

BWLCHGWYN TRAVELLER SITE**BIOSECURITY RISK ASSESMENT**

Location: LL11 5UB, SJ 267 536 Planning consent APP/H6955/A/19/3221887, Land near Graig Wen Farm

Including Reasonable Avoidance Methods for Invasive Non-Native Species

1.0 Introduction

1.1 The development and use of this site will not involve any work with cultures of micro-organisms or any unusual practices that might result in increased risks from micro-organisms. Biosecurity on this site largely relates to invasive non-native species (INNS), which are plants and animals that have been accidentally or deliberately introduced from other parts of the world and are a risk because they can spread in the UK, and then present a risk to native species and ecosystems. The risk from INNS is not a risk of harm to the ecology of the development site itself; the site is of low value. The risk is from the growth of INNS on the site and the resulting spread to more valuable habitat. There is a minor risk from the spread of tree diseases; this can be avoided.

1.2 Plants such as Rhododendron, Japanese knotweed and Himalayan balsam shade out native plant species in habitats such as water margins and native woodlands, while supporting very few or none of the native animal species; they take up areas of land or water bodies and are of much less value to biodiversity than a mound of rubble. Animals such as signal crayfish out-compete similar native species and spread diseases to them, or prey on native species in an unbalanced way.

1.3 A large range of information on many invasive species can be found on the Non-native Species Secretariat website. Those species that are considered to present a potential risk through development and operational activity on the Bwlchgwyn Traveller Site are listed in Table 2 of this document. Many INNS are the subject of laws that aim to prevent their spread, particularly under the Wildlife and Countryside Act 1981 as amended. These are listed in Schedule 9 of the WCA. Some INNS present a serious risk but are not widely recognised as presenting a risk: wall cotoneaster, planted on a massive scale in landscaping schemes and gardens during the 1990's, is spread by birds to valued habitats on limestone rocks, as seed.

1.4 Some garden varieties, sub-species and hybrids that appear similar to wild plants are invasive, or cross with true native species; Spanish and other garden bluebells are a problem in this way, particularly when growing near to old woodland.

1.5 Many non-native species present in the UK are not invasive; most garden plants remain in gardens or only grow in very restricted habitats, while most exotic pets cannot sustain themselves in the British climate. Some native species are 'invasive', such as rushes or bracken, but this is usually as a result of land management changes.

2.0 Summary of risk factors and recommendations

2.1 The existing physical characteristics of the site, and factors connected to the employment of the intended occupiers of the site variously increase or decrease the risks. The site is situated on slightly elevated ground between two nearby headwater streams, and is next to wetland, grassland and woodland habitats. The site surface includes base rich material such as concrete rubble and crushed brick. Members of the Evans family, who own the site, are mostly employed in short-term construction contract work away from the locality. All of these factors increase the risk of accidentally importing some INNS to the site, and of them spreading from the site.

2.2 The following factors decrease the risk of accidentally importing INNS to the site. The site and the locality around it appear to be free of INNS species except rhododendron, which is locally abundant but requires acidic soils to spread. A condition of the planning consent (Condition 5) excludes commercial use of the site and storage of related materials or parking of heavy vehicles. The Evans family members are unlikely to be employed in large-scale site clearance work, which is normally carried out by specialist contractors. The site is distant from and partially separated by physical factors from valued or protected habitat such as the River Dee and Bala Lake SAC, and Ruabon/Llantisilio Mountains and Minera SSSI. These are described in Table 1, following.

2.3 The ditches on the edge of the wider site enter a stream close to the site. This is a tributary of the River Dee, through the River Cegidog and then the River Alyn, over a total corridor length of about 21km. However, the stream has two sections where flow appears to be underground, probably percolating through ground disturbed by historic mining activity, sinking at SJ 2802 5419 and SJ 2856 5453.

2.4 Measures to mitigate the risk will include preparation of an illustrated 'information pack' for the occupants including safe practise recommendations, annual inspections by a suitably qualified ecologist, restrictions on the sources of trees and shrubs for landscaping.

3.0 Species Assessment

3.1 Table 2 gives an assessment of the risk of INNS growing on site and then spreading from development activity, which will be short term but likely to involve the importation of materials, and operational activity, which will be long term but should not involve significant importation. The 'nature of the risk from established growth' means both the risk of importation to the site from established growth elsewhere, and the risk of spread from the site if an INNS species becomes established there.

Note The use here of the terms high, moderate and low to describe levels of risk from the growth and spread of INNS are relative to the day-to-day risk from normal activities, which might be considered to be low if no development, land clearance or waste disposal is occurring. 'High risk' does not imply the immediate and continuing high likelihood of an adverse ecological impact, any more than a high risk sport involves a battlefield level of danger.

3.2 The assessment of these risks from various species has to be subjective, based on existing information and the author's experience. However, a qualitative model can be based on identifiable risk factors:

1. Is the species widespread in the region or nationally?
2. Is the species known to be present locally?
3. Is the species found on brownfield and other potential development sites?
4. Can the species spread through small fragments of vegetable material, as opposed to seeds?
5. Are viable seeds produced and do they spread easily?
6. Can the species survive as fragments or seeds for a few days in fairly dry conditions?
7. Is the species for sale, even if illegally?
8. Is the risk not widely known or recognised?
9. Is growth of the species hard to observe if not dense?
10. Are there special risks associated with the development site?

3.3 Where the answer is 'Yes' for four or more of these factors, we may say that there is a high risk of both importation and spread, three that there is a moderate risk. If only one or two factors are actual, or the species is rare nationally and it is not present locally, then the risk would be low.

The following are considered to present a high or moderate risk.

3.4 Japanese knotweed – widespread locally and nationally, can be spread by small fragments of material, is found on waste ground; fragments, especially of roots, can survive in dry conditions. But – is well known and readily observed. However, contrary to popular opinion, newly established growth can be eradicated by one or two herbicide applications.

3.5 Cotoneasters – widespread locally and nationally, are found in quantity on some development sites, spreads by seed via birds, the seeds survive dry conditions, and the risk is not widely recognised or understood. Basic soil conditions on site will suit it; there is a risk to limestone sites. It is easily eradicated but this must be done on site.

3.6 Rhododendron (*Rhododendron ponticum* & possibly *R. catawbiense* & hybrids) - widespread locally and nationally, is found adjacent to the site and in it, viable and easily spread seeds are produced, and young growth can survive dry conditions. The development site has some protection through the basic rubble in its surface cover; rhododendron needs acidic conditions. Continuous monitoring and repeated treatment may be needed.

3.7 Himalayan (Indian) balsam - widespread locally and nationally, especially on moist soils, is found in quantity on some development sites, viable and easily spread seeds are produced, and the

headwaters around the site increase the dispersal risk. However, once identified small populations are easily controlled.

3.8 The following aquatic plants are considered to present a high or moderate risk during operation of the site, but because of the location need additional care.

3.9 Australian swamp stonecrop (AKA New Zealand pigmyweed) – widespread nationally, known in Wrexham Council area, is spread as small vegetative fragments which resist limited drying, can be sometimes be found in temporary ponds and wet ground on development sites, is not widely recognised and is hard to observe at low density. It will grow and spread on damp ground, like the adjacent overgrown wet meadow area. It is unlikely to be spread to the site during development; importation in fill material is unlikely, and other pathways would need the Evans family members to be working on another site where it was present, while the development was going on. In the long term it does present a greater risk.

3.10 Canadian pondweeds, curled waterweed, water fern and other water plants – these are strictly aquatic and do not survive drying, but they are widespread in aquariums and garden ponds, and, surprisingly, can still be purchased via Ebay, from sources that do not even offer a warning although most of these species are on Schedule 9. Some could be present locally but not recorded. They are not widely recognised as a risk, and during the operational phase of the site, there would be various routes to the site and adjacent water bodies. Short range transfer from the site is possible, to local ponds.

4.0 Risk avoidance

1. Cut through rhododendron roots along the site boundary and uproot all growth within the site (Area A) and the remaining undeveloped area (Area B). Alternatively, make arrangements with the neighbouring landowner and treat by cutting through bases and applying herbicide stump treatment. In all cases burn or shred/chip all arisings and retain remnants on site of origin.
2. Have the development site (A), the compensation area (C), the remaining undeveloped area (B) and the adjacent habitat inspected by a competent ecologist or similar twice annually, ideally in late spring and early autumn.
3. Tree diseases: All material from trees and shrubs on the site, such as sections of felled trees or cut down shrubs, will remain stacked on site, or chipped if below 40mm diameter and piled on site, in the south east corner of area C or in area B, and away from watercourses.
4. Ensure that all trees, shrubs and other plants are purchased from specialist nurseries or grown from locally gathered seed.
5. If invasive species other than rhododendron are identified on the development site or the remaining undeveloped area, arrange for treatment by knowledgeable and experienced operatives. If Invasive species are identified in the compensation area, inform the appointed managers.
6. If invasive species are identified on adjacent land, inform the landowner and seek joint arrangements for treatment.

7. Vehicles including private cars coming to the site from construction, landscaping or clearance work places must be cleaned of mud and soil before leaving those places.
8. All occupants will be informed about the risks of introducing species or importing fragments and seeds, and the routes by which this can occur. Illustrated notes will be provided by the developer's ecological advisers, showing the species that carry a significant risk of transfer to and from the site.

References / Bibliography

www.nonnativespecies.org.uk The website of the GB non-native species secretariat, including species identification sheets

www.dinns.org.uk The website of the Dee Invasive Non-Native Species Project – This includes many links to other useful websites

Table 1 – Sites and habitats

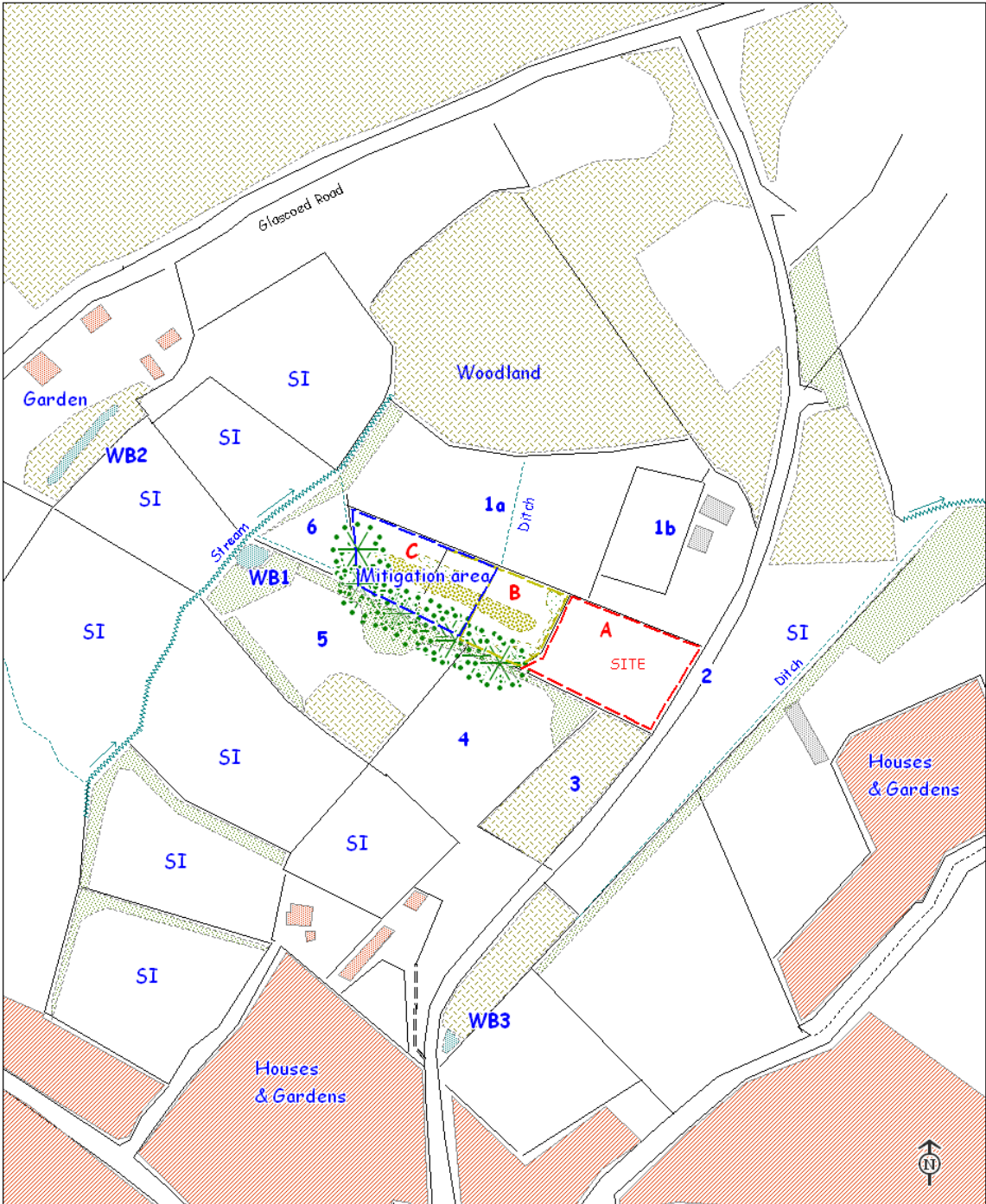
TABLE 1 Sites and habitats at risk from INNS, Bwlchgwyn Traveller Site SJ267536			
Site & Status	Habitat type	Separation	Notes
Berwyn & South Clwyd Mountains SAC	Upland, varied geology	3km West & 1.6km SW, ~50m higher	
Llandegla Moor SSSI	Upland moor	3km West ~50m higher	
Ruabon / Llantysilio Mountains & Minera SSSI	Upland, varied geology	1.6km SW, ~50m higher	Some limestone areas, includes Minera quarry WT reserve
River Dee & Bala Lake SAC / SSSI	River & corridor	13km East, ~270m lower, 21km corridor length	Tributary headwaters adjacent to site, but two breaks in surface flow
Disused limestone quarries	Rock faces, raw basic soils	260m, 320m	
Deciduous woodland	Oak and birch woodland, alder woodland	Adjacent, & 100m	Not old woodland
Wet pasture	MG10 rush pasture	Adjacent, around wider site	
Ponds	140m, 155m, 240m from devt. Site		Recent, but quite diverse

TABLE 2 Invasive Non-Native Species (INNS) of concern, relative to Bwlchgwyn Traveller Site, SJ267536

English Name	Cymraeg	Scientific Name	Development risk	Operational risk	Nature of risk from established growth on this site or other sites	Sources (into this devt. site)	Schedule 9?
TERRESTRIAL							
Russian vine	Clymog Rwsia	<i>Fallopia baldschuanica</i>	Low	Moderate	Carried to new sites on/in vehicles	Construction, landscaping and garden clearance	
Japanese knotweed	Pysen saethr	<i>Fallopia japonica</i>	High	Moderate	Small fragment spread. Carried to new sites on/in vehicles	Imported fill, construction, landscaping and garden clearance	YES
Japanese rose	Rhosyn Japan	<i>Rosa rugosa</i>	Low	Moderate	Animal distribution of seeds, deliberate introduction	Landscape and garden clearance	YES
Cotoneasters	Cotoneasterau	<i>Cotoneaster spp.</i>	Moderate	Moderate	Animal (bird) distribution of seeds	Construction, landscaping and garden clearance, seed spread	YES five species
Montbretia	Montbresia	<i>Crocsmia x crocosmiiflora</i>	Low	Moderate	Carried to new sites on/in vehicles, deliberate introduction	Construction, landscaping and garden clearance	YES
Canadian goldenrod	Eurwialen Canada	<i>Solidago canadensis</i>	Low	Low	Airborne seed spread	Landscape and garden clearance, seed spread	
Rhododendron species	Rhododendron	<i>Rhododendron ponticum & R. spp.</i>	High	High	Suckering, airborne seed spread	Locally present	YES
Himalayan (Indian) balsam	Jac y Neidiwr	<i>Impatiens glandulifera</i>	Low	Moderate	Seeds carried downstream & on vehicles	Construction, landscaping and garden clearance	YES
Giant hogweed	Efwr enfawr	<i>Heracleum mantegazzianum</i>	Low	Low	Airborne and waterborne seed spread, carried to site on vehicles	Construction, landscaping and garden clearance	YES
Variegated yellow archangel	Marddanhadle n (gardd)	<i>Lamium galeobdolon ssp. argenteum</i>	Low	Moderate	Deliberate or careless introduction	Construction, landscaping and garden clearance	YES
Spanish and hybrid bluebells 'Garden bluebell'	Clychau Cog Sbaen	<i>Hyacinthoides hispanica</i> <i>H. X massartiana</i>	Low	Moderate	Deliberate or careless introduction	Construction, landscaping and garden clearance	NO
Exotic pets Chipmunks, Parakeets etc.	esiamp l - Gwiwer resog, Paracit Torchog	<i>e.g. Tamias sibiricus,</i> <i>Psittacula krameri</i>	Low	Low	Escapes	Purchases, gifts	Some of these

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Name (English)	Name (Cymraeg)	Sci. Name	Development risk	Operational risk	Nature of risk from established growth on this site or other sites	Sources(into this devt. site)	Schedule 9?
AQUATIC / WETLAND							
New Zealand pigmyweed / Australian swamp stonecrop / 'Crassula'	Briweg Seland Newydd	<i>Crassula helmsii</i>	Low	High	Small fragment spread, on/in vehicles, and in water	Pond / wetland clearance, angling equipment	YES
Curly waterweed	Chwyn dwr Cynliog	<i>Lagarosiphon major</i>	Low	Moderate	Transfer in water, short range fragment spread, deliberate introduction	Pond / wetland clearance, angling equipment	YES
Canadian pondweed, Nuttall's pondweed	Chwyn dwr	<i>Elodea canadensis</i> , <i>E. nuttallii</i>	Low	Moderate	Transfer in water, short range fragment spread, deliberate introduction	Pond / wetland clearance, angling equipment	YES
Parrot's feather	Myrdd-ddail	<i>Myriophyllum aquaticum</i>	Low	Low	Small fragment spread, transfer in water, deliberate introduction	Pond / wetland clearance, angling equipment	YES
Water fern	Cyfrdwy	<i>Azolla filiculoides</i>	Low	Moderate	Small fragment spread, transfer in water, deliberate introduction	Pond / wetland clearance, angling equipment	YES
Zebra mussel	Misglen resog	<i>Dreissena polymorpha</i>	Low	Low	Transfer on aquatic plants & on angling equipment	Pond / wetland clearance, angling equipment	
Signal crayfish	Cimwch dir Croyw	<i>Pacifastacus leniusculus</i>	Low	Low	Deliberate transfer	Deliberate transfer	YES



Traveller Site, Bwlchgwyn Location & Habitats
Boundaries & features as shown are representative only

1a ... 6	Habitat around site (see ecology text)		Residential areas (Bwlchgwyn village)
SI	Semi-improved grassland		Separate houses, barns, traditional
	Scrub , scattered trees, dense hedgerows		Widespan buildings, sheet clad
	Woodland (mixed & deciduous)		