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ENVIRONMENTAL CONSULTANTS

Ecological Constraints & Opportunities Report

Old Kilcullen Heritage Trail, Co. Kildare

Document Details

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Contents

1. Introduction

1.1. Background

This report serves to highlight all potential constraints relating to the ecological features around the development of the Old Kilcullen Heritage Trail. The trail will run for approximately 3700 m along an existing route, most of which is tarred local road. The development of the trail will be relatively "works light".

The land around the trail is rural agricultural with a low density of residential properties, most of which are single story dwellings. A public house, a crane hire, and a concrete supplier can also be found along the route.

A dedicated Biodiversity Action Plan (BAP) was prepared for the Old Kilcullen Area Community Association in October 2019, based on desk and field work carried out in the summer of the same year. Subsequently, a landscape and biodiversity plan has been prepared by Hayes Ryan Landscape Architects in December 2023.

1.2. Scope

The overall project has been broken down into three separate phases. The initial phase, which only requires minor changes to the existing roadway, is considered enough to meet the project requirements for a walking route with improved safety measures. The second phase would involve more infrastructural work but would link additional areas. The final phase, which would link the first two, does not have consent and is seen at this stage as aspirational only.

This report pertains to the areas covered under Phases One and Two, as Phase Three is under private ownership and has not yet been confirmed for development. For the purposes of assessment and screening, Phases One and Two have been merged into what will be referred to as Phase A in this report. Phase Three will be referred to as Phase B.

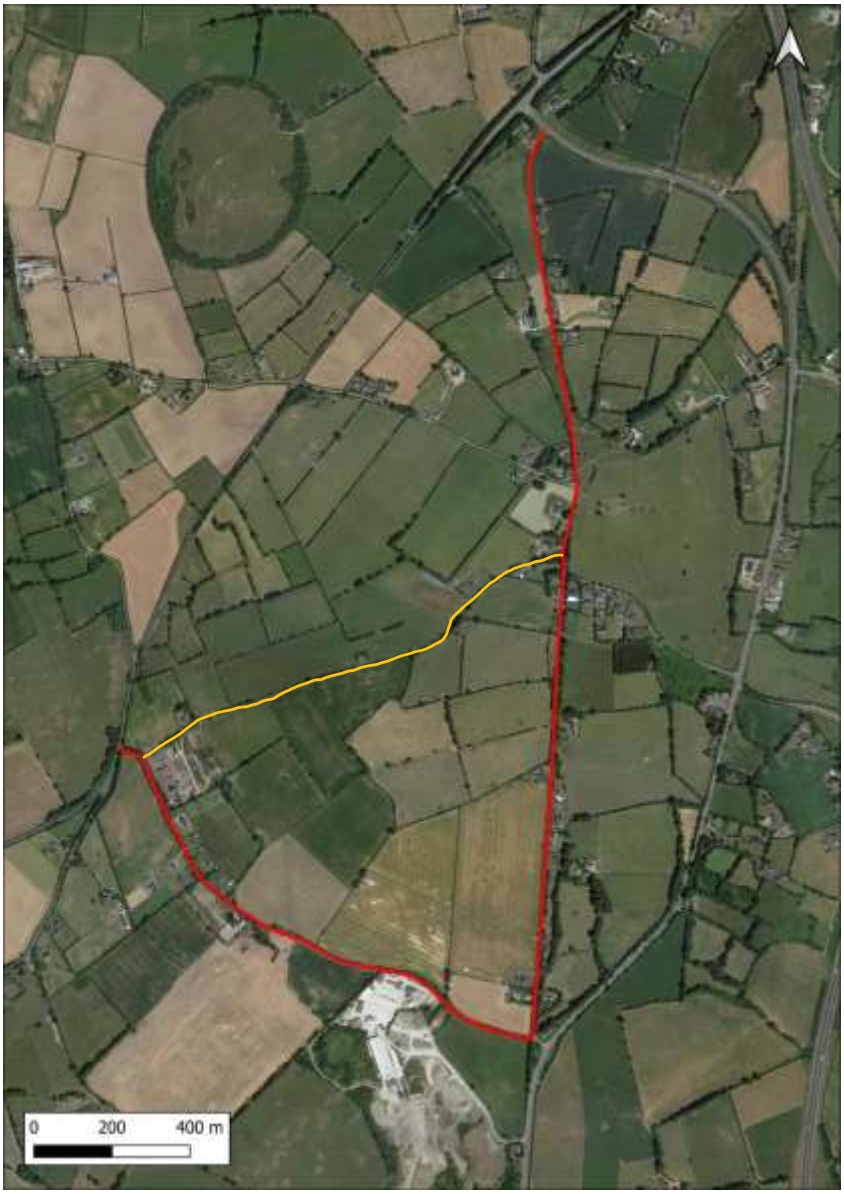


Figure 1: Overview of the area surveyed, with Phase A in red and Phase B in yellow.

2. Description of Proposed Development

2.1. Phase A

This section will receive the lightest modifications, with many of the changes being the installation of visual markers, such as:

- The installation of "Quiet Lane" signage. The Quiet Lane scheme is a community programme started in the UK that promotes the sharing of rural roads between drivers and vulnerable road users (VRUs). The lane will have advisory signs at either end to show motorised users clearly that the road is a shared space.
- The installation of an alternative surface at the gateways to the Quiet Lane for the full carriageway width for a length of 10 m. Buff coloured resin-bound calcined bauxite is proposed as a material.
- The painting of "False Cattle Grid" road markings will use closely spaced bands to give the perception of a cattle grid to slow down road users. This measure is used throughout the scheme and will be repeated at the gateway zones and at informal crossing locations.
- The scheme will also use QR codes on timber bollards, seating and as wall installations, to provide information on the local area.

The primary method proposed for improving VRU safety along the walking heritage route is to improve the condition of the existing verges.

From the Draft Engineering Report:

"The verges shall be levelled, raked and seed[ed] to generally provide 2.0 m wide margins where possible. The margins shall not be less than 1.2 m. Where road cuts are encountered or required, they shall be filled level with the surfaces with drainage stone to avoid trip hazards. The margins will require maintenance on a regular basis, which includes grass cutting and repair of vehicle rutting. Ongoing monitoring of the managed margins may suggest that other measures are required to protect the margin for vehicle tracking, which may include edge protection, edge reinforcement or vehicle lay-bys. Vehicle lay-bys are not being employed initially as they act as a traffic calming measure in their own right."

The second part of Phase A will involve the development of a VRU track for approximately 530 m and for local road improvements on the L6083 for a length of approximately 840 m.

Again, from the Draft Engineering Report:

"In rural cycleway and greenway situations, where the cycleways attractiveness is just as important as comfort, dust path construction or other loose material construction maybe the preferred option in order to blend with the environment and to avoid unnecessary impacts in forests, along protected heritage trails, tow paths and along riverbanks [...] Over-the-edge drainage is the preferred arrangement for a rural road with a cycleway adjoining and is the method used for the VRU track.

Where over-the-edge drainage is used it is important to ensure that the surface water runoff flows off the cycleway towards the drainage ditch and does not pond. Suitable crossfall of between 1% and 3% shall be provided on the trail way pavement. The verge either side of the route shall be constructed with a crossfall of no more than 10%. The outside pavement edge detail of [...] the trail route should be higher than the proposed ground level by the depth of the pavement wearing course to stop back flow of the surface water runoff from a flat grassed verge."

Beyond the construction of this trackway, works will require the repair of potholes and other minor repairs to the existing tarmac road as well as the installation of signage.

3. Methodology

3.1. Guidance

The survey was carried out under guidance from the following documents, adapted where required for local conditions and/or the level of detail required:

- Handbook for Phase 1 Habitat Survey (JNCC, 2010).
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009).
- Guidelines for Preliminary Ecological Appraisal, 2nd edition (CIEEM, 2017).

Habitats, and subsequent habitat codes, were assigned in accordance with A Guide to Habitats in Ireland (Fossitt, 2000), and any Red Listed species (Wyse Jackson et al, 2016) (Curtis & MacGough, 1988) encountered were recorded.

This assessment also follows the source-pathway-receptor model. The SPR approach takes the position that, for pollution to occur, there must be a source to generate significant effects, a receptor sensitive to those effects, and a reasonable pathway that connects the two.

3.2. Limitations

Ecological work is seasonal by nature and to get the full picture of a particular site, multiple visits throughout the year are required as different species become more/less active. The site visit was carried out in winter a time when animals are less active and many flowering plants are dormant, with some not even being visible above ground. As such, the observations and recommendations arising from this fieldwork are limited to what was visible at this time of the year.

4. Desk Study

4.1. Protected Sites

The nearest protected site is the Pollardstown Fen Special Area of Conservation (SAC), protected under the European Habitats Directive, at approximately 9.4 km north of the proposed development (PD).

Though in the same overall catchment area (the Barrow), the PD and the SAC are in separate sub-catchments and the nature of the works is not of a scale that there would be a reasonable pathway connecting the two.

4.2. Water features

There are no watercourses or bodies of water within a reasonable proximity of the PD. The nearest watercourse is the Kilcullen stream at approximately 830 m away, on the far side of the M9 motorway.

4.3. Amphibians & Reptiles

A single recording of the Common Frog *(Rana temporaria*) was made in 2020 within 1 km of the PD.

4.4. Bats

No significant records of bats have been recorded within the last five years. The most recent record was of several common species approximately 4 km away in 2014. The local area has a habitat suitability index score of 25.56 (moderate)[1] and so if suitable roosting features are present in the area, bat habitation may be significant.

4.5. Birds

Birds recorded around the PD within the last five years include:

- Yellowhammer *(Emberiza citrinella)*
- Buzzard (*Buteo buteo*)
- Hooded Crow *(Corvus cornix)*
- Rook *(Corvus frugilegus)*
- Blue Tit *(Cyanistes caeruleus)*
- Winter Wren *(Trogolodytes trogolodytes)*
- Starling *(Sternus vulgaris)*
- Blackbird *(Turdus merula)*
- Song Thrush *(Turdus philomelos)*
- Peregrine Falcon (*Falco peregrinus*)
- Common Kestrel *(Falco tinnunculus)*
- Common Pheasant *(Phasianus colchicus)*
- Common Wood Pigeon *(Columba palumbus)*
- Chaffinch (*Fringilla Coelebs*)
- Redwing *(Turdus iliacus)*
- Barn Owl *(Tyto alba)*

[1] https://maps.biodiversityireland.ie/Map/Terrestrial/Dataset/128

These records are only an indication of the species that may be present in the area and not confirmation of their continued presence. Single sightings may only represent the passage of the animal through the area. Red (high conservation concern) and amber (medium conservation concern) species are listed.

4.6. Mammals

The only mammal recorded in the area in the past five years was Red Fox *(Vulpes vulpes).*

4.7. Invasive Species

A stand of Japanese Knotweed located at the car park of Brennan's Public house, was highlighted by the Biodiversity Action Plan (2019).

Beyond this, no records of invasive species were found within a reasonable distance of the PD. The nearest recorded species were approximately 3 km away in Kilcullen and included:

- Winter Heliotrope *(Petasites pyrenaicus)*
- Himalayan Balsam *(Impatiens gladulifera)*
- Giant Rhubarb *(Gunnera tinctoria)*

5. Field Study

The site was visited on 15 December 2023 and the extent of Phase A was walked in both directions. Weather conditions were dry and overcast with low wind and high humidity.

5.1. Habitat Overview

Al most all of Phase A ran along existing tarmac roads. Many of these were lined with native and naturalised hedgerows (WL1) and treelines (WL2).

Table 1: Results of the survey (images and details).

Detail	Image

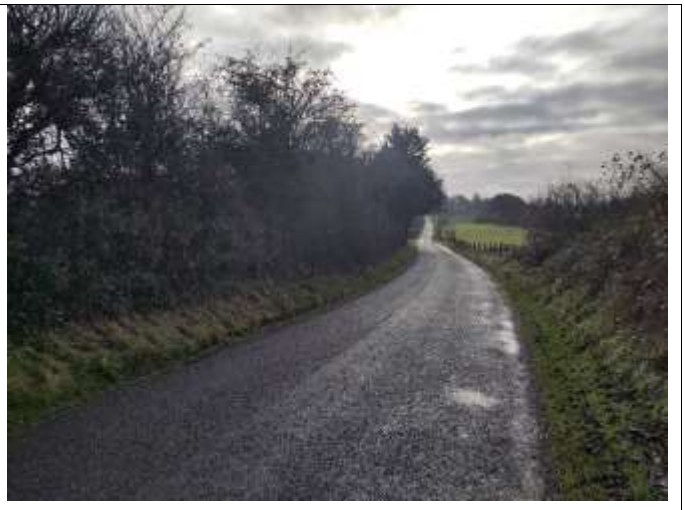
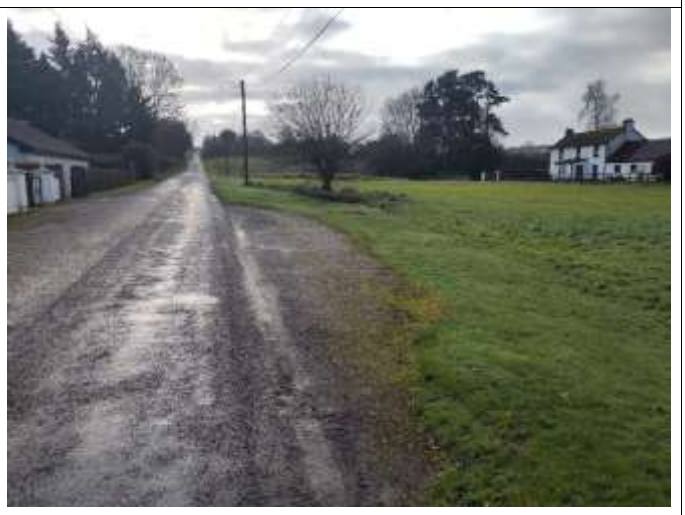
Figure 2: The north end of the route is bounded by hedgerows composed of typical Irish species (Pt. 4). Compositions vary, though they were typical of rural hedgerows – Blackthorn *(Prunus spinosa),* Hawthorn *(Crataegus monogyna),* Elder *(Sambucus nigra)* with a dense layer of Bramble *(Rubus fruticosus agg.)* and Ivy (*Hedera* helix) at the base.	
Figure 3: The area chosen to be developed for car parking (Pt.1 in table 2).	

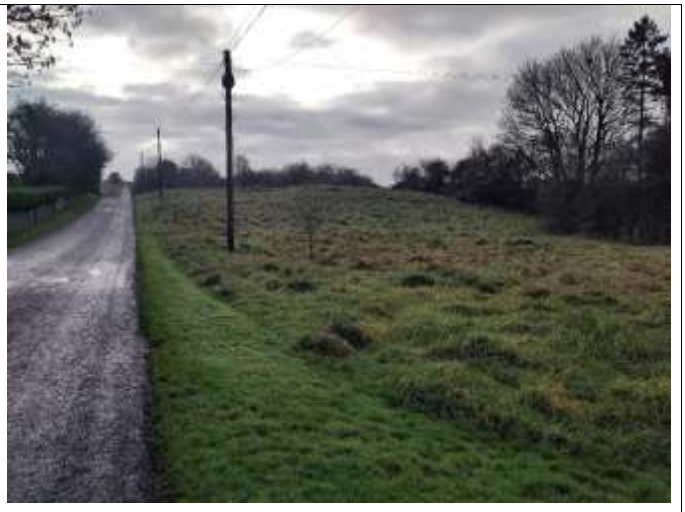
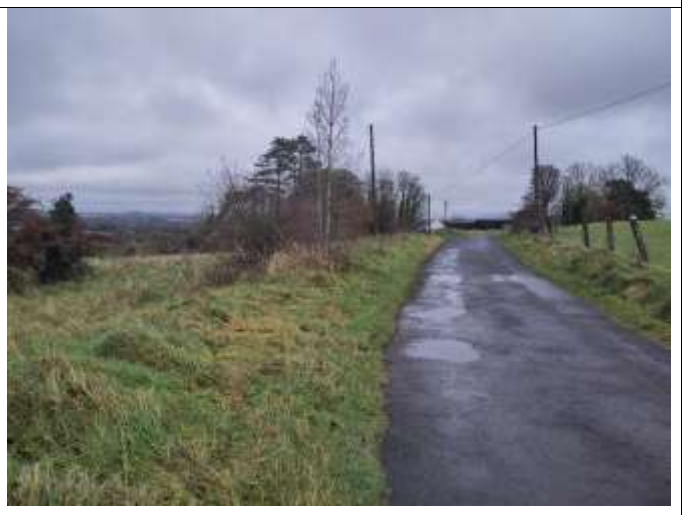
Figure 4: Large area of fallow grassland (GS2) to the west of the route (Pt. 6). Cocksfoot (*Dactyllis glomerata*), Yorkshire Fog (*Holcus lanatus*) and False Oat Grass (*Arrhenatherum elatius*) were the dominant species with occasional other common field species such as docks (*Rumex spp.*) and Buttercups (*Ranunculus spp.*) also present. Several mammal trails were running through the grassland to Bramble scrub (WS1) at the boundary.	
Figure 5: Area of dry grassland (GS2) similar to the one described above around the barrow burial site (Pt. 2/25). Some patches of scrub, mostly Bramble, and immature trees (WS1) Birch (*Betula pendula*), Willow and Hawthorn are growing here too.	

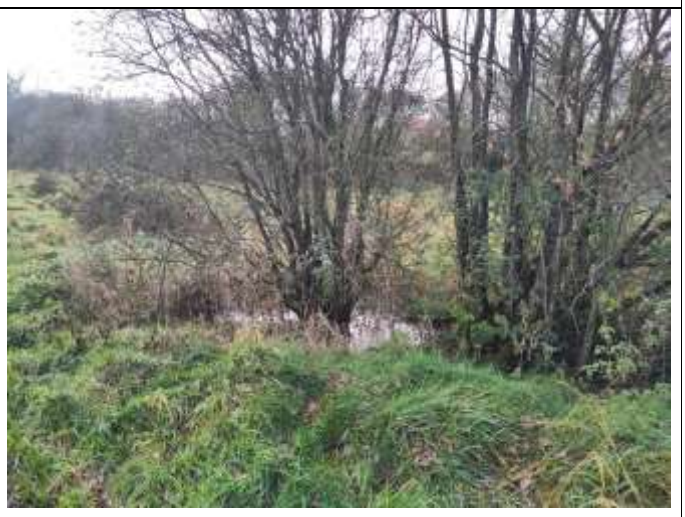
Figure 6: Several of the Ash (*Fraxinus excelsior*) trees along the route were showing minor signs of Ash dieback disease (Pt. 7). Symptoms observed include withered and darked tips at the extremities (this was also observed in immature individuals), slight discolouration of the bark and apparent increased production of seed clusters (known as "keys", visible in picture, right) which can be a sign of stress.	
Figure 7: A small pond (FL8) was observed at the base of some Willows (*Salix* spp.). This may be of importance to amphibians for spawning in spring (Pt. 8).	

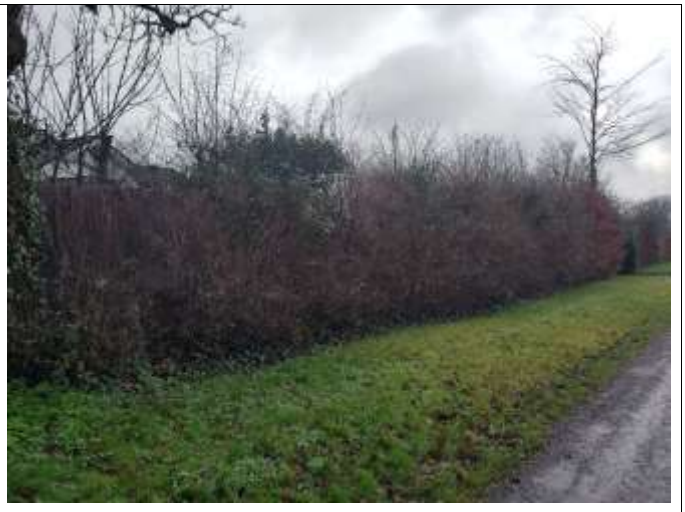
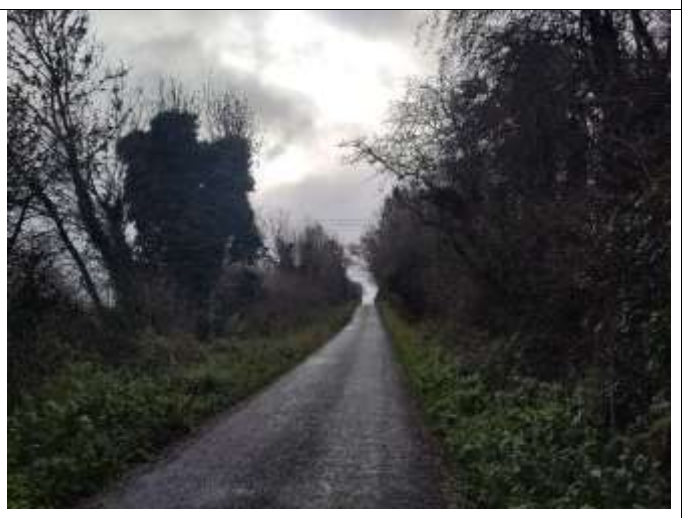
Figure 8: Snowberry (*Symphoricarpos albus*) made up a significant part of two private hedgerows bordering the trail (Pt. 10). This invasive species can spread into and "smother" native young woodlands and hedgerows.	
Figure 9: In some areas the hedgerow has matured into treelines. Ash was the dominant species with Hawthorn and Sycamore (*Acer pseodoplatanus*) also significant (Pt. 11).	

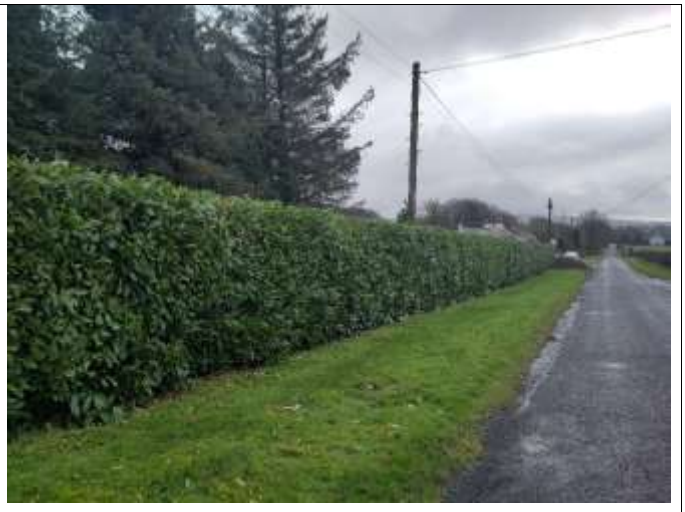
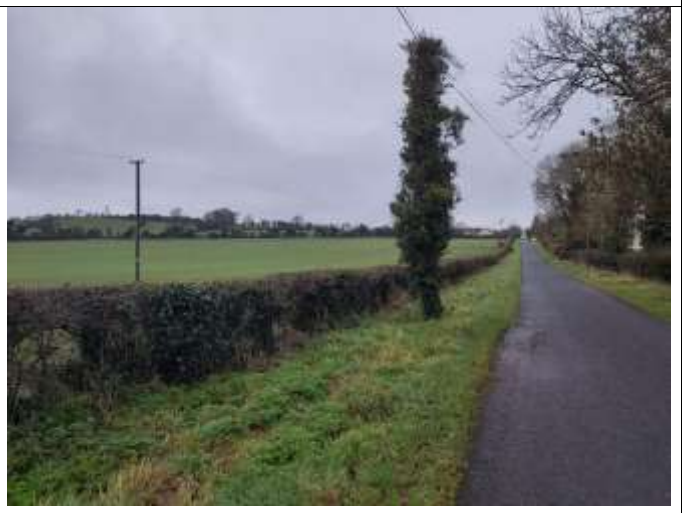
Figure 10: Cherry Laurel (*Prunus laurocerasus*), another invasive species, can be found bordering the trail (Pt. 13).	
Figure 11: Grassy verge (GS2) widens here. Some grasses are present, though Alexanders (*Smyrnium olusatrum*) appear dominant, with Ivy frequent in the hedge. The hedges here are over-managed and cut too low, possibly by the landowner (Pt. 14).	

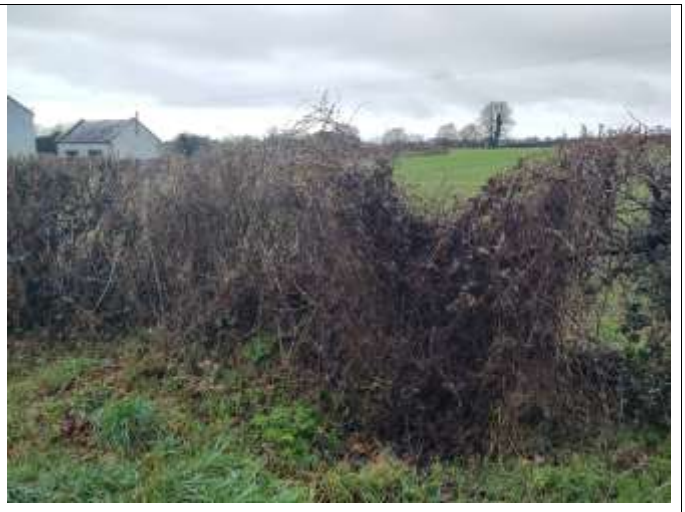
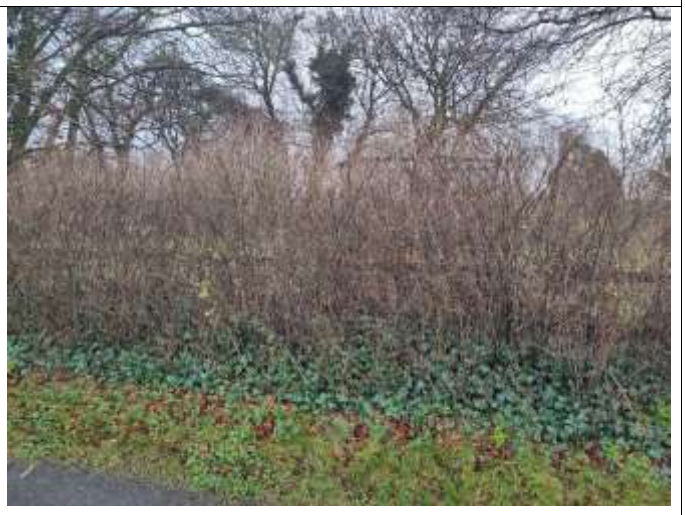
Figure 11: Old Man's Beard (*Clematis vitalba*) can be found in the same hedgerow pictured above (Pt. 15). This is another invasive species that will likely spread throughout the trail.	
Figure 12: More Snowberry can be found in a private hedge (Pt. 16).	

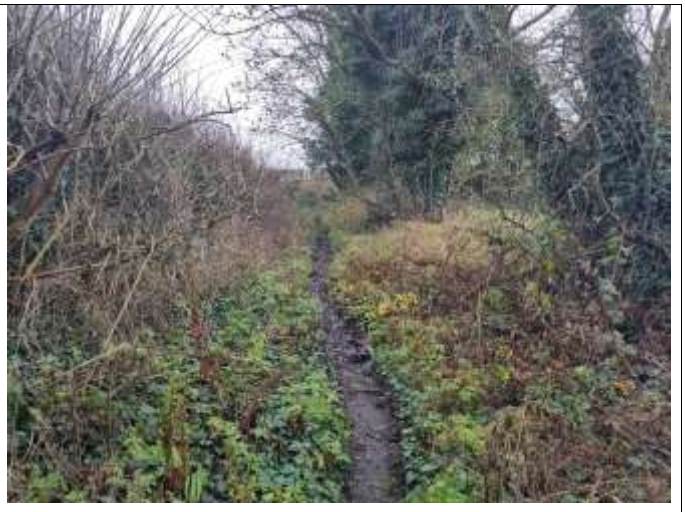
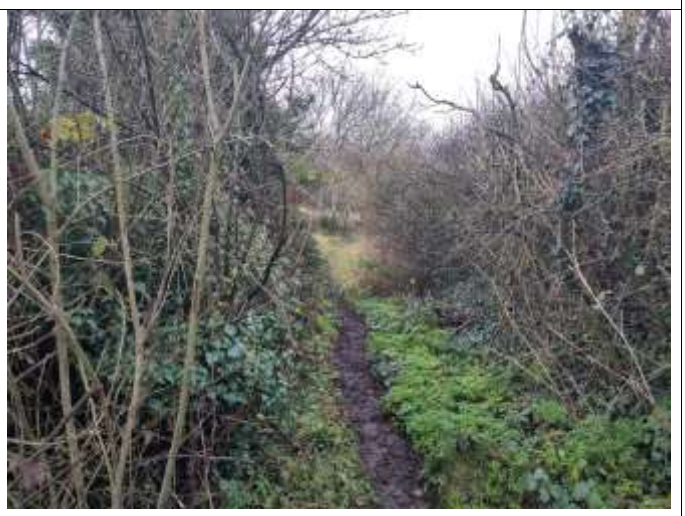
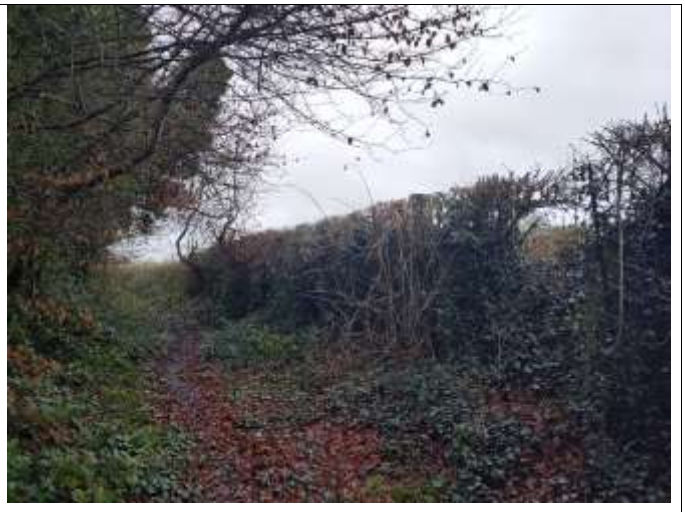
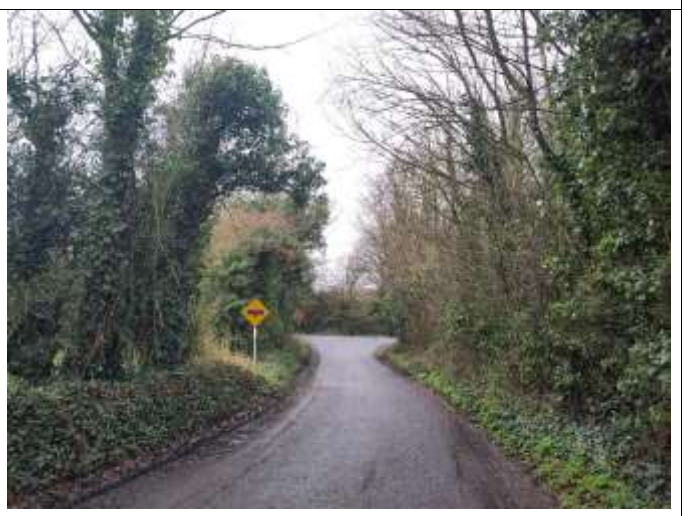
Figure 13: As the route turns west, it becomes a much narrower track that runs through a more densely vegetated area (Pt. 18). If left undeveloped the treeline and hedgerow will join as scrub grows up in between. Development here will consist of widening the track and laying a gravel track. This will require the loss of vegetation.	
Figure 14: As with the above point, the narrow path will require vegetation clearance (Pt. 19). Elder, Blackthorn, Hawthorn, Willow and Spindle (*Euonymus europaeus*), were all found in the hedge.	

Figure 15: More mismanaged hedgerows along the route (Pt. 20). Ivy is the dominant ground flora here. Some Beech (*Fagus sylvestris*) appears in the treeline, which may be contributing to the lack of ground flora.	
Figure 16: Phase A ends just before the junction (Pt. 23). Treelines here are broken by private house entrances.	

No direct evidence of protected amphibians, reptiles, bats, or mammals was found during the field visit, however several mature trees along the southern extent of the route may provide suitable bat roosting features. Several mammal trails were observed crossing the PD route, though the species that made them could not be readily discerned.

Birds observed were not uncommon for the area or season and no red or amber listed species were

sighted.

- Wren (*Troglodytes troglodytes*)
- Bullfinch (*Pyrrhula pyrrhulla*)
- Robin (*Erithacus rubecula*)
- Hooded Crow (*Corvus cornix*)
- Rook (*Corvus fragulegus*)
- Wood Pigeon (*Columba palumbus*)

6. Evaluation of Ecological Impacts

A Landscape and Biodiversity Measures Plan (LBMP) has been prepared by Hayes Ryan, based on many of the measures highlighted by the Biodiversity Action Plan (BAP). The measures laid out in the plan have been reviewed in combination with the proposed development of Phases A.

Overall, the habitats adjoining the trail are typical of the Irish countryside. Hedgerows and treelines over moderate ecological value that are fragmented by roads, pasture, and private land. The most ecologically significant area is likely the large grassy meadow by the barrow site, as it appears to have been left to naturalise for several years. This area will be managed as a wildflower meadow according to the LBMP.

6.1. Habitat Loss/Fragmentation

The works involved with Phase A will be minor and very little impact upon the local habitats is foreseen as a result. The installation of signage or the changing of road surfaces will not have any effect on the hedgerows or treelines of the trail. One of the areas where impacts may occur is from the reduction in size of the verges along parts of the trail.

"The verges shall be levelled, raked and seed[ed] to generally provide 2.0 m wide margins where possible. The margins shall not be less than 1.2 m."

As this will be an ongoing measure, it will result in the loss of a relatively small amount of grassy verge habitat, which is not an uncommon habitat type in the area. If verges must be reduced to allow more road space for VRUs, this loss will be unavoidable and is deemed acceptable as it will not cause significant change to the overall quality of the local habitat.

Many of the surrounding pasture grassland fields will be managed as grassland meadows according to the LBMP, which will hopefully see an overall increase in the amount of biodiverse grassland habitat in the local area once the project is in the operational phase.

The impact of the trail development will increase where the route turns sharply west, where some vegetation removal will be required to make the trail wide enough for the loose aggregate path. No endangered or protected species were found in the ground flora here, though as mentioned in the limitations above, the survey was not carried out during the flowering season and so it is possible that

many flowering species were not identified. In general, the less vegetation removed, the lower the impact there will be here.

All vegetation clearance activities should be timed to occur outside of the breeding season (March 1st – August 31st), ideally afterwards in November-January to allow an extra season of fruiting and flowering for local animals.

No impacts are expected upon bat species, as there will be no new lighting installed or loss of foraging grounds or linear features for navigation. Similarly, amphibians will likely not be impacted, so long as the small pond present towards the north of the route is not affected.

Several hedgerows and treelines along the trail are in poor condition, either being overly managed and box cut (figures 11 and 15), dominated by invasive species (figures 8, 10, 11 and 12), or left unmanaged for too long and have become overmature with too many gaps (figures 9 and 16). It is unknown whether all of these are on private land, however the LBMP provides for reasonable measures to infill gaps with native species in several areas, which should aid rejuvenation.

The development of the parking area will consist of the laying of a geo grid, filled with aggregate. The location selected for this is currently eroded amenity grassy verge and will lead to negligible habitat loss.

6.2. Invasive Species

The stand of Japanese Knotweed was not found during the field survey. However, there can be no excavation at this site until it has been appropriately treated.

The areas where invasive species were identified during the survey are depicted below in Appendix A, figures 17-21.

Though the management of invasives is only briefly mentioned in the local BAP, leaving them untreated would undermine the efforts proposed in the LBMP. It would be counter to the long-term goal of creating a long-lasting nature trail for Old Kilcullen, as they would slowly take over areas of the hedges, fields, or treelines, reducing biodiversity.

With the landowner's informed consent (if required), the Cherry Laurel, Snowberry and Old Man's Beard could be removed before they spread further. Cherry Laurel is commonly planted as a border in private gardens, though the recent Citizen's Assembly on Biodiversity Loss has recommended that the Irish Government ban the sale of this plant in garden centres as it can have significant negative impacts on native woodlands. It grows through the winter period and smothers young native trees that are dormant before they can reach the canopy, creating Laurel-dominated woods. Snowberry can act in a similar way for hedgerows and understories, while Old Man's Beard is a climber that can cover entire trees, adding weight to trees and blocking the amount of light that reaches the forest floor. A competent ecologist or invasive species consultant should be employed to advise on management practices if these species are to be removed correctly.

6.3. Disturbance

Beyond this, other impacts may arise from an increase in use of the route by walkers, leading to an increase in human activity, which may disturb some species. As the routes are already occasionally used by walkers, these increased use impacts will in theory remain minor as the route is rural and should benefit the local populus as opposed to drawing significant footfall from neighbouring areas.

7. Conclusion

Overall, the development of Phases A of the Heritage Trail will have only minor impacts upon the local ecology. A thorough assessment of the flora and fauna in the area was not possible due to seasonal constraints, though given the proposed design and usage of the trail and based on what was observable during the study period, it is not likely that the trail will impact upon the conservation of any protected species that may be in the area.

The impacts the PD could have, namely the loss of grassy verge and several metres of scrub and hedgerow, are relatively minor in the contact of the surrounding landscape and the planned biodiversity enhancement measures detailed in the LBMP, which should result in the creation of new habitat around the trail that will compensate for that which may be lost.

The targeting of invasive species found along the trail would benefit both the measures proposed by the LBMP and the long-term viability of the biodiversity trail itself. As part of an integrated landscape management plan for the trail, annual hedgerow maintenance and rejuvenation will establish methodologies for managing the risk of invasive species and replacing the Cherry Laurel over time, where agreement can be reached with private landowners.

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Appendix A: Maps

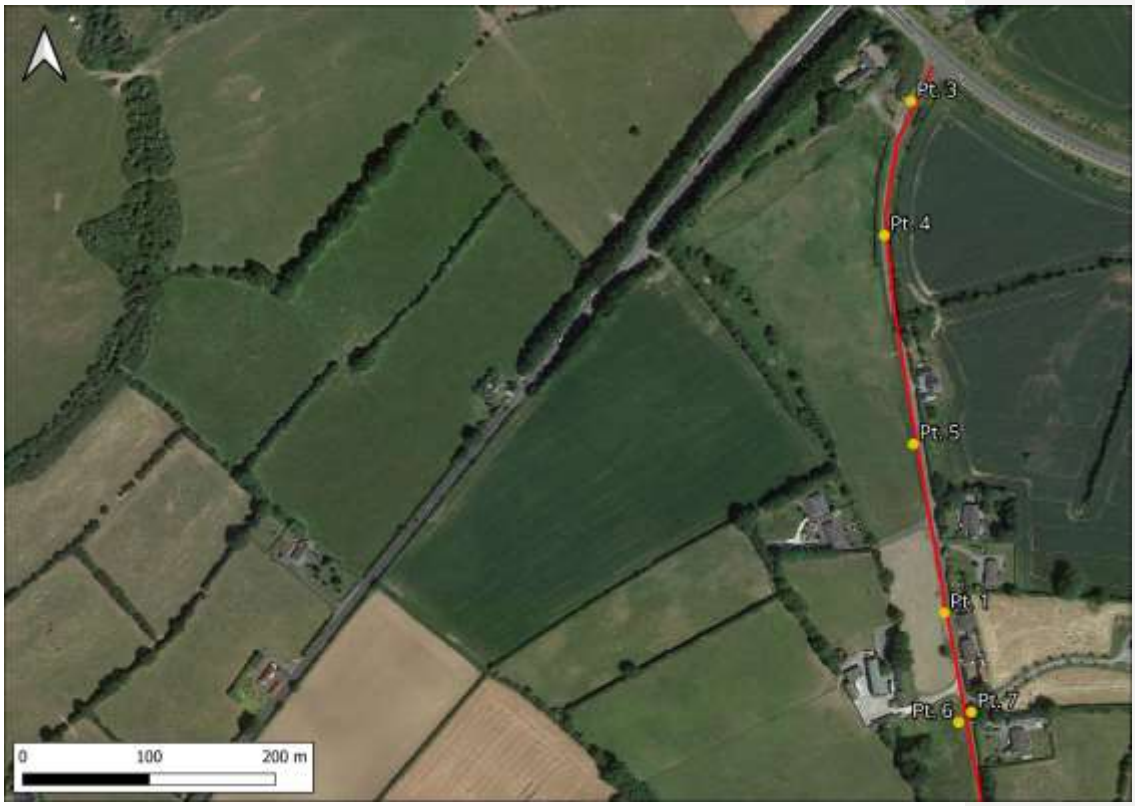

Figure 17: Survey route map (1/5).

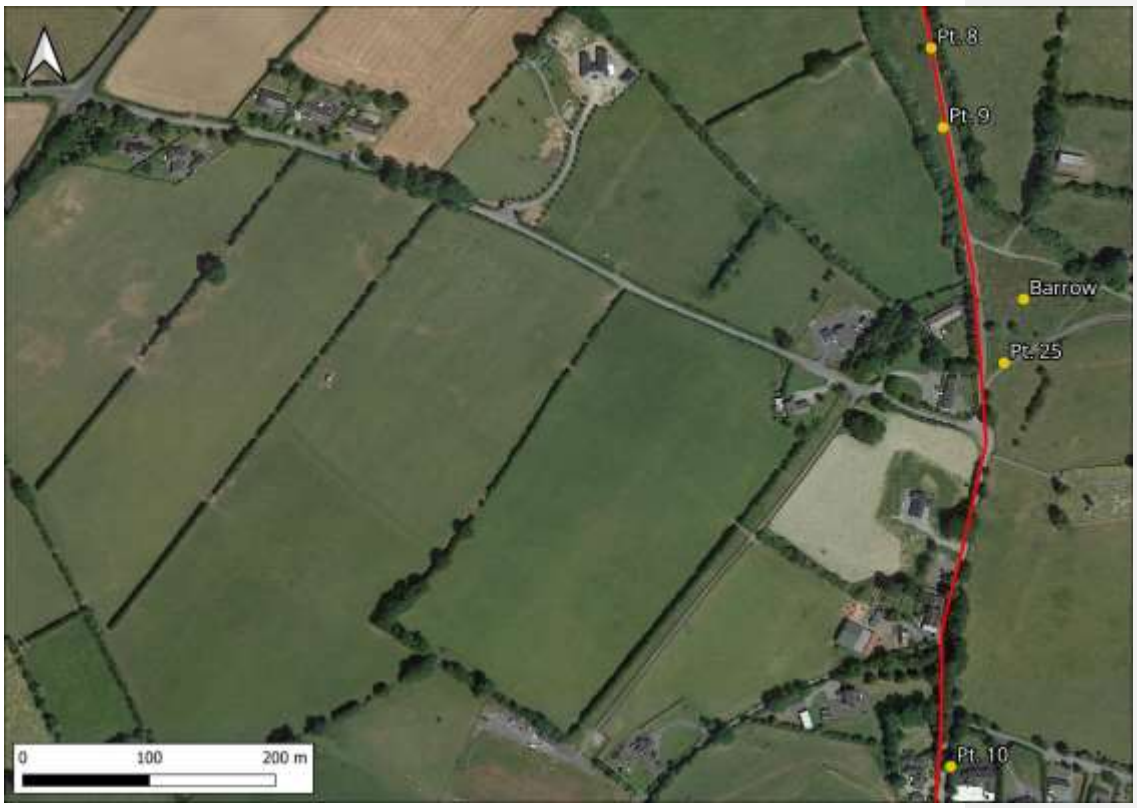

Figure 18: Survey route map (2/5).

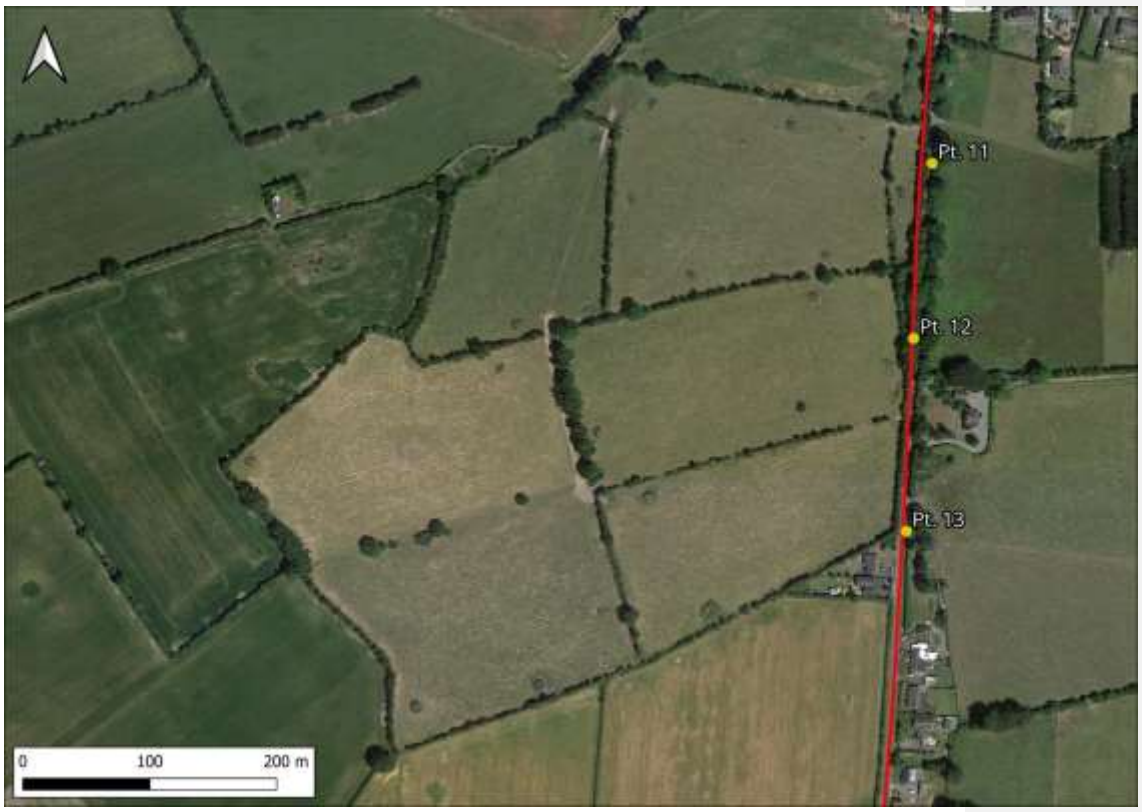

Figure 19: Survey route map (3/5).

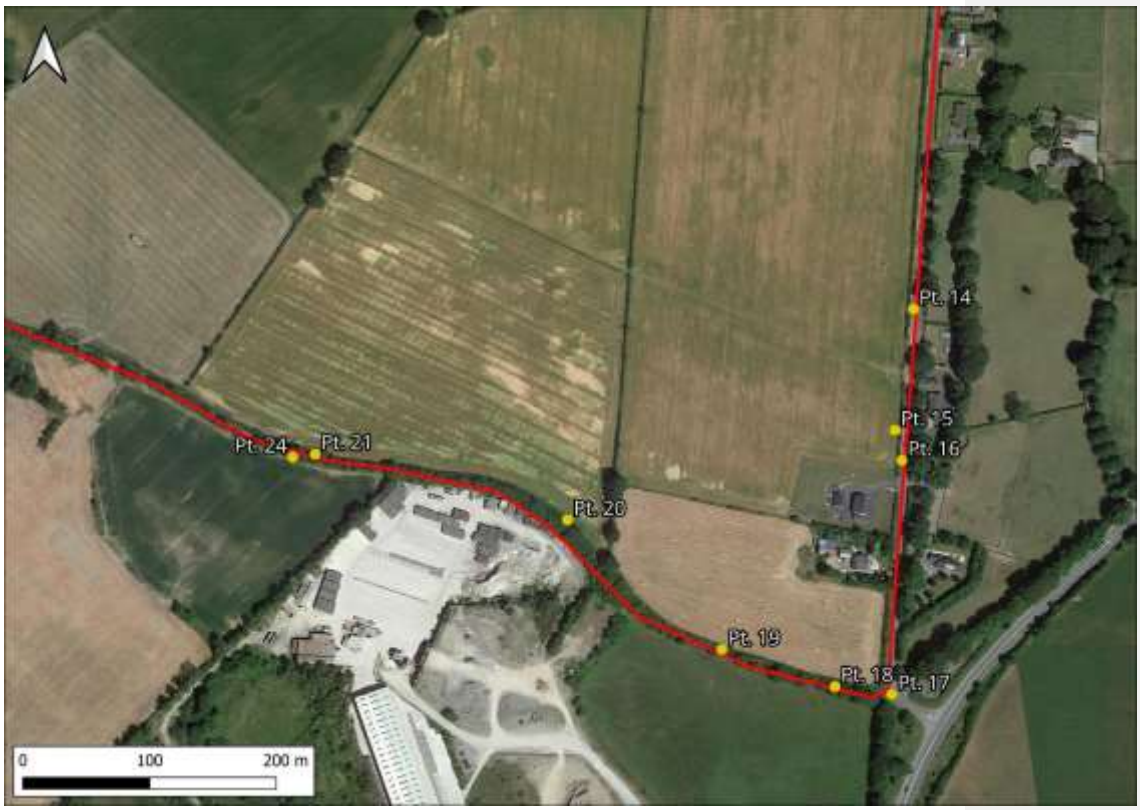

Figure 17: Survey route map (4/5).

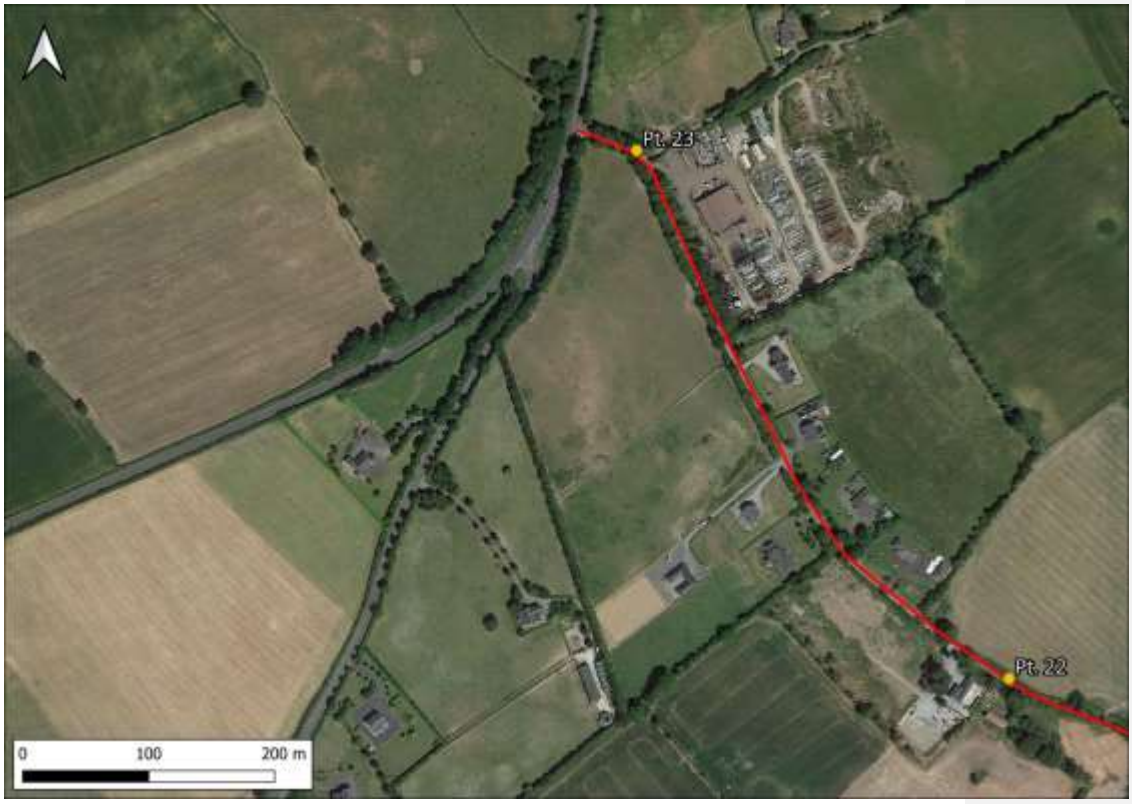

Figure 17: Survey route map (5/5).

Table 2: Survey data points.

Name	Description	Picture Name
Pt. 1	Car parking area	1182_2023-12-12 11-26-49.png
Barrow (Pt. 2)	Identified pre survey as a large grassland	
Pt. 3	Northern trail head	1184_2023-12-12 11-18-45.png
Pt. 4	Native hedgerow on east side	1185_2023-12-12 11-21-57.png
Pt. 5	Hedgerow and grassy verge	1186_2023-12-12 11-24-16.png
Pt. 6	Fallow grassland	1187_2023-12-12 11-28-03.png
Pt. 7	Ash (10-15 m tall) with signs of minor dieback	1188_2023-12-12 11-28-39.png

Pt. 8	Wet area by trees - amphibian and invertebrate potential	1189_2023-12-12 11-30-40.png
Pt. 9	Many distinct mammal trails	1190_2023-12-12 11-32-17.png
Pt. 10	Snowberry here which could be removed	1191_2023-12-12 11-50-16.png
Pt. 11	Moderate condition native hedges	1192_2023-12-12 11-52-28.png
Pt. 12	Large wet ditch (though no watercourse or seepage zones apparent). Won't be impacted by trail.	1193_2023-12-12 11-55-07.png
Pt. 13	Cherry Laurel hedge	1194_2023-12-12 11-57-27.png
Pt. 14	Poorly managed hedge on west side	1195_2023-12-12 12-02-41.png
Pt. 15	*Clematis vitalba* on west side	1196_2023-12-12 12-0
Pt. 16	More Snowberry on the east side	1197_2023-12-12 12-05-11.png
Pt. 17	Point where Phase One meets Phase Two.	1198_2023-12-12 12-07-36.png
Pt. 18	Narrow trail with diverse native scrub	1199_2023-12-12 12-09-19.png
Pt. 19	Narrow path, avoid cut hedge if possible. Willow, Ash, Hawthorn	1200_2023-12-12 12-11-35.png
Pt. 20	More signs of poor hedge management/overcutting	1201_2023-12-12 12-15-07.png
Pt. 21	Dumped Cherry laurel. Watch for regrowth	1202_2023-12-12 12-19-32.png
Pt. 22	More Snowberry	1203_2023-12-12 12-23-41.png
Pt. 23	Phase A end	1204_2023-12-12 12-35-02.png
Pt. 24	Road from here west	1205_2023-12-12 12-44-25.png
Pt. 25	Barrow area verge	1206_2023-12-12 13-08-12.png

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