

Riverlinx CJV

Silvertown Tunnel **Invasive Species Survey**

Final report

Prepared by LUC

July 2020

Riverlinx CJV

Silvertown Tunnel
Invasive Species Survey

Project Number
 11032

Version	Status	Prepared	Checked	Approved	Date
1.	Final Draft				27.07.2020

Contents

Chapter 1	
Introduction	1
Terms of Reference	1

Chapter 2	
Methods	2
Desk Study	2
Walkover Survey	2
Limitations	3

Chapter 3	
Results	4
Schedule 9 Species	5
Other Species	9

Chapter 4	
Management Recommendations	10
Schedule 9 Species	10
Other Species	11

Appendix A	
Maps	A-1
Figure 1: Map Showing Distribution of Schedule 9 INNS Species	A-2
Figure 2: Map Showing Distribution of Non-Schedule 9 INNS Species	A-3

Chapter 1

Introduction

Terms of Reference

1.1 LUC was appointed in March 2020 by Riverlinx CJV to provide ecological support in advance of main construction works for the Silvertown Tunnel Scheme. Consented works were primarily informed by the Silvertown Tunnel Environmental Statement (April 2016).

1.2 The scheme includes two tie-in sites to the north and south of the River Thames.

- The Silvertown Area (Northern Tie-In) is currently in use as urban industrial land. It is situated on the banks of the River Thames, located in the London Borough of Newham and west of City Airport.
- The Greenwich Area (Southern Tie-In) is currently in use as a mixture of urban industrial land and carparking for the nearby O2 arena, which is directly north of the Site.

1.3 Species listed in Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) are subject to control. It is an offence to plant or allow these species to grow in the wild.

1.4 Japanese knotweed is both persistent and resilient to disturbance and is able to spread through contaminated soil. The Environmental Protection Act 1990 and Duty of Care Regulations 1991 provide further regulation of the treatment, storage, transport and disposal of Japanese knotweed material and materials contaminated with Japanese knotweed.

1.5 This report presents the findings of the Invasive Non-native Species (INNS) survey carried out in July 2020 and includes management prescriptions to inform the developing Ecological Management Plan (EcMP).

1.6 This report has been prepared for the exclusive use of Riverlinx CJV and the Silvertown Tunnel Project. No part of this report should be considered as legal advice.

Chapter 2

Methods

Desk Study

2.1 To provide additional background and to inform the walkover survey a search of Greenspace Information for Greater London (GIGL) records, which details records held by LISI, was conducted to identify records of INNS within 1km of the Site boundary.

Walkover Survey

2.2 A walk-over survey of the Site was conducted on 07th July 2020, in warm and sunny conditions. The survey targeted plant species listed as Species of Concern by the London Invasive Species Initiative (LISI)¹.

2.3 Japanese knotweed rhizome spread can extend up to 7m from an established plant. Where possible the survey area included a 7m buffer² from the order limits to account for this.

2.4 Where relevant to management prescriptions³ surveyors marked locations and extent of INNS on tablets and Geographic Information Systems (GIS) software.

2.5 The survey was conducted by [REDACTED].

London Invasive Species Initiative

2.6 The survey targeted plant species listed as Species of Concern by the London Invasive Species Initiative (LISI)⁴. Specifically, the survey recorded Category 3 and Category 4 plant species as these Categories were relevant to the Site⁵. These categories and Species of Concern are detailed below. Those listed under Part II of Schedule 9 under the Wildlife and Countryside Act 1981 are highlighted in superscript ^{SCH9}.

2.7 LISI Category 3 species are '*species of high impact or concern which are widespread in London and require concerted, coordinated and extensive action to control/eradicate*'. This includes:

- *Buddleia Buddleja davidii*

¹ Accessible at: www.londonisi.org.uk/wp-content/uploads/2013/10/LISI-species-of-concern_-Nov_2014.pdf [Online resource accessed July 2020].

² SEPA Technical Guidance Note. On-site management of Japanese Knotweed and associated contaminated soils. [Online resource accessed July 2020].

³ For example, due to the widespread extent of buddleia on Site (LISI Category 3) and good practice management for this species this INNS was not mapped as a constraint. Whereas species listed on Schedule 9 Part II were, due to the increased controls these species are subject to.

⁴ Accessible at: www.londonisi.org.uk/wp-content/uploads/2013/10/LISI-species-of-concern_-Nov_2014.pdf [Online resource accessed July 2020].

⁵ **Category 1:** does not list plant species; **Category 2** Species of Concern are site specific, therefore not relevant to the survey within the order limits; **Category 5 & 6** Species of Concern were data deficient or not deemed a threat to London:

- Brazilian waterweed *Egeria densa*^{SCH9}
- Cherry laurel *Prunus laurocerasus*
- Curly waterweed *Lagarosiphon major*^{SCH9}
- Floating pennywort *Hydrocotyle ranunculoides*^{SCH9}
- Gallant soldier *Galinsoga parviflora*^{SCH9}
- Giant hogweed *Heracleum mantegazzianum*^{SCH9}
- Himalayan balsam *Impatiens glandulifera*^{SCH9}
- Japanese knotweed *Fallopia japonica* ^{SCH9}
- Australian swamp stonecrop *Crassula helmsii*^{SCH9}
- Parrot's-feather *Myriophyllum aquaticum*^{SCH9}
- Shaggy soldier *Galinsoga quadriradiata*
- Tree-of-heaven *Ailanthus altissima*

2.8 LISI Category 4 species are 'Species which are widespread for which eradication is not feasible but where avoiding spread to other sites may be required'.

- False-acacia *Robinia pseudoacacia*
- Goat's-rue *Galega officinalis*
- Least duckweed *Lemna minuta*
- Pondweeds *Elodea canadensis* and *Elodea nuttallii*^{SCH9}
- Spanish bluebell *Hyacinthoides hispanica* & *H. x massartiana*
- Three-cornered garlic *Allium triquetrum*
- Yellow archangel *Lamium galeobdolon* subsp. *Argentatum*

Limitations

2.9 INNS were recorded by visual inspection only. Some areas were inaccessible due to fixed fencing, access restrictions and impenetrable bramble vegetation. Therefore, it is a limitation of this survey that INNS may remain undetected in some limited areas due to access restrictions. However, these areas make up a small proportion of the Site and majority of the Site was able to be surveyed with high confidence.

Chapter 3

Results

Desk Study

3.1 Biological records of INNS within 1km of the Site boundary are detailed in the table below.

Table 3.1 Showing LISI Species Listed within 1km of the Site Boundary

Taxon Name	Designation	Date of most recent record
Butterfly-bush <i>Buddleja davidii</i>	LISI category 3	2006
Pale Galingale <i>Cyperus eragrostis</i>	LISI category 2	2006
Japanese Knotweed <i>Fallopia japonica</i>	LISI category 3	2002
Goat's-rue <i>Galega officinalis</i>	LISI category 4	2005
Green Alkanet <i>Pentaglottis sempervirens</i>	LISI category 6	2015
False-acacia <i>Robinia pseudoacacia</i>	LISI category 4	2011
Snowberry <i>Symphoricarpos albus</i>	LISI category 2	2011

Walkover Survey

3.2 The species, extent and location of INNS found present on the Site are described in the subsections below.

3.3 Locations of plants listed under Part II of Schedule 9 of the Wildlife and Countryside Act 1981, and additional species listed by LISI, are mapped in **Appendix A, Figure 1** (Greenwich Area) and **Appendix A, Figure 2** (Silvertown Area).

Schedule 9 Species

Giant hogweed^{SCH9} (LISI Category 3)



3.4 A single giant hogweed plant was recorded within the Silvertown area.

3.5 Giant hogweed was not noted elsewhere within the survey area.

Japanese knotweed^{SCH9} (LISI Category 3)

3.6 Japanese knotweed was recorded in both the Silvertown and Greenwich areas. The size and extent of areas contaminated with Japanese knotweed are detailed in **Table 3.1** below.

Table 3.1: Japanese Knotweed Survey Results

Location	Description and Area Measurement	Photograph
Greenwich Area	<p>A 3m x 4m stand of mature Japanese knotweed stem within a thicket of dense bramble.</p> <p>There was no evidence of previous treatment.</p>	
Greenwich Area	<p>A linear section of mature stems and secondary rhizome growth along the boundary of the Blackwall Tunnel southern approach road.</p> <p>There was evidence past management, including stems cut to the base.</p>	

Location	Description and Area Measurement	Photograph
Greenwich Area	<p>Small stand of mature stems within the northern woodland.</p>	
Silvertown Area	<p>A large section dead stems encroaching from Docklands Light Railway land.</p> <p>There was evidence of previous management (herbicide application) However the stand persisted on the Site and there was fresh regrowth noted amongst the dead stems.</p>	

Location	Description and Area Measurement	Photograph
Silvertown Area	<p>Within the eastern section of the roundabout there were three stands of growth comprising two mature stands with evidence of secondary rhizome growth.</p> <p>There was no evidence of previous management.</p>	

Chapter 3

Results

Silvertown Tunnel

July 2020

Other Species

False Acacia (LISI Category 4)



3.7 Within the Silvertown area mature false acacia trees were found within the A1102 roadside linear woodland.



3.8 Semi-mature false acacia trees were found in isolation at two separate points within the Silvertown area.

Goat's-rue (LISI Category 4)

3.9 Goats rue was established small area of disturbed ground in the north of the Silvertown Area. Goats rue was not found elsewhere within the survey area.

Buddleia (LISI Category 3)

3.1 Buddleia was widespread throughout the Site, in both the Silvertown and Greenwich areas, and was found as dense scrub along urban wasteland and as scattered scrub on broken hardstanding.

Cherry Laurel (LISI Category 3)

3.2 A single section of cherry laurel hedge was found within the Silvertown area, along the western boundary of the roundabout between Lower Lea Crossing and the Dock Road turning. The hedge was formally managed and was not bearing fruit. Cherry laurel was not found elsewhere within the survey area.

Chapter 4

Management Recommendations

Schedule 9 Species

4.1 The survey recorded Japanese knotweed and giant hogweed within the Site. The presence of Japanese knotweed on the Site carries the following project risks:

- Disturbance and spread of Japanese knotweed during site vegetation / strip clearance;
- Disturbance and spread of Japanese knotweed during demolition;
- Disturbance and spread of Japanese knotweed during excavation and levelling;
- Risk of spread through removal of spoil from the Site; and
- Structural risk to the project through damage caused to services, structures or hard standing.

Japanese knotweed

Where feasible Japanese knotweed growth should be isolated by a buffer area of 7m from any visible growth, to ensure that shallow rhizomes are protected from disturbance and to prevent potential spread. **This action is high priority.**

4.2 Following isolation the following removal / treatment options should be discussed with a suitably qualified and experienced contractor:

- Where works will result in ground disturbance stands of Japanese knotweed should be subject to full excavation and removal from site by appropriately licenced waste carriers to a licenced disposal site;
- It may be feasible to 'entomb' excavated contaminated soil as a cost saving measure;
- Contractors working in the vicinity of Japanese knotweed should be suitably informed (by project Managers as part of any works briefing) and any essential works within the 7m exclusion zone should be overseen by a suitably qualified person to ensure any actions which would result in spread are prohibited; and
- Where works will not result in ground disturbance and stands can be isolated effectively these areas should be

subject to a programme of herbicide treatment (combination of stem injection of mature stems and foliar application) by a suitably qualified person. Removal via this method takes between 3-5 years.

subsequent revisions to agreed management plans and remedial actions, if required.

4.3 Where Japanese knotweed is found along the boundaries of the Site liaison with landowners is required to agree on future management.

4.4 Yearly monitoring of Japanese knotweed should be conducted to inform future prescriptions and remedial actions.

Giant hogweed

4.5 Giant hogweed is known to cause adverse reactions to skin, causing swelling, pain and blistering which can persist and reoccur for years after exposure.

A single plant was noted during the survey. It is recommended this is subject to treatment by herbicide application (stem injection) by a suitably qualified contractor. Given the health risks associated with giant hogweed **this action is high priority.**

Other Species

4.6 Species identified within LISI Species of Concern not listed as Schedule 9 species should be considered in the context of the Silvertown Tunnel Code of Construction, as to facilitate their spread would be risk detriment to ecology and appropriate action is required to reduce this risk.

4.7 Buddleia and Cherry Laurel are LISI Category 3 species *'of high impact or concern which are widespread in London and require concerted, coordinated and extensive action to control/eradicate'*.

4.8 False-acacia and goats rue are Category 4 species *'which are widespread for which eradication is not feasible but where avoiding spread to other sites may be required'*.

4.9 Where possible woody cuttings may be chipped on Site. If unable to be chipped waste should be removed by a licensed contractor.

4.10 Any removal of woody species should be followed a program to remove root systems, through treatment (such as an 'ecoplug' system) or physical excavation.

Management and Monitoring

4.11 Given the risk of spread within the Site yearly monitoring and INNS reporting (until the completion of works) by a suitably experienced ecologist is recommended to detect any potential changes to INNS presence and distribution across the Site from the 2020 baseline. Monitoring will inform

Appendix A

Maps



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Source: FA, LUC
CB MN EB: Nicholson_M LUC FIG1_11032_r0_Greenwich_InvasiveSpecies_A4P 12/07/2020

Figure 1: Greenwich Area Invasive Species Map

 Indicative study area

Invasive Species

 Japanese Knotweed



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 Source: FA, LUC
 CB:MN EB Nicholson_M LUC FIG2_11032_r0_Silvertown_InvasiveSpecies_A4P 12/07/2020

Figure 2: Silvertown Area Invasive Species Map

- | | | | |
|---|-----------------------|---|-------------------|
|  | Indicative study area |  | Japanese Knotweed |
| Invasive Species | | | |
|  | False acacia |  | Cherry laurel |
|  | Giant Hogweed |  | False acacia |
| | |  | Goats Rue |