

Dinting Vale, Glossop

INVASIVE NON-NATIVE SPECIES REPORT

784-B039096





Wain Homes Ltd

September 2022

Prepared on Behalf Tetra Tech Limited.

Document control

Document:	Invasive non-native species report
Project:	Dinting Vale, Glossop
Client:	Wain Homes Ltd
Job Number:	784-B039096
File Origin:	\\ds-dc-vm-101\Data\Projects\784-B039096_Dinting_Vale\60 Project Output\61 Work in Progress\

Revision:	1	Status:	Final
Date:	September 2022		
Prepared by: Lucy Bennison Assistant Ecologist 	Checked by: Laura Holmes MCIEEM Associate Ecologist 	Approved By: Candice Howe CEcol MCIEEM Principal Ecologist 	
Description of revision: First Issue			
Revision			
V2	Updated number of properties 31/10/2022	Katrina Caine Consultant Ecologist 	

Revision:		Status:	
Date:			
Amended by:	Checked & Approved by:		
Description of revision:			

CONTENTS

INTRODUCTION	4
1.1 Background	4
1.2 Site Location	4
1.3 Development Proposals.....	4
1.4 Purpose of the Report.....	4
LEGISLATION	5
METHODOLOGY	7
3.1 Desk Study.....	7
3.1.1 Previous Reports	7
3.1.2 Local Ecological Records Centre	7
3.2 Field Surveys	7
3.3 Limitations	7
RESULTS	8
4.1 Overview	8
4.2 Himalayan Blasam	8
4.3 Variegated Yellow Archangel.....	8
MANAGEMENT OF INVASIVE NON-NATIVE SPECIES	9
5.1 Recommended working practices to prevent further spread.....	9
5.1.1 Clerk of Works.....	9
5.1.2 Toolbox talk	9
5.1.3 Marking.....	9
5.1.4 Haulage routes	9
5.1.5 Washdown.....	9
5.1.6 Monitoring.....	9
5.1.7 Records of control measures	10
ERRADICATION OPTIONS.....	11
6.1 General Biosecurity Measures.....	11
6.2 Himalayan balsam	11
6.3 Variegated Yellow Archangel.....	12
REFERENCES
FIGURES.....
APPENDIX A – REPORT CONDITIONS.....

APPENDIX B – TARGET NOTES

EXECUTIVE SUMMARY

Contents	Summary
Site Location	The site is located south off the A57 Dinting Vale, Glossop (centred at Ordnance Survey National Grid Reference SK 01926 94214).
Proposals	The proposal is for a new residential development of 100 properties, associated infrastructure and landscaping.
Scope of this Survey(s)	<ul style="list-style-type: none"> • Identify all areas of invasive species on-site at the time of survey and in the immediate surroundings of the site to a maximum of 50m, where possible; • Consider the source of these invasive plant species; • Consider vectors on and off the site that could allow these species to spread; and • Provide species-specific, preliminary advice on: <ul style="list-style-type: none"> ○ The legal implications of the presence of any invasive species on site; and ○ Potential eradication/management options available.
Results	<p>Himalayan balsam was present in extensive strands at eight locations across the site.</p> <p>Variegated yellow archangel was present in one stand in the north-east corner of the site.</p>
Recommendations	<p>It is illegal to facilitate the spread of invasive and non-native species or otherwise cause them to grow in the wild under the Wildlife and Countryside Act, 1981 (as amended).</p> <p>Good practice procedures to reduce the risk of spreading include:</p> <ul style="list-style-type: none"> • A minimum 3m buffer around invasive species, using high visibility tape/netting (or similar) to demarcate the boundary and prevent any disturbance of plants or potentially contaminated soils prior to works; • The use of a suitable, non-permeable membrane and heavy duty boarding where vehicular/personnel access is necessary around areas with surface growth; and • The implementation of a wheel-wash or foot bath and tools/boots cleaning system, where necessary; and measures to prevent the transfer of potentially contaminated materials and soils. <p>Four methods of Himalayan balsam control were identified, all of which could be utilised on site alone or in combination:</p> <ol style="list-style-type: none"> 1. Hand pulling 2. Mechanical 3. Chemical 4. Excavation.

	<p>Two methods of variegated yellow archangel control were identified which could be utilised on site alone or in combination:</p> <ol style="list-style-type: none">1. Mechanical2. Chemical <p>Further consultation with a specialist contractor is recommended to confirm and implement suitable eradication methods.</p> <p>Appropriate methods must be used to ensure waste is legally disposed of and monitoring of the infested area undertaken until at least two years have passed with no re-growth of invasive species.</p>
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GLOSSARY

DWT	Derbyshire Wildlife Trust
ECoW	Ecological Clerk of Works
LERC	Local Ecological Records Centre
INNS	Invasive Non-Native Species
W&CA	Wildlife & Countryside Act 1981 (as amended)

INTRODUCTION

1.1 BACKGROUND

Tetra Tech was commissioned by Wain Homes Ltd in June 2022 to undertake an Invasive Non-Native Species survey of the site known as Dinting Vale, Glossop (hereafter referred to as the 'site') and to produce a management plan based on the findings of the survey. This follows the completion of an extended Phase 1 habitat survey undertaken in November 2021 by TEP (TEP, 2022) which identified the presence of INNS within the site. The extent of INNS growth was also highlighted during the badger survey undertaken by Tetra Tech in June 2022 (Tetra Tech, 2022).

This report has been prepared by Lucy Bennison Assistant Ecologist and the conditions pertinent to it are provided in Appendix A.

1.2 SITE LOCATION

The site is south off the A57 Dinting Vale, Glossop, eastern Manchester (centred at Ordnance Survey National Grid Reference SK 01926 94214) (Figure 1).

The site includes plantation broad-leaved woodland in the north with scattered broad-leaved trees throughout the site. The southern area of the site is dominated by marsh/marshy grassland with areas of dense/continuous scrub and tall ruderal. There is also a pocket of semi-improved neutral grassland to the north of the site and a hardstanding road forming access to existing adjacent residential properties and an area of running water in the northeast corner of the site.

The site is bordered to the north by the A57 Dinting Vale; to the west by woodland and a rail corridor; and to the east and south by woodland and residential dwellings.

1.3 DEVELOPMENT PROPOSALS

It is understood that a new residential development is proposed with 100 properties, associated infrastructure and landscaping. The plans are not currently confirmed however the indicative plan (Drawing reference: WH/DV/SSL/01) shows that the marshy grassland, semi-improved neutral grassland, semi-improved acid grassland, unimproved acid grassland, plantation woodland, tall ruderal, introduced shrub and scrub will mostly be lost to facilitate the current proposals.

1.4 PURPOSE OF THE REPORT

The objectives of this assessment are to:

- Identify all areas of invasive species on-site at the time of survey and in the immediate surroundings of the site;
- Consider the source of these invasive plant species;
- Consider vectors on and off the site that could allow these species to spread; and
- Provide species-specific, preliminary advice on:
 - The legal implications of the presence of any invasive species on site; and
 - Potential eradication/management options available.

Please note: This report shall indicate potential management options only. It does not seek to recommend any specific treatment strategy to be adopted or imply what treatment option(s) would be most successful. A specialist contractor will need to be employed to design a treatment strategy for the site with reference to the project plans, timescales and other constraints.

LEGISLATION

The Wildlife & Countryside Act 1981 (as amended) is the principal mechanism for the legislative protection of wildlife in the UK. Since it was first introduced, the W&CA has been amended several times.

Part 14 of the W&CA makes it unlawful to plant or otherwise cause to grow in the wild any plant which is listed in Part II of Schedule 9. Part 14 of the W&CA states that 'if any person plants or otherwise causes to grow in the wild, plants which are included in Part II of Schedule 9, he shall be guilty of an offence'. The W&CA also states that persons must take all reasonable steps and must exercise due diligence to avoid committing an offence. It is not an offence to have plants listed under Schedule 9 on your land. It is an offence to cause the spread of these plants to new areas.

The relevant species listed on Schedule 9 of the W&CA are Indian (Himalayan) balsam *Impatiens glandulifera* and variegated yellow archangel *Lamiastrum galeobdolon subsp. argentatum*.

Table 1 lists all plant species on Schedule 9.

Table 1: Plant Species Listed on Schedule 9 of the W&CA

Invasive Species Listed in Relevant Legislation			
Australian swamp stonecrop or New Zealand pygmyweed	<i>Crassula helmsii</i>	Japanese rose	<i>Rosa rugosa</i>
Californian red seaweed	<i>Pilea californica</i>	Japanese seaweed	<i>Sargassum muticum</i>
Curly waterweed	<i>Lagarosiphon major</i>	Laver seaweeds (except native species)	<i>Porphyra</i> spp
Duck potato	<i>Sagittaria latifolia</i>	Parrot's-feather	<i>Myriophyllum aquaticum</i>
Entire-leaved cotoneaster	<i>Cotoneaster integrifolius</i>	Perfoliate alexanders	<i>Smyrniium perfoliatum</i>
False Virginia creeper	<i>Parthenocissus inserta</i>	Pontic rhododendron	<i>Rhododendron ponticum</i>
Fanwort or Carolina water-shield	<i>Cabomba caroliniana</i>	Purple dewplant	<i>Disphyma crassifolium</i>
Few-flowered garlic	<i>Allium paradoxum</i>	Red algae	<i>Grateloupia luxurians</i>
Floating pennywort	<i>Hydrocotyle ranunculoides</i>	Rhododendron	<i>Rhododendron ponticum</i> × <i>Rhododendron maximum</i>
Floating water primrose	<i>Ludwigia peploides</i>	Small-leaved cotoneaster	<i>Cotoneaster microphyllus</i>
Giant hogweed	<i>Heracleum mantegazzianum</i>	Three-cornered garlic	<i>Allium triquetrum</i>
Giant kelp	<i>Macrocystis</i> spp.	Variegated yellow archangel	<i>Lamiastrum galeobdolon subsp. argentatum</i>
Giant knotweed	<i>Reynoutira (Fallopia) sachalinensis</i>	Virginia creeper	<i>Parthenocissus quinquefolia</i>
Giant rhubarb	<i>Gunnera tinctoria</i>	Wakame	<i>Undaria pinnatifida</i>
Giant salvinia	<i>Salvinia molesta</i>	Wall cotoneaster	<i>Cotoneaster horizontalis</i>
Green seafingers	<i>Codium fragile</i>	Water fern	<i>Azolla filiculoides</i>
Himalayan cotoneaster	<i>Cotoneaster simonsii</i>	Water hyacinth	<i>Eichhornia crassipes</i>
Hollyberry cotoneaster	<i>Cotoneaster bullatus</i>	Water lettuce	<i>Pistia stratiotes</i>
Hooked asparagus seaweed	<i>Asparagopsis armata</i>	Water primrose	<i>Ludwigia grandiflora</i>
Hottentot fig	<i>Carpobrotus edulis</i>	Water primrose	<i>Ludwigia uruguayensis</i>

Hybrid knotweed	<i>Reynoutria (Fallopia) japonica × sachalinensis</i>	Waterweeds	<i>Elodea spp.</i>
Indian (Himalayan) balsam	<i>Impatiens glandulifera</i>	Yellow azalea	<i>Rhododendron luteum</i>
Japanese knotweed	<i>Reynoutria japonica</i>		

The Environmental Protection Act 1990 classifies soil and other waste containing viable propagules of invasive non-native plant species as controlled waste. This waste must be disposed of in accordance with the duty of care outlined in section 34 of the Act (Environmental Protection ‘Duty of Care’ Regulations 1991).

Any invasive species that have already been treated by certain toxic herbicides classified as hazardous will also fall under the Hazardous Waste Regulations 2005. These provisions mean that if these species occur on a site proposed for development or other work which may disturb the ground, control of these species is likely to be required. In normal circumstances it is important to eradicate invasive species in advance of commencement of development works to prevent spread of these plants.

METHODOLOGY

3.1 DESK STUDY

3.1.1 Previous Reports

An extended Phase 1 habitat survey was completed for the site in November 2021:

- Dinting Vale, Glossop. Ecological Appraisal (TEP, 2022)

Other relevant reports included:

- Dinting Vale, Glossop. Badger Report (Tetra Tech, 2022)

The above reports were reviewed as part of this assessment.

3.1.2 Local Ecological Records Centre

Information was requested from the Derbyshire Wildlife Trust (DWT) for information on any invasive species records within 2km of the site.

3.2 FIELD SURVEYS

A field survey was completed by Tetra Tech Consultant Ecologist Katrina Caine on 15th July 2022.

The site was thoroughly searched for evidence of any invasive species listed in relevant legislation or considered to be invasive/non-native locally. Where present larger stands were mapped onto field maps of the site. Individual plants and/or smaller stands were mapped using a smartphone-based mobile GIS application.

3.3 LIMITATIONS

The optimal period to undertake a survey for invasive flora is April to September inclusive; during which time the key invasive species noted in Section 2.0 are most likely to be visible and identifiable. The survey was completed in mid-July 2022 which is inside the optimal survey window and therefore is not considered to be a limitation to the accurate assessment of the presence and distribution of invasive species across the site.

It should be noted that, due to land access restrictions, it was not possible to survey a 50m buffer zone surrounding the site boundary. It is possible that some invasive species present on the border of the site may have been missed and therefore there is the risk that if species were missed, these may encroach into the site in the future. It is recommended that prior to clearance these areas of site are thoroughly searched to determine presence/likely absence of invasive and non-native species. It was noted that Himalayan Balsam extended outside of the site boundary to the east onto the adjacent land.

The details of this report will remain valid for a period of **two years** from the date of the survey (i.e. until 15th July 2024), after which the validity of this assessment should be reviewed to determine whether further updates are necessary. Note that the preliminary advice within this report should be reviewed (and reassessed if necessary) should there be/are any changes to the red line boundary or development proposals which this report was based on.

RESULTS

4.1 OVERVIEW

Two plant species listed on Schedule 9 of the W&CA were recorded within the survey area during the survey:

- Himalayan balsam *Impatiens glandulifera*; and
- Variegated yellow archangel *Lamiastrum galeobdolon subsp. argentatum*.

The locations of these species are shown in Figure 2 and further details are provided under the headings and in Appendix B.

4.2 HIMALAYAN BLASAM

The LERC (DWT) returned no records of Himalayan balsam within 2 km of the site boundary.

Himalayan balsam was previously recorded in two locations in the north-west of the site during the Phase 1 habitat survey conducted in November 2021 (TEP, 2022).

Eight areas of Himalayan balsam were noted during the Invasive species survey of the site.

Two of the records were large stands located along the eastern boundary of the site in areas of previously recorded semi-improved and marshy grassland (TN 1-2, Appendix B). The third stand spreads out into the centre north of the site up to the hardstanding road that cuts across the north of the site (TN3, Appendix B). See Figure 2 for exact locations.

In the north of the site Himalayan balsam is present within the scrub habitat and throughout the broadleaved woodland. Five extensive stands are found within the northern woodland (TN4-8, Appendix B) (Figure 2).

4.3 VARIEGATED YELLOW ARCHANGEL

The LERC (DWT) returned no records of variegated yellow archangel within 2 km of the site boundary.

No previous records of variegated yellow archangel were reported on site.

One stand of variegated yellow archangel was present within the northeast corner of the site. See TN9 in Appendix B for further detail (Figure 2).

MANAGEMENT OF INVASIVE NON-NATIVE SPECIES

5.1 RECOMMENDED WORKING PRACTICES TO PREVENT FURTHER SPREAD

Good on-site biosecurity practices to prevent spread of invasive plants both on-site and off-site should include:

5.1.1 Clerk of Works

A suitably qualified Ecological Clerk of Works (ECoW) or Invasive species contractor should supervise excavation and disposal ensuring that work is undertaken under controlled conditions and that appropriate health and safety measures are implemented.

5.1.2 Toolbox talk

All operatives and consultants working on the site should be provided with a toolbox talk provided by the ECoW or Invasive species contractor, which highlights the locations of invasive non-native species on the site and describes the strategy used for marking, eradicating and stopping them spreading.

5.1.3 Marking

All invasive species on site should be clearly marked to limit the potential for accidental spread during day-to-day operation of the site, including any investigative surveys that may be required to support the development proposals (e.g. ground investigations):

- Where practicable, INNS should be marked using high visibility tape or netting erected around the stands, where possible with an exclusion zone of 3m from the outer edge of the stand/plant. However, it might be more practical to mark the exclusion zones with high visibility line paint, due to the number of plants present.

5.1.4 Haulage routes

Designated haulage routes must be established avoiding invasive plant locations.

- Do not use vehicles within the delineated buffer zones, as rhizome fragments and/or soil contaminated with seeds can become lodged within tracks or tyre tread. Plastic sheeting and boarding can be put down if vehicles or personnel need to access or track over affected areas. However, any boards or sheeting must either be cleaned and/or disposed of afterwards; and
- Limit access to treatment areas to treatment operatives only.

5.1.5 Washdown

- An appropriate number of vehicle washdown areas should be established in a designated area that can contain the spread of any invasive plant material within or between sites.
- Vehicles and other equipment must be thoroughly cleaned before being used in uncontaminated areas. Cleaning must be undertaken in a designated wash down area(s).
- Wash-down areas should be provided to clean boots and tools as soon as contractors leave this area to prevent spread of any invasive plant material within or between sites.
- All material resulting from vehicle wash-down must be collected and disposed of at a landfill site which is licenced to receive Schedule 9 plant waste.

5.1.6 Monitoring

Monitoring by a suitably qualified ECoW or Invasive species contractor, may be required for several years after completion to treat any regrowth.

5.1.7 Records of control measures

Detailed records of all control measures should be kept and passed on to all future site owners/managers.

To enable the development to take place, all invasive species must be eradicated from the site prior to the main ground works taking place as there is a high risk that plant propagules may be spread or incorrectly disposed of during this phase of works.

ERRADICATION OPTIONS

6.1 GENERAL BIOSECURITY MEASURES

Whichever method is chosen as a method of eradication, measures for continued prevention of spread and a monitoring programme to check for further growth **must be implemented**. Good on-site biosecurity practices **during** eradication must include:

- Designated haulage routes must be established and, ideally lined with root barrier membrane and covered with a thick layer of sand and protective layer of hardcore. The level of protection should be dependent upon the ground that is being traversed – i.e. an un-surfaced track will require greater protection than an existing road.
- An appropriate number of vehicle wash down areas, lined in the same manner as the haulage route, should be established in a designated area that can contain the spread of any invasive plant material.
- Vehicles and other equipment must be thoroughly cleaned before being used in uncontaminated areas. Cleaning must be undertaken in a designated wash down area (or more than one if necessary to prevent spread across the site).
- All material resulting from vehicle wash-down must be collected and disposed of at a landfill site which is licenced to receive Schedule 9 plant waste.
- Detailed records of all control measures should be kept and passed on to all future site owners/managers.

6.2 HIMALAYAN BALSAM

This species is an annual which reproduces solely by seed. Seeds may live in the seedbank for 1-3 years. The seeds are locally dispersed by the fruits ‘exploding’ and throwing the seeds and can be spread over longer distances via watercourses.

Table 2 outlines management options which could be implemented to control Himalayan Balsam at the site.

Table 2. Summary of Management Options for Himalayan Balsam

Method	Detail
Hand pulling	<p>Himalayan Balsam can be easily hand pulled as it has shallow roots. This method is particularly useful for smaller infestations and in high ecological value areas. A gentle tug is usually enough to remove the entire root system. Multiple plants can be pulled simultaneously. Gloves should be worn to avoid injury and nettle <i>Urtica dioica</i> stings.</p> <p>Hand pulling should ideally commence in May/June when plants can be easily identified, and they will not have set seed. However, it can be carried out sooner from the seedling/young plants stage although identification can be harder.</p> <p>Pulled plants should not be placed on soil or in damp areas as they can readily re-root. The plants can be allowed to dry out or composted. Once dried, the remains can be left on site as they reduce to small amounts, if fully desiccated and seedless, disposed of as inert waste, or burnt.</p>
Mechanical control	<p>Plant stems should be cut below the first node, which is often very close to ground level, preferably before they start flowering. Cutting below the first</p>

	<p>node will be much easier once the plants have reached approximately 50cm in height in about May.</p> <p>Compared to hand pulling, cutting/strimming will likely cause more collateral damage to other plant species.</p>
Chemical Control	<p>Several herbicides have been shown to be effective at killing Himalayan balsam and often just one application is sufficient.</p> <p>Herbicide application should be carried out during periods of active growth before flowering but late enough to ensure that germinating seedlings have grown up sufficiently to be adequately covered by the herbicide (50+ cm would be suitable). The initial application should ideally be carried out in May/June with subsequent treatments/monitoring likely being required in July/August and September/October, as above.</p> <p>Due to Himalayan balsam's preference for habitats near water, this limits herbicide selection to products approved for use near water, e.g. glyphosate based herbicides and certain formulations of 2,4-D Amine which can be applied as a spot treatment to individual plants. Where accessibility is problematic, e.g. river banks, a long lance sprayer is useful. Weed wiping reduces the risk of damaging surrounding vegetation but is only feasible for relatively small infestations.</p>
Excavation	<p>Excavation of soil and associated plants can be used where immediate eradication is required.</p> <p>Contaminated soil may be retained onsite. Stockpiles should be at least 10m from the property boundary. Arisings can also be buried at a depth of at least 1m. Prior to the burial of invasive plant waste, the appropriate authority (e.g., the Environment Agency in England) must be contacted and approval granted.</p> <p>Any contaminated waste that is taken offsite must be taken by a licensed waste carrier and must go to a suitably authorised landfill site (as per the Environmental Protection Act, 1990).</p>

A range of different techniques may be required to eradicate the plant. Other methods may be applicable for this site therefore, it is recommended a specialist contractor be employed to develop a bespoke treatment strategy.

Repeat treatments will likely be required for 2-3 years due to the presence of a short-lived seed bank.

6.3 VARIEGATED YELLOW ARCHANGEL

Variegated yellow archangel is a non-native species with widespread distribution over much of the UK. The plant spreads by seeds and long runners which root at the nodes. Spreading quickly, it can outcompete native species forming dense mats of growth.

Table 3 outlines management options which could be implemented to control invasive variegated yellow archangel at the site.

Table 3. Summary of Management Options for Variegated Yellow Archangel

Method	Detail
Mechanical control	<p>The plant is shallow rooting and can be mechanically removed although care should be taken to remove all of the plant material as the runners easily break up when disturbed and have the potential to propagate new colonies.</p> <p>Waste materials containing variegated yellow archangel are considered 'controlled' waste and must be disposed of appropriately.</p>
Chemical Control	<p>Herbicide application can successfully control the plant. Applications of herbicide should be made while the plant is actively growing to ensure maximum effectiveness.</p>

REFERENCES

- Environmental Protection Act, (1990), Available: <http://www.legislation.gov.uk/ukpga/1990/43/contents>. , Accessed [August 2022]
- TEP (2022), Dinting Vale, Glossop: Ecological Appraisal.
- Tetra Tech (2022), Dinting Vale, Glossop. Badger Report.

Please note that the legislation which is relevant to this report is not included in the list above, but details are included in Appendix A below.

FIGURES

Figure 1 – Site Location Plan

Figure 2 – Invasive Non-native Species Plan



Site Location Plan

Dinting Vale

Wain Homes



Legend

Site boundary

Notes:

Drawn by: CD
 Checked by: JA
 Office: Southampton

Figure No. 1
 Revision No. A

0 50 100 150 200 250 Meters 11 July 2022
 Scale 1:5,000 @A3 NGR: 401924E 394224N

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The Pavilion, 1st Floor
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Invasive Non-native Species Plan

Dinting Vale



Wain Homes

Legend

- Site boundary
- Target note
- Himalayan Balsam *Impatiens glandulifera*
- Variegated Yellow Archangel *Lamium galeobdolon*
subsp. Argentatum

Notes:

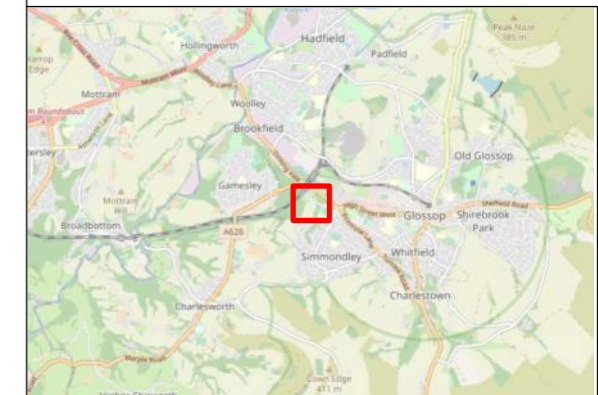
Drawn by: CL
 Checked by: LB
 Office: Southampton

Figure No. 2
 Revision No. A

0 15 30 45 60 75 Meters
 Scale 1:1,600 @A3

10 August 2022
 NGR: 401924E 394224N

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APPENDIX A – REPORT CONDITIONS

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The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.

APPENDIX B – TARGET NOTES

Target Note	Description	Photograph
1 & 2	<p>Himalayan balsam <i>Impatiens glandulifera</i></p> <p>Extensive stand located at grid reference SK 01964 94120.</p> <p>Additional stand located at grid reference SK 02001 94175.</p>	
3	<p>Himalayan balsam <i>Impatiens glandulifera</i></p> <p>Extensive stand located at grid reference SK 01983 94231.</p>	
4 - 7	<p>Himalayan balsam <i>Impatiens glandulifera</i></p> <p>Extensive stands located in multiple areas throughout the broad-leaved woodland.</p> <p>Central grid references:</p> <ul style="list-style-type: none"> • SK 01994 94280 • SK 01984 94349 • SK 01956 94347 • SK 01939 94324 	

8	<p>Himalayan balsam <i>Impatiens glandulifera</i></p> <p>Extensive stand located at grid reference SK 02024 94321.</p>	
9	<p>Variiegated yellow archangel <i>Lamiaeum galeobdolon subsp. argentatum</i>.</p> <p>Stand located in the north-east corner of the site at grid reference SK 02064 94297.</p>	