



NIGHTINGALE
environmental LIMITED

Invasive Weed Management Plan

**Taylor Wimpey NW
Heritage Way
Brymbo
Wrexham
LL11 5TF**

Date	19 th January 2021
Project	Heritage Way, Brymbo
Client	Taylor Wimpey NW
Inspected by	D Nightingale
Authorised by	D Nightingale
Project reference	NIG/DN20047

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LIMITATIONS

Nightingale Environmental Ltd has prepared this report with reasonable skill, care and diligence and taking account of the contract terms and conditions and manpower and resources devoted to it in agreement with the client. Nightingale Environmental Ltd disclaims any responsibility to the client and others in respect of any matters outside the scope of the above.

This report has been prepared based on the information received during the timescale available and all potential contamination; constraints or liabilities associated with the site may not necessarily have been revealed. The report is only valid when it is used in its entirety.

This report is confidential to the client and Nightingale Environmental Ltd accepts no responsibility to third parties to whom the report, or any part thereof, is made known. Any such party using any information contained within the report does so at their own risk.

1. INTRODUCTION

- 1.1 Daniel Nightingale of Nightingale Environmental Ltd has been involved in vegetation management and weed control for over 20 years, including 16 years specialising in the control and eradication of invasive weed species as identified in the Wildlife and Countryside Act 1981 (as amended). As a member of the BASIS professional register along with IOSH, NPTC and CSCS qualifications and utilising his knowledge and experience gained over a long standing career he is ideally placed to provide clients with information and advice as to how best to deal with vegetation management and weed control issues on land within their ownership.
- 1.2 In January 2021 Nightingale Environmental Ltd were commissioned by Robert Allen of Taylor Wimpey NW to undertake an inspection of the proposed development site off heritage Way, Brymbo, LL11 5TF. The purpose of the inspection was to identify any invasive or problematic weed species that may be present within the boundary of the site or the immediate surrounding area, report the findings and propose a solution to any infestations found to be present. The inspection was undertaken on 15th January 2021
- 1.3 The main species being inspected for at this time is Japanese Knotweed
- 1.4 This management plan provides background information relating to the main invasive plant species and sets options for control and eradication.

2. SITE AND FINDINGS

- 2.1 The site consists of reclaimed lagoons that have been remediated and reclaimed to provide a flat plateau of almost trapezoid shape covering approx. 2.36ha. The majority of the site is covered with rough grass land, scattered scrub and self seeded trees
- 2.2 Surrounding areas comprise of existing residential properties and footpaths to the west, further scrub and trees to the north, Brymbo Sports and Social complex to the east with Heritage Way forming the southern boundary of the site
- 2.3 The site was inspected on the 15th January 2021 outside of the expected growing season with one area of Japanese Knotweed being identified within the site
- 2.4 The knotweed is located in the south west corner of the site at the top of an embankment adjacent to the current boundary fencing. Visible stems cover an areas of approx. 1.5m x 1.5m amongst self seeded vegetation
- 2.5 An single plant of Montbretia was also identified at the top of the embankment
- 2.6 Two single stems of Cotoneaster were identified at the base of the embankment
- 2.7 Approx OS coordinates of the invasive species identified on site
- | | |
|-------------------|------------------|
| Japanese Knotweed | - SJ 29621 52513 |
| Montbretia | - SJ 29614 52508 |
| Cotoneaster | - SJ 29636 52514 |
| Cotoneaster | - SJ 29629 52512 |
- 2.8 At the time of the survey no evidence of knotweed was identified beyond the site boundary within immediate adjacent land of 7m of the site boundary
- 2.9 No further visible evidence of invasive species was identified within the remainder of the site during the inspection.
- 2.10 Whilst the locations of all four areas of invasive plant material fall outside of any potential development plots, it is expected that all four areas will be excavated, under supervision, with excavated spoil being removed from site to a licensed landfill facility.
- 2.11 Further monitoring of the site should be undertaken of the site following removal works to ensure no further recurrence.
- 2.12 It is worthy of note at this point that in knotweed infested areas the root/rhizome system can grow 7 metres outwards from the visible plant and in excess of 3 metres deep and if the spoils are dispersed on site, re - infestation is likely to occur.
- 2.13 Please note: If materials are removed from site this must be done in accordance with current waste regulations by a licensed carrier to an appropriate receiving facility.

3. INVASIVE AND PROBLEMATIC PLANTS

3.1 Identifying invasive and problematic plants (extracted from Netregs website)

- 3.1.1 Identifying invasive and problematic plants on a site early lets developers assess and cost options for destroying, disposing of and managing them.
- 3.1.2 Managing land infested by invasive and problematic plants in a timely and appropriate way can avoid:
 - excessive cost
 - potential prosecution and compensation claims
 - physical damage to buildings and hard surfaces
 - harm to the environment

3.2 Identifying Invasive Species



www.nonnativespecies.org

Produced by Olaf Booy, Max Wade and Vicky White of RPS

Japanese Knotweed

Species Description

Scientific name: *Fallopia japonica*

AKA: Japanese Bamboo, Pysen saethwr (Welsh),

Polygonum cuspidatum, *Reynoutria japonica*

Native to: Japan, Taiwan, northern China

Habitat: Common in urban areas, particularly on waste land, railways, road sides and river banks

Tall herbaceous perennial with bamboo like stems. Often grows into dense thickets. Characteristic leaves and stems, persistence of last year's dead canes and distinctive rhizome (underground root-like stems) enables year round identification.

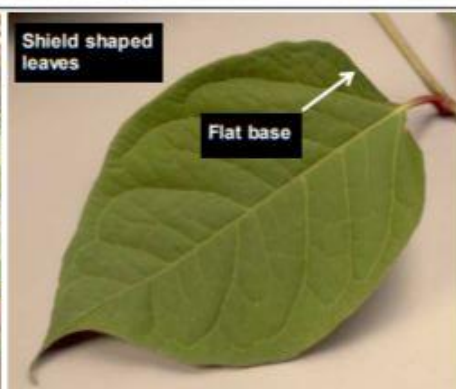
Introduced in the early 19th century as an ornamental plant. Now common and widespread across the UK. Spreads rapidly in the wild by natural means and as a result of spread by humans. Spread is solely by vegetative means, either fragments of rhizome or stem. Does not produce seed in the UK. Negative impacts include outcompeting native flora, contributing to river bank erosion and increasing the likelihood of flooding. Can also cause significant delays and cost to development as well as structural damage (it can grow through asphalt and some other surfaces).

Japanese Knotweed is listed under Schedule 9 to the Wildlife and Countryside Act 1981 with respect to England, Wales and Scotland. As such it is an offence to plant or otherwise cause Japanese knotweed to grow in the wild. Under the Environmental Protection Act 1990, Japanese Knotweed is classified as controlled waste.

For details of legislation go to www.nonnativespecies.org/legislation.



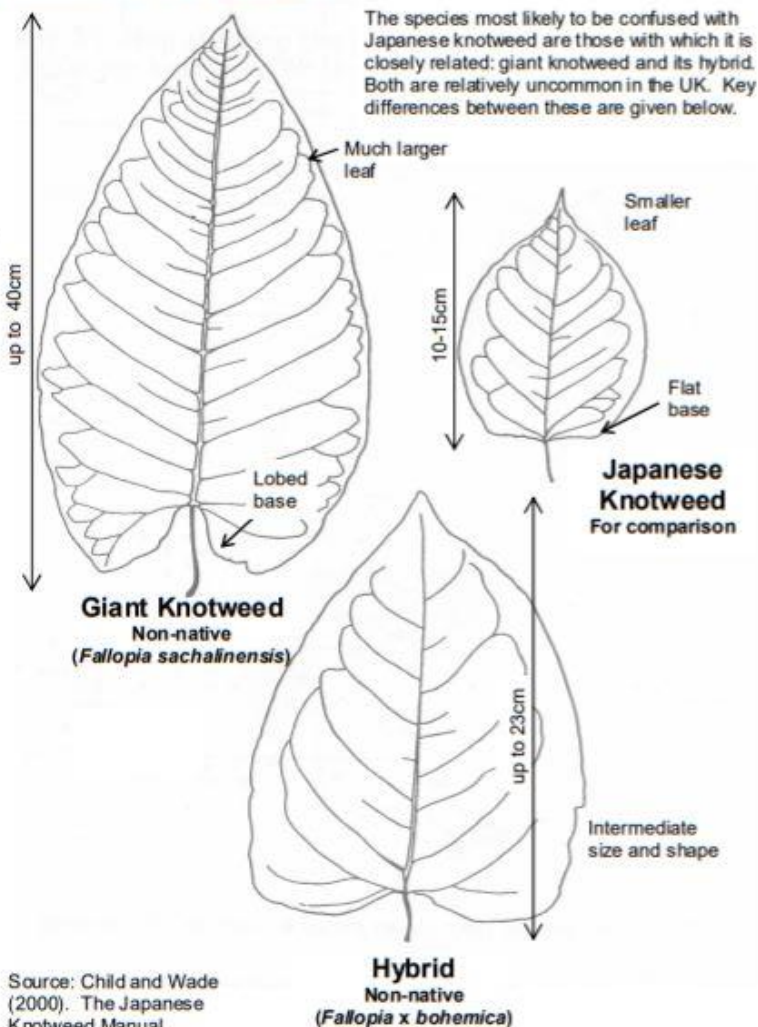
Key ID Features



Identification throughout the year



Similar Species



Distribution

Widespread and common across the UK. Notably extensive infestations are found in the south-west of England, south Wales and Greater London, however similarly extensive populations can also be found elsewhere.

Source: NBN Gateway. Check website for current distribution



References and further reading:

- Blamey, M, Fitter, R and Fitter, A (2003) "The Wild Flowers of Britain and Ireland. The Complete Guide to the British and Irish Flora." A & C Black
- Child, L E and Wade, P M (2000) "The Japanese Knotweed Manual". Packard
- Environment Agency (2006) "The Japanese Knotweed Code of Practice". Environment Agency
- Preston, C D, Pearman, D A and Dines, T A (editors) (2002) "New Atlas of the British and Irish Flora". Oxford University Press
- Stace, C (1999) "Field Flora of the British Isles". Cambridge University Press

Photos from: Olaf Booy, Helen Parish, Max Wade, Vicky White

Montbretia, *Crocoscopia pottsii* x *aurea* = *C. x crocosmiiflora*



Overview

Short description of *Crocoscopia pottsii* x *aurea* = *C. x crocosmiiflora*, Montbretia

It forms clumps similar in appearance to those of the yellow iris, but with bright orange flowers. There are several related species and hybrids.

Description of *Crocoscopia pottsii* x *aurea* = *C. x crocosmiiflora*, Montbretia status in GB

Montbretia is established in the wild from garden throw-outs and spreading vegetatively, especially in the west, but rarely reproducing by seed.

Habitat summary: *Crocoscopia pottsii* x *aurea* = *C. x crocosmiiflora*, Montbretia
Usually in woodland edges or on roadsides where garden refuse has been dumped.

Distribution map

We're sorry, this factsheet is currently unavailable.

[Search for another factsheet](#)

Overview table

Environment:	Terrestrial
Species status:	Hybrid GB
Functional type:	Land plant
Status in England:	Hybrid GB
Status in Scotland:	Hybrid GB
Status in Wales:	Hybrid GB
Location of first record:	v.c.83
Date of first record:	1907

Invasion history: *Crocoscopia pottsii* x *aurea* = *C. x crocosmiiflora*, Montbretia

Origin

It is a horticultural cross derived (in France) from species brought originally from South Africa.

First Record

Introduced to gardens in 1880 and first recorded in the wild in 1911.

Pathway and Method

Very commonly grown in gardens, where it tends to spread and form large clumps. Many gardeners dump the excess plants on roadsides and in woods.

Species Status

It is mildly invasive in the west of GB, especially on coastal slopes and on hedgebanks in Cornwall. In Ireland it is much more widespread in similar habitats, and in New Zealand it is considered an 'environmental weed.'

Ecology & Habitat: *Crocoscopia pottsii* x *aurea* = *C. x crocosmiiflora*, Montbretia

Dispersal mechanisms

Reproduction by seed is unusual, so most spread is by gardeners. Once established, clumps grow vegetatively, sometimes forming large colonies.

Reproduction

A monoecious plant, occasionally producing viable seed. More commonly reproducing by producing rhizomes that give rise to new culms a short distance from the parent plant.

Known Predators/Herbivores

Montbretia is highly resistant to pests and does not suffer serious herbivory.

Resistant Stages

All stages are resistant to pests and herbivory.

Habitat Occupied in GB

Mostly roadsides and woodland edges, as it can tolerate only partial shade. It is more abundant in western parts, as it is susceptible to severe frost, and it is typical of hedgebanks and coastal habitats, including the upper reaches of saltmarshes.

Distribution: *Crocasmia pottsii x aurea* = *C. x crocosmiiflora*, Montbretia

Widespread throughout GB, mainly in urban areas and close to the west coast.

Impacts: *Crocasmia pottsii x aurea* = *C. x crocosmiiflora*, Montbretia

Environmental Impact

Cornwall Wildlife Trust suggested that montbretia 'pushes out native flowers'.

Health and Social Impact

There are no adverse impacts from Montbretia, but it is a popular feature of hedgebanks owing to its colourful flowers.

Economic Impact

None known.

References & Links: *Crocasmia pottsii x aurea* = *C. x crocosmiiflora*, Montbretia

Identification

Stace, C.A. (2010) *New flora of the British Isles*, Third Edition, Cambridge University Press, Cambridge.

Plantfinder: http://www.bbc.co.uk/gardening/plants/plant_finder/

Biology, ecology, spread, vectors

Howell, C. (n.d.) Consolidated list of environmental weeds in New Zealand. <http://www.doc.govt.nz/upload/documents/science-and-technical/drds292.pdf>.

Management and impact

<http://news.bbc.co.uk/1/hi/england/cornwall/6577593.stm>

General

Chater, A.O. (2010) *Flora of Cardiganshire*, Aberystwyth.

Cotoneaster

Species Description

Scientific name: *Cotoneaster* species

AKA: Cotoneasterau (Welsh)

Native to: Majority of species originate from east Asia

Habitat: Rough ground

A large group of small trees and prostrate shrubs that can be either evergreen or deciduous. They are becoming increasingly naturalised due to birds which eat the small red berries and spread the seed. There is one native species, wild Cotoneaster (*Cotoneaster cambricus*) which occurs as a few individuals in North Wales. This ID sheet includes those introduced species which are relatively common. Where they become established they can become dominant to the exclusion of native species.

Himalayan cotoneaster (*Cotoneaster simonsii*) is an erect deciduous shrub 3-4 metres high with 1.5-2.5 cm long leaves; small-leaved cotoneaster (*Cotoneaster microphyllou*) is an evergreen low-growing shrub with very small leaves (0.5-0.8cm long) and tree cotoneaster (*Cotoneaster frigidus*) is a deciduous or semi-evergreen shrub or small tree with leaves between 6-15 cm long and flowers in dense clusters. All these species have leaves which are shiny and hairless on the upper surface and slightly hairy on the lower surface. Cotoneaster species do not have thorns.

Wall cotoneaster (*Cotoneaster horizontalis*) is the most widely recorded species and is distinctive in having stems that spread horizontally in flattened herring-bone like branches and bears single flowers. Unlike the other cotoneasters mentioned, the underside of leaves of this species are relatively hairless.

Cotoneasters have been in cultivation in GB since 1824 and there are over 100 species now widely cultivated in the UK. Other species could also become naturalised.

Cotoneaster species are listed under Schedule 9 to the Wildlife and Countryside Act 1981 with respect to England and Wales. As such, it is an offence to plant or otherwise cause these species to grow in the wild.

For details of legislation go to www.nonnativespecies.org/legislation.

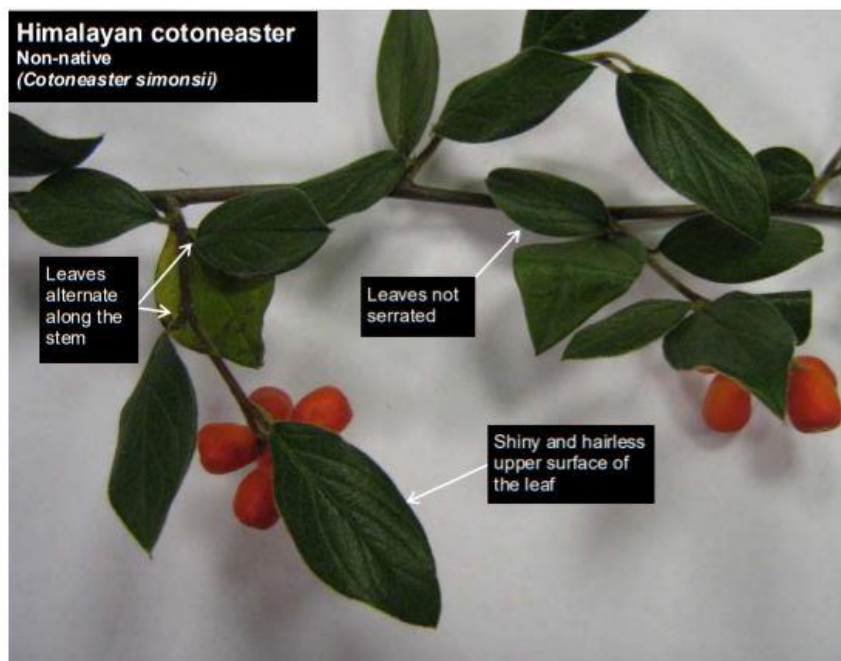


Himalayan cotoneaster (*Cotoneaster simonsii*)

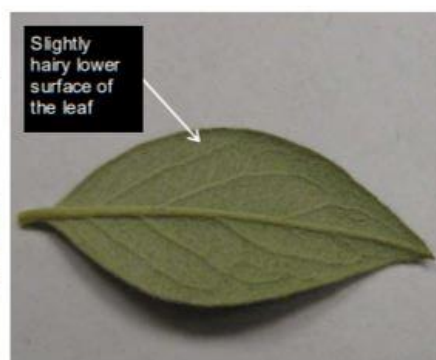
Key ID Features

Himalayan cotoneaster

Non-native
(*Cotoneaster simonsii*)



Slightly hairy lower surface of the leaf



Red/orange fruits in clusters

Identification throughout the year

Evergreen species such as the small-leaved cotoneaster can be identified throughout the year by its leaves. Deciduous species can be identified by the presence of the red berries which can remain throughout winter and, in the case of wall cotoneaster, by the distinctive herringbone-shaped branches.



Similar Species

Firethorn

Non-native
(*Pyracantha coccinea*)



A shrub with small serrated leaves that alternate along the stem, which has long thorns



Wilson's honeysuckle

Non-native
(*Lonicera nitida*)



Similar to the small leaved cotoneasters, leaves opposite not alternate

Aromatic wintergreens

Non-native
(*Gaultheria* species)



An evergreen shrub with alternate leaves and bell shaped flowers, unlike the five petalled flowers of cotoneasters

Other similar species which may be confused with cotoneaster include:

Escallonia (*Escallonia macrantha*) - an evergreen shrub which has alternate serrated leaves and numerous pinkish-red flowers, no thorns;

Barberry (*Berberis vulgaris*) - a thorny shrub with small serrated leaves, yellow flowers and red lozenge-shaped berries; and

Sea buckthorn (*Hippophae rhamnoides*) - a thorny densely branched shrub with alternate long thin leaves with bright orange berries on female plants.

Distribution

Cotoneaster species are widespread throughout Britain.



Source: NBN Gateway. Check website for current distribution.

Some other species of Cotoneaster

Wall cotoneaster

Non-native
(*Cotoneaster horizontalis*)



Herringbone-shaped branches



Himalayan cotoneaster

Non-native
(*Cotoneaster simonsii*)



Evergreen habit

Small-leaved cotoneaster

Non-native
(*Cotoneaster microphyllus*)

References and further reading:

Johnson, O and More, D (2004) "*Collins Tree Guide*". HarperCollins

Preston, C D, Pearman, D A and Dines, T A (editors) (2002) "*New Atlas of the British and Irish Flora*". Oxford University Press

Stace, C (1999) "*Field Flora of the British Isles*". Cambridge University Press

4 CONTROL OF INVASIVE AND PROBLEMATIC PLANTS

4.1.1 Treating invasive and problematic plants with herbicide can be a very effective method of control. Though it should be noted that with invasive or problematic weed species it is expected that repeat applications would be required to either reduce the vigour of the infestation or as part of a treatment programme for an established seed base

4.1.2 Using herbicides

The person doing the spraying must hold a certificate of technical competence for herbicide use or work under the direct supervision of a certificate holder. The sprayer must also comply with the pesticide product label and meet all of its conditions.

4.2 Additional control measures

- Infested areas (to include buffer zone) should be clearly identified.
- Unauthorized access disturbance or removal of contaminated material should be prevented.
- Restrictions regarding access to the infested areas and any applicable restrictions regarding movement of plant and vehicles, should be communicated to all on-site personnel.
- Vehicles, equipment and footwear should be inspected and cleaned prior to exiting contaminated areas.
- Should access to the area be required during the treatment period, advice should be sought prior to entering.
- Where invasive or problematic weed species are identified on adjacent land, owners should be informed so that appropriate actions can be taken to prevent re-infestation.

5.0 ON SITE ACTIONS AND PRECAUTIONS

5.1 Warning signs or fencing shall be erected to identify infestations to other site personnel. Additionally, other contractors working on site will be briefed to familiarise them with the appearance of the plant.

5.2 Unauthorised access disturbance or removal of contaminated material will be prevented.

5.3 Restrictions regarding access to the infested areas and any applicable restrictions regarding movement of plant and vehicles, shall be communicated to all on-site personnel.

5.4 Should access to the area be required during the treatment period, advice should be sought prior to entering.

5.5 Herbicide selection will be dependent on each area taking into consideration surrounding desirable vegetation and environmental considerations though it is expected that the herbicide of choice will be a glyphosate based product.

5.6 PLEASE NOTE: Task and site specific method/risk and COSHH assessments will need to be carried out for each specific task being undertaken.

6.0 PROPOSED WORKS

- 6.1 Once possession of the site is taken the areas of infestation should be clearly marked and identified to site personnel.
- 6.2 Areas are to be highlighted to contractors undertaking vegetation removal prior to development.
- 6.3 As part of site remedial works and site set up the areas of infestation are to be excavated under supervision and loaded directly in to wagons for removal from site to licensed landfill facility.
- 6.4 Further monitoring of the site is to be undertaken to ensure no further re-growth.

Site Name: Heritage Way, Brymbo	Client : Taylor Wimpey NW	Ref : NIG/DN20047
Location: Brymbo LL11 5TF	Description of works	Undertaken by
Spring 2021	Identification of infested areas on site	NEL
June 2021	Supervised excavation and removal of invasive species to licensed landfill facility	NEL and appointed groundworks contractor
To September 2023	On-going monitoring of areas throughout development period	NEL
To October 2033	On-going monitoring of areas as part of warranty	NEL

7.0 SITE PHOTOS 15th January 2021



Pic 1 – Japanese Knotweed along south western boundary of site



Pic 2 – Montbretia in south west corner of site



Pic 3 – Single stem of Cotoneaster in south western corner of site



Pic 4 – Single stem of Cotoneaster in south west corner of site

8.0 SITE PLAN INDICATING APPROX. LOCATIONS



9.0 HEALTH AND SAFETY

10.1 Nightingale Environmental Ltd operates by the below Health & Safety guidelines

10.2 Relevant health and safety legislation must be observed in the UK. The relevant regulations are outlined in *The UK Pesticide Guide* produced annually.

10.3 The legislation relevant to the use of herbicides is: -

- The *Control of Substances Hazardous to Health Regulations* (COSHH) 2001. All operatives must comply with the regulations and wear protective clothing and observe a strict code of hygiene of washing hands before drinking and eating.
- The *Control of Pesticides Regulations* 1986 under the *Food and Environment Protection Act* (FEPA) 1995.
- *Pesticides: Code of Practice* 1990 (Published by MAFF/HSE).

10.4 Health and Safety Guidelines

- All operatives must hold a Certificate of Competence for herbicide application (NPTC) or be under the direct supervision of qualified operative prior to commencing a spraying programme.
- All operatives must act responsibly in the storage and handling of the herbicide. The disposal of the herbicide and empty containers must be carried out by operatives in a responsible way.
- Any spillage must be guarded against and if occurring shall be dealt with and cleaned up. All operatives must carry a basic first aid kit.
- The area of work should be protected from the general public during the treatment and use of the herbicide.
- The use of herbicides should be carried out in compliance with the product label instructions.
- Advice on herbicide application should be sought for a BASIS registered advisor

10.5 Other legislation relevant to the control of non-native invasive weeds includes the following.

- *Town and Country Planning Act* 1990.
- *Highways Act* 1980.
- *Water Resources Act* 1991.
- *The Waste Management and Licensing Regulations* 1994.
- *The Landfill (England and Wales) Regulations* 2002.
- *The Control of Pesticides Regulations* 1986 (under the *Food and Environment Protection Act* 1985).
- *The Control of Substances Hazardous to Health Regulations* 2001 (COSHH)

11.0 REFERENCES

Renals, T. and Rene, P. (May 2001) *Code of Practice for the Management, Destruction and Disposal of Japanese knotweed, Version 1*.
The Environment Agency.

Available to download: www.environment-agency.gov.uk

Child, L. and Wade, M. (2000) *The Japanese knotweed Manual*
Packard Publishing Limited, Chichester.

Web Sites

Non Native Species Secretariat
www.nonnativespecies.org

Nature Conservation
www.nationaltrust.org.uk

Japanese Knotweed Control Forum
www.ex.ac.uk/knotweed

Netregs
www.netregs.gov.uk