



Forestry, Ecology & Environment

Mammal Survey

Survey of Non-Volant Mammalian Prey and Predator Species at Derrycassin Woods

Compiled by: Veon Ecology,

Amy Haigh BSc (Hons), PhD

Prepared for: Adam Mulvihill, Biodiversity Officer, Longford County Council

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General Details

Details of Author(s)

Name:	Amy Haigh
Address:	Veon, CO:WORX, 5 Main Street Edgeworthstown N39 AH64
Company name:	Veon Ltd. Veon Ecology
Tel. no:	M: +353 87 6082065
E-mail:	ahaigh@veon.ie
Details of relevant qualifications/affiliations/years of experience	<p>Amy Haigh B.Sc. (Hons) in Zoology NUIG, PhD in Mammal Ecology, UCC, QCIEEM</p> <p>National University of Ireland Galway (NUIG), University College Cork (UCC)</p> <p>Over 15 years' experience conducting research and working in the field of ecology, with extensive stakeholder engagement and survey skills particularly on mammal research.</p>
Name:	Pascal McKenna
Address:	Veon, CO:WORX, 5 Main Street Edgeworthstown N39 AH64
Company name:	Veon Ltd. Veon Ecology
Tel. no:	M: +353 86 4110366
E-mail:	pmckenna@veon.ie
Details of relevant qualifications/affiliations/years of experience	<p>Pascal Mc Kenna B.Sc. (Hons) in ecology & environmental biology, University of Leeds, UK. QCIEEM. Three-year Nat. Dip Forestry Management Sparsholt College, Hants, UK. MSIF.</p> <p>Over 20 years' experience in both ecology and forestry industries. Approved ecologist on list of DAFM approved Native Woodland Scheme (NWS, 2024) and Directory of Professional Ecologists for Forestry Projects. Extensive ecological field work skills including mammals</p>

Compliance

The survey was carried out in compliance with:

- All relevant EU requirements and national legislation for the time
- European Communities (Birds and Natural Habitats) Regulations 2011, as amended Wildlife Act 1976, as amended.
- Good Practice Guidance for Habitats and Species (CIEEM, 2021)
- All records of species identified will be reported to the National Biodiversity Data Centre.

Section 1: Background

Veon Ltd. (Veon Ecology) has been appointed by Adam Mulvihill, Biodiversity Officer at Longford County Council to conduct a survey of mammalian species present in Derrycassin Woods. This project was supported by the National Parks and Wildlife Service and Longford County Council and is part of the Local Biodiversity Action Fund initiative. Two of the objectives of the Local Biodiversity Action Fund (LBAF) are particularly relevant to this project, namely:

Objective 3: Secure Nature's Contribution to People

1. *Actions highlight the relationship between nature and people in Ireland. These include recognising the tangible and intangible values of biodiversity, promoting nature's importance to our culture and heritage and recognising how biodiversity supports our society and our economy.* Derrycassin Woods is a popular amenity areas. Therefore, developing a greater understanding of the mammal fauna in this area will greatly assist in promoting public awareness/engagement and the importance of conserving wildlife in their area. A public talk on the findings of this work was conducted on 20th August 2024 at Derrycassin Woods as part of Heritage Week.

2. Objective 4: Enhance the Evidence Base for Action on Biodiversity

This objective focuses on biodiversity research needs, as well as the development and strengthening of long-term monitoring programmes that will underpin and strengthen future decision-making. Action will also focus on collaboration to advance ecosystem accounting that will contribute towards natural capital accounts. Derrycassin Woods are also subject to an LBAF project involving bat (Bat Conservation Ireland) and barn owl (Bird Watch Ireland) surveys. Therefore, this project will compliment these other projects, providing a picture of the food web in these ecosystems and provide baseline knowledge which will inform the development of the Biodiversity Action Plan.



Figure 1.1: A Silver Washed Fritillary (*Argynnis paphia*) observed at Derrycassin Woods.

Section 2: Site Description and location

Derrycassin woods is located on the shores of Lough Gowna in Dring. It is 6.8 km north of Granard and close to the Cavan border. Derrycassin Woods is a commercial woodland managed by Coillte. The woodland covers an area of approximately 73 hectares and is bordered by farmland to the east and Lough Gowna to the west and north (**Figure 2.1**). The woods were once part of a larger estate that belonged to the Dopping Heppenstall family. Derrycassin House was built in 1760 and demolished in the 1930s (**Figure 2.2**) and at the time boasted beautiful walled gardens. Remnants of the walled garden still exist today as does the remains of a rath or ringfort dated between 500-1500 AD. The woodland contains a mix of broadleaf and deciduous species such as Rowan (*Sorbus aucuparia*) Beech (*Fagus sylvatica*) Douglas Fir (*Pseudotsuga menziesii*) and Sitka Spruce (*Picea sitchensis*) (**Figure 2.3**). A stream runs through the middle of the wood and runs into Lough Gowna (**Figure 2.4**).



Figure 2.1: The location of Derrycassin woods.



Figure 2.2: The former Derrycassin House.

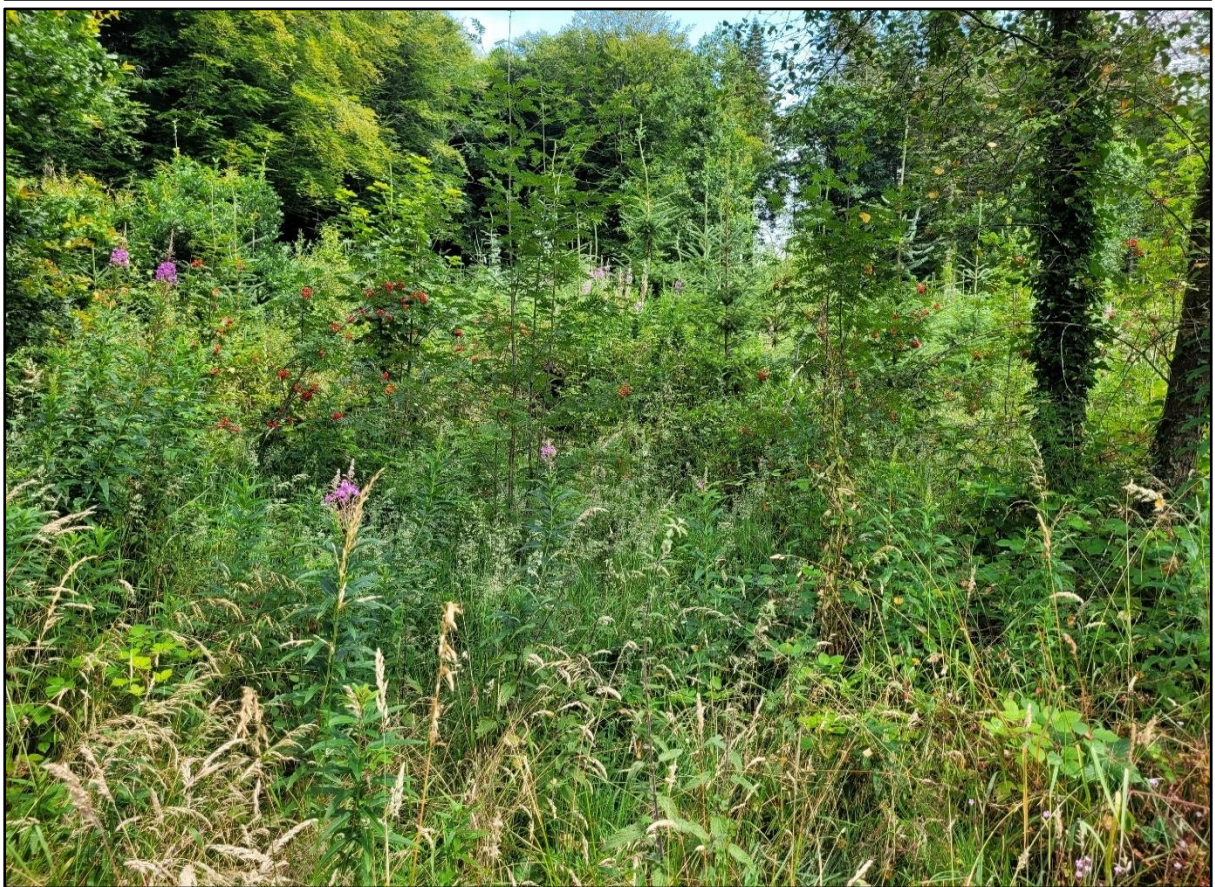


Figure 2.3: Examples of the woodland at Derrycassin Woods.



Figure 2.4: Lough Gowna which borders the west and north of Derrycassin Woods.

Section 3: Methodology

3.1 Small Mammal Trapping

Longworth traps with shrew exclusion holes were deployed by Amy Haigh, mammal lead and Pascal Mc Kenna, head of division of Veon Ecology in July 2024. Sites were selected with good ground cover and in habitat that was deemed suitable for small mammals. An emphasis was placed on having one grid close to the edge (areas where for instance the woodland met farmland close to the playground) (**See Figure 3.1**) and another towards the centre of the site.

Traps were placed at 10 metres from one another, in a 4 x 4 grid. This resulted in a total of 16 traps per grid. Two grids were deployed at each site leading to a total of 32 traps per site.

Before deployment, the main chamber of each trap was filled with hay and the traps were baited with peanuts and dried mealworms. After placing the trap in position, it was camouflaged by covering it with nearby vegetation. The GPS location of each trap was recorded manually (**See Appendices, Table 7.1**) and also on the app Fieldmaps. A red or blue flag was also placed at each trap to aid detection (**See Figure 3.2**).

Baited traps were deployed in the afternoon and checked every subsequent morning thereafter. When traps were closed the entrance tunnel of the trap was enclosed in a polythene bag, the corners of which were snipped to provide breathing holes. The trap was then opened out into the bag and the rodent flushed out. The animal was channelled into the corner and secured before removing the trap. The animal was held securely with its nose out of the breathing hole. It was then identified to species, sexed and classified into an age class. The animal was then released at the site of capture and the trap redeployed. The traps were deployed for a period of three nights, resulting in 96 trap nights.

3.1.1 Habitat at each trapping grid

Location 1-Playground (Edge)

This area was located in an area of mixed woodland directly opposite the GAA pitch and behind the playground. The trap grid was started at the boundary to the neighbouring farmland where the hedgerow met Derrycassin wood (**Figure 3.1**). Tree species at this location consisted of Sitka Spruce (*Picea sitchensis*), Beech (*Fagus sylvatica*) (**Figure 3.2**), Sycamore (*Acer pseudoplatanus*) and Ash (*Fraxinus excelsior*) saplings. The understorey consisted mainly of Bramble (*Rubus fruticosus*), Fern and Ivy (*Hedera helix*).



Figure 3.1: The first line of the trapping grid at Derrycassin Woods where the farmland met the woods.



Figure 3.2: Beech (*Fagus sylvatica*) woodland at Derrycassin Woods with one of the traps and flag located in the centre of the image.

Location 2-Walled garden (Centre)

The second trapping grid was located within the remains of the old walled garden (**Figure 3.3**). Here the tree species consisted of Sycamore (*Acer pseudoplatanus*), Sitka Spruce (*Picea sitchensis*) and Ash (*Fraxinus excelsior*). The understorey vegetation was composed of Bramble (*Rubus fruticosus*), Enchanters Nightshade (*Circaea lutetiana*), Fern, Holly (*Ilex aquifolium*), Herb Robert (*Geranium robertianum*), Raspberry (*Rubus idaeus*), Hedge Woundwort (*Stachys sylvatica*) (**Figure 3.4**).



Figure 3.3: The walled garden where the second trapping grid at Derrycassin Woods was located.



Figure 3.4: The understory vegetation at the second trapping grid at Derrycassin Woods.

3.2 Tracks and Signs Surveys

Prior to trapping commencing the site was walked over by Amy Haigh of Veon Ecology on the 26th July 2024. This was to pinpoint suitable trapping sites, camera trap locations and look for signs of tracks, dwellings (**Figure 3.5**), scats or feeding activity to determine the presence of other mammal species. Unusual sightings of other fauna were also recorded opportunistically. On the week of the 29th July after traps were checked, the site was walked for signs, targeting a different section of the site each time. Each record was photographed, identified and the location recorded (**See Appendices, Table 7.2**).



Figure 3.5: Foxes (*Vulpes vulpes*) den at the northern section of Derrycassin Woods.

3.3 Camera Trapping

Three camera traps were deployed at the site for a period of 10 days. Sites were chosen based on features such as a high concentration of scats, prints, dwellings, intersection of well-trodden paths or due to the proximity of topographical features such as water sources (**Figure 3.6**). When a camera was deployed care was also taken to ensure that views were not obstructed or that the cameras would not be set off by vegetation blowing in the wind. Each camera was secured where possible on a suitable tree (**Figure 3.7**). The location was recorded manually (**See Appendices, Table 7.3**) and on Field Maps and the time of deployment noted. The cameras were set to record images and video.



Figure 3.6: Camera trap deployed along the shore of Lough Gowna at Derrycassin Woods.



Figure 3.7: Camera trap at one of the badger setts at Derrycassin Woods.

Section 4: Results

4.1 Small Mammal Trapping

Over a total of 96 trap nights, there were 27 captures. In total, 16 Bank Voles (*Clethrionomys glareolus*) (**Figure 4.1**) and 11 Wood Mice (*Apodemus sylvaticus*) (**Figure 4.2**) were captured. There was little difference in the prevalence between each species at each site.

The most productive trapping grid was the edge at Derrycassin Woods, where the farmland met the woodland (**Table 4.2**). At the trapping grid in the walled garden (centre), there was just one Wood Mouse capture, with the rest of the captures being Bank Vole.

Some of the traps were closed but had been occupied, indicating that shrew was present. However, it was unclear whether they were Pygmy Shrew (*Sorex minutus*) or Greater White Toothed Shrew (*Crocidura russula*).



Figure 4.1: Bank Vole (*Clethrionomys glareolus*) caught at Derrycassin Woods.



Figure 4.2: Wood Mouse (*Apodemus sylvaticus*) caught at Derrycassin Woods.

Table 4.1: Number of small mammals caught at each of the three sites.

Species	Total captures
Bank Vole (<i>Clethrionomys glareolus</i>)	16
Wood Mouse (<i>Apodemus sylvaticus</i>)	11
Total	27

Table 4.2: The number of each species caught at each trapping grid.

Trapping grids					
Site	Location	Trap nights	Species Caught	Number	Total individuals
Derrycassin Woods	Edge (Playground)	48	Bank Vole (<i>Clethrionomys glareolus</i>)	9	18
			Wood Mouse (<i>Apodemus sylvaticus</i>)	9	
	Centre (Walled garden)	48	Bank Vole (<i>Clethrionomys glareolus</i>)	8	9
			Wood Mouse (<i>Apodemus sylvaticus</i>)	1	
Total		96		27	27

4.2 Tracks and Signs Survey

Signs of mammal activity were found at Derrycassin Woods in the form of dwellings, feeding activity, scats and direct sightings (**Table 4.3**).

Fifteen scats were recorded at the Derrycassin Woods, 14 of which were Pine Marten (*Martes martes*) (**Figure 4.3**). Dens of this species were also evident (**Figure 4.4**) and there was a sighting close to the visitor information sign.

Squirrel (*Sciurus* spp.) feeding activity was prevalent throughout Derrycassin Woods (**Figure 4.5**)

Two large setts were recorded in Derrycassin woods with >6 entrances each (**Figure 4.6**). Bedding material was also evident close to one of the entrances (**Figure 4.7**).

A fox den (**Figure 3.5**) was found at the north of the site and a scat was found close to Lough Gowna.

Table 4.3: Mammal signs recorded during the duration of the project.

	Badger	Deer	Fox	Mink	Otter	Pine Marten	Squirrel	Stoat
Tracks and Signs								
Dwelling	x		x			x		
Feeding activity							x	
Print								
Scat			x			x		
Sighting						x		



Figure 4.3: Pine Marten (*Martes martes*) scats on a tree outside a den in Derrycassin Woods.



Figure 4.4: A Pine Marten (*Martes martes*) den at Derrycassin Woods.



Figure 4.5: Squirrel (*Sciurus* spp.) feeding activity at Derrycassin Woods



Figure 4.6: Badger (*Meles meles*) sett at Derrycassin Woods.



Figure 4.7: Badger (*Meles meles*) bedding close to a sett entrance at Derrycassin Woods.

4.3 Camera Trapping

Six species were recorded on the camera traps (**Figures 4.8-4.13**) (**Table 4.4, Appendices, Table 7.4**). Two species (Brown Rat (*Rattus norvegicus*) and Irish Hare (*Lepus timidus hibernicus*) had not been identified at the site through other methods.

Table 4.4: Species recorded on the camera traps.

Species	Derrycassin Woods
Badger (<i>Meles meles</i>)	X
Brown Rat (<i>Rattus norvegicus</i>)	X
Fox (<i>Vulpes vulpes</i>)	X
Irish hare (<i>Lepus timidus hibernicus</i>)	X
Pine Marten (<i>Martes martes</i>)	X
Wood Mouse (<i>Apodemus sylvaticus</i>)	X



Figure 4.8: Pine marten (*Martes martes*) captured at the wall garden, Derrycassin Woods.



Figure 4.9: Wood Mouse (*Apodemus sylvaticus*) captured at the walled garden at Derrycassin Woods.



Figure 4.10: A Brown Rat (*Rattus norvegicus*) in the walled garden at Derrycassin Woods.



Figure 4.11: Badger (*Meles meles*) at one of the setts in Derrycassin Woods.



Figure 4.12: Fox (*Vulpes vulpes*) along the shore of Lough Gowna, Derrycassin Woods.



Figure 4.13: Irish Hare (*Lepus timidus hibernicus*) at one of the badger setts in Derrycassin Woods.

Section 5: Conclusion

In total nine non-volant mammal species were recorded at Derrycassin Woods. The site offers a diversity of different habitats, with farmland, hedgerow, lake and stream all within proximity of the site. The wood itself also offers a mix of tree species and age classes, which is likely to benefit a greater number of species. This is evident from the diversity of mammalian species utilising Derrycassin Woods.

Mink (*Mustela vison*) and Otter (*Lutra lutra*) were previously recorded within 10km of the site (**Further Appendices, Table 7.5**). While they were not recorded within the present study, the surrounding habitat would be suitable for both species, so it cannot be ruled out that they are present.

While squirrel feeding activity was frequent throughout Derrycassin Woods, as there were no visual sightings, it is unclear whether it was the work of red (*Sciurus vulgaris*) or grey squirrel (*Sciurus carolinensis*). As County Longford was the release site of the invasive grey squirrel in 1911 (Dominguez McLaughlin *et al.* 2022) it was traditionally a stronghold for the species. However, the population of greys has crashed in the midlands, causing red squirrels to be common in these areas after an absence of 30 years (Sheehy and Lawton, 2014). In the latest, squirrel survey (Lawton *et al.* 2020), greys were not recorded in Longford, but red squirrels and pine marten both had 17 records for the county, with red squirrel abundance increasing by 58%. Therefore, the feeding activity is likely to be that of red squirrel. Similarly, as shrews were not visually seen, it is unclear whether the Greater White Toothed Shrew (*Crocidura russula*), Pygmy Shrew (*Sorex minutus*), or both, were present. The Greater White Toothed Shrew (*Crocidura russula*) was first discovered in 2007 (Tosh *et al.* 2008) is present in County Longford (McDevitt *et al.* 2014). Likewise, the Pygmy Shrew (*Sorex minutus*) is widespread but neither species has been previously identified within 10km of Derrycassin Woods (**Further Appendices, Table 7.5**). Therefore, it cannot be ruled out that both species are present at the site. However, this could only be determined through targeted trapping.

Signs of Badger (*Meles meles*), Fox (*Vulpes vulpes*) and Pine Marten (*Martes martes*) were all identified (**Table 5.1**), with dens/setts, scats and sightings all being recorded during the tracks and signs survey, and all three species also appearing on the camera traps.

No one method alone would have positively identified all of the mammal species identified at the site, demonstrating the importance of a multiple methodology approach.

Table 5.1: The number of terrestrial mammal species recorded at each site and the method by which they were detected.

	Camera trap	Droppings	Dwelling	Feeding Sign	Print	Roadkill	Sighting	Trapping
Derrycassin Woods								
Badger	X		x					
Bank Vole			x					X
Brown Rat	X							
Fallow Deer								
Fox	X	x	x					
Irish Hare	X							
Mink								
Otter								
Pine Marten	X	x	x				x	
Shrew species								X
Squirrel species				X				
Stoat								
Wood Mouse	x		x					x

Section 6: References

- Bang, P. & Dahlstrom, P. 2004. Animal Tracks and Signs. Oxford University Press, Oxford.
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial Freshwater and Coastal. Second edition.
- EPA Maps. Available Online at: <https://gis.epa.ie/EPAMaps/>.
[Derrycassin Woodland Trail - Longford.ie](#). Accessed 26th August 2024.
- Dominguez McLaughlin, H., Lawton, C., Hadziabdic, D., Boggess, S., Ony, M. and Trigiano, R., 2022. A genetic analysis of grey squirrel (*Sciurus carolinensis*) populations in Ireland. *Biological Invasions*, 24(8), pp.2421-2438.
- Gurnell, J. & Flowerdew, J.R. (1994) Live Trapping Small Mammals: a Practical Guide, 2nd edn, revised. Mammal Society, Reading.
- Lawton C., Hanniffy, R., Molloy, V., Guilfoyle, C., Stinson, M. & Reilly, E. (2020) All-Ireland Squirrel and Pine Marten Survey 2019. Irish Wildlife Manuals, No. 121. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
- McDevitt, A.D., Montgomery, W.I., Tosh, D.G., Lusby, J., Reid, N., White, T.A., McDevitt, C.D., O'Halloran, J., Searle, J.B. and Yearsley, J.M., 2014. Invading and expanding: range dynamics and ecological consequences of the greater white-toothed shrew (*Crocidura russula*) invasion in Ireland. *PloS one*, 9(6), p.e100403.
- NPWS (2023) Conservation Objectives: Mount Jessop Bog SAC 002202. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
- Tosh, D.G., Lusby, J., Montgomery, W.I. and O'HALLORAN, J.O.H.N., 2008. First record of greater white-toothed shrew *Crocidura russula* in Ireland. *Mammal Review*, 38(4), pp.321-326.
- Sheehy, E. and Lawton, C., 2014. Population crash in an invasive species following the recovery of a native predator: the case of the American grey squirrel and the European pine marten in Ireland. *Biodiversity and conservation*, 23, pp.753-774.

Section 7: Appendices

Table 7.1: Results of the small mammal trapping at the Derrycassin Woods.

Date	Weather	Temp.	Area	Northing	Easting	Night	Trap	Open/closed	Species	Age	Sex
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	1	Closed	Woodmouse	Male	Juvenile
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	2	Closed	Woodmouse	Female	Juvenile
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	3	Closed	Woodmouse	Male	Adult
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	4	Closed	Bankvole	Female	Juvenile
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	5	Closed	Woodmouse	Female	Adult
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	6	missing			
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	7	Open			
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	8	Open			
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	9	Open			
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	10	Open			
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	11	Open			
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	12	missing			
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	13	missing			
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	14	Open			
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	15	missing			
31/07/2024	Sunny	16	Playground	53.82353	7.527576	1	16	Closed	Bankvole	Female	Adult
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	1	Closed	Bankvole	Male	Juvenile
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	2	Open			
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	3	closed/empty/shrew			
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	4	Open			
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	5	closed/empty			
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	6	Open			
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	7	Open			
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	8	closed/empty/shrew			
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	9	Closed	Bankvole	Female	Juvenile
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	10	Open			
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	11	closed/empty/shrew			
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	12	open			
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	13	Closed	Bankvole	Male	Adult
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	14	open			
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	15	closed/empty			
31/07/2024	Sunny	16	Walled garden	53.82632	7.55172	1	16	closed/empty/shrew			
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	1	Open			
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	2	Open			
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	3	Open			
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	4	Open			
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	5	Open			
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	6	Open			

01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	7	Open			
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	8	closed/empty			
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	9	closed	Bankvole	Female	Juvenile
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	10	Open			
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	11	closed	Woodmouse	Male	Juvenile
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	12	closed	Woodmouse	Male	Juvenile
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	13	missing			
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	14	Open			
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	15	Open			
01/08/2024	Overcast, sunny	16	Playground	53.82353	7.527576	2	16	closed	Bankvole	Male	Adult
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	1	closed	Bankvole	Female	Adult
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	2	closed/empty			
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	3	Open			
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	4	closed	Bankvole	Male	Adult
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	5	closed	Bankvole	Male	Adult
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	6	Open			
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	7	Open			
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	8	closed/empty/shrew			
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	9	closed	Bankvole	Male	Juvenile
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	10	Open			
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	11	Open			
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	12	closed/empty			
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	13	Open			
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	14	closed	Bankvole	Male	Juvenile
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	15	Open			
01/08/2024	Overcast, sunny	16	Walled garden	53.82632	7.55172	2	16	Open			
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	1	Open			
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	2	Open			
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	3	Open			
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	4	closed	Woodmouse	Male	Adult
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	5	Closed	Bankvole	Female	Juvenile
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	6	Open			
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	7	closed	Woodmouse	Male	Adult
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	8	Disturbed			

02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	9	closed	Bankvole	Female	Juvenile
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	10	closed	Bankvole		Adult
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	11	closed	Woodmouse	Male	Juvenile
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	12	Open			
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	13	Open			
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	14	closed	Woodmouse		Juvenile
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	15	Closed/empty			
02/08/2024	Overcast, showers	18	Playground	53.82353	7.527576	3	16	closed	Bankvole	Female	Juvenile
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	1	Open			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	2	Open			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	3	open			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	4	closed/empty			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	5	open			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	6	open			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	7	open			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	8	closed/empty/shrew			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	9	closed/empty			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	10	open			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	11	open			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	12	closed/empty			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	13	open			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	14	closed/empty			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	15	Open			
02/08/2024	Overcast, showers	18	Walled garden	53.82632	7.55172	3	16	closed	Woodmouse	Male	Adult

Table 7.2: The results of the tracks and signs surveys at Derrycassin Woods

Date	Site	Northing	Westing	Observation type	Species	Comments
31/07/2024	Derrycassin	53.823372	7.527042	Nest	Wren	
31/07/2024	Derrycassin	53.823197	7.527706	Den	Pinemarten	
31/07/2024	Derrycassin	53.823133	7.527765	Scats	Pinemarten	
31/07/2024	Derrycassin	53.823196	7.527856	Den	Pinemarten	
31/07/2024	Derrycassin	53.823151	7.527865	Scat	pinemarten	
31/07/2024	Derrycassin	53.823279	7.526562	Sett	Badger	>6 entrances, bedding
31/07/2024	Derrycassin	53.823141	7.528099	Den	Pinemarten	
31/07/2024	Derrycassin	53.564095	7.724008	Feeding activity	Squirrel	
31/07/2024	Derrycassin	53.563876	7.724926	Feeding activity	Squirrel	
01/08/2024	Derrycassin	53.82313	7.52798	Scat	pinemarten	
01/08/2024	Derrycassin	53.823515	7.536043	Sighting	pinemarten	
01/08/2024	Derrycassin	53.822834	7.527409	Scat	pinemarten/Stoat	
01/08/2024	Derrycassin	53.826105	7.550873	Scat	Pinemarten	
01/08/2024	Derrycassin	53.826016	7.551038	Scat	pinemarten	
01/08/2024	Derrycassin	53.826003	7.551638	Scat	pinemarten	
01/08/2024	Derrycassin	53.825458	7.542495	Sighting	Great Spotted Woodpecker	
02/08/2024	Derrycassin	53.823087	7.527277	Den	Pinemarten	
02/08/2024	Derrycassin	53.82581	7.544465	Scat	Pinemarten	
02/08/2024	Derrycassin	53.825725	7.544855	Scat	Fox	
02/08/2024	Derrycassin	53.826043	7.551252	Scat	pinemarten	
02/08/2024	Derrycassin	53.825427	7.544809	Scat	Pinemarten	
07/08/2024	Derrycassin	53.825665	7.544459	Scat	Pinemarten	
07/08/2024	Derrycassin	53.824468	7.546975	sighting	Zebra mussel	
07/08/2024	Derrycassin	53.827112	7.556662	Feeding activity	Squirrel	
07/08/2024	Derrycassin	53.828634	7.556772	Den	Fox	
07/08/2024	Derrycassin	53.826742	7.552152	Scat	Pinemarten	
26/07/2024	Derrycassin	53.825192	7.538368	Sett	Badger	>6 entrances
26/07/2024	Derrycassin	53.823772	7.536341	Feeding activity	Squirrel	
26/07/2024	Derrycassin	53.823292	7.528585	Scat	Pinemarten	
26/07/2024	Derrycassin	53.825063	7.546365	Empty shells	Zebra mussels	
30/07/2024	Derrycassin	53.822924	7.530451	Scat	Pinemarten	
30/07/2024	Derrycassin	53.826259	7.551588	Feeding activity	Squirrel	
30/07/2024	Derrycassin	53.826259	7.551588	Feeding activity	Squirrel	

Table 7.3: The location of camera traps at Derrycassin Woods.

Deployed	Removed	Site	Northing	Westing	Reason
30/07/2024	07/08/2024	Derrycassin	53.825192	7.538368	Badger sett
30/07/2024	07/08/2024	Derrycassin	53.826336	7.551687	Squirrel feeding activity, walled garden
30/07/2024	07/08/2024	Derrycassin	53.825063	7.546365	Water source

Table 7.4: Species captured on the camera traps at Derrycassin Woods.

Date of capture	Time of capture	Site	Location	Northing	Westing	Species
01/08/2024	23:15	Sett	Derrycassin	53.825192	7.538368	Badger
01/08/2024	23:23	Sett	Derrycassin	53.825192	7.538368	Badger
02/08/2024	21:17	Sett	Derrycassin	53.825192	7.538368	Badger
02/08/2024	23:46	Sett	Derrycassin	53.825192	7.538368	Fox
03/08/2024	01:56	Sett	Derrycassin	53.825192	7.538368	Woodmouse
03/08/2024	02:34	Sett	Derrycassin	53.825192	7.538368	Badger
03/08/2024	03:03	Sett	Derrycassin	53.825192	7.538368	Woodmouse
03/08/2024	21:04	Sett	Derrycassin	53.825192	7.538368	Badger
03/08/2024	21:05	Sett	Derrycassin	53.825192	7.538368	Irish hare
06/08/2024	01:31	Sett	Derrycassin	53.825192	7.538368	Woodmouse
06/08/2024	01:47	Sett	Derrycassin	53.825192	7.538368	Woodmouse
06/08/2024	03:45	Sett	Derrycassin	53.825192	7.538368	Woodmouse
06/08/2024	03:46	Sett	Derrycassin	53.825192	7.538368	Woodmouse
06/08/2024	03:48	Sett	Derrycassin	53.825192	7.538368	Woodmouse
06/08/2024	05:01	Sett	Derrycassin	53.825192	7.538368	Badger
06/08/2024	11:20	Sett	Derrycassin	53.825192	7.538368	Badger
31/07/2024	19:07	Walled garden	Derrycassin	53.826336	7.551687	Pinemarten
31/07/2024	23:23	Walled garden	Derrycassin	53.826336	7.551687	Woodmouse
01/08/2024	23:35	Walled garden	Derrycassin	53.826336	7.551687	Woodmouse
02/08/2024	2:16-4:05	Walled garden	Derrycassin	53.826336	7.551687	Woodmouse
02/08/2024	22:23-4:04	Walled garden	Derrycassin	53.826336	7.551687	Woodmouse
03/08/2024	22:14-00:21	Walled garden	Derrycassin	53.826336	7.551687	Woodmouse
04/08/2024	00:22-00:25	Walled garden	Derrycassin	53.826336	7.551687	Brown rat
04/08/2024	1:34-3:25	Walled garden	Derrycassin	53.826336	7.551687	Woodmouse
04/08/2024	3:39-3:45	Walled garden	Derrycassin	53.826336	7.551687	Brown rat
04/08/2024	04:21	Walled garden	Derrycassin	53.826336	7.551687	Woodmouse
04/08/2024	23:54:00-1:42	Walled garden	Derrycassin	53.826336	7.551687	Brown rat
05/08/2024	00:27-1:41	Walled garden	Derrycassin	53.826336	7.551687	Woodmouse
06/08/2024	22:52-4:15	Walled garden	Derrycassin	53.826336	7.551687	Woodmouse
31/07/2024	01:12	Lough Gowna	Derrycassin	53.825063	7.546365	Fox
01/08/2024	01:46	Lough Gowna	Derrycassin	53.825063	7.546365	Fox
02/08/2024	00:00:18	Lough Gowna	Derrycassin	53.825063	7.546365	Fox
02/08/2024	00:00:52	Lough Gowna	Derrycassin	53.825063	7.546365	Fox
02/08/2024	02:18	Lough Gowna	Derrycassin	53.825063	7.546365	Fox
04/08/2024	01:09	Lough Gowna	Derrycassin	53.825063	7.546365	Fox
06/08/2024	01:51	Lough Gowna	Derrycassin	53.825063	7.546365	Fox

Further Appendices (Biodiversity Data)

Table 7.5: Terrestrial mammal species recorded in 10km² grid surrounding the Derrycassin site recorded since 2000 (NBDC, 2024).

Terrestrial mammal species recorded within 10km ² of Derrycassin Woods	
Common Name/Scientific Name	Designations/Conservation Status
American Mink (<i>Mustela vison</i>)	Invasive Species: Invasive Species Invasive Species: Invasive Species >> High Impact Invasive Species Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
Common Pipistrelle (<i>Pipistrellus pipistrellus sensu stricto</i>)	
Daubenton's Bat (<i>Myotis daubentonii</i>)	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
Eurasian Badger (<i>Meles meles</i>)	Protected Species: Wildlife Acts
Eurasian Red Squirrel (<i>Sciurus vulgaris</i>)	Protected Species: Wildlife Acts
European Otter (<i>Lutra lutra</i>)	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex II Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
European Rabbit (<i>Oryctolagus cuniculus</i>)	Invasive Species: Invasive Species Invasive Species: Invasive Species >> Medium Impact Invasive Species
House Mouse (<i>Mus musculus</i>)	Invasive Species: Invasive Species Invasive Species: Invasive Species >> High Impact Invasive Species
Irish Hare (<i>Lepus timidus</i> subsp. <i>hibernicus</i>)	
Lesser Noctule (<i>Nyctalus leisleri</i>)	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
Nathusius's Pipistrelle (<i>Pipistrellus nathusii</i>)	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
Natterer's Bat (<i>Myotis nattereri</i>)	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
Pine Marten (<i>Martes martes</i>)	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex V Protected Species: Wildlife Acts
Pipistrelle (<i>Pipistrellus pipistrellus sensu lato</i>)	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
Red Fox (<i>Vulpes vulpes</i>)	
Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>)	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
West European Hedgehog (<i>Erinaceus europaeus</i>)	Protected Species: Wildlife Acts

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