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**Nant Llyn Glan Gors
Proposed Hydro-Electric Scheme
Preliminary Ecological Assessment**

5th September 2024



Report by: Chris Hall ACIEEM

Client: Clwb Rygbi Nant Conwy

**Planning
Authority:** Parc Cenedlaethol Eryri

**Grid
Reference:** SH 78255 61608 (intake) SH 78591 61560 (Power house & outflow)

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Figure 1: Site Location (approximate site centre)

Nant Llyn Glan Gors Proposed Hydro-Electric Scheme Preliminary Ecological Assessment

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1. Summary

A Preliminary Ecological Assessment (PEA) was carried out on 6th August 2024 at Nant Llyn Glan Gors near Llanrwst. It is proposed to develop a small community owned hydro–electric scheme to provide power for the nearby Rugby Club.

The survey revealed the only habitats to be impacted by the proposed works are a coniferous plantation and a small area of mixed woodland at the top of the scheme for approximately 80m from the intake location. Habitat loss will be restricted to the small footprints of the intake, settling tank, powerhouse and outflow. The proposed works within these habitats will have no significant negative ecological impact.

The small watercourse which will be depleted for approximately 450m runs through a deep, rocky ravine which is largely inaccessible. The watercourse will still be available as a commuting route for otters; (*Lutra lutra*) which are known to be present in the locality on completion of the works but due to the nature of the watercourse at this location, any commuting behaviour would need to negotiate an overland route.

There are potential protected species issues that will be required to be taken into account in the form of hedgehogs; (*Erinaceous europaeus*) which are detailed in Section 9.2.2 and nesting birds (see Section 9.2.3).

Two ‘Invasive Non-Native Species’ (INNS) were found to be present along the proposed cable route where Montbretia; (*Crocoshia x crocosmiiflora*) and Himalayan balsam; (*Impatiens glandulifera*) were found to be present. Himalayan balsam was also found to be present in the car park of the Rugby Club where the new ‘H’ Pole will be located to connect the scheme to the electricity network. As excavation will be required in both locations, precautionary measures have been recommended in Section 9.1.3. Both of these plants are listed as INNS under Schedule 9 of the Wildlife & Countryside Act and there are legal implications regarding their presence (see Section 11).

The proposed works will not result in the loss of any potential bat roosts and there will be no loss of habitat connectivity, therefore no potential negative impact on bats.

The biological records search, which was carried out with the Local Records Centre (LRC) ‘Cofnod’ revealed that there are a number of relevant protected sites within the search radius. Due, however, to the very limited scale of the works, there will be no negative impact on any of these sites.

Precautionary measures for working in close proximity to watercourses have been recommended in Section 9.1.4 to minimise the risk of a pollution incident occurring.

Under Chapter 6 of Planning Policy Wales 12, Planning Authorities must seek to maintain and enhance biodiversity in the exercise of their functions. It is also a priority for developments in Wales to consider ecosystem resilience and green infrastructure in the development of enhancement schemes. In this case biodiversity enhancements will be achieved through the provision of bee bricks and new native tree planting (see Section 10).

Key Messages:

- 1. The only habitats to be lost as a result of the proposals are the footprints of the intake, settling tank and powerhouse. There will be no significant negative ecological impact due to habitat loss.**
- 2. Any broadleaved trees lost as a result of the burying the pipeline at the top of the scheme will be required to be replaced (see Section 9.1.2).**
- 3. Precautionary pollution control measures are recommended in Section 9.1.4 to avoid any impact on aquatic habitats or species.**
- 4. Guidance is given in Section 9.2.2. to ensure there is no negative impact on hedgehogs.**
- 5. Recommendations regarding the timing of works have been made in Section 9.2.3 to avoid any impact on nesting birds.**
- 6. Biodiversity enhancements will be achieved through the provision of bat boxes and bird nest boxes (see Section 10).**

2. Introduction

A Preliminary Ecological Assessment (PEA) was carried out on 6th August 2024 at Nant Llyn Glan Gors. It is proposed to develop a small hydro–electric scheme to provide power for the nearby Rugby Club.

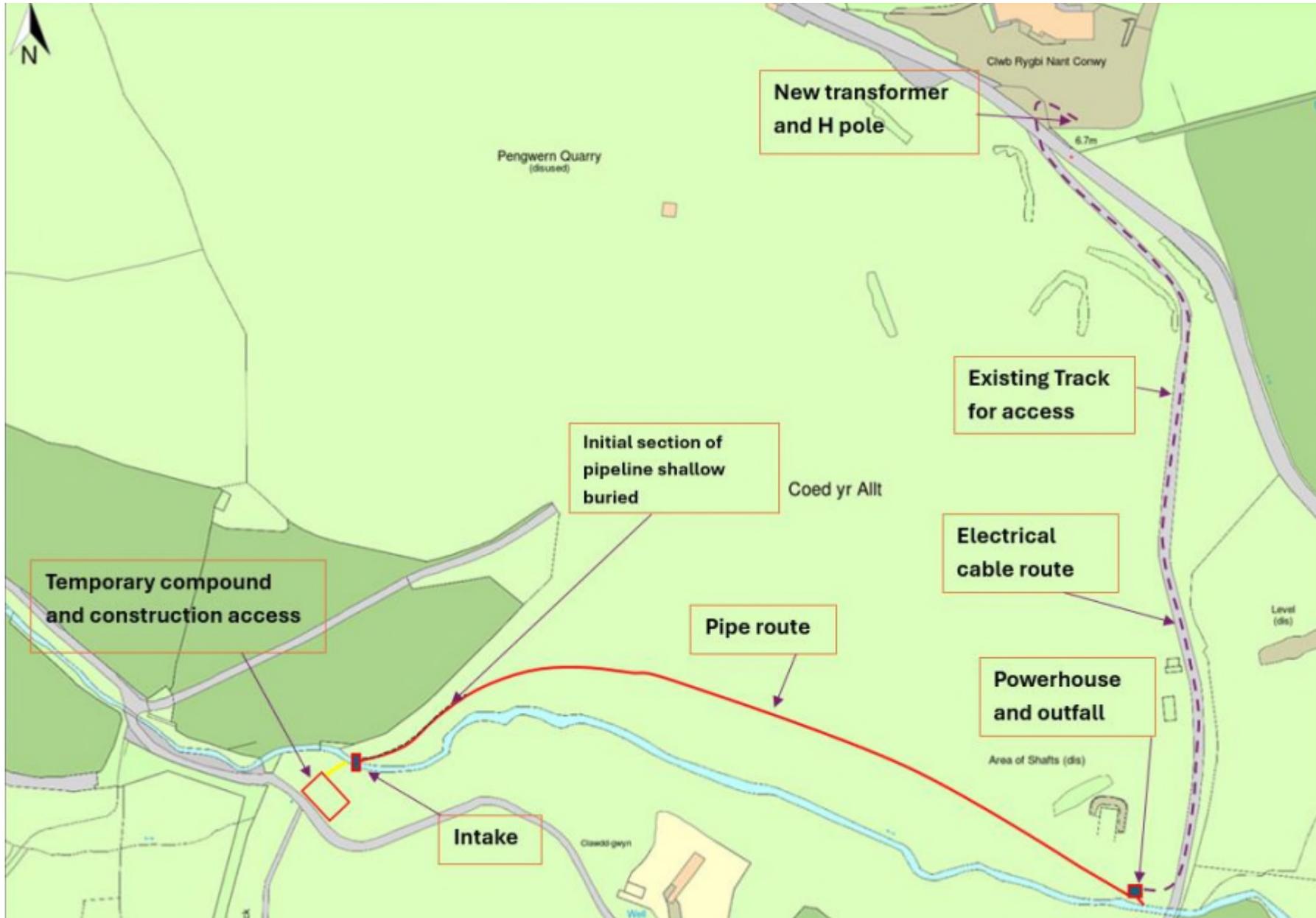
The scheme will involve 280mm pipe buried for its 480m length from the intake to the outflow and powerhouse. It is proposed that the scheme will have 70% abstraction (HOF - Q95 - 7l/s) up to max flow of Qmean - (78l/s)

Approximately the first 80m of pipe will be laid in a shallow trench 150mm deep and covered with soil and leaf litter through mixed woodland; thereafter, the pipe will be buried in a 750mm deep trench through a commercial plantation of Douglas fir; (*Pseudotsuga menziesii*), (pipe 315mm OD).

The relevant Planning Authority is Parc Cenedlaethol Eryri which requires an ecological survey report to be submitted as an integral part of the planning application process.

The intake for the proposed scheme will be located at SH 78255 61608 and the powerhouse and outflow at SH 78591 61560 (see Figure 2).

Figure 2: Location and proposed scheme layout.



3. Methodologies

The surveys were carried out on 6th August 2024 by ecologist Chris Hall and assistant Mélanie Gautier. Chris is an associate member of the Chartered Institute of Ecology & Environmental Management (CIEEM) has been working as an independent ecologist for 18 years and has held a bat license from Countryside Council for Wales (CCW)/ Natural Resources Wales (NRW) for 27 years and an otter licence (No S089662-2) for 20 years.

Chris founded the Afon Dwyryd Otter Partnership and has 22 years experience in carrying out otter surveys, including comprehensive surveys of the uplands and coast of Eryri. The data generated by the Afon Dwyryd Otter Partnership resulted in otters being included as a feature of the Pen Llŷn a'r Sarnau SAC. Chris also delivered professional training courses on surveying for riparian mammals including otters and water voles.

3.1 Habitats

The survey took the form of an extended Phase I survey and identified baseline ecological conditions, as well as any important or notable habitats. All habitats within the proposed development site were classified, species lists were drawn up for each habitat type identified and the habitat condition was assessed. In the context of this report, *important or notable habitats* are considered to be those which are of a sustainable size, and which meet any of the following criteria:

- Habitats which have a high intrinsic ecological value, i.e. they support a diverse range of vascular plant and/or faunal species.
- Mature or semi-natural habitats in built-up areas.
- Environment Wales Act priority habitats.
- Habitats considered as having a significant extent and/or ecological interest.
- Habitats supporting Invasive Non-Native Species, (INNS).

All habitats considered as having the potential to support rare, protected or otherwise notable species of flora and fauna were noted, as were any direct signs of these species. Where possible, habitats were cross-referenced to any relevant UK/Wales priority habitats.

3.2 Bats

Any trees or buildings potentially impacted by the proposed works were inspected for the presence of Potential Roosting Features, (PRFs) and any tree removal was assessed for its potential to result in habitat fragmentation.

3.3 Otters

The watercourse affected by the proposed scheme was methodically searched for signs of otter presence. These field signs included spraints (droppings), footprints, prey remains and otter tracks leading to and from watercourses. The habitat was also searched for the presence of actual and potential holts and assessed on its potential to support otters in the context of the habitats in the surrounding landscape.

3.4 Water Voles

The affected water courses and associated habitat were searched for evidence of water vole presence. The main focus of water vole surveys is territorial latrines, which are a conclusive sign of the animal's presence. Any burrows, water-side runways and feeding remains were also to be recorded.

The habitat was also assessed on its potential to support water voles in both the context of its current condition, and its condition following the proposed maintenance works.

3.5 Other Protected Species

The site and adjacent habitats were assessed on their potential to support any protected or important species. During this survey, a search was made for field signs of protected or notable species and assessments made of the potential of habitats to support these species. In the context of this report important or notable species are considered to be those that meet any of the following criteria:

- Species protected by British or international law.
- Environment Wales Act priority species.
- Nationally rare or scarce species.
- Species of Conservation Concern (e.g. JNCC Red List, RSPB/BTO Red or Amber lists).

3.6 Desk Study

The desktop study aims to collate existing information about priority species, habitats, and designated sites. This information has relevance to the likelihood of priority species being present within the survey area, as well as giving context to any species and habitat records from the actual site.

A biological records search was carried out with Cofnod for all priority species, habitats, and designated sites as recommended in the guidance from CIEEM. This enables the proposed development site to be assessed in a wider context and a potential wider 'zone of influence' of the development to be taken into account. The search parameters were a 10km radius for all protected sites with specific relevance to bats and 2km radius for all other protected sites and all protected species.

4 Survey Limitations

4.1 Otters

Otters are known to occupy extensive territories of up to 30 – 40km of watercourse, in which they pursue a semi-nomadic existence, moving from one holt to another to exploit seasonally available food sources when they are present in sufficient biomass for hunting to be efficient (Green et al 1984). It is therefore possible that a site will be used by otters but not visited for some considerable

time. In this case there is a possibility of no field signs being present when the survey is carried out as the watercourse only has the potential to be used for commuting.

4.2 Water Voles

Due to the metapopulation dynamics of water voles as a species, which involves periodic localised extinctions, followed by re-colonisation from other colonies in the area during the dispersal of young animals, a site can be negative when surveyed only to be later re-colonised. The assessment of the potential of this happening is vital when assessing the impact of proposed works and any subsequent mitigation strategy.

While this survey was carried out outside the normally recognised water vole survey period, even at this time of the year, it is expected that the well-used waterside runways and burrows of an established population would still be apparent.

5 Results

5.1 Desk-based Study

5.1.1 Protected Species

The Cofnod search revealed a number of protected mammal species records for the search area including eleven bat species. Also present are 29 records of hedgehogs; (*Erinaceous europaeus*), the locations of which are shown below in Figure 3. The relevant mammal records are summarised in Table 1 below.

There are a number of herpetofauna, (amphibians & reptiles) records within the search area but these are not considered relevant due to the unsuitability of the largely coniferous plantation habitat.

Table 1- Summary of the protected mammal species records returned in the data search.

Common Name	Zoological Name	No. of Records
Badger	<i>Meles meles</i>	18
Hedgehog	<i>Erinaceous europaeus</i>	29
Otter	<i>Lutra lutra</i>	16
Water vole	<i>Arvicola aquaticus</i>	4
Bat (unknown)	<i>Chiroptera</i>	8
Brown long eared bat	<i>Plecotus auritus</i>	10
Pipistrelle (species unknown)	<i>Pipistrellus spp</i>	28
Common pipistrelle	<i>P. Pipistrellus</i>	19
Soprano pipistrelle	<i>P. pygmaeus</i>	25
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	43
Daubenton's bat	<i>Myotis daubentonii</i>	2

Natterer's bat	<i>M. nattereri</i>	5
Myotis (species unknown)	<i>Myotis spp</i>	2
Noctule bat	<i>Nyctalus noctula</i>	9
Serotine	<i>Eptesicus serotinus</i>	1

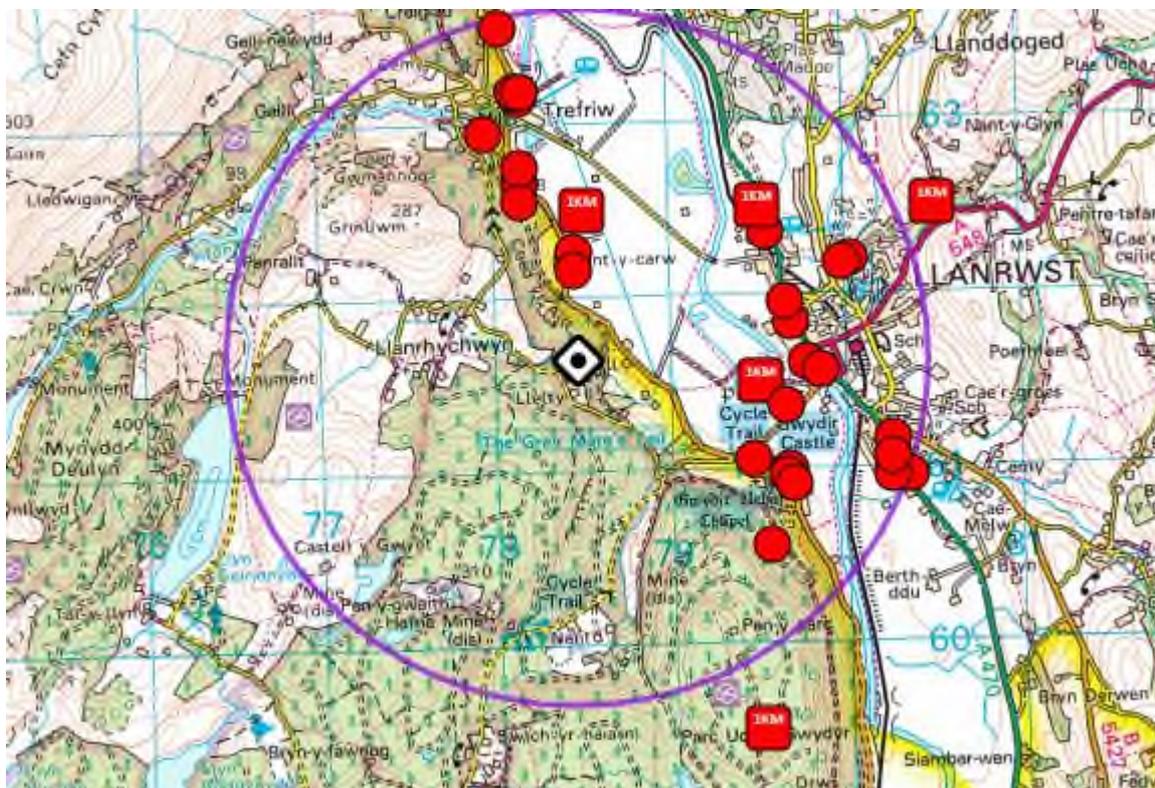


Figure 3: Location of hedgehog records.

5.1.2 Statutory Protected Sites

The data search also revealed a number of statutory protected sites, the details for which are given below-

- The Gwydir Mines Special Area of Conservation (SAC) lies 450m from the centre of the site and is designated for a range of geological and botanical interest and associated species including the lesser horseshoe bat; (*Rhinolophus hipposideros*) (see Figure 4).
- The SAC is underpinned by two Sites of Special Scientific Interest, (SSSI). The Gwydir Forest Mines SSSI which lies 450m from the centre of the site and the Plas Maenan SSSI which lies 4.8km (see Figure 5).
- Also present is the Pandora Reservoirs SSSI which lies 1.5km away and is designated for its aquatic vegetation (see Figure 6).

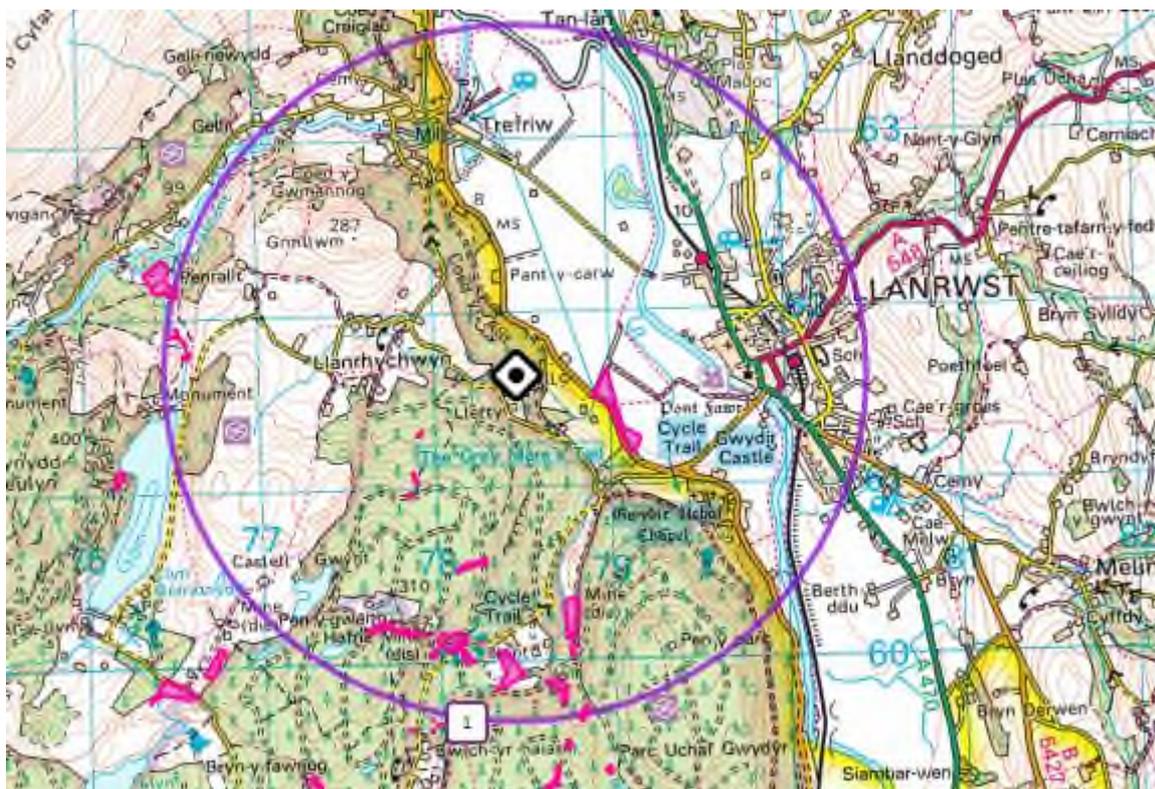


Figure 4: Location of the Gwydir Forest Mines SAC.

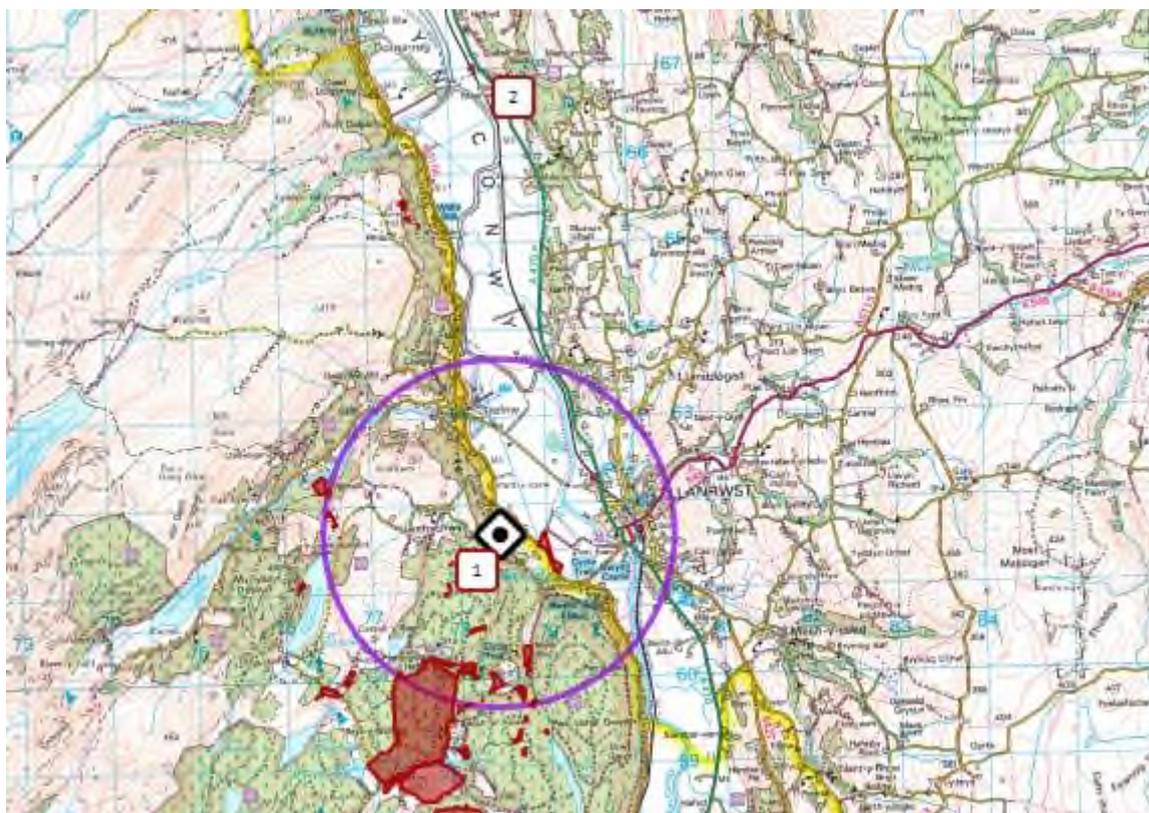


Figure 5: Location of the Gwydir Forest Mines SSSI (1) and Plas Maenan SSSI (2).



Figure 7: The locations of the PAWS.

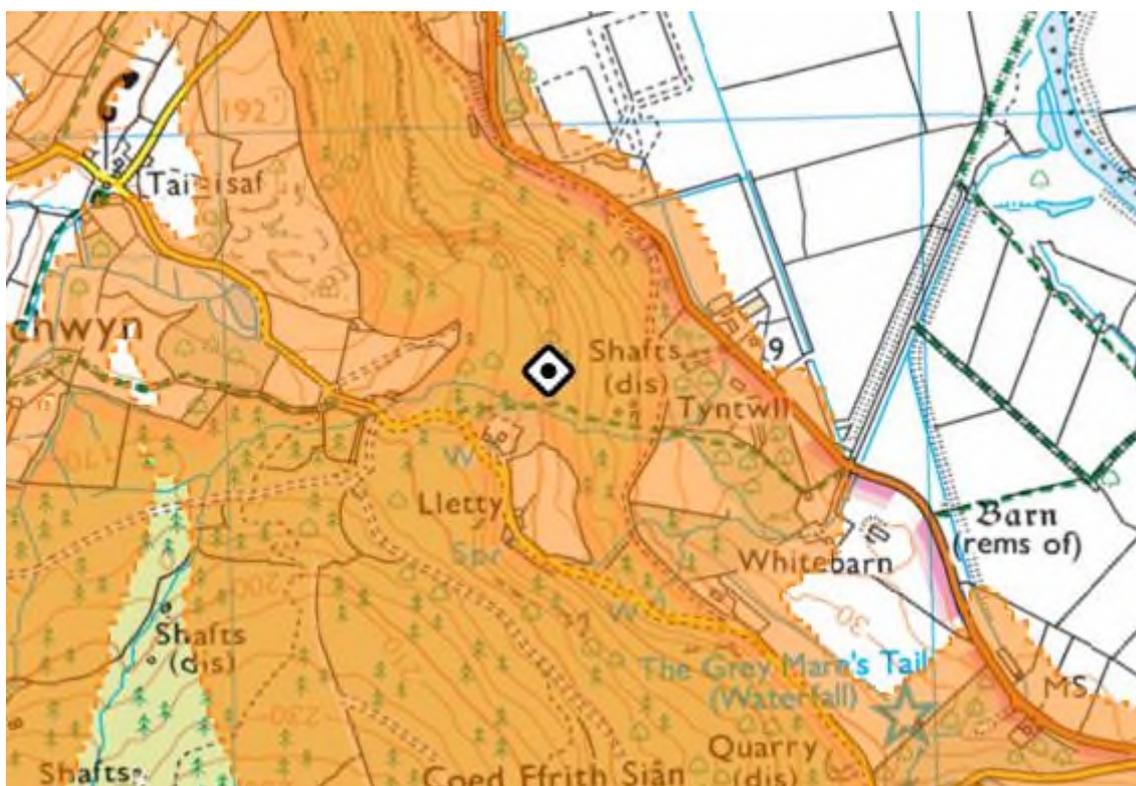


Figure 8: Location of the Priority Ecological Networks Site (native woodland).



Figure 9: Location of the five Wildlife Sites (Candidate) including Pant y Carw (1).

5.2 Habitats

5.2.1 'H' Pole & Network Connection

The 'H' Pole and network connection are to be located in the car park of the rugby club. The car park is surfaced with aggregate and there is minimal vegetation encroachment. One species of interest however is the Himalayan balsam which is classified as an INNS under Schedule 9 of the Wildlife & Countryside Act.

5.2.2 Cable Route

The cable route will run from the 'H' Pole in the rugby club car park to the powerhouse. This follows the route of an existing, surfaced forestry track under which the cable will be buried.

While there is no significant vegetation present on the track, Himalayan balsam and Montbretia are present in the adjacent vegetation. Both of these species are classified as INNS.

5.2.3 Powerhouse & Outflow

The powerhouse and outflow are to be located in woodland adjacent to the watercourse. There is no ground-flora in the location and the powerhouse is to be constructed on a large, rocky ledge. The canopy in this location is dominated by beech; (*Fagus sylvatica*), some of which are semi-mature, but most are younger saplings.

No Trees are to be removed in this location and boulders are to be used to prevent erosion from the outflow.

5.2.4 Pipeline Route

The majority of the pipeline follows a route between the rows of coniferous plantation trees. There will however be a requirement to remove approximately 15 plantation trees which are a mixture of Douglas fir and sitka spruce: (*Picea sitchensis*).

As expected in a maturing coniferous plantation, ground-flora is mostly sparse and restricted to species which can tolerate the harsh conditions and heavy shading. Bramble; (*Rubus fruticosus*) is present along with ivy; (*Hedera helix*), hard fern; (*Blechnum spicant*) and lady fern; (*Dryopteris filix-femina*).

In places where more light reaches the woodland floor, herb Robert; (*Geranium robertianum*), foxglove; (*Digitalis purpurea*) and wood sorrel; (*Oxalis acetosella*) are also present. This latter plant is an ancient woodland indicator which supports the PAWS designation of this site.

At the upper end of the pipeline route, the coniferous planting is less dense and, as a result, some broadleaved species have regenerated. Species present in this upper 80m of the site include beech, hazel; (*Corylus avellana*) and rowan; (*Sorbus aucuparia*). The pipeline will only be buried in a shallow trench in this section to avoid damage to retained trees.

5.2.5 Intake & Settling Tank

There is no vegetation at this location which is bare rock due to the scouring action of the watercourse.

5.2.6 Temporary Compound

The temporary compound will be located on an area of existing hardstanding at the roadside. Access to the intake location will require the level of an existing track to be built up to achieve the necessary gradient and levels. This will result in the loss of one ash: (*Fraxinus excelsior*) sapling and a small hazel, along with some bramble.

5.2.7 Watercourse

The watercourse which will be depleted for approximately 450m of its length is a narrow and very fast flowing stream with a rocky substrate. The rate of flow results in scouring of the stream bed and as a result, no aquatic or emergent vegetation is present.

The stream flows through a deep gorge which is largely inaccessible

5.3 Protected Species

5.3.1 Badgers

There was no evidence of badgers, badger activity or any setts within 30m of the proposed pipeline route or any other part of the scheme.

5.3.2 Bats

None of the trees to be removed have any PRFs and the removal of these trees will have no impact on habitat connectivity.

5.3.3 Hedgehogs

The hedgehog is a largely nocturnal species which leaves very little in the way of field signs to indicate its presence. While there was no evidence of the presence of this species, the habitat is capable of supporting a hedgehog population and there are a large number (25) of records on the Cofnod database. This species will therefore be required to be taken into consideration in the mitigation strategy (see Section 9.2.2).

5.3.4 Otters

There was no evidence of otter use of the depleted watercourse.

5.3.5 Water Voles

There was no evidence of past or current occupation of the site by this species.

5.3.6 Other Protected Species

Nesting Birds

There is the potential for nesting birds to be present in the trees proposed for removal at the appropriate time of year.

There is no other vegetation within the scope of the scheme dense enough to conceal nesting birds.

6 Habitat Impact Assessment

6.1 Coniferous Plantation

The burying of the pipeline will only result in the loss of a relatively small number of trees in the context of a commercial plantation, with the majority of trees retained.

The removal of these commercial conifers will however allow more light to reach the forest floor and as this is a PAWS, it is anticipated that this will trigger the germination and regeneration of the ancient woodland ground-flora where these species are still present in the seed bank.

On the upper 80m of the pipeline, there may be some impact on young broadleaved species which have regenerated in this area. It is however proposed to replace any young trees that are lost.

There will therefore be no significant negative impact on the woodland habitat as a result of the proposed scheme.

6.2 Broadleaved Trees

The number of broadleaved trees lost will be very limited and as a result any impact would be minimal. Any impact must however be avoided, and new trees planted to compensate for any trees that are lost (see Section 9.1.2).

6.3 INNS

There is the potential for Montbretia and Himalayan balsam to be spread to habitats outside of the application boundary during the course of trenching works to bury the cable. This could result in the negative impact caused by these invasive species being extended far beyond the site boundary. This could also constitute a criminal offence.

Precautionary measures must therefore be in place to minimise this risk (see Section 9.1.3).

6.4 Watercourse

The stream itself should be physically unaffected by the proposed works but the scheme will result in a depleted stretch of approximately 450m with up to 70% of the water being temporarily extracted and discharged downstream.

Due to the very rocky nature of the substrate, combined with the scouring action of this very steep watercourse, there is an absence of aquatic, emergent and bank-side vegetation. Any impact would therefore be likely to be minimal.

There is however the potential for the watercourse to act as a transmission vector for any pollutants generated during the course of the works. This could extend the 'zone of influence' of the proposals far beyond the site and application boundaries, resulting in a negative impact on a wider scale. Due however to the very limited scale of the proposed works that will actually take place in close proximity to the watercourse, the risk of this occurring is considered to be minimal and can easily be avoided via the precautionary measures given in Section 9.1.4. The majority of the proposed works which involve excavation which will take place in terrestrial habitats some distance from the watercourse and will be relatively small due to the diameter of the pipe.

7 Species Evaluation & Impact Assessment

7.1 Badgers

There will be no damage or disturbance to setts and no loss of foraging habitat as a result of the proposals. There will therefore be no negative impact on badgers at any level.

7.2 Bats

There will be no reduction in roosting opportunities for bats as a result of the proposed works and there will be no habitat fragmentation.

No negative impact on any bat species at any level is therefore anticipated.

There is however the potential for a positive impact on bats as a result of the provision of bat boxes as part of the biodiversity enhancement scheme detailed in Section 10.

7.3 Hedgehogs

The primary risk to hedgehogs on a scheme such as this is entrapment in open excavations created to bury the pipeline. There is a very real risk of this occurring due to the number of hedgehog records present on the Cofnod database (see Figure 3). Any death or injury of animals could have a negative impact at a local level.

The hedgehog is a 'Priority' species listed under Section 7 of the Environment Wales Act. Due to this status, any negative impact must be avoided.

7.4 Nesting Birds

There is some potential for nesting birds to be present in trees that will be required to be removed. If this work is carried out during the nesting season and results in the failure of the brood, this could have a negative impact on the species involved at a local level. Precautionary measures regarding the timing of works are provided below in Section 9.2.3.

All birds, with the exception of some 'pest species' which can be controlled under licence, are protected while nesting by UK legislation.

7.5 Otters

No holts or places of shelter used by otters will be impacted by the proposed works and no otters will be disturbed by the proposals.

While the stream is unlikely to support any fish prey species due to the very small size, fast flow and impassable waterfalls of the watercourse, otters do use streams such as this as a commuting route to

cross the watershed from one river system to another. The proposals will however not have any negative impact on the stream as a potential commuting route. The course of the stream will not be altered or blocked, and the proposed 70% extraction will ensure that there is still some water flow present in the stream. Due to the very steep gradient of the stream, otters would already be forced to adopt an over-land route and this will not be altered in any way by the proposals.

Precautionary pollution prevention measures will ensure there will be no reduction in prey biomass in the wider landscape such as in the Afon Conwy into which the stream flows.

No negative impact on otters is therefore anticipated as a result of the proposed works.

7.6 Water Voles

No evidence of water voles was found during the course of the surveys.

The assessment of the site concluded that the stream is totally unsuitable for this species. The very fast flow will render the stream unsuitable as an escape mechanism from predators and the rocky banks and substrate are unsuitable for burrowing.

It is therefore concluded that there will be no negative impact on water voles at any level as a result of the proposed works.

8 **Protected Sites Impact Assessment**

Due to the relatively small scale of any excavations that could cause a pollution/siltation event and the implementation of rigorous pollution control measures, it is not considered feasible that the proposed scheme could have any negative impact on the protected sites or associated species at any level.

The majority of the protected/designated sites present are associated with lesser horseshoe bats on which there are no potential impacts.

There will also be no negative impact on the Priority Ecological Networks Site as the loss of trees is minimal in the context of the extensive forest cover in this area.

9 **Mitigation Measures**

9.1 Habitats

9.1.1 Coniferous Trees

A number of commercial coniferous trees will require removal to facilitate the proposed scheme. It is however considered that this will have a beneficial impact on the woodland habitat by allowing more light to reach the forest floor, allowing the ancient woodland ground-flora to regenerate. The disturbance to the soil to excavate the trench for the pipeline could also be beneficial as this could trigger germination.

No mitigation measures should therefore be required in relation to the loss of non-native coniferous trees from a habitat perspective.

Protected species in the form of nesting birds will however be required to be taken into consideration with regards to the timing of any felling works (see Section 9.2.3).

9.1.2 Broadleaved Trees

A small number of young native broadleaved trees may be lost at the upper end of the scheme where the first 80m of the pipeline will be buried in a shallow trench. Any trees lost, must be replaced on completion of any trench excavation works.

9.1.3 INNS

Montbretia and Himalayan balsam are present in the habitats either side of the track under which the cable will be buried, and Himalayan balsam is present in the rugby club car park where the new 'H' Pole will be located. Excavation will be taking place in both locations resulting in the potential spread of both species.

The following precautionary measures are recommended to minimise the risk of spreading either species which could constitute an offence under the Wildlife & Countryside Act.

- All excavated material must be kept on site.
- All plant, tools, machinery etc must be thoroughly cleaned before leaving the site.
- Following completion of the works, it is recommended that an eradication programme is initiated for the Himalayan balsam in the rugby club car park. This is unfortunately not practical in the habitats alongside the cable route track as this is outside of the ownership of the scheme.

9.1.4 Watercourse

To minimise the risk of a pollution incident occurring during the course of the works, the current guidance for working in proximity to watercourses must be adhered to. This can be found at:

https://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf?utm_source=website&utm_medium=social&utm_campaign=GPP5%2027112017

9.2 Protected Species

9.2.1 Badgers, Bats & Water Voles

No mitigation measures for badgers, bats or water voles are required.

9.2.2 Hedgehogs

Excavation sites are hazardous places for straying animals, with the potential for animals to become trapped in open excavations for the installation of pipelines. The simple precautionary measures below have been recommended.

- All excavations must be securely covered, or escape ramps must be fitted to any excavations left open overnight to allow animals to escape.
- These excavations must be checked for the presence of animals prior to work commencing each morning.
- Any piping must be securely capped overnight.

9.2.3 Nesting Birds

It is recommended that any tree removal works are undertaken outside the bird nesting season, recognised as 1st March – 31st August.

If this is not possible, a thorough search of the affected area must be undertaken by a suitably experienced person prior to works commencing. If any active nests are found to be present, work must be delayed until such time as the young have fledged.

9.2.4 Otters

The precautionary pollution prevention guidance recommended in Section 9.1.4 will ensure there is no negative impact on prey biomass for otters.

9.3 Protected/Designated Sites

Due to a lack of potential negative impacts, no mitigation measures regarding protected sites will be required.

10 Biodiversity Enhancements & Green Infrastructure Statement

10.1 Biodiversity Enhancement

Under Chapter 6 of Planning Policy Wales 12, planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions.

The location of all biodiversity enhancements must be clearly shown on final plans for the development.

In this case biodiversity enhancements will be achieved through the provision of bat boxes and nest boxes suitable for pied flycatchers on mature trees at the upper end of the site near the intake location. As there will be minimal biodiversity loss as a result of this very small-scale development, this is considered to be an appropriate and proportionate level of biodiversity gain.

10.1.1 *Bat boxes*

A total of five bat boxes will be provided. It is recommended that ‘woodcrete’ or ‘woodstone’ products are used as these have a much longer lifespan than traditional wooden boxes and have better thermal insulation qualities (see figure 10). The boxes should be mounted as high as possible on mature trees.



Figure 10: Example of a suitable bat box.

10.1.2 *Pied flycatcher nest boxes*

A total of five nest boxes suitable for pied flycatchers should be provided. Again, it is recommended that ‘woodcrete’ boxes are utilised as this material has a much longer lifespan than traditional wooden boxes (see Figure 11). The boxes should be mounted as high as possible on the north or north-east side of trees where they will be sheltered from the prevailing south-westerly weather. This enhancement is likely to be successful due to the number of records of this species in the vicinity of the proposed scheme (see Figure 12).



Figure 11: Example of a suitable woodcrete product.



Figure 12: Location of pied flycatcher records.

10.2 Green Infrastructure Statement

Details regarding how each biodiversity enhancement measure improves ecosystem resilience and green infrastructure are given below-

- Bat Boxes- These features will act as ‘stepping stones’ for bat species known to be present in the area by offering new satellite roosts and allowing radiation into the wider landscape. This will potentially bolster bat populations within the surrounding area.
- Nest Boxes- Pied Flycatchers are a ‘Priority Species’ listed under Section 7 of the Environment Wales Act and have a close association with ancient woodlands. This is a hole nesting species for which there appears to be a lack of nesting opportunities in the adjacent woodland. It is recommended that a minimum of three boxes are provided. The provision of these boxes has a high likelihood of success with a number of records of this species on the Cofnod database (see Figure 12). The use of these boxes will potentially bolster the population of this species present in the area by providing optimal nesting opportunities.

Table 2 below shows how the ‘stepwise’ approach has been implemented in order to achieve the goals of chapter 6 of the planning policy Wales (Updated 2023).

Table 2- How the stepwise approach will be implemented on this development.

Stepwise Step-	How the step has been implemented
1 - Avoid	<p>Due to the scale and nature of the works, any impact on protected/designated sites has been avoided.</p> <p>The lack of any potential bat roosts and no bat habitat loss will ensure any negative impact on bats is avoided.</p> <p>Guidance given regarding the timing of any tree felling works ensure that there is no negative impact on nesting birds.</p> <p>The stream will still be available as an otter commuting route on completion of the works which will avoid any inhibition of normal territorial movements.</p> <p>No significant vegetation is to be removed, as such any negative impact on habitat connectivity as a result of physical fragmentation has also been avoided.</p> <p>Guidance for precautionary pollution prevention measures will ensure there is no negative impact as a result of a pollution incident.</p>
2 – Minimise	<p>Guidance given regarding excavations will ensure that any negative impact on hedgehogs is minimised.</p> <p>The adoption of the recommended precautionary measures will minimise the risk of spreading INNS into the wider environment.</p> <p>Future carbon emissions will be minimised via the implementation of this scheme which will also contribute to Welsh Government Clean Energy</p>

	Generation Targets.
3 – Mitigate	N/A
4 – Onsite compensate	New planting will take place to compensate for any young broadleaved trees lost at the upper end of the scheme
5 – Offsite compensate	N/A

11 Legal Implications

11.1 Badgers

Badgers and their setts are protected by the Protection of Badgers Act 1992. Under this Act it is an offence to damage, destroy or obstruct access to a badger sett, and also to disturb a badger whilst it is occupying a sett.

Undertaking an activity within 30 metres of a badger sett, which could result in damage to the sett, obstructing access to it or disturbance of any occupying badgers, may constitute an offence. This distance may be extended to 100 metres if the activity involves blasting or pile-driving.

NRW, the statutory conservation authority, are empowered under the 1992 Act to issue a licence permitting potentially damaging or disturbing activities to be undertaken within 30 metres or 100 metres of a badger depending on the nature of the activity undertaken as part of a local authority consented development.

11.2 Bats

Bats are protected under UK law by the Wildlife and Countryside Act 1981 (as amended) and also under European law by the Conservation of Habitats and Species Regulations (2021). Under these laws it is an offence to deliberately kill or injure a bat, to disturb a bat or to damage, destroy or block access to a roost. Bat roosts are protected under these laws whether the animals are present at the time of survey or not. NRW are empowered to issue licences to carry out work to bat roosts for reasons of overriding public interest.

11.3 Hedgehogs

The hedgehog is a priority species across North Wales, including Anglesey and is included in Section 7 of the Environment Wales Act (2016) as a species of importance to the maintenance and enhancement of Biodiversity in Wales.

11.4 INNS

Himalayan balsam is included in the list of alien invasive species covered by the Wildlife & Countryside Act 1981. Under this legislation, the introduction of any of the species listed, or

allowing them to spread into the wild could constitute an offence. The Environmental Protection Act 1990 and associated regulations define INNS contaminated soil or plant material as controlled waste and make provisions for their treatment and disposal. This relates to Japanese knotweed, Himalayan balsam and giant hogweed.

11.5 Nesting Birds

Under the Wildlife and Countryside Act 1981, all nesting birds and their nests are protected. Once a bird places a single piece of material then it constitutes a nest. It is then an offence to cause damage to the bird, nest, eggs or chicks and immediate habitat which is likely to result in damage by causing the bird to desert its nest. This covers all bird species, with a small number of exceptions (pest species which can be controlled by special license).

In 2000, the Countryside and Rights of Way Act (CROW Act) was made law, strengthening the legal protection for many species and introducing a ‘reckless disturbance’ offence.

11.6 Otters

Otters are protected under UK law by the Wildlife and Countryside Act 1981 (as amended) and under European law by the Habitat and Species Regulations (2010). Under these laws it is an offence to deliberately kill or injure an otter, to disturb them or to damage, destroy or block access to their place of shelter. Under both laws the Welsh Assembly Government are empowered to issue licences to disturb them and disturb or destroy their habitat for reasons of overriding public interest.

12 **References**

Environment (Wales) Act 2016

Green, J, Green, R & Jefferies, DJ (1984) A radio tracking survey of otters *Lutra lutra* on a Perthshire river system. *Lutra* 27: 85-145

Wildlife and Countryside Act (1981)

13 **Appendices**

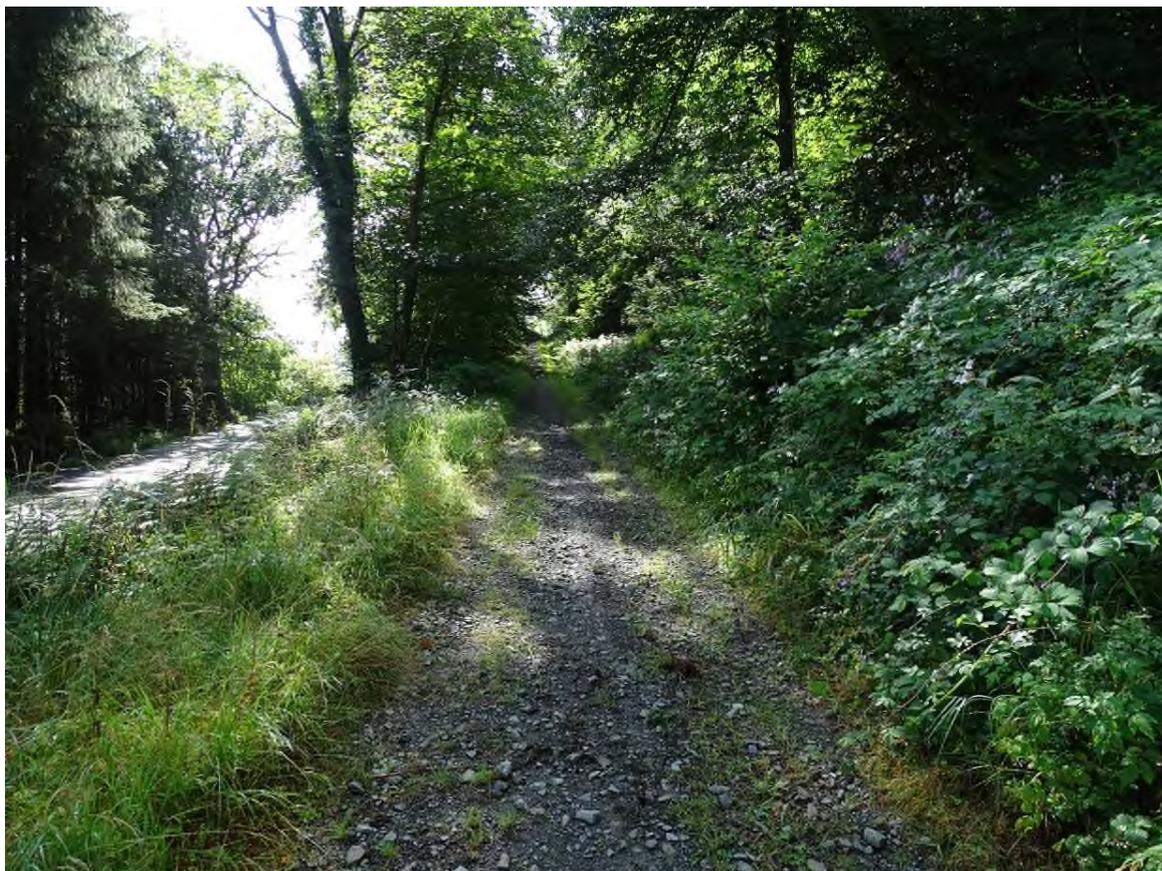
13.1 Site Photographic Record



'H' Pole location in the rugby club carpark.



Himalayan balsam present in the car park and alongside the cable route track



The existing track under which the cable will be buried.



Montbretia by the track under which the cable will be buried.



The lack of vegetation at the powerhouse & outflow location.



The coniferous woodland habitat through which most of the pipeline route is located.



The more mixed woodland at the upper end of the proposed scheme.



The abstraction location.



The fast-flowing rocky character of the watercourse.

13.2 Review Table

Name	Task	Date
Chris Hall	Author	05.09.2024
Ben Box	Review	09.09.2024
Heaven Kyriacou	Final Proofread	10.09.2024