

ECOLOGICAL APPRAISAL

Ash Footbridge Replacement



Provided for:

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Date: March 2023

Provided by:

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Version Control

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Version	1.0
Reference	Ash Footbridge Replacement

The survey was carried out in accordance with the Phase 1 habitat assessment methods (JNCC 2010) and Guidelines for Preliminary Ecological Appraisal (CIEEM 2017). All works associated with this report have been undertaken in accordance with the Code of Professional Conduct for the Chartered Institute of Ecology and Environmental Management. (www.cieem.org.uk)

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1 INTRODUCTION

The Greater Manchester Ecology Unit (GMEU) was commissioned by Oldham Council in March 2023 to identify possible ecological constraints that could affect the proposed scheme, which is the installation of a new wooden footbridge over the River Medlock. The existing revetments and bridge supports are to remain in place, with some renewal or the supports.

1.1 SURVEY BRIEF

The work commission involved:

- Desktop surveys for any existing ecological information relating to the site, particularly concerning the presence of specially protected sites or species.
- A 'walkover' site survey and appraisal.
- The preparation of reports for the site appraising the ecological value of the area for the proposed works and advising of any possible ecological constraints that may affect the refurbishment of the bridge

The report will include:

- ❖ plans showing any areas of potential nature conservation importance;
- ❖ a description of the survey techniques employed and their limitations (if any);
- ❖ the findings of the desktop and site surveys;
- ❖ an appraisal of the nature conservation value of the site;
- ❖ recommendations for further ecological surveys that would be required in support of any future planning applications for the sites and areas

1.2 SITE LOCATION & PROPOSAL

The section of the River Medlock is located at **SD 9096 0009** and involves the installation of a new wooden footbridge over the River Medlock.

1.3 PERSONNEL

Samuel Bolton BSc together with Mandy Elford BSc, MCIEEM, both Ecologist's with the Greater Manchester Ecology Unit, conducted all survey work. Samuel Bolton wrote this report.

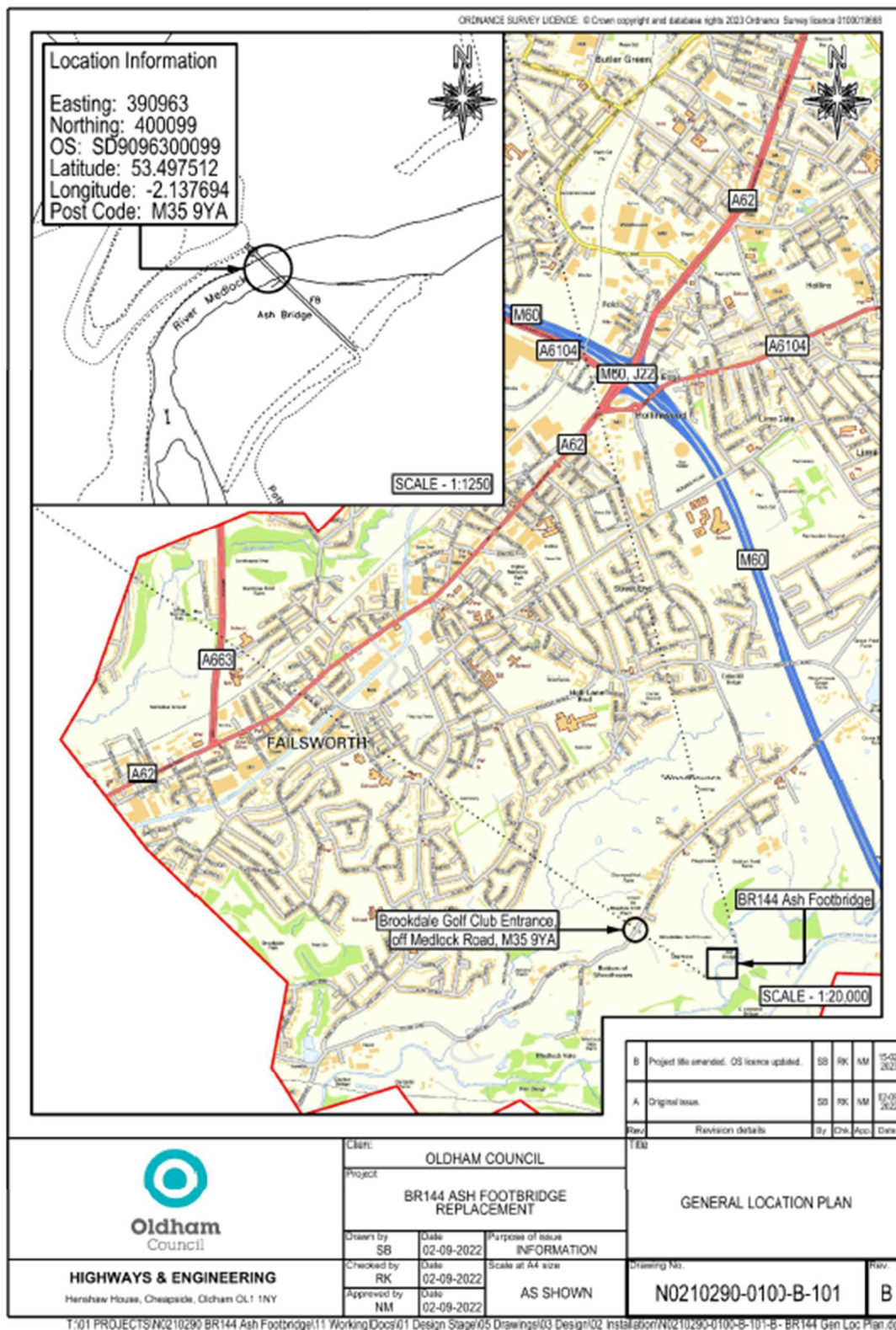


Figure 1 – Site Location



Figure 2 – Selected photographs of the site survey including river bank

2 LEGISLATION AND POLICY

The following UK legislation may be relevant to the proposed site allocations:

- the Conservation of Habitats and Species Regulations (Amendments) (EU Exit) 2019
- The Wildlife and Countryside Act 1981 (as amended)
- The Natural Environment and Rural Communities (NERC) Act (2006)
- Countryside and Rights of Way (CROW) Act 2000
- Protection of Badgers Act 1992

The National Planning Policy Framework (NPPF) 2021 acts as guidance for local planning authorities and decision-takers, both in drawing up plans and making decisions about planning applications.

3 METHODOLOGY

3.1 Desk Study

The Multi-Agency Geographic Information for the Countryside (MAGIC) collaborative database website (<http://magic.defra.gov.uk/MagicMap.aspx>) was searched for information on key environmental schemes and statutory designations in February 2023

An ecological data search was undertaken using data held by the Greater Manchester Ecology Unit/Greater Manchester Local Record Centre. Information was provided on all protected and priority species within 1km of the site.

The results of these studies are found in Section 4.

3.2 Field Survey

The main survey of the site was undertaken on 22nd March 2023 and comprised of a walkover of the site. No detailed surveys for species were undertaken.

Japanese Knotweed and Himalayan Balsam were non-native invasive plant species found in the survey location.

Samuel Bolton BSc and Mandy Elford BSc MCIEEM Ecologist's with the Greater Manchester Ecology Unit undertook the survey.

3.3 Survey limitations

The timing of the survey in mid March was not within the optimum time for undertaking botanical surveys, therefore some flora may have been missed or under recorded. The survey also offers only a single 'snapshot' of a site and takes no account of seasonal differences, or of any species, which might choose to take up residence subsequently. Many species are mobile in their habits and habitats can change over time. A lack of signs of any particular species does not confirm its absence, merely that there was no indication of its presence during the survey.

The records held by GMEU are not comprehensive and a negative result does not indicate the absence of protected species from the area of search. All suitable habitats and structures impacted by the proposals will need full surveys for protected species; the absence of biological records for an area in no way implies that taxa are not present.

4 BASE LINE ECOLOGICAL CONDITIONS

4.1 DESKTOP SEARCH

The desktop search results are shown in Appendix 1.

Designated Sites and Areas

There are no National Site Network or Nationally designated sites within 1km of the site. It does lie in the Site of Special Scientific Interest (SSSI) Impact Risk Zones for a number of SSSIs. These Zones are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks posed by development proposals to: Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites. They define zones around each site which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

These SSSI are:

- Huddersfield Narrow Canal
- Rochdale Canal
- Hollinwood Branch Canal

However, given the limited nature of the proposed works as understood at this time (i.e. refurbishment of bridge) none of the identified impacts are likely to arise. While the impacts on these sites can be reasonably discounted, the Environment Agency must be contacted if any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream.

River Medlock – Main River

The works will impact the River Medlock. The proposed works will involve a Main River. This will require a licence from the Environment Agency. They should be consulted at the earliest opportunity. Items that the EA may wish to

consider in any permit may include fish closed season for breeding and sediment/contamination control downstream of the site.

Local Nature Reserve

There is one Local Nature Reserve's present within the 1km buffer zone, Hollinwood Branch Canal.

Sites of Biological Importance

There are six Sites of Biological Importance (SBI) within 1km buffer of the proposed site;
Daisy Nook (West), Brookdale Golf Course, Jericho Clough, Medlock Vale & Lumb Clough (North). Hollinwood Branch Canal and Medlock Vale & Lumb Clough (South)

The bridge replacement is partially inside the Brookdale Golf Course designation.

Species and Species Groups

Bats

There are a number of bat roost records within the 1km buffer of the site. Species recorded roosting within the 1km buffer area include Pipistrelle sp. None of the roosts are associated with the site.

Other bat records were returned for Common and unidentified pipistrelle species (see Map 4). None of the bat records are associated with the site.

Badgers

Please see Appendix 3 for details of any badger records returned, this map is confidential and not for the public record.

Other Mammals

There are records of water vole and hedgehog within the 1km buffer zone.

Schedule One Birds

Kingfisher and barn owl have been recorded within the 1km buffer zone.

Species of Principle Importance

This group of species have been identified as being of Principle Importance for Conservation in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act which came into force on 1st October 2006. In addition to the species listed above, records for 12 other species were returned. A full list can be found in the table below:

Species
Bullfinch
Cuckoo
Dunnock
House Sparrow
Lapwing

Lesser Redpoll
Linnet
Reed Bunting
Song Thrush
Spotted Flycatcher
Starling

4.2 SURVEY RESULTS

Proposed Site

The proposed works will take place at **SD 9096 0009**.

Site Description

Either side of the riverbank is reveted with upright filled concrete tubes. There is a mix of ground flora on the banks including wild garlic, butterbur, lesser celandine and opposite leaved golden saxifrage. The shrub layer is sparse with occasional hawthorn, young oak, locally dominant Japanese knotweed and occasional Himalayan balsam. Mature willow tree species flank either side of the bridge supports.

Protected and Priority Species

Bats

The riverbank has a very low potential to support roosting bats. There were no visible crevices to support a roost. No signs of bats were found during the site visit.

There were some trees near the bank that may have the potential to support roosting bats.

Birds

No detailed bird surveys were undertaken as part of this study. If works are carried out during the main bird nesting season (1st March to the 31st August), then a suitably qualified person should undertake a nesting bird survey immediately prior to the works to ensure that no nesting birds are disturbed during the period of operations.

Hedgehog

Hedgehog have been recorded within a 1km radius on the proposed works. No hedgehogs were recorded during the walk over survey. Contractors should be careful not to harm any hedgehogs that may be discovered whilst carrying out bridge maintenance.

Water vole

Water vole have been found to use the river Medlock within 1km of the proposed works. No sign of burrows, latrines, or feeding signs were found during the survey.

Badgers

See Appendix 2.

Invasive Species

There was evidence of Japanese Knotweed and Himalayan Balsam along the watercourse.

5.0 IMPLICATIONS & RECOMMENDATIONS

The proposed works will take place at **SD 9096 0009**.

Statutory Designated Sites

Given the limited nature of the proposals, there will be no impact on any sites within the National Site Network (formerly European designated sites) or SSSI.

Sites of Biological Importance

There are six Sites of Biological Importance (SBI) within 1km buffer of the proposed site;
Daisy Nook (West), Brookdale Golf Course, Jericho Clough, Medlock Vale & Lumb Clough (North). Hollinwood Branch Canal and Medlock Vale & Lumb Clough (South)

The bridge replacement is partially inside the Brookdale Golf Course designation.

The development may have a potential impact on the Brookdale Golf Course SBI.

The main area of concern is the large amount of Japanese Knotweed in and around the area of bridge reconstruction.

Ideally any work that takes place on site will involve the treatment of the Japanese knotweed by a suitably qualified person with a PA6W license. Care should also be taken to not distribute this or any other INNS that may start to grow in between this report being written and the work commencing.

A tool box talk should be given to contactors before they commence work on the site to ensure they are able to identify the both Japanese knotweed and Himalayan balsam, so not contribute to it being spread either onsite or offsite.

Bats

While there was no evidence of bats using the river bank or nearby trees, bats are mobile in their habits and move roosts frequently. Bats can turn up in the most unlikely places and under the Habitat Regulations it is an offence to disturb, harm or kill bats. If a bat is found or suspected all work should cease immediately and a suitably licensed bat worker employed to assess how best to safeguard the bat(s).

GMEU should be contacted immediately (0161 342 2250) or Samuel Bolton directly on (07725481129)

Birds

All birds, with the exception of certain pest species, and their nests are protected under the terms of the Wildlife and Countryside Act 1981 (as amended). We would therefore recommend works should not be undertaken in the main bird breeding season (March to August inclusive), unless nesting birds have found to be absent, by a suitably qualified person.

Hedgehog

Care should be taken to not harm or disturb any hedgehogs discovered on site by contractors. If a hedgehog is found and has the potential to be harmed by the operations taking place, it should be gently moved to an area nearby with cover from potential predators, such as an area of brash or leaf litter out of the works area.

Water vole

Water voles are specially protected under the terms of the Wildlife and Countryside Act 1981 (as amended). The development has the potential to harm water voles, either by directly affecting the animals or by affecting water vole burrows.

No signs of water vole were found during the survey. The work to the bank is not expected to result in the loss of any significant areas of water vole habitat and I would not consider that the works will affect the conservation status of water voles on the site.

If, during the work, water vole or the signs of water vole are found, works should cease and GMEU should be contacted immediately on (0161 342 2250) or Samuel Bolton directly on (07725481129).

Invasive Species

There was evidence of Japanese Knotweed and Himalayan Balsam along the watercourse. Care should be taken to avoid the spread of these species. Additional guidance has been provided in appendix 4

REFERENCES

CIEEM (2017) *Guidelines for preliminary ecological appraisal*.

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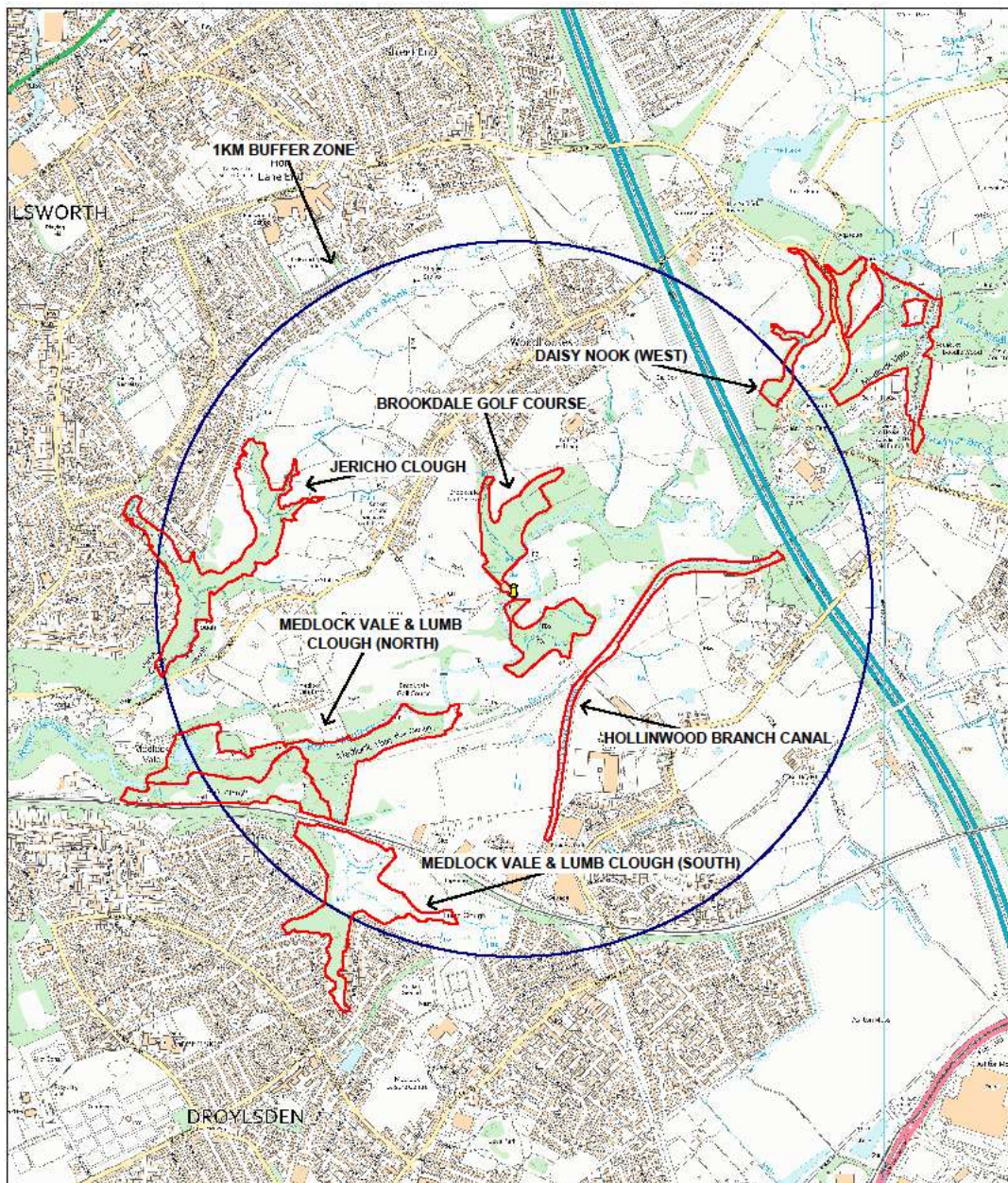
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Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. The Bat Conservation Trust, London

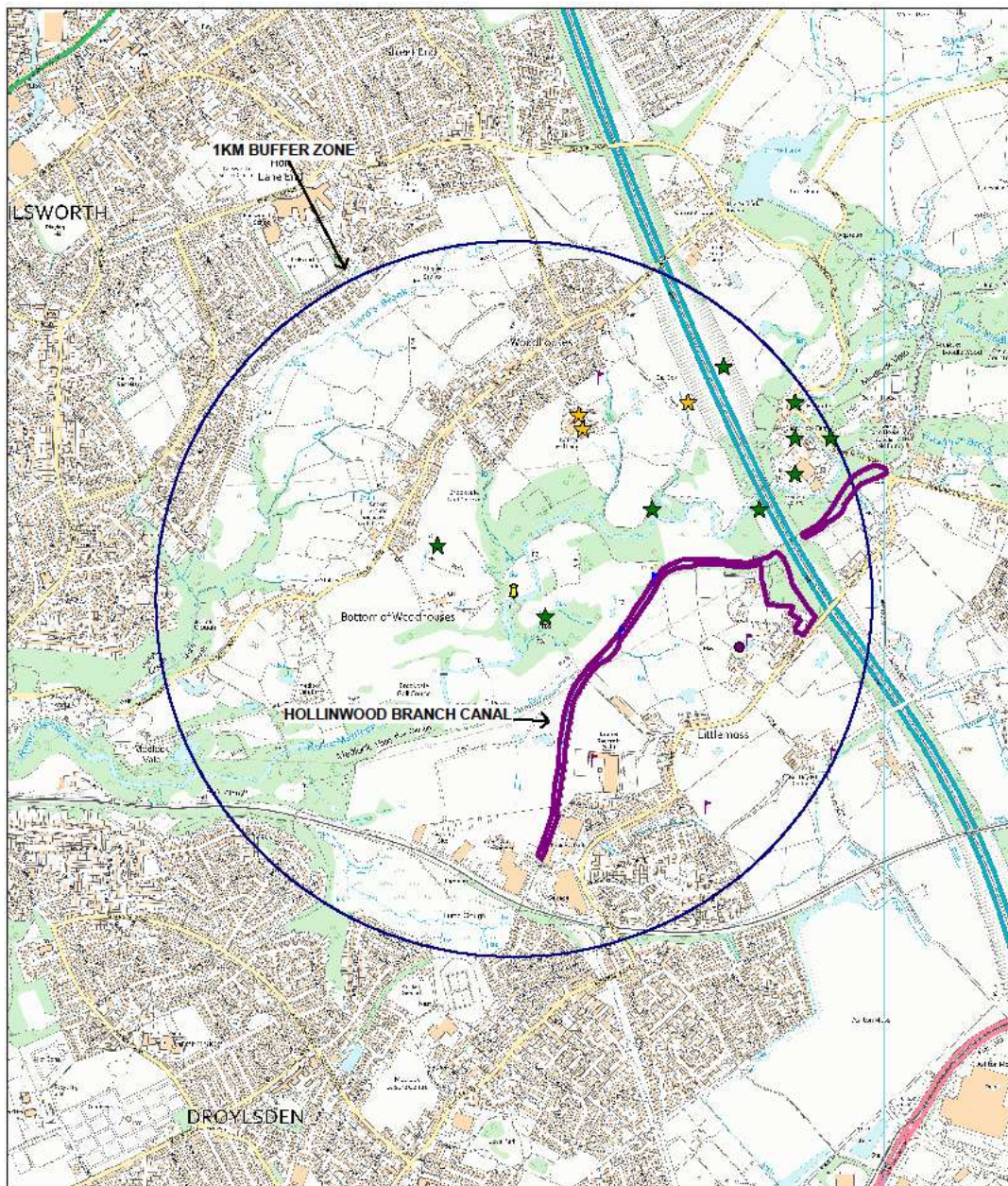
<https://www.bats.org.uk/news/2016/02/bat-surveys-for-professional-ecologists-good-practice-guidelines-3rd-edition>


Appendix 1 DATA SEARCH RESULTS Map 1 – SBI



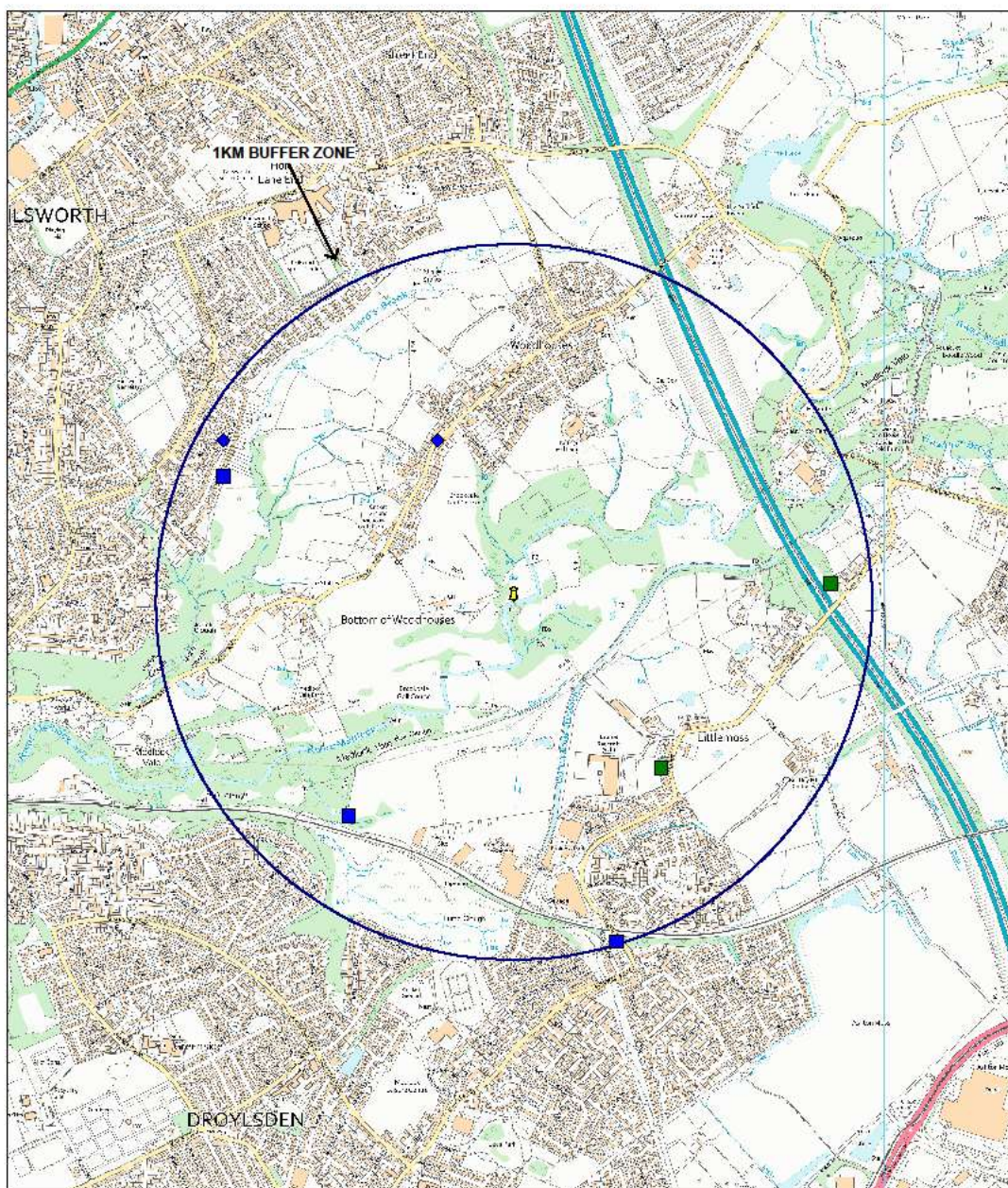
<p>KEY SITE OF BIOLOGICAL IMPORTANCE  SBI BOUNDARY</p>	<p>GREATER MANCHESTER ECOLOGY UNIT ECOLOGICAL SEARCH - SD90963 00099 ASH FOOTBRIDGE - MAP 1</p>	
<p>SCALE 1:10,000</p>		
<p>THE MAP IS BASED UPON ORDNANCE SURVEY MATERIAL WITH THE PERMISSION OF ORDNANCE SURVEY ON BEHALF OF THE CONTROLLER OF HMSO ©CROWN COPYRIGHT UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS</p>		
<p>TAMESIDE MBC LICENCE NO LA100022697, 2023</p>		
		<p>Greater Manchester Ecology Unit Telephone 0161 342 4409 Email: gmeu@tameside.gov.uk Date Produced: 23/03/2023</p>

Map 2 – PROTECTED SPECIES



<p>KEY</p> <p>PROTECTED SPECIES</p> <p>↑ GREAT CRESTED NEWT</p> <p>● GREAT CRESTED NEWT ABSENCE</p> <p>★ BARN OWL</p> <p>★ KINGFISHER</p> <p>SITES</p> <p>□ LOCAL NATURE RESERVES</p>	<p>GREATER MANCHESTER ECOLOGY UNIT ECOLOGICAL SEARCH - SD90963 00099 ASH FOOTBRIDGE - MAP 2</p> <p>SCALE 1:10,000</p> <p>THE MAP IS BASED UPON ORDNANCE SURVEY MATERIAL WITH THE PERMISSION OF ORDNANCE SURVEY ON BEHALF OF THE CONTROLLER OF HMSO ©CROWN COPYRIGHT UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS</p> <p>TAMESIDE MBC LICENCE NO LA100022697, 2023</p>	 <p>Greater Manchester Ecology Unit</p> <p>Telephone 0161 342 4409 Email: gmeu@tameside.gov.uk</p> <p>Date Produced: 23/03/2023</p>
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Map 4 – BATS



KEY
BAT ROOSTS

◆ PIPISTRELLE SP

BATS OTHER SIGNS

■ COMMON PIPISTRELLE

■ PIPISTRELLE SP

GREATER MANCHESTER ECOLOGY UNIT
ECOLOGICAL SEARCH - SD90963 00099
ASH FOOTBRIDGE - MAP 4

SCALE 1:10,000

BAT DATA COURTESY OF SOUTH LANCS BAT GROUP

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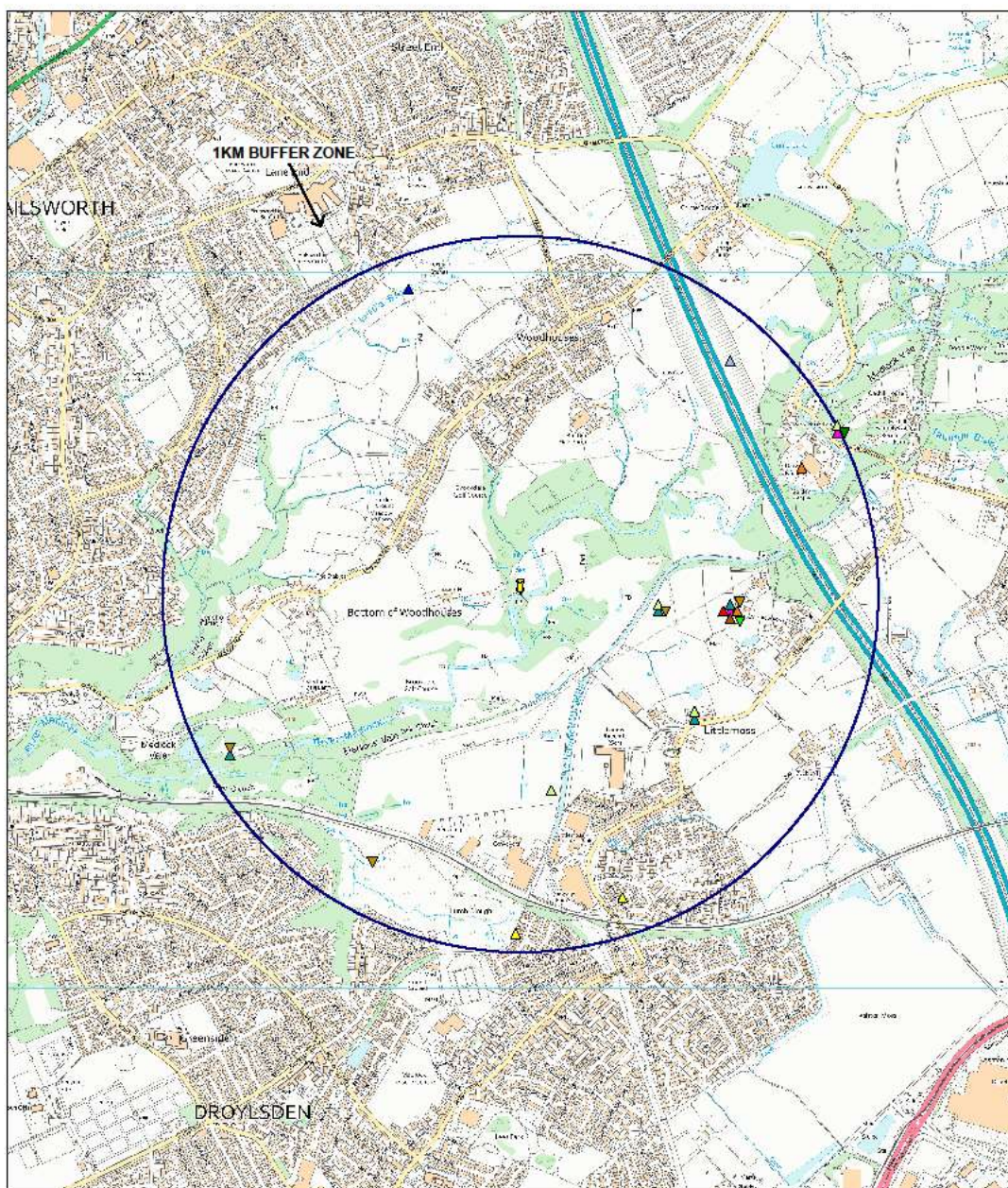



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Date Produced: 23/03/2023

Map 5 – S41



<p>KEY SECTION 41 SPECIES</p> <ul style="list-style-type: none"> ▲ BULLFINCH ▲ CUCKOO ▲ DUNNOCK ▲ HEDGEHOG ▲ HOUSE SPARROW ▲ LAPWING ▲ LESSER REDPOLL ▲ LINNET ▲ REED BUNTING ▼ SONG THRUSH ▼ SPOTTED FLYCATCHER ▼ STARLING 	<p>GREATER MANCHESTER ECOLOGY UNIT ECOLOGICAL SEARCH - SD90963 00099 ASH FOOTBRIDGE - MAP 5</p> <p>SCALE 1:10,000</p> <p>THE MAP IS BASED UPON ORDNANCE SURVEY MATERIAL WITH THE PERMISSION OF ORDNANCE SURVEY ON BEHALF OF THE CONTROLLER OF HMSO ©CROWN COPYRIGHT UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS</p> <p>TAMESIDE MBC LICENCE NO LA100022697, 2023</p>	 <p>Greater Manchester Ecology Unit</p> <p>Telephone 0161 342 4409 Email: gmeu@tameside.gov.uk Date Produced: 23/03/2023</p>
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APPENDIX 2

BADGER INFORMATION

STRICTLY CONFIDENTIAL

INTRODUCTION

Badgers are subject to persecution and all information relating to the location of their setts and activity should be kept strictly confidential.

LEGISLATION AND POLICY

Badgers and their setts are protected by the Protection of Badgers Act 1992.

It is an offence to:

- Intentionally capture, kill or injure a badger
- Damage, destroy or block access to their setts
- Disturb badgers in setts
- Treat a badger cruelly
- Deliberately send or intentionally allow a dog into a sett
- Bait or dig for badgers
- Have or sell a badger, or offer a live badger for sale
- Have or possess a dead badger or parts of a badger (if you got it illegally)
- Mark or attach a marking device to a badger

Desk Study

An ecological data search was undertaken using data held by the Greater Manchester Ecology Unit/Greater Local Record Centre (See Map 3, supplied separately). The records held for badger from GMLRC are not associated with the site and will not be impacted by the works.

Implications and Recommendations

The records held for badger from GMLRC are not associated with the site and will not be impacted by the works.

The site was checked for any large holes and none were found at the time of the survey. However, badgers are mobile in their habits and can dig a sett in one night. If any large holes are found at any time during the works, which could be associated with badger, works should cease immediately and GMEU (0161 342 2250) contacted.

MAP 3 – BADGER – CONFIDENTIAL

Map supplied separately

APPENDIX 3

TABLE 1 – ADHOC BIOLOGICAL RECORDS FROM SITE VISIT

Common name	Scientific name	Date	Grid reference	Recorders	Determiner	Abundance	SexStageStatus
Ramsons	<i>Allium ursinum</i>	22/03/2023	SD90960010	Sam Bolton	Mandy Elford	Frequent	In Leaf
Butterbur	<i>Petasites hybridus</i>	22/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	Flowering
Japanese Knotweed	<i>Fallopia japonica</i>	22/03/2023	SD90960010	Sam Bolton	Mandy Elford	Locally Abundant	Vegetative (not in flower)
Common Bistort	<i>Persicaria bistorta</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Abundant	In Leaf
Sorrel	<i>Rumex</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	In Leaf
Bramble	<i>Rubus fruticosus</i> agg.	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	In Leaf
Indian Balsam	<i>Impatiens glandulifera</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Frequent	In Leaf
Cow Parsley	<i>Anthriscus sylvestris</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	In Leaf
Rosebay Willowherb	<i>Chamerion angustifolium</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	In Leaf
Cleavers	<i>Galium aparine</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Frequent	In Leaf
Common Nettle	<i>Urtica dioica</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Frequent	In Leaf
Lesser Celandine	<i>Ranunculus ficaria</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	In Leaf
Red Champion	<i>Silene dioica</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	Not recorded
Hogweed	<i>Heracleum sphondylium</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	In Leaf
Common Ragwort	<i>Senecio jacobaea</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	In Leaf
Willow	<i>Salix</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	Canopy
Hawthorn	<i>Crataegus monogyna</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	Mature
Sycamore	<i>Acer pseudoplatanus</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	Mature
Lady-fern	<i>Athyrium filix-femina</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	Not recorded
Oak species	<i>Quercus</i>	24/03/2023	SD90960010	Sam Bolton	Mandy Elford	Occasional	Not recorded

APPENDIX 4

Japanese Knotweed Guidance

Invasive Weeds

What are invasive weeds?

Several types of plant can become invasive weeds. They are either native species that grow well in disturbed or nutrient-enriched conditions, to the detriment of other plant and animal species, or non-native plants that have been introduced to this country by accident or as a consequence of trade or deliberate collection. The latter tend to grow in situations where native plants of similar form do not. Not all non-native species become weeds, but if they do, they become very difficult to control. Native weed species, although troublesome, do not cause as much ecological or physical damage as the non-native variety. Invasive non-native species tend to share characteristics that make them successful. These are related to the method of reproduction, growth rate, growth form and persistence, but in particular the absence of pests and diseases and their consequent resistance to control. The introduction of plant species into new environments carries risks. The danger of species becoming serious weeds in agricultural areas is well controlled, but other potential weeds are not currently recognised and subject to risk assessment and management. The effects of climate change will alter the distribution of weed species in future; already, several aquatic weeds found in Europe originated in sub-tropical areas of the world. The predicted consequences of global warming, including increased temperatures, increased carbon dioxide and stormier weather, make it more likely that additional invasive species will cause problems in future. The huge increase in the distribution of Himalayan balsam since 1962 indicates that conditions are ideally suited for this species. Other species may respond similarly in future if climate change favours their colonisation and rapid growth. Plants that grow in water and on riverbanks can cause flooding if not managed correctly. The consequences and costs of invasive non-native species are huge.

Existing legislation

When non-native species become invasive they can transform ecosystems, causing a variety of problems including seriously threatening native and endangered species. These problems are acknowledged in several international treaties, European Union Directives and also in domestic legislation. The problems caused by some invasive non-native species occur worldwide, and international obligations to address them are placed on the United Kingdom through regional and global agreements. These include the Convention on Biological Diversity (CBD), International Plant Protection Convention (IPPC), the Bern Convention on the Conservation of European Wildlife and Natural Habitats, and the EC Habitats and Species Directive. The sixth CBD conference adopted a series of Guiding Principles for States to follow as part of their invasive non-native species policies. The Wildlife and Countryside Act 1981 (as amended) provides the primary controls on the release of non-native species into the wild in Great Britain. It is an offence under section 14(2) of the Act to 'plant or otherwise cause to grow in the wild' any plant listed in Schedule 9, Part II. The only flowering plants currently listed in Schedule 9 are Japanese knotweed and giant hogweed. However, Japanese knotweed in particular has continued to spread and has nearly doubled its distribution in the past 20 years. Stricter enforcement provisions for wildlife offences were introduced under the Countryside and Rights of Way Act 2000. These include increased penalties available to the courts for offences committed under the Wildlife and Countryside Act 1981. The Weeds Act 1959 provides for the control of five specified weeds. These are non aquatic species, though ragwort, (*Senecio*

jacobaea), can grow in riparian areas. This legislation is directed at clearing weeds that threaten agricultural production.

Other legislation relevant to non native species control includes:

- Environmental Protection Act 1990
- Environmental Protection (Duty of Care) Regulations 1991
- Town and Country Planning Act 1990
- Highways Act 1980
- Water Resources Act 1991
- The Waste Management Licensing Regulations 1994
- The Landfill (England and Wales) Regulations 2002

The Government has acknowledged the problems that can be caused by non-native invasive species. It has established a programme board to oversee a GB-wide framework strategy. This strategy was a key recommendation from the Non-native Species Review Group Report that was published in 2003 and is in line with the guiding principles established by the Convention on Biological Diversity.

Invasive Weed Control

Responsibility for dealing with invasive weeds rests with individual landowners. Strategic, widespread control is currently not the sole responsibility of any statutory organisation. The Environment Agency may seek to control specific invasive weeds on land that it owns or flood defence structures that it maintains. Control efforts by individuals can help reduce the spread of invasive non-native species and are most successful if carried out as a catchment wide co-ordinated strategy with collaboration of all relevant parties. Control often needs to be repeated year after year.

General methods of control

There are four basic methods of controlling weeds: mechanical, chemical, natural and environmental. Mechanical control includes cultivation, hoeing, pulling, cutting, raking, dredging or other methods to uproot or cut weeds. Chemical control uses specific herbicides. Natural control uses pests and diseases of the target weed to weaken it and prevent it from becoming a nuisance. Environmental control works by altering the environment to make it less suitable for weed growth, for example by increasing or decreasing water velocity. In England and Wales the use of herbicides in or near rivers, canals, lakes and drainage channels requires prior agreement from the Environment Agency.

Control of Himalayan Balsam

Control measures should aim to prevent flowering, and are best carried out before June for maximum effectiveness. Chemical control near water can be carried out with herbicides containing glyphosate or 2,4-D amine. Glyphosate will kill all plants, but 2,4-D amine will kill only broad-leaved weeds; for best effect, use when the plant is small and actively growing, particularly in springtime. Cutting, mowing or strimming on a regular basis for about three years will be effective and may even eradicate the plant from isolated sites.

Non Chemical Control

Cutting

Cut at ground level using a scythe, machete, flail or strimmer before the flowering stage in June. Cutting earlier than this will promote greater seed production from plants that regrow. Cutting should be repeated annually until no more growth occurs.

Pulling

Shallow-rooted plants can be hand pulled up very easily and disposed of by burning, or composting unless seeds are present.

Grazing

Grazing by cattle and sheep is effective from April throughout the growing season. It should be continued until no new growth occurs.

Chemical Control

Glyphosate

Treatment with a weed wipe in mixed stands, or by foliar spray in dense stands, before flowering. If all plants are controlled, then spraying programmes should only be required for two to three years.

2,4-D amine

Treat during early spring at the rosette stage for effective control.

In general

It is essential to establish vegetation quickly after control measures have been applied. Dense grass sward tends to discourage seed germination. Control should be undertaken on a catchment basis, working from the upstream end to prevent seed recolonisation.

** In England and Wales the use of herbicides in or near rivers, canals, lakes and drainage channels requires prior agreement from the Environment Agency.*

Control of Japanese knotweed

Japanese knotweed, *Fallopia japonica* is a very invasive weed. It occurs throughout Greater Manchester in a variety of places. It was introduced from Japan as a garden plant in 1850. It was spread through fly tipping and vegetative propagation across large tracts of land. The smallest fragment of this invasive plant will propagate.

Knotweed has been controlled with some success for some years by means of foliar herbicide spraying, although there are a number of concerns regarding the impact of foliar spraying because of its effect on the surrounding vegetation. Herbicide spraying therefore needs to be undertaken carefully by properly trained operatives. This method also requires two visits per year to the site. In 1999 a three year programme to investigate a new methodology for the control of knotweed commenced. The research looked at a new way of controlling knotweed using the cut and injection method; it also compared a variety of herbicides which were known to have been successful in controlling knotweed using the foliar spray methodology. The research investigated the effect on the surrounding ground flora and shrubs and trees.

Herbicides tested

- Glyphosate (Roundup Pro Bi-active)
- 2,4D Amine (Dormone)
- Asulam (Asulox)
- Picloram (Tordon 22K)
- Triclopyr (Garlon 4)
- Diquat (Reglone)
- Imazapyr (Arsenal 50)

Only Glyphosate, Diquat and 2,4D Amine are licensed to use near water courses, where many infestations occur. Picloram and Imazapyr can be persistent and damage neighbouring trees and broadleaved herbs. Picloram and Imazapyr are not recommended for use in areas to be landscaped or in natural vegetation. The following best practice has emerged from the research.

Methodology for Control

- The knotweed is cut with loppers, just below the first node, usually about 8 to 10cms above ground level. Some operators prefer to cut just above the node and perforate the septum with a sharp instrument. There does not appear to be any difference between the effectiveness of the methods.
- The cut growth is stacked on site, usually on polythene and later burnt.
- The optimum timing is mid-August to late September, provided the knotweed is not stressed by drought or frost.
- Using a spot gun applicator, 5 to 10mls of the herbicide (Roundup bi-active) is applied to the hollow cut stem. With larger patches, a dye is added to ensure each stem is treated.

- Any re-growth is likely to be low growing and distorted and cannot therefore be treated with the injection method. This should be spot sprayed with Roundup Pro-Biactive, ensuring minimum run-off.
- The site should be monitored for at least five years and any re-growth tackled as soon as possible

Ash Footbridge Replacement

The cut and inject method is a very effective way of controlling Japanese knotweed. Although primarily designed for use in sites of high nature conservation value or in gardens and cemeteries, it can in fact be used anywhere. There can be time savings over the foliar spray method because it needs only one visit per year. Aftercare treatment will generally require spot spraying of individual re-growth the following year. The method can be used in moderately windy conditions. It will be accepted far more readily by communities concerned about herbicide use.

It is important to treat all knotweed on a site. The 'edge effect' of leaving plants will cause knotweed to re-invade. It is also important to re-visit the site annually and tackle any re-growth.

Roundup Pro-Biactive is the most effective herbicide for most situations and is licensed to be used near water courses. Kill rates vary, depending on soil depth and how well established the knotweed is. On some very extensive research sites in Cornwall, a 99 per cent reduction in knotweed has been achieved over three years.