Infestation:
30m x 4m

Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures
(to be implemented under supervision of an invasive species specialist)

High density polyethylene grass carpet terram covering the infestation during the preconstruction phase and maintained throughout the duration of works.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Invasive Species Survey:

Infestation ID: IS_K8

ITM: 582418,659369

Infestation Type:
Japanese Knotweed

Dimensions of Infestation:
10m x 2m

Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures
(to be implemented under supervision of an invasive species specialist)

High density polyethylene grass carpet terram covering the infestation during the preconstruction phase and maintained throughout the duration of works.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.

Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage

Invasive Species Survey:

Infestation ID: IS_K9

ITM: 583553,659413

Infestation Type:
Japanese Knotweed

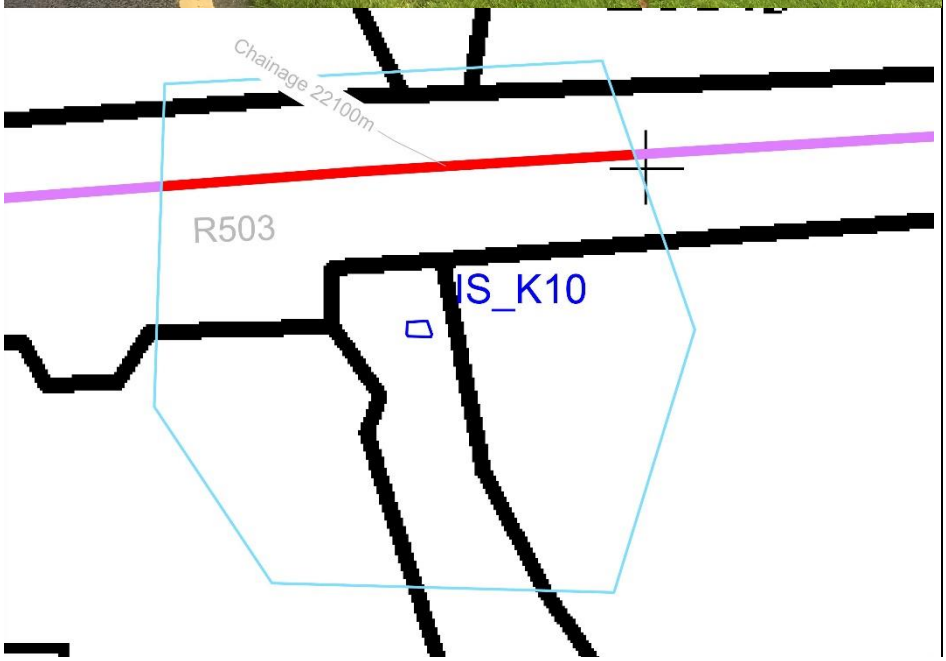
Dimensions of Infestation:
20m x 15m

Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures
(to be implemented under supervision of an invasive species specialist)

High density polyethylene grass carpet terram covering the infestation during the preconstruction phase and maintained throughout the duration of works.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage

Invasive Species Survey:

Infestation ID: IS_K10

ITM: 587701,658482

Infestation Type:
Japanese Knotweed

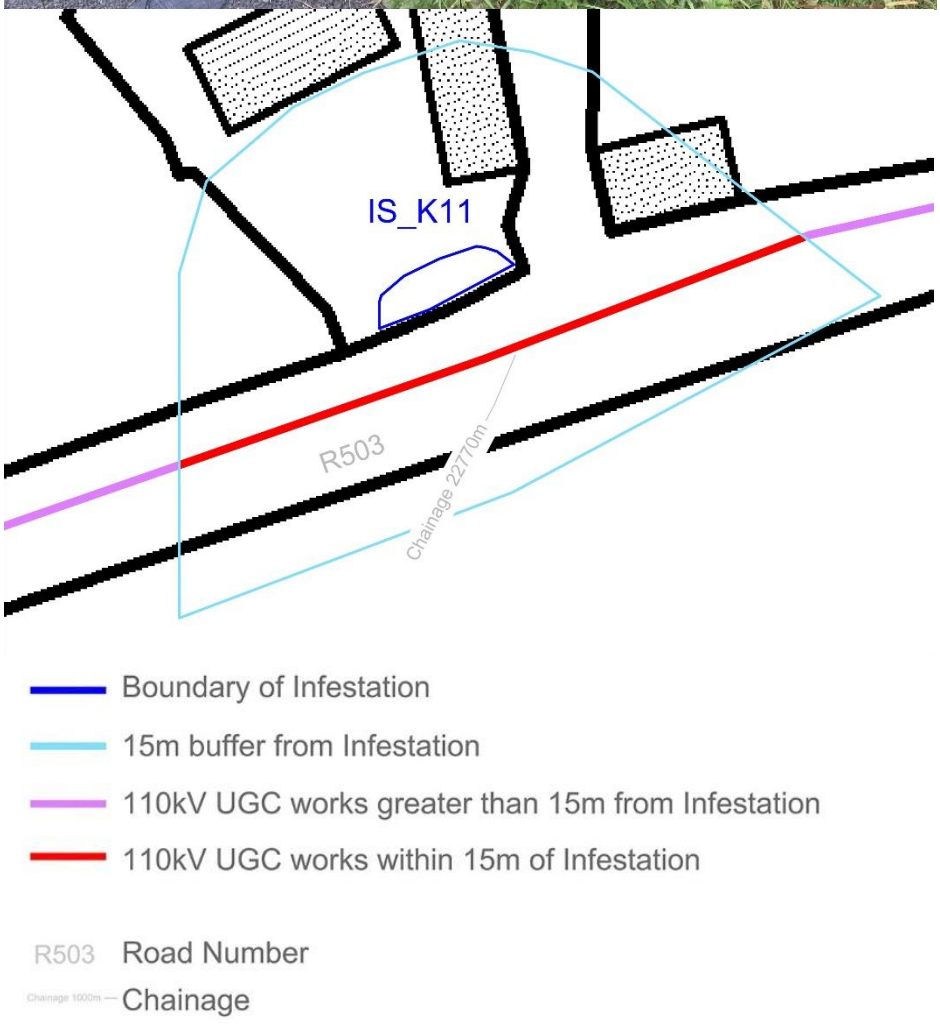
Dimensions of Infestation:
1m x 1m

Separation Distance: 4m
(from construction works)

Infestation Specific Biosecurity Measures
(to be implemented under supervision of an invasive species specialist)

High density polyethylene grass carpet terram covering the infestation during the preconstruction phase and maintained throughout the duration of works.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Invasive Species Survey:

Infestation ID: IS_K11

ITM: 588340,658592

Infestation Type:
Japanese Knotweed

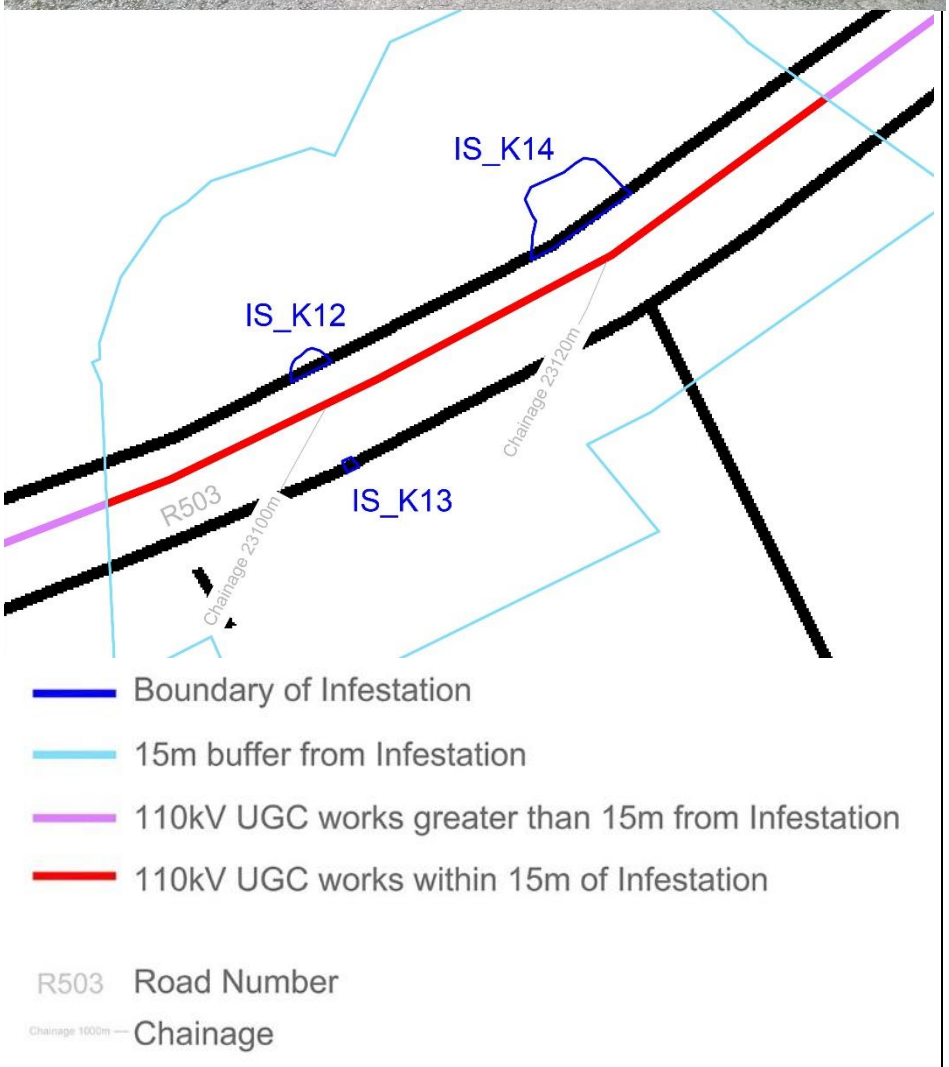
Dimensions of Infestation:
11m x 3m

Separation Distance: 1m – Edge of road verge

Infestation Specific Biosecurity Measures
(to be implemented under supervision of an invasive species specialist)

High density polyethylene grass carpet terram covering the infestation during the preconstruction phase and maintained throughout the duration of works.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Invasive Species Survey:

Infestation ID: IS_K12

ITM: 588654,658645

Infestation Type:
Japanese Knotweed

Dimensions of Infestation:
3m x 2m

Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures *(to be implemented under supervision of an invasive species specialist)*

High density polyethylene grass carpet terram covering the infestation during the preconstruction phase and maintained throughout the duration of works.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.

Invasive Species Survey::

Infestation ID: IS_K13

ITM: 588657,658637

Infestation Type:
Japanese Knotweed

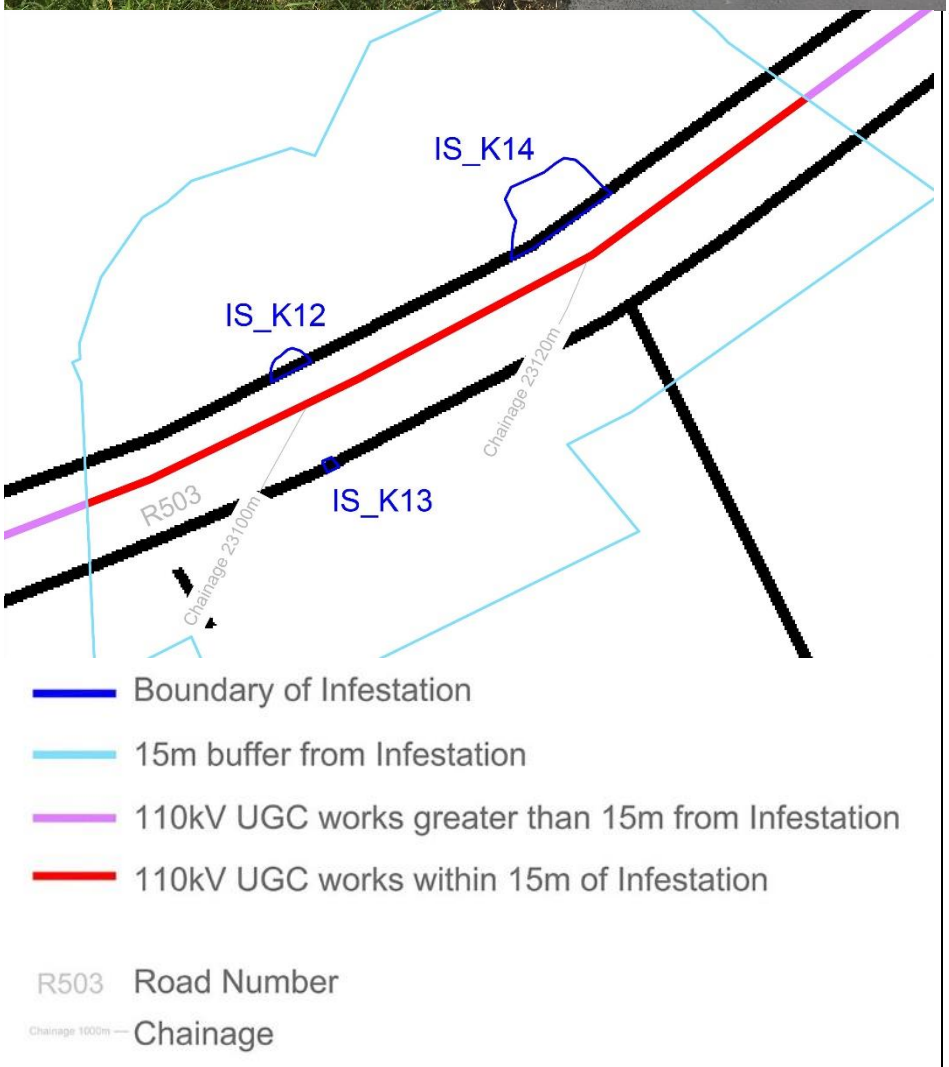
Dimensions of Infestation:
1m x 1m

Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures
(to be implemented under supervision of an invasive species specialist)

High density polyethylene grass carpet terram covering the infestation during the preconstruction phase and maintained throughout the duration of works.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Invasive Species Survey:

Infestation ID: IS_K14

ITM: 588675,658659

Infestation Type:
Japanese Knotweed

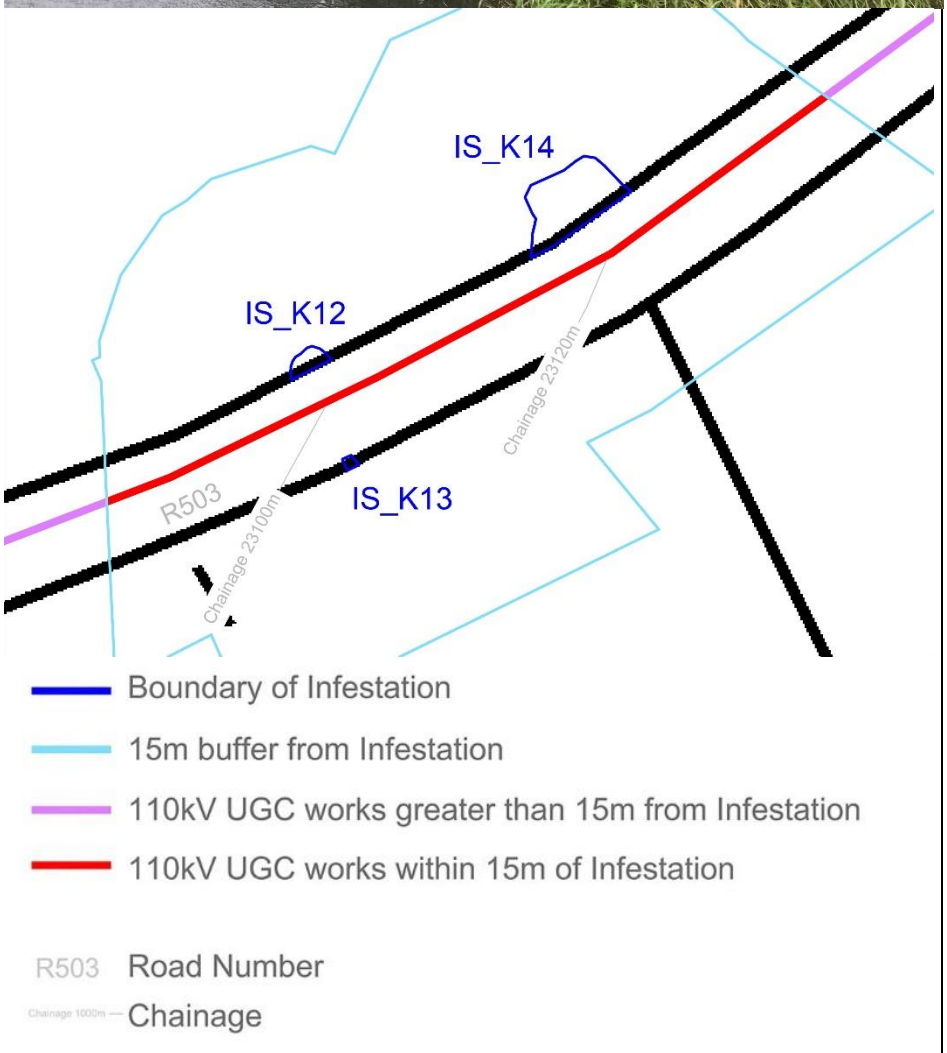
Dimensions of Infestation:
8m x 5m

Separation Distance: 0m - At Edge of roadway

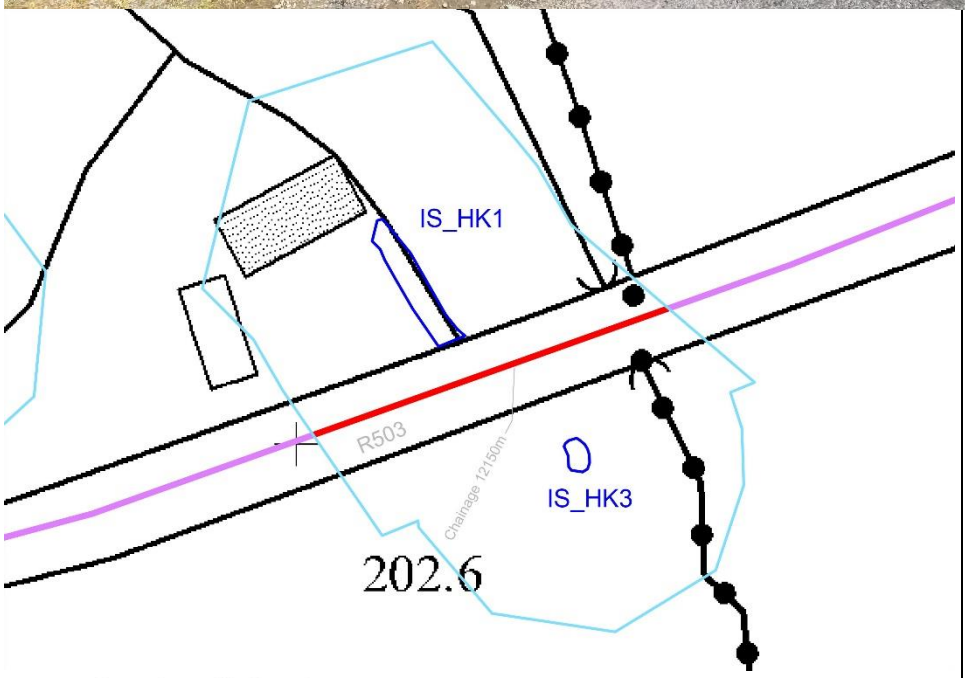
Infestation Specific Biosecurity Measures
(to be implemented under supervision of an invasive species specialist)

High density polyethylene grass carpet terram covering the infestation during the preconstruction phase and maintained throughout the duration of works.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



2.3 Himalayan Knotweed infestations



Invasive Species Survey:

Infestation ID: IS_HK1

ITM: 579096,660608

Infestation Type: Himalayan Knotweed

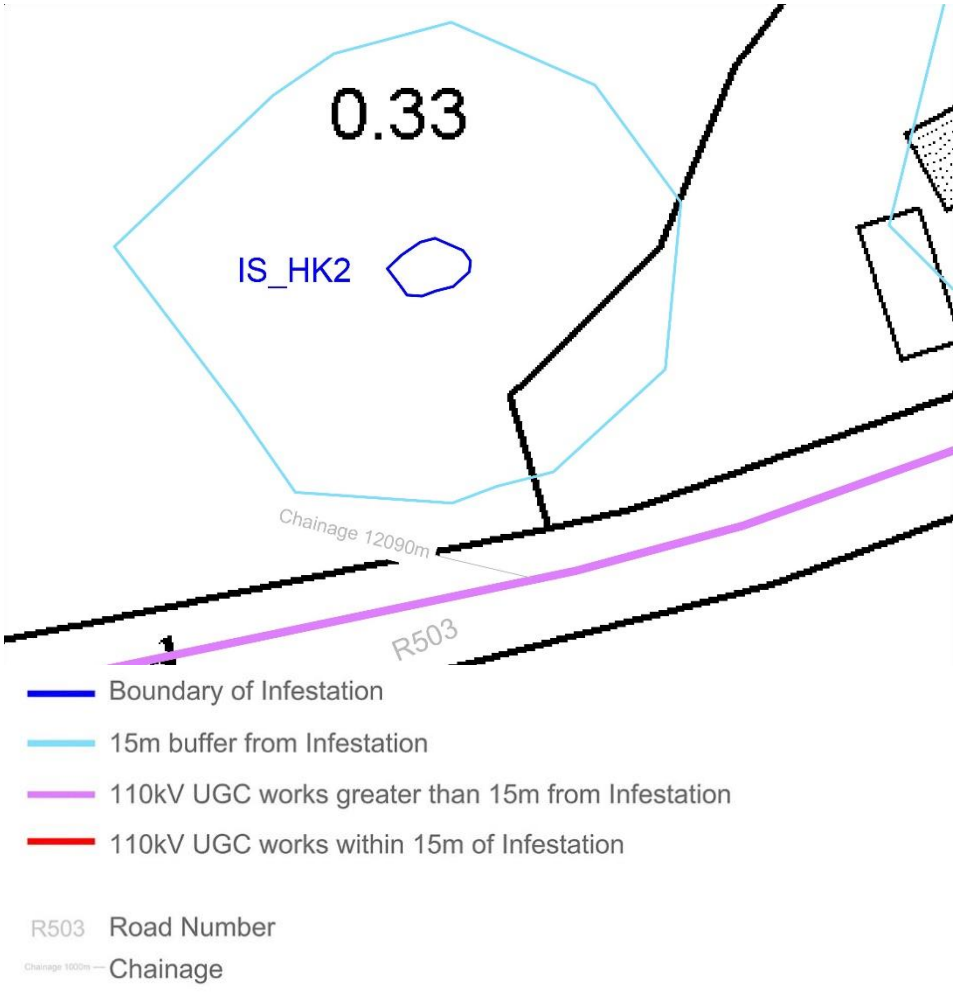
Dimensions of Infestation: 3m x 10m

Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures *(to be implemented under supervision of an invasive species specialist)*

High density polyethylene grass carpet terram covering the infestation during the preconstruction phase and maintained throughout the duration of works.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Invasive Species Survey:

Infestation ID: IS_HK2

ITM: 579041,660606

Infestation Type:
Himalayan Knotweed

Dimensions of Infestation:
3m x 2m

Separation Distance: 18m
(from construction works)

Infestation Specific Biosecurity Measures
No measures required due to distance from works

Invasive Species Survey:

Infestation ID: IS_HK3

ITM: 579110,660593

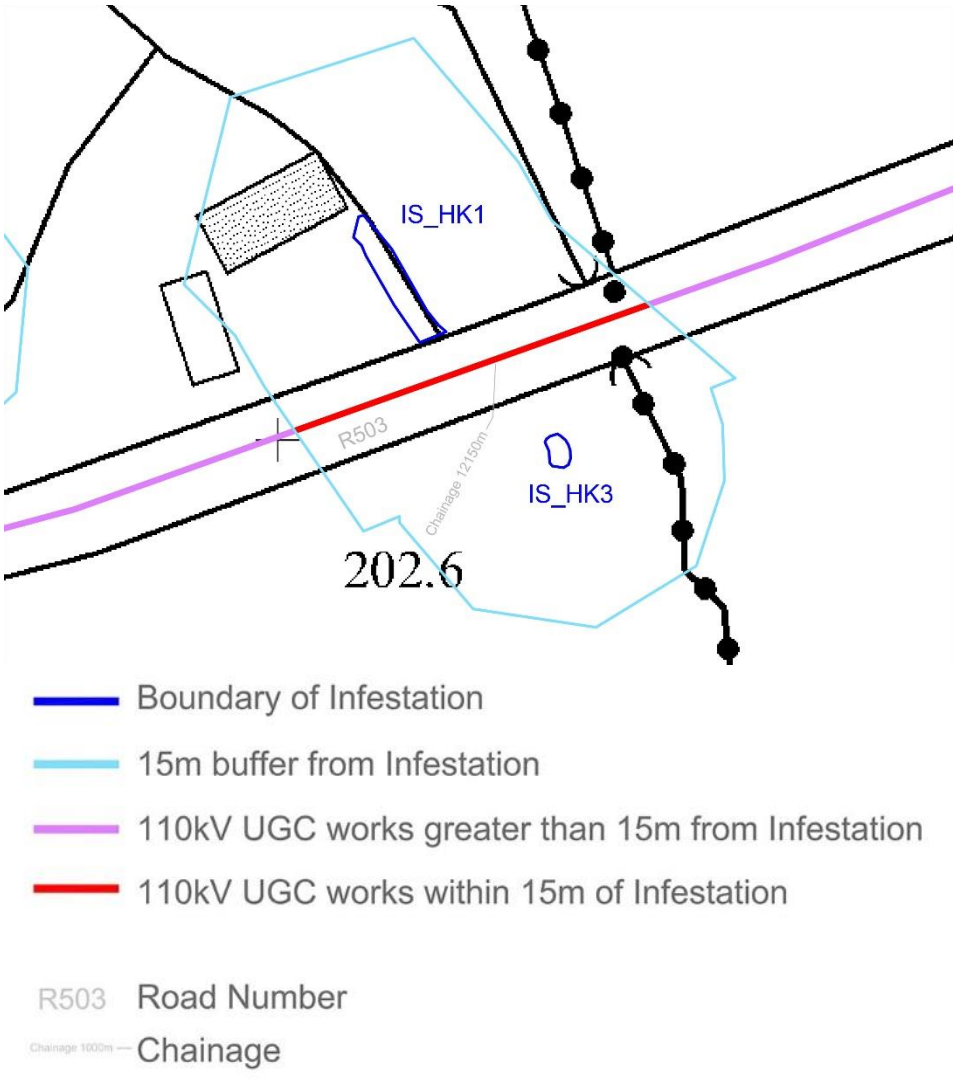
Infestation Type:
Himalayan Knotweed

Dimensions of Infestation:
2m x 3m

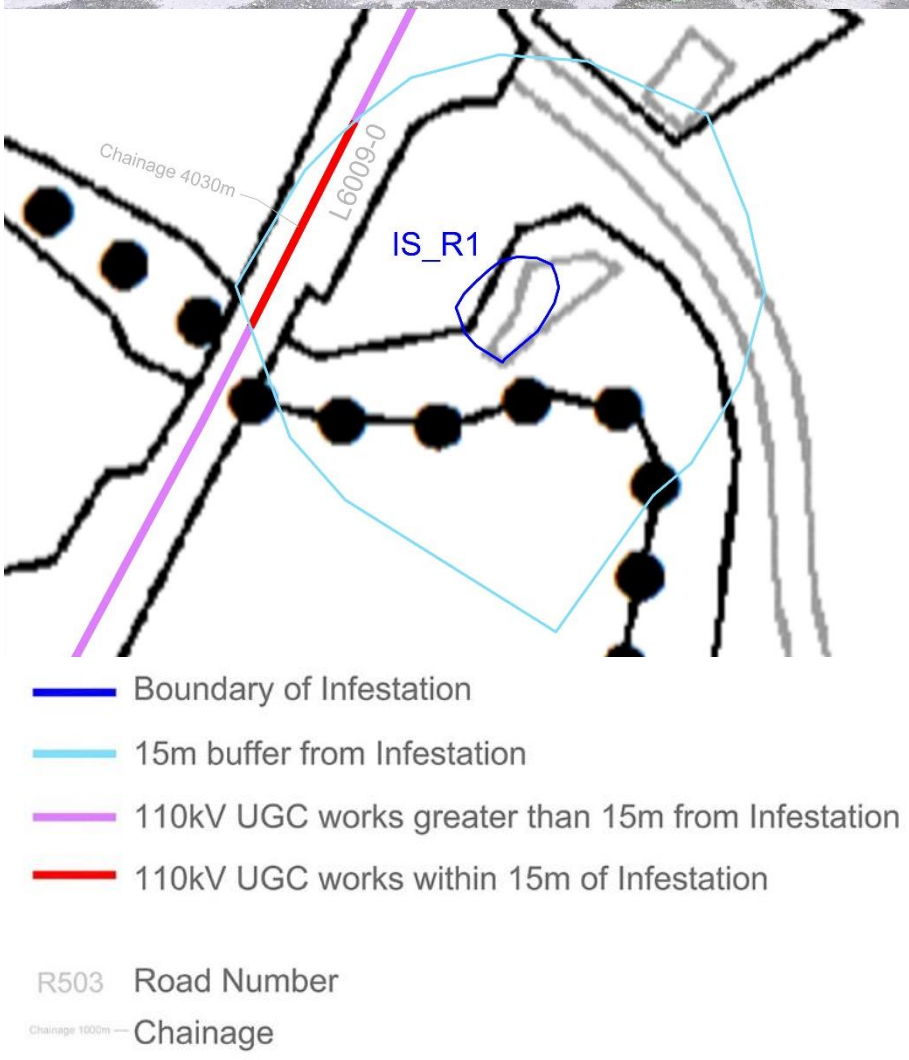
Separation Distance: 4m
(from construction works)

Infestation Specific Biosecurity Measures
(to be implemented under supervision of an invasive species specialist)

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



2.4 Rhododendron Infestations



Invasive Species Survey:

Infestation ID: IS_R1

ITM: 574208,662599

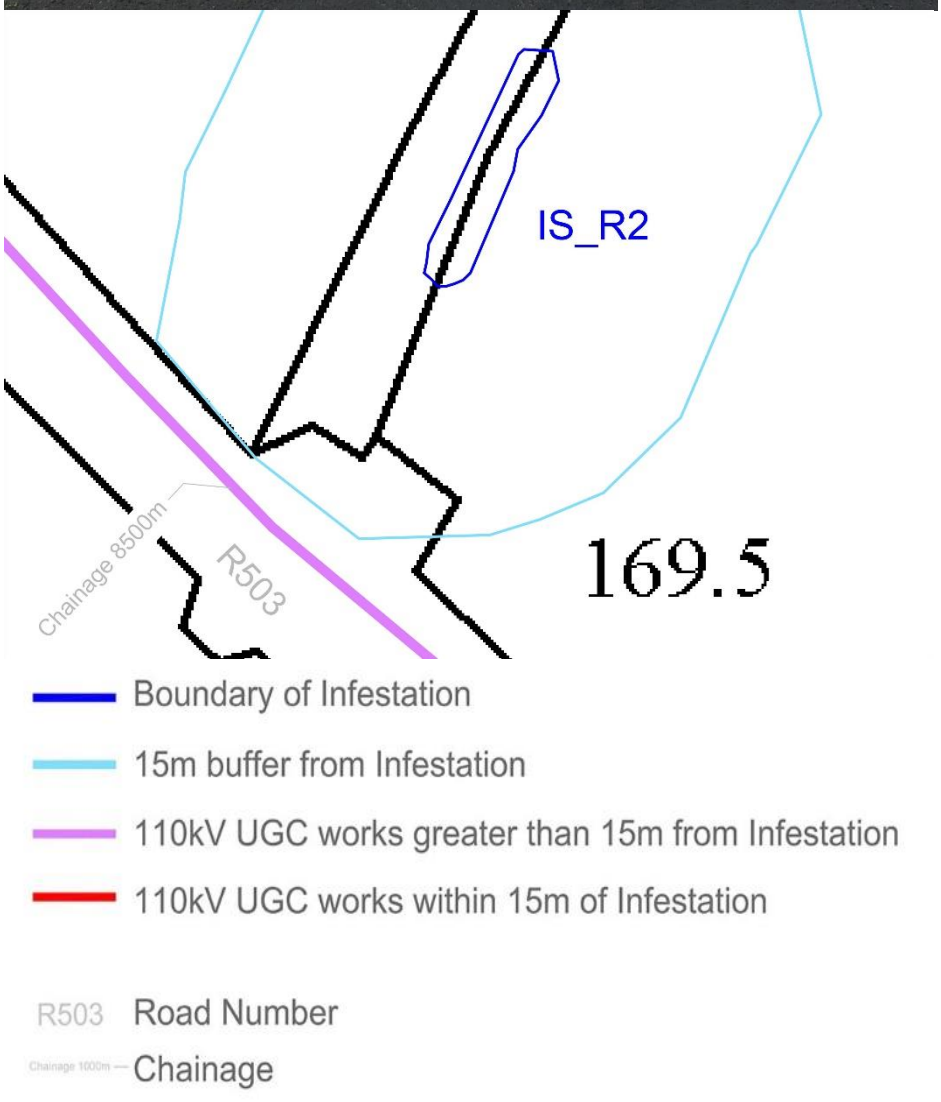
Infestation Type: Rhododendron

Dimensions of Infestation: 8m x 6m

Separation Distance: 10m *(from construction works)*

Infestation Specific Biosecurity Measures

No measures required due to distance from works



Invasive Species Survey:

Infestation ID: IS_R2

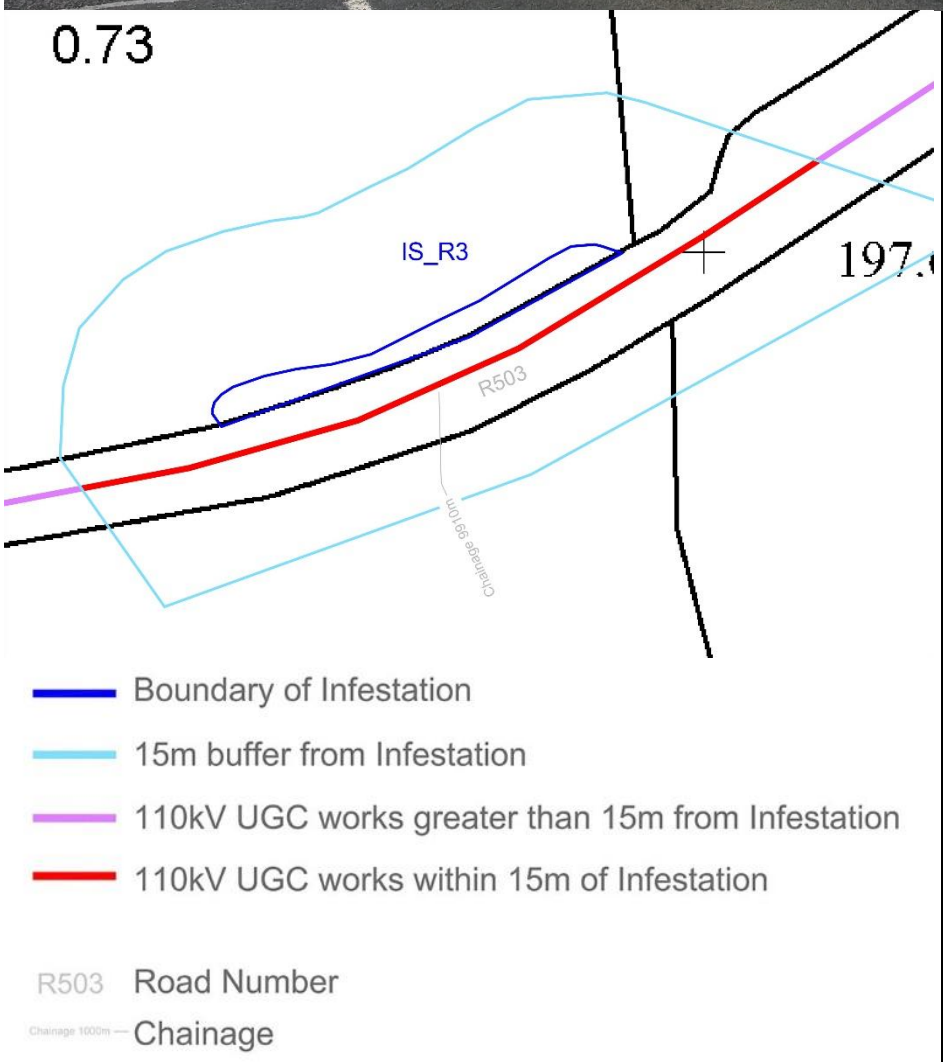
ITM: 575705,660336

Infestation Type:
Rhododendron

Dimensions of Infestation:
3m x 15m

Separation Distance: 15m

Infestation Specific Biosecurity Measures
No measures required due to distance from works



Invasive Species Survey:

Infestation ID: IS_R3

ITM: 576964,659981

Infestation Type: Rhododendron

Dimensions of Infestation: 40m X 3m

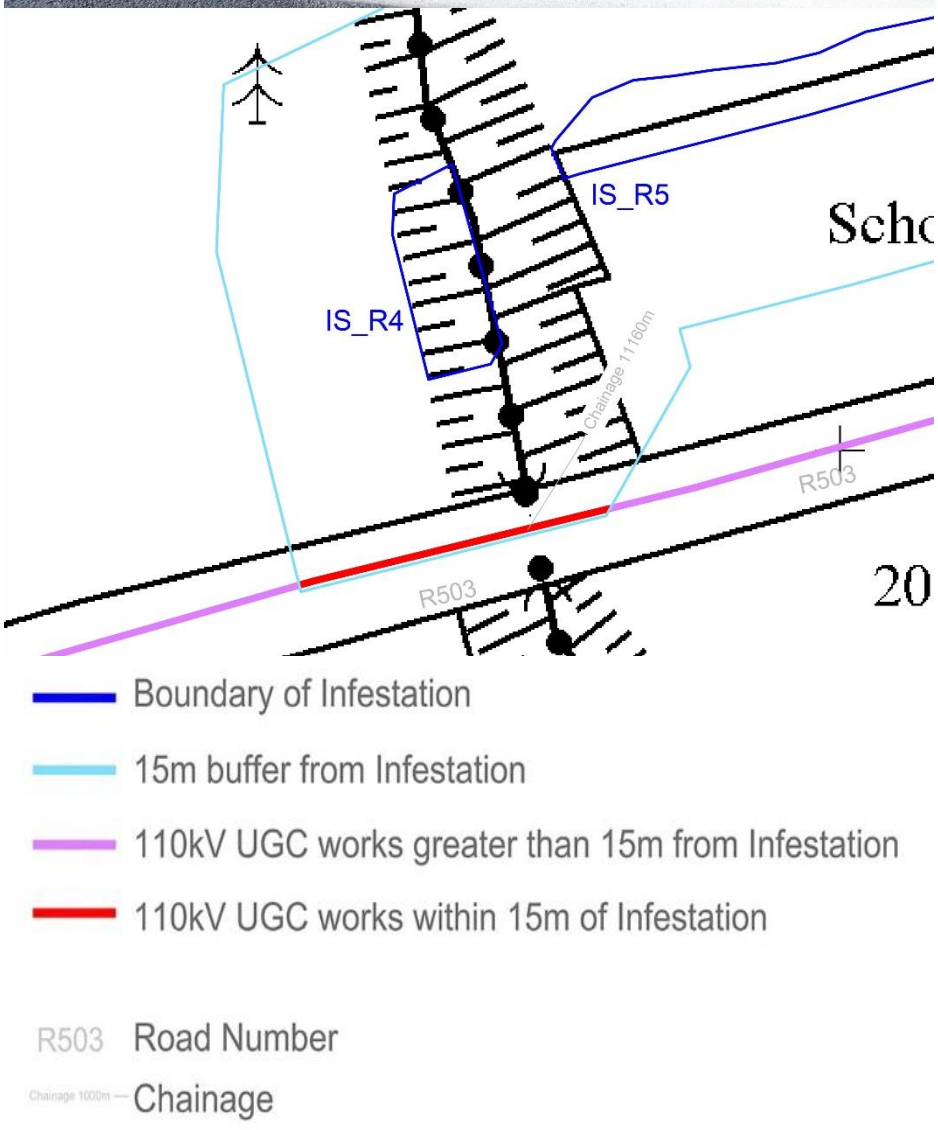
Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures:

Construction machinery will not come into contact with any of the adjacent vegetation during excavation of the ducting channel.

Construction works adjacent to the infestation will be carried out under supervision of the invasive species specialist.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Invasive Species Survey:

Infestation ID: IS_R4

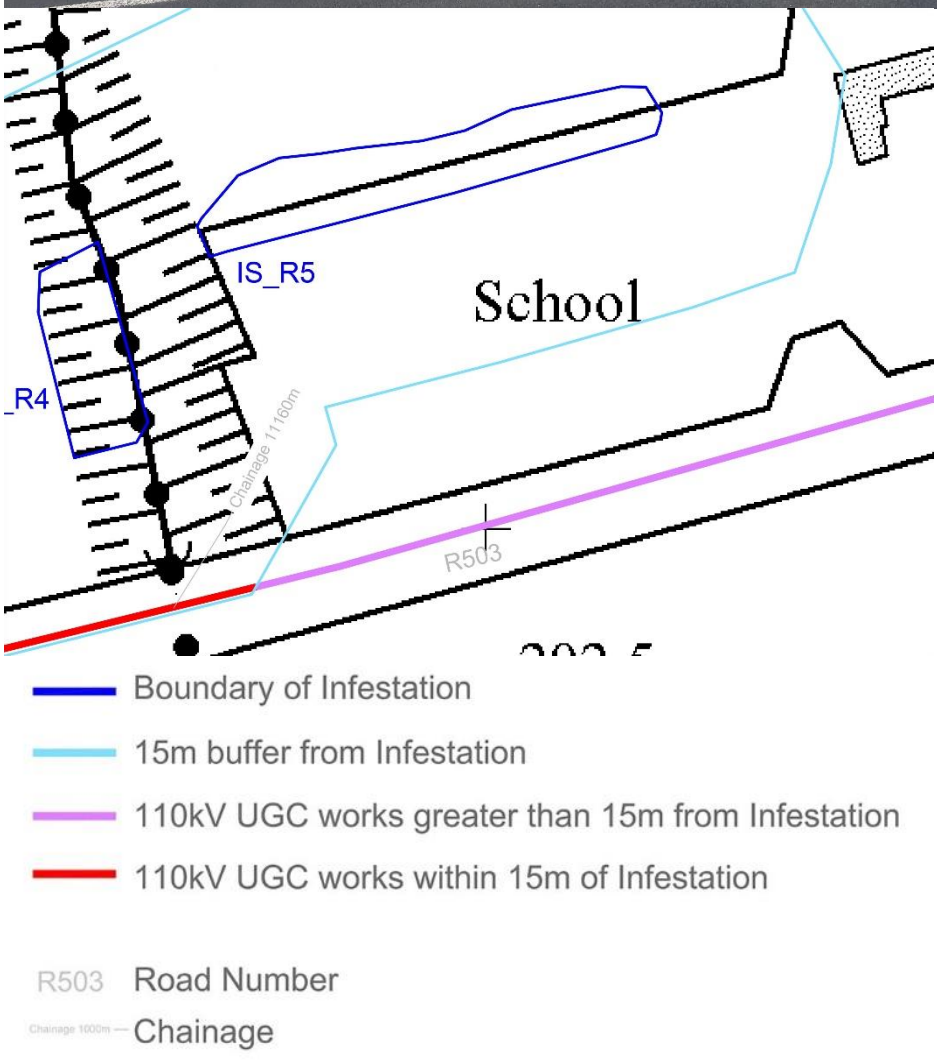
ITM: 578127,660433

Infestation Type:
Rhododendron

Dimensions of Infestation:
7m x 16m

Separation Distance: 10m
(from construction works)

Infestation Specific Biosecurity Measures
No measures required due to distance from works



Invasive Species Survey:

Infestation ID: IS_R5

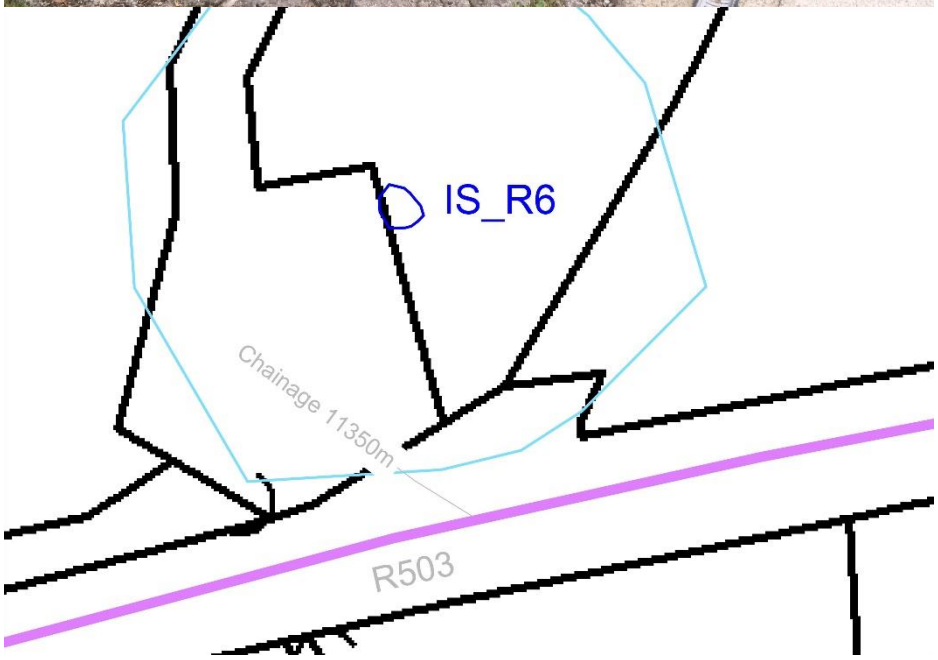
ITM: 578157,660450

Infestation Type:
Rhododendron

Dimensions of Infestation:
40m x 5m

Separation Distance: 25m
(from construction works)

Infestation Specific Biosecurity Measures
No measures required due to distance from works



Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage

Invasive Species Survey:

Infestation ID: IS_R6

ITM: 578311,660481

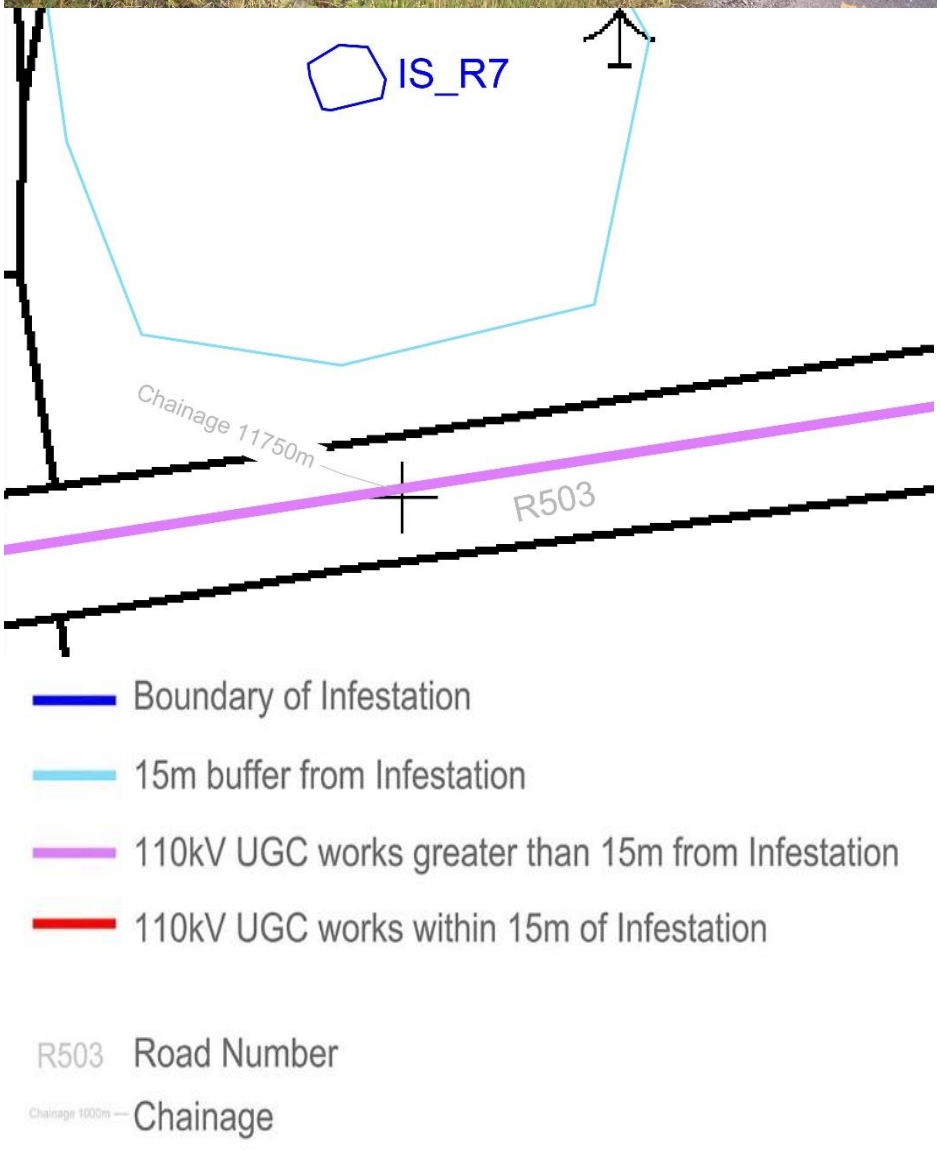
Infestation Type: Rhododendron

Dimensions of Infestation: 2m x 2m

Separation Distance: 15m *(from construction works)*

Infestation Specific Biosecurity Measures

No measures required due to distance from works



Invasive Species Survey:

Infestation ID: IS_R7

ITM: 578708,660549

Infestation Type: Rhododendron

Dimensions of Infestation: 4m x 3m

Separation Distance: 20m *(from construction works)*

Infestation Specific Biosecurity Measures
No measures required due to distance from works

Invasive Species Survey:

Infestation ID: IS_R8

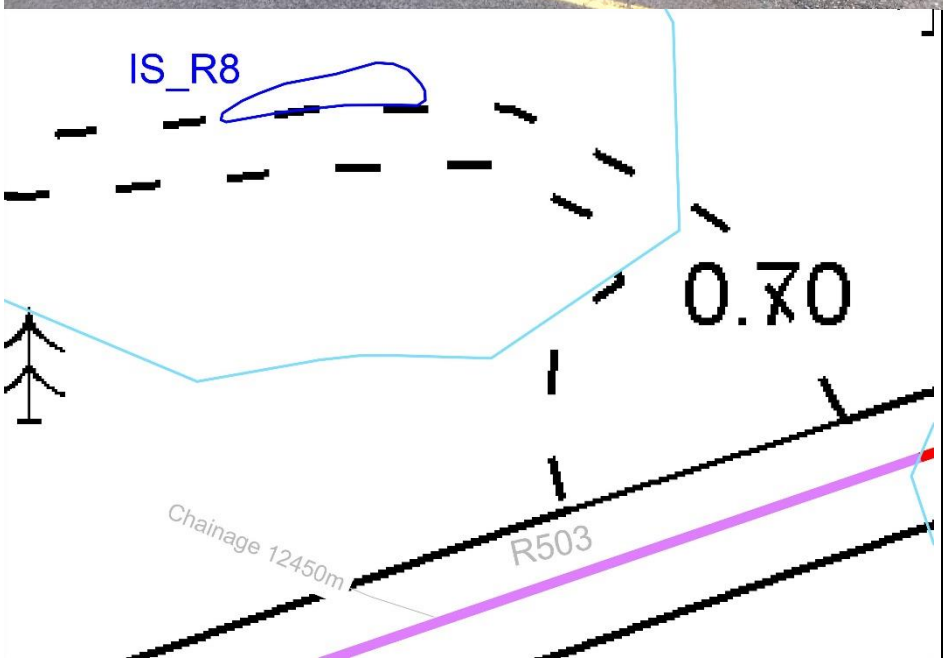
ITM: 579371,660730

Infestation Type: Rhododendron

Dimensions of Infestation: 3m x 12m

Separation Distance: 28m *(from construction works)*

Infestation Specific Biosecurity Measures
No measures required due to distance from works



Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage

Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage

Invasive Species Survey:

Infestation ID: IS_R9

ITM: 579425,660705

Infestation Type: Rhododendron

Dimensions of Infestation: 4m x 5m

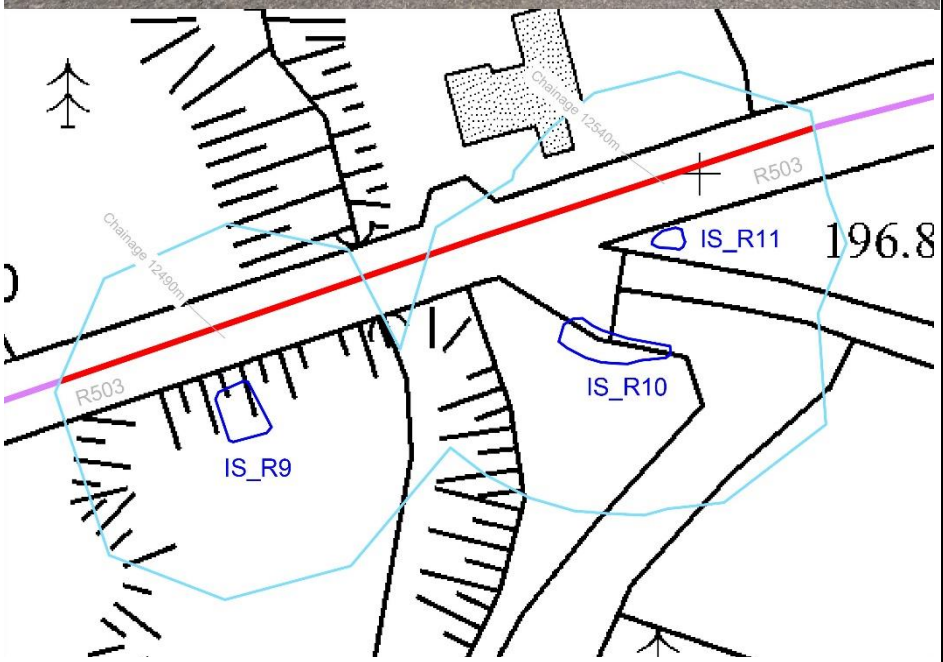
Separation Distance: 2m *(from construction works)*

Infestation Specific Biosecurity Measures:

Construction machinery will not come into contact with any of the adjacent vegetation during excavation of the ducting channel.

Construction works adjacent to the infestation will be carried out under supervision of the invasive species specialist.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage

Invasive Species Survey:

Infestation ID: IS_R10

ITM: 579462,660712

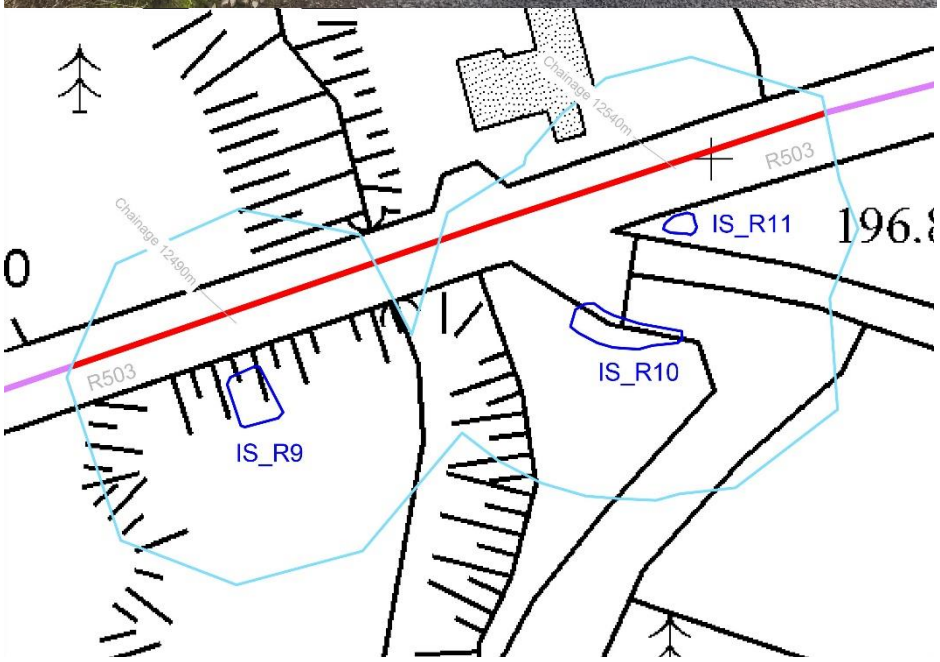
Infestation Type: Rhododendron

Dimensions of Infestation: 10m x 3m

Separation Distance: 7m *(from construction works)*

Infestation Specific Biosecurity Measures

No measures required due to distance from works



Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage

Invasive Species Survey:

Infestation ID: IS_R11

ITM: 579468,660723

Infestation Type: Rhododendron

Dimensions of Infestation: 2m x 2m

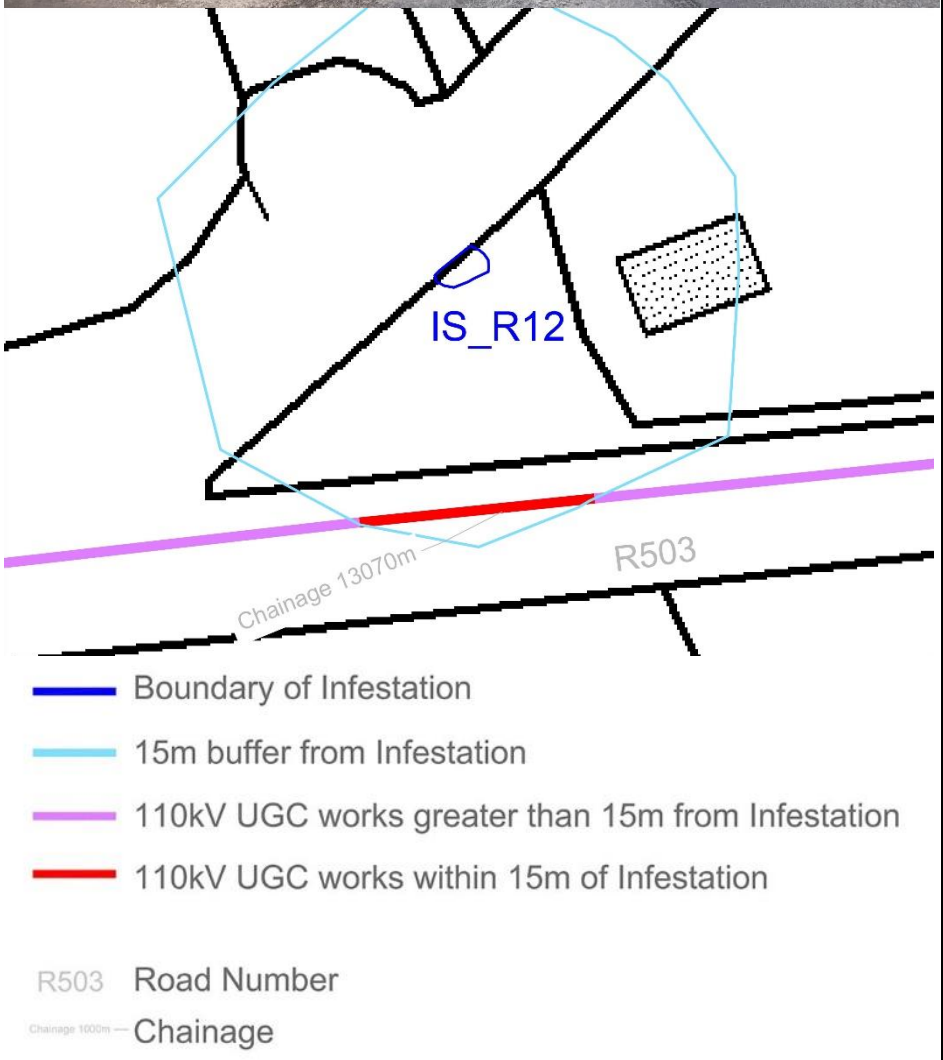
Separation Distance: 1m *(from construction works)*

Infestation Specific Biosecurity Measures:

Construction machinery will not come into contact with any of the adjacent vegetation during excavation of the ducting channel.

Construction works adjacent to the infestation will be carried out under supervision of the invasive species specialist.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Invasive Species Survey:

Infestation ID: IS_R12

ITM: 579991,660807

Infestation Type: Rhododendron

Dimensions of Infestation: 2m x 3m

Separation Distance: 11m

Infestation Specific Biosecurity Measures

No measures required due to distance from works

Invasive Species Survey:

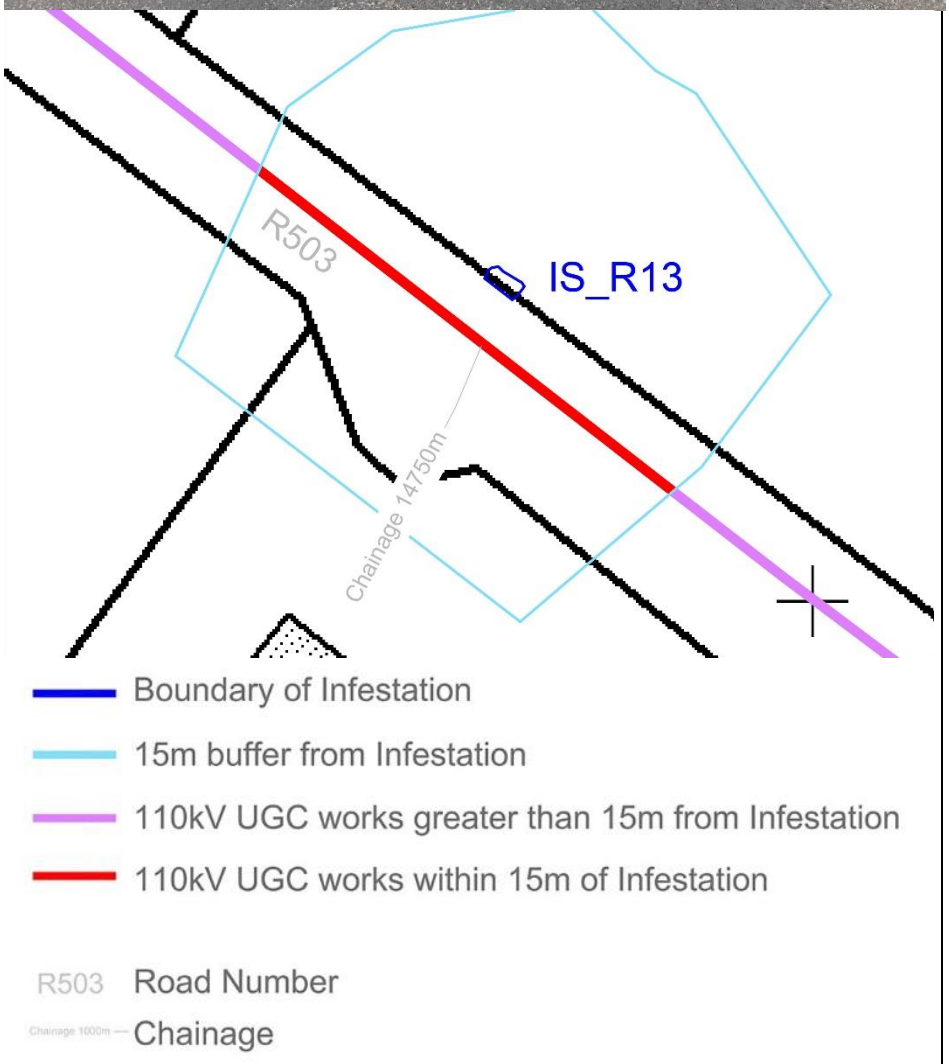
Infestation ID: IS_R13

ITM: 581500,660187

Infestation Type: Rhododendron

Dimensions of Infestation: 2m x 1m

Separation Distance: 0m - At Edge of roadway

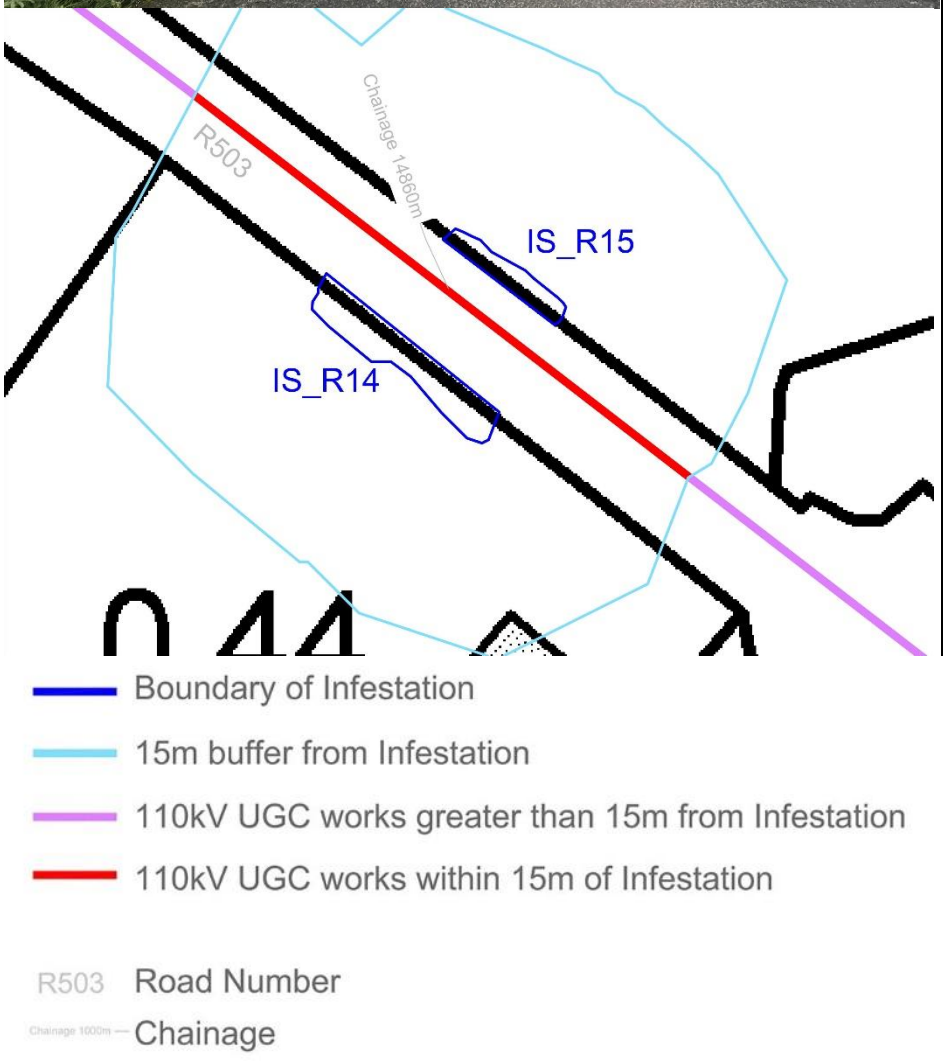


Infestation Specific Biosecurity Measures:

Construction machinery will not come into contact with any of the adjacent vegetation during excavation of the ducting channel.

Construction works adjacent to the infestation will be carried out under supervision of the invasive species specialist.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Invasive Species Survey:

Infestation ID: IS_R14

ITM: 581582,660113

Infestation Type: Rhododendron

Dimensions of Infestation: 16m x 2m

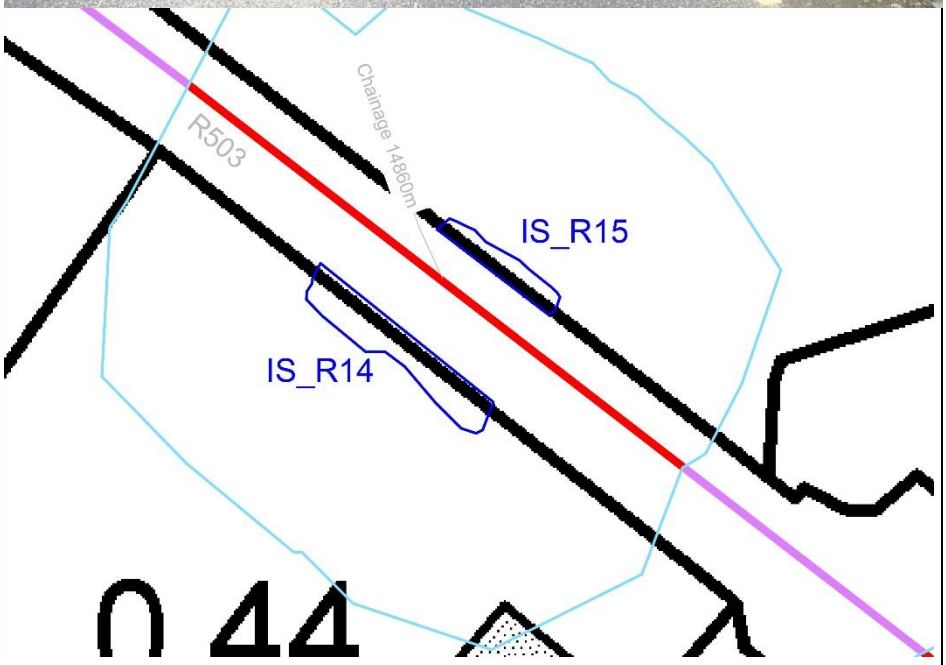
Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures:

Construction machinery will not come into contact with any of the adjacent vegetation during excavation of the ducting channel.

Construction works adjacent to the infestation will be carried out under supervision of the invasive species specialist.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Invasive Species Survey:

Infestation ID: IS_R15

ITM: 581590,660120

Infestation Type: Rhododendron

Dimensions of Infestation: 10m x 2m

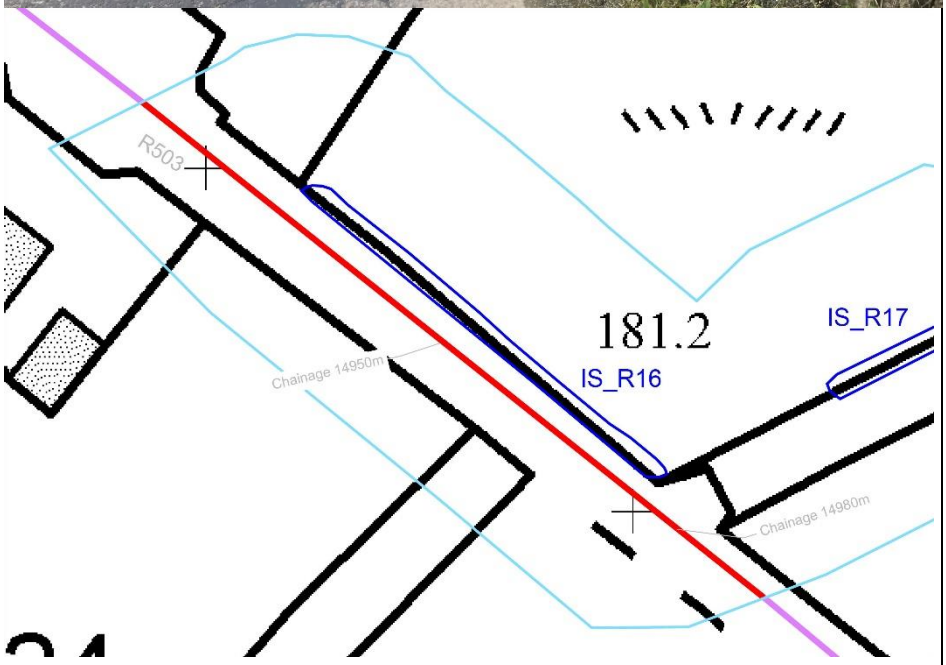
Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures:

Construction machinery will not come into contact with any of the adjacent vegetation during excavation of the ducting channel.

Construction works adjacent to the infestation will be carried out under supervision of the invasive species specialist.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage

Invasive Species Survey:

Infestation ID: IS_R16

ITM: 581658,660067

Infestation Type: Rhododendron

Dimensions of Infestation: 45m x 2m

Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures:

Construction machinery will not come into contact with any of the adjacent vegetation during excavation of the ducting channel.

Construction works adjacent to the infestation will be carried out under supervision of the invasive species specialist.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.

Invasive Species Survey:

Infestation ID: IS_R17

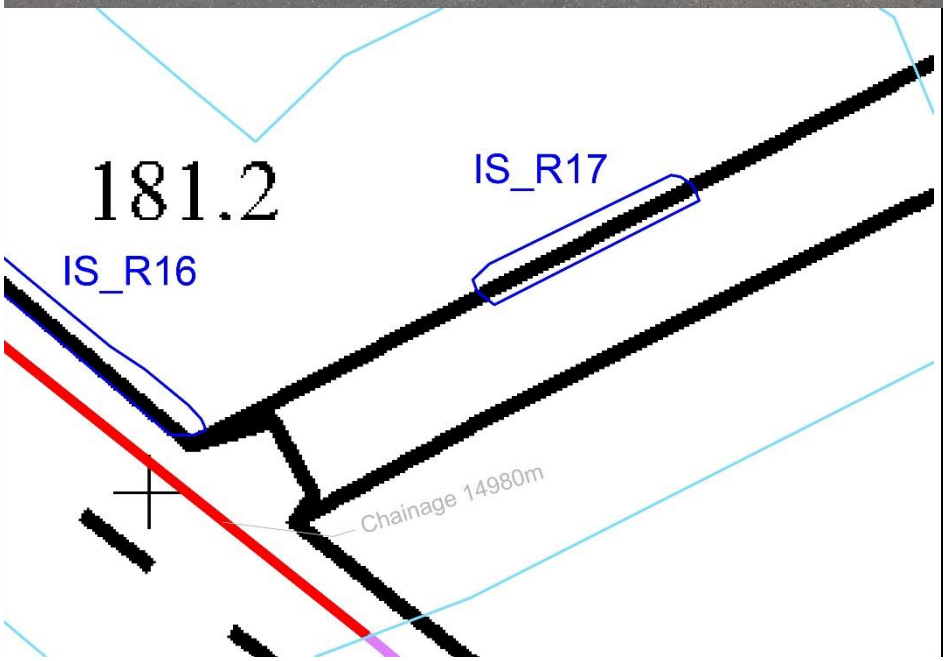
ITM: 581697,660065

Infestation Type:
Rhododendron

Dimensions of Infestation:
2m x 15m

Separation Distance: 20m
(from construction works)

Infestation Specific Biosecurity Measures
No measures required due to distance from works



Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage

Invasive Species Survey:

Infestation ID: IS_R18

ITM: 582284,659450

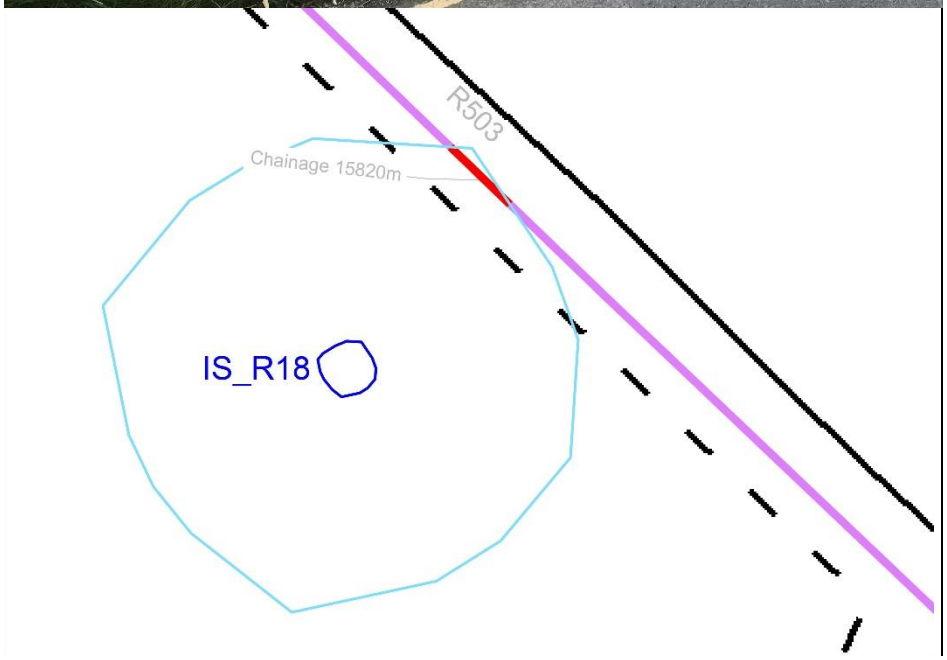
Infestation Type: Rhododendron

Dimensions of Infestation: 4m x 4m

Separation Distance: 12m

Infestation Specific Biosecurity Measures

No measures required due to distance from works



Boundary of Infestation

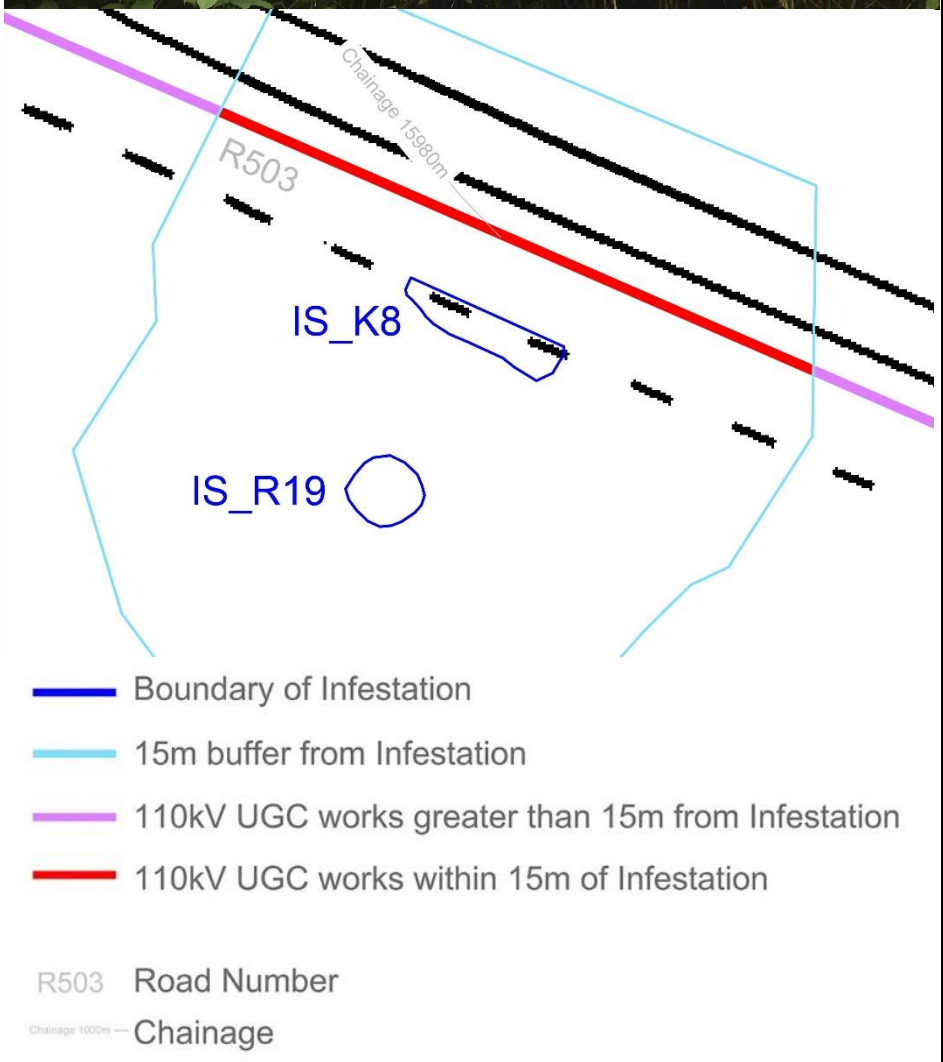
15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage



Invasive Species Survey:

Infestation ID: IS_R19

ITM: 582412,659360

Infestation Type: Rhododendron

Dimensions of Infestation: 4m x 4m

Separation Distance: 10m, behind Knotweed

Infestation Specific Biosecurity Measures
No measures required due to distance from works

Invasive Species Survey:

Infestation ID: IS_R20

ITM: 583844,659437

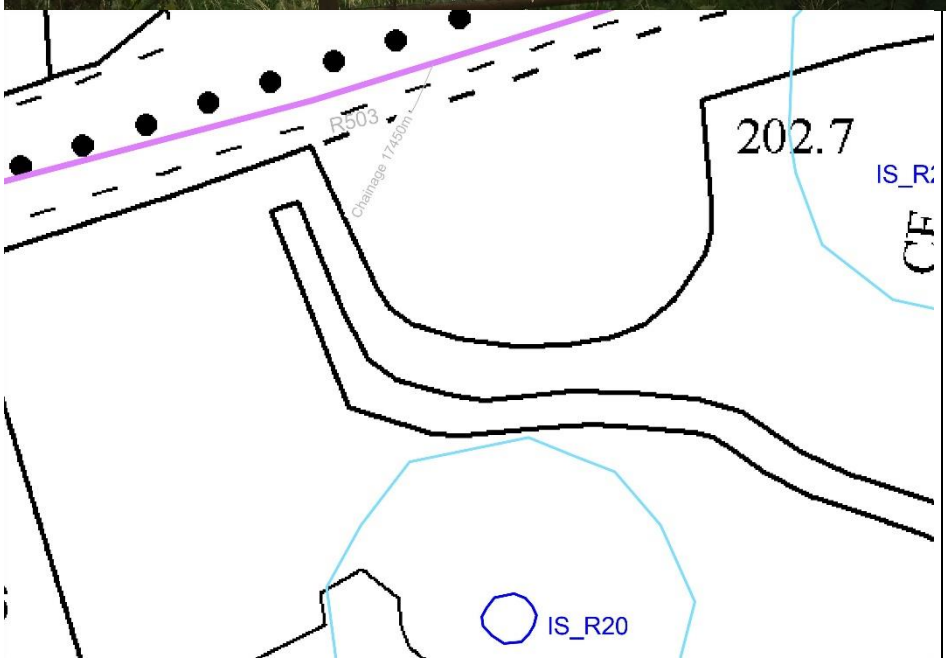
Infestation Type: Rhododendron

Dimensions of Infestation: 5m x 4m

Separation Distance: 50m *(from construction works)*

Infestation Specific Biosecurity Measures

No measures required due to distance from works



Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage

Invasive Species Management Plan

EMP

Invasive Species Survey:

Infestation ID: IS_R21

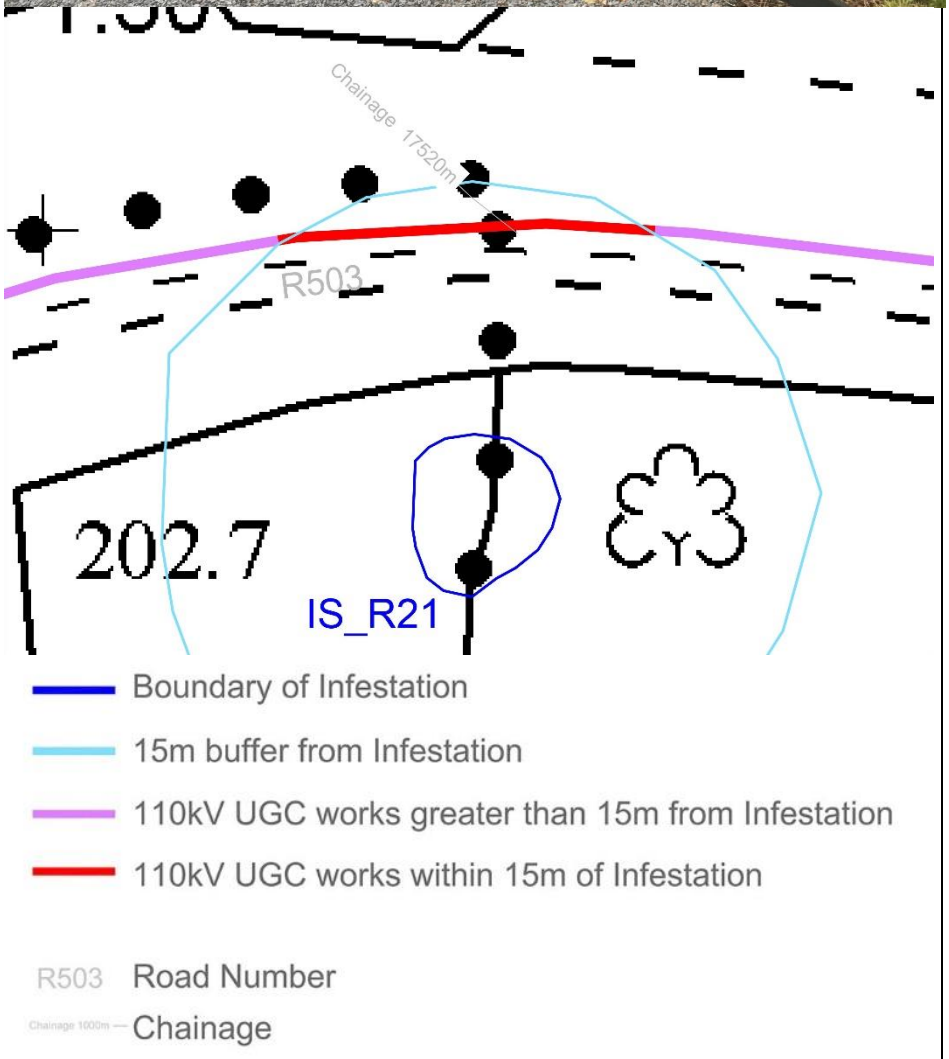
ITM: 583891,659489

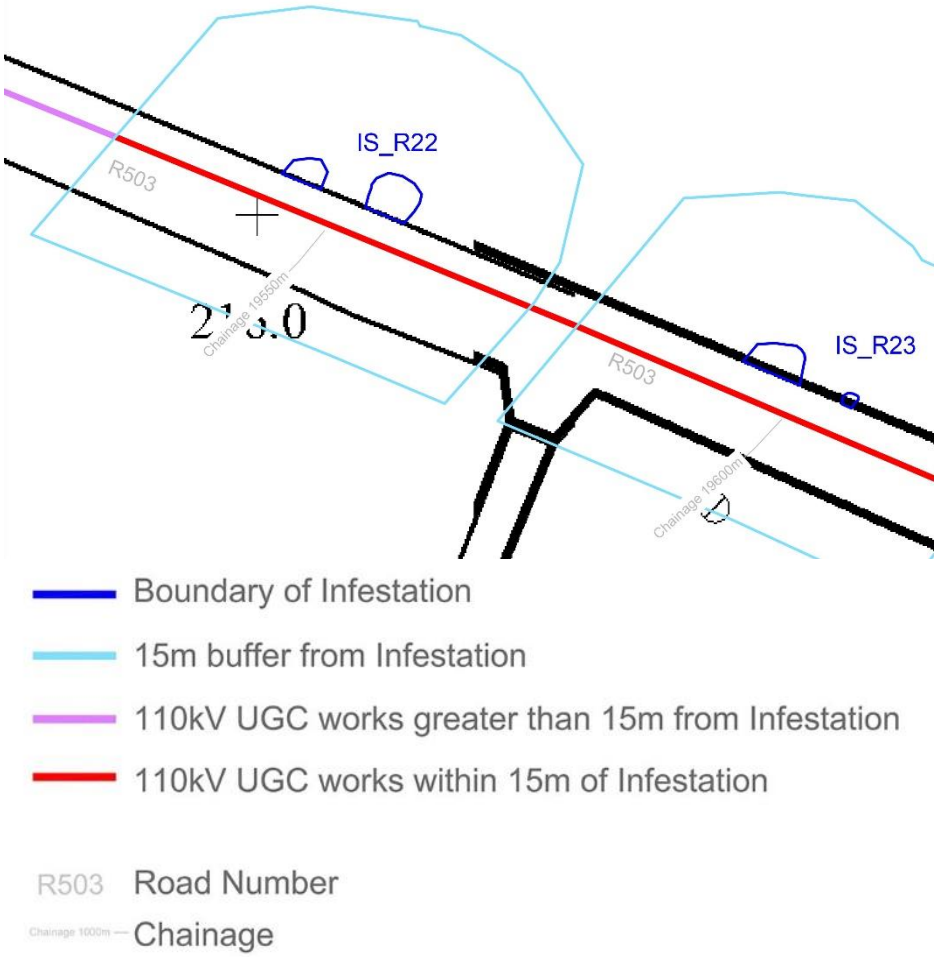
Infestation Type:
Rhododendron

Dimensions of Infestation:
8m x 8m

Separation Distance: 10m
(from construction works)

Infestation Specific Biosecurity Measures
No measures required due to distance from works





Invasive Species Survey:

Infestation ID: IS_R22

ITM: 585791,658815

Infestation Type: Rhododendron

Dimensions of Infestation: 3m x 2m & 5m X 4m (2 locations)

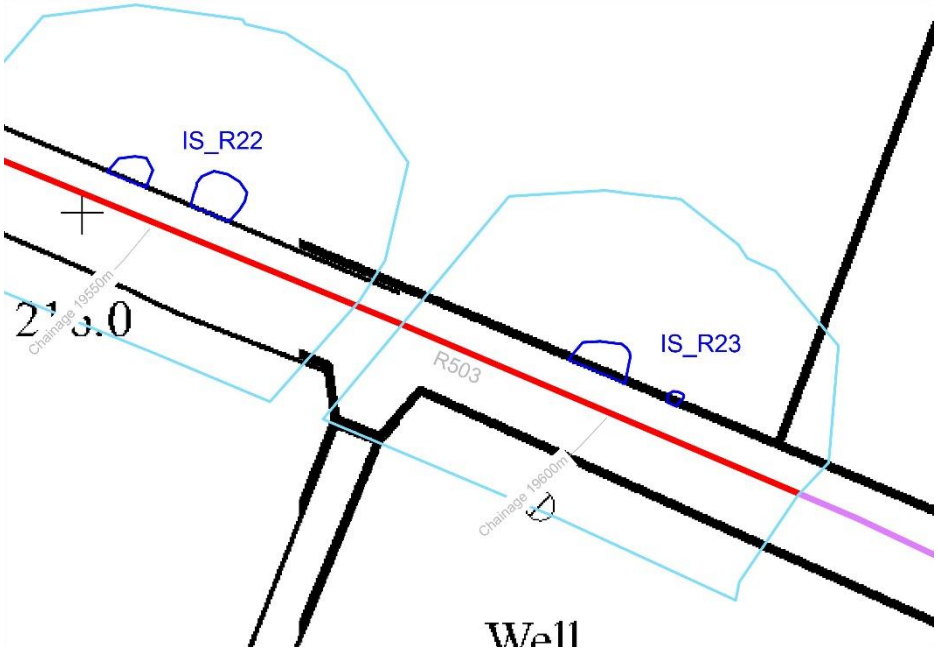
Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures:

Construction machinery will not come into contact with any of the adjacent vegetation during excavation of the ducting channel.

Construction works adjacent to the infestation will be carried out under supervision of the invasive species specialist.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage

Invasive Species Survey:

Infestation ID: IS_R23

ITM: 585837,658797

Infestation Type: Rhododendron

Dimensions of Infestation: 5m x 3m & 1 X 1 (2 locations)

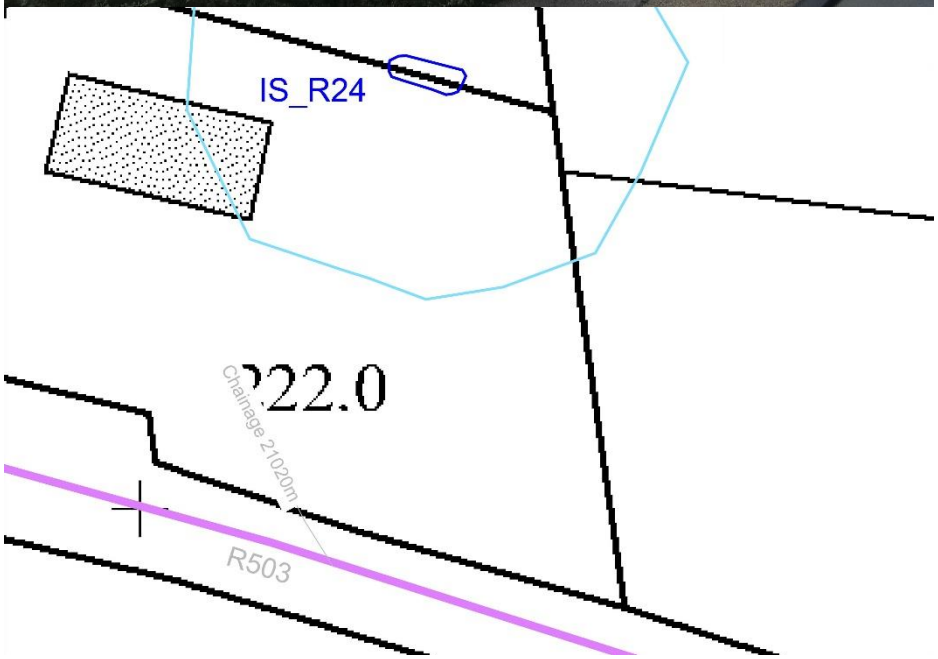
Separation Distance: 0m - At Edge of roadway

Infestation Specific Biosecurity Measures:

Construction machinery will not come into contact with any of the adjacent vegetation during excavation of the ducting channel.

Construction works adjacent to the infestation will be carried out under supervision of the invasive species specialist.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.



Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1000m — Chainage

Invasive Species Survey:

Infestation ID: IS_R24

ITM: 586972,658306

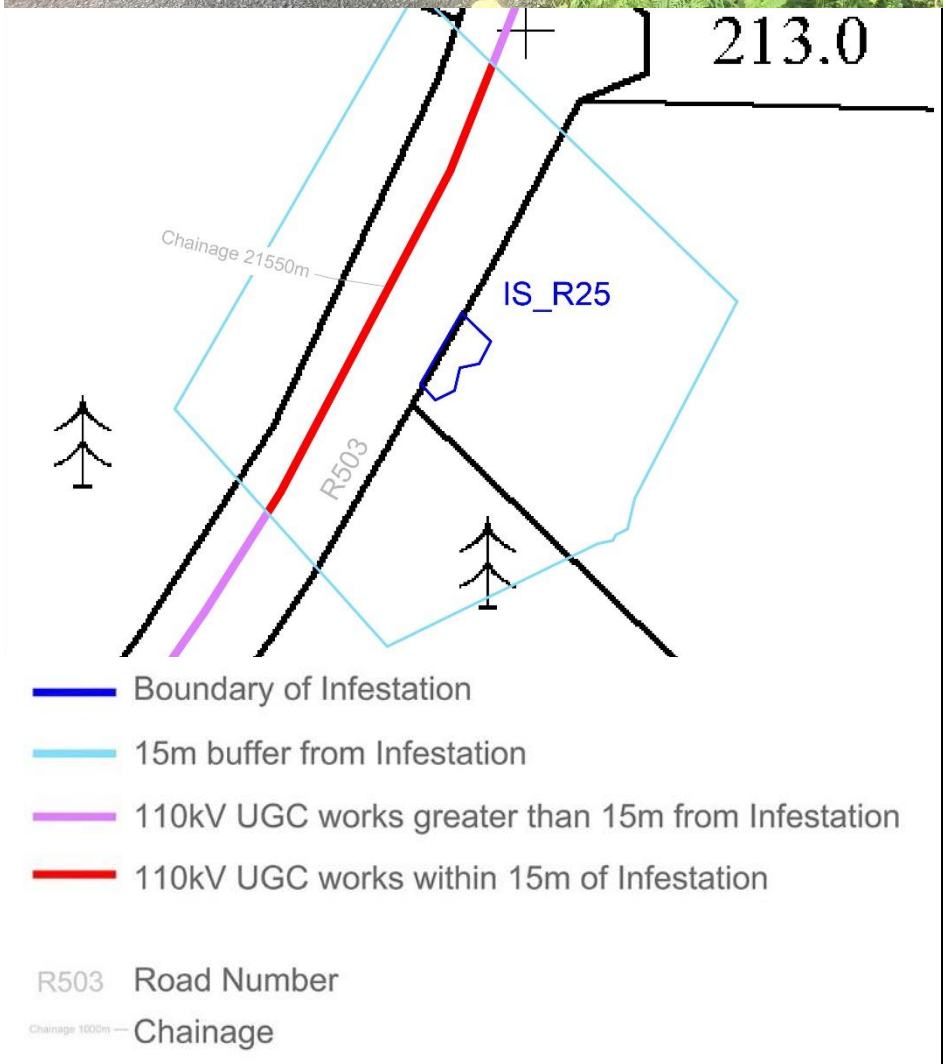
Infestation Type: Rhododendron

Dimensions of Infestation: 5m x 2m

Separation Distance: 35m *(from construction works)*

Infestation Specific Biosecurity Measures

No measures required due to distance from works



Invasive Species Survey:

Infestation ID: IS_R25

ITM: 587417,658297

Infestation Type: Rhododendron

Dimensions of Infestation: 6m x 3m

Separation Distance: 0m - At Edge of roadway

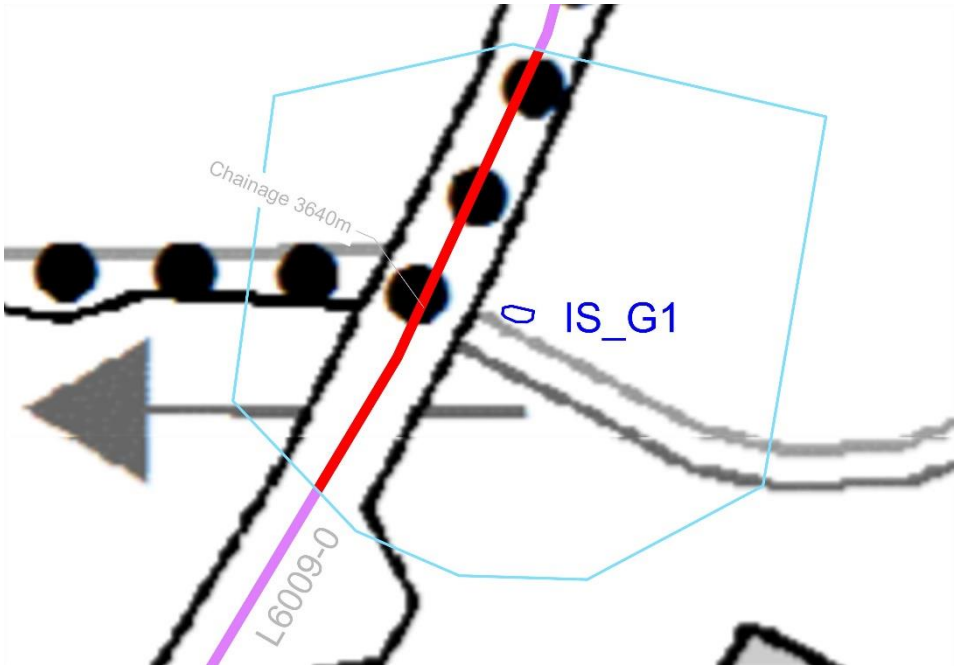
Infestation Specific Biosecurity Measures:

Construction machinery will not come into contact with any of the adjacent vegetation during excavation of the ducting channel.

Construction works adjacent to the infestation will be carried out under supervision of the invasive species specialist.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.

2.5 Giant Hogweed Infestation



Boundary of Infestation

15m buffer from Infestation

110kV UGC works greater than 15m from Infestation

110kV UGC works within 15m of Infestation

R503 Road Number

Chainage 1600m — Chainage

Invasive Species Survey:

Infestation ID: IS_G1

ITM: 574383,662954

Infestation Type:
Giant Hogweed

Dimensions of Infestation:
1m x 2m

Separation Distance: 2.5m
(from construction works)

Infestation Specific Biosecurity Measures:

Construction machinery will not come into contact with any of the adjacent vegetation during excavation of the ducting channel.

Construction works adjacent to the infestation will be carried out under supervision of the invasive species specialist.

Excavated trenching material from the section of the 110kV UGC marked in red on the map, will be disposed as potentially contaminated material, by a licenced contractor to a suitably licenced waste facility.

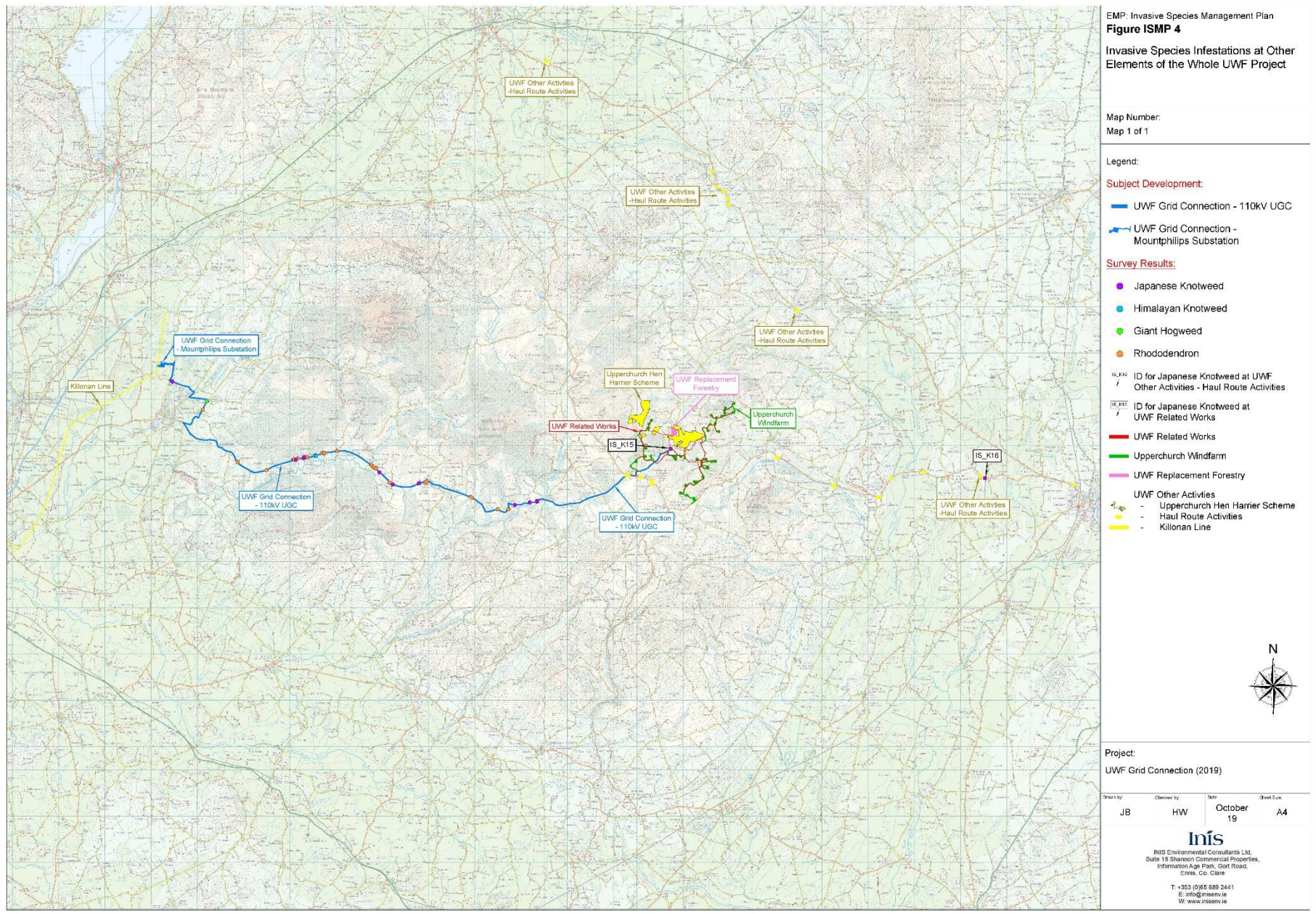
3. Invasive Species Infestations at Other Elements of the Whole UWF Project

UWF Grid Connection is part of a whole project – the Whole Upperchurch Windfarm (UWF) Project. Invasive species infestations in proximity to Other Elements of the Whole UWF Project were assessed in the Invasive Species Surveys. In summary, there is one infestation proximal to UWF Related Works, and one infestation proximal to a Haul Route Activity location (part of UWF Other Activities), as detailed below and shown on Figure ISMP 4 and Figure ISMP 5. These infestations will be dealt with, throughout the construction period, with the same comprehensive measures as the UWF Grid Connection works listed in Section 4.

The promoter of the UWF Grid Connection, Ecopower Developments Ltd, is also the promoter of the Whole UWF Project, and as such will have full control over all construction practices for the works as the Promoter. Ecopower Development is committed to implementing the Biosecurity Measures, which are described in Section 4 of this Plan, for all works and activities relating to the Whole UWF Project.

Operational Stage: It is important to note that there are currently no invasive plant infestations within the Upperchurch Windfarm boundary and as such operational risks from Invasive plant infestations are not present. The Promoter of the Upperchurch Windfarm project, will have full control of all vehicular movements within the wind farm. To avoid creating new infestations all such movements will follow specific Biosecurity Measures as listed in Section 4.

Re the Decommissioning stage of the wind farm, it is impossible to predict what infestations will be present in 25 years' time. Ecopower Developments Ltd will apply Best Practice Biosecurity Measures to assessing and dealing with any/all infestations wherever they occur within their wind farm. A new updated Invasive Species Management Plan will be produced for the decommissioning stage.


UWF Other Activities -Haul Route Activities
UWF Other Activities -Haul Route Activities
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UWF Other Activities -Haul Route Activities
UWF Grid Connection - Mountphilips Substation
Killonan Line
UWF Grid Connection - 110kV UGC
Upperchurch Hen Harrier Scheme
UWF Replacement Forestry
Upperchurch Windfarm
UWF Related Works
IS_K15
UWF Grid Connection - 110kV UGC
IS_K16
UWF Other Activities -Haul Route Activities
EMP: Invasive Species Management Plan
Figure ISMP 4
Invasive Species Infestations at Other Elements of the Whole UWF Project
Map Number:
Map 1 of 1
Legend:
Subject Development:
UWF Grid Connection - 110kV UGC
UWF Grid Connection - Mountphilips Substation
Survey Results:
Japanese Knotweed
Himalayan Knotweed
Giant Hogweed
Rhododendron
ID for Japanese Knotweed at UWF Other Activities - Haul Route Activities
ID for Japanese Knotweed at UWF Related Works
UWF Related Works
Upperchurch Windfarm
UWF Replacement Forestry
UWF Other Activities
- Upperchurch Hen Harrier Scheme
- Haul Route Activities
- Killonan Line
N
Project:
UWF Grid Connection (2019)
Drawn by: JB
Checked by: HW
Date: October 19
Sheet Size: A4
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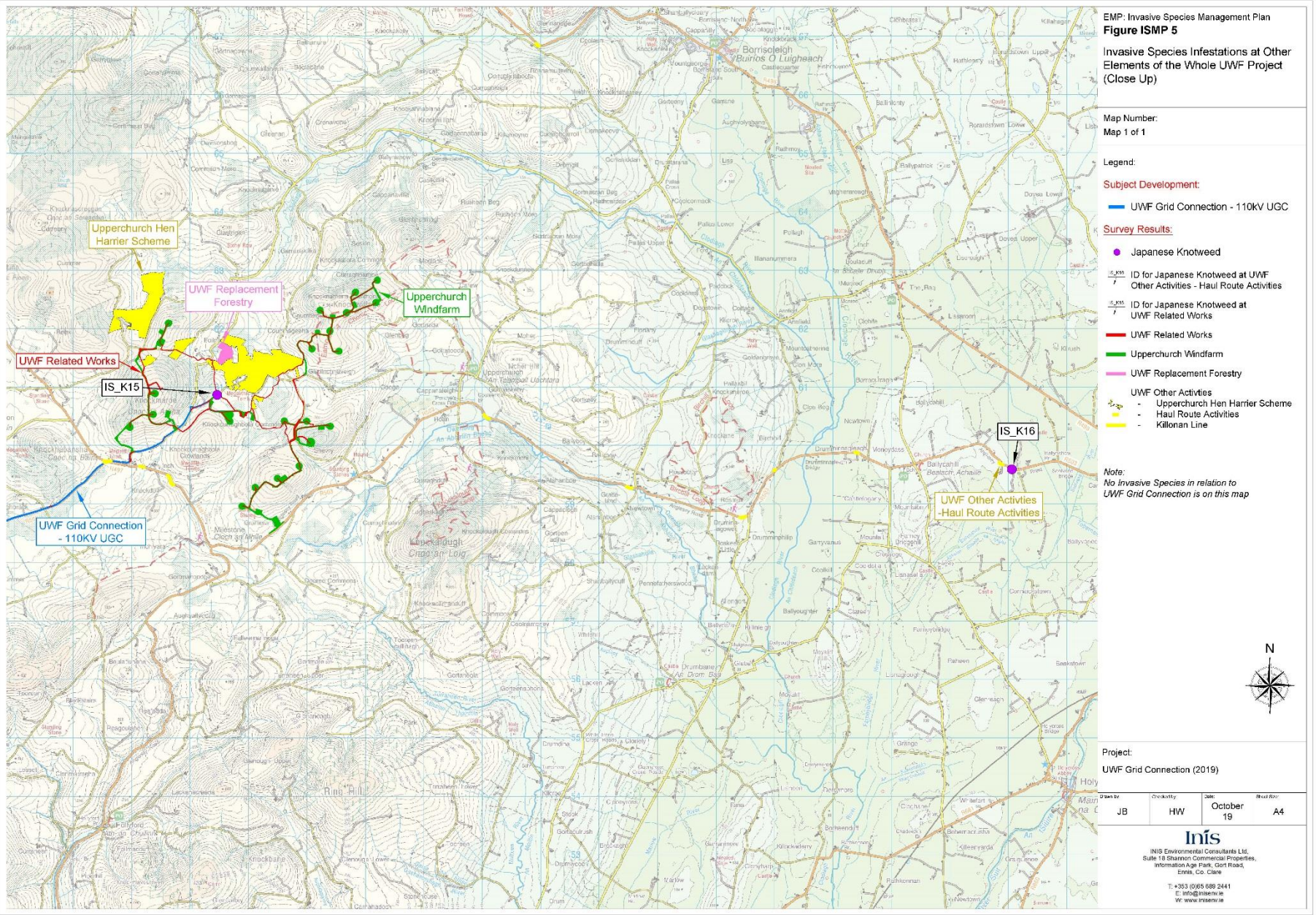
Upperchurch Hen Harrier Scheme
UWF Replacement Forestry
Upperchurch Windfarm
UWF Related Works
IS_K15
UWF Grid Connection - 110KV UGC
IS_K16
UWF Other Activties -Haul Route Activities
EMP: Invasive Species Management Plan
Figure ISMP 5
Invasive Species Infestations at Other Elements of the Whole UWF Project (Close Up)
Map Number:
Map 1 of 1
Legend:
Subject Development:
UWF Grid Connection - 110kV UGC
Survey Results:
Japanese Knotweed
ID for Japanese Knotweed at UWF Other Activities - Haul Route Activities
ID for Japanese Knotweed at UWF Related Works
UWF Related Works
Upperchurch Windfarm
UWF Replacement Forestry
UWF Other Activties
- Upperchurch Hen Harrier Scheme
- Haul Route Activities
- Killonan Line
Note:
No Invasive Species in relation to UWF Grid Connection is on this map
N
Project:
UWF Grid Connection (2019)
Drawn by: JB
Checked by: HW
Date: October 19
Sheet Size: A4
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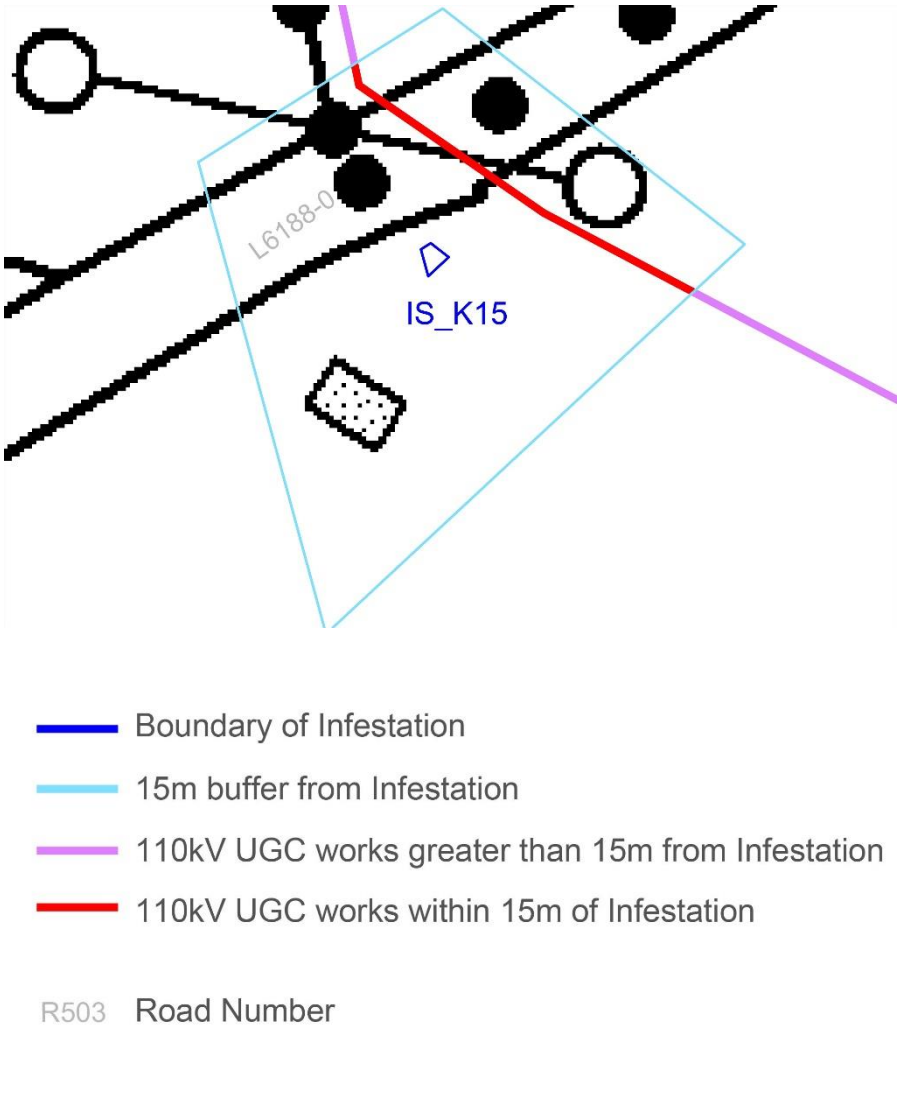


UWF RELATED WORKS

nvasive Species Survey:

Infestation ID: IS_K15

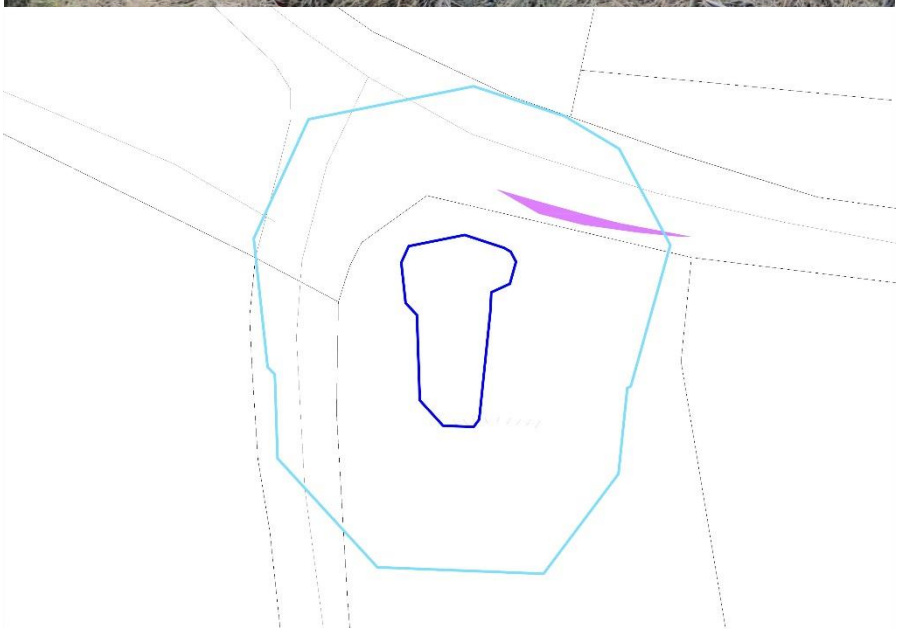
ITM: 594434 E 660905

Infestation Type:
Japanese Knotweed

Dimensions of Infestation:
2m x 2m

Separation Distance: 7m
(from UWF Related Works construction works for Internal Windfarm Cabling)

Infestation Specific Biosecurity Measures
No measures required due to distance from works



UWF OTHER ACTIVITIES
(Haul Route Activity)

Invasive Species Survey:

Infestation ID: IS_K16

ITM: 608032 E 659632

Infestation Type:
Japanese Knotweed

Dimensions of Infestation:
5m x 10m

Separation Distance: 6m
(from UWF Other Activities - Haul Route Activities)

Infestation Specific Biosecurity Measures
No measures required due to distance from works

No construction works will occur at this location

4. Biosecurity Measures for the Containment and Management of Invasive Species during the Construction Stage

The most relevant and current guidance in relation to the management of non-native invasive plant species and animal species during construction projects, will be implemented during the construction of the UWF Grid Connection project and during the development of the Other Elements of the Whole UWF Project. All works or activities in close proximity to Invasive Plant Infestations will be carried out under the supervision of an invasive species specialist.

The prescriptions for the treatment of invasive species were derived with reference to the following literature:

- Managing Japanese knotweed on development sites - The Knotweed Code of Practice produced by the Environmental Agency (2013);
- NRA Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads (2010);
- Managing Invasive Non-native Plants in or near Freshwater, Environment Agency (2010);
- Best Practice Management Guidelines Japanese knotweed Fallopia japonica, Invasive Species Ireland (2015);
- IFI Biosecurity Protocol for Field Survey Work, Inland Fisheries Ireland (2010).

4.1 Biosecurity Measures for works proximate to Invasive Plant Species Infestations

4.1.1 Pre-Construction Processes

- Pre-Construction confirmatory surveys will be completed by an invasive species specialist, 3 – 4 weeks before construction begins. Mapping, showing the most up to date distribution and extent of each infestation, will be distributed to the Promoter, Owners Engineer and the Contractor;
    - A toolbox talk will be provided by the invasive species specialist with the Contractors construction site engineers and general operatives to explain about all invasive species identified along the route and the restrictions that will apply for the full construction period. The toolbox talk will cover all pertinent topics including all relevant invasive species close to construction works and the biosecurity measures to be implemented while working. The invasive species toolbox talk will cover the full lifecycle of every construction activity including, but not limited to, all onsite construction activities, mechanical excavation, transportation and disposal of all material from excavations, through to the backfilling of excavations, and reinstatement of the construction works area;
- During trenching and ducting works, it is assumed that 80 -100m per day of ducting can be completed. Covering of knotweed infestations (adjacent the works) within these 80-100m sections will be 7 days ahead of the construction program i.e. the covering of knotweed infestations will be completed on sections seven days in advance of works occurring on all sections. The infestations will be covered so that their full extent plus 1 metre is covered entirely and no vegetation is visible;
- The covering of vegetative knotweed infestations with high density polyethylene grass carpet terram at all identified locations prior to any works commencing on that section and the monitoring of construction works at that section when it happens. The polyethylene grass carpet terram covering will only be placed on and removed from the infestation under direct supervision from an invasive species specialist. When taking the terram off an infestation and moving to the next section the construction team will need to ensure that all adherent material has been removed and placed within the adjacent infestation i.e. it will be important not to spread the infestation;
- No posts will be used to secure the coverings i.e. there will be no uncontrolled ground interference

within 7 meters of any infestation during any of these operations;

- Once each knotweed infestation has been covered, works can begin at that location, an invasive species specialist will be present to provide supervision of all works adjacent to infestations;
- Rhododendron infestations and the giant hogweed infestation will not be covered with high density polyethylene grass carpet terram, instead where works occur within 5m of Rhododendron infestations or within 5m of the giant hogweed infestation, an invasive species specialist will be present to ensure that construction machinery and operatives do not come into contact with these infestations;
- The site Environmental Clerk of Works will ensure that the Contractor engages a suitable waste disposal company with the requisite license for handling any hazardous waste (i.e. invasive species material). The Contractor will maintain records of all wastes arising, and the documentation will include the waste contractor's local authority license and proof of appropriate haulage license per individual haulage vehicle.
- Excavated trenching material from the section of the 110kV UGC within 15m of an infestation, will be disposed as potentially contaminated material, by a licensed contractor to a suitably licensed waste facility.
- Construction machinery will not come into contact with any of the adjacent vegetation during excavation of the ducting channel.
- Construction works adjacent to the infestation will be carried out under supervision of the invasive species specialist.

4.1.2 Construction Phase Processes for works locations proximate to Infestations

- Before construction begins on any section, all General Operatives will attend a toolbox talk on invasive species. No General Operative will be allowed to work on the project without completing the toolbox talk;
- Once this is completed construction can begin with onsite supervision of works in close proximity to locations where invasive species occur;
- The Environmental Clerk of Works will ensure that only licensed hauliers are collecting and disposing of material from any open excavation.

4.2 Biosecurity Measures to Prevent the Spread/Introduction of Aquatic Invasive Species

To ensure the effective implementation of the biosecurity measures, an invasive species specialist will monitor each infestation location during all critical stages of construction works.

4.2.1 Inspection and Cleaning of Delivery Vehicles

- Prior to arrival on site, the contractor's vehicles and equipment will be thoroughly cleaned and then dried using high-pressure steam cleaning, with water hotter than 65 degrees Celsius, in addition to the removal of all vegetative material. Items difficult to soak/spray will be wiped down with a suitable disinfectant (e.g. Virkon Aquatic);
- Evidence that all machinery has been cleaned will be required to be on file for review by the statutory authorities. Given that Crayfish Plague has affected rivers in the area recently (2017) the level of evidence required of the Contractor will be actual registration plates of vehicles onsite and a register of when, how and where each of these were cleaned before they arrived on site;
- A dedicated member of each construction crew along the 110kV UGC and at the Mountphilips Substation site will be responsible for inspecting and cleaning delivery vehicles both entering and exiting construction works areas along the 110kV UGC, and entering the Mountphilips Substation site. These persons will receive training in the correct techniques; Following cleaning, all equipment and vehicles will be visually inspected to ensure that all adherent material and debris has been removed manually. A bin will be provided at each work locations/site entrance for adherent material to be placed in. This will be emptied on a daily basis into the hazardous waste container at the Temporary Compound for removal offsite by a licensed operator; Spot checks on the efficacy of cleaning strategies will be carried out by the Project Ecologist. Records of supplies and cleaning of delivery vehicles will be kept by the flagmen, and will be regularly inspected by the Environmental Clerk of Works;
- Before works take place onsite the Contractor will have 150kg (15No. x 10kg buckets) of Virkon Aquatic available for the construction team – this will be stored in the COSSH store at the Temporary Compound at Mountphilips Substation site.
- A Virkon footbath will be available at all compound areas, construction areas and at the site entrance;
- Each construction crew will be equipped with a 'disinfection box'. This will contain Virkon Aquatic, a spraying mechanism, cloths or sponges, a scrubbing brush and protective gloves. Protective gloves will be worn when using any disinfectant solution;
- Visual inspections will be carried out on all machinery and equipment (particularly for machinery and equipment exiting the site and which has come into contact with water or soils) for evidence of attached plant or animal material, or adherent mud or debris. Any attached or adherent material will be removed before entering or leaving the site of operation, securely stored away from traffic for removal to the waste storage area in the Temporary Compound at the end of the work day;
- No removed material or run-off will be allowed to enter a water body of any sort. If watercourses are present near construction works areas a small 1-foot bund will be built using sand bags on either side of the works to ensure no water can enter the watercourse – any dirty water will be directed back into the construction site/excavated trench to be treated;

4.2.2 Measures for Works at/in Watercourses

- Residual water in any containers/vessels used in works near watercourses will be flushed with disinfectant (Virkon Aquatic) onto grass. A drying period of at least 24 hours will be adhered to;
- All footwear used, or to be used, in watercourses will be dipped in or scrubbed with a disinfectant solution (e.g. 1% solution of Virkon Aquatic or another proprietary disinfection product) and thoroughly dried afterwards. This also applies to footwear use in the agricultural lands at Mountphilips Substation site and on the public or private paved roads along the route of the 110kV UGC.
- Any observations of mass mortality of Crayfish will be reported to the relevant authorities

immediately upon evidence being found;

4.3 Biosecurity Measures to Prevent the Spread/Introduction of Invasive Animal Species

On the UWF Grid Connection project (at the Mountphilips Substation site) and during the development of the Other Elements of the Whole UWF Project many trees and shrubs will be planted as part of the project. These trees/shrubs (the root balls, leaves and soil) can contain invasive animal species. 'Hitch-hiking' is a term used to describe when a species is spread by the movement of other material. This can be, for example, on plants, soil, clothing or equipment.

Good practice Biosecurity Measures will be followed on the UWF Grid Connection project and the Other Elements of the Whole UWF Project in order to avoid the unintentional introduction and spread of invasive animal species through newly imported plants or growing media.

Measures to be applied throughout the construction period will be as follows:

- Care will be taken in the use of trailers and the movement of plants onsite – inspections of all plants and shrub root balls will take place before they leave the nursery but also when they arrive onsite;
- All trailers will be checked before they leave the nursery but also when they arrive onsite;
- Staff will be appropriately trained in preventing the spread of invasive species (including training in relevant regulations).
- A toolbox talk will be provided by the invasive species specialist with the Contractors construction site engineers and general operatives to explain about all potential animal invasive species and the controls expected and that will apply for the full construction period. The toolbox talk will cover all pertinent topics including all relevant invasive species close to construction works and the biosecurity measures to be implemented.
- The invasive species toolbox talk will cover the full lifecycle of every plant delivery onsite including how to inspect deliveries and how to deal with any 'hitchhikers' if found;
- In all cases of an invasive species being found the relevant statutory authorities will be contacted immediately.

Example of 'hitchhiker'

Small mammals (e.g. White Toothed Shrew)

Hitchhike on: Trailers, larger root balls, and movement of large plants.

How to prevent it: Check plant consignments for signs of mammals. Signs would include droppings, chewed packaging materials and also seeing the animals. Avoid allowing any animals transported to your site to escape into the wild.

Insects (e.g. Red lily beetle, Harlequin ladybird)

Hitchhike on: Plants brought onto the site.

How to prevent it: Check consignments of the plants. Will require hand picking or in some cases use of pesticides. Do not release any handpicked animals into the wild.

5. Biosecurity Measures to be implemented during the Operation of UWF Grid Connection

During the operation of UWF Grid Connection Biosecurity Measures will be required to ensure that no invasive species are introduced or spread from any existing infestations. No major construction works will be required during the operation of UWF Grid Connection however strict protocols will stay in place for all planned activities for the operational life time of the UWF Grid Connection.

5.1 Overview of Operational Activities

The planned, and potential, activities for the operational life time of the UWF Grid Connection are as follows:

Mountphilips Substation – Operational Phase

Daily monitoring: The Mountphilips Substation will not be permanently manned, as the equipment will be operated by remote computer link which will be connected to the National Control Centre.

Monthly Inspection: will mainly involve the testing of the electrical equipment and apparatus and testing of the electrical, communications and control systems along with visual inspections of the Mountphilips Substation Compound and Control Building. The security and condition of the surrounding palisade fence and entrance gates, and the condition of the access road, drainage network and watercourse crossing structures will also be inspected during these monthly visits.

Monitoring of the communication cables will be carried out remotely.

Annual Maintenance: will involve testing of equipment, apparatus and systems, and may also involve the replacement of electrical parts within the Substation Compound or Control Building. All parts and tools will be brought into the Mountphilips Substation as required. Mobile generators and hoists may also be required for some maintenance activities.

Conclusion: All planned activities for the operational life time of Mountphilips Substation will be by people arriving by vehicle and completing inspections on foot.

Mountphilips - Upperchurch 110kV UGC– Operational Phase

Annual Inspection: The electric cables will be inspected annually by ESB Networks. The annual inspection which will include checks, inspections and testing via the link boxes which will have been installed in a link box chamber at Joint Bays. The man-hole type cover over the link box chamber, which is at road surface level, will be removed to provide access to the link box within. Checks and testing of the electric cables will be carried out using hand held tools. The entire length of the 110kV UGC will also be visually inspected, by drive over of the route. Traffic management will be set up as required during inspections.

Planned Maintenance: The minimum lifecycle of the electrical cables and electric plant is 80 - 100 years in accordance with ESB Networks Specifications. As the cables will be factory tested to a high standard, sourced from ESBN approved suppliers and buried in a concrete enclosed trench in accordance with ESBN specifications, it is not expected that the cables will require replacement during their operational life. However, if any particular cable is found not to be performing to its specification, it will be scheduled for replacement.

Replacement of cables will involve the use of an excavator to remove the road surface and concrete covers from the top of the joint bay chambers at each end of the cable to be replaced. The sand inside the chambers is then removed and the cable joints opened. The cable can then be pulled out of its duct using a cable winch set up at one of the joint bays, and a new cable is then be pulled into the duct and jointed at both ends. The sand will then be backfilled into the chambers and the covers replaced and the road reinstated. Testing and

commissioning in a similar manner to the construction phase will then be carried out. Traffic management will be set up as required.

Unplanned Repairs: It is not likely or expected that there will be any requirements for unplanned repairs to UWF Grid Connection during its operation. However, in the unlikely event that repairs are required, the associated activities and likely to be similar to the planned maintenance activities described above.

Conclusion: Planned activities for the operational life time of Mountphilips - Upperchurch 110kV UGC will mostly involve non-intrusive drive through inspections of the cable route and testing inspections at joint bays. In addition, although extremely unlikely, there may be a requirement to open a road section to replace underperforming cabling; this work will involve an excavator and intrusive works.

Taking account of the activities that will, or may, take place during the Operational Phase of Upperchurch 110kV UGC, the following protocols will be in place for the lifetime of the Upperchurch 110kV UGC:

5.2 Biosecurity Measures for Operational Phase at Mountphilips Substation (Plants, Animals and Aquatic Invasive Species)

- Prior to arrival on site, any contractor's /ESB Networks vehicles will be thoroughly cleaned and then dried using high-pressure steam cleaning, with water hotter than 65 degrees Celsius, in addition to the removal of all vegetative material. Items difficult to soak/spray will be wiped down with a suitable disinfectant (e.g. Virkon Aquatic);
- Before working onsite, all boots/footwear will be disinfected;
- Before working onsite, all trailers will be checked for animal invasives;
- Visual inspections will be carried out on all vehicles for evidence of attached plant or animal material, or adherent mud or debris, before travelling to and working on Mountphilips Substation site;
- Contractors or ESB Networks RAMS (Risk Assessment Method Statement), for all works on Mountphilips – Upperchurch 110kV UGC, will be required to reflect a knowledge of all pertinent Invasive issues and the recommended procedures for each;
- In all cases of an invasive species being found the relevant statutory authorities will be contacted immediately.

5.3 Biosecurity Measures for Operational Phase at Mountphilips - Upperchurch 110kV UGC (Plants, Animals and Aquatic Invasive Species)

- Prior to arrival on site at Mountphilips – Upperchurch 110kV UGC, any contractor's /ESB Networks vehicles will be thoroughly cleaned and then dried using high-pressure steam cleaning, with water hotter than 65 degrees Celsius, in addition to the removal of all vegetative material. Items difficult to soak/spray will be wiped down with a suitable disinfectant (e.g. Virkon Aquatic);
- Before working onsite, all boots/footwear will be disinfected;
- Before working onsite, all trailers will be checked for animal invasives. In all cases of an invasive species being found the relevant statutory authorities will be contacted immediately;
- Visual inspections will be carried out on all vehicles for evidence of attached plant or animal material, or adherent mud or debris, before travelling to and working on Mountphilips – Upperchurch 110kV UGC;
- Before planned maintenance or unplanned repair works commence, an ecology or invasive species specialist will survey the works locations for invasive plant species infestations in proximity to the works location(s) - the infestations will be covered so that their full extent plus 1 meter is covered entirely and no vegetation is visible; any infestations of knotweed will be covered with polyethylene grass carpet terram before works and removed immediately afterwards under the supervision of the ecologist/invasive species specialist; rhododendron and giant hogweed infestations will not be covered;

the ecologist/invasive species specialist will supervise any works in proximity (5m) to infestations to ensure that construction machinery and operatives do not come into contact with these infestations;

- Contractors or ESB Networks RAMS (Risk Assessment Method Statements), for all works on Mountphilips – Upperchurch 110kV UGC, will be required to reflect a knowledge of all pertinent Invasive issues and the recommended procedures for each; the ecologist/invasive species specialist will provide a toolbox talk to works crews prior to works commencing;
- Should any works be required at watercourse crossings - residual water in any containers/vessels used in works near watercourses will be flushed with disinfectant (Virkon Aquatic) onto grass. A drying period of at least 24 hours will be adhered to; all footwear used, or to be used, in watercourses will be dipped in or scrubbed with a disinfectant solution (e.g. 1% solution of Virkon Aquatic or another proprietary disinfection product) and thoroughly dried afterwards. This also applies to footwear used on the public or private paved roads along the route of the 110kV UGC; any observations of mass mortality of Crayfish will be reported to the relevant authorities immediately upon evidence being found.

6. Biosecurity Measures to be implemented at Other Elements of the Whole UWF Project

UWF Grid Connection is part of a whole project – the Whole Upperchurch Windfarm (UWF) Project. Invasive species infestations in proximity to Other Elements of the Whole UWF Project were assessed during Invasive Species Surveys. In summary, there is one infestation proximal to UWF Related Works, and one infestation proximal to a Haul Route Activity location (part of UWF Other Activities), as detailed below. These infestations will be dealt with, throughout the construction period, with the same comprehensive Best Practice measures as the UWF Grid Connection works listed in Section 4.

The Promoter of the UWF Grid Connection, Ecopower Developments Ltd, is also the Promoter of the Whole UWF Project, and as such will have full control over all construction practices for the works as the Promoter. Ecopower Developments is committed to implementing the Biosecurity Measures, which are described in Section 4 of this Plan, for all works and activities relating to the Whole UWF Project.

Operational Stage: It is important to note that there are currently no invasive plant infestations within the Upperchurch Windfarm boundary and as such operational risks from Invasive plant infestations are not present. Ecopower Developments Ltd, as Promoter/owner of the Upperchurch Windfarm project, will have full control of all vehicular movements within the wind farm. To avoid creating new infestations all such movements will follow the Biosecurity Measures listed in Section 4.

Decommissioning stage of Upperchurch Windfarm: it is impossible to predict what infestations may or may not be present in 25 years' time. Ecopower Developments Ltd, as promoter/owner of the Upperchurch Windfarm project, will apply Best Practice Biosecurity Measures to assessing and dealing with any/all infestations wherever they occur within their wind farm. A new updated Invasive Species Management Plan will be produced for the decommissioning stage.