



Report prepared on behalf of Heywood Homes

Land off Huddersfield Road, Meltham, Holmfirth, HD9 4BU

**Management Plan for Himalayan balsam *Impatiens glandulifera***

17/06/2020

| Status | Issue | Name of Author/Reviewer                                                | Date       |
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| DRAFT  | 1     | Chris Formaggia BSc (Joint Hons) CBiol CEnv MCIEEM MRBS VR - Principal | 15/06/2020 |
| Final  | 2     | Chris Formaggia BSc (Joint Hons) CBiol CEnv MCIEEM MRBS VR - Principal |            |
| Update | 3     | Chris Formaggia BSc (Joint Hons) CBiol CEnv MCIEEM MRBS VR - Principal |            |

**This Management Plan is a “living document” that will be added to and revised as appropriate throughout the scheme. Blank appendices are included for the storage of site records.**

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## Introduction to the Site

|                                                         |                                                                                                                                                                                                               |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Location</b>                                    | Land off Huddersfield Road, Meltham, Holmfirth, HD9 4BU<br>NGR SE 10923 11353                                                                                                                                 |
| <b>Site Description (pre-development)</b>               | The site currently consists of rank grassland, boundary woodland with a small internal stand of ruderal herb and a small, spring-fed, culverted, stream with a larger watercourse along the southern boundary |
| <b>Description of Proposed Development (Appendix 1)</b> | Outline application for erection of residential development.                                                                                                                                                  |
| <b>Client</b>                                           | Heywood Homes                                                                                                                                                                                                 |
| <b>Site Area</b>                                        | 15.4 Ha                                                                                                                                                                                                       |
| <b>Balsam Advisor</b>                                   | Christopher Formaggia BSc (Joint Hons) CBiol CEnv MCIEEM MRBS VR                                                                                                                                              |
| <b>Date of MP</b>                                       | 15/06/2020                                                                                                                                                                                                    |
| <b>Access and Works areas</b>                           | Via B6108 Huddesfield Road                                                                                                                                                                                    |

Figure 1 Site Location



|                         |                                                                                                                                                                 |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Designated sites</b> | The site is not protected by any nature conservation designations ( <a href="http://www.magic.gov.uk/MagicMap.aspx">http://www.magic.gov.uk/MagicMap.aspx</a> ) |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Site Management Objectives

- To comply with statutory and civil legislation in relation to Himalayan balsam *Impatiens glandulifera* (HB)
- To control existing HB contamination on the site
- To seek to eradicate HB from site
- To prevent spread of HB back onto site from third-party landholdings.

## Limitations and Threats to Site Management Objectives

In the UK, legislation concerning Himalayan Balsam is provided by several statutory instruments. The primary aim of these instruments is to prevent the spread of Himalayan balsam. In summary, it is an offence to cause Himalayan balsam to spread into the wild and, if transported offsite, there is a duty of care for any part of the plant that can facilitate growth (propagules) and any soils etc. containing propagules, i.e. such material must be treated as Controlled Waste.

As an annual plant, HB undergoes its whole life cycle in one growth season, reproducing from year to year entirely by its small spherical seeds, 2-4 mm in diameter. The seeds are highly viable and germinate early in the growth season (usually from March to June) with rapid growth following. Plants will achieve their full height by July or August, flower and set seed. While the species does not spread vegetatively, e.g. from fragments of root or stem, uprooted plants left in moist conditions can re-root from nodes on the stem. Furthermore, plants that have been cut will re-sprout unless the primary stem is cut below the first node. When the stem is cut above the first node, the species will regrow extremely vigorously and potentially produce more flowers and seeds than it would have otherwise. While Himalayan Balsam generally produces seeds once it has reached its full height, plants can seed at heights under 15 cm in certain conditions (particularly after disturbance). A single plant germinating from a single seed could start a significant invasion.

The presence of HB on site can increase the financial burden on the project and alter the temporal and spatial planning of the site. The project needs to bear the costs of treatment measures to safely develop the site and protect the site from subsequent re-infestation.

Untreated HB material remaining on site poses a threat to landscaping works and poses a risk of civil and statutory legal action.

|                                                                                                                                                                                                                                                                                        |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>There is the possibility of incursion onto site from HB present on surrounding 3<sup>rd</sup>-party landholdings.</p> <p>Materials exported onto or imported from the site require evaluation to ensure that viable HB material does not leave or enter site by these pathways.</p> |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

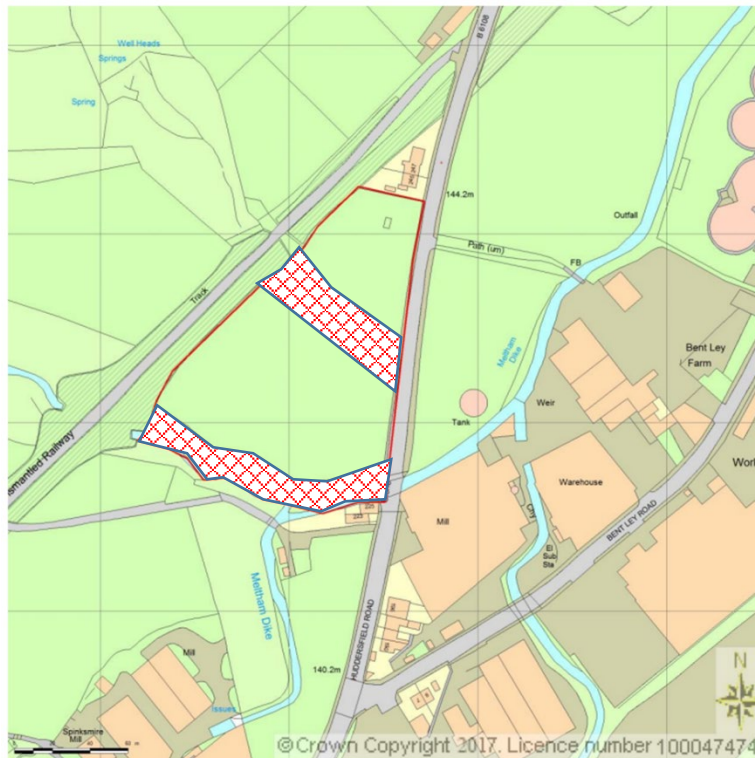
## Inventory of the Site

### Description of the site boundaries, topography, access, and special features

The site comprises of rough agricultural grassland partially divided by a semi-culverted tributary of the Mag Brook. It is bordered by a vernacular stone wall on the east boundary, the wooded riparian corridor of the Mag Brook on the south, a dwelling on the north and the train line to the east.

### Description of Himalayan balsam distribution on site and adjacent to site.

There is visible growth of HB along the southern boundary on the banks of the Mag Brook and one more discrete cluster along the culverted tributary.



For the purposes of this management plan the whole of the hatched red area should be regarded as contaminated because of construction movements.

## Brief Description of Management Plan

The management of HB on site shall be overseen by the Site Foreman or their appointed deputies.

The principle advisory expert on HB management is Christopher Formaggia BSc (Joint Hons) CBiol CEnv MCIEEM MRBS VR – Principal of Arbtech Consulting Ltd. The expert has 31 years of experience as an “invasives” ecologist and is BASIS qualified to give advice on herbicidal and physical control regimes for HB.

This management plan and any appendices and revisions shall be kept and passed to future site owners.

This Management Plan should be used in conjunction with any regulatory Codes of Practice.

This management plan is based on a programme of control of the existing stands by either:

- Hand pulling of plants
- Cutting of plant stems below 1<sup>st</sup> node
- Targeted herbicidal application

or, a combination of these.

The purpose of this action is to deny replacement of the seedbank. HB seedbanks are typically viable for ~18 months so a control programme lasting 2 years or more should be sufficient to eradicate the seedbank.

If a more immediate solution is required the seedbanks will have to be excavated and removed to specially licensed landfill.

Following control and eradication measures will be required to prevent re-infestation of the site.

## Setting Priorities

### High Priority

- Regular site vigilance – monthly inspection of site area for emerging HB.
- Employment of physical control regime (hand pulling or stem cutting) and/or herbicidal spot treatment programme to treat visible contamination and any new emerging contamination.
- Establish protocol for screening imported (and any exported) materials to (and from) site.

### Medium Priority

- Review contamination at 12-month interval.
- Establish a re-infestation management protocol. It would be desirable to establish a relationship with the landowner on the south of the Hag Brook as a combined approach from both parties will help to remove seedbank that could lead to direct threat of re-infestation.

## Preventing Further Spread

### Methods to be employed to prevent further spread.

A reputable contractor to undertake monthly vigilance inspections of known contamination and site peripheries. HB plants on site to be hand pulled or cut below 1<sup>st</sup> node prior to seed set. HB can also to be treated by means of a spot-spray herbicidal regime to be repeated at least six times during growing season including at least one application near end of growing season (late October). Selected herbicide is to be a glyphosate (probably Roundup Pro or similar) and will be applied in accordance with its pesticide label. Control to be affected for 2 years.

All top-soils, other soils and aggregates brought onto site to be inspected for HB prior to acceptance and to be appropriately certified as being HB free.

## Management Objectives

**Measurable objectives for planned control activities.**

Objective 1: Conduct monthly spot checks of known contamination and checks of site for new plants.

Objective 2: undertake annual control programme by hand-pulling, cutting and/or herbicidal spot-spraying consisting of at least six spray visits.

Objective 3: maintain appropriate site records including spray records for duration of programme.

Objective 4: Eliminate HB on site within 2 years.

**Viable Control Options**

Do nothing option is not viable as it risks criminal and civil litigation, planning failure and poses a direct physical threat to newly constructed structures and surfaces.

Untreated HB compromises saleability of new units and poses mortgage and insurance risks to buyers.

**Actions Planned****Control Method****All Areas Control Method****Control Methods****Hand-pulling (preferred)**

Himalayan Balsam can be simply hand pulled as the species has very shallow roots growing to a depth of 10-15 cm. This method is particularly useful for smaller infestations and in high ecological value areas where the use of herbicides, or unselective cutting, should be avoided. While hand pulling is time consuming, non-target species can be avoided, and so the re-establishment of native vegetation should be facilitated by using this approach.

A gentle pull is usually enough to remove the entire root system. Multiple plants can be pulled simultaneously. Gloves should be worn to avoid injury, including stings from nettles which are often found growing beside Himalayan Balsam.

Hand pulling should ideally commence in May/June when plants can be easily found/identified and they will not have set seed. However, it can be carried out sooner (although identification can be more difficult) and there will typically be more plants, as numbers reduce with time due to competition.

Repeat treatments will likely be required.

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.

**Cutting**

If the species is cut back prior to setting seed for two consecutive years control should be achieved. In order to prevent vigorous regrowth, plant stems should be cut below the first node, which is often very close to ground level. Cutting below the first node will be much easier once the plants have reached approximately 50cm in height in about May. Compared to hand pulling, cutting/trimming will likely cause more collateral damage to other, potentially desirable, plant species.

Repeat treatments will likely be required.

Plant remains should be dealt with as above.

**Herbicidal**

Application of glyphosate in situ by spot-spraying or contact weed-wipe

1. Horticultural specialist to conduct monthly vigilance inspections
2. Apply glyphosate in accordance with pesticide label
3. Check for re-growth at 4-6 week interval and re-treat as necessary.

**Seedbank Excavation**

This is the least favoured control approach because it is expensive and environmentally the least favourable – however it can be employed where development timetables require an immediate solution.

Defra guidance (2013) states that: 'to clear ground contaminated with Himalayan balsam, you may need to remove soil up to 6 metres from the parent plant and to a depth of 0.5 metres'. It has been found that for most species seed movement in soil is slow and that deeper seeds are older, except in severely disturbed soils. There is also a strong correlation between species where seeds are found at depth in the soil and species with extended seed longevity. The fact that HB seeds are not long lived makes it very unlikely that they will be present at depths down to 0.5 metres in all but highly disturbed or cracked soils. As such, the depth potential for seeds should be considered on a site by site basis.

All excavated waste will have to be treated as a controlled waste, documented, and moved under waste transfer to an appropriately licensed landfill.

### How Actions will be evaluated

Monitoring will be carried out by the appointed control contractor and the Site foreman prior to any treatment being carried out to serve as a baseline for future monitoring and every 4-6 weeks to growth season (currently taken to be March to October but to be established at site). The contractor and foreman will agree the level of control to be achieved and the future treatment schedule. Recording sheets will be used to document percentage cover of HB.

### Resource Need *(tbc by contractor)*

| Item | Description | Projected Resources | Projected Costs | Actual Costs |
|------|-------------|---------------------|-----------------|--------------|
|      |             |                     |                 |              |
|      |             |                     |                 |              |
|      |             |                     |                 |              |

### Results of Evaluation

*(tbc by Site Foreman and JKW Expert at 12 months)*

### Implementation Schedule

*(tbc by contractor on appointment)*

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## Appendix 1: Site Recording Forms (monitoring)

## Appendix 2: Herbicide Application – Spray Records

## Appendix 3: Waste Records

## Appendix 4: Import Materials – Certification, Receipts and Test Results

## Appendix 5: Useful Contacts

### **Environment Agency Local Office**

Lateral House, 8 City Walk, Holbeck, Leeds LS11 9AT  
Phone: 0370 850 6506

### **Landfill**

Bradley Park Landfill Site  
Lower Quarry Road  
Huddersfield HD2 1FN  
Tel: 01484 534976  
Email: [weighbridge@bradleyparkwm.com](mailto:weighbridge@bradleyparkwm.com)

Appendix 6: Site Plan (proposed)



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