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Technical Report

Snowdonia – Visual Impact Tunnels

Invasive Non-native Species Report

Hochtief UK Ltd

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Contents

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1 Introduction

1.1 Terms of Reference

Atmos Consulting Ltd (Atmos) were commissioned by Hochtief Ltd in March 2022 to undertake an Invasive Non-Native Species (INNS) survey as part of the Snowdonia Visual Impact Provision Project (VIPP) which spans over two sites, referred to as 'Garth' and 'Cilfor'. The area surveyed, hereafter referred to as the 'Site', lies outside of these two areas and to the west of Cilfor. This report will inform precautions, or treatment, that must be taken in regard to INNS around water abstraction and discharge associated with the main works.

1.2 Site Location and Description

The main site is split over two locations, either side of the Dwyryd Estuary, located in Gwynedd, Wales. The first site is the Cilfor site, which is located just outside of Llandecwyn, within Snowdonia National Park. The second site is the Garth site, and this is located just outside of Minffordd, within the jurisdiction of Gwynedd County Council. The Site is located to the west of the Cilfor site with a central NGR SH 62069 37815.

1.3 Objectives

The objectives of this study were to:

- undertake an invasive non-native species survey of the Site, including an appropriate buffer; and
- To put forward recommendations for further ecological survey work/mitigation that may be required.

2 Relevant Legislation

Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, (the Habitats Regulations) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds Directive in England and Wales. The Regulations provide for the designation and protection of 'European Sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites ('Natura 2000 Sites termed Special Areas of Conservation SACs or Special Protection Areas (SPAs). The Regulations designate these Sites as being important for either habitats or species (listed in Annexes I and II of the Habitats Directive respectively).

Wildlife and Countryside Act 1981

National legislation for the special protection of selected species is provided in the Wildlife and Countryside Act 1981, as amended (WCA) and the Habitats Regulations.

Under Section 1(1) and 1(2) of the WCA, all British bird species, their nests and eggs (excluding some pest and game species) are protected from intentional killing, injury or damage. Under Sections 1(4) and 1(5), special penalties are applied to bird species included in Schedule 1 of the WCA and protection is extended for these species to disturbance to birds whilst building, in or near a nest and disturbance to dependant young. Schedule 5 provides special protection to selected animal species other than birds, through Section 9(4) of the WCA, against damage to "any structure or place which any [wild animal included in the schedule] uses for shelter and protection" and against disturbance whilst in such places.

Non-native invasive plants are listed in Schedule 9 of the WCA which makes it an offence to spread or enable them to be spread in the wild. The list includes species such as Japanese knotweed *Fallopia japonica* and Himalayan balsam *Impatiens glandulifera*.

A number of animals, known as European protected species (EPS), are provided full protection through inclusion in Schedule 2 of The Habitats Regulations. The Habitats Regulations provide protection against deliberate disturbance to those animals wherever they are present and provides tests against which the permission for a development (that may have an effect on a Schedule 2 protected species) must be assessed before permission can be given.

In addition to species protection, the WCA and Habitats Regulations also set out requirements/procedures for the notification, designation and protection of a range of statutory Site designations in order to preserve important nature conservation resources.

All public authorities have a requirement to pay due regard to the conservation and enhancement of habitats and species through Section 42 of the Natural Environment and Rural Communities Act 2006 (NERC). Section 42 states, "Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper

exercise of those functions, to the purpose of conserving biodiversity". To this end, Section 42 of the NERC provides for the establishment of a list of habitat and species that are considered to be of "principal importance for the conservation of biological diversity in Wales".

3 Methodology

3.1 Desk Study

A review of online data[1] was undertaken in December 2022 to gather details of statutory nature conservation designations within 2 km of the Site, e.g. Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Ramsar Sites, Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs).

Cofnod, North Wales Environmental Information service were contacted in December 2022 to obtain the following ecological data:

- Details of non-statutory designated sites of nature conservation importance within 2km of the site, e.g. areas included on the Ancient Woodland Inventory (AWI), Sites of Nature Conservation Interest (SNCIs) and Local Wildlife Sites (LWSs); and
- Details of invasive non-native species within 2 km of the Site.

3.2 Invasive Non-Native Survey

An INNS survey was undertaken in the daytime of 14th December 2022. The survey focused on the ditch on Site and surrounding habitat. The survey was undertaken by an ecologist experienced in invasive species identification and mitigation.

3.3 Limitations

The survey was carried outside of what is considered the optimal season for habitats (March to September inclusive). The ditch banks had been recently cut by the landowner, however the arisings were still present on Site and could be inspected for any cut invasive plant species.

[1] Using the MAGIC website (www.Magic.gov.uk) which provides authoritative geographic information about the natural environment from across government.

4 Results

4.1 Desk Study

4.1.1 Statutory Designated Nature Conservation Sites

There are five statutory designated sites within 2 km of the Site. Two Special Areas of Conservation (SAC) and two Sites of Special Scientific Interest (SSSI).

Pen Llyn a'r Sarnau / Lleyn Peninsula and the Sarnau SAC

This site is located 50m to the west of the Site. The primary reason for this site to be selected is Annex I habitats that are; sandbanks which are slightly covered by sea water all the time, estuaries, coastal lagoons, large shallow inlets and bays and reefs. Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site are; mudflats and sandflats not covered by seawater at low tide, *Salicornia* and other annuals colonizing mud and sand, Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) and submerged or partially submerged sea caves. Annex II species present as a qualifying feature, but not a primary reason for site selection; bottlenose dolphin *Tursiops truncates*, otter *Lutra lutra* and grey seal *Halichoerus grypus*

Coedydd Derw a Safleoedd Ystlumod Meirion / Meirionnydd Oakwoods and Bat Sites SAC

This site has various locations scattered across Nort West Wales, the nearest area to the Site is located approximately 0.9 km north. The primary reason for this site to be selected is Annex I habitats that are; old sessile oak woods with *Ilex* and *Blechnum* in the British Isles, Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*). Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site; water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation, Northern Atlantic wet heaths with *Erica tetralix*, European dry heaths, *Tilio-Acerion* forests of slopes, screes and ravines and bog woodland. Annex II species that are a primary reason for selection of this site – lesser horseshoe bat *Rhinolophus hipposideros*. This large composite site includes most of the known maternity roosts in Meirionnydd and some hibernacula and comprises the centre–of distribution for lesser horseshoe bats in Wales. The sheltered river valleys provide excellent tree cover and numerous suitable maternity roosts.

Coedydd Dyffryn Ffestiniog (Gogleddol) SSSI

Most of this site lies within the Meirionnydd Oakwoods and Bat Sites SAC. The site is of special interest for its biological features. These features comprise: semi- natural broadleaved woodland, woodland bird assemblage, moss, liverwort, lichen and slime mould assemblages and lesser horseshoe bats. Coedydd Dyffryn Ffestiniog (Gogleddol) SSSI is situated on the south-facing slopes of the Vale of Ffestiniog, extending for a distance of 10 km, from Penrhyndeudraeth in the west, towards Blaenau Ffestiniog in the east. The SSSI includes a 1 km stretch of the Afon Goedol at Coed Cymerau and a number of woodland blocks situated mainly on the steep valley sides.

Morfa Harlech SSSI

A large proportion of this site lies within the Lleyn Peninsula and the Sarnau SAC. This is a large site of special interest for its biological and geological features. The sand dunes at

Morfa Harlech are one of the largest moderately calcareous systems in Britain. The saltmarsh at Glan-y-mor is of regional importance for breeding waders, particularly redshank *Tringa 6etanus* and lapwing *Vanellus vanellus*. Curlew *Numenius arquata*, ringed plover *Charadrius hiaticula* and oystercatcher *Haematopus ostralegus* also regularly breed. During September to March nationally important numbers of pintail *Anas acuta* feed and roost on the extensive areas of mud and saltmarsh in the Glaslyn/Dwyryd estuary.

4.1.2 Non-statutory Designated Nature Conservation Sites

There are five Local Wildlife Sites (LWS) within 2 km of the Site, as shown in table1 below.

Table 1: Statutory designated sites

LWS name	Distance and direction from Site	Description
Gwaith Powdwr [Candidate]	0.5 km N	Dry dwarf shrub heath; bracken
Maes-y-coed woods	1.2 km N	Upland oak woods, lowland acid grassland
Abergafren	1.3 km W	Semi-improved neutral grassland, broadleaved woodland
Pen-y-Bwlch	1.4 km NW	Wet woodland and rush pasture
Pen-y-bryn	1.6 km NW	Swamp, rush pasture and lowland mixed deciduous woodland

4.1.3 Non-native Invasive Species

Rhododendron

There are seven records of Rhododendron *Rhododendron ponticum* within 2 km of the Site. The nearest record is 1.2 km east of the Site dating from 2009. There are historical records 0.2 km south of the Site dating from 1986 and due to the location are likely to be from a garden collection.

Japanese knotweed

There 51 records of Japanese knotweed *Fallopia japonica*, with the nearest being located 0.4 km north of the Site, dating from 2018. There are further records south of the Site, however, the majority of the records are situated on the other side of the estuary.

Mink

There are two records of mink Neovison vison with the nearest record located approximately 0.5 km north of the Site, dating from 2009. Both records are of field signs, not live sightings.

New Zealand willowherb

There are five New Zealand willowherb *Epilobium brunnescens* records within 2 km of the Site. The nearest record is located 0.7 km north of the Site dating from 2012.

Himalayan balsam

There are 78 records of Himalayan balsam *Impatiens glandulifera*, with the nearest record being located approximately 0.5 km from the Site and dating form 2015.

Japanese rose

There is a single record of Japanese rose *Rosa rugosa* located approximately 0.9 km and dating from 2012.

Montbretia

There is a single record of montbretia *Crocosmia pottsii x aurea = C. x crocosmiiflora* located 0.9 km north of the Site and dating from 2012.

Canadian waterweed

There is a single record of Canadian waterweed *Elodea canadensis* located 2 km south of the Site downstream in the estuary, dating from 2014.

Common cord-grass

There is a single record of common cord-grass *Spartina anglica* located 2 km south of the Site downstream in the estuary, dating from 2014.

4.2 INNS Survey

Habitats

The Site is situated within an improved grassland with species such as perennial ryegrass *Lolium perenne*, red fescue *Festuca rubra* and soft rush *Juncus effusus* present. A tidal ditch runs east to west of the Site, with vegetated banks with dominant species of common reed *Phragmites australis*, bracken *Pteridium aquilinum* and bramble *Rubus fruticosus*.

4.2.1 Results

Rhododendron

There were no rhododendrons identified in or near the Site during the survey. The habitats present on Site are not considered suitable to support rhododendron due to the land being heavily grazed and the area being subject to tidal inundations, resulting in a wet ground that is unlikely to thrive in wet conditions.

Japanese knotweed

Although the banks had been recently cut the arisings were inspected for any invasive species, Japanese knotweed was not present during the survey. With records being relatively near to the Site, 0.4 km upstream, it increases the possibility the plant may encroach on the area in the future.

Mink

There were no mink identified during the survey, nor any field signs of the species. The habitat present on Site is considered suitable for foraging or commuting mink. It is likely they are present in the wider area and may range into the Site.

New Zealand willowherb

The habitats on Site are considered unsuitable for this species as they grow at medium to high elevation. This species was not identified during the survey.

Himalayan balsam

The cuttings from the ditch banks were inspected for Himalayan balsam and none were identified. This species rapidly spreads as a result of high seed production and explosive seed dispersal. The seed pod explodes, propelling the seeds up to 7m from the parent plant. Seeds can float downstream, carried by attachment to animals and/or moved in contaminated soil. Due to the presence of the species in the wider area and the suitable habitat present on Site, it is likely the species may encroach into the area.

Japanese rose

No Japanese rose was identified during the survey, and it is unlikely to be present on Site due to the sheep grazing and lack of scrub habitat.

Montbretia

Montbretia was not present during the survey. This species is usually a garden escapee and it found in built up habitats. Due to the land being of agricultural use, it is considered unlikely this species will encroach into the area.

Canadian waterweed

Canadian waterweed was not identified during the survey. The single record of the species is located 2 km downstream in the estuary.

Common cord-grass

This species was not present during the survey and the habitats on Site are not considered suitable to support the species.

5 Evaluation and Recommendations

5.1 Habitats

The habitats on Site are ditch and improved grassland. Due to the connectivity to the wider area via the ditch, it is recommended that an INNS survey is carried out annually. If any invasive species do encroach into the area, action can be taken immediately to prevent the further spread.

5.2 Species

The species most likely to establish on Site are Japanese knotweed due to the local records (as show in Figure 1) and Himalayan balsam due to the way the species disperses its seeds. As mentioned previously, an annual survey will ensure the species are identified early and appropriately removed to prevent further spread to the wider area.

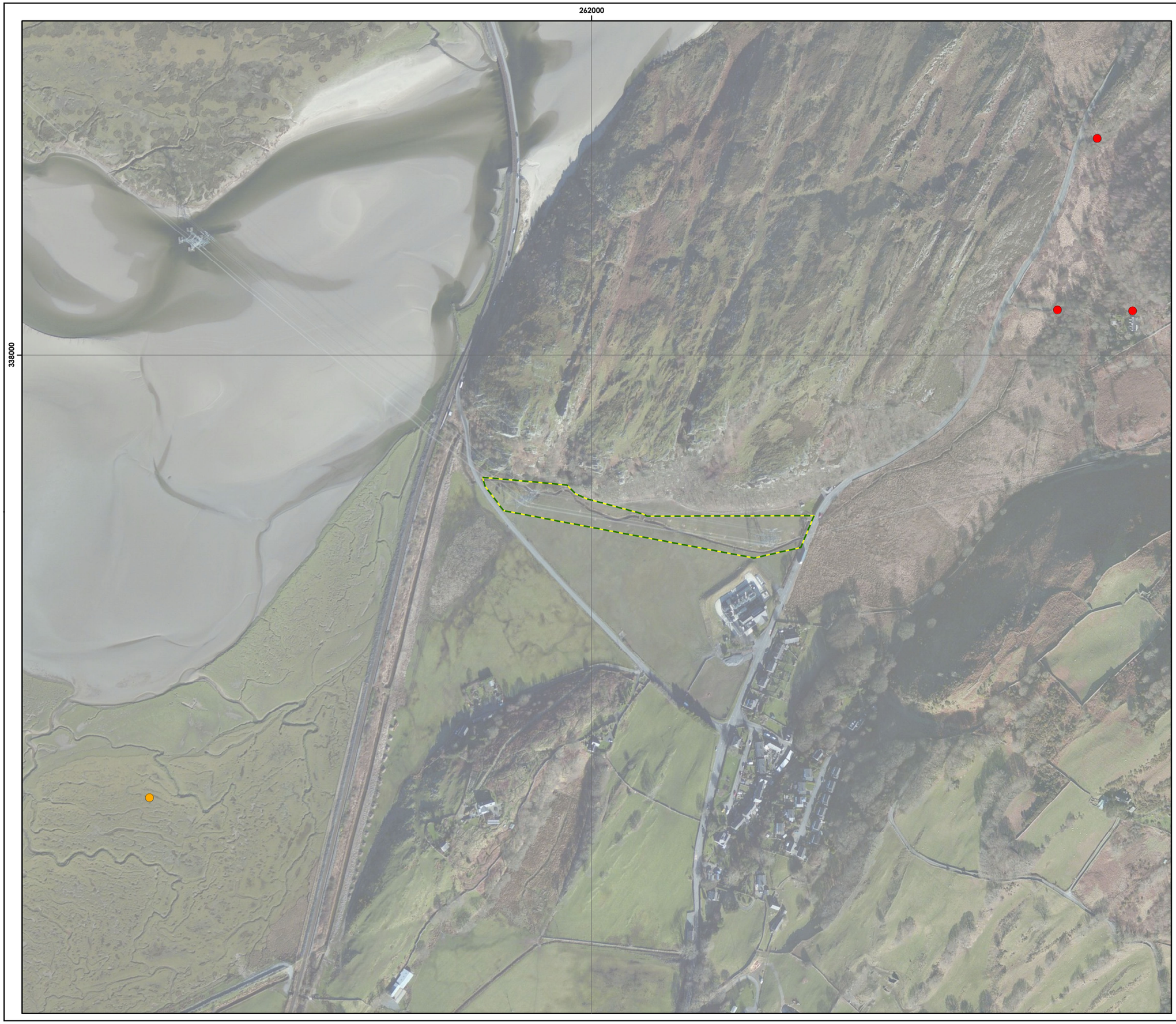
6 Figures

6.1 Figure 1 Site boundary and local records of Japanese knotweed and Himalayan balsam

Snowdonia
Visual Impact Tunnels

HOCHTIEF

Locations of Invasive Species



Key

Survey area

Invasive species records

- Himalayan Balsam
- Japanese Knotweed

atmos CONSULTING

0 50 100 200

Meters

N

Scale @ A3:

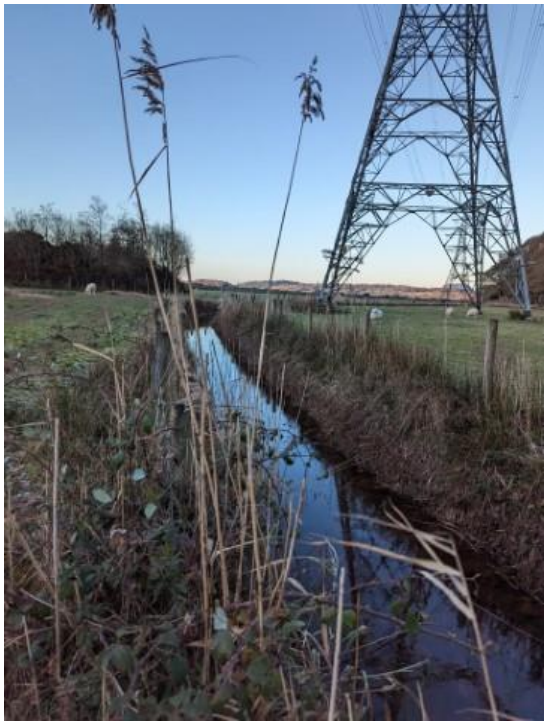
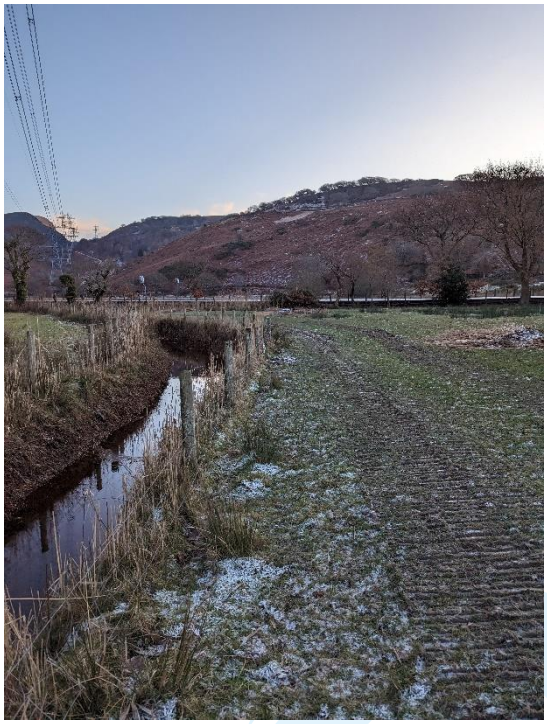
1:4,000

04/01/2023 64050/HB/023a

Drawn by: JT Checked by: KM Approved by: FM

7 Appendices

Appendix A - Photographs

Comment	Image
The Site is comprised of a ditch in an improved grassland field grazed by sheep	
The ditch banks had recently been cut	

Comment	Image
The arisings from the cutting had been left in piles in the field meaning they could be easily inspected