

**Roundwood Village, Co. Wicklow**

**Biodiversity Action Plan**

**Report Prepared for Roundwood Tidy Towns Group**

**with funding from Community Foundation Ireland Environment and Nature- Biodiversity Grants 2022.**



*FINAL REPORT*

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## Roundwood Village, Co. Wicklow

### Biodiversity Action Plan

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## Roundwood Village, Co. Wicklow

### Biodiversity Action Plan

#### 1. INTRODUCTION

##### 1.1 Background

Faith Wilson Ecological Consultant was commissioned by the Roundwood Tidy Towns Group who successfully received funding for the study from the Community Foundation Ireland under Strand 1 of the Environment and Nature Fund 2022 to prepare a biodiversity action plan for Roundwood Village in Co. Wicklow as shown on **Figure 1** below. Several landowners were also interested in having their lands surveyed and these and part of the Vartry Reservoir were included in the plan. The study area is shown on **Figure 2** below.

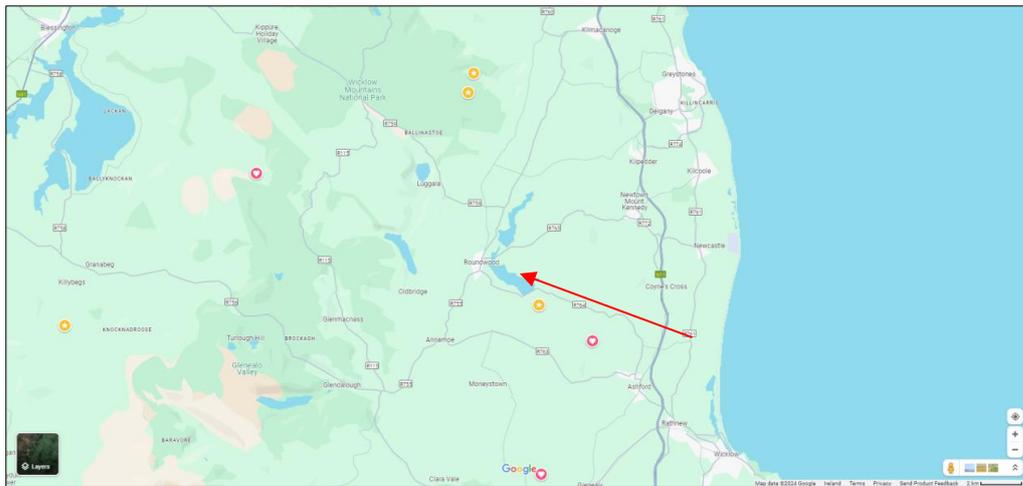


Figure 1. Roundwood Village, Co. Wicklow.

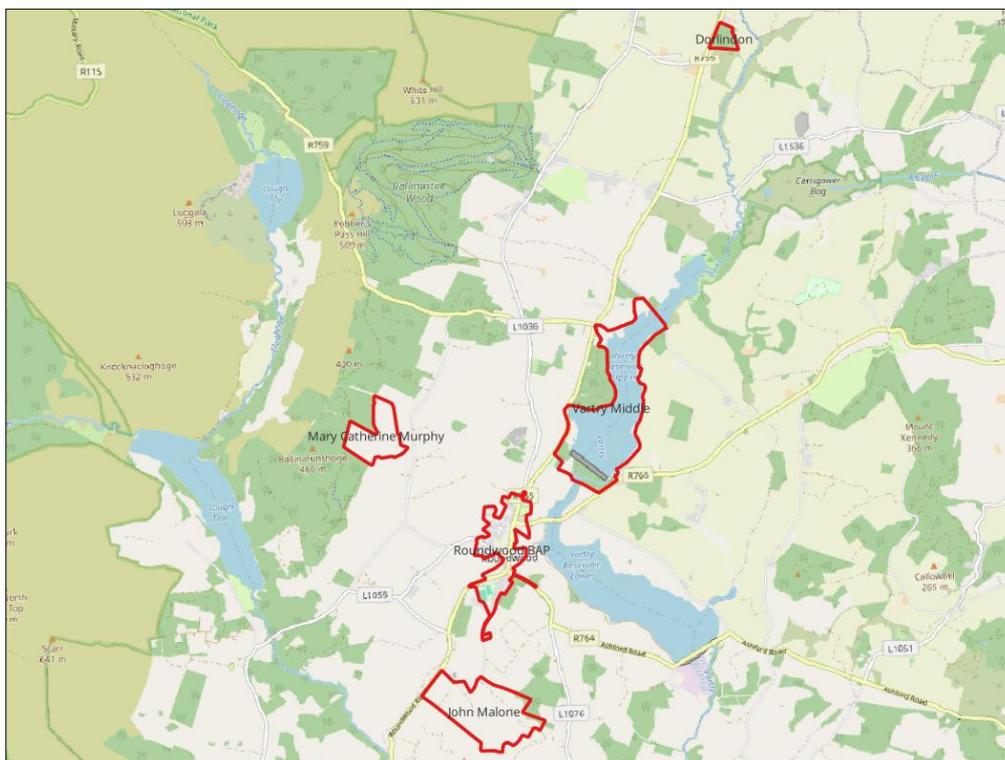
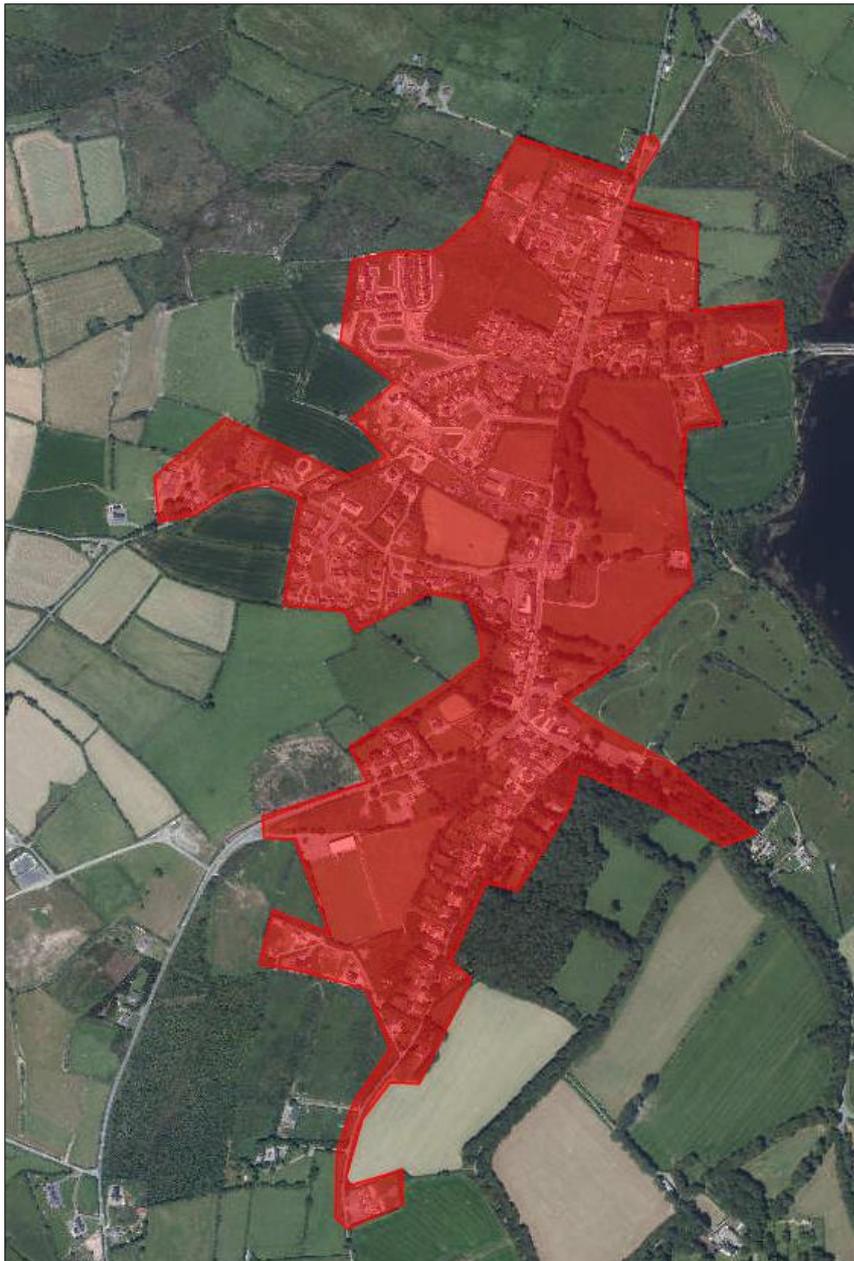


Figure 2. Lands surveyed as part of the study (Google Maps imagery).

## 2. METHODOLOGY

### 2.1 Desktop Research

A desk study was carried out to collate the available information on the ecological environment within the study area in Roundwood Village as shown on **Figure 3** below. The National Parks and Wildlife Service (NPWS) of the Department of Housing, Local Government and Heritage (DHLGH) database of designated conservation areas and NPWS records of rare and protected plant species was checked. Information on protected species of fauna and flora listed for protection under Annex II of the EU Habitats Directive (92/43/EEC), Annex I of the Birds Directive (79/409/EEC) and the Wildlife (Amendment) Act (2000) was also sought from NPWS, the National Biodiversity Data Centre and published sources. Recent, high resolution, colour aerial photographs were also used to identify and map habitats.



**Figure 3. Roundwood Village Study Area - shown in red (Source: National Biodiversity Data Centre).**

Consideration was also given to other flora and fauna as defined under the following legislative instruments and red data books:

- species protected under the **Wildlife Act (1976 (amended 2000))**, such as bats, badger, pine marten and common frog,
- plant species listed under the **Flora (Protection) Order (2022)**,
- vascular plant species listed in the **Irish Red List for Vascular Plants**<sup>1</sup>,
- bird species listed under the '**Birds of Conservation Concern in Ireland**' document<sup>2</sup>,
- mammals listed in the **Irish Red List for Terrestrial Mammals**<sup>3</sup>,
- amphibians and reptiles listed in the **Irish Red List for Amphibians, Reptiles & Freshwater Fish**<sup>4</sup>,
- invasive species listed under Schedule 3 of the '**Birds and Natural Habitats Regulations 2011**' and the **EU Regulation on Invasive Alien Species (EU Regulation 1143/2014)**<sup>5</sup>.

## 2.2 Field Surveys

The flora and habitats within the environs of Roundwood Village were surveyed over several visits in 2022, 2023 and 2024 using the Phase 1 habitat survey methodology (JNCC, 1993) and Best Practice Guidance for Habitat Survey and Mapping (Smith *et al.*, 2011) to identify the vegetation communities and habitats present. These are described using Fossitt (2000)<sup>6</sup>. Plant identification follows Parnell *et al* (2012)<sup>7</sup>, and species nomenclature follows Scannell & Synnott (1987)<sup>8</sup>.

## 2.3 Consultation and Meetings

A series of meetings were held with the members of the local group. A public bat walk event was held in the village.

A meeting was also held with David Fallon the Biodiversity Officer with Uisce Éireann at the Vartry Reservoir to discuss the various biodiversity actions.

---

<sup>1</sup> Wyse Jackson, M., FitzPatrick, Ú., Cole, E., Jebb, M., McFerran, D., Sheehy Skeffington, M. & Wright, M. (2016). Ireland Red List No. 10: Vascular Plants. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, Dublin, Ireland.

<sup>2</sup> Gilbert G, Stanbury A and Lewis L.J. 2021. Birds of Conservation Concern in Ireland 2020 -2026. Irish Birds 43, 1-22.

<sup>3</sup> Marnell, F., Looney, D. & Lawton, C. (2019). Ireland Red List No. 12: Terrestrial Mammals. National Parks and Wildlife Service, Department of the Culture, Heritage and the Gaeltacht, Dublin, Ireland.

<sup>4</sup> King, J.L., Marnell, F., Kingston, N., Rosell, R., Boylan, P., Caffrey, J.M., Fitzpatrick, Ú., Gargan, P.G., Kelly, F.L., O'Grady, M.F., Poole, R., Roche, W.K. & Cassidy, D. (2011). Ireland Red List No. 5: Amphibians, Reptiles & Freshwater Fish. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, Dublin, Ireland.

<sup>5</sup> S.I. No. 477 of 2011. The European Communities (Birds and Natural Habitats) Regulations 2011. Irish Government, Government Publications Office, Molesworth Street, Dublin 2.

<sup>6</sup> Fossitt, J. (2000) A Guide to Habitats in Ireland. The Heritage Council, Ireland.

<sup>7</sup> Parnell, J. and Curtis, T. (2012). An Irish flora (8th edn). Cork University Press.

<sup>8</sup> Scannell, M. and D. Synnott (1987). Census Catalogue of the Flora of Ireland - Clár de Phlandaí na hÉireann. Stationery Office Dublin, Dublin.

### 3. RESULTS - DESKTOP RESEARCH

#### 3.1 Underlying Geology & Soils

Roundwood Village is underlain by dark blue-grey slate, phyllite & schist, which date from the Palaeozoic, Lower - Middle Ordovician and form part of what is known as the Maulin Formation as can be seen on **Figure 4** below. The lands around the village are overlain by glacial till in a soil formation known as the 'Clonroche soil association' which consists of a fine loamy drift with siliceous stones as shown on **Figure 5** below.

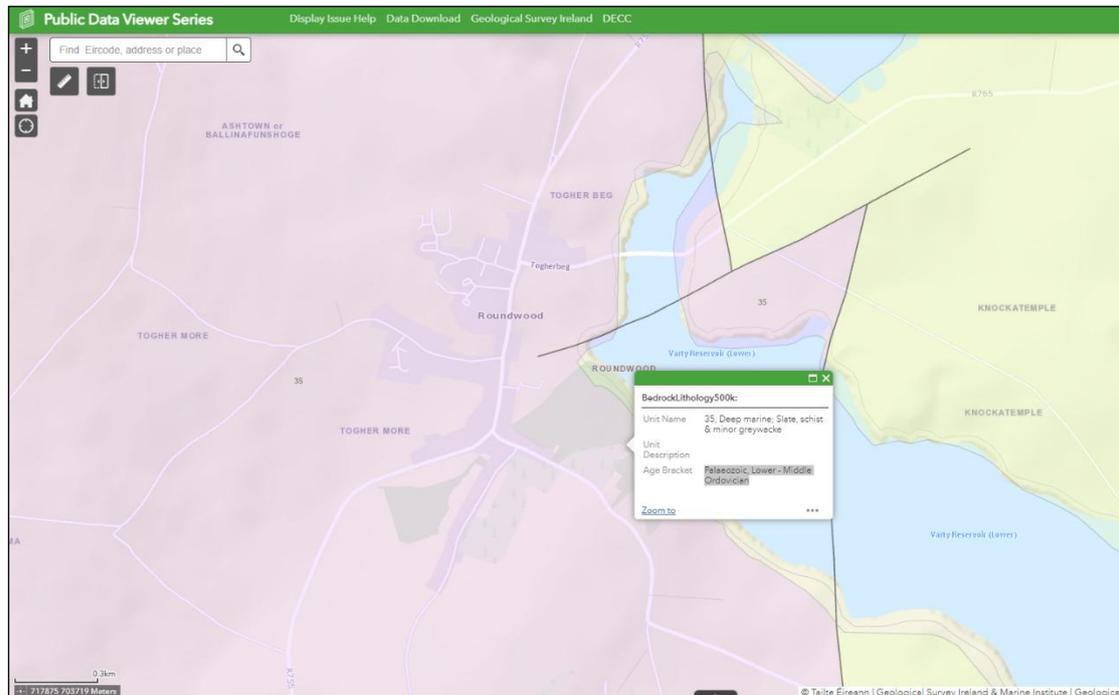


Figure 4. Geology of Roundwood Village (Source: Geological Survey of Ireland).

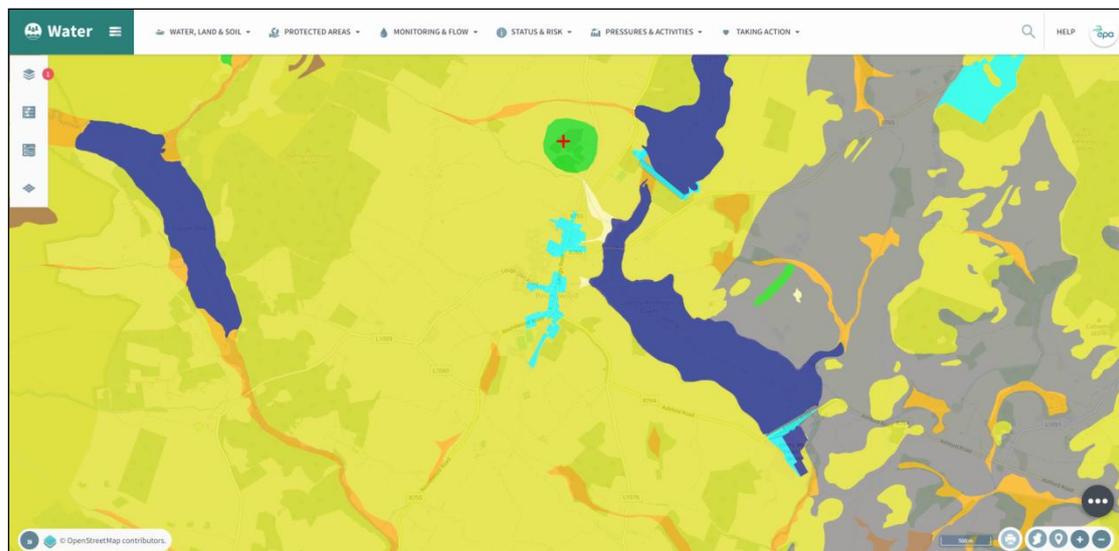
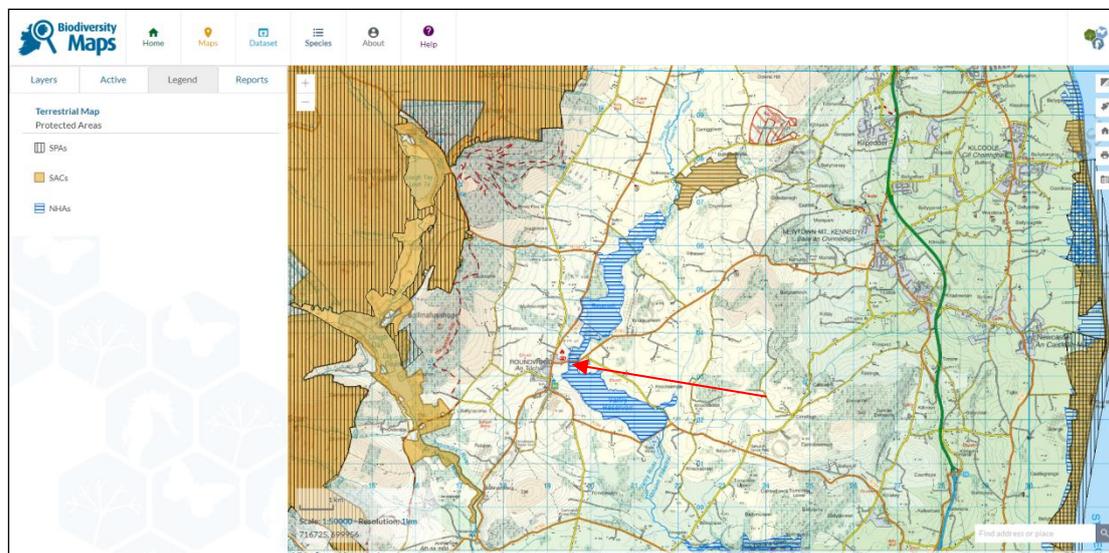


Figure 5. Soils surrounding Roundwood Village are glacial till which is acidic in nature (Source: EPA).

### 3.2 Nature Conservation Designations

The lands within and adjoining Roundwood Village are not currently the subject of any of the formal proposed nature conservation designations as described above in **Section 2.3.1**. There are a number of areas designated for nature conservation within the wider environs of the village – the locations of these are shown on **Figure 6** below.



**Figure 6. Areas legally designated for nature conservation within the environs of Roundwood Village (indicated by the red arrow).**

The most important of these are the Wicklow Mountains which are designated as both a Special Area of Conservation (Wicklow Mountains SAC (Site Code: 002212)) and a Special Protection Area (for Birds) (The Wicklow Mountains SPA (Site Code: 004040)).

The Vartry Reservoir is designated as a proposed Natural Heritage Area (Vartry Reservoir pNHA (Site Code: 001771)). Walking trails from the village lead to this important site.

Further east and downstream of Roundwood is The Murrough, which is located at the coast. This extensive wetland is designated as both a Special Area of Conservation (The Murrough Wetlands SAC (Site Code: 002249)), a Special Protection Area (for Birds) (The Murrough Wetlands SPA (Site Code: 004186)) and a proposed Natural Heritage Area (The Murrough NHA (Site Code: 000730)). These sites are hydrologically linked to Roundwood by the Vartry River which acts as an important wildlife corridor linking the village to the Devil's Glen pNHA (Site Code: 000718)) and these designated areas downstream and at the coast.

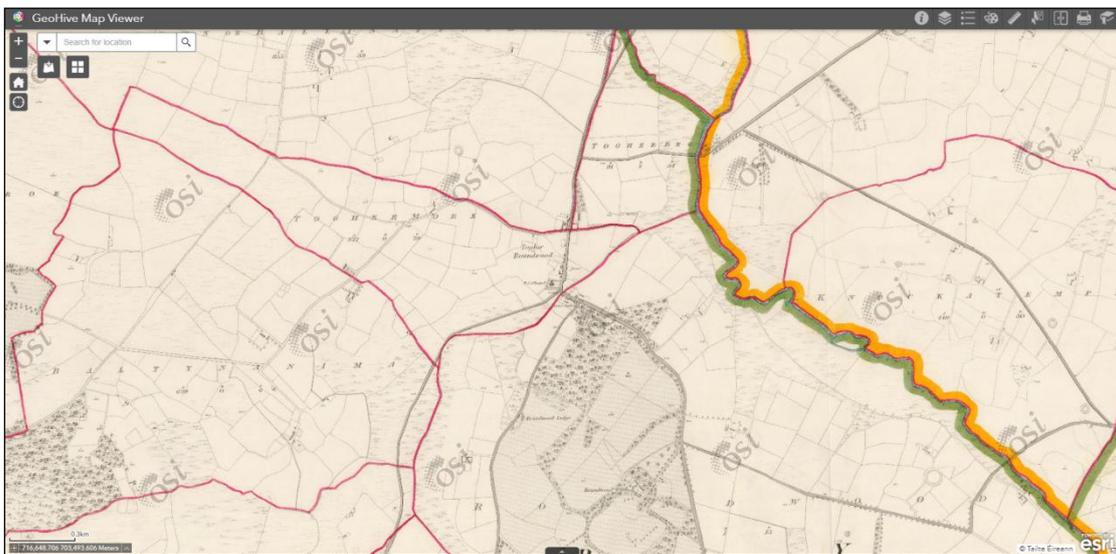
The site synopsis, which is a document that summarises the conservation interest of these designated sites, is presented in **Appendix 1** and **2**.

### 3.3 The Development of Roundwood Village

A review of historic mapping for the environs of Roundwood Village was completed. The first edition Ordnance Survey Ireland 6" series map shows that the village consisted of a very small number of buildings along the main street of the village as shown on **Figure 7** and **8** below. The Vartry Reservoir had not yet been developed and the course of the Vartry River is clearly visible.



**Figure 7. The undeveloped nature of Roundwood Village in the mid-1800s (OSI First Edition 6" Map Series).**



**Figure 8. Roundwood Village in the mid-1800s (OSI First Edition 6" Map Series).**

By the early 1900s the Lower Vartry Reservoir and waterworks had been developed and the village had expanded slightly as can be seen on the last 6" edition mapping (**Figure 9**).

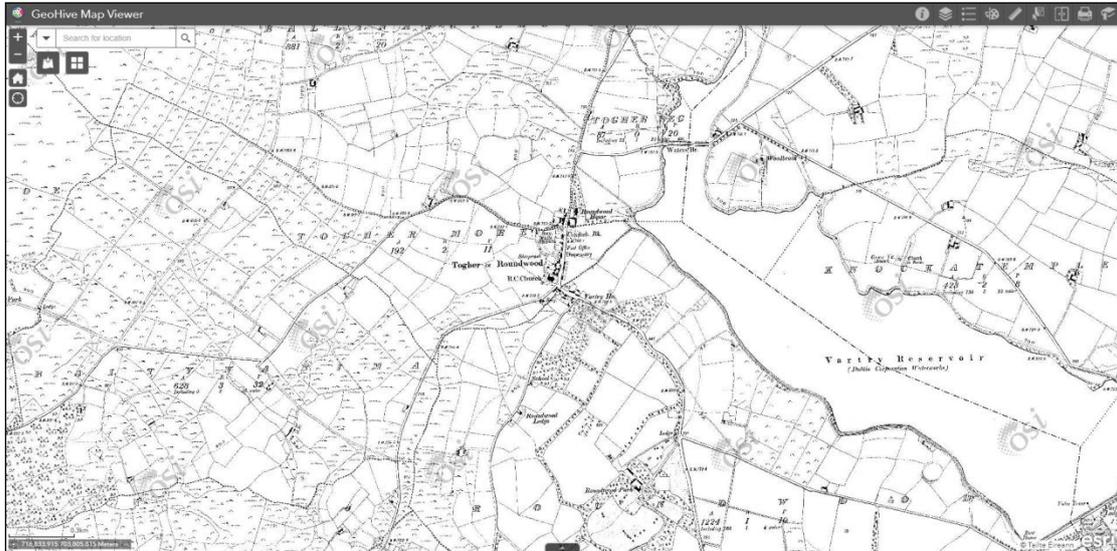


Figure 9. The OSI Last Edition 6" Map Series.

By the time the 25" maps were produced (Figure 10) the village remained relatively unchanged.

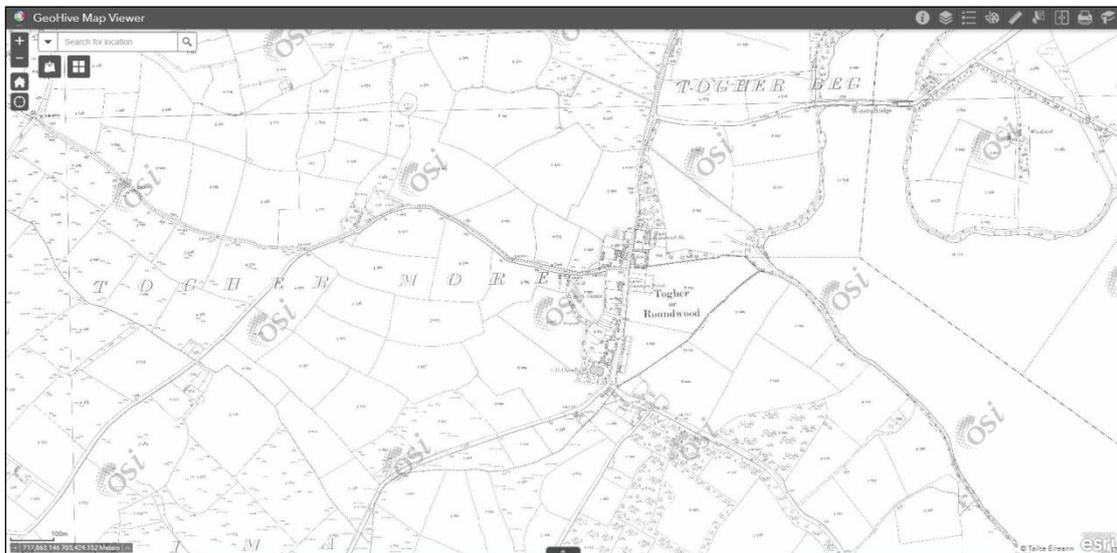
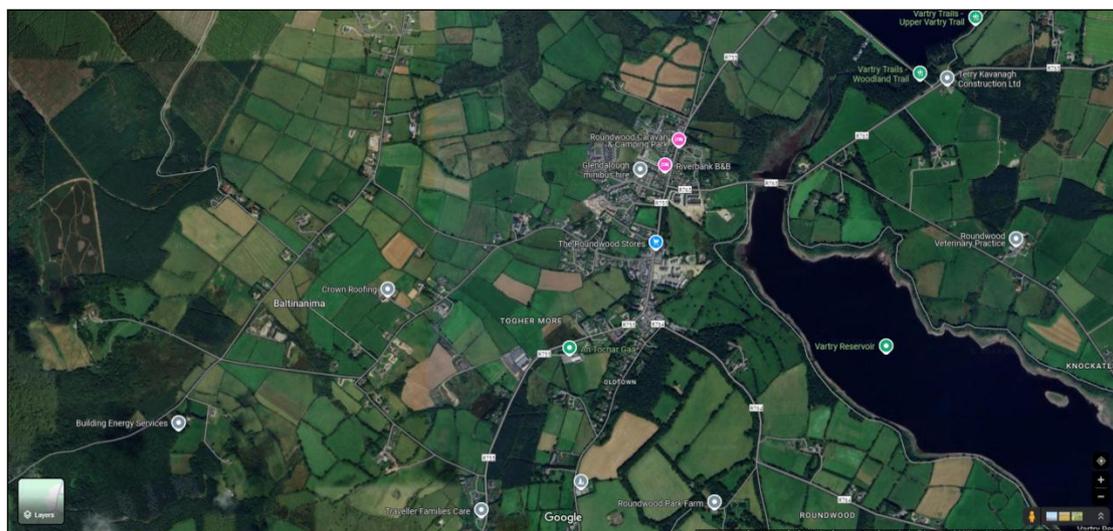


Figure 10. The OSI 25" Map Series.

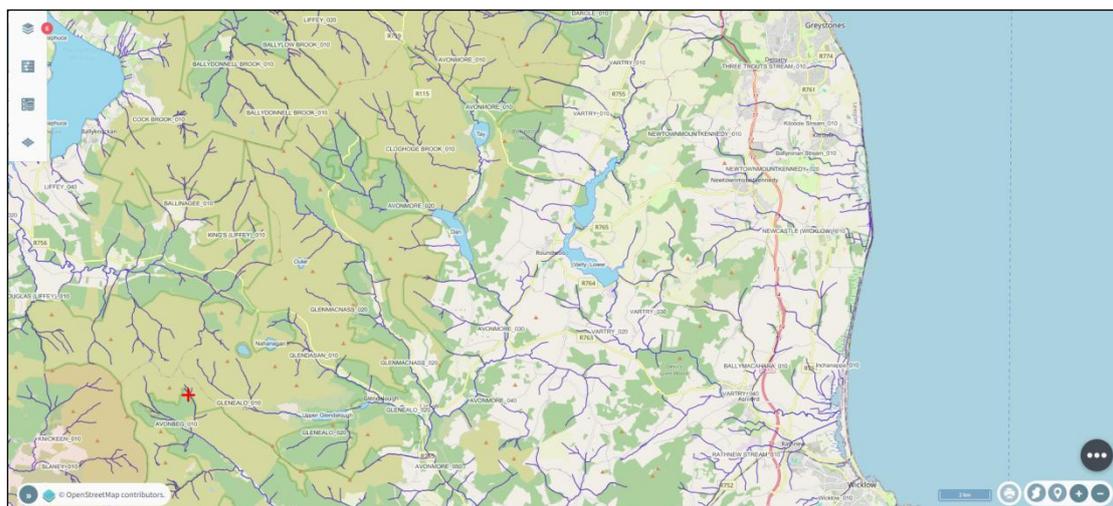
Since then the village has hugely expanded with the development of several housing estates and numerous one off houses as can be seen on Figure 11 below.



**Figure 11. Roundwood today (Google maps).**

### 3.4 Varty River

Roundwood is located within the Ovoca Varty Catchment (010) and within the Varty Sub catchment (SC\_010).



**Figure 12. The Varty River.**

The Varty River, rises to the north of the village near the Great Sugarloaf on Calary Bog and flows into the Varty Reservoir which is located to the north-east and east of Roundwood Village. The Varty River is impounded here by reservoir dams which form the Upper and Lower Reservoirs.

Other headwater streams of the Varty River rise on the slopes of Djouce Mountain and White Hill. A number of these tributary streams flow into and feed the Upper Reservoir – these are the Glasnamullen Stream, the Knockraheen Stream, the Sleamaine or Ballinvalla Stream, the Mullinaveige Stream and the Ballinahinch Stream.

The Lower Reservoir is fed by the Ashtown or Ballinafunshoge Stream, the Togher More stream, the Knockatemple Stream and the Ballinahinch Upper Stream.

On exiting the Lower Reservoir the Varty continues south east through Annagolan Bog and the Devil’s Glen to Ashford and then to the Broad Lough on The Murrough before entering the sea as the Leitrim River in Wicklow Town as shown on **Figure 12** above.

In the general environs of Roundwood the Vartry River and her tributary streams are best classified as an **upland eroding watercourse (FW1)**.

**Eroding/upland rivers (FW1)** are described by Fossitt (2000) as follows:

“This category includes natural watercourses, or sections of these, that are actively eroding, unstable and where there is little or no deposition of fine sediment. Eroding conditions are typically associated with the upland parts of river systems where gradients are often steep, and water flow is fast and turbulent. Rivers in spate are included. For some rivers on the seaward side of coastal mountains, particularly in the west of Ireland, eroding conditions persist to sea level because of comparatively steep gradients over short distances, and high rainfall. Small sections of other lowland rivers may also be eroding where there are waterfalls, rapids or weirs. The beds of eroding/upland rivers are characterised by exposed bedrock and loose rock. Pebbles, gravel and coarse sand may accumulate in places, but finer sediments are rarely deposited. These rivers vary in size but are usually smaller and shallower than **depositing/lowland rivers - FW2**. Small mountain streams that dry out periodically can be included if an obvious channel persists or wetland plants are present”.

### 3.5 Vartry Reservoir

The Vartry Reservoir adjoins the village. This is classified as a **Reservoir (FL7)**.

**Reservoirs (FL7)** are described by Fossitt (2000) as follows:

“This category incorporates all open water bodies that are used for the storage and supply of water. It includes natural lakes where water levels fluctuate significantly and unnaturally as a result of abstraction, in addition to modified lakes with dams or retaining walls or banks. Entirely artificial water bodies, some lined with concrete, that are used as reservoirs are also included here (see also **other artificial lakes and ponds - FL8**). Other lakes where there is evidence of water abstraction (pumps, pumphouses or outflowing pipes) but where there are no indications of significant water level changes are not included here. Redshank (*Polygonum persicaria*) is often common along the drawdown zone of reservoirs in lowland areas”.

The Vartry Reservoir is designated as a proposed Natural Heritage Area (Site Code: 001771) as shown on **Figure 13** below.



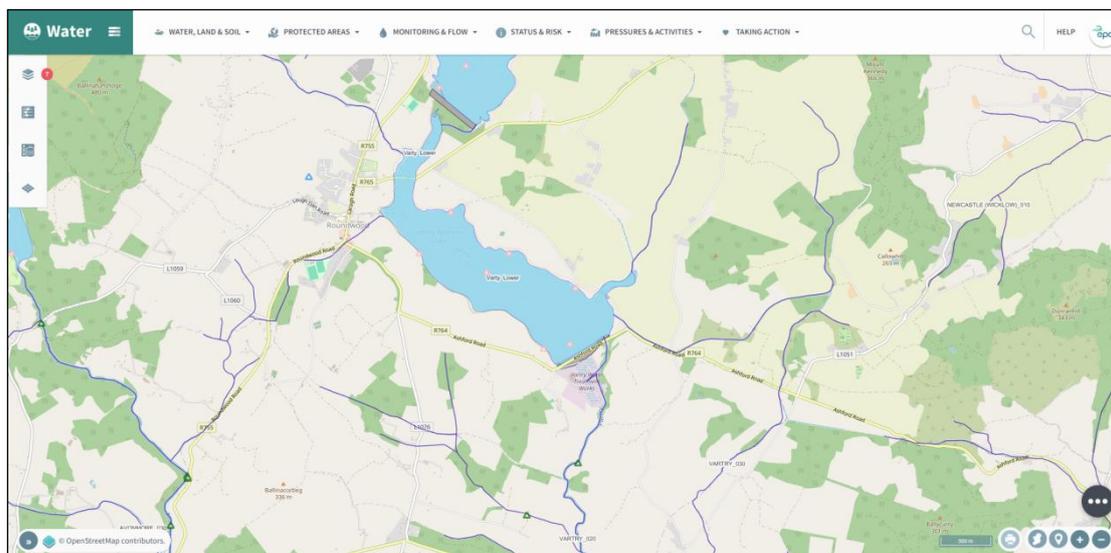
**Figure 13.** The boundary of the Vartry Reservoir proposed Natural Heritage Area.

### 3.6 Vartry River and Reservoir – Water Quality

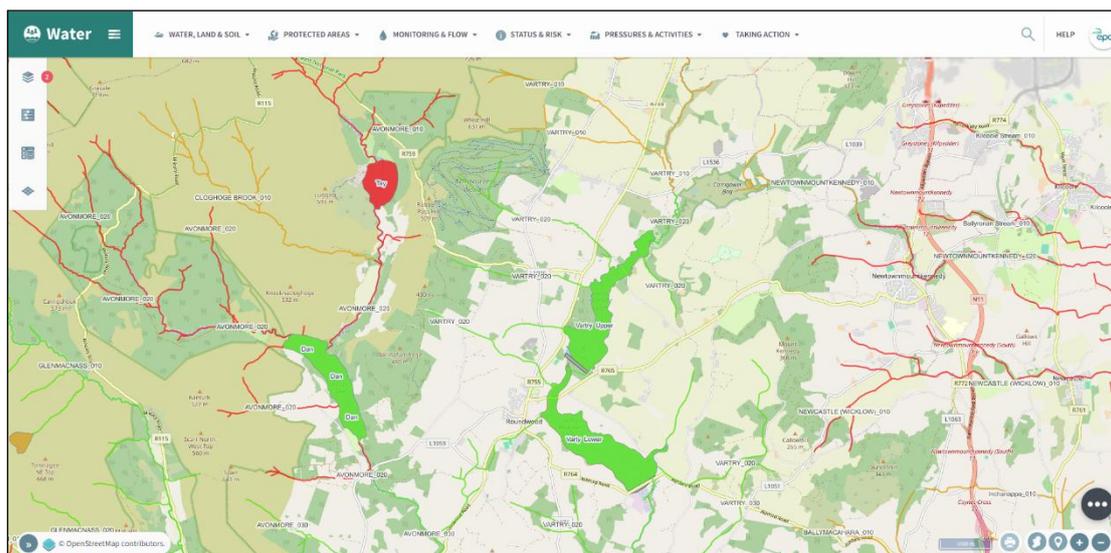
Water quality in the Vartry River and Reservoir is monitored as part of Ireland’s reporting obligations under the Water Framework Directive. Unsurprisingly given the drinking water supply for Dublin comes from the reservoir water samples are regularly taken at a number of standard sampling locations within the environs of the reservoir and elsewhere on the River Vartry. These are shown on **Figure 14** below.

Water quality in the Vartry River and Reservoir was assessed as ‘Good’ between 2010 and 2015, remaining ‘Good’ during the 2013 – 2018 period and the 2016 – 2021 period.

The Vartry River and Reservoir are both classified as “not at risk” of failing to meet the Water Framework Directive (WFD) objective of at least “good” ecological status by 2027 (see **Figure 15** below).



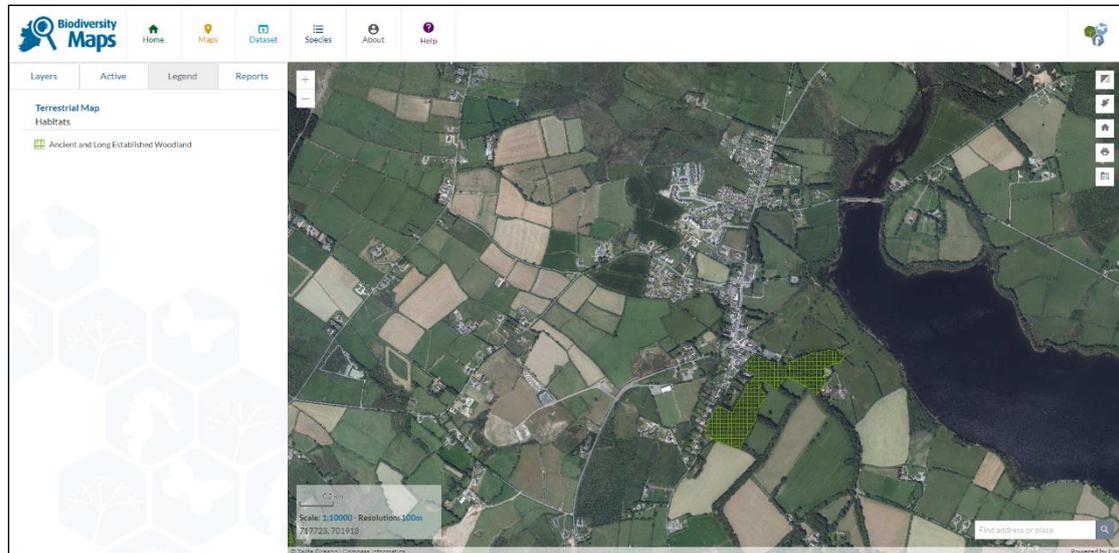
**Figure 14. Water sampling locations (shown as triangles) on the Vartry Reservoir and River.**



**Figure 15. Both the Vartry River and Vartry Reservoir are ‘Not At Risk’ of failing to meet the Water Framework Directive (WFD) objective of at least “good” ecological status by 2027 (Source: <https://gis.epa.ie/EPAMaps/Water>).**

### 3.7 Native Woodlands in the Environs of Roundwood

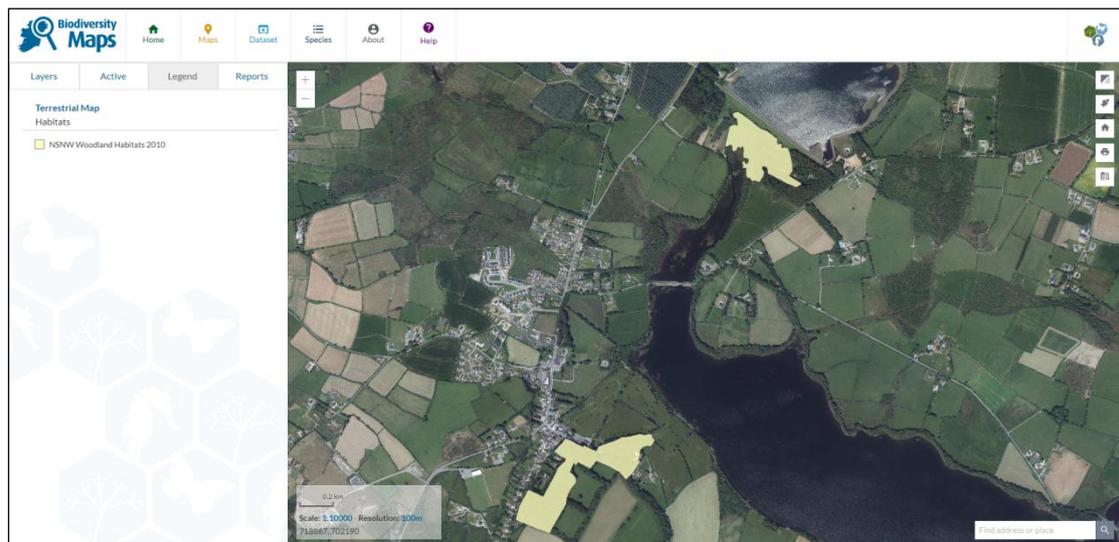
As was noted above in the review of the historic Ordnance Survey Ireland mapping the woodlands at Roundwood House remain extant from the mid-1800s. They are mapped within the Ancient and Long Established Woodland dataset prepared by NPWS as shown on **Figure 16** below.



**Figure 16.** Woodlands near the village at Roundwood Park are mapped as Ancient and Long Established Woodland within the dataset prepared by NPWS (National Biodiversity Data Centre).

This woodland and an area below the embankment of the reservoir were surveyed as part of the National Native Woodland Surveys completed by National Parks and Wildlife Service in 2010 (Site Codes: 0876 and 0906).

The areas surveyed are presented on **Figure 17** and information from the survey of each of the woodlands is presented on **Figures 18** and **19**.



**Figure 17.** The woodlands at Roundwood House (Site Code: 0876) and below the embankment of the Vartry Reservoir (Site Code: 0906) were surveyed as part of the NPWS National Native Woodland Surveys (National Biodiversity Data Centre).

Site no.	<input type="text" value="0876"/>	FIPS no.	<input type="text" value="79722"/>
Date surveyed	<input type="text" value="08/08/2005"/>		
Woodland name	<input type="text" value="Roundwood"/>	Townland name	<input type="text" value="Roundwood"/>
Conservation rating and score	<input type="text" value="Moderate"/> <input type="text" value="46"/>	Threat rating and score	<input type="text" value="Low"/> <input type="text" value="17"/>
Disco. map	<input type="text" value="56"/>	Grid ref.	<input type="text" value="O191024"/>
		6 inch sheet	<input type="text" value="WI 18"/>
		County	<input type="text" value="Wicklow"/>
NPWS region	<input type="text" value="South Eastern"/>	NHA code	<input type="text" value="-"/>
		SAC code	<input type="text" value="-"/>
		SPA Code	<input type="text" value="-"/>
National Park	<input type="checkbox"/>	Nature Reserve	<input type="checkbox"/>
		Woodland present in the 1840s	<input type="text" value="Yes"/>
Ownership	<input type="text" value="Private - Single"/>	Area (ha)	<input type="text" value="9"/>
		Max. alt. (m)	<input type="text" value="255"/>
		Min. alt. (m)	<input type="text" value="240"/>
Sub-soil	<input type="text" value="RckNCa/TLPSsS"/>	Soil	<input type="text" value="AminSW/AminDW"/>

Geography	Woodland habitats	Grazing	Hydrological features
Esker <input type="checkbox"/>	WN1 <input type="text" value="100%"/>	Deer <input checked="" type="checkbox"/>	Seasonal flooding <input type="checkbox"/>
Drumlin <input type="checkbox"/>	WN2 <input type="text" value="0%"/>	Cattle <input type="checkbox"/>	Springs <input type="checkbox"/>
Valley <input type="checkbox"/>	WN3 <input type="text" value="0%"/>	Sheep <input type="checkbox"/>	Lakes <input type="checkbox"/>
Lakeside <input type="checkbox"/>	WN4 <input type="text" value="0%"/>	Rabbits <input type="checkbox"/>	Rivers/streams <input type="checkbox"/>
Bogland <input type="checkbox"/>	WN5 <input type="text" value="0%"/>	Hares <input type="checkbox"/>	Damp clefts/ravines <input type="checkbox"/>
Hill <input checked="" type="checkbox"/>	WN6 <input type="text" value="0%"/>	Goats <input type="checkbox"/>	Other <input type="text" value=""/>
Plain/Lowlands <input type="checkbox"/>	WN7 <input type="text" value="0%"/>	Horses <input type="checkbox"/>	
Island <input type="checkbox"/>	WS1 <input type="text" value="0%"/>	Other <input type="text" value=""/>	
Riverside/Floodplain <input type="checkbox"/>	WD1 <input type="text" value="0%"/>	Grazing level <input type="text" value="3"/>	
Coastal/Estuary <input type="checkbox"/>	WD2 <input type="text" value="0%"/>		
	Other habitats <input type="text" value=""/>		

Field notes External data source: not all data recorded

A mid-sized oak woodland just south of Roundwood village in Co. Wicklow. The entire site is very grassy and appears heavily grazed (although no farm animals have been on the land in the past 4 years according to the farm managers). The canopy is dominated by sessile oak (*Quercus petraea*), with beech (*Fagus sylvatica*) and birch (*Betula pubescens*) occurring in patches. Holly (*Ilex aquifolium*) is almost entirely absent, rowan (*Sorbus aucuparia*) forms the understorey, but is patchy. *Agrostis stolonifera* dominates the herb layer. A small lobe of woodland at the northeast (across the road) may be cleared to access (or extend?) the adjacent golf course, although there are no official plans for this yet (a local person provided this information).

Figure 18. Roundwood Wood (Site Code: 0876).

Site no.	0906	FIPS no.	83852, 60269				
Date surveyed	06/09/2005						
Woodland name	Knockraheen	Townland name	Knockraheen, Mullinaveigh				
Conservation rating and score	Poor	39	Threat rating and score	Low			
				0			
Disco. map	56	Grid ref.	O200040	6 inch sheet			
				WI 18			
			County	Wicklow			
NPWS region	South Eastern	NHA code	1771	SAC code			
				-			
			SPA Code	-			
National Park	<input type="checkbox"/>	Nature Reserve	<input type="checkbox"/>	Woodland present in the 1840s			
				No			
Ownership	Private - Single	Area (ha)	5	Max. alt. (m)			
				220			
			Min. alt. (m)	210			
Sub-soil	A/TLPSS		Soil				
			AlluvMIN/AminDW				
<u>Geography</u>		<u>Woodland habitats</u>		<u>Grazing</u>			
<u>Hydrological features</u>							
Esker	<input type="checkbox"/>	WN1	100%	Deer	<input type="checkbox"/>	Seasonal flooding	<input type="checkbox"/>
Drumlin	<input type="checkbox"/>	WN2	0%	Cattle	<input type="checkbox"/>	Springs	<input type="checkbox"/>
Valley	<input type="checkbox"/>	WN3	0%	Sheep	<input type="checkbox"/>	Lakes	<input type="checkbox"/>
Lakeside	<input type="checkbox"/>	WN4	0%	Rabbits	<input type="checkbox"/>	Rivers/streams	<input checked="" type="checkbox"/>
Bogland	<input type="checkbox"/>	WN5	0%	Hares	<input type="checkbox"/>	Damp clefts/ravines	<input type="checkbox"/>
Hill	<input checked="" type="checkbox"/>	WN6	0%	Goats	<input type="checkbox"/>	Other	
Plain/Lowlands	<input type="checkbox"/>	WN7	0%	Horses	<input type="checkbox"/>		
Island	<input type="checkbox"/>	WS1	0%	Other	Unknown		
Riverside/Floodplain	<input type="checkbox"/>	WD1	0%	Grazing level	1		
Coastal/Estuary	<input type="checkbox"/>	WD2	0%				
		Other habitats					
Field notes		External data source: not all data recorded <input type="checkbox"/>					
<p>A very small area of woodland northeast of Roundwood village in Co. Wicklow. It is dominated by birch (<i>Betula pubescens</i>) and grey willow (<i>Salix cinerea</i>), with occasional sessile oak (<i>Quercus petraea</i>). The ground flora is either <i>Rubus fruticosus</i> dominated, or grassy (with <i>Deschampsia cespitosa</i>, <i>Agrostis stolonifera</i> and <i>A. capillaris</i> common). Lichen cover and diversity is high. There is likely to be a number of foxes living here. At the southwest end there is a large area of willow scrub, into which this woodland grades. These woods are under the management of the Water Works of Dublin Corporation. We spoke with Ned Fleming, the engineer in charge. He is very interested in knowing how best to manage the woods to allow them to develop naturally. He reports a badger sett in the woods.</p>							

Figure 19. Knockraheen Wood (Site Code: 0906).

### 3.8 Rare Scarce or Threatened Flora/Fauna

Roundwood Village is located within 10km square O10, while much of the Vartry Reservoir is located in 10km square O20. The National Parks and Wildlife Service have records of several species of protected flora and fauna from the area.

There are records of the following species from the 10km square O10:

- Small white Orchid (*Pseudorchis albida*) from Luggala, Lough Dan and Glenmacnass
- Bog Orchid (*Hammarbya paludosa*)
- Red Deer (*Cervus elaphus*)
- Sika Deer (*Cervus nippon*) from Laragh
- Stoat (*Mustela erminea*)

There are records of the following species from the 10km square O20:

- Killarney Fern (*Trichomanes speciosum*) from the Devil's Glen
- Red Squirrel (*Sciurus vulgaris*) from 2.5 miles south east of Roundwood
- Bog Orchid (*Hammarbya paludosa*)



fishing is permitted under license on the Vartry Reservoirs. The season runs from March 1st to October 12th. Boat fishing is let to County Wicklow Anglers Association.

### 3.11 Bats in Roundwood

The Bat Conservation Ireland database has no records of bats from within Roundwood Village. There does not appear to have been any recent surveys completed in the village for either of the new housing estates that are currently under construction/nearing completion.

The Bat Conservation Ireland database has records of the following species from the Vartry Reservoir:

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Unidentified Pipistrelle bat (*Pipistrellus* sp.)
- Leisler's bat (*Nyctalus leisleri*)
- Daubenton's bat (*Myotis daubentonii*)

These were recorded during the BATLAS 2010 project from the lower reservoir.

In 2007 this author completed a walkover detector survey of bat activity in Roundwood Park as part of a planning application for a development there. Although conducted late in the season a number of species were recorded using the property as follows:

"The grounds of the main house, the areas of woodland and the various tracks through the property were walked. The most commonly encountered species were the soprano pipistrelle (*Pipistrellus pygmaeus*) and the common pipistrelle (*Pipistrellus pipistrellus*). These species were recorded commuting and foraging along the main avenue, the tree-lined tracks through the estate and along the hedgerows in the eastern section of the property. Daubenton's bat (*Myotis daubentonii*) was detected foraging over the pond below the main house and Leisler's bat (*Nyctalus leisleri*) was seen and heard flying high over the fields of wet grassland and pasture in the western section of the property. The public roads surrounding the property were also surveyed and common and soprano pipistrelle were detected in these areas. The areas of woodland and shelterbelts within the estate offer potentially rich foraging areas, commuting routes and roosting potential for a variety of bat species and large numbers of trees treelines and around the main house also provide potential roosting for bats".

### 3.12 Mammals from the Roundwood Area

The most comprehensive mammal survey completed to date in the general environs of Roundwood Village was that completed by this author in 2007 in Roundwood Park for an integrated tourism/recreational facility, which recorded the following:

"Rabbits (*Oryctolagus cuniculus*) were frequently seen and their burrows are common in many of the field boundaries. Fox (*Vulpes vulpes*) droppings were found at several locations within the property and they were observed during survey work. The slots of deer (red x Sika hybrids (*Cervus nippon x Cervus elaphus*)) were frequently observed – notably in the areas of immature woodland and the conifer plantations, which provide suitable cover.

Red squirrels (*Sciurus vulgaris*) are known to be present in the woodlands within the estate and were photographed there during site surveys by other members of the team and recorded there during the tree survey.

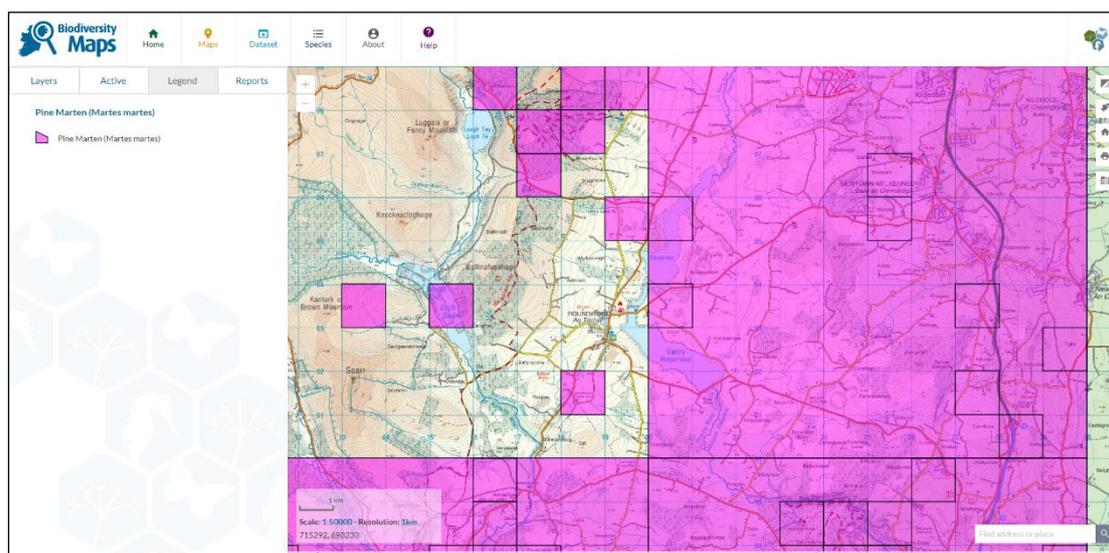
The non-native grey squirrel (*Sciurus carolinensis*) was observed during the walkover survey and a road kill specimen was found on the main road, which bisects the property.

A single pine marten (*Martes martes*) was recorded as road kill on the public road, which bisects the eastern and western section of the site in January 2008. This is a shy, nocturnal creature, which is rarely observed even in its stronghold habitat of the Burren in Co. Clare. The pine marten is protected under the Wildlife Act (amended 2000), the Bern and Bonn Conventions and under Annex V of the EU Habitats Directive. The pine marten appears to be increasing its range after years of persecution and is listed as an Irish Red Data Book species\*.

Other mammals that are likely to occur near the proposed development site include mountain hare (*Lepus timidus hibernicus*), hedgehog (*Erinaceus europaeus*), stoat (*Mustela erminea*), wood mouse (*Apodemus sylvaticus*), pygmy shrew (*Sorex minutus*), American mink (*Mustela vison*) and brown rat (*Rattus norvegicus*) (Hayden and Harrington 2000)”.

\*Since then (2007) the Pine Marten population in Ireland has recovered astonishingly as persecution and the use of indiscriminate poisons became illegal. There are now many records of Pine Marten from East Wicklow as can be seen on **Figure 21** below, whereas in 2007 it was a rarity to see this species in the county.

There was evidence of Pine Marten attempting to enter one of the nest boxes which was erected in the Neighbourhood Scheme in the Vartry Reservoir.



**Figure 21. Pine Marten records from East Wicklow (Source: NBDC).**

### 3.13 Amphibians and Reptiles

During the surveys completed in Roundwood Park in 2007 the common frog (*Rana temporaria*) was observed in areas of wet grassland, and was expected to breed in the pond within the site. The smooth newt (*Triturus vulgaris*) might also be expected to breed in suitable habitat in and round the village.

Areas of heathy habitat and stone walls around Roundwood are likely to also support the common lizard (*Lacerta vivipara*), a species, which also occurs in a wide range of habitat types including grasslands, moorland and woodland edges.

### 3.14 Biodiversity Records

A review of biodiversity records from the general environs of Roundwood (within the village) held by the National Biodiversity Data Centre (NBDC) was completed. There are only seventeen species recorded from within the village. These are shown in **Table 1** below.

**Table 1. Species records from Roundwood Village stored in the NBDC.**

Species Group	Species	Number	Record Date	
bird	Common Blackbird ( <i>Turdus merula</i> )	1	23/06/2017	Birds of Ireland
bird	Common Crossbill ( <i>Loxia curvirostra</i> )	1	23/07/1997	Birds of Ireland
bird	Eurasian Siskin ( <i>Carduelis spinus</i> )	1	23/07/1997	Birds of Ireland
bird	Eurasian Treecreeper ( <i>Certhia familiaris</i> )	1	23/07/1997	Birds of Ireland
flowering plant	Cowslip ( <i>Primula veris</i> )	1	18/04/2023	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards
flowering plant	Meadow Vetchling ( <i>Lathyrus pratensis</i> )	1	20/06/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards
flowering plant	Sheep's-bit ( <i>Jasione montana</i> )	1	27/06/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards
insect - beetle (Coleoptera)	Beet Carrion Beetle ( <i>Aclypea opaca</i> )	1	01/05/1940	Carrion Beetles of Ireland
insect - beetle (Coleoptera)	<i>Nicrophorus investigator</i>	1	15/09/1924	Carrion Beetles of Ireland
insect - butterfly	Orange-tip ( <i>Anthocharis cardamines</i> )	1	23/04/2019	Butterflies of Ireland pre-2022
insect - moth	Common Marbled Carpet ( <i>Chloroclysta truncata</i> )	1	04/10/2012	Moths Ireland
insect - moth	Feathered Thorn ( <i>Colotois pennaria</i> )	1	15/11/2012	Moths Ireland
insect - moth	Grey Dagger ( <i>Acronicta psi</i> )	1	26/07/2018	Moths Ireland
insect - moth	Hebrew Character ( <i>Orthosia gothica</i> )	1	12/04/2012	Moths Ireland
insect - moth	Water Carpet ( <i>Lampropteryx suffumata</i> )	1	12/04/2012	Moths Ireland
insect - true fly (Diptera)	<i>Tipula oleracea</i>	1	31/12/1903	Craneflies of Ireland
terrestrial mammal	Eurasian Red Squirrel ( <i>Sciurus vulgaris</i> )	1	31/12/2012	Irish Squirrel Survey 2012

At a wider scale (within the 2km square O10W) as shown on **Figure 22** below there is a rich diversity of species recorded with some 380 species recorded and submitted to the National Biodiversity Data Centre.



**Figure 22. Roundwood is located in the 2km square O10W.**

These are presented in **Table 1** in **Appendix 7**.

They include records of:

- Birds
- Ferns
- Flowering plants
- Fungi
- Insects – butterflies
- Insects – dragonflies
- Insects – bees and wasps
- Insects - moths
- Insects – stone fly and true flies
- Insects – caddis flies
- Insects - millipedes
- Liverworts, and
- Mammals



### Habitats at the Vartry Reservoir

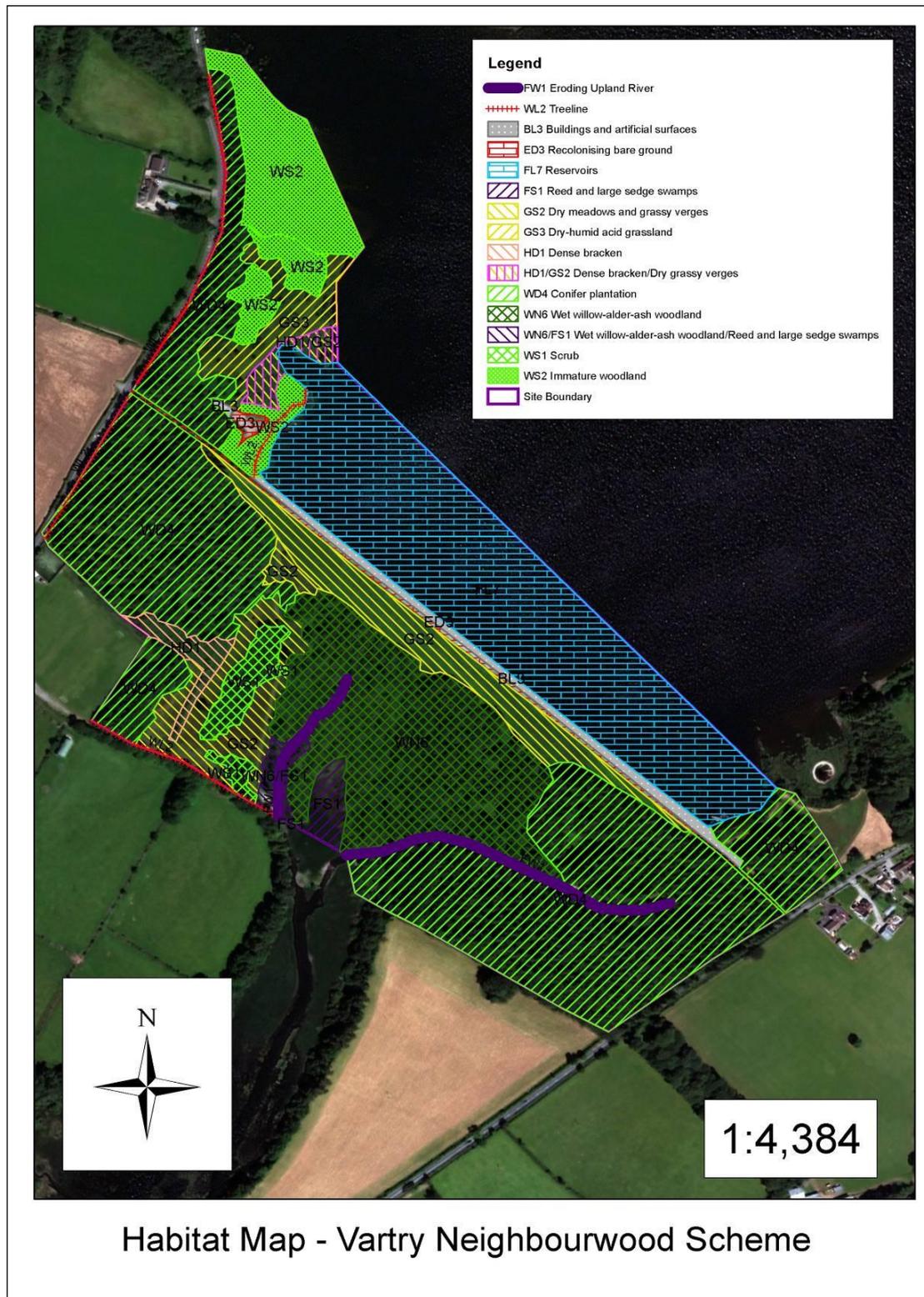


Figure 24. Habitat map of the Vartry Neighbourhood Scheme.

The dominant habitat is obviously the reservoir (FL7) itself. To the south east and south west of the embankment are two large conifer plantations (WD4).

The embankment itself supports dry grassy verge vegetation (GS2). This habitat also occurs on the eastern side of the reservoir. A small area of dry acid grassland (GS3) is found along the western shore of the reservoir. The area of natural woodland at the base of the embankment between the upper and the lower reservoir is wet willow alder ash woodland (WN6). There are small, scattered areas of gorse scrub (WS1) while other areas of grassland are becoming invaded by bracken (HD1). Large areas to the north of the angling clubhouse have been planted with a variety of tree species forming an area of immature woodland (WS2). Adjoining the areas of wet woodland is an area rich in sedges (FS1) and the River Vartry (FW1) flows under the dam via a siphon. The locations and extent of the habitats recorded are shown above in **Figure 24**.

A description of each of the habitat types present at the Vartry as described by Fossitt (2000) in the Heritage Council 'Guide to Habitats' is presented below.

#### 4.1.1. Reservoirs (FL7)

This category incorporates all open water bodies that are used for the storage and supply of water. It includes natural lakes where water levels fluctuate significantly and unnaturally as a result of abstraction, in addition to modified lakes with dams or retaining walls or banks. Entirely artificial water bodies, some lined with concrete, that are used as reservoirs are also included here (see also other artificial lakes and ponds - FL8). Other lakes where there is evidence of water abstraction (pumps, pumphouses or outflowing pipes) but where there are no indications of significant water level changes are not included here. Redshank (*Polygonum persicaria*) is often common along the drawdown zone of reservoirs in lowland areas (Fossitt, 2000).



**Plate 1. Water levels within the reservoir fluctuate.**

Water levels in the reservoir fluctuate and when low large areas of the exposed muds and sands support Marsh Cudweed (*Gnaphalium uliginosum*), Shoreweed (*Littorella uniflora*), Water Pepper (*Polygonum hydrophyllum*), and Bulbous Rush (*Juncus bulbosus*).



**Plate 2. Exposed muds and gravel shores at lower water levels.**



**Plate 3. The old road bridge exposed at low water levels.**

#### 4.1.2. Conifer plantation (WD4)

This category is used for areas that support dense stands of planted conifers where the broadleaved component is less than 25% and the overriding interest is commercial timber production. Conifer plantations are characterised by even-aged stands of trees that are usually planted in regular rows, frequently within angular blocks. Species diversity is low and single species stands are common. The majority of planted conifers are non-native species such as Sitka Spruce (*Picea sitchensis*), Lodgepole Pine (*Pinus contorta*), Norway Spruce (*Picea abies*) and larches (*Larix* spp.). Conifer plantations may be fringed with narrow bands of broadleaved trees, most of which are also planted. Any distinct blocks of broadleaved trees should be recorded separately in the appropriate woodland category. Mixed stands of conifers and broadleaved trees (at least 25% of each) should be considered under mixed broadleaved/conifer woodland - WD2. Young conifer plantations and Christmas tree farms are included in this category but note that plantations that have been felled and not replanted are excluded (see recently-felled woodland - WS5). (Fossitt, 2000).

The mature conifer plantations in and around the embankment contain Douglas Fir and Larch with some Sitka Spruce and Pine. Native broadleaves include Rowan, Elder, Ash, Holly and Hawthorn in the understory with Bramble dominating the ground cover. Non-native broadleaves include Beech and Sycamore. These woods have been thinned under the Neighbourwood Scheme with trees removed from around native species to allow their crowns to develop and more light to reach the forest floor encouraging natural regeneration.



**Plate 4. Halo thinning around native trees within the conifer plantations at the Vartry Reservoir.**

Along the public road (R755) there is Douglas Fir with some Larch, Scots Pine and Spruce and an understory of Holly, Elder, Hawthorn, Rowan and Goat Willow with Ash and Sycamore seedlings.

In general the ground flora below the mature conifer stands is poor on account of the deep shading and is limited to Bramble, Ivy, Ferns (including Male Fern (*Dryopteris filix-mas*), Lady Fern (*Athyrium filix-femina*), Hard Fern (*Blechnum spicant*), and Hart's-tongue Fern (*Phyllitis scolopendrium*)). Lords and ladies (*Arum maculatum*), Creeping Bent (*Agrostis stolonifera*) and the non-native invasive species Montbretia (*Crocasmia x crocosmiiflora*), as listed in the NRA guidelines, was also noted forming large stands in the eastern conifer block.



**Plate 5. Stands of Montbretia along path margins.**

The conifer woodland plantations were enriched with the planting of native species as part of the Neighbourwood Scheme. These have to be protected by deer tubes to prevent them being browsed by non-native invasive Sika deer.

The deer browsing presents the biggest threat to the woodland habitat at the Vartry and across Wicklow as the population is at unsustainable levels.



**Plate 6. Enrichment planting of native trees in clearings and light gaps within the wood.**



**Plate 7. Enrichment planting of native trees in clearings and light gaps within the wood.**

#### 4.1.3. Wet willow-alder-ash woodland (WN6)

This broad category includes woodlands of permanently waterlogged sites that are dominated by willows (*Salix* spp.), Alder (*Alnus glutinosa*) or Ash (*Fraxinus excelsior*), or by various combinations of some or all of these trees. It includes woodlands of lakeshores, stagnant waters and fens, known as carr, in addition to woodlands of spring-fed or flushed sites. Carr is dominated by Rusty Willow (*Salix cinerea* ssp. *oleifolia*) and Alder (*Alnus glutinosa*). The field layer comprises Creeping Bent (*Agrostis stolonifera*), Meadowsweet (*Filipendula ulmaria*), Common Marsh-bedstraw (*Galium palustre*), Purple loosestrife (*Lythrum salicaria*) and Skullcap (*Scutellaria galericulata*). Mosses such as *Climacium dendroides*, *Calliergon cordifolium* and *Homalia trichomanoides* are characteristic. Carr occurs on organic soils and fen peats that are subject to seasonal flooding but remain waterlogged even when flood waters recede. Woodlands of flushed or spring-fed sites are typically dominated by Alder (*Alnus glutinosa*) or Ash (*Fraxinus excelsior*) and the ground flora is often 'grassy' in appearance with abundant Remote Sedge (*Carex remota*) and Creeping Bent (*Agrostis stolonifera*). Other common components of the field layer include Bramble (*Rubus fruticosus* agg.), Creeping Buttercup (*Ranunculus repens*), Meadowsweet (*Filipendula ulmaria*), Common Marsh-bedstraw (*Galium palustre*), Yellow Pimpernel (*Lysimachia nemorum*) and Lady-fern (*Athyrium filix-femina*). This type of woodland occurs on mineral soils or fen peats, and may occasionally be associated with river banks or lakeshores. Note that **riparian woodland - WN5** is treated as a separate category. Also included in this category are woodlands of calcareous spring-fed hollows that are characterised by a mixture of trees including willows (*Salix* spp.), Alder (*Alnus glutinosa*), Ash (*Fraxinus excelsior*) and Downy Birch (*Betula pubescens*). Greater Tussock-sedge (*Carex paniculata*) dominates the field layer and tussocks may support species of drier land. Common Reed (*Phragmites australis*) may be abundant in open wet areas. The ground surface is often treacherous and water-filled hollows and channels typically support aquatic plants (Fossitt, 2000).

The area of wet woodland which is located between the two reservoirs has been extant in this location for over a century as it is shown on the ordnance survey 6" maps - the upper reservoir is noted as being under construction on these maps. Of note within the wet woodland were stands of Cherry laurel (*Prunus laurocerasus*) which is an invasive species as listed in the NRA guidelines. The main species recorded in the canopy here were ash, willow, alder and birch. The ground flora included yellow flag (*Iris pseudacorus*), bramble (*Rubus fruticosus* agg.), Creeping Buttercup (*Ranunculus repens*), Meadowsweet (*Filipendula ulmaria*) and Reed canary grass (*Phalaris arundinacea*).



Plate 8. Wet willow alder ash woodland between the two reservoirs.



**Plate 9. Wet willow alder ash woodland near the overflow siphon. This type of vegetation and the areas of marginal tall herbaceous vegetation along the margins of the reservoir help to clean the water. Non-native conifer species should be slowly removed.**

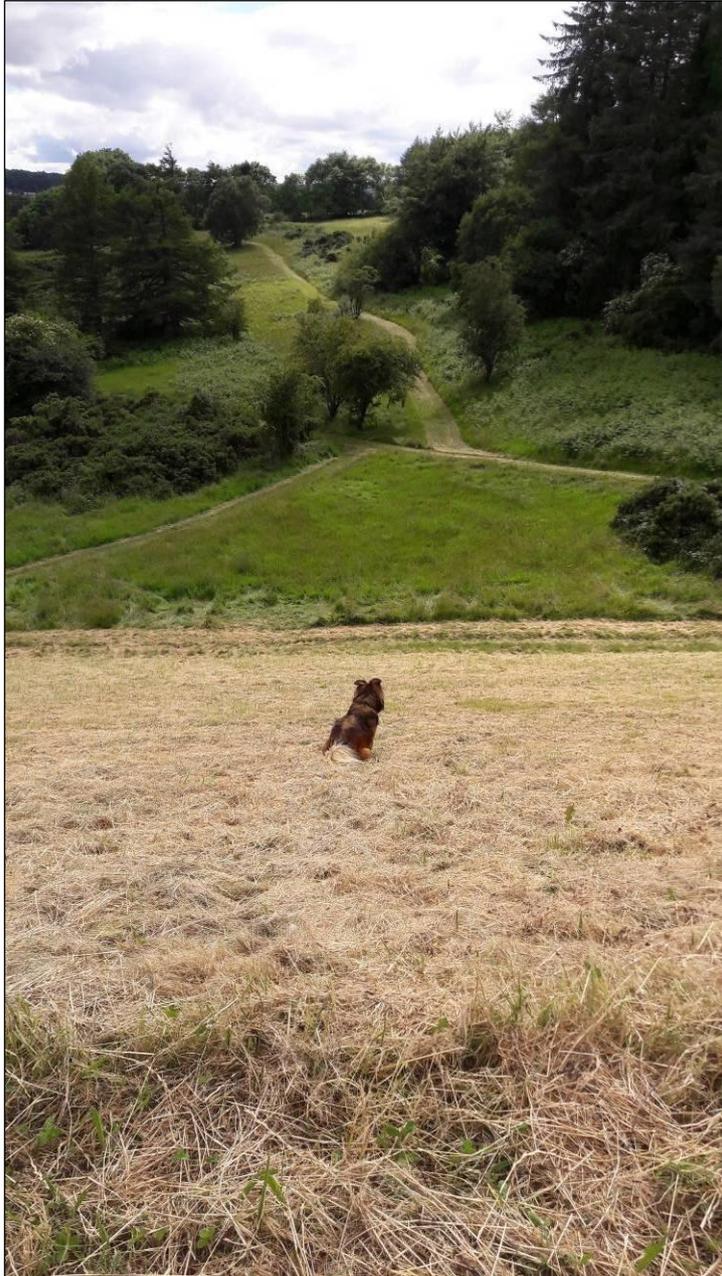


**Plate 10. Native willows and Alder are adapted to fluctuating water levels.**

**4.1.4. Dense bracken (HD1)**

This category is used for areas of open vegetation that are dominated by Bracken (*Pteridium aquilinum*). Cover of the fern may be either patchy or continuous, but should exceed 50% overall. Dense bracken is usually associated with areas of **dry-humid acid grassland - GS3** or **dry siliceous heath - HH1**. Areas of woodland with a bracken dominated understorey are excluded, as are areas that are dominated by shrubs or brambles (see **scrub - WS1**). The ferns die back in the autumn but remains of fronds usually persist throughout the winter (Fossitt, 2000).

Areas of dry grassy verge vegetation along the western shore of the upper reservoir and between the two reservoirs are becoming invaded by bracken.



**Plate 11. Grassland along the woodland edges becoming invaded by bracken.**

#### 4.1.5. Dry meadows and grassy verges (GS2)

Dry meadows that are rarely fertilised or grazed, and are mown only once or twice a year for hay are now rare in Ireland. Most have been improved for agriculture and this type of grassland is now best represented on grassy roadside verges, on the margins of tilled fields, on railway embankments, in churchyards and cemeteries, and in some neglected fields or gardens. These areas are occasionally mown (or treated with herbicides in the case of some railway embankments), and there is little or no grazing or fertilizer application. This pattern of management produces grasslands with a high proportion of tall, coarse and tussocky grasses such as False Oat-grass (*Arrhenatherum elatius*) and Cock's-foot (*Dactylis glomerata*). Other grasses may include Yorkshire-fog (*Holcus lanatus*), Smooth Meadow-grass (*Poa pratensis*), Barren Brome (*Anisantha sterilis*) and Meadow Foxtail (*Alopecurus pratensis*). The broadleaved herb component is characterised by a range of species that either grow tall, such as Cow Parsley (*Anthriscus sylvestris*), Hogweed (*Heracleum sphondylium*), Goat's-beard (*Tragopogon pratensis*), Nettle (*Urtica dioica*) and Common Knapweed (*Centaurea nigra*), or climb the stems of others, as in the case of Bush Vetch (*Vicia sepium*) and Meadow Vetchling (*Lathyrus pratensis*). Grassy verges may support other smaller broadleaved herbs such as Pignut (*Conopodium majus*), Creeping Cinquefoil (*Potentilla reptans*) and clovers (*Trifolium* spp.).

*Links with Annex I:* Corresponds to the annexed habitat, 'lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) (6510)' (Fossitt, 2000).

The largest extent of dry grassy verge vegetation is found on the embankment which was constructed between the upper and lower reservoirs. Relative to areas of improved agricultural grassland in adjoining farmlands this grassland is relatively diverse and species rich. This bank supports a rich diversity of species including the grasses; Sweet vernal grass (*Anthoxanthum odoratum*), False oat-grass (*Arrhenatherum elatius*), Cock's-foot (*Dactylis glomerata*), Red fescue (*Festuca rubra*), and Yorkshire-fog (*Holcus lanatus*). Other species include Bush Vetch (*Vicia sepium*), Meadow buttercup (*Ranunculus acris*), Creeping buttercup (*Ranunculus repens*), Meadow Vetchling (*Lathyrus pratensis*), Ribwort plantain (*Plantago lanceolata*), Smooth hawk's-beard (*Crepis capillaris*), Bitter-vetch (*Lathyrus montanus*), Sheep's sorrel (*Rumex acetosella*), Common Knapweed (*Centaurea nigra*), Field wood-rush (*Luzula campestris*), Cow Parsley (*Anthriscus sylvestris*), Barren strawberry (*Potentilla sterilis*), Hogweed (*Heracleum sphondylium*), Oxeye Daisy (*Leucanthemum vulgare*), Rough hawk's-beard (*Crepis biennis*), Selfheal (*Prunella vulgaris*), Creeping Cinquefoil (*Potentilla reptans*), Red Clover (*Trifolium pratense*), Bird's-foot trefoil (*Lotus corniculatus*), White Clover (*Trifolium repens*), Cut-leaved crane's-bill (*Geranium dissectum*), Germander Speedwell (*Veronica chamaedrys*) and Dandelion (*Taraxacum* agg.).

Appropriate mowing is important in maintaining the species diversity of this habitat. This is not currently taking place - the cuttings have been left on the embankment and the diversity of the sward here is reducing as a result.

Species such as Heath Spotted Orchid (*Dactylorhiza maculata* ssp. *ericetorum*), Spotted Orchid (*Dactylorhiza fuchsii*), and Cowslip (*Primula veris*) have either been lost or have declined in numbers over recent years as a result.

There is also an area of GS2 grassland on the eastern side of the reservoir. This area was unmown and was dominated by Creeping buttercup, with Ox eye daisy and Greater stitchwort (*Stellaria holostea*).



**Plate 12.** Current mowing practices on the embankment are not (and may not be) able to collect the cuttings. Grazing may be an option here.



**Plate 13.** Area of un-mown grassland on the eastern side of the reservoir. This is easier to cut and collect being on the flat.

#### 4.1.6. *Dry-humid acid grassland (GS3)*

Unimproved or semi-improved grassland that occurs on free-draining acid soils that may be dry or humid, but not waterlogged. This type of grassland mainly occurs on mineral rich or peaty podzols in upland areas but can also be found on siliceous sandy soils in the lowlands, as in the case of the Curragh in Kildare. It is usually most extensive near the upper limit of enclosed farmland on hills and mountains, particularly those in the centre and east of the country, but also occurs widely on steep slopes in upland and lowland regions, and near the coast. Dry-humid acid grassland frequently grades into, or forms mosaics with **dry siliceous heath - HH1** or blanket bog (**PB2-3**).

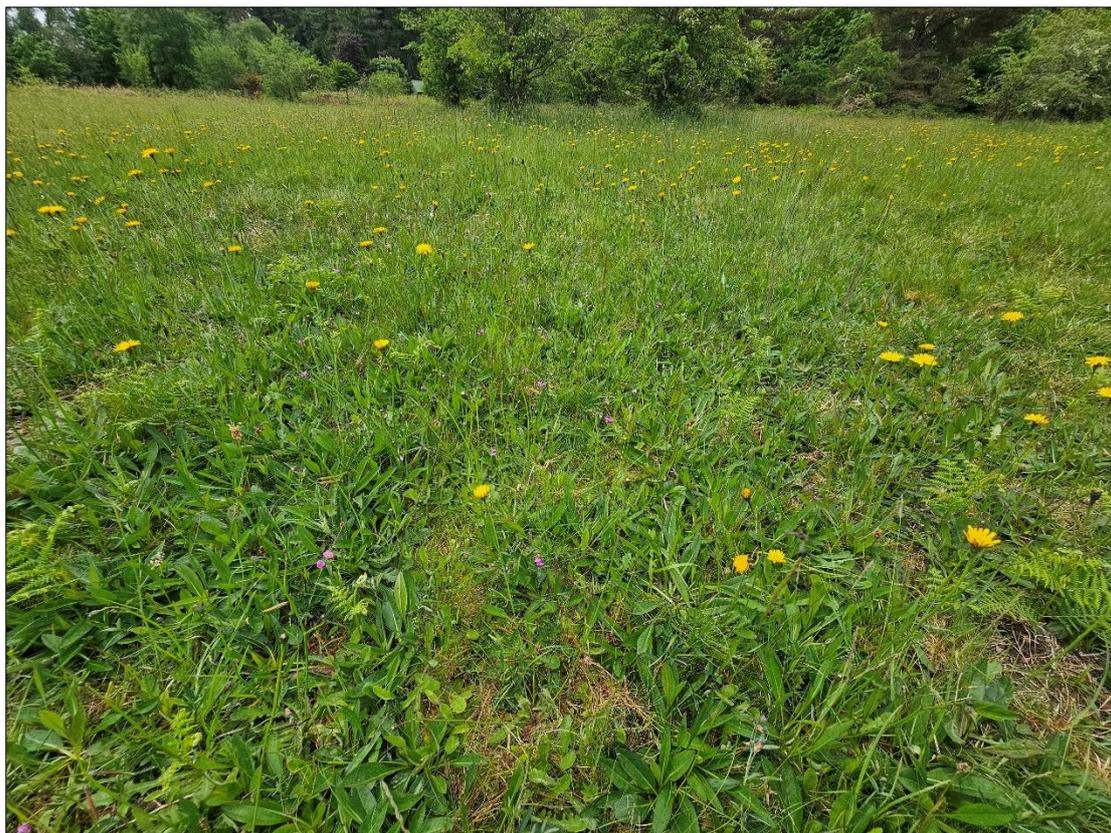
This type of grassland is characterised by dense low swards of narrow-leaved grasses such as bents (*Agrostis capillaris*, *A. tenuis*), fescues (*Festuca* spp.), Sweet Vernal-grass (*Anthoxanthum odoratum*), Wavy Hair-grass (*Deschampsia flexuosa*) and Mat-grass (*Nardus stricta*). Purple Moor-grass (*Molinia caerulea*) may be present but should not dominate. Wood-rushes (*Luzula* spp.), Heath Rush (*Juncus squarrosus*) and small sedges such as Green-ribbed Sedge (*Carex binervis*) and Pill Sedge (*Carex pilulifera*) may also be prominent. Common broadleaved herbs include Heath Bedstraw (*Galium saxatile*), Tormentil (*Potentilla erecta*), White Clover (*Trifolium repens*), Devil's-bit Scabious (*Succisa pratensis*), Sheep's Sorrel (*Rumex acetosella*), Heath Speedwell (*Veronica officinalis*), Common Dog violet (*Viola riviniana*), Lousewort (*Pedicularis sylvatica*) and Yarrow (*Achillea millefolium*).

Herbs of **improved agricultural grassland - GA1** may be well represented in areas that are semi-improved. Moss cover is often extensive. Dwarf shrubs may also be present (particularly *Calluna vulgaris*, *Erica cinerea* and *Vaccinium myrtillus*) but cover of these should not exceed 25%. Scattered shrubs of Hawthorn (*Crataegus monogyna*) or patches of gorse (*Ulex* spp.) or Bracken (*Pteridium aquilinum*) are common. Acid soils that are contaminated with heavy metals, mostly from old copper mines, and which support a type of grassland with abundant Spring Sandwort (*Minuartia verna*), Ribwort Plantain (*Plantago lanceolata*), Red Fescue (*Festuca rubra*) and Common Mouse-ear (*Cerastium fontanum*) should be included in this category.

*Links with Annex I:* This category includes the priority habitat, '\*species-rich *Nardus* grasslands on siliceous substrates in mountain areas (6230)'. High species diversity is not characteristic but species-poor stands that appear to be the product of overgrazing are excluded. As with **dry calcareous and neutral grassland - GS1**, acid grasslands of old mine workings may also correspond to the annexed habitat 'Calaminarian grasslands of the *Violetalia calaminariae* (6130)' (Fossitt, 2000).

This is one of the more species rich habitats adjoining the reservoir on the western side. There are two main areas - one to the north of the anglers boathouse and one further north where tree planting has occurred.

Species recorded here include; Devil's bit Scabious (*Succisa pratensis*), Knapweed (*Centaurea nigra*), Cats ear (*Hypochoeris radicata*), Creeping Bent (*Agrostis stolonifera*), Common Bent (*Agrostis capillaris*), Ribwort Plantain (*Plantago lanceolata*), Bracken (*Pteridium aquilinum*), Bitter Vetch (*Lathyrus linifolius*), Yorkshire Fog (*Holcus lanatus*), Tormentil (*Potentilla erecta*), Spear Thistle (*Cirsium vulgare*), Perennial Rye-grass (*Lolium perenne*), Cock's-foot Grass (*Dactylis glomerata*) and Tufted Vetch (*Vicia cracca*).



**Plate 14. Species rich acid grassland north of the boathouse.**

#### **4.1.7. Scrub (WS1)**

This broad category includes areas that are dominated by at least 50% cover of shrubs, stunted trees or brambles. The canopy height is generally less than 5 m, or 4 m in the case of wetland areas. Scrub frequently develops as a precursor to woodland and is often found in inaccessible locations, or on abandoned or marginal farmland. In the absence of grazing and mowing, scrub can expand to replace grassland or heath vegetation. Trees are included as components of scrub if their growth is stunted as a result of exposure, poor soils or water logging. If tall trees are present, these should have a scattered distribution and should not form a distinct canopy. This category does not include areas that are dominated by young or sapling trees (<5 or 4 m in height) or young conifer plantations.

Scrub can be either open, or dense and impenetrable, and it can occur on areas of dry, damp or waterlogged ground. Common components include spinose plants such as hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), gorse (*Ulex europaeus*), juniper (*Juniperus communis*), bramble (*Rubus fruticosus* agg.) and erect or scrambling roses (*Rosa* spp.), in addition to a number of willows (*Salix* spp.), small birches (*Betula* spp.) and stunted hazel (*Corylus avellana*). Scrub may also contain bog-myrtle (*Myrica gale*) and broom (*Cytisus scoparius*). The field layer is often impoverished and poorly-developed but, in some situations, may be similar to that of woodland. Low-growing western gorse (*Ulex gallii*) and prostrate juniper (*Juniperus communis*) can also be components of heath. Note that any areas that are dominated by non-native shrubs should be excluded (Fossitt, 2000).

Scrub species recorded include; Gorse (*Ulex europaeus*), Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Bramble (*Rubus fruticosus* agg.) and Sally willows (*Salix cinerea* subsp. *atrocinerea*). The presence of scrub helps to protect young trees from grazing pressure by deer allowing them to get away. It also supports many invertebrates, fungi and breeding birds.



**Plate 15. Scrub provides habitat for a number of bird and invertebrate species and is the precursor to woodland.**

#### **4.1.8. Immature woodland (WS2)**

Immature woodland includes areas that are dominated by young or sapling trees that have not yet reached the threshold heights (5 m, or 4 m in the case of wetland areas) for inclusion in the woodland categories previously described. Recently planted areas and young plantations should also be included here, with the exception of **conifer plantations - WD4**. Any areas that are dominated by shrubs or stunted trees should be considered under **scrub - WS1** (Fossitt, 2000).

Areas of immature woodland that was planted are found to the north of the boat house. A variety of native and non-native species are recorded here – these include Sycamore (*Acer pseudoplatanus*), Field Maple (*Acer campestre*), Hawthorn (*Crataegus monogyna*), and Norway maple (*Acer platanoides*).

Trees were also planted on a small peninsula on the western side of the reservoir in between existing mature Hawthorn trees. The acid grassland in this area appears to be relatively species rich with Pignut (*Conopodium majus*) present in some abundance.

Unfortunately many of the trees here seem to have failed on account of browsing by deer and possibly trespassing sheep also.



**Plate 16. Recent planting of native trees on the western side of the reservoir have been damaged by browsing deer – the tree cages used here whilst providing protection for the trees from hare and rabbit are not sufficiently tall to stop browsing deer.**

#### **4.1.9. Buildings and artificial surfaces (BL3)**

This broad category incorporates areas of built land that do not fit elsewhere in the classification. It includes all buildings (domestic, agricultural, industrial and community) other than derelict stone buildings and ruins (see stone walls and other stonework - BL1). It also includes areas of land that are covered with artificial surfaces of tarmac, cement, paving stones, bricks, blocks or astroturf (e.g. roads, car parks, pavements, runways, yards, and some tracks, paths, driveways and sports grounds). Unpaved areas are excluded (see spoil and bare ground - ED2). Any other built structures that are not made of natural stone, including walls made of bricks, cement blocks and mass concrete, should be considered here. Note that greenhouses and polythene tunnels are excluded (see horticultural land - BC2), as are refuse dumps (see refuse and other waste - ED5). Plant cover should not exceed 50% (Fossitt 2000).

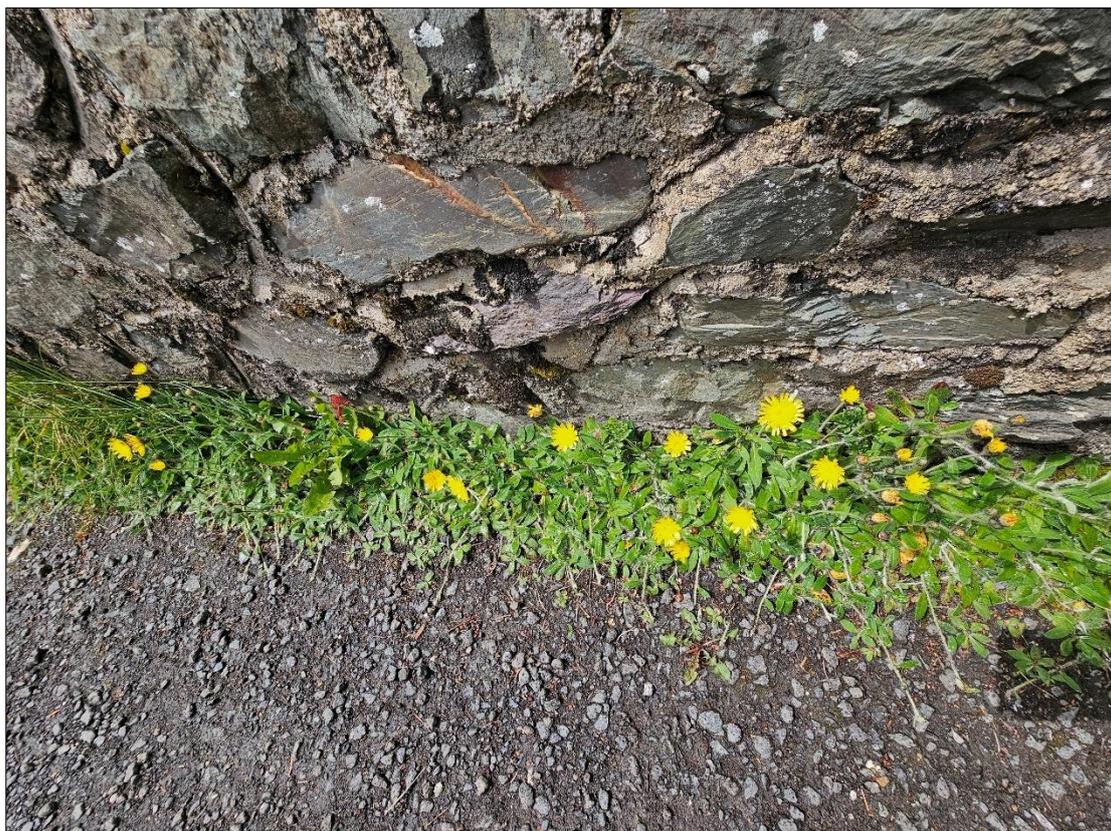
The wave wall and stone wall along the margins of the reservoir fall into this category. The invasive species Cotoneaster and Rhododendron (*Rhododendron ponticum*) recorded growing here should be removed if possible.

#### **4.1.10. Recolonising bare ground (ED3)**

This category is used for any areas where bare or disturbed ground, derelict sites or artificial surfaces of tarmac, concrete or hard core have been invaded by herbaceous plants. Vegetation cover should be greater than 50% for inclusion in this category. Most of the typical colonisers are ruderals, or weed plants. Common examples include colt's foot (*Tussilago farfara*), nettle (*Urtica dioica*), dandelion (*Taraxacum* spp.), willow-herbs (*Epilobium* spp.) and ragworts (*Senecio* spp.). Grasses are usually also present but should not dominate. Ground that is regularly trampled or driven over is usually characterised by greater plantain (*Plantago major*), knotgrass (*Polygonum aviculare*), pineapple weed (*Matricaria discoidea*) and shepherd's-purse (*Capsella*

*bursa-pastoris*). In urban areas, recolonising bare ground can be important for wildlife and may support a diverse flora, typically with a high proportion of non-native species, including butterfly-bush (*Buddleja davidii*), Japanese knotweed (*Reynoutria japonica*) and many other garden escapes. Note that if shrubs or grasses dominate, the habitat should be considered under the appropriate scrub/transitional woodland or grassland category (Fossitt, 2000).

The walking tracks, existing vehicle access tracks and areas of hard standing in the vicinity of the angling club is found in this category. These areas are vegetated along the margins with species such as Mouse ear hawkweed (*Hieracium pilosella*), Hairy brome, Ox eye daisy, Knapweed, Cowslip, Ribwort plantain, Yellow clover, Cock's foot grass, and Bird's foot trefoil.



**Plate 17. Mouse ear hawkweed (*Hieracium pilosella*) along the track.**

#### **4.1.11. Reed and large sedge swamps (FS1)**

This category includes species-poor stands of herbaceous vegetation that are dominated by reeds and other large grasses or large, tussock-forming sedges. Most reed and large sedge swamps are overwhelmingly dominated by one or a small number of species, as in the case of reedbeds. Stands of vegetation can range from very dense to open. Typical components include Common Reed (*Phragmites australis*), Common Club-rush (*Schoenoplectus lacustris*), Reed Sweet-grass (*Glyceria maxima*), Branched Bur-reed (*Sparganium erectum*), Reed Canary-grass (*Phalaris arundinacea*), Great Fen-sedge (*Cladium mariscus*), Greater Tussock-sedge (*Carex paniculata*), Bulrush (*Typha latifolia*), and Water Horsetail (*Equisetum fluviatile*). Stands of Sea Club-rush (*Bulboschoenus maritimus*) may also occur in brackish waters. Note that a number of the possible dominants have a late growing season and their full extent may be difficult to determine before mid-May.

Unlike **tall-herb swamps - FS2** below, the broadleaved herb component is minor. Vegetation typically lacks stratification as there is little or no development of an understorey element. In some situations there may be a mixture of other species such as Common Marsh-bedstraw (*Galium palustre*), Water Mint (*Mentha aquatica*), forget-me-nots (*Myosotis* spp.), Bogbean

(*Menyanthes trifoliata*), Marsh Cinquefoil (*Potentilla palustris*), Wild Angelica (*Angelica sylvestris*), Meadowsweet (*Filipendula ulmaria*) or Fool's Water-cress (*Apium nodiflorum*) (Fossitt, 2000).



**Plate 18. Large sedge swamp below the wet woodland.**

At the northern end of the lower reservoir is an area of large sedge swamp which is subject to fluctuations in water levels depending on the draw down from the reservoir. This is dominated by Water Horsetail (*Equisetum fluviatile*) with occasional Amphibious Bistort (*Persicaria amphibia*), Marsh Pennywort (*Hydrocotyle vulgaris*), Water Mint (*Mentha aquatica*), Lesser Spearwort (*Ranunculus flammula*), Common Reed (*Phragmites australis*), Reed Canary-grass (*Phalaris arundinacea*), Marsh Marigold (*Caltha palustris*) and Common Spike-rush (*Eleocharis palustris*). This area supports nesting Great Crested Grebe and other waterbirds. The fluctuating water levels of the reservoir can leave their nest vulnerable to predation.

#### **4.1.12. Eroding/upland rivers (FW1)**

This category includes natural watercourses, or sections of these, that are actively eroding, unstable and where there is little or no deposition of fine sediment. Eroding conditions are typically associated with the upland parts of river systems where gradients are often steep, and water flow is fast and turbulent. Rivers in spate are included. For some rivers on the seaward side of coastal mountains, particularly in the west of Ireland, eroding conditions persist to sea level because of comparatively steep gradients over short distances, and high rainfall. Small sections of other lowland rivers may also be eroding where there are waterfalls, rapids or weirs. The beds of eroding/upland rivers are characterised by exposed bedrock and loose rock. Pebbles, gravel and coarse sand may accumulate in places, but finer sediments are rarely deposited. These rivers vary in size but are usually smaller and shallower than depositing/lowland rivers - FW2. Small mountain streams that dry out periodically can be included if an obvious channel persists or wetland plants are present. (Fossitt, 2000).

The River Vartry discharges into a man-made channel between the upper and lower lakes after flowing through the spillway and siphon under the embankment of the upper reservoir. The steep sided channel was blasted through the existing bedrock and within this channel flows in a somewhat naturalistic setting over exposed bedrock and gravel riverbed. The banks of the channel itself have slowly become vegetated with ferns, mosses, liverworts and in some places willow, birch and ash saplings.



**Plate 19. The Vartry River in a man-made channel between the two reservoirs.**

#### **4.1.13. Treelines (WL2)**

A treeline is a narrow row or single line of trees that is greater than 5 m in height and typically occurs along field or property boundaries. This category includes tree-lined roads or avenues, narrow shelter belts with no more than a single line of trees, and overgrown hedgerows that are dominated by trees. Most treelines are planted and trees are often regularly spaced. They commonly comprise a high proportion of non-native species such as beech (*Fagus sylvatica*), horse chestnut (*Aesculus hippocastanum*), sycamore (*Acer pseudoplatanus*), limes (*Tilia* spp.), some poplars (*Populus* spp.) and conifers. Trees may occur on level ground or on banks of earth. The presence or absence of hedgerow or scrub at the base should be noted. If treelines are greater than 4 m wide at the base they should be considered as narrow stretches of woodland (Fossitt 2000).

The current treelines along the R755 and at the southern end of the study area are those that were historically present in the area.

#### **4.1.14. Stone walls and other stonework (BL1)**

The stonework and workmanship of previous stone masons is to be admired at the Vartry Reservoir. Although the local rock is acidic when traditional lime mortar is used instead of cement the walls can support a rich variety of ferns and other plants that enjoy calcareous conditions as well as mosses and lichens. It is important that these are not cleaned off – this might be the only habitat for them in the area.

The vegetation on the wave wall of the reservoir is also of interest – species recorded here include Mouse ear hawkweed (*Hieracium pilosella*), Wood sage (*Teucrium scorodonia*), Bird's-foot trefoil (*Lotus corniculatus*), and mosses. This is becoming invaded by bramble and willows. This area could be managed by annual strimming where required to prevent the development of woody material, bramble or shrubs.



Plate 20. Ferns on the stone wall by the R755.

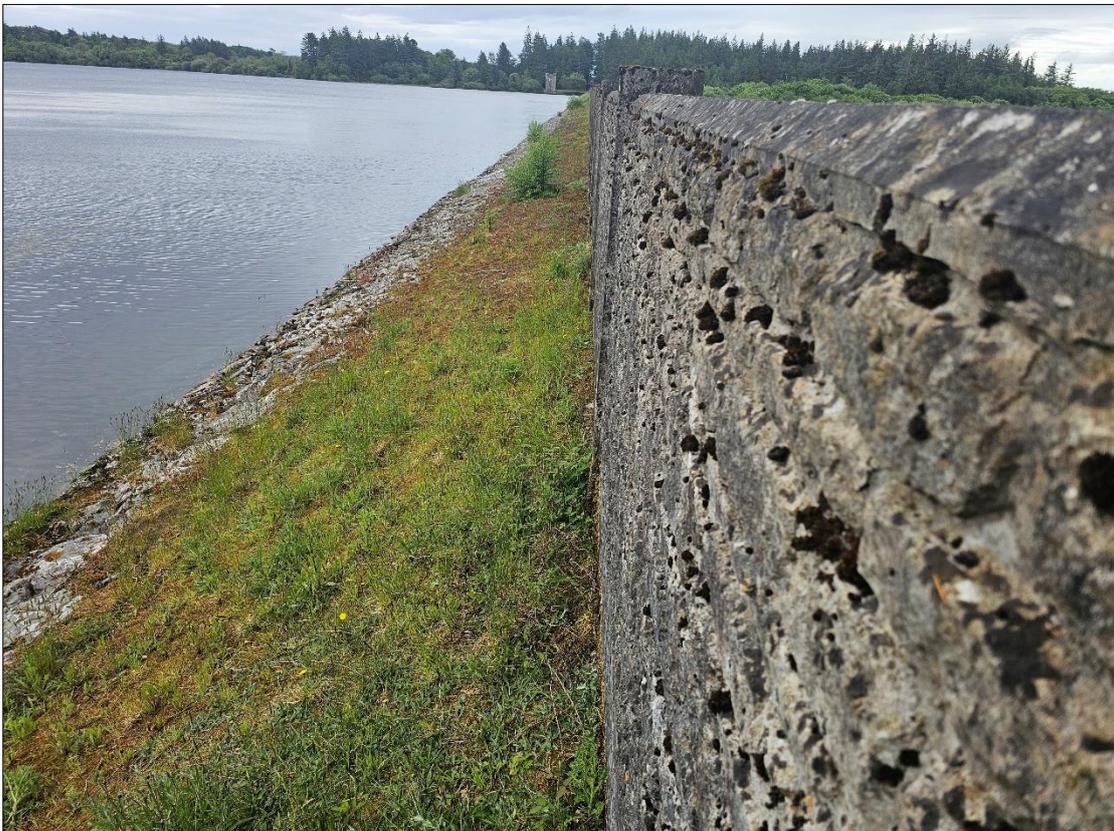


Plate 21. The wave wall.

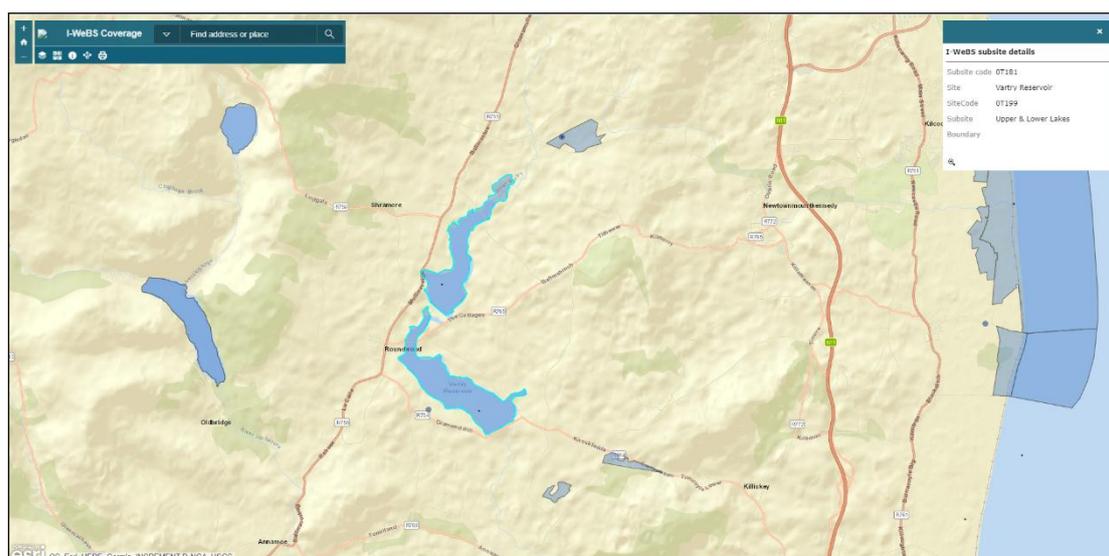
## 4.2 Birds

### 4.2.1 Birds of the Vartry Reservoir

Along the Vartry River between the two reservoirs riparian species such as grey wagtail (*Motacilla cinerea*), grey heron (*Ardea cinerea*), Irish dipper (*Cinclus cinclus*) and kingfisher (*Alcedo atthis*), which is a species, listed under Annex I of the EU Birds Directive, can be observed. The Kingfisher requires an open steep sandy/soil bank to make it's nest in.

The two reservoirs are counted during the winter months as part of the Irish Wetland Bird Survey (I-WeBS) by BirdWatch Ireland volunteers as shown on **Figure 25**. These surveys have recorded mute swan (*Cygnus olor*), whooper swan (*Cygnus cygnus*), greylag geese (*Anser anser*) and the ducks mallard (*Anas platyrhynchos*), teal (*Anas crecca*), wigeon (*Anas penelope*), tufted duck (*Aythya fuligula*), goldeneye (*Bucephala clangula*) and pochard (*Aythya ferina*).

Waterbirds include moorhen (*Gallinula chloropus*), little grebe (*Tachybaptus ruficollis*), great crested grebe (*Podiceps cristatus*) and coot (*Fulica atra*) all of which also breed here during the summer months. Other waterbirds that have been recorded, albeit less frequently, are curlew (*Numenius arquata*), snipe (*Gallinago gallinago*), jack snipe (*Lymnocyptes minimus*), lapwing (*Vanellus vanellus*) and green sandpiper (*Tringa ochropus*). Although some distance from the sea the cormorant (*Phalacrocorax carbo*) is a frequent visitor and can be seen hunting the trout within the reservoir.



**Figure 25. I-WeBS counts are conducted during the winter months on the Upper and Lower Vartry reservoirs (Source: BirdWatch Ireland).**

The woodlands support a rich community of nesting birds. These include; jay (*Garrulus glandarius*) and other common woodland birds such as blackbird (*Turdus merula*), song thrush (*Turdus philomelos*), mistle thrush (*Turdus viscivorus*), robin (*Erithacus rubecula*), dunnock (*Prunella modularis*), wren (*Troglodytes troglodytes*), chaffinch (*Fringilla coelebs*), great tit (*Parus major*), long-tailed tit (*Aegithalos caudatus*), greenfinch (*Carduelis chloris*), goldfinch (*Carduelis carduelis*), goldcrest (*Regulus regulus*), coal tit (*Parus ater*), willow warbler (*Phylloscopus trochilus*), chiff chaff (*Phylloscopus collybita*), and blue tit (*Parus caeruleus*).

During the site visits treecreeper (*Certhia familiaris*), redpoll (*Carduelis flammea cabaret*), crossbill (*Loxia curvirostra*), collared dove (*Streptopelia decaocto*), wood pigeon (*Columba palumbus*), blackcap (*Sylvia atricapilla*) and woodcock (*Scolopax rusticola*) have also been observed.



**Plate 22. Kingfisher nesting site.**

In recent years the great spotted woodpecker (*Dendrocopos major*) has bred at the reservoir woodlands. Keep your eyes peeled in the woods for their roosting/breeding holes and feeding signs particularly on standing dead tree trunks.

Birds associated with gorse scrub include linnet (*Carduelis cannabina*) and yellowhammer (*Emberiza citrinella*).

Other bird species recorded include raven (*Corvus corax*), hooded crow (*Corvus corone cornix*), pheasant (*Phasianus colchicus*), magpie (*Pica pica*) and in areas of open grassland meadow pipit (*Anthus pratensis*) and skylark (*Alauda arvensis*).

Birds of prey associated with the reservoir and woodlands include; buzzard (*Buteo buteo*), kestrel (*Falco tinnunculus*), sparrowhawk (*Accipiter nisus*), long eared owl (*Asio atus*) and the red kite (*Milvus milvus*), which was reintroduced to Ireland in County Wicklow and can now be found almost countywide.

Barn swallows (*Hirundo rustica*), sand martin (*Riparia riparia*) and house martin (*Delichon urbica*) can be seen hunting over the reservoirs and village. Swift (*Apus apus*) have also been recorded but may be just moving through as opposed to breeding given the elevation of the reservoir and village – see **Section 4.2.2** below.

Other species that are likely to occur within the lands but were not observed during site visits include whitethroat (*Sylvia curruca*), bullfinch (*Pyrrhula pyrrhula*), wheatear (*Oenanthe oenanthe*), fieldfare (*Turdus pilaris*) and redwing (*Turdus iliacus*) – the latter two are winter visitors. Cuckoo (*Cuculus canorus*), which is a declining species may be heard during the spring.

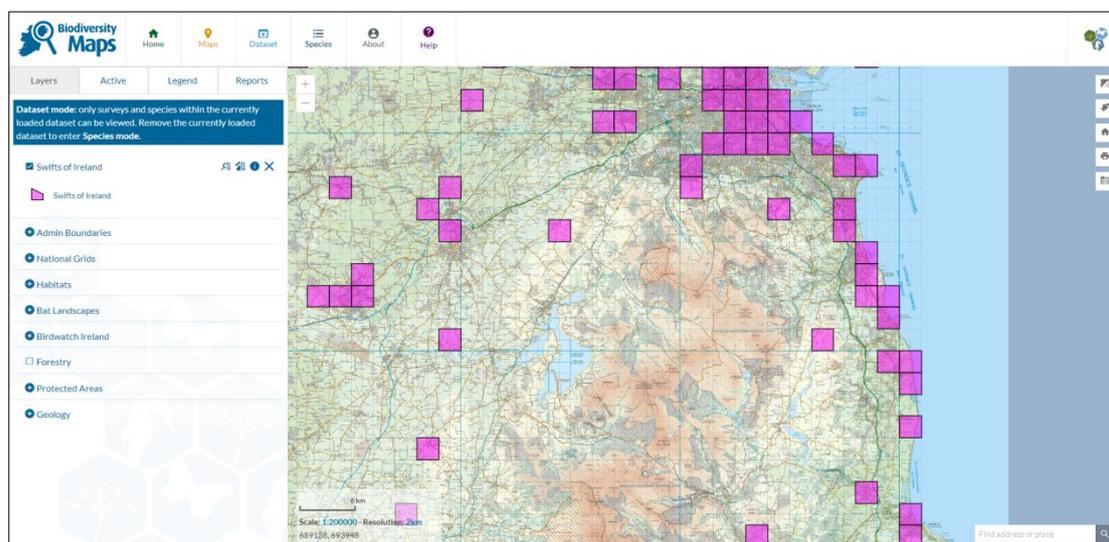
Gull species occasionally visit the lakes – especially species such as black-headed gull (*Larus ridibundus*) and less frequently common gull (*Larus canus*), herring gull (*Larus argentatus*) and great black backed gull (*Larus marinus*).

#### **4.2.2 Swifts**

An iconic bird of the summer is the Swift. Swifts are a migratory species which travel from tropical Africa to breed in Ireland every year. Swift numbers have declined by over 40% in the past twenty years. The main cause of this decline is loss of their breeding sites. They nest in

buildings in towns and villages. Their traditional nests can usually be found at the top of walls or in cavities in brick work. They gain access to the tops of walls by climbing behind the fascia board. When repairs or renovation work are carried out to roofs and guttering the birds can no longer gain access to their traditional nesting site. Since Swifts are colonial birds, repair or renovation work can often affect more than one pair of birds.

Swifts are not generally associated with the mountains and there are no records of Swifts from upland areas in the NBDC as can be seen on **Figure 26** below.



**Figure 26. Swift records from County Wicklow (Source: Swifts of Ireland, NBDC).**

The Tidy Towns Biodiversity Group in Roundwood erected a swift box and caller on the school in the village but this needs to be re-sited.

### 4.3 Mammals

The presence of badgers (*Meles meles*) was not confirmed within the area of the Neighbourhood Scheme but it is likely that they are present on adjoining lands.

The presence of Irish hare (*Lepus timidus hibernicus*) was confirmed by both sightings and their droppings, as was rabbit (*Oryctolagus cuniculus*) and pygmy shrew (*Sorex minutus*) was heard.

Fox is (*Vulpes vulpes*) undoubtedly present and the presence of otter (*Lutra lutra*) was confirmed by their spraints along the shoreline of the reservoir. The non-native species American mink (*Mustela vison*) is also likely to be present.

Red squirrel (*Sciurus vulgaris*) has been seen at the Vartry as has the Grey squirrel (*Sciurus carolinensis*). The latter may be declining as the Pine Marten (*Martes martes*) expands its range in County Wicklow following years of persecution. This species is altering the dynamic between the non-native grey squirrel and our native red squirrel which may be beginning to recover. There was evidence of Pine Marten attempting to enter one of the nest boxes which was erected in the Neighbourhood Scheme.

### 4.4 Bats

A bat walk was held in the village on the 23<sup>rd</sup> May 2024. The group met at the Parish Centre and explored the environs of the Church and the laneway behind the school as shown on **Figure 27** below.



Figure 27. Bats detected in Roundwood Village on the 23<sup>rd</sup> May 2024.

Two species of bats were recorded. These were Common Pipistrelle and Soprano pipistrelle bats. The sheltered, wooded laneway behind the school was particularly favourable to bats. Sonograms of their echolocation calls are presented below in Figures 28 and 29.

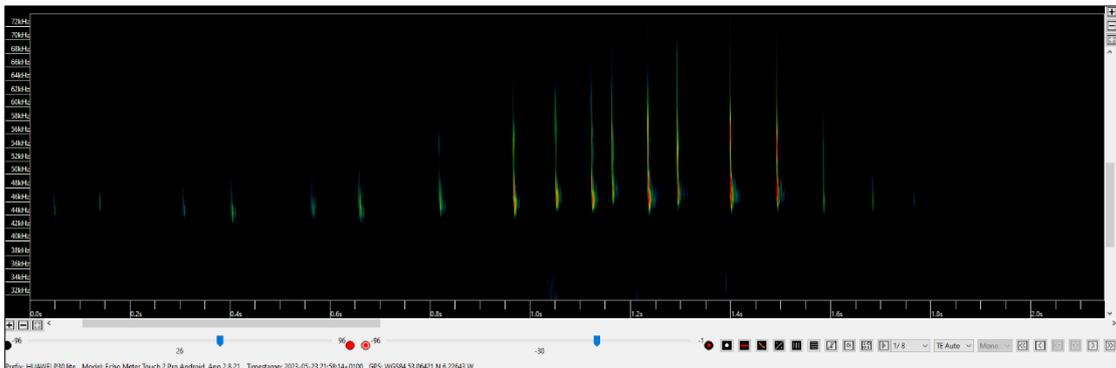


Figure 28. Sonogram of Common Pipistrelle bat in Roundwood.

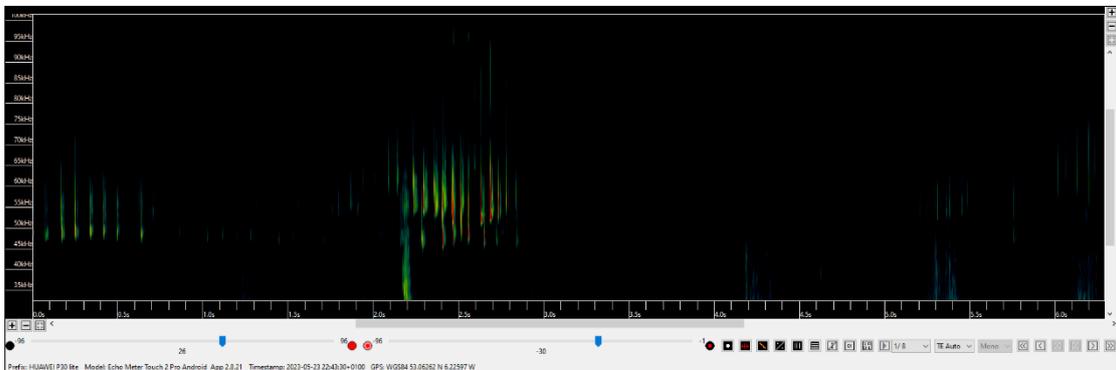


Figure 29. Sonogram of Soprano Pipistrelle and Common Pipistrelle bats in Roundwood.

#### 4.5 Invertebrates

A good diversity of butterflies were recorded from Roundwood Village and environs during the site visits and from other visits over recent years. These include small white (*Pieris rapae*), green veined white (*Pieris napi*), large white (*Pieris brassicae*), speckled wood (*Pararge aegeria*), orange tip (*Anthocharis cardamines*), peacock (*Inachis io*), meadow brown (*Maniola jurtina*), small tortoiseshell (*Aglais urticae*) and holly blue (*Celastrina argiolus*).

#### 4.6 Roundwood Graveyard

The tidy towns group have been busy planting a native hedgerow which is doing well at the graveyard. It looks fantastic and has established well.



**Plate 23. Native hedgerow planting at Roundwood Graveyard.**

There are also an interesting mix of native clovers (an important pollinator resource for bumblebees and other species) and bird's foot trefoil (the food plant for several butterfly species) becoming established on the gravels of the car park where the cars do not park – instead of using weed killer in these areas could they be conserved and mown annually managing them as a short mow meadow.

There is a large area of grassland within the graveyard that is currently mown regularly and the cuttings left. Could this be managed either as a short mow meadow or a long hay meadow and cut and collected at the end of the summer?

Could the native hedgerow be extended east into the graveyard car park in the long run and screen the eastern, northern and southern walls softening the stark look of the area and providing habitat. This planting could also be replicated on the eastern and southern perimeter of the graveyard in the adjoining fields – the cypress trees planted here are unsuitable for long term retention and a plan to replace them over time would be wise.



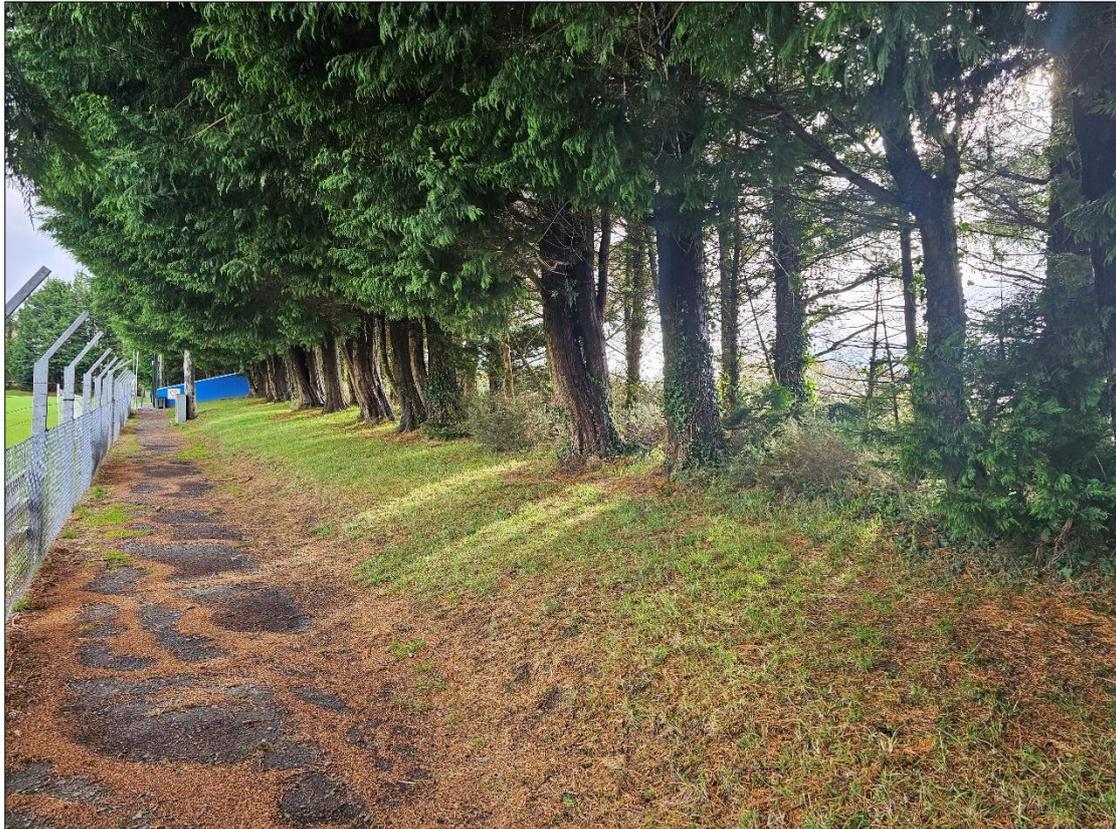
**Plate 24. Clovers becoming established in the gravels -could these be conserved?**



**Plate 25. Could the grassland in the graveyard be manged as a short mow meadow?**

#### 4.7 GAA Grounds

The GAA grounds include a large area of mown amenity grassland and is bounded to the south by a tall treeline (WL2) of Cypress (*Cupressus* sp.). Unfortunately these are not native and not great from the perspective of biodiversity. They are also prone to windblow and dropping of branches once mature. A long term objective here could include the replacement of this treeline with native species and these could be established on the southern side of the treeline where they will get light. Ideally they would be planted outside of the root zone of the trees as they will take a lot of the water that the native species will need to get going.



**Plate 26. Treeline of Cypress at the GAA grounds.**

The margins of the grounds could be managed as a short mow meadow and the cuttings removed to improve biodiversity in the sward.

A native hedgerow could also be established along the eastern edge of the carpark and maintained as a trimmed cut hedgerow.

Swift boxes would have a good chance of being used if they were erected on the club house building under the eaves of the roof.



**Plate 27. A native hedgerow could be established along this fence.**



**Plate 28. Could the margins of the club grassland be mown as a short mow meadow.**

#### **4.8 Sites in Roundwood Village**

Various sites in Roundwood Village were surveyed during the project including the grounds around the church, the school, the various housing estates and the general environs of the village.

There are no real areas of intact habitat of conservation value remaining within the village.

Observations and notes on the sites surveyed within the village are presented in **Table 2** in **Section 5.1** below which also sets out the biodiversity actions recommended for each.

**The opportunities for biodiversity action in the village are mostly limited to private spaces as the majority of lands are in private ownership.**

However if everyone took one or two biodiversity actions in their back garden or communal space where they live, work, are educated or play those actions would really add up.

Some of these ideas for biodiversity actions are explored below in **Section 5**.

### **5. LARGE SCALE BIODIVERSITY ACTIONS FOR ROUNDWOOD**

The most important area of natural habitat is the Vartry Reservoir and it is here that real action can be taken – see Section 5.2. As a state agency Uisce Éireann is obliged to deliver and implement the EU Nature Restoration law.

#### **The EU Nature Restoration Law**

To meet the EU-wide objectives for nature restoration, the Regulation sets quantified and time-bound restoration targets for habitats included in Annex I of the Habitats Directive (including forest habitats, peatlands, grasslands, rivers and lakes) as well as targets for habitats of protected species under the Habitats and the Birds Directives, and restoration targets for essential marine habitats covered by the nature directives and the Marine Strategy Framework Directive.

Beyond the habitats covered by existing legislation, to ensure the continued provisions of ecosystem services to European citizens, the law requires Member States:

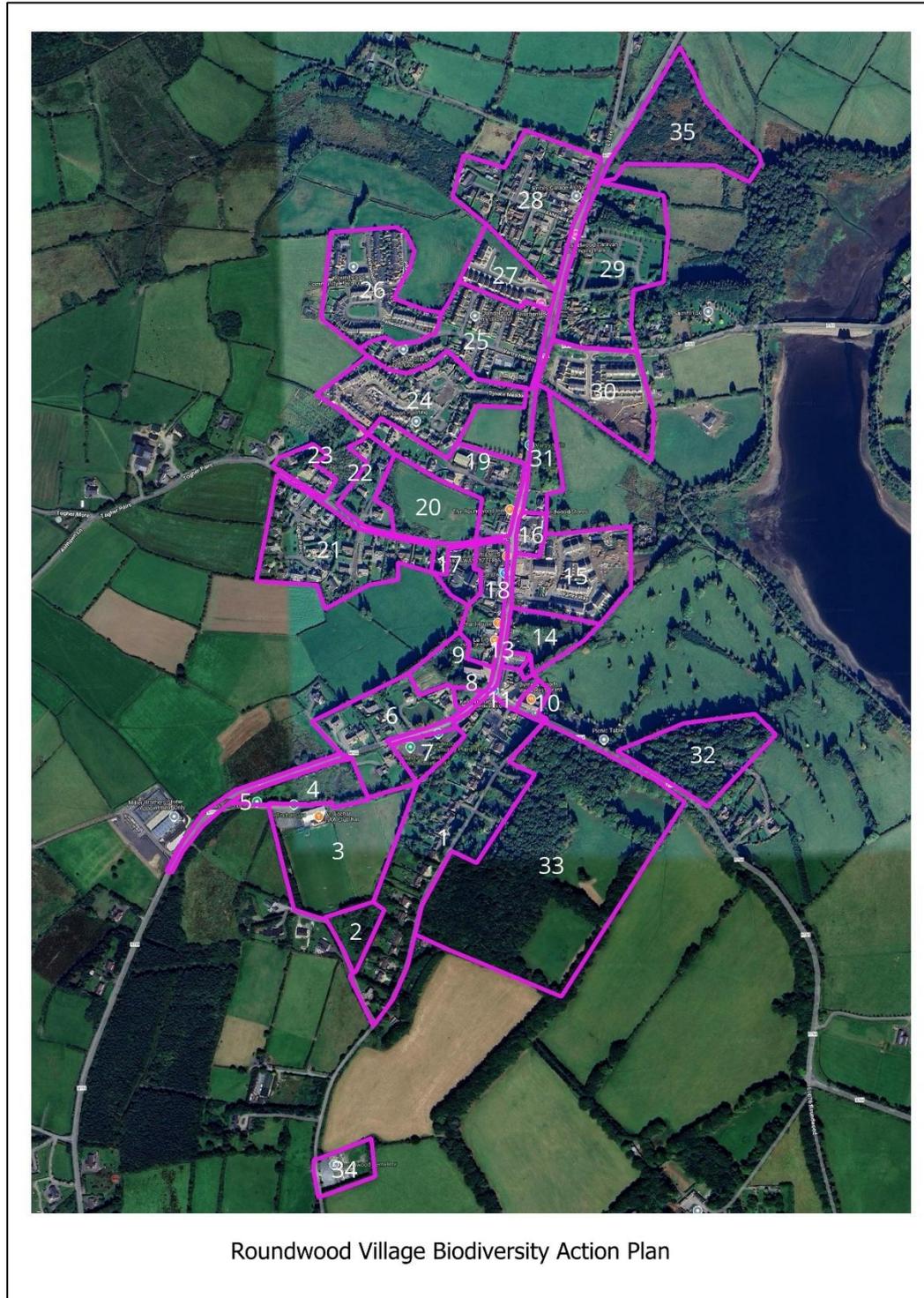
- to halt the loss of urban green and increase urban green space and urban tree canopy cover
- to restore the natural connectivity of rivers and the natural functions of related floodplains
- to halt and reverse pollinator decline
- to restore and rewet peatlands under agricultural use
- to put in place measures aiming to increase farmland bird populations and to achieve a positive trend in certain other key biodiversity indicators in agricultural ecosystems
- to achieve a positive trend in a range of biodiversity indicators in forest ecosystems
- to contribute to the EU-level commitment of planting at least three billion additional trees by 2030

**Let's put the Nature Restoration Law into action and restore what we can in Roundwood Village and the Vartry Reservoir.**

### 5.1 Actions for Biodiversity Areas in Roundwood

There are a number of observations on how specific habitats within the village should be conserved. These are outlined below. Many of these habitat management recommendations also apply to those habitats within the Vartry Reservoir.

The biodiversity action plan for Roundwood identified 35 locations within the town which were surveyed in 2022 /2023/2024 as part of this study. They are shown on **Figure 30** below.



**Figure 30. Potential Biodiversity Action Areas in Roundwood.**

Observations on the current condition and management of these areas from the perspective of biodiversity were conducted as part of this survey and recommendations for action are presented.

These are summarised below in **Table 2**.

The locations of these areas for biodiversity action are further presented in the maps in **Appendix 1**.

Many actions may require the permission of private landowners, residents groups, businesses or collaboration with the local authority (Wicklow County Council (and Dublin City Council at the Vartry Reservoir)) or the statutory agencies (Uisce Éireann, Inland Fisheries Ireland, National Parks and Wildlife Service and the EPA) and may need to be integrated into a wider plan or project.



**Plate 29.** If you are planting a hedge if you use native species you will support more biodiversity than non-native ornamental species. Blackthorn in flower in May.

The new native hedge at Roundwood Cemetery is great to see.

Could a new hedgerow be planted outside the earthen berm surrounding the Vartry Trails Car Park and protected from deer?

A native hedgerow could also be established along the earthen bank below the treeline adjoining the Roundwood - Kilmacanogue Road in the Vartry Reservoir.



**Plate 30. Old stone walls such as those in the village provide habitats for many invertebrates and nesting birds as well as wall flora such as these Rustyback and Black spleenwort ferns.**



**Plate 31. Bare ground on earthen banks can provide habitat for nesting solitary bees and beetles. Ideally they are south facing for insects but north facing banks can support liverworts and mosses as can be seen here.**



**Plate 32. Gorse scrub provides important habitat for wildlife.**



**Plate 33. Butterfly Bush. This is an invasive species so try to control its spread both in the village and in the wider landscape. This shrub has become established on the Varray Walking trails. There is a large population of it behind the car park at the Parish Centre.**



**Plate 34.** Could you create a mini woodland in your housing estate with native species such as the Wood sorrel and Pignut you can see here below the trees?



**Plate 35.** Gravelled areas can be a great place to establish native species such as Ox eye daisy or other wildflowers that need low nutrient levels. Please do not sow 'wildflower' mixes in the countryside. They may contain invasive species or plants that are not native to or appropriate to Ireland. Why not collect seed yourself from local populations?



Plate 36. Hedge mustard (*Alliaria petiolata*) - the food plant of the Green veined white and Orange tip butterflies. Did you think it was a weed?



Plate 37. Bramble and dog rose give birds safe places to roost and forage in.



**Plate 38. Oak – one of our most important native species.**



**Plate 39. Could you consider planting native primroses instead of non-native daffodils for spring planting?**



**Plate 40. Ivy – a really important food plant for wildlife – used by Holly blue butterflies and many birds and small mammals eat the berries.**



**Plate 41. Elder – rich in flowers and berries in our hedgerows.**

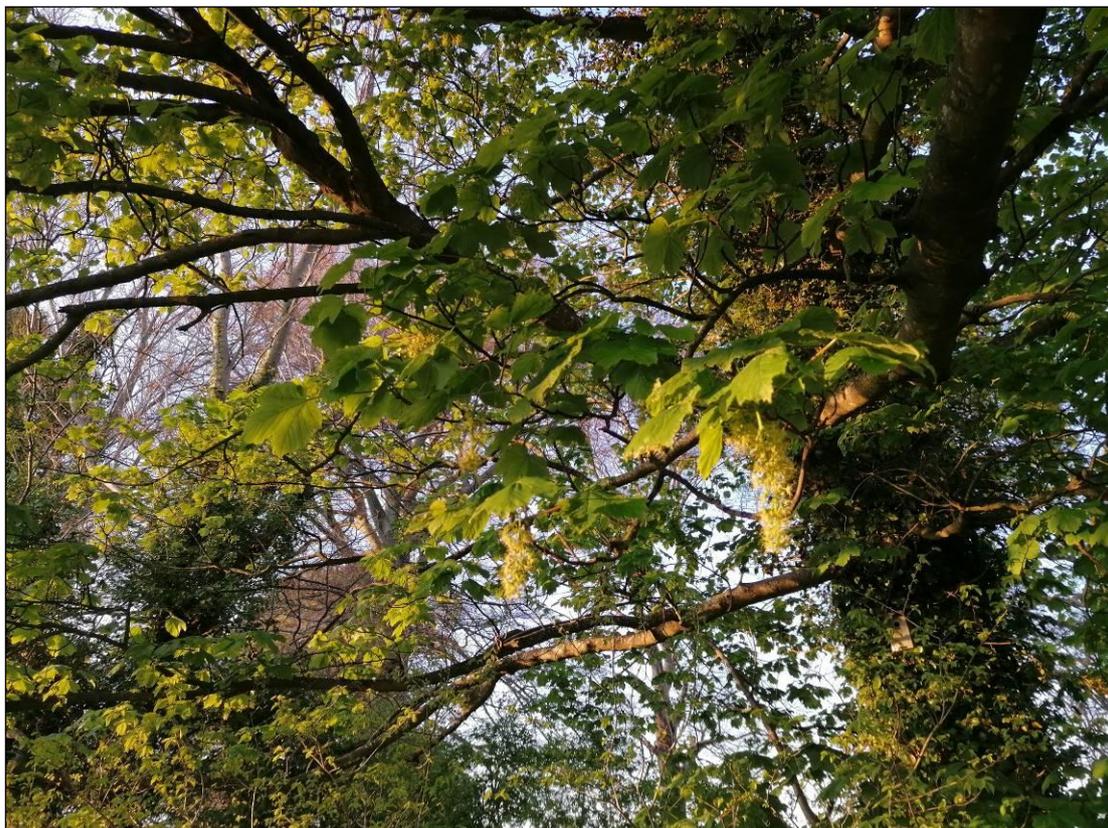


Plate 42. Although Sycamore is not native to Ireland it supports many insects.



Plate 43. Peacock caterpillars on Nettle. Could you leave a few clumps for them in a sunny spot?



**Plate 44. Resist the temptation to mow the dandelions and leave them for the emerging bumblebees in spring. Who knows what else might flower...**



**Plate 45. The lichens on old stonework, walls and trees are a symbiotic relationship between a fungus and an algae. Some are indicators of good air quality. Please don't go cleaning them off.**



**Plate 46. Native shrubs, bramble tangles and long grass such as this are where birds naturally nest, small mammals forage and invertebrates live. Could you allow a natural nesting area to develop?**

**Table 2. Areas of Biodiversity Importance identified in Roundwood Village and its environs and possible biodiversity actions for same.**

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
Private Property - residential	1	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GA2 Amenity grassland</li> </ul>	In general most private homes have an area of driveway, mown grass, non-native ornamental shrubs and flowerbeds	<p>Homeowners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Grassland management - short mow meadow could be an option in part of a garden with some areas allowed to grow long at margins/near base of hedgerows/property boundaries</p> <p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p> <p>Some areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p> <p>Adding more pollinator friendly and native planting in flower beds</p> <p>Considering adding native tree or shrub species on the property</p>
An Tochar GAA woodland	2	<ul style="list-style-type: none"> <li>• WN - native woodland copse</li> </ul>	Ownership is unknown	Get permission to survey this and see if it can be protected as a small biodiversity area
An Tochar GAA	3	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• GA2 Amenity grassland</li> </ul>	<p>Mostly non-native species present</p> <p>There is plenty of space in the north eastern part of the grounds where some actions for biodiversity could be implemented</p>	<p>Consider grassland management</p> <p>Plan for the establishment of native hedgerows in the environs of the club and the removal of the non-native Cypress</p>

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
			Long term plan for the replacement of the Cypress treelines is recommended	
Land between GAA and R755	4	<ul style="list-style-type: none"> <li>• WN - native woodland copse</li> <li>• WS emergent woodland</li> </ul>	<p>Native tree and shrub species present here</p> <p>Small wetland habitat</p>	<p>Threatened by development - land was for sale</p> <p>Provides important screening for the GAA complex - both visual and acoustic</p> <p>Also provides important natural vista entering the village</p>
R755 to Annamoe	5	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> </ul>	<p>Loss of hedgerows adjoining road</p> <p>Non-native species used in Miller Stone planting</p>	<p>Reinstate native hedgerows along road verges and at Miller Stone</p> <p>Loss of the view of the mountains leaving the village</p>
Private Housing R755	6	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GA2 Amenity grassland</li> </ul>	<p>In general most private homes have an area of driveway, mown grass, non-native ornamental shrubs and flowerbeds</p>	<p>Homeowners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Grassland management - short mow meadow could be an option in part of a garden with some areas allowed to grow long at margins/near base of hedgerows/property boundaries</p> <p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p> <p>Some areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p>

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
				<p>Adding more pollinator friendly and native planting in flower beds</p> <p>Considering adding native tree or shrub species on the property</p>
Roundwood Playground	7	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> </ul>	<p>No natural habitat to educate children</p> <p>Playground is exposed to the road - noise and fumes from traffic</p>	<p>Consider planting a native hedgerow around the playground - will help to reduce pollution from cars and traffic noise</p>
HSE Centre	8	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> </ul>	<p>Grassland at the front of the centre has potential to be quite species rich</p>	<p>Manage as a short mow meadow</p>
Church of St. Laurence O'Toole	9	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GS Semi-natural grassland</li> </ul>	<p>Could the church support a bat roost?</p>	<p>Survey the church for bats</p> <p>Parish could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Grassland management - short mow meadow could be an option in part of the church grounds with some areas allowed to grow long at margins/near base of trees/property boundaries</p> <p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p>

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
				<p>Some grassland areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p> <p>Adding more pollinator friendly and native planting in flower beds</p> <p>Considering adding native tree or shrub species on the property</p> <p>Protect land from development</p> <p>Cherry laurel in laneway beside the church should be removed</p>
Private Property – Woods & Byrne	10	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> </ul>		<p>Property owners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Adding more pollinator friendly and native planting in flower beds/window boxes</p> <p>Considering adding native tree or shrub species on the property – native hedgerow around the car park at the rear of the building</p>
Private Property – Miller Stone	11	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>•</li> </ul>		<p>Property owners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Adding more pollinator friendly and native planting in planters</p>
Private Property – rear of Parish Hall	12	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> </ul>	Non-native invasive Buddleia	Remove and control

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
		<ul style="list-style-type: none"> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> </ul>		
Parish Hall	13	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GA2 Amenity grassland</li> </ul>	No biodiversity area	Could car park be improved with native planting - even climbers like honeysuckle/ivy on the walls?
Gardai Station and Credit Union	14	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> </ul>	Large area of undeveloped land at the rear of these properties provides wildlife habitat in the village	<p>Make sure ornamental planting is pollinator friendly</p> <p>Property owners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p>
Causeway Meadows	15	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GA2 Amenity grassland</li> </ul>	In general most private homes have an area of driveway, mown grass, non-native ornamental shrubs and flowerbeds	<p>Homeowners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Grassland management - short mow meadow could be an option in part of a garden with some areas allowed to grow long at margins/near base of hedgerows/property boundaries</p> <p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p>

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
				<p>Some areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p> <p>Adding more pollinator friendly and native planting in flower beds</p> <p>Considering adding native tree or shrub species on the property</p>
Coach House and Roundwood Stores	16	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> </ul>	<p>Lack of street trees in the village</p> <p>Ornamental planting</p> <p>Potential to add native hedgerow and landscaping around perimeter of the car park</p>	<p>Property owners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p>
Roundwood School	17	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> </ul>	<p>Importance of laneway at the rear of the school for bats</p>	<p>Property owners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p>
Businesses and Private residences on Main Street	18	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> </ul>	<p>Lack of street trees in the village</p> <p>Ornamental planting</p>	<p>Consider trees within the streetscape</p> <p>Make sure ornamental planting is pollinator friendly</p> <p>Property owners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Put venison on the menu!</p>
Roundwood Inn and Private Residences	19	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> </ul>	<p>Lack of street trees in the village</p>	<p>Consider trees within the streetscape</p> <p>Make sure ornamental planting is pollinator friendly</p>

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
			Ornamental planting	<p>Property owners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Continue to have venison on the menu.</p>
Field at Togher Pairc	20	<ul style="list-style-type: none"> <li>• GA1 - Agricultural grassland</li> </ul>	Parking and set down area for the school is proposed here	Conserve the remainder of the field as a community open space and develop it for biodiversity
Togher Park	21	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GA2 Amenity grassland</li> </ul>	In general most private homes have an area of driveway, mown grass, non-native ornamental shrubs and flowerbeds	<p>Homeowners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Grassland management - short mow meadow could be an option in part of a garden with some areas allowed to grow long at margins/near base of hedgerows/property boundaries</p> <p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p> <p>Some areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p> <p>Adding more pollinator friendly and native planting in flower beds</p> <p>Considering adding native tree or shrub species on the property</p>
Private Property - residential	22	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> </ul>	In general most private homes have an area of driveway, mown grass,	Homeowners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
		<ul style="list-style-type: none"> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GA2 Amenity grassland</li> </ul>	non-native ornamental shrubs and flowerbeds	<p>Grassland management – short mow meadow could be an option in part of a garden with some areas allowed to grow long at margins/near base of hedgerows/property boundaries</p> <p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p> <p>Some areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p> <p>Adding more pollinator friendly and native planting in flower beds</p> <p>Considering adding native tree or shrub species on the property</p>
Private Property - residential	23	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GA2 Amenity grassland</li> </ul>	In general most private homes have an area of driveway, mown grass, non-native ornamental shrubs and flowerbeds	<p>Homeowners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Grassland management – short mow meadow could be an option in part of a garden with some areas allowed to grow long at margins/near base of hedgerows/property boundaries</p> <p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p> <p>Some areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p>

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
				<p>Adding more pollinator friendly and native planting in flower beds</p> <p>Considering adding native tree or shrub species on the property</p>
Djouce Meadow	24	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GA2 Amenity grassland</li> </ul>	In general most private homes have an area of driveway, mown grass, non-native ornamental shrubs and flowerbeds	<p>Homeowners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Grassland management – short mow meadow could be an option in part of a garden with some areas allowed to grow long at margins/near base of hedgerows/property boundaries</p> <p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p> <p>Some areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p> <p>Adding more pollinator friendly and native planting in flower beds</p> <p>Considering adding native tree or shrub species on the property</p>
Vartry Heights	25	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> </ul>	In general most private homes have an area of driveway, mown grass, non-native ornamental shrubs and flowerbeds	<p>Homeowners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Grassland management – short mow meadow could be an option in part of a garden with some areas allowed</p>

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
		<ul style="list-style-type: none"> <li>• GA2 Amenity grassland</li> </ul>		<p>to grow long at margins/near base of hedgerows/property boundaries</p> <p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p> <p>Some areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p> <p>Adding more pollinator friendly and native planting in flower beds</p> <p>Considering adding native tree or shrub species on the property</p>
Ashwood	26	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GA2 Amenity grassland</li> </ul>	<p>In general most private homes have an area of driveway, mown grass, non-native ornamental shrubs and flowerbeds</p> <p>There is a lot of cherry laurel hedging unfortunately</p> <p>Some areas could be planted up with a native hedgerow or small pockets of native trees</p>	<p>Homeowners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Grassland management - short mow meadow could be an option in part of a garden with some areas allowed to grow long at margins/near base of hedgerows/property boundaries</p> <p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p> <p>Some areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p> <p>Adding more pollinator friendly and native planting in flower beds</p>

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
				Considering adding native tree or shrub species
The Willows	27	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GA2 Amenity grassland</li> </ul>	In general most private homes have an area of driveway, mown grass, non-native ornamental shrubs and flowerbeds	<p>Homeowners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Grassland management – short mow meadow could be an option in part of a garden with some areas allowed to grow long at margins/near base of hedgerows/property boundaries</p> <p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p> <p>Some areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p> <p>Adding more pollinator friendly and native planting in flower beds</p> <p>Considering adding more native tree or shrub species on the property along the watercourse – it’s great to see the existing tree planting here</p>
Ashtown Lane - Private Property - residential	28	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GA2 Amenity grassland</li> </ul>	In general most private homes have an area of driveway, mown grass, non-native ornamental shrubs and flowerbeds	<p>Homeowners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Grassland management – short mow meadow could be an option in part of a garden with some areas allowed to grow long at margins/near base of hedgerows/property boundaries</p>

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
				<p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p> <p>Some areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p> <p>Adding more pollinator friendly and native planting in flower beds</p> <p>Considering adding native tree or shrub species on the property</p>
Caravan Park and Private Housing	29	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GA2 Amenity grassland</li> </ul>	In general most private homes have an area of driveway, mown grass, non-native ornamental shrubs and flowerbeds	<p>Homeowners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Grassland management – short mow meadow could be an option in the caravan park or part of a garden with some areas allowed to grow long at margins/near base of hedgerows/property boundaries</p> <p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p> <p>Some areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p> <p>Adding more pollinator friendly and native planting in flower beds</p> <p>Considering adding native tree or shrub species on the property</p>

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
Bracken Demesne	30	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• BL1 Stone walls and other stonework</li> <li>• WS3 Ornamental shrubs</li> <li>• GA2 Amenity grassland</li> </ul>	In general most private homes have an area of driveway, mown grass, non-native ornamental shrubs and flowerbeds	<p>Homeowners could consider if any of the forty actions identified in <b>Section 6</b> would be suitable for their property</p> <p>Grassland management - short mow meadow could be an option in part of a garden with some areas allowed to grow long at margins/near base of hedgerows/property boundaries</p> <p>Raising the mowing height several centimetres would allow native plants such as Selfheal, Clovers and Yarrow to flower in the lawn</p> <p>Some areas could be allowed to grow long for the summer and then cut and collect these areas in the autumn and compost them</p> <p>Adding more pollinator friendly and native planting in flower beds</p> <p>Considering adding native tree or shrub species on the property</p>
Treelines in the Village - Private Property - residential	31	<ul style="list-style-type: none"> <li>• WL2 Treeline</li> </ul>	Important mature treeline in the village	Consider TPO on these trees
Woodland adjoining the picnic bench on road to Roundwood Park	32	<ul style="list-style-type: none"> <li>• WN1 - oak woodland</li> <li>• WS3 Ornamental planting</li> </ul>	<p>Oak woodland grazed by sheep/deer - privately owned</p> <p>No understory structure in the woods</p> <p>Picnic area with some ornamental planting</p>	<p>Approach landowner to see if they would consider protecting this woodland with funding from one of the Forest Service woodland schemes and excluding grazers to allow woodland flora and understory to develop</p> <p>Increase amount of native species by putting in a hedge adjoining the fence at the picnic area</p>

Name	Map No.	Habitats Present	Comments/observations	Recommended Actions
Roundwood Park Woodland	33	<ul style="list-style-type: none"> <li>• WD1 Mixed Broadleaved Woodland</li> </ul>	<p>Woodland dominated by Beech and grazed by sheep/deer</p> <p>No understory structure</p>	<p>Approach landowner to see if they would consider protecting this woodland with funding from one of the Forest Service woodland schemes and excluding grazers to allow woodland flora and understory to develop</p>
Roundwood Cemetery	34	<ul style="list-style-type: none"> <li>• BL3 Buildings and artificial surfaces</li> <li>• GA2 Amenity grassland</li> <li>• WL1 Hedgerow</li> <li>• ED2 Exposed gravel and soils</li> </ul>	<p>New native hedgerow has established well and looks great</p>	<p>Consider developing native hedgerow around the perimeter of the graveyard</p> <p>Manage grassland through short mow meadow – cut and collect</p> <p>Plan for long term replacement of Cypress trees with native species</p>
Wetland Habitat at Togher Beg	35	<ul style="list-style-type: none"> <li>• WS1 Scrub</li> <li>• GS4 Wet grassland</li> <li>• FW1 Upland watercourse</li> </ul>	<p>These habitats form a small wetland area that buffer the stream and protect the water which then flows into the reservoir</p> <p>Japanese knotweed is present along the roadside verge on the eastern side of the road</p>	<p>There should be no drainage or clearance of vegetation in this area – it is an important habitat</p> <p>Japanese knotweed is present along the roadside verge on the eastern side of the road and should be fenced off and treated to prevent accidental spread by machinery</p>

## 5.2 Actions for Biodiversity at Vartry Reservoir

The following actions were viewed on the ground and actions for same discussed with the Biodiversity Officer from Uisce Éireann during the site walkover. They are further expanded on below.

- Ash die back - allow the trees to dismantle where safe to do so
- Enrichment planting of native tree and shrub species in grassland around the areas where meadow management isn't possible
- Investigate drain blocking in wet woodland between the two reservoirs
- Management of the embankment grassland
- Tackling invasive species – these include Cherry laurel, Montbretia, Rhododendron, Buddleia
- Buildings and structures should be surveyed for bats
- Hibernation potential for bats in the middle valve building
- Bryophytes of the canyon
- Check about Fisheries actions in channel
- It was noted that there was good usage of nest boxes in the Neighbourwood Scheme area – additional provision of nest boxes could be expanded elsewhere
- Some germination of bluebell seed below the beech - fence off this area with sign to explain that ground vegetation is recovering
- Acid grassland on west side of reservoir with dry meadow grassland on the embankment and east side – management for both required
- Importance of vegetation near the overflow sump
- Nature based solutions for water quality – including increased woodland cover around the reservoir
- Pine marten - evidence of activity at some boxes
- Scrub is providing protection for emerging trees
- Some annual mowing along margins of track is ok - adds diversity
- Bramble growth management on stone embankment
- Potential for grazing the peninsula on the western side of the upper reservoir – the grassland here has good populations of pig nut. The tree planting here has mostly been compromised by deer browsing.
- Potential to build a Sand Martin tower
- Diversification of Coillte block surrounding the car park with thinning and CCF management – the aim here should be to increase native component and stabilise the stand for the long term
- Devil bit scabious - potential for this area of grassland to become colonised and managed for marsh fritillary butterfly
- If additional benches are proposed for the trail to keep them natural and in keeping with the place – a large hardwood log with the top skimmed off - allowed to sit into ground and rot over time as opposed to urban benches/seating
- Awareness among the angling community and other visitors to the reservoir of biosecurity
- Impacts of fluctuating water levels on the habitats and species
- 

**They also need to be discussed and agreed with the local staff and groundsmen and contractors who look after the lands around the Vartry Reservoir.**

### 5.2.1. Grassland Management

#### **Mowing/Grazing**

The main threat to the areas of species rich grassland and other grassland habitats adjoining the reservoir arises from the lack of an appropriate grassland management/mowing regime.

In the absence of appropriate mowing areas that were species rich such as the embankment have become dominated by the coarser grass species and this has resulted in the loss of species such as oxeye daisy, selfheal, orchids, etc.

Mowing at the wrong time of year has also meant that the few diverse species such as Cowslip that remain on the embankment were cut before they could flower and set seed. Mowing too early in the season may mean that flowering species cannot set seed and populations decline.

Under-grazing or a lack of appropriate mowing will result in the long run in a reduction in species diversity in the grasslands. This can be seen in some areas near the boat house but also in those areas adjoining the embankment and beside the lower paths in that area which are becoming colonised by bracken and brambles. A decision needs to be made if these areas are to be managed as grassland or be allowed to develop with native woodland softening the edge of the conifer plantations and increasing species diversity in terms of trees and shrubs. Areas where either grazing or mowing and collecting the cuttings is not feasible could be considered for future tree planting of native species.



**Plate 47. If possible the grassland here should be cut and collected or alternatively native woodland could be established here.**

A programme of mowing by Uisce Éireann staff should be planned for in the long term. Mowing of the grassland habitats on the embankment, the grasslands to the south of the embankment and the grassland areas to the north of the boat house and east of the reservoir should be done at the end of the summer months (not before the end of August) when wildflowers have set seed and all cuttings should be allowed to lie for 2 - 3 days to allow seed to fall **before being removed** and composted offsite to prevent the grassland from becoming rank and reduce fertility.

This will also avoid the bird breeding season (March to August inclusive) and ensure that local populations of pollinators and butterflies such as meadow brown, grasshoppers, etc. which

may use the site could breed successfully. Mowing should be preferably done with a scythe (or similar mechanised machine) as opposed to a flail mower or strimmer as the latter results in a fine mulch of plant material which is difficult to remove and increases nutrients within the site.

Management of grasslands for biodiversity should aim to achieve a good mosaic of sub-habitats within the grassland areas, including areas of short turf, bare ground, long grass and a limited amount of scrub. Small patches of bare soil, as along soil-creep or human trampled pathways, can also be beneficial for many invertebrates.

For tidiness the margins of the pedestrian paths through the area could be mown more regularly and the remaining areas mown as recommended above.

➤ **Maintenance of nutrient poor status in species rich areas**

This can be achieved through removal of the grass/vegetation cuttings following mowing. On no account should fertiliser be used on the grasslands being managed for biodiversity purposes and these areas should not be reseeded.

➤ **Devil's bit scabious rich grassland - potential marsh fritillary breeding site**

The area of acid grassland to the north of the angling clubhouse is rich in Devils'-bit scabious (*Succisa pratensis*), which is the food plant of the marsh fritillary butterfly (*Euphydryas aurinia*). This is a rare and scarce butterfly species and is the only insect species in Ireland listed under Annex II of the EU Habitats Directive. It was thought to be extinct in the county for many years and breeding populations were found nearby at Carrigower and at Boleynass. Both the populations at these sites have undergone recent declines as a result of lack of appropriate management and drainage. This butterfly relies on a good density of the food plant for its caterpillars and also a suitable structure within the sward.

Marsh fritillary colonies are typically part of a meta population with several colonies located close to one another and requires landscape-scale management in order to survive. A metapopulation is defined as a collection of local populations that are connected together as a result of occasional dispersal. Amongst these some will disappear and others will be founded. An important feature of metapopulations is that there will always be empty habitat within the system. It is possible for the majority of the habitat patches to be empty. The security of suitable places where the butterfly does not presently inhabit is essential to its survival in the long term.

At present the sward of acid grassland is too closely mown at the Vartry and requires a more tussocky structure for the butterflies to breed in. Ideally the sward here would be allowed to grow long to see what other species are present and then be grazed lightly by either cattle or horses (sheep are not suitable as they nibble everything to the ground). The aim is to produce an uneven patchwork of short and long vegetation by the end of the grazing period, between 8 and 25 cm. With suitable management the grassland at the reservoir could be brought into favourable condition for this scarce and rare butterfly and it could form part of the known network of sites in the vicinity.

### **Grazing**

Grazing with a native cattle species during the winter months could also be implemented on the embankment if cutting and collecting is not feasible here or elsewhere. The use of the zero fence collars or a temporary electric fence would curtail where the stock are grazing. The area of failed tree planting on the western side of the reservoir could also be managed as grassland as the sward here seemed relatively diverse.

### **5.2.2. Woodland Management**

The conifer stands near the embankment underwent a first thinning intervention as part of the management under a 'close to nature' continuous cover forestry management plan for the property.

The results of this are already clear to see with the restoration of native ground flora in parts and the successful establishment of native trees in the areas of enrichment planting.



**Plate 48. Woodruff in the ground flora.**

Broadcasting of bluebell (*Hyacinthoides non-scriptus*) seed below the Beech dominated areas in the southeast of the Neighbourwood Scheme site was completed as part of the Neighbourwood Scheme. (It was noted in that plan that it can take up to seven years for bluebells to develop from seed so this will be a slow process). These areas show promising signs of establishment of Bluebell. Fencing off this area with sign to explain that ground vegetation is recovering would be helpful.

Ash trees within the Reservoir should be monitored for Ash die-back and where safe to do so allowed to slowly dismantle themselves by falling apart as opposed to being cut down and removed.

There has been a series of tree planting actions within the reservoir in recent years some of which have failed on account of browsing pressure.

Only tree species that are native to Ireland and of certified native provenance should be introduced to the Vartry Reservoir pNHA recognising the natural vegetation of the area and it's designation as a pNHA. The Ogham Tree trail whilst educational and very well executed contains a number of non-native species such as Horse chestnut and Walnut would be better sited in the village itself or in the GAA Grounds - we need to try and keep the wild areas wild...

Also any trees planted without adequate protection from browsing deer will simply be expensive deer food.



**Plate 49. Bluebell plants developing from native bluebell seed which was scattered under the areas of planted beech as part of the Neighbourwood Scheme. Prevent trampling in this area through signage/fencing.**

A drain was noted running through the area of wet woodland below the embankment. The feasibility of blocking this drain to improve the hydrology of this area for the wet woodland habitat should be investigated and implemented. Wet woodland could be further developed on the area of wet grassland to the north of the Coillte conifer plantation on the western side of the reservoir.



**Plate 50. The feasibility of blocking this drain through the area of wet woodland below the embankment should be investigated.**



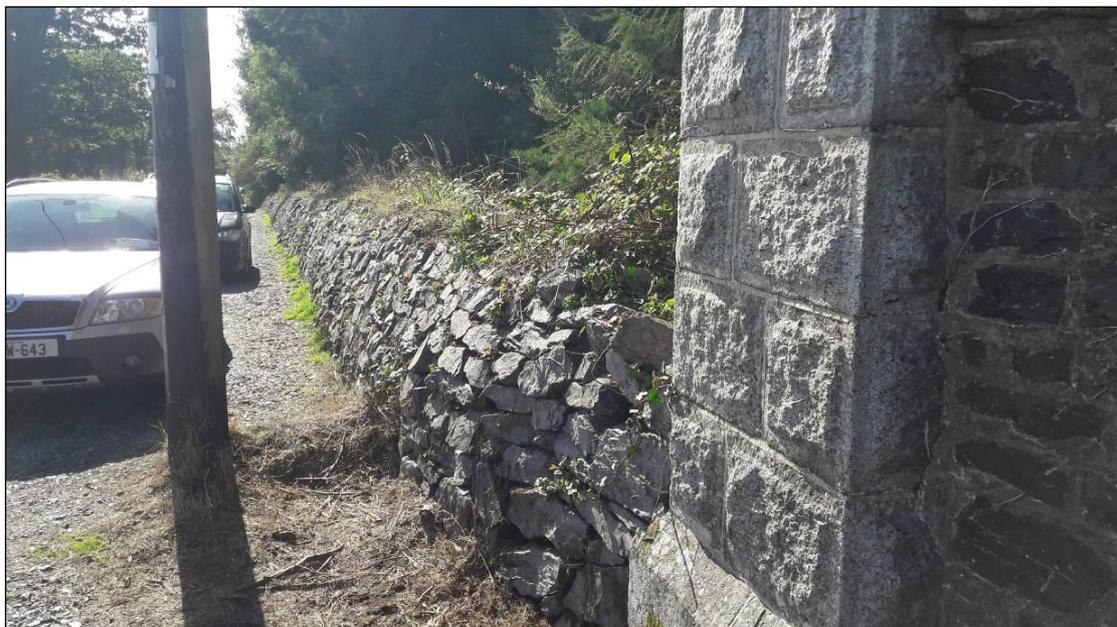
**Plate 51. Wet woodland could continue to develop here naturally if deer pressures were reduced allowing trees to become established.**

### **5.2.3. Stone walls**

A series of old stone walls were noted along the eastern boundary of Vartry Reservoir within the conifer plantation both adjoining the road and local farmland. Crevices and holes within these walls provide opportunities for nesting birds such as blue tits, breeding holes for species such as stoat and basking areas for species such as lizard which are likely to occur.

It is important that these features are retained and these traditional walls are not repointed/over tidied.

The wall adjoining the parking area is currently subject to application of weed killer which should cease – if vegetation control is required here the area could be manually strimmed leaving growth of 10 – 15cm.



**Plate 52. The use of weed killer should be avoided where possible.**

#### ***5.2.4. Invasive Species***

There are a number of invasive species in the environs of the Vartry Reservoir – these include Rhododendron, Cherry Laurel, Montbretia, Buddleia (Butterfly bush) and Pendulous Sedge.

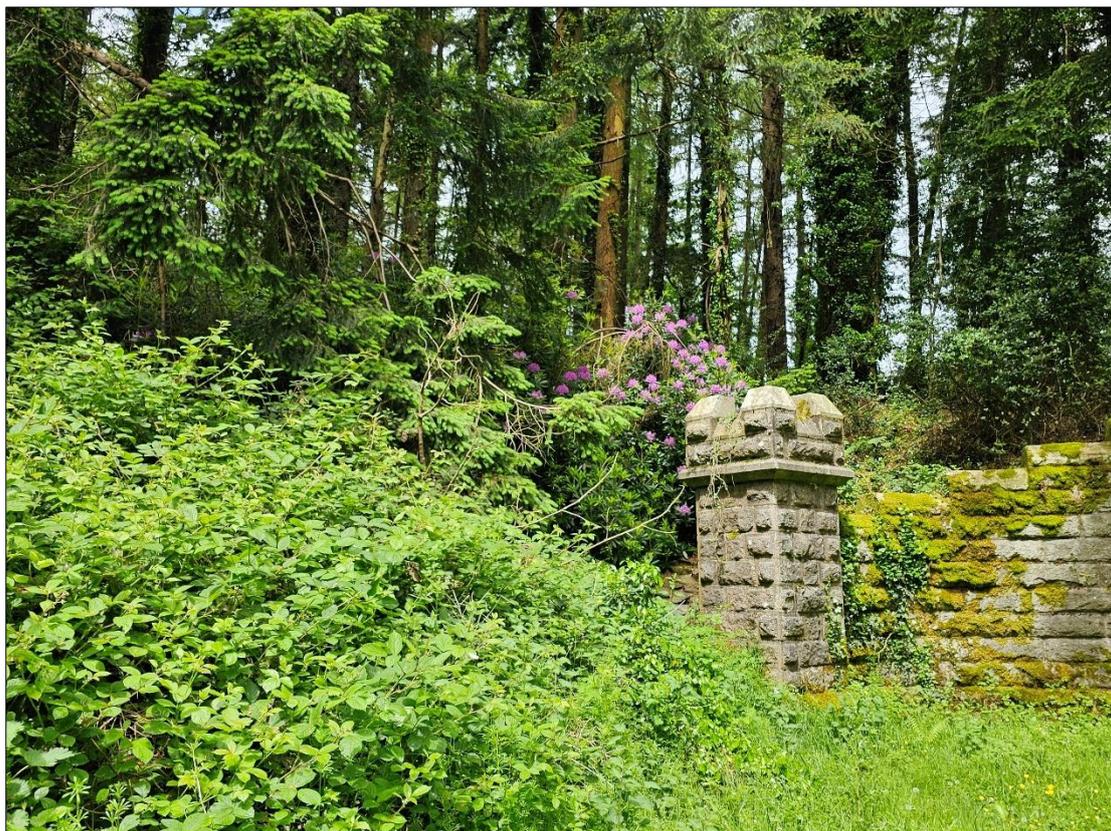
#### **Rhododendron**

A small area of Rhododendron was noted on the northern side of the wave wall of the dam near the western end and also at the northeastern end of the reservoir near the ‘Special Ops Outdoor Adventures’ property.

#### **Cherry Laurel**

A large number of stands of the invasive species Cherry laurel were previously noted in the wet woodland and these were cut and a round of treatment with herbicide implemented as part of the Neighbourwood Scheme. These areas will require repeat treatment and ongoing control of regrowth.

**A new method for treating Rhododendron and Cherry Laurel has been developed whereby the bark of each stem is skimmed with a chainsaw and the herbicide directly applied. This has been used very successfully by Coillte in the Devil’s Glen on Cherry Laurel and by the Dulra Project in Connemara on the Rhododendron.**



**Plate 53. Rhododendron near the Middle Valve Building.**



**Plate 54. Rhododendron near the 'Special Ops Outdoor Adventures' property.**



**Plate 55. Cherry laurel regrowth.**

### **Montbretia**

The stands of Montbretia below the conifers on the eastern side of the property should also be removed as they are impacting on the ground flora within the woodland.

Montbretia is easily recognised when in flower by the distinct shape and colour of the flower head with relatively short stems and orange flowers. When not in flower, Montbretia is more difficult to identify. Look for rusty brown dead leaves and remains of previous years flowering heads.

The NRA guidelines recommend the following methods for control/eradication:

#### **Physical Control**

Physical control of Montbretia is difficult as the corms break up from their chains very readily and can result in ready re-infestation or further spread. Where infestations are limited in extent, the entire stand can be excavated and buried at a depth of at least 2m, incinerated or disposed of to licensed landfill. The corms are very hardy and are not suitable for composting. Due to the potential for re-infestation from corms, regular follow-up will be required over a period of at least 2 years to deal with any re-growth.

#### **Chemical Control**

Control can be achieved using Glyphosate or Metsulfuron. For both products, 20ml of penetrant is recommended. Application can be by either foliar spray or weed wiper during the growing season.

 <b>Physical Control</b>		
Method	Season	Follow-up
Excavation	Any time of year when the soil is suitably dry.	Regular follow-up to deal with missed corms re-sprouting.

 <b>Chemical Control</b>		
Chemical	Season	Follow-up
Glyphosate	During active growth in late spring or summer.	Foliar spray, wiper applicator or spot treatment.
Metsulfuron	During active growth in late spring or summer.	Foliar spray, wiper applicator or spot treatment.

### Butterfly Bush

Butterfly bush was noted on the western side of the reservoir and was likely introduced with stone used to dress the walking track. Seedlings and small plants of this shrub can be hand pulled but larger bushes may need to be cut and the stumps treated with herbicide to prevent regrowth.



**Plate 56. There needs to be ongoing control and removal of Butterfly bush from the Vartry Reservoir pNHA.**

### Pendulous Sedge

Pendulous Sedge was also noted on the western side of the reservoir and again was likely introduced with stone used to dress the walking track. This can be simply dug out with a mattock and disposed of offsite as green waste. Please conserve the Wood horsetail (circled in red) which grows alongside this plant - it is a relatively scarce species in Wicklow.



**Plate 57. There needs to be ongoing control and removal of Pendulous sedge from the Vartry Reservoir pNHA. Conservation of the Wood horsetail population will be required.**

#### **5.2.5. Public Education**

Given the level of amenity use of the area by anglers, walkers and local residents it is important that consideration is given to educating and informing the public about the conservation and biodiversity measures which are being implemented.

In the absence of basic information, it is likely that visitors will view the lack of grass cutting in some areas with some dismay. Similarly, when cutting does take place this can also cause concern.

By creating a small temporary sign outlining the measures being implemented residents and visitors to the area can be given an understanding of why grassland habitats are being managed and the benefits for biodiversity as a result.

#### **5.2.6. Recommendations for Bats**

The presence of four species of bats was confirmed from the Vartry Reservoir. Measures often proposed for amenity projects which may have the potential to cause disturbance to bats can include the installation of inappropriate lighting, removal of areas of natural vegetation, loss of roosts in structures and potential roosts in mature trees and the loss of foraging habitat.

Best practice measures and recommendations for the protection of bats are outlined below:

##### **Stone and built structures/buildings**

These should be surveyed for use by bats prior to any works taking place such as repointing of stone, filling of crevices, etc.



**Plate 58. A comprehensive survey of the buildings and structures in the reservoir for bats should be completed.**

#### **Provision of Roosting opportunities**

Roosting opportunities could be further improved for bats in the area. 10 no. 1FF Schwegler bat boxes were erected within the property on trees scheduled for long term retention in the Neighbourwood Scheme.

The Middle Valve house could offer bats a roost for hibernation and potentially a maternity roost for Daubenton's bats if suitable boxes were installed. These measures were agreed with the biodiversity officer with Uisce Éireann and the appropriate boxes should be sited by a suitably qualified bat specialist with Uisce Éireann staff.

#### **Lighting**

The Vartry Reservoir trails should not be artificially lit and a dark landscape maintained for bats and other wildlife.



Plate 59. The Middle Valve structures could be enhanced for roosting bats.

### 5.2.7. Recommendations for Birds

#### Kingfisher

There is a kingfisher nesting site close to the angling club facilities and it is important that the scrub and vegetation cover which surrounds the small inlet here is maintained to ensure the birds are not disturbed by people accessing the top of the bank.

However in 2024 it was noted that the face of the bank itself bank had become quite overgrown with vegetation.



**Plate 60. Some cutting back of vegetation covering the steep banks in the kingfisher nesting area to expose the face bank is recommended.**

In a natural watercourse there is ongoing erosion of the bank which prevents it becoming overgrown but this does not happen in an artificially managed situation like a reservoir where water levels are controlled.

Some judicious pruning by a suitably qualified ornithologist from a boat might help to open up the bank – the local angling club could maybe help with this. It should be done outside the bird breeding season (March – August inclusive).

#### **Nest boxes**

The erection of a variety of artificial nest boxes such as tit boxes, open fronted thrush/robin boxes, Treecreeper boxes, long eared owl nesting baskets and great spotted woodpecker nest boxes were sited and erected by Faith Wilson and Christian Osthoff in the environs of the Woodpecker Trail as part of the Neighbourwood Scheme.

The majority of these appear to be in use which is great to see.

#### **Protection Measures for Birds**

Section 40 of the Wildlife Act 1976, as amended by Section 46 of the Wildlife (Amendment) Act 2000, restricts the cutting, grubbing, burning or destruction by other means of vegetation growing on uncultivated land or in hedges or ditches during the nesting and breeding season for birds and wildlife, from 1 March to 31 August.

**In general no clearance of vegetation suitable for nesting birds (shrubs, bramble tangles, etc.) should take place during this period.**

#### **Provision of a Sand Martin Nesting Wall/Tower**

There are a number of suitable locations within the environs of the reservoir where an artificial bank/tower for nesting sand martins could be developed. This was discussed with the

biodiversity officer for Uisce Éireann. See further information on possible designs in **Section 5.32**.

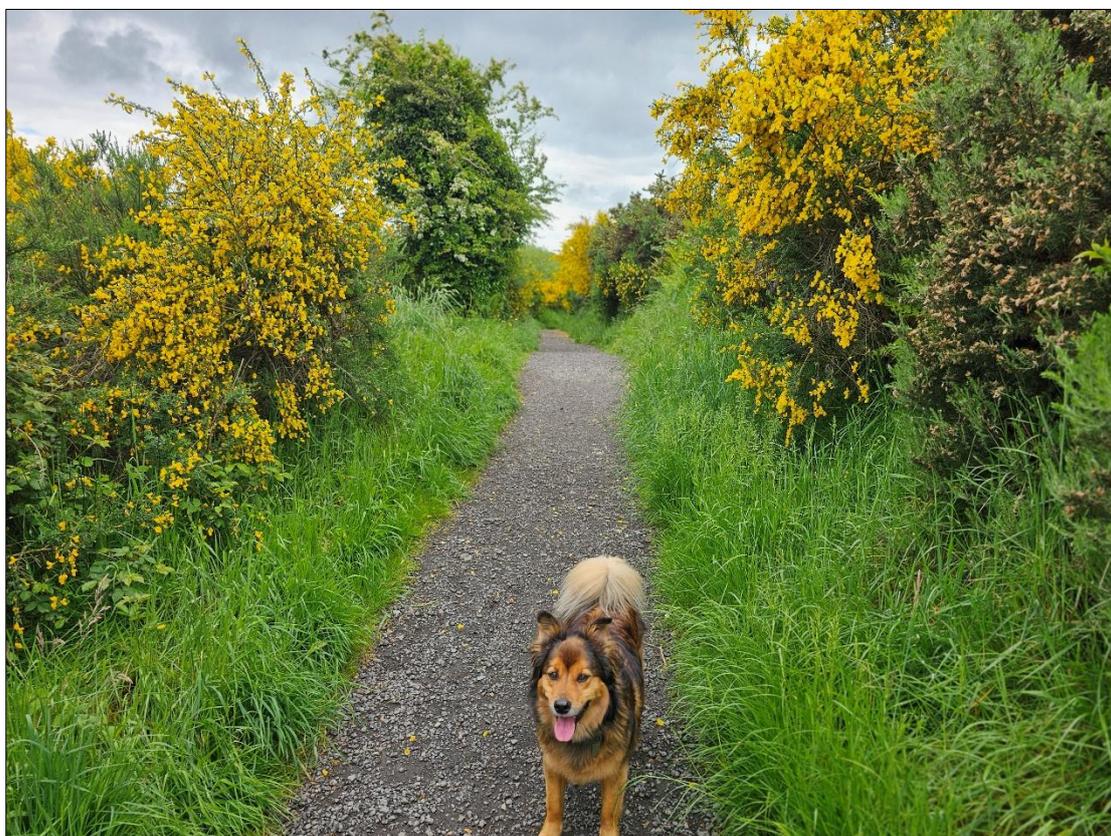
#### **5.2.8 Recommendations for Invasive Mammals - Deer**

A deer management plan is required to assess the impacts of deer on natural regeneration within the plantations at the Vartry Reservoir managed under CCF and some form of deer control may be required or we will not have any trees getting established.

Consideration could also be given to implementing a trapping programme for the grey squirrels on site but the provision of a few den boxes for the pine martens could help to further restore the natural balance.

#### **5.2.9 Recommendations for Pollinators**

The management of the grassland habitats within the property in a more sensitive manner will benefit pollinators but increasing native species in the property whether that is through natural regeneration or protection of habitat that is often dismissed such as scrub or bramble tangles will benefit invertebrates.



**Plate 61. Native broom and gorse adjoining the track provide rich pollinator and invertebrate habitat.**

#### **5.2.10 Track maintenance**

In some parts of the walking track around the reservoir mowing of the vegetation such as areas of dry heath with western gorse and heather on an annual will maintain species diversity. Otherwise mowing/cutting along the track margins should be minimised.

It is very important that the natural screen of woodland trees and shrubs that surround the reservoir are not reduced, cut out or interfered with. These help to reduce the visual impact and potential disturbance to wildlife caused by the visitors and people and provide a buffer for the reservoir.

There also needs to be follow up on those parts of the track where new gravel was brought in to dress the surface as this has introduced the Butterfly bush and Pendulous sedge to the property (see also **Section 5.2.4**). Both of these species can be highly invasive and should not be allowed to establish.



**Plate 62.** Annual mowing of track margins at the end of the bird breeding season could be implemented to keep the paths open and diversity in the sward. The vegetation beyond this band should not be interfered with. Please do not use herbicide.

#### **5.2.11 Biosecurity**

An awareness raising campaign amongst visitors to the reservoir and the angling community should be developed to ensure that no invasive species of aquatic plant or animal (such as the Zebra mussel, Bloody-red shrimp, or Quagga mussel) become established within the reservoir.

The Check Clean Dry Campaign is asking anyone who goes out on the water to help in reducing the risk of spreading invasive species and disease by following the *Check, Clean, Dry* principles.

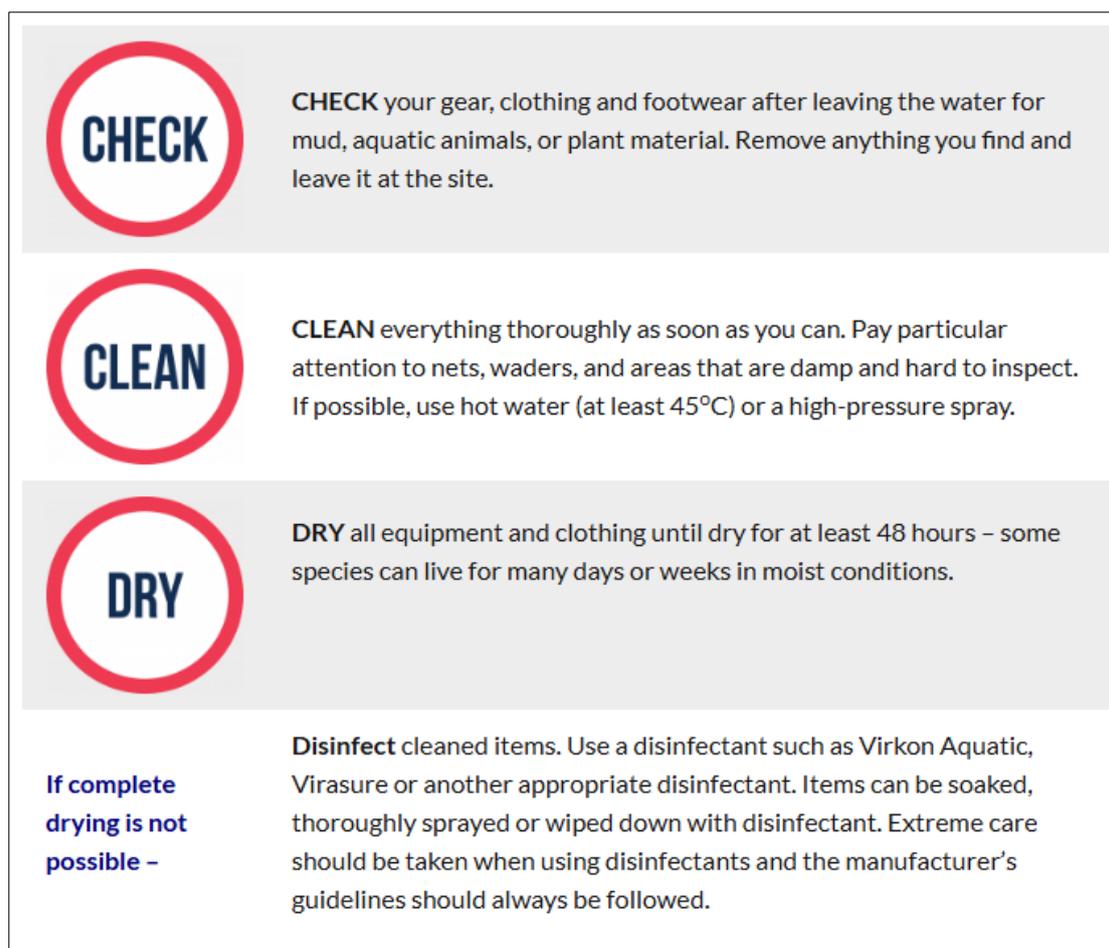


Figure 31. The Check Clean Dry Campaign.

#### 5.2.12 Development Pressures

There are ongoing development pressures on the Vartry Reservoir pNHA and these will only increase with the addition of new housing in the village and increased visitor numbers to the area (both domestic and international visitors). The development of the Vartry Trails whilst providing a wonderful opportunity for people to get out and enjoy the natural world has impacts on the local biodiversity and ecology of the area. These range from issues and pressures such as the introduction of invasive species with path materials and machinery, littering, disturbance, dogs, trampling, over use, parking pressures, etc.

The new Sugarloaf Way walking route has been recently developed on the eastern side of the reservoir here as can be seen on **Figure 32** below.

The northern end of the reservoir is one of the least visited and most important areas in the pNHA for birdlife. There should be no further development of trails here (such as a loop walk on the western side) to maintain this habitat in an undisturbed state.



**Plate 63. Looking north towards the Great Sugarloaf over the least disturbed part of the reservoir - an important refuge for fauna.**

Elsewhere on the Vartry Trails as mentioned above it is very important that the natural screen of woodland trees and shrubs that surround the reservoir are not reduced, cut out or interfered with. These help to reduce the visual impact and potential disturbance to wildlife caused by the visitors and people and provide a buffer for the reservoir. They also provide a buffer for the adjoining landowners and farms from people and dogs.

There are also applications for tourism related developments such as glamping nearby and other proposed trails and walking routes such as from the Downs Hill and Newtownmountkennedy to link to the Vartry Trail network.

There will undoubtedly be increased pressures for further car parking facilities etc. in the future and for upgrades to path surface to make the trail all ability and suitable for bicycles. These will all increase pressure on what is supposed to be a protected natural heritage area and lead to losses of ecological value and biodiversity unless due care and consideration of visitor impacts are properly considered.

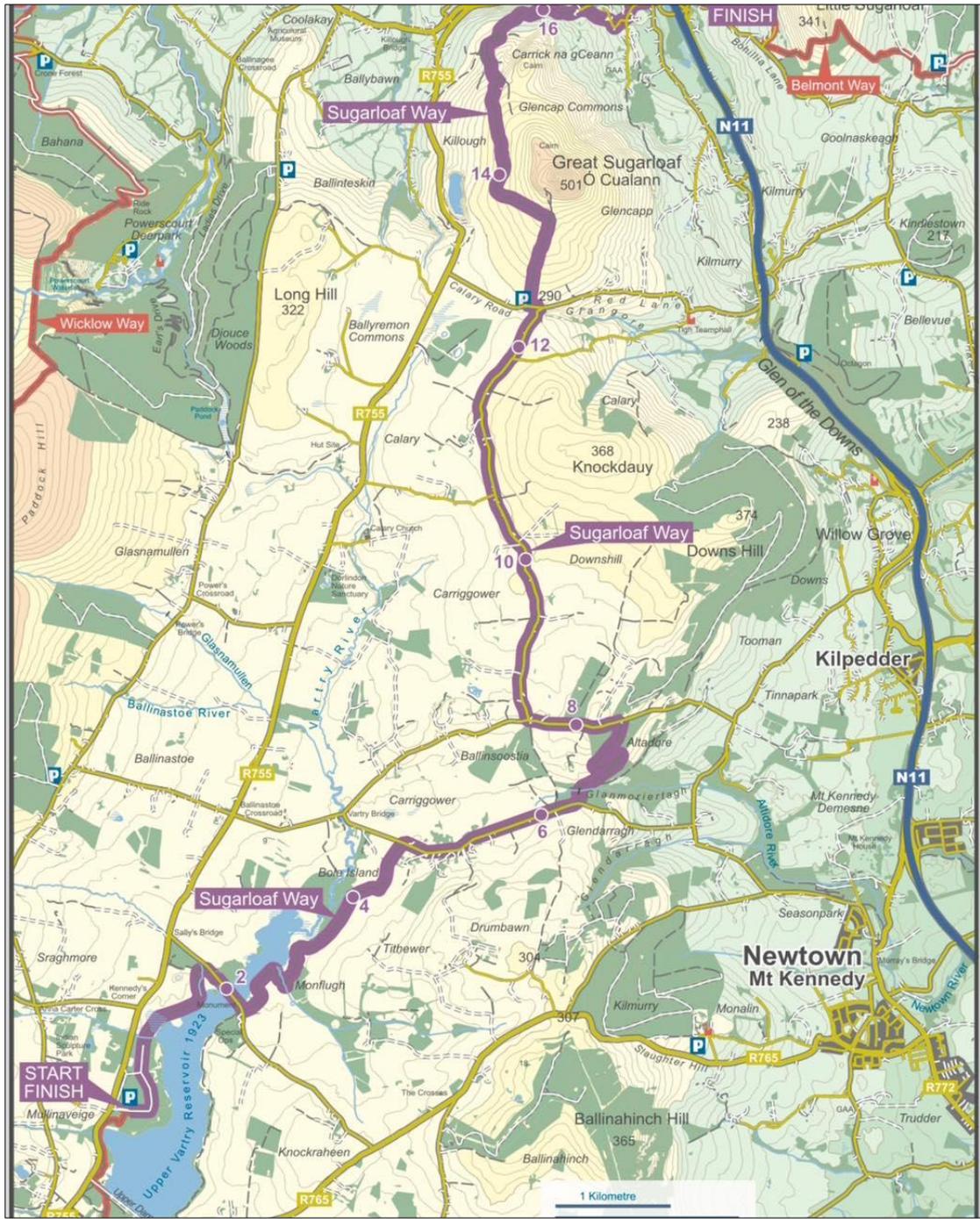


Figure 32. The Sugarloaf Way.



**Plate 64.** Newly cleared area in former conifer plantation at Sraghmore with provision of direct access for users to the Vartry Trail network. Note lack of buffer zone to the tributary stream.



**Plate 65.** Areas of vegetation such as this need to be conserved to buffer the reservoir and screen human activity from the wildlife that use it and reduce disturbance impacts.

### **5.2.13 Supervision of Works**

Given the designation of the Vartry Reservoir as a pNHA it is recommended that the biodiversity measures suggested here are discussed with the local staff, the Biodiversity Officer with Uisce Éireann and an ecologist is engaged to oversee/direct same. Some may also need to be discussed with National Parks and Wildlife Service staff and the Biodiversity Officer in Wicklow County Council.

### **5.2.14 Monitoring of Biodiversity Measures**

There should be annual monitoring of the measures to determine their efficacy and outcomes particularly for the grassland management. The management can then be tweaked or adjusted accordingly.

## **5.3 Invasive Species**

There is an increasing issue with non-native species escaping from gardens and establishing themselves in the wild in many of our towns and villages as well as the wider countryside.

A dedicated plan for the removal and control of those species listed under the Third Schedule of the Birds and Natural Habitats Regulations 2011 in the Vartry Reservoir (Rhododendron) needs to be developed by Uisce Éireann and Dublin City Council as the local authority and implemented on the ground.

Local groups such as the Roundwood Tidy Towns Group can assist with dealing with those species that can be managed by pulling, cutting or mowing. These include species such as Butterfly bush and Pendulous Sedge which were noted on the Vartry Trails.

Those species that require the use of herbicide (Rhododendron and Cherry laurel) will need specialist contractors engaged to deal with them.

Developing awareness amongst gardeners and householders about invasive species and their proper management and control as well as general disposal of green waste needs to be considered.

## **5.4 Local Landowners**

As part of the biodiversity action plan several local landowners had their properties visited and were given ideas around biodiversity actions they could take to improve their lands. These included:

- Mary Mc Carthy, who farms at Ashtown
- John Malone, who farms at Ballinacor Beg
- Brendan , the warden at Dorlindon Forest

## 6. RECOMMENDATIONS FOR BIODIVERSITY ACTIONS YOU CAN DO

Forty actions and ideas for how we can all respond to the biodiversity crisis are set out below. Which of these could you do in your garden, school grounds, work place, church grounds, sports grounds, and home?

### 6.1 Meadow Management

This action can be undertaken by anyone with a small area of grass, a local housing estate or a larger piece of land and will provide habitat for a wide variety of invertebrates including many pollinators.

Guidance is available from the All Ireland Pollinator Plan on how to manage both long flowering and short flowering meadows. Short flowering meadows shouldn't be cut until after the 15<sup>th</sup> April allowing dandelions to flower (an important resource for pollinators to forage on in spring) and then cut every six weeks – see **Figure 33** below. Long flowering meadows can be left till the autumn, the seeds allowed to fall and all the cuttings then removed to reduce fertility over time.

### TIPS TO CREATE POLLINATOR-FRIENDLY 6-WEEK MEADOWS

- **First cut after 15th April.** (this will allow Dandelions to flower. Dandelions are a vital food source for pollinators in spring)
- **Second cut at end of May.** (Cutting at the end of May and not again until mid-late July will increase the growth of important plants like Clover, Selfheal, Cuckooflower and Bird's-foot-trefoil).
- **Third cut in mid-late July.** (maximises growth of Clovers and other wildflowers)
- **Fourth cut end August.**
- **Fifth cut after mid-October.**



Natural regeneration from the native seed bank is often pollen-rich and offers food to which our native bees have adapted.

**Figure 33. Managing a short flowering meadow.**

This is also one of the main actions to be implemented at the Vartry Reservoir.

### 6.2 Create a Wildlife Pond

A garden wildlife pond could also be something that people might be interested in doing in their back garden or elsewhere in the village such as in the school grounds. A pond is a great way to attract wildlife. Something as small as 1-2m<sup>2</sup> could provide frogs with somewhere to breed.

The pond should be designed to provide habitat for breeding frogs in that they need to have a minimum depth of 60cm of water present all year round following the advice provided by the amphibian conservation charity Froglife as set out below:

When thinking about a wildlife pond, the primary concern should be the source of clean water. This can be achieved by locating the pond in woodland, rough grassland with low nutrient input or, if this is not possible, by surrounding the pond with a grassy buffer zone at least six metres wide. For amphibians, it seems that a pond's proximity (approx. 100m) to a copse or woodland is especially beneficial for hibernation purposes. Alternatively, large (at least 1.5m high) hibernacula made of wood or bricks, covered with some rainproof material and soil, can be provided. The pond should be located at the lowest point of the chosen area, where any surface water collects. Usually, if a site is occasionally flooded, it is a good indication that a pond will hold water there without an artificial liner.

Suitable species for planting in a pond include:

- Marginals - Yellow flag iris (*Iris pseudacorus*), Marsh marigold (*Caltha palustris*), Water plantain (*Alisma plantago-aquatica*), Water forget-me-not (*Myosotis scorpioides*), Brooklime (*Veronica beccabunga*), and Ragged robin (*Lychnis flos-cuculi*).
- Emergents - Greater spearwort (*Ranunculus lingua*), Branched bur-reed (*Sparganium erectum*), Purple loosestrife (*Lythrum salicaria*), Water mint (*Mentha aquatica*).

Care should be taken when purchasing aquatic plants from nurseries as many species have the potential to become invasive. Attention is drawn to the invasive species listed under the Birds and Natural Habitats Regulations 2011.

#### Pond features important for amphibians:

Ponds of all sizes are valuable but for amphibians the best are those larger than 100m<sup>2</sup>. If possible, several ponds should be created no more than 250m from each other.

The pond should be up to 1.5m deep, with a few depressions of different depths. In the summer, shallower areas may dry out with only the deepest point holding water. This can be beneficial, creating a variety of conditions to suit different plants, invertebrates and larger animals.

Shallow slopes, which become exposed or flooded depending on the weather, allow a dynamic process which seems to be beneficial for many invertebrate species.

A variable shoreline helps to create different niches and maximises the number of species that will benefit from the pond.

Ponds should not be planted up as they will quickly be colonised by native plants from surrounding areas.

Preferably rainfall or ground water should be the only source of water.

4

No more than 30% of the pond should be shaded by surrounding shrubs or trees, and preferably there should be no shade on the southern edge of the pond. While shading provides a beneficial variation of microclimate on larger ponds, it should not be encouraged on small ponds below 100m<sup>2</sup>.

No more than 60% of the pond should be covered by emergent vegetation such as reeds and bulrushes (reedmace). Whilst vegetation is very important as cover for amphibians such as great crested newts, ponds that exceed this threshold are more vulnerable to succession and a decline in water quality.

Fish ponds and wildlife ponds have different roles and should be kept separate.

Only larger ponds should be used for watering cattle, and access should be restricted (either in terms of time or by limiting the area which can be accessed). While cattle definitely help to keep vegetation both in and around the pond in check, too much pressure can result in complete destruction of the vegetation and a decline in water quality.

### 6.3 Hibernaculum for Frogs

In addition to the design recommendations for the pond/water feature above it is also recommended that a hibernaculum for frogs is created within the village. This is done by creating a pile of stones or logs with gaps between them in a mound in an undisturbed part of the property – preferably near a pond/water feature that could be used for breeding.



#### 6.4 Native Tree and Shrub Species Suitable for Planting in Gardens or in the Village

Any native species used for planting in the environs of Roundwood should be suitable for acid soils. There is little point in planting plants that need really neutral/calcareous conditions as they will likely not thrive.

Suitable shrub/small tree species include: Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Elder (*Sambucus nigra*), Hazel (*Corylus avellana*), Wych elm (*Ulmus glabra*), Crab apple (*Malus sylvestris*), and Dog rose (*Rosa canina*). Suitable tree species include; Oak (*Quercus petraea*), Mountain ash (*Sorbus aucuparia*), Whitebeam (*Sorbus aria*), Silver birch (*Betula pendula*), Willows (*Salix cinerea*, *Salix caprea*, *Salix aurita*).

All species should be of certified Irish genetic provenance as they are best adapted to Irish growing conditions - nurseries that supply the Forest Service native woodland scheme grow stock from Irish collected seed.



Plate 66. Tree planting in The Willows.

#### 6.5 Measures for Butterflies in Roundwood

Butterflies present in Roundwood Village include;

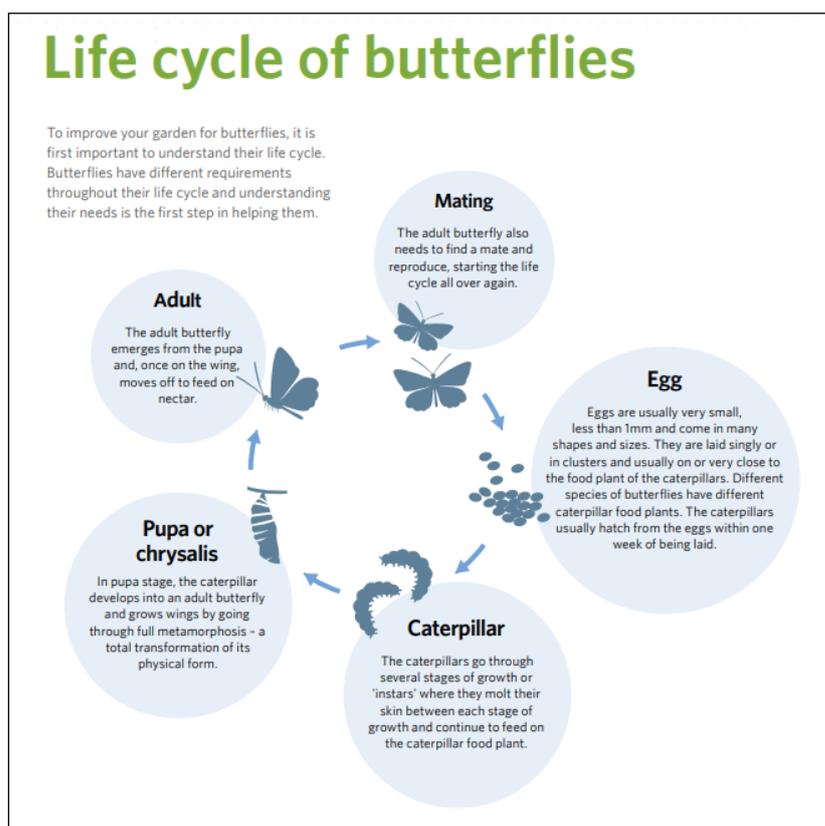
- Comma (*Polygonia c-album*)
- Common Blue (*Polyommatus icarus*)
- Green-veined White (*Pieris napi*)
- Holly Blue (*Celastrina argiolus*)
- Large White (*Pieris brassicae*)
- Orange-tip (*Anthocharis cardamines*)
- Painted Lady (*Vanessa cardui*)
- Peacock (*Inachis io*)
- Red Admiral (*Vanessa atalanta*)
- Ringlet (*Aphantopus hyperantus*)
- Small Tortoiseshell (*Aglais urticae*)

- Small White (*Pieris rapae*)
- Speckled Wood (*Pararge aegeria*)

We need to consider the life cycle of butterflies and some other principles to conserve them in our communities. This is shown on **Figure 34** below.

Therefore we need to think about:

- Providing food plants for caterpillars
- Nectar supply for adult butterflies
- Keeping ivy (both immature and mature) on trees and walls
- Providing shelter for butterflies – roosting habitat
- Providing overwintering habitats for butterflies
- Do not buy a “butterfly kit” with caterpillars or release adult butterflies



**Figure 34. The life cycle of butterflies.**

## 6.6 Food Plants and Habitat for Butterflies and Invertebrates

Several plant species used by butterflies, moths and other insects for their food plant already exist within Roundwood Village and could be confused for 'weeds'.

On the island of Ireland, 18% of butterflies and 8% of macro-moths are threatened with extinction. By planting suitable food plants and native species that support them we can help reverse this decline.

A list of the food plants used by the various species of butterfly is outlined below on **Figure 35**.

Have you any of these in your back garden – could you help butterflies to breed?

Butterfly	Caterpillar foodplant
Brimstone	Buckthorn ( <i>Rhamnus cathartica</i> ) and Alder Buckthorn ( <i>Frangula alnus</i> )
Clouded Yellow*	Clovers ( <i>Trifolium</i> spp.)
Comma	Nettle ( <i>Urtica dioica</i> )
Common Blue	Bird's-foot-trefoil ( <i>Lotus corniculatus</i> )
Green-veined White	Garlic Mustard ( <i>Alliaria petiolate</i> ), Cuckooflower ( <i>Cardamine pratensis</i> ), Water-cress ( <i>Rorippa-nasturtium aquatica</i> ) and other members of the Brassicaceae family
Holly Blue	Holly ( <i>Ilex aquifolium</i> ) and Ivy ( <i>Hedera helix</i> )
Large White	Brassicaceae family
Meadow Brown	Grasses: Fescues ( <i>Festuca</i> spp.), Meadow-grasses ( <i>Poa</i> spp.) and Bents ( <i>Agrostis</i> )
Orange-tip	Cuckooflower ( <i>Cardamine pratensis</i> ) and Garlic Mustard ( <i>Alliaria petiolate</i> )
Painted Lady*	Thistles ( <i>Cirsium</i> spp. and <i>Carduus</i> spp.)
Peacock	Nettle ( <i>Urtica dioica</i> )
Red Admiral*	Nettle ( <i>Urtica dioica</i> )
Ringlet	Grasses: Cock's-foot ( <i>Dactylis glomerata</i> ), False Brome ( <i>Brachypodium sylvaticum</i> ), Tufted Hair-grass ( <i>Deschampsia cespitosa</i> ) and Common Couch ( <i>Elymus repens</i> )
Silver-washed Fritillary	Common Dog-violet ( <i>Viola riviniana</i> )
Small Copper	Common Sorrel ( <i>Rumex acetosa</i> ) and Sheep's Sorrel ( <i>R. acetosella</i> )
Small Heath	Fine grasses, especially fescues ( <i>Festuca</i> spp.), Meadow-grasses ( <i>Poa</i> spp.)
Small Tortoiseshell	Nettle ( <i>Urtica dioica</i> )
Small White	Brassicaceae family and nasturtiums ( <i>Tropaeolum</i> )
Speckled Wood	Feed on a variety of grasses but most commonly on: False Brome ( <i>Brachypodium sylvaticum</i> ), Cock's-foot ( <i>Dactylis glomerata</i> ) and Yorkshire Fog ( <i>Holcus lanatus</i> )
Wood White	Meadow Vetchling ( <i>Lathyrus pratensis</i> ), Bitter-vetch ( <i>Lathyrus linifolius</i> ), Tufted Vetch ( <i>Vicia cracca</i> ) and Common Bird's-foot-trefoil ( <i>Lotus corniculatus</i> )

Figure 35. The food plants butterflies need for their caterpillars to complete their lifecycles on.

### 6.7 Roosting Habitats for Butterflies

Butterflies roost on the underside of leaves, in long grass, rock crevices or similar sheltered places. Butterflies roost with their wings closed, often their wings camouflage with their background to protect them from predators while they sleep. If we mow and tidy away everywhere around our homes and in our landscape there is nowhere for them to roost.

## 6.8 Overwintering Habitats for Butterflies

Butterflies can enter diapause (overwinter) in all four stages, but the majority will overwinter in their caterpillar stage. Before diapause, butterflies produce a form of internal antifreeze to protect them from the cold weather. Because diapause is triggered by shorter day lengths and lower temperatures, they generally overwinter outside. The habitats that butterflies need for overwintering, as shown on **Figure 36** below, in one of their immature stages are:

- Leaf litter
- Thick/uncut vegetation
- Log piles

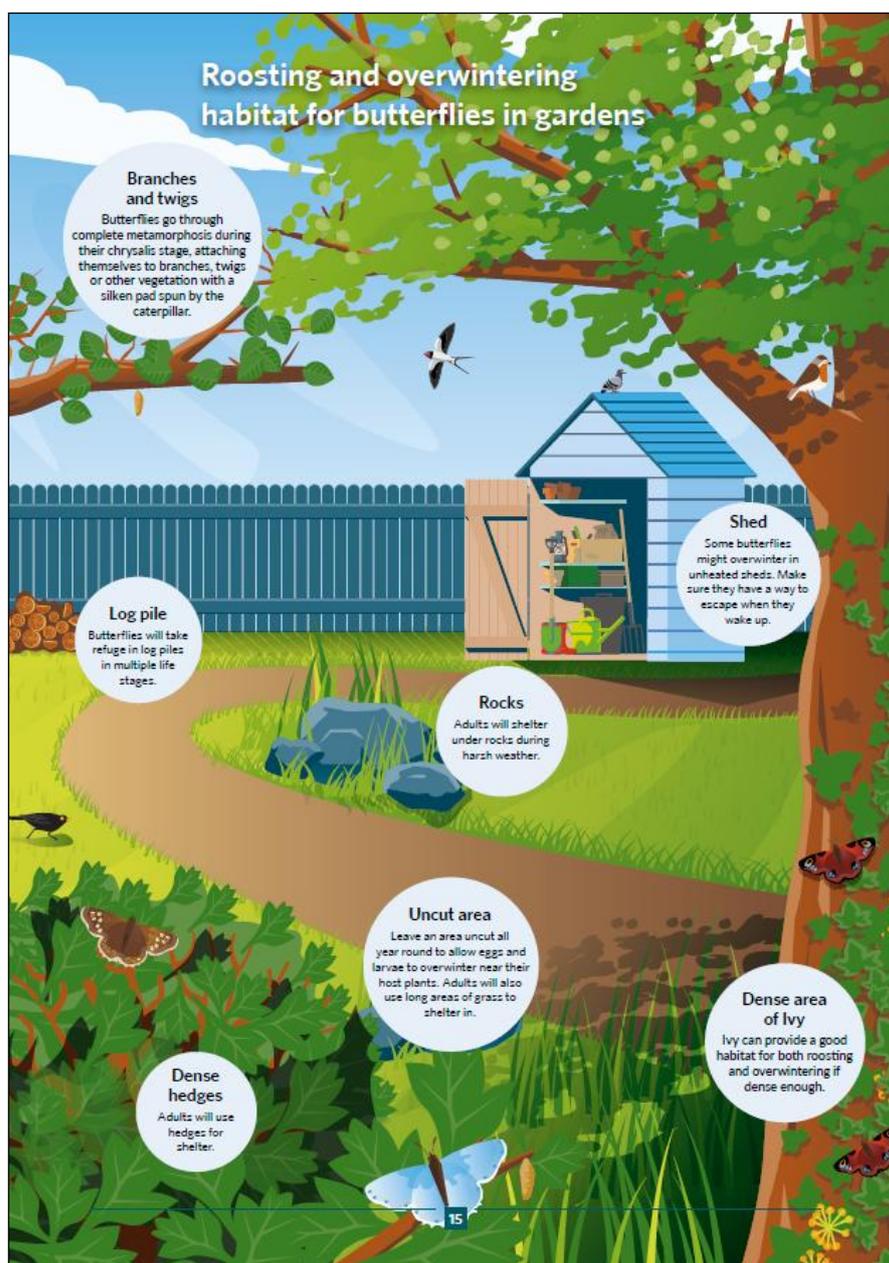


Figure 36. Roosting and overwintering habitat for butterflies.

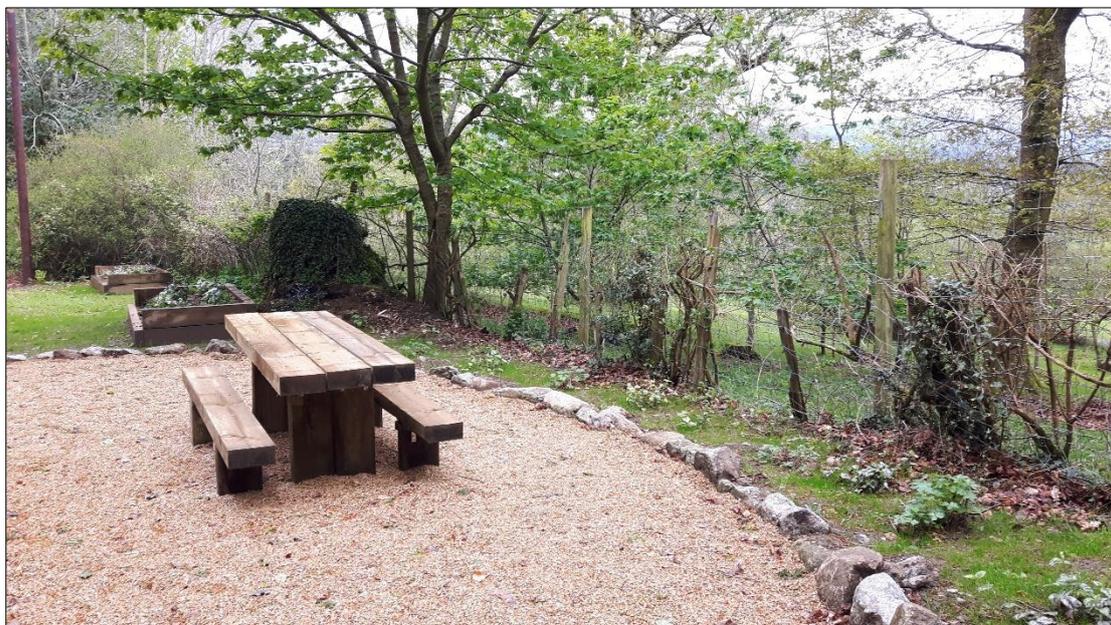
## 6.9 Ornamental Pollinator Planting

There are a wide variety of species currently planted by people in their gardens and in Roundwood Village by Tidy Towns for ornamental purposes. Some of these were completely alive with insects during the site visits. Species that could be considered for planting in gardens include:

Shady areas - *Anemone*, *Aquilegia*, *Dicentra*, *Digitalis*, *Erythronium*, *Geranium*, *Hellebore*, *Pulmonaria*, *Trillium*.

Dry areas - *Bergenia*, *Echinops*, *Echinacea*, *Kniphofia*, *Sedum*, *Stachys*, *Verbena*.

Damp areas - *Helenium*, *Astrantia*, *Astilbe*, *Euphorbia*, *Heuchera*, *Hosta*, *Achillea*, *Ligularia*, *Rudbeckia*.



**Plate 67. Try and choose native or pollinator friendly (non-invasive) plants when planting.**

#### **6.10 Management of Stone Walls**

The old walls in and around the village (those built with stone and lime mortar) as opposed to those that are pointed in concrete or made out of blocks and rendered provide a rich habitat for a variety of species including nesting birds and invertebrates. They should not be cleaned of their vegetation (unless tackling an invasive species).

The sections of concrete/block walls which are ugly to look at and offer no biodiversity value could be planted up with native climbers such as:

- Dog Rose (*Rosa canina*)
- Ivy (*Hedera helix*)
- Honeysuckle (*Lonicera periclymenum*)

#### **6.11 Pesticides**

Pesticides (herbicides, insecticides and fungicides) and chemicals such as fertilisers are used by many gardeners and landowners. They can cause huge damage to butterflies, other insects, and the plants they feed on. Please set out to make Roundwood Village a pesticide free zone.

#### **6.12 Composting**

Compost heaps can not only sustainably reduce green waste from the garden but can also provide homes for many insects including Springtails, Woodlice, Earthworms, Millipedes, Centipedes and Beetles.

Maybe you could develop a compost heap in your garden?

#### **6.13 Woodland Planting**

Trees are often planted by community groups but are then managed with mown grassland (or even worse circles of dead vegetation sprayed with herbicide). Why not consider instead

developing natural looking mini-woodland by establishing native species under the trees such as:

- Foxglove – introduced by seed collected at the end of the summer from nearby woodland tracks
- Primrose
- Common Dog Violet
- Red Campion
- Wood Anemone
- Lesser celandine
- Native bluebells (from seed – please do not dig them up from the wild)
- Ferns

#### **6.14 Citizen Science**

Members of the community could help monitor and identify species within the village and in their gardens and record their findings with the National Biodiversity Data Centre. There are a number of schemes that could be implemented in the village. These include:

- The Garden Butterfly Monitoring Scheme
- Complete a Flower Insect Timed Count
- Map your actions for pollinators
- The Irish Garden Bird Survey

##### ***The Garden Butterfly Monitoring Scheme***

The Garden Butterfly Monitoring Scheme helps to keep track of which butterflies regularly use gardens, and how numbers vary across the country year on year. Participants make regular 15-minute counts of the 20 most common butterflies found in Ireland. No expert knowledge is required, and it's perfect for beginners.

This recording scheme is a great way of finding out which butterflies are visiting your garden, and how you can support them.

The National Biodiversity Data Centre have developed a free online course for the Garden Butterfly Monitoring Scheme. By going through this eCourse you will learn:

1. How to identify the 20 most common garden butterfly species
2. How to take part in the Garden Butterfly Monitoring Scheme
3. How to register your garden on the National Sampling Framework
4. How to submit your data

If you would like to get involved, please email the NBDC at [butterflies@biodiversityireland.ie](mailto:butterflies@biodiversityireland.ie)

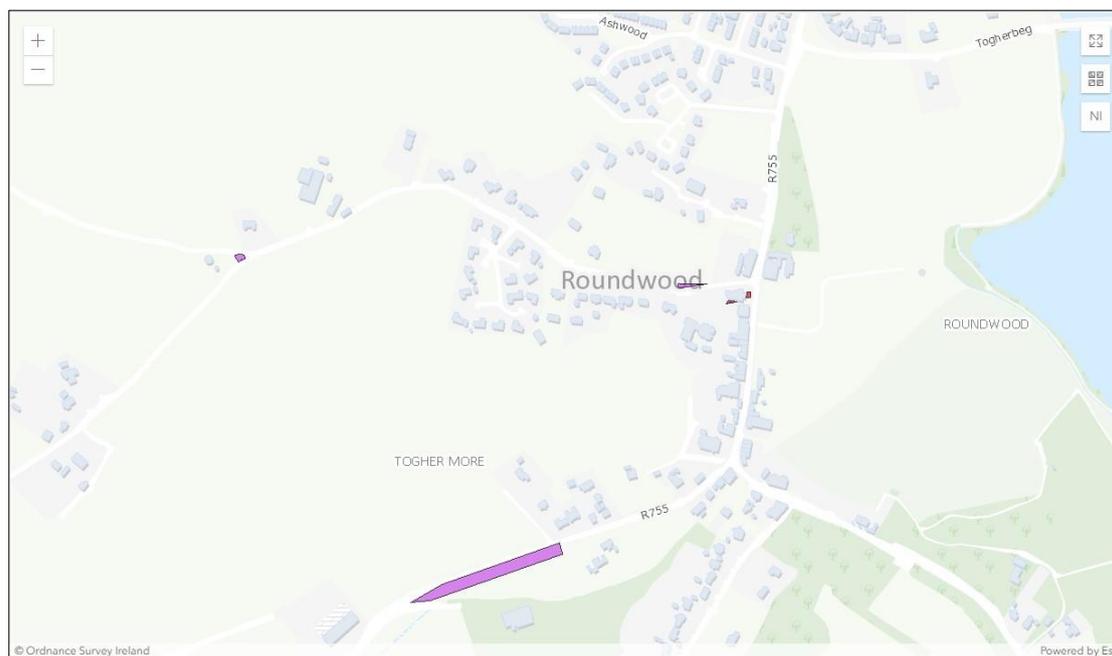
##### ***Complete a Flower Insect Timed Count***

- Flower Insect Timed (FIT) Counts are an initiative of the All Ireland Pollinator Plan.
- FIT Counts are open to everyone
- You can do a 10-minute FIT Count at any time between the 1st April and the 30th September
- Your location can be anywhere e.g., garden, farm, park, school, business site
- You don't need to identify the insects to species level, but only to tally within broad groups e.g., bumblebee, butterflies & moths, wasp, beetle
- Watch the short video for more details and see the step-by-step guide and resources sections at <https://biodiversityireland.ie/surveys/fit-counts/>
- From 2022, a new FIT Count app allows you to take a FIT Count and upload the results in one go.

##### ***Map your actions for Pollinators***

It is great to see that Roundwood Village has mapped areas being managed for pollinators as shown on **Figure 37** below. Could you add your garden, could the local GAA get involved and

do a bit? What about the church grounds? See the maps and add new areas on <https://pollinators.biodiversityireland.ie/>



**Figure 37. Mapped locations of actions for pollinators in Roundwood.**

### ***The Irish Garden Bird Survey***

Why not take part in the BirdWatch Ireland annual Irish Garden Bird Survey, which takes place over the winter months. The Irish Garden Bird Survey is BirdWatch Ireland's most popular citizen science survey, with around two thousand gardens taking part each year. Between December and February each year, members of the public keep note of the highest number of each bird species visiting their garden every week. Information on the size of the garden being surveyed, the kinds of food, if any, being offered to the birds, and so on is also collated. Taking part is fun, easy and an ideal way to get to know your garden birds better. As the Irish countryside changes, gardens are becoming increasingly important havens for many species. The Irish Garden Bird Survey can give us a good idea of how the garden birds themselves are doing, but also an indication of how the biodiversity actions at Roundwood are delivering for wildlife.

### **6.15 Measures for Roosting Bats**

A number of bat boxes could be erected within the general environs of the village. These can be either wooden boxes or woodcrete 'Schwegler' bat boxes (which are composed of a mixture of concrete and wood shavings) and are available online from <http://www.jacobijayne.co.uk/nest-boxes-by-species/bats/>.

Maybe these could be built by a local men's shed or school woodworking class and erected within the village or in peoples back gardens.

### **6.16 Conservation of Water**

The water running off the roof of your house, school, office, garage, garden shed, etc. could be collected in rainwater butts or diverted to feed a pond or to create a rainwater garden or bog garden.

### **6.17 Measures for Nesting Birds**

The breeding success of many of our suburban birds can be improved by the provision of artificial breeding boxes made from timber. These could be built by a local men's shed or school woodworking class and erected within gardens or around the village. Leave areas where

brambles have become established to develop further into a natural area of bramble scrub with a sign to show that this area is being left for nesting birds. The insects will appreciate it too.

### 6.18 Invasive Species

This study and the study completed on the Roundwood Reservoir highlighted the threat that invasive species pose to our native habitats and biodiversity in general.

There are populations of Butterfly bush in the village which should be tackled - such as that adjoining the Parish Hall (to the east of the car park). There is also action to be taken in the Vartry Reservoir pNHA.



**Plate 68. Non-native invasive Cherry laurel used as hedging in Ashwood.**

Try to make sure that you aren't part of the problem. Consider what you plant. Choose native species where possible. Don't dump your garden waste into the countryside and try and control or stop the spread of invasive species where you live.

### 6.19 Bat Survey

Have you bats in your attic? Could a bat walk become an annual event in the village?

### 6.20 Development Pressures

Development pressures have really increased in Roundwood Village in the last number of years. Once land is zoned it is very difficult to conserve biodiversity in these lands. Submissions to the local authority at planning stage for developments requesting that areas are kept for wildlife, that native species are used in the landscaping planting proposals and that lighting is wildlife friendly can help to ameliorate some of these impacts.

### **6.21 Measures for Hedgehogs**

The retention of the area of old cuttings, leaves and branches provides cover and shelter for hedgehogs and other species in the garden. Could you make a small area for them to hibernate safely in? Maybe they are under your shed?

Can hedgehogs move through your garden or the gardens in your housing estate?

Could you make a small opening in your fence for them, which would them to move safely through back gardens in your community?

### **6.22 Signage**

Many of these actions are already taking place in the village, and those that are proposed, could benefit from signage so people understand why they are being done and what species will benefit.

### **6.23 Ash Dieback Disease**

Ash dieback is a serious disease of Ash trees caused by the invasive fungal pathogen *Hymenoscyphus fraxineus* (previously known as *Chalara fraxinea*), which originated in Asia and was brought to Europe in the 1990's. The pathogen has now spread across most of the natural range of Ash in Europe causing high mortality rates of Ash trees. Ash dieback was first detected in 2012 in Ireland on plants imported from continental Europe. The disease is now prevalent across Ireland and will likely cause the death of over 90% of Ash trees here in the next decade. The disease can affect Ash trees of any age and in any setting. The disease can be fatal, particularly among younger trees.

A number of Ash trees in the environs of the village show signs of ash die back. Where safe to do a proportion of this Ash could be allowed to transition naturally to standing deadwood which has a high biodiversity value. It is recommended that summer survey of healthy Ash trees not displaying Ash dieback symptoms is carried out in the environs of the village. These trees should be recorded and mapped and protected from any knee jerk tree felling as they could have a natural resilience to the disease.

### **6.24 Educational Resources**

The National Biodiversity Data Centre have produced a series of very useful and attractive swatches which help in identifying various species groups such as ladybirds, shield bugs, dragonflies, butterflies, moths, etc. Having these resources to hand help in identifying species and understanding more about the world we share with them.

### **6.25 Keeping the Wild 'Wild'**

Please refrain from introducing non-native and ornamental species into the countryside and along roadside verges and edges particularly in a rural village such as Roundwood. This is especially true for the Vartry Reservoir where a number of garden species have become established in the wild and area threatening biodiversity.

### **6.26 Engaging Children with Nature**

Recently there has been a trend for the development of 'Fairy Walks and trails' in many woodlands and natural areas. These invariably involve painted doors, plastic items, glitter and other unnatural materials. Please do not promote or encourage fairy doors or trails in your local wild area. Why not teach children to engage directly with the natural world around them by observing and learning about where they are and how to protect it instead.

### **6.27 Leave No Trace**

Our visits and actions when we visit wild places can have a variety of impacts. These include:

#### **1. Wildlife Impacts**

Disturbance, altered behaviour

## 2. Vegetation Impacts

Vegetation loss, the introduction of invasive species.

## 3. Water Resource Impacts

Siltation, sedimentation, pollution.

## 4. Cultural Resource Impacts

Congestion, theft or damage to cultural feature.

## 5. Soil Impacts

Soil compaction

## 6. Social Impacts

Crowding, conflicts between groups.

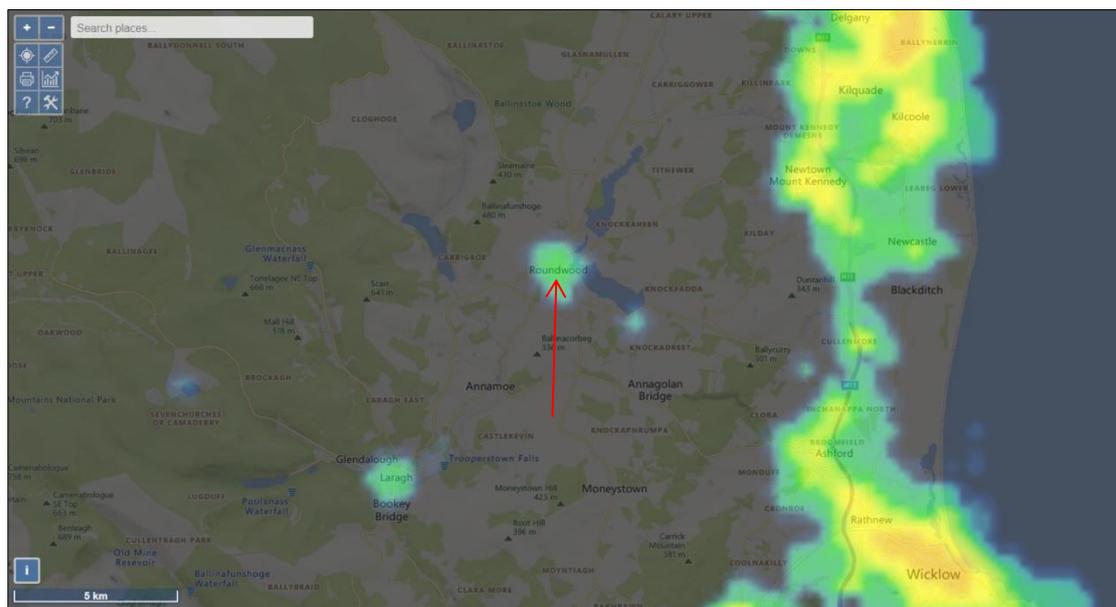
**Visitors to the Vartry Reservoir Trails and the Wicklow Uplands should be encouraged to follow the 7 Leave no trace Principles. The 7 Principles are:**

1. Plan Ahead and Prepare
2. Be Considerate of Others
3. Respect Farm Animals and Wildlife
4. Travel and Camp on Durable Ground
5. Leave What You Find
6. Dispose of Waste Properly
7. Minimise the Effects of Fire

**Practising a Leave No trace ethic is very simple: Make it hard for others to see or hear you and LEAVE NO TRACE of your visit.**

### 6.28 Lighting

Consider the impacts of lighting on wildlife in your community. We should be conserving energy and only illuminating what is really necessary for health and safety purposes. Look at the amount of artificial light reaching the night sky from Roundwood Village in **Figure 38** below. The other main source of artificial light is from the Water Treatment Works. This was brought to the attention of the Biodiversity Officer but engagement with the local staff could help also - could cowed lighting or motion activated lights could be considered?



**Figure 38. Artificial lighting impacts in the environs of Roundwood (shown with the red arrow).**

### **6.29 Educational Walks and Talks**

It is recommended that a series of educational biodiversity based walks and talks continue in Roundwood Village. Education is key to improving our understanding of the natural world. These could be seasonally themed or have a particular focus such as fungi, bats, moths, breeding birds, spring flowers, autumn leaves, winter bark, etc.

### **6.30 Community Events**

The Roundwood Tidy Towns and Community Group is very active and it would great to see some of that energy focused on helping to do our bit for the biodiversity and climate change crisis. Get involved – don't just leave it all up to the great team who got the funding and commissioned this report.

### **6.31 Develop a Sense of Wonder**

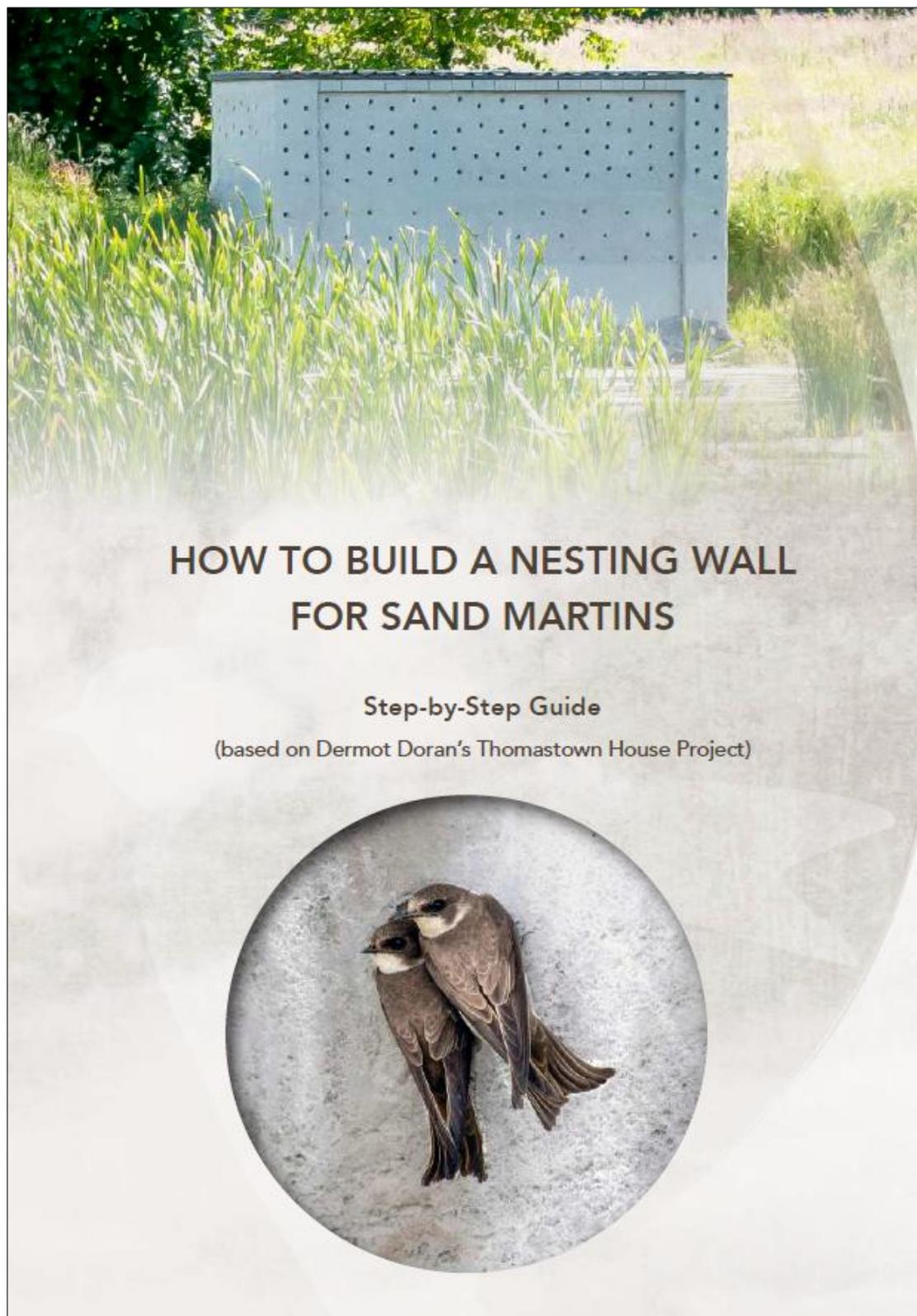
The more you spend time in the natural world the more engaged you become with it. Spending time in nature be it walking, sitting and sketching, gardening, watching the activity at a bird feeder from your sofa or looking at the night sky will improve your mental health and offer you a perspective on our time on the planet – use it wisely.

### **6.32 Create a Sand Martin Tower at the Vartry Reservoir**

The construction of an artificial Sand Martin Tower at the Vartry reservoir would be a great biodiversity action. This should be discussed with Uisce Éireann and DCC. Below in **Plate 69** is one we made on a farm in Wicklow using an old steel tank but there are other designs around that could be considered such as one built using blocks (see **Plate 70**).



**Plate 69. Artificial Sand Martin Colony.**



**Plate 70. Artificial Sand Martin bank built using blocks.**

### **6.33 Action for Swifts**

It's great to see the Biodiversity Group have tried erecting a couple of swift boxes in the village on the school building. Ideally these would be relocated and sited under the eaves of the

building for optimum use. Playing swift calls helps too – be patient it can take several years for swifts to find your site.

Swift Conservation Ireland provides really great advice on how to offer swifts a home as follows:

‘Artificial nest boxes can be used very successfully for Swifts if they are placed in the correct location.

#### LOCATION OF BOXES

They should be **at least 4 metres above ground level** and placed such that they do not receive full sun in summer. There must be a clear flyway in front.

#### BUILT-IN OR EXTERNAL?

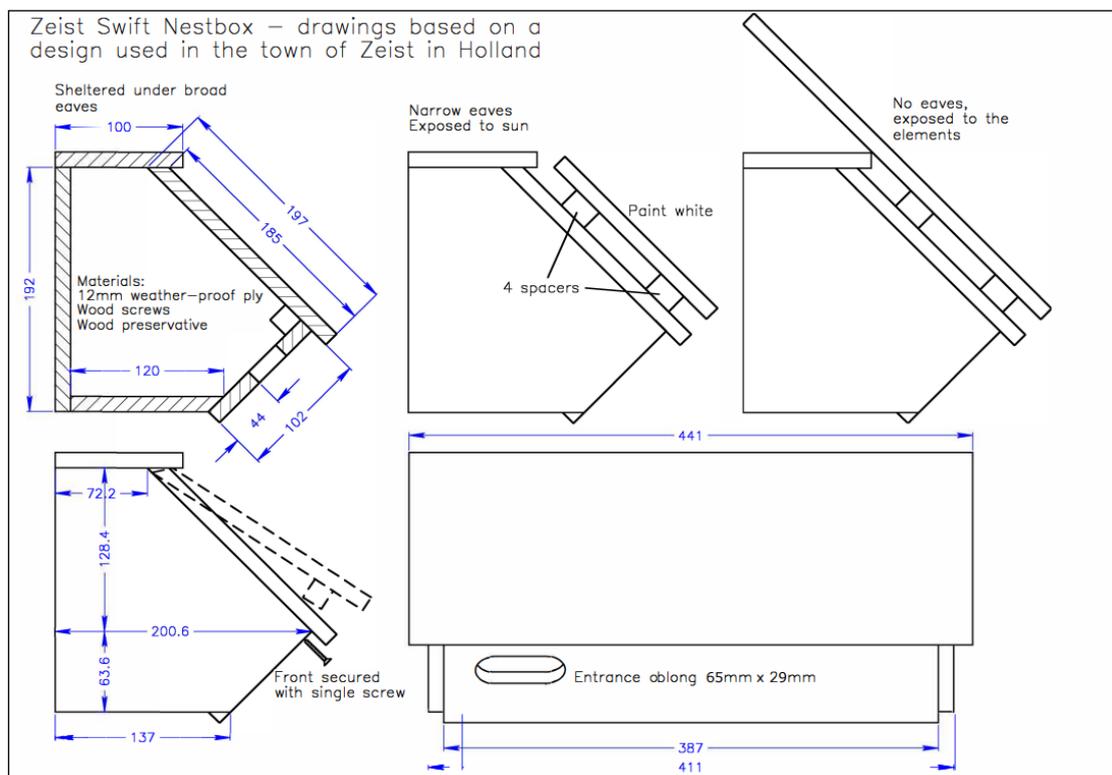
While it is preferable to incorporate nesting places into a building structure, external nest boxes placed near to nest sites that have been lost can be particularly effective to mitigate the loss.

**HOW MANY BOXES?** Swifts are colonial nesters so you need more than one nest box at your chosen location, however, that being said they need to have the own nest space. Nest boxes come as either a single boxes or with multiple cavities (that have a dividing wall between each nest area).

#### SIZE OF ENTRANCE HOLE

The entrance hole size is critical and should ideally be 28mm x 60mm but no bigger than 30mm x 65mm. If the hole is bigger than this then starlings can enter the box and they out compete the swift and will take over a nest box. Other birds, such as sparrows, will be able to get in to the 30mm x 65mm hole but this is not a problem because the swift is able to evict them’.

You could make a swift box at home using the design template below on **Figure 39**.



**Figure 39. Swift box design.**

To increase the chance of swifts finding your box you can play a call to attract them as outlined by Swift Conservation Ireland:

#### 'PLAYING ATTRACTION CALLS

Speed of occupancy of a nest box can be considerably accelerated by playing swift attraction calls. The attraction calls make the swift think that other swifts are nesting in this location and so indicate that this is an attractive place to breed. So any swift looking for a nest site will explore this area for a vacant place.

Whichever sound system you are using should be placed as near as possible to the nest boxes e.g. on a window sill or attached to the box. The calls should be played for as long as possible during the day from mid-April to end August. Playing the calls 24 hours a day is best but if not then as long as possible from 8.00 am to 11am and 8.00 pm to 11pm.

Patience is essential, it could take a year or three for swifts to find the boxes even when playing the calls. You will need to play calls from mid-April until end August each year until the swifts have started to breed in one or more of the boxes'.

Further advice on using a swift caller can be obtained from Swift Conservation Ireland: [swiftconservationireland@gmail.com](mailto:swiftconservationireland@gmail.com)

If you know of a nesting site for swifts in the village please log it here <https://records.biodiversityireland.ie/record/common-swift#7/53.455/-8.016>

#### **6.34 Action for Barn Owls**

Barn owls are a species that are slowly recovering in County Wicklow. The Roundwood Biodiversity Group within Roundwood Tidy Towns with the support of the Wicklow Barn Owl Project erected a barn owl box on John Malones farm. Boxes can be erected in either an outdoor or indoor (in an open hay barn shed) site but there are different design specifications for each to ensure they remain waterproof and weathertight.

Could you help barn owls on your farm and build a network of artificial nest sites through the county they could avail of?

#### **6.35 Native Hedgerow Establishment**

If you are considering planting a hedge on your property could you use appropriate native species such as Hawthorn, Blackthorn, Holly, Gorse and Dog rose?

Typical hedging species such as Laurel, Beech, Hornbeam, or even worse Leylandii offer little for our native species.

#### **6.36 Put Venison on the Menu in Roundwood**

We have an enormous issue with deer in the Wicklow Uplands. The local pubs, cafes and restaurants should be encouraged to have at least one dish on their menu that utilises Wicklow Wild Venison – it is a very health meat and we need to develop a market for the product.

#### **6.37 Household Check – Are You Part of the Problem?**

Everyone in the community can make a difference by checking their own home to see if it too could be contributing to poor water quality in the Roundwood area. This is known as a misconnection survey.

A property is typically serviced by two types of drains namely **foul** and **surface water**.

The **foul** drain conveys wastewater from foul appliances such as washing machines, dishwashers and toilets to the wastewater treatment plant.

The **surface water** drain conveys “clean” rainwater from your roof and hard standing to local rivers and streams.

When correctly plumbed the foul water does not enter a local drain or watercourse and goes to the waste water treatment plant, which once it has capacity and is properly operated ensures that the waste is treated before discharge as shown on **Figure 40**.

A misconnection occurs when a foul drain is incorrectly plumbed to the surface water network, causing pollution of nearby surface waters as shown in **Figure 41** below.

During construction or following renovations or repairs a misconnection can occur where a foul drain is incorrectly plumbed into a surface water drain as shown on **Figure 42** below. It can also commonly occur if an existing foul appliance is moved to a new location i.e. moving a washing machine from a kitchen to an outbuilding.

Similarly if surface waters are plumbed to the foul network it can result in the wastewater treatment system being overloaded and discharging in storm events.

A good place to start is to inspect your rainwater downpipes. If there is any additional pipework connected to the downpipe, this could indicate a misconnection.

Shampoos, soaps, chemicals & detergents can have a detrimental effect on the flora & fauna in our rivers.

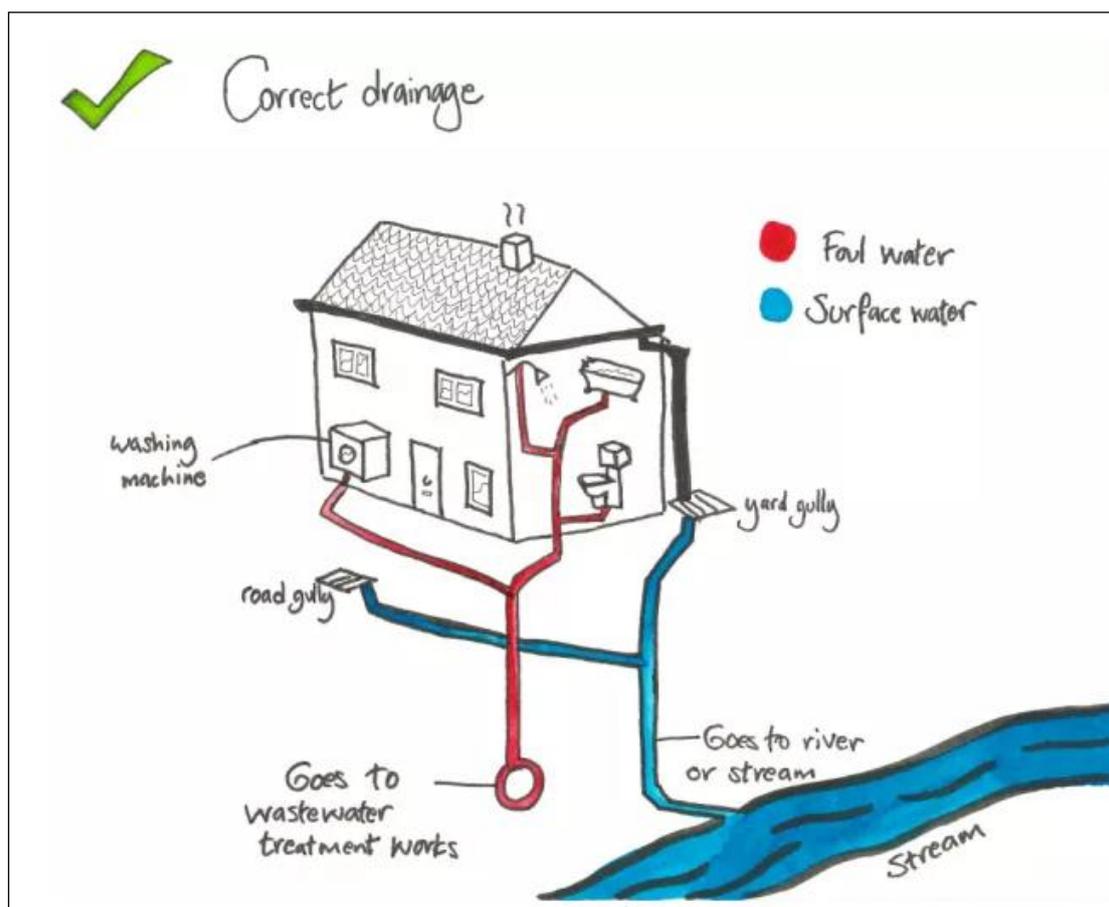


Figure 40. Correctly plumbed house where only clean surface water enters the river.

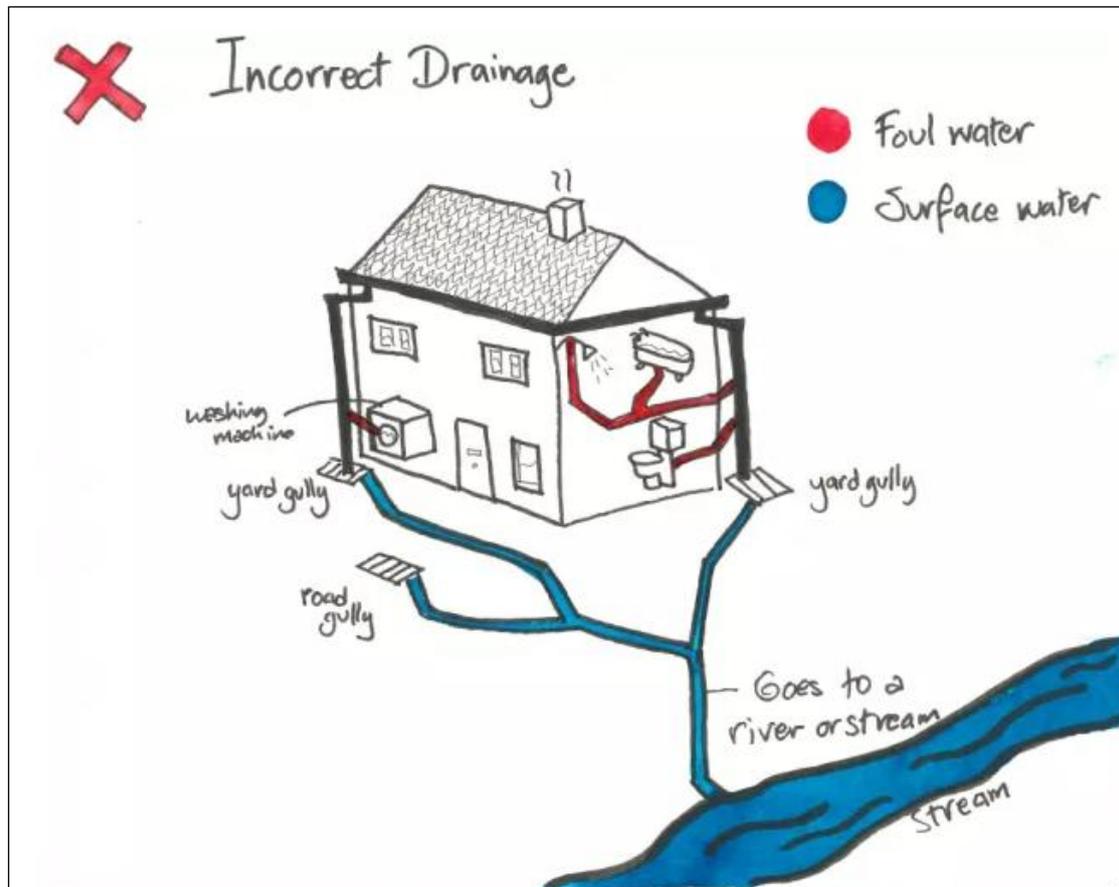


Figure 41. Incorrect drainage showing possible misconnections from washing machines, baths and toilets which can enter surface water systems.

Take a look at the pipework at your home or business and see if anything is going where it shouldn't and get it fixed!



Figure 42. Correctly plumbed premises.

### **6.38 People Pressures and the Wicklow Uplands**

The numbers of people accessing and using the natural areas in the environs of Roundwood has increased significantly in recent years, both as a result of increasing human populations in north eastern Wicklow and Dublin, social media promotion and the global Covid pandemic when people explored and discovered wild places on their doorsteps.

These recreational pressures can cause the deterioration of habitats and disturbance to wildlife as well as causing congestion in the village and on the local road network.

Walking routes, cycle paths and greenways should result in a net biodiversity gain for nature – not further erode and impact on those increasingly fragmented and degraded natural areas that remain in our landscapes.

As BirdWatch Ireland recently stated in their response to proposals for a greenway through bird habitat in Co, Meath:

‘There is a clear need for strategic guidance on greenway proposals, guidance which gives equal footing to biodiversity, climate and the needs of local residents. Not only would this approach prevent environmental damage, it would also reduce the amount of time and public money spent deliberating such proposals.

BirdWatch Ireland fully supports the development of greenways and initiatives that promote a modal shift in transport. These have obvious important benefits to climate but also economic and well-being benefits. However, it is vital that such developments do not come at a cost to our biodiversity, which is already experiencing pressures from all sides. In May 2019, Dail Éireann declared a climate and a biodiversity emergency. Both must be addressed together’.

### **6.39 Support Nature Conservation Charities**

Join and support the nature conservation charities who do tremendous work in our society for nature conservation and sustainability. You can also take part in many recording events, monitoring studies, fund raising actions or other activities with them. Be a voice for nature in your community.

### **6.40 Be An Active Citizen at Planning Stage**

The current Roundwood Town Plan runs from 2022 - 2028. This is what drives and permits development in the environs of Roundwood including rezoning of land. The current plan is set out below on **Figure 43**. The objectives for the town include:

1. Improve and provide roads, footpaths and cycleways where required and at the following locations:
  - a. along the L-5059 between the town centre and St. Laurence O’Toole National School;
  - b. along L5077 from junction with R764 to the old schoolhouse;
  - c. at the junction of R764 / R755; and
  - d. along the R764 from Kavanagh’s Vartry House to Roundwood Park gates.
2. To facilitate the provision of pedestrian and cycling linkages within and between existing and new housing/mixed use development throughout the settlement and from the town centre to the Vartry looped walks.
3. Due to the inherent risk of leakage from waste-water pumping chambers or treatment plants, these installations and any other development that would have a significant risk to the Vartry reservoir will not be permitted within 200m of the reservoir shore.
4. All development proposals shall appropriately address the protection of waterways connected to the Vartry Reservoir, which is designated a proposed Natural Heritage Area (pNHA) and is hydrologically linked to protected European Sites (SAC / SPA) downstream.

5. To maintain views eastwards from the main street of the Vartry Reservoir; development proposals for lands between the main street and the reservoir shall be designed to maintain views following evaluation and agreement of principal vistas.
6. To protect established trees and boundaries within the area.
7. To promote the renewal and regeneration of the town centre.
8. To provide for additional car parking and a set-down area, on the lands across the road from the school identified as RD1 on Map No. 1.
9. To provide for a town centre extension and a 'village green' on the lands identified as RD2 on Map No. 1 in accordance with the following criteria:
10. A minimum of 500sqm of commercial floor space shall be provided, particularly in the form of new street / village green facing ground floor retail / retail services / professional service uses.
11. A 'village green' with a minimum width of 15m with hard and soft landscaping, located between the nearer edge of the footpath of the main street to the eastern edge of the plan boundary at the reservoir buffer. No more than 50% of the lands within the objective boundary shall be developed prior to the provision of the 'village green'.
12. Vehicular/pedestrian/cycle access/links from the main street to the primary development lands to the south (RD3).
13. On the lands identified as RD3 on Map 1, to ensure that any development proposals allow for future connectivity to the lands to the north (RD2) and to the south.
14. On the lands identified as RD4 west of the Waters Bridge on Map 1 (tertiary zone) to provide for tourism use and two family dwellings only (on a maximum area of 1.5 acres), strictly on the basis of the connection of any development to mains water and wastewater services, and no adverse impacts arising on the proximate Vartry Reservoir.
15. On lands identified as RD5 on Map 1, ensure any development proposals allow for future connectivity to the lands to the north identified as RD3.

**There are no listed biodiversity objectives for the village** beyond 'To protect established trees and boundaries within the area' and 'To maintain views eastwards from the main street of the Vartry Reservoir'.

**There are no lands zoned for Nature Protection, Restoration or Enhancement. The lands zoned for development under RD1 should be examined from the perspective of biodiversity to see how we can conserve some spaces for nature within the village.**

Make your voice for nature be heard at planning stage when Wicklow County Council will be commencing pre-draft public consultation for the next Roundwood Town Plan and make those concerns known to your local elected councillors and TDs.

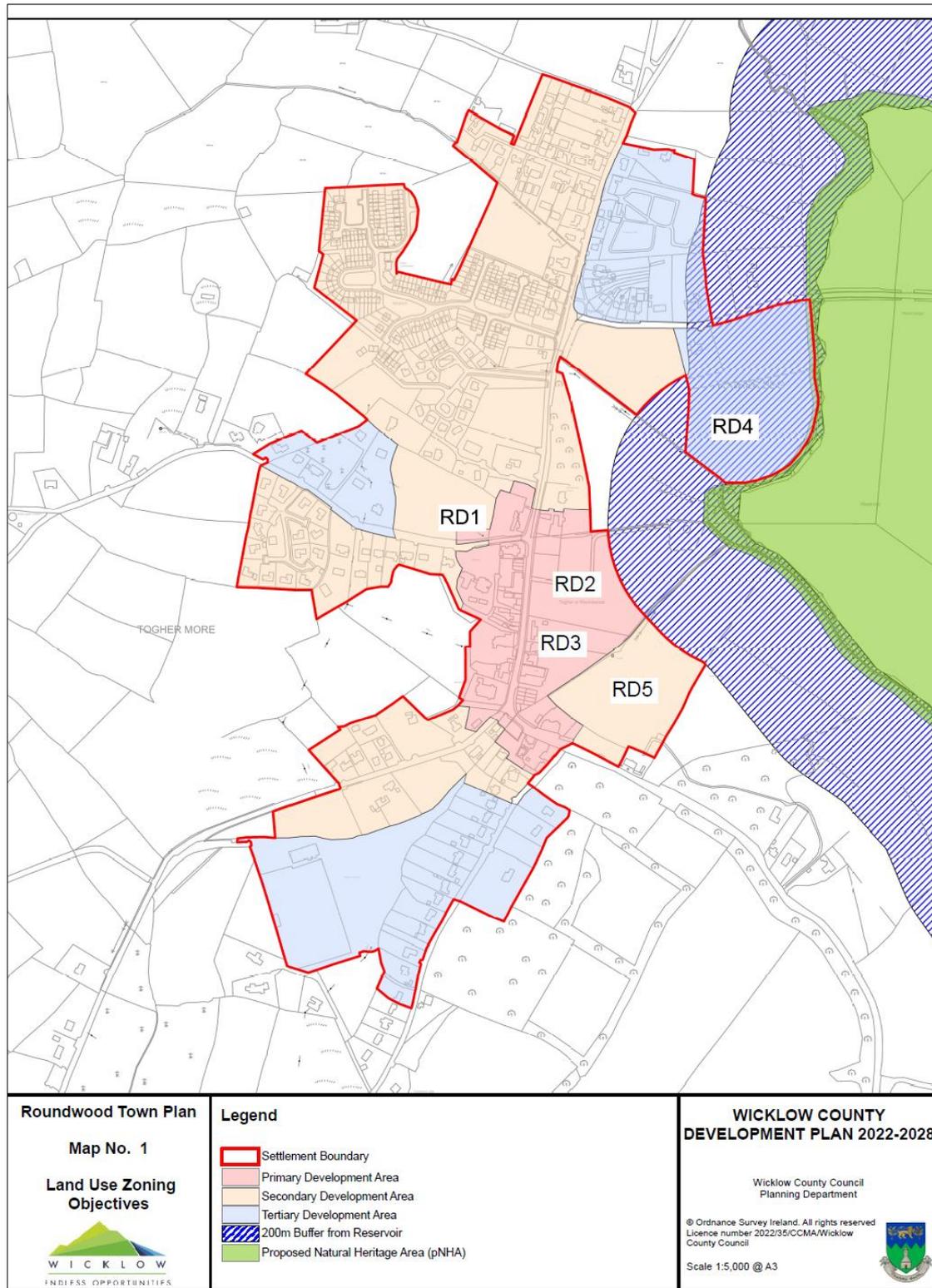


Figure 43. Roundwood Town Plan 2022 – 2028.

## **7. APPENDICES**

**7.1 Appendix 1 – Locations of Biodiversity Action Areas**

Figure 1. Potential Biodiversity Action Locations in the Northern portion of the Village.

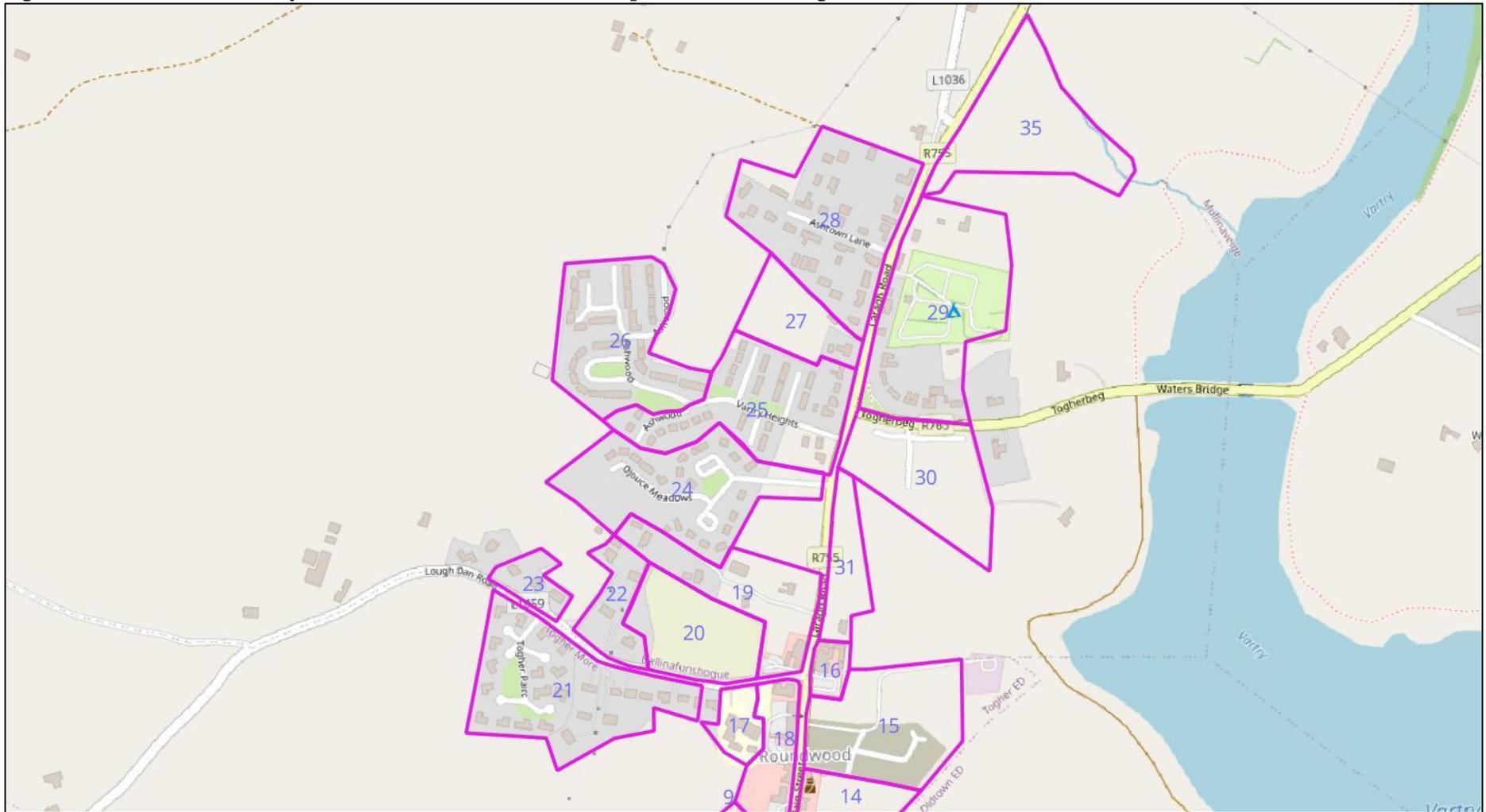
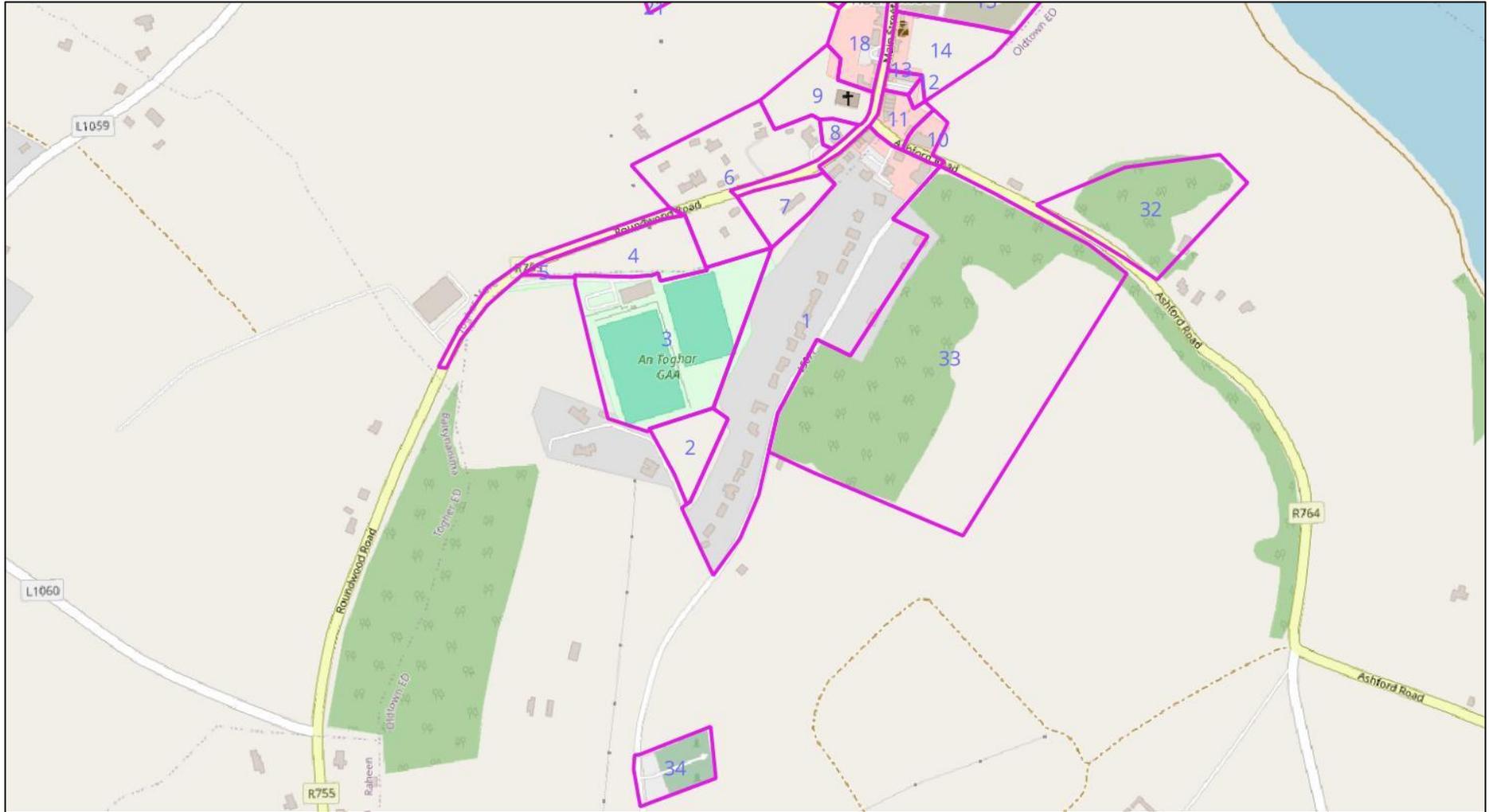


Figure 2. Potential Biodiversity Action Locations in the Southern portion of the Village.



## 7.2 Appendix 2 – Site Synopsis for the Vartry Reservoir pNHA

### SITE SYNOPSIS

**SITE NAME: VARTRY RESERVOIR**

**SITE CODE: 001771**

The Vartry Reservoir is located to the east of Roundwood, in the upper catchment of the Vartry River. The lower reservoir was constructed in the 1860s and the upper reservoir completed in 1924. Both are owned and managed by Dublin Corporation. The annual fluctuation in water levels is in the order of 4 or 5 metres. Lowest levels are generally reached in September/October, and maximum levels between February and May. With the exception of Poulaphouca Reservoir, Vartry is the largest inland waterway in the southeast of Ireland.

A distinct type of vegetation, mainly of annual species, occurs on the muds and gravels within the range of fluctuating water levels. The silty floor at lower levels, especially at the northern end, supports a vegetation dominated by Marsh Cudweed (*Gnaphalium uliginosum*). A species rich vegetation occurs on the gently sloping muddy shores, and to a lesser extent on the gravel shores; species include Shoreweed (*Littorella uniflora*), Water Pepper (*Polygonum hydropiper*), Bulbous Rush (*Juncus bulbosus*), Unbranched Bur-reed (*Sparganium emersum*), Common Spike-rush (*Eleocharis palustris*), Broad-leaved Pondweed (*Potamogeton natans*), and both Small and Floating Sweet-grass (*Glyceria declinata* & *G. fluitans*). Two plant species, which are relatively rare in Ireland other than in the south west, occur in the areas of fluctuating water levels - these are Six-stamened Waterwort (*Elatine hexandra*) and Water-purslane (*Lythrum portula*).

Dwarf shrub heath and acid grassland occur together as a mosaic. In the wetter heath areas, grasses are abundant, dominated by Purple Moor-grass (*Molinia caerulea*), with occasional Scots Pine (*Pinus sylvestris*) and Birch (*Betula pubescens*). The areas of dry heath are dominated by Autumn Gorse (*Ulex gallii*) and Heather (*Calluna vulgaris*). The vegetation of areas of acid grassland is rather variable and includes Fescue species (*Festuca* spp.), Cocksfoot (*Dactylis glomerata*), False Oat-grass (*Arrhenatherum elatius*), Knapweed (*Centaurea nigra*), Sneezewort (*Achillea ptarmica*), Devil's-bit Scabious (*Succisa pratensis*) and Field Scabious (*Knautia aroensis*). Marshy grasslands occur most extensively at the northern end of the Upper Reservoir, where grasses, sedges and rushes occur with Meadowsweet (*Filipendula ulmaria*), Wild Angelica (*Angelica sylvestris*), Devil's-bit Scabious and Common Valerian (*Valeriana officinalis*).

Broad-leaved woodland occurs in a strip around the perimeter of the lakes, with a block occurring between the northern end of the Lower Reservoir and the embankment. Most of the woodland is dominated by Birch, with Ash (*Fraxinus excelsior*), Alder (*Alnus glutinosa*) and Willow (*Salix* spp.). Two areas of plantation woodland are included in the site; a mature Scots Pine plantation at the southern end of the Upper Reservoir, and a small area of Oak (*Quercus petraea*) and Beech (*Fagus sylvatica*) to the east of the Lower Reservoir.

The site has considerable ornithological interest, mostly for wintering waterfowl. The Greylag Goose population is of national importance (average peak 242, winters 1985/86-88/89). In the same period the following were also recorded: Whooper Swan (average peak 35), Teal (average peak 22), Mallard (average peak 72), Pochard (average peak 10) and Tufted Duck (average peak 31). The site is used as a night roost for gulls, up to 1,800 Black-headed Gulls have been recorded.

Great Crested Grebe has bred, or attempted to breed, at the Vartry since about 1990, while Little Grebe breeds annually. Several pairs of Lapwing breed annually, and Teal probably breeds.

Although Vartry Reservoir originated as an artificial lake, it has, over time, developed a diversity of habitats, from wetland vegetation to heathland and woodland. The presence of

some plant species which are relatively rare in eastern Ireland adds further interest to the site. The site is of national importance for Greylag Geese, and of regional or local importance for several other waterfowl species.

16.2.1995

### 7.3 Appendix 2 – Site Synopsis for The Wicklow Mountains SAC

#### SITE SYNOPSIS

**Site Name: Wicklow Mountains SAC**

**Site Code: 002122**

Wicklow Mountains SAC is a complex of upland areas in Counties Wicklow and Dublin, flanked by the Blessington reservoir to the west and Vartry reservoir in the east, Cruagh Mountain in the north and Lybagh Mountain in the south. Most of the site is over 300 m, with much ground over 600 m. The highest peak is 925 m at Lugnaquilla. The Wicklow uplands comprise a core of granites flanked by Ordovician schists, mudstones and volcanics. The form of the Wicklow Glens is due to glacial erosion. The topography is typical of a mountain chain, showing the effects of more than one cycle of erosion. The massive granite has weathered characteristically into broad domes. Most of the western part of the site consists of an elevated moorland, covered by peat. The surrounding schists have assumed more diverse outlines, forming prominent peaks and rocky foothills with deep glens. The dominant topographical features are the products of glaciation. High corrie lakes, deep valleys and moraines are common features of this area. The substrate over much of the area is peat, usually less than 2 m deep. Poor mineral soil covers the slopes, and rock outcrops are frequent. The Wicklow Mountains are drained by several major rivers including the Dargle, Liffey, Dodder, Slaney and Avonmore. The river water in the mountain areas is often peaty, especially during floods.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (\* = priority; numbers in brackets are Natura 2000 codes):

- [3110] Oligotrophic Waters containing very few minerals
- [3160] Dystrophic Lakes
- [4010] Wet Heath
- [4030] Dry Heath
- [4060] Alpine and Subalpine Heaths
- [6130] Calaminarian Grassland
- [6230] Species-rich *Nardus* Grassland\*
- [7130] Blanket Bogs (Active)\*
- [8110] Siliceous Scree
- [8210] Calcareous Rocky Slopes
- [8220] Siliceous Rocky Slopes
- [91A0] Old Oak Woodlands
- [1355] Otter (*Lutra lutra*)

The vegetation over most of Wicklow Mountains SAC is a mosaic of heath, blanket bog and upland grassland (mostly on peaty soil, though some on mineral soil), stands of dense Bracken (*Pteridium aquilinum*), and small woodlands mainly along the rivers. Mountain loughs and corrie lakes are scattered throughout the site.

The two dominant vegetation communities in the area are heath and blanket bog. Heath vegetation, with both wet and dry heath well represented, occurs in association with blanket bog, upland acid grassland and rocky habitats. The wet heath is characterised by species such as Heather (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), cottongrasses (*Eriophorum* spp.), Tormentil (*Potentilla erecta*), Mat-grass (*Nardus stricta*), bent grasses (*Agrostis* spp.) and bog mosses (*Sphagnum* spp.). In places the wet heath occurs in conjunction with flush communities and streamside vegetation,

and here species such as Heath Rush (*Juncus squarrosus*) and sedges (*Carex* spp.) are found. Dry heath at this site is confined to shallow peaty soils on steep slopes where drainage is better and particularly in sheltered conditions. It is characterised by species such as Heather, gorse (*Ulex* spp.), Bell Heather (*Erica cinerea*), Bilberry (*Vaccinium myrtillus*), Purple Moor-grass (*Molinia caerulea*) and lichens (*Cladonia* spp.). In places the heath grades into upland grassland on mineral soil.

Blanket bog is usually dominated by cottongrasses, Heather and bog mosses. On steeper slopes there is some flushing and here Purple Moor-grass, Heath Rush and certain *Sphagnum* species become more common. The Liffey Head blanket bog is among the best of its kind in eastern Ireland, with deep peat formations and an extensive system of dystrophic pools developed among the hummocks and hollows on the bog surface. The vegetation is largely dominated by Heather and Cross-leaved Heath, with cottongrasses (*Eriophorum vaginatum* and *E. angustifolium*), Deergrass (*Scirpus cespitosus*) and Bog Asphodel (*Narthecium ossifragum*). In drier areas, Bilberry and Cowberry (*Vaccinium vitis-idaea*) are common, while the scarce Bog-rosemary (*Andromeda polifolia*) is also found. Blanket bog occurs over extensive areas of deeper peat on the plateau and also on gentle slopes at high altitudes.

Due to the underlying rock strata, the water of the rivers and streams is acid rather than alkaline. The water is generally oligotrophic and free from enrichment. The lakes within the area range from the high altitude lakes of Lough Firrib and Three Lakes, to the lower pater-noster lakes of Glendalough, Lough Tay and Lough Dan. Spectacular corrie lakes, such as Loughs Bray (Upper and Lower), Ouler, Cleevaun, Arts, Kellys and Nahanagan, exhibit fine sequences of moraine stages. The deep lakes are characteristically species-poor, but hold some interesting plants including an unusual form of Quillwort (*Isoetes lacustris* var. *morei*), a stonewort (*Nitella* sp.) and Floating Bur-reed (*Sparganium angustifolium*).

Alpine vegetation occurs on some of the mountain tops, notably in the Lugnaquilla area, and also on exposed cliffs and scree slopes elsewhere in the site. Here alpine heath vegetation is represented with heath species such as Crowberry (*Empetrum nigrum*) and Cowberry, and others such as Dwarf Willow (*Salix herbacea*), the grey green moss *Racomitrium lanuginosum*, and scarce species such as Mountain Clubmoss (*Diphasiastrum alpinum*), Firmoss (*Huperzia selago*), and Starry Saxifrage (*Saxifraga stellaris*). Some rare arctic-alpine species have been recorded, including Alpine Lady's-mantle (*Alchemilla alpina*) and Alpine Saw-wort (*Saussurea alpina*).

Old lead mine workings at Glendasan support an estimated 3.6 hectares of Calaminarian Grassland, with a suite of rare metallophyte (metal-loving) bryophytes, including the moss *Ditrichum plumbicola* and the liverworts *Cephaloziella massalongi* and *C. nicholsonii*.

Small areas of old oakwood (Blechno-Quercetum petraeae type) occur on the slopes of Glendalough and Glenmalure, near Lough Tay and Lough Dan, with native Sessile Oak (*Quercus petraea*) trees, many of which are 100-120 years old. On wetter areas, wet broadleaved semi-natural woodlands occur which are dominated by Downy Birch (*Betula pubescens*). Mixed woodland with non-native tree species also occurs.

The site supports a range of rare plant species. Parsley Fern (*Cryptogramma crispa*), Marsh Clubmoss (*Lycopodiella inundata*), Lanceolate Spleenwort (*Asplenium billotii*), Small-white Orchid (*Pseudorchis albida*) and Bog Orchid (*Hammarbya paludosa*) are all legally protected under the Flora (Protection) Order, 2015. Greater Broomrape (*Orobanche rapum-genistae*), Alpine Saw-wort and Alpine Lady's-mantle are listed in the Irish Red Data Book. The rare Myxomycete fungus *Echinostelium colliculosum* has been recorded from the Military Road.

The Red Data Book fish species Arctic Char has been recorded from Lough Dan, but this population may now have died out.

Mammals and birds which occur are typical of the uplands. Deer are abundant, mainly hybrids between Red and Sika Deer. Other mammals include Hare, Badger and Otter, the latter being a species listed on Annex II of the E.U. Habitats Directive. Pine Marten has recently been confirmed as occurring within the site.

Among the birds, Meadow Pipit, Skylark, Raven and Red Grouse are resident throughout the site. Wheatear, Whinchat and the scarce Ring Ouzel are summer visitors. Wood Warbler and Redstarts are rare breeding species of the woodlands. Dipper and Grey Wagtail are typical riparian species. Merlin and Peregrine, both Annex I species of the E.U. Birds Directive, breed within the site. Recently, Goosander has become established as a breeding species.

Large areas of the site are owned by the National Parks and Wildlife Service (NPWS) and are managed for nature conservation based on traditional land uses of upland areas. The most common land use is traditional sheep grazing, but others include turf cutting, mostly hand-cutting but some machine-cutting also occurs. These activities are largely confined to the Military Road, where there is easy access. Large areas which had been previously hand-cut and are now abandoned are regenerating.

In the last 40 years, forestry has become an important land use in the uplands, and has affected both the wildlife and the hydrology of the area. Amenity use is very high, with Dublin city close to the site. Peat erosion is frequent on the peaks. This may be a natural process, but is likely to be accelerated by activities such as grazing.

Wicklow Mountains is important as a complex, extensive upland site. It shows great diversity from a geomorphological and a topographical point of view. The vegetation provides examples of the typical upland habitats with heath, blanket bog and upland grassland covering large, relatively undisturbed areas. In all, twelve habitats listed on Annex I of the E.U. Habitats Directive are found within the site. Several rare or protected plant and animal species occur, adding further to its value.

## 7.4 Appendix 3 – Site Synopsis for The Wicklow Mountains SPA

### SITE SYNOPSIS

**SITE NAME: WICKLOW MOUNTAINS SPA**

**SITE CODE: 004040**

This is an extensive upland site, comprising a substantial part of the Wicklow Mountains. Most of the site is in Co. Wicklow, but a small area lies in Co. Dublin.

The underlying geology of the site is mainly of Leinster granites, flanked by Ordovician schists, mudstones and volcanics. The area was subject to glaciation and features fine examples of glacial lakes, deep valleys and moraines. Most of site is over 300 m, with much ground being over 600 m; the highest peak is Lugnaquilla (925 m). The substrate over much of site is peat, with poor mineral soil occurring on the slopes and lower ground. Exposed rock and scree are features of the site. The predominant habitats present are blanket bog, heaths and upland grassland.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Merlin and Peregrine.

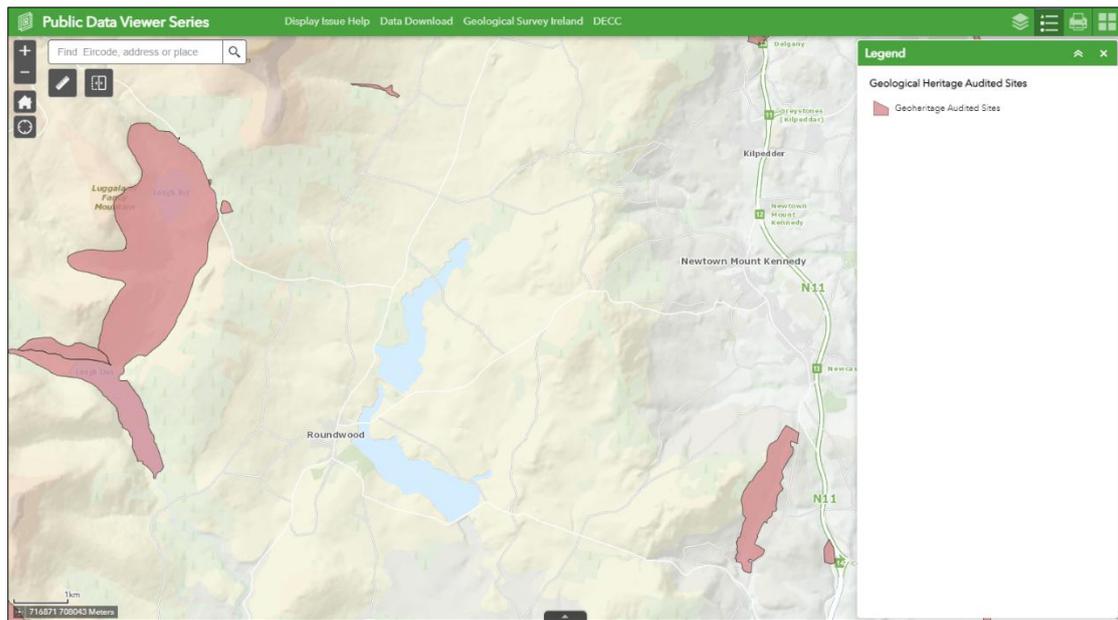
A series of surveys of the Wicklow Mountains SPA indicates that up to 9 pairs of Merlin breed within the site in any one year. Traditionally a ground-nesting species, Merlin in the Wicklow Mountains are usually found nesting in old crows nests in conifer plantations. The open peatlands provide excellent foraging habitat for Merlin with small birds such as Meadow Pipit being their main prey. The cliffs and crags within the site also provide ideal breeding locations for Peregrine (20 pairs in 2002).

Other birds of the open peatlands and scree slopes that have been recorded within the site include Ring Ouzel and Red Grouse.

The Wicklow Mountains SPA is of high ornithological importance as it supports nationally important populations of Merlin and Peregrine, both species that are listed on Annex I of the E.U. Birds Directive. Part of Wicklow Mountains SPA is a Statutory Nature Reserve.

7.7.2014

## 7.5 Appendix 4 – Sites of Geological Interest in the Environs of Roundwood



**Figure 1.** The corrie lakes of Lough Dan and Lough Tay to the west of the village and Dunran Glen to the east are all listed as Geological Heritage Sites in Co. Wicklow.

## 7.6 Appendix 5 - Biodiversity and Nature Conservation Legislation

### Nature Conservation Designations

#### *International Conservation Designations*

Special Areas of Conservation (SACs) are habitats of international significance that have been identified by NPWS and submitted for designation to the EU. SAC is a statutory designation, which has a legal basis under the EU Habitats Directive (92/43/EEC) as transposed into Irish law through the European Communities (Natural Habitats) Regulations, 1997, which were amended in 1998, 2005 and 2011. The European Communities (Birds and Natural Habitats) Regulations 2011 consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats)(Control of Recreational Activities) Regulations 2010, as well as addressing transposition failures identified in the Court of Justice of the European Union (CJEU) judgements.

A Special Protection Area (SPA) is a statutory designation, which has a legal basis under the EU Birds Directive (79/409/EEC). The primary objective of SPAs is to maintain or enhance the favourable conservation status of the birds for which the SPAs have been designated.

#### *National Conservation Designations*

Proposed NHAs are habitats or sites of interest to wildlife that have been identified by NPWS. These sites become NHAs once they have been formally advertised and land owners have been notified of their designation. NHAs are protected under the Wildlife (Amendment) Act, 2000, from the date they are formally proposed. NHA is a statutory designation according to the Wildlife (Amendment) Act, 2000.

### Bats

Eleven species of bats occur in Ireland and all are protected under both national and international law. Nine species are resident and have confirmed breeding populations while two species are deemed to be vagrants as set out in **Table 1** below.

**Table 1. Legal protection and status of the Irish bat fauna.**

Common and scientific name	Wildlife Act 1976 & Wildlife (Amendment) Acts 2000 & 2010	Irish Red List status	Habitats Directive	Bern & Bonn Conventions
Common pipistrelle <i>Pipistrellus pipistrellus</i>	Yes	Least Concern	Annex IV	Appendix II
Soprano pipistrelle <i>P. pygmaeus</i>	Yes	Least Concern	Annex IV	Appendix II
Nathusius' pipistrelle <i>P. nathusii</i>	Yes	Not referenced	Annex IV	Appendix II
Leisler's bat <i>Nyctalus leisleri</i>	Yes	Near Threatened	Annex IV	Appendix II
Brown long-eared bat <i>Plecotus auritus</i>	Yes	Least Concern	Annex IV	Appendix II
Lesser horseshoe bat <i>Rhinolophus hipposideros</i>	Yes	Least Concern	Annex II Annex IV	Appendix II
Greater horseshoe bat <i>Rhinolophus ferruginous</i>		Data Deficient	Annex II Annex IV	Appendix II
Daubenton's bat <i>Myotis daubentonii</i>	Yes	Least Concern	Annex IV	Appendix II

Common and scientific name	Wildlife Act 1976 & Wildlife (Amendment) Acts 2000 & 2010	Irish Red List status	Habitats Directive	Bern & Bonn Conventions
Natterer's bat <i>M. nattereri</i>	Yes	Least Concern	Annex IV	Appendix II
Whiskered bat <i>M. mystacinus</i>	Yes	Least Concern	Annex IV	Appendix II
Brandt's bat <i>M. brandtii</i>	Yes	Data Deficient	Annex IV	Appendix II

#### Wildlife Act 1976

In the Republic, under Schedule 5 of the Wildlife Act 1976, all bats and their roosts are protected by law. It is unlawful to disturb either without the appropriate licence. The Act was amended in 2000.

#### Bern and Bonn Convention

Ireland has also ratified two international conventions, which afford protection to bats amongst other fauna. These are known as the 'Bern' and 'Bonn' Conventions. The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), exists to conserve all species and their habitats, including bats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries, which covers certain species of bat.

#### EU Habitats Directive

All bat species are given strict protection under Annex IV of the EU Habitats Directive, whilst the lesser horseshoe bat (*Rhinolophus hipposideros*) and greater horseshoe bat (*Rhinolophus ferrumequinum*) are given further protection under Annex II of the EU Habitats Directive. Both are listed as a species of community interest that is in need of strict protection and for which E.U. nations must designate Special Areas of Conservation (SACs). The latter is only known from a single site and no breeding populations have been recorded to date. The former are a species of the western seaboard of Ireland and have not yet been recorded on the east coast.

#### Eurobats

This is a Europe-wide (and neighbouring jurisdictions including North Africa and the Middle East) agreement that originates from efforts to apply the Bonn Convention to the protection of bats within areas to which they may migrate from their European summer or winter sites. There are 33 parties (including Ireland) that have entered into a UN forum to protect the 52 species of bat (based on current knowledge) of Europe.

#### **Threats to Irish bats:**

The principal pressures on Irish bat species have been identified as follows:

- urbanized areas (e.g. light pollution);
- bridge/viaduct repairs;
- pesticides usage;
- removal of hedges, scrub, forestry;
- water pollution;
- other pollution and human impacts (e.g. renovation of dwellings with roosts);
- infillings of ditches, dykes, ponds, pools and marshes;
- management of aquatic and bank vegetation for drainage purposes;
- abandonment of pastoral systems;
- speleology and vandalism;
- communication routes: roads; and
- inappropriate forestry management.

### Badgers

Badgers (*Meles meles*) are common and widespread in Ireland, and are found in all lowland habitats where the soil is dry and not subject to flooding (Hayden and Harrington, 2000). Badgers are social animals that live in complex underground tunnel systems called setts. Badger territories may vary in size from about 60-200 ha (Smal, 1995). Badgers and their setts legally are protected under the provisions of the Wildlife Act, 1976, and the Wildlife Amendment Act, 2000. It is an offence to intentionally kill or injure a protected species or to wilfully interfere with or destroy the breeding site or resting place of a protected wild animal.

### Otter

The otter (*Lutra lutra*) is a legally protected species under the EU Habitats Directive (where it is listed under Annex II) and is found throughout Ireland (Hayden and Harrington, 2000). The otter is listed as internationally important in the Irish Red Data book (Whilde, 1993), is classified as 'near threatened' in Ireland (Marnell, et al. 2009), on a European scale (Temple & Terry, 2007) and on a global scale by the IUCN (2009). It is listed as a strictly protected species under Appendix II of the Bern convention (Council of Europe, 1979). Because it is listed in Appendix 1 of CITES (1979), trade in otter specimens is permitted only in exceptional circumstances.

Annexes II and IV of the E.U. Habitats Directive (92/43/EEC) list the otter as a species of community interest that is in need of strict protection and for which E.U. nations must designate Special Areas of Conservation (SACs). The E.U. Habitats Directive was transposed into Irish law in the European Union (Natural Habitats) Regulations, (SI 94/1997) and 40 candidate SACs have been designated for the otter in Ireland (NPWS (2008)<sup>9</sup>). A Species Action Plan and a Threat Response Plan has been prepared for the otter by NPWS (2008 & 2009)<sup>10</sup>.

### Kingfisher

The kingfisher (*Alcedo atthis*) is a species listed under Annex I of the EU Birds Directive for which EU nations must designate Special Protection Areas (for birds) (SPAs).

### Invasive Species

The Birds and Habitats Regulations (2011) included new legislation on invasive and non-native species in Sections 49 and 50. Since then the EU Regulation on Invasive Alien Species (EU Regulation 1143/2014) also came into force on the 3<sup>rd</sup> August 2016.

*The plant and animal species to which the Birds and Habitats Regulations (2011) apply are presented in Schedule Three. Part 1 details the plants species, while Part 3 outlines those animal or plant vector materials and are presented below.*

### Third Schedule: Part 1 Plants

#### Non-native species subject to restrictions under Regulations 49 and 50.

First column	Second column	Third column
Common name	Scientific name	Geographical application
American skunk-cabbage	<i>Lysichiton americanus</i>	Throughout the State
A red alga	<i>Grateloupia doryphora</i>	Throughout the State
Brazilian giant-rhubarb	<i>Gunnera manicata</i>	Throughout the State
Broad-leaved rush	<i>Juncus planifolius</i>	Throughout the State
Cape pondweed	<i>Aponogeton distachyos</i>	Throughout the State
Cord-grasses	<i>Spartina</i> (all species and hybrids)	Throughout the State

<sup>9</sup> NPWS (2008). The status of EU protected species and habitat in Ireland. NPWS, Dublin.

<sup>10</sup> NPWS (2009). Threat Response Plan: Otter (2009-2011). National Parks & Wildlife Service, Department of the Environment, Heritage & Local Government, Dublin.

First column	Second column	Third column
Common name	Scientific name	Geographical application
Curly waterweed	<i>Lagarosiphon major</i>	Throughout the State
Dwarf eel-grass	<i>Zostera japonica</i>	Throughout the State
Fanwort	<i>Cabomba caroliniana</i>	Throughout the State
Floating pennywort	<i>Hydrocotyle ranunculoides</i>	Throughout the State
Fringed water-lily	<i>Nymphoides peltata</i>	Throughout the State
Giant hogweed	<i>Heracleum mantegazzianum</i>	Throughout the State
Giant knotweed	<i>Fallopia sachalinensis</i>	Throughout the State
Giant-rhubarb	<i>Gunnera tinctoria</i>	Throughout the State
Giant salvinia	<i>Salvinia molesta</i>	Throughout the State
Himalayan balsam	<i>Impatiens glandulifera</i>	Throughout the State
Himalayan knotweed	<i>Persicaria wallichii</i>	Throughout the State
Hottentot-fig	<i>Carpobrotus edulis</i>	Throughout the State
Japanese knotweed	<i>Fallopia japonica</i>	Throughout the State
Large-flowered waterweed	<i>Egeria densa</i>	Throughout the State
Mile-a-minute weed	<i>Persicaria perfoliata</i>	Throughout the State
New Zealand pigmyweed	<i>Crassula helmsii</i>	Throughout the State
Parrot's feather	<i>Myriophyllum aquaticum</i>	Throughout the State
Rhododendron	<i>Rhododendron ponticum</i>	Throughout the State
Salmonberry	<i>Rubus spectabilis</i>	Throughout the State
Sea-buckthorn	<i>Hippophae rhamnoides</i>	Throughout the State
Spanish bluebell	<i>Hyacinthoides hispanica</i>	Throughout the State
Three-cornered leek	<i>Allium triquetrum</i>	Throughout the State
Wakame	<i>Undaria pinnatifida</i>	Throughout the State
Water chestnut	<i>Trapa natans</i>	Throughout the State
Water fern	<i>Azolla filiculoides</i>	Throughout the State
Water lettuce	<i>Pistia stratiotes</i>	Throughout the State
Water-primrose	<i>Ludwigia</i> (all species)	Throughout the State
Waterweeds	<i>Elodea</i> (all species)	Throughout the State
Wireweed	<i>Sargassum muticum</i>	Throughout the State

### EU Regulation 1143/2014 on Invasive Alien Species

On 14 July 2016 the European Commission published Commission Implementing Regulation 2016/1141 which set out an initial list of 37 species to which the EU Invasive Alien Species Regulation 1143/2014 applies. The associated restrictions and obligations came into force on 3rd August 2016.

Three distinct types of measures are envisaged under the Directive, which follow an internationally agreed hierarchical approach to combatting IAS:

- Prevention: a number of robust measures aimed at preventing IAS of Union concern from entering the EU, either intentionally or unintentionally.
- Early detection and rapid eradication: Member States must put in place a surveillance system to detect the presence of IAS of Union concern as early as possible and take rapid eradication measures to prevent them from establishing.
- Management: some IAS of Union concern are already well-established in certain Member States and concerted management action is needed so that they do not spread any further and to minimize the harm they cause.

**Plant species** listed on the directive include:

- American skunk cabbage *Lysichiton americanus*
- Asiatic tearthumb *Persicaria perfoliata* (*Polygonum perfoliatum*)

- Curly waterweed *Lagarosiphon major*
- Eastern Baccharis *Baccharis halimifolia*
- Floating pennywort *Hydrocotyle ranunculoides*
- Floating primrose willow *Ludwigia peploides*
- Green cabomba *Cabomba caroliniana*
- Kudzu vine *Pueraria lobata*
- Parrot's feather *Myriophyllum aquaticum*
- Persian hogweed *Heracleum persicum*
- Sosnowski's hogweed *Heracleum sosnowskyi*
- Water hyacinth *Eichhornia crassipes*
- Water primrose *Ludwigia grandiflora*
- Whitetop weed *Parthenium hysterophorus*

**Animal species** listed on the directive include:

- Amur sleeper *Percottus glenii*
- Asian hornet *Vespa velutina*
- Chinese mitten crab *Eriocheir sinensis*
- Coypu *Myocastor coypus*
- Fox squirrel *Sciurus niger*
- Grey squirrel *Sciurus carolinensis*
- Indian house crow *Corvus splendens*
- Marbled crayfish *Procambarus* spp.
- Muntjac deer *Muntiacus reevesii*
- North american bullfrog *Lithobates (Rana) catesbeianus*
- Pallas's squirrel *Callosciurus erythraeus*
- Raccoon *Procyon lotor*
- Red swamp crayfish *Procambarus clarkii*
- Red-eared terrapin/slider *Trachemys scripta elegans*
- Ruddy duck *Oxyura jamaicensis*
- Sacred ibis *Threskiornis aethiopicus*
- Siberian chipmunk *Tamias sibiricus*
- Signal crayfish *Pacifastacus leniusculus*
- Small Asian mongoose *Herpestes javanicus*
- South American coati *Nasua nasua*
- Spiny-cheek crayfish *Orconectes limosus*
- Topmouth gudgeon *Pseudorasbora parva*
- Virile crayfish *Orconectes virilis*

On 13 July 2017 the European Commission published Commission Implementing Regulation 2017/1263 which added a further 12 species to the current list of 37 species regulated under the EU Invasive Alien Species Regulation (1143/2014). These are:

**Plant species**

- Alligator weed (*Alternanthera philoxeroides*)
- Milkweed (*Asclepias syriaca*)
- Nuttall's waterweed (*Elodea nuttallii*)
- Chilean rhubarb (*Gunnera tinctoria*)
- Giant hogweed (*Heracleum mantegazzianum*)
- Himalayan balsam (*Impatiens glandulifera*)
- Japanese stiltgrass (*Microstegium vimineum*)
- Broadleaf watermilfoil (*Myriophyllum heterophyllum*)
- Crimson fountaingrass (*Pennisetum setaceum*)

**Animal species**

- Egyptian goose (*Alopochen aegyptiacus*)
- Raccoon dog (*Nyctereutes procyonoides*)

➤ Muskrat (*Ondatra zibethicus*)

*Other Invasive Species*

The main guidance document that has been prepared dealing with invasive species/noxious weeds on sites is the NRA 'Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads' which was published in 2010. This document details other non-native species of note which threaten biodiversity. Observations of these species were also made during the field surveys.

## 7.7 Appendix 6 - Biodiversity Resources & Linkages

The following is a list of useful links to guides on a range of common biodiversity subjects.

Subject	Link(s)
Bats	<a href="http://www.batconservationireland.org/">www.batconservationireland.org/</a> <a href="https://www.facebook.com/dublinbatgroup/">www.facebook.com/dublinbatgroup/</a>
Birdwatching	<a href="http://www.birdwatchireland.ie/irelands-birds-birdwatch-ireland/">www.birdwatchireland.ie/irelands-birds-birdwatch-ireland/</a> <a href="http://www.irishbirding.com">www.irishbirding.com</a>
Children's Biodiversity Activities	<a href="http://www.birdwatchireland.ie/our-work/fun-learning/for-kids/">www.birdwatchireland.ie/our-work/fun-learning/for-kids/</a> <a href="http://www.woodlandtrust.org.uk/blog/2020/03/kids-nature-activities-self-isolation/">www.woodlandtrust.org.uk/blog/2020/03/kids-nature-activities-self-isolation/</a> <a href="http://www.rspb.org.uk/fun-and-learning/">www.rspb.org.uk/fun-and-learning/</a>
Garden Biodiversity	<a href="https://laois.ie/wp-content/uploads/Garden-Wildlife-Booklet-WEB-17MB.pdf">https://laois.ie/wp-content/uploads/Garden-Wildlife-Booklet-WEB-17MB.pdf</a>
General Biodiversity Issues	<a href="http://www.biodiversityireland.ie">www.biodiversityireland.ie</a> <a href="http://www.npws.ie">www.npws.ie</a>
Habitat and Nest Boxes	<a href="http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-How-to-Guide-1-ALT_FINAL.pdf">www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-How-to-Guide-1-ALT_FINAL.pdf</a> <a href="http://www.birdwatchireland.ie/app/uploads/2019/09/Nestboxes-factsheet.pdf">www.birdwatchireland.ie/app/uploads/2019/09/Nestboxes-factsheet.pdf</a> <a href="http://www.batconservationireland.org/wp-content/uploads/2015/05/BCIrelandGuidelines_BatBoxes.pdf">www.batconservationireland.org/wp-content/uploads/2015/05/BCIrelandGuidelines_BatBoxes.pdf</a>
Hedgerows	<a href="http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-How-to-Guide-3-FINAL-1.pdf">www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-How-to-Guide-3-FINAL-1.pdf</a> <a href="https://www.heritagecouncil.ie/content/files/conserving_hedgerows_2mb.pdf">https://www.heritagecouncil.ie/content/files/conserving_hedgerows_2mb.pdf</a> <a href="https://63273-649646-raikfcquaxqncofqfm.stackpathdns.com/wp-content/uploads/2019/04/Hedgerow-CasestudyASPaul21-Send-for-New-Website.pdf">https://63273-649646-raikfcquaxqncofqfm.stackpathdns.com/wp-content/uploads/2019/04/Hedgerow-CasestudyASPaul21-Send-for-New-Website.pdf</a> <a href="https://mosart.ie/wp-content/uploads/2016/02/Irish-Hedgerows-Networks-for-Nature.pdf">https://mosart.ie/wp-content/uploads/2016/02/Irish-Hedgerows-Networks-for-Nature.pdf</a> <a href="http://www.hedgelaying.ie">www.hedgelaying.ie</a>
Interpretative Signage	<a href="https://www.nature.scot/sites/default/files/2019-11/Guidance%20-%20Natural%20heritage%20interpretation_1.pdf">https://www.nature.scot/sites/default/files/2019-11/Guidance%20-%20Natural%20heritage%20interpretation_1.pdf</a> <a href="https://www.heritagecouncil.ie/content/files/bored_of_boards_1mb.pdf">https://www.heritagecouncil.ie/content/files/bored_of_boards_1mb.pdf</a> <a href="https://pollinators.ie/resources/signage-templates/">https://pollinators.ie/resources/signage-templates/</a>
Invasive Alien Species	<a href="https://invasivespeciesireland.com/">https://invasivespeciesireland.com/</a> <a href="https://www.fisheriesireland.ie/Invasive-Species/invasive-species.html">https://www.fisheriesireland.ie/Invasive-Species/invasive-species.html</a>

<b>Subject</b>	<b>Link(s)</b>
Orchards	<a href="http://www.irishseedsavers.ie/blog/wp-content/uploads/2014/10/CreatingAnOrchard.pdf">http://www.irishseedsavers.ie/blog/wp-content/uploads/2014/10/CreatingAnOrchard.pdf</a>  <a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/11466/1973262.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/11466/1973262.pdf</a>  <a href="http://www.wetlandsystems.ie/goephow.html">http://www.wetlandsystems.ie/goephow.html</a>  <a href="https://www.theorchardproject.org.uk/">https://www.theorchardproject.org.uk/</a>
Pollinator Friendly Planting Schemes	<a href="https://pollinators.ie/resources/">https://pollinators.ie/resources/</a>  <a href="https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Planting-Code-2018-WEB.pdf">https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Planting-Code-2018-WEB.pdf</a>  <a href="http://www.rhs.org.uk">www.rhs.org.uk</a>
Pollinators	<a href="https://pollinators.ie/">https://pollinators.ie/</a>
Recording Biodiversity	<a href="https://www.biodiversityireland.ie/record-biodiversity/">https://www.biodiversityireland.ie/record-biodiversity/</a>
Reducing Herbicide Use	<a href="https://greensideup.ie/16-natural-alternatives-to-herbicide-why-you-should-use-them/">https://greensideup.ie/16-natural-alternatives-to-herbicide-why-you-should-use-them/</a>
Schools & Biodiversity	<a href="https://greenschoolsireland.org/biodiveristy/">https://greenschoolsireland.org/biodiveristy/</a>  <a href="https://pollinators.ie/schools/">https://pollinators.ie/schools/</a>  <a href="http://www.heritageinschools.ie/teachers-resources/strand/living-things-science/p3?q=&amp;c=">http://www.heritageinschools.ie/teachers-resources/strand/living-things-science/p3?q=&amp;c=</a>
Swifts	<a href="https://birdwatchireland.ie/our-work/surveys-research/research-surveys/swift-surveys/">https://birdwatchireland.ie/our-work/surveys-research/research-surveys/swift-surveys/</a>  <a href="http://www.swiftconservation.ie/">www.swiftconservation.ie/</a>
Tree Identification & Selection	<a href="http://www.treecouncil.ie/nativeirishtrees">www.treecouncil.ie/nativeirishtrees</a>  <a href="http://www.clarecoco.ie/services/planning/publications/tree-design-guide-for-towns-and-villages-in-co-clare-2017-28115.pdf">www.clarecoco.ie/services/planning/publications/tree-design-guide-for-towns-and-villages-in-co-clare-2017-28115.pdf</a>
Urban Watercourses	<a href="https://www.fisheriesireland.ie/extranet/fisheries-management-1/1756-ifi-urban-watercourses-planning-guide-2020-update.html">https://www.fisheriesireland.ie/extranet/fisheries-management-1/1756-ifi-urban-watercourses-planning-guide-2020-update.html</a>
Water Quality	EPA Maps - maps with details about soils, water quality, habitat <a href="http://gis.epa.ie/EPAMaps/EnvironmentAndWellbeing">http://gis.epa.ie/EPAMaps/EnvironmentAndWellbeing</a>  <a href="https://gis.epa.ie/EPAMaps/Water">https://gis.epa.ie/EPAMaps/Water</a>
Wildflower Meadows	<a href="https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Wildflower-Meadows-2018-WEB.pdf">https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Wildflower-Meadows-2018-WEB.pdf</a>
Wildflowers	<a href="http://www.wildflowersofireland.net/index.php">www.wildflowersofireland.net/index.php</a>  <a href="http://www.bsbi.org">www.bsbi.org</a>
Wildlife Ponds	<a href="https://www.wildlifetrusts.org/actions/how-build-pond">https://www.wildlifetrusts.org/actions/how-build-pond</a>  <a href="https://invasivespeciesireland.com/wp-content/uploads/2017/10/AQUATICS_BOOK5.pdf">https://invasivespeciesireland.com/wp-content/uploads/2017/10/AQUATICS_BOOK5.pdf</a>

<b>Subject</b>	<b>Link(s)</b>
Woodland	<a href="http://www.woodlandsofireland.com/sites/default/files/Management%20Guidelines%20for%20Ireland%27s%20Native%20Woodlands%202017.pdf">http://www.woodlandsofireland.com/sites/default/files/Management%20Guidelines%20for%20Ireland%27s%20Native%20Woodlands%202017.pdf</a>  <a href="https://www.forestryfocus.ie/social-environmental-aspects/biodiversity-and-nature-conservation/biodiversity-in-forests/conservation-and-restoration/">https://www.forestryfocus.ie/social-environmental-aspects/biodiversity-and-nature-conservation/biodiversity-in-forests/conservation-and-restoration/</a>  <a href="http://www.woodlandsofireland.com/sites/default/files/Silvicultural%20Guidelines%20for%20Native%20Trees.pdf">http://www.woodlandsofireland.com/sites/default/files/Silvicultural%20Guidelines%20for%20Native%20Trees.pdf</a>

7.8 Appendix 7 - Records held by the National Biodiversity Data Centre

Table 1. Records held by the National Biodiversity Data Centre from Roundwood Village.

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
bird	Barn Swallow ( <i>Hirundo rustica</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Black-billed Magpie ( <i>Pica pica</i> )	4	22/05/2016	Birds of Ireland	
bird	Blackcap ( <i>Sylvia atricapilla</i> )	1	22/05/2016	Birds of Ireland	
bird	Black-headed Gull ( <i>Larus ridibundus</i> )	2	21/01/2023	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Blue Tit ( <i>Cyanistes caeruleus</i> )	4	22/05/2016	Birds of Ireland	
bird	Brambling ( <i>Fringilla montifringilla</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Chaffinch ( <i>Fringilla coelebs</i> )	2	22/05/2016	Birds of Ireland	
bird	Coal Tit ( <i>Periparus ater</i> )	2	22/05/2016	Birds of Ireland	
bird	Common Blackbird ( <i>Turdus merula</i> )	6	21/01/2023	Birds of Ireland	
bird	Common Bullfinch ( <i>Pyrrhula pyrrhula</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Chiffchaff ( <i>Phylloscopus collybita</i> )	2	24/04/2016	Birds of Ireland	
bird	Common Coot ( <i>Fulica atra</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Crossbill ( <i>Loxia curvirostra</i> )	2	21/01/2023	Birds of Ireland	
bird	Common Kingfisher ( <i>Alcedo atthis</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
bird	Common Linnet ( <i>Carduelis cannabina</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Moorhen ( <i>Gallinula chloropus</i> )	3	21/03/2014	Birds of Ireland	
bird	Common Pheasant ( <i>Phasianus colchicus</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
bird	Common Raven ( <i>Corvus corax</i> )	4	24/04/2016	Birds of Ireland	
bird	Common Sandpiper ( <i>Actitis hypoleucos</i> )	4	25/04/2016	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Snipe ( <i>Gallinago gallinago</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section III Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Starling ( <i>Sturnus vulgaris</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Wood Pigeon ( <i>Columba palumbus</i> )	3	21/01/2023	Birds of Ireland	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
bird	Eurasian Collared Dove ( <i>Streptopelia decaocto</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Eurasian Jackdaw ( <i>Corvus monedula</i> )	4	21/01/2023	Birds of Ireland	
bird	Eurasian Jay ( <i>Garrulus glandarius</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Eurasian Siskin ( <i>Carduelis spinus</i> )	2	31/12/2011	Bird Atlas 2007 - 2011	
bird	Eurasian Sparrowhawk ( <i>Accipiter nisus</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
bird	Eurasian Teal ( <i>Anas crecca</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Eurasian Treecreeper ( <i>Certhia familiaris</i> )	3	31/12/2011	Bird Atlas 2007 - 2011	
bird	Eurasian Wigeon ( <i>Anas penelope</i> )	3	20/03/2016	Birds of Ireland	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Eurasian Woodcock ( <i>Scolopax rusticola</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section III Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	European Goldfinch ( <i>Carduelis carduelis</i> )	2	21/01/2023	Birds of Ireland	
bird	European Greenfinch ( <i>Carduelis chloris</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	European Robin ( <i>Erithacus rubecula</i> )	4	21/01/2023	Birds of Ireland	
bird	Fieldfare ( <i>Turdus pilaris</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Goldcrest ( <i>Regulus regulus</i> )	2	22/05/2016	Birds of Ireland	
bird	Goosander ( <i>Mergus merganser</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
bird	Great Cormorant ( <i>Phalacrocorax carbo</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Great Crested Grebe ( <i>Podiceps cristatus</i> )	14	09/07/2020	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Great Egret ( <i>Ardea alba</i> )	1	22/02/1998	Rare birds of Ireland	
bird	Great Tit ( <i>Parus major</i> )	2	21/03/2014	Birds of Ireland	
bird	Grey Heron ( <i>Ardea cinerea</i> )	3	20/03/2016	Birds of Ireland	
bird	Grey Wagtail ( <i>Motacilla cinerea</i> )	7	21/01/2023	Birds of Ireland	
bird	Hedge Accentor ( <i>Prunella modularis</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Herring Gull ( <i>Larus argentatus</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Hooded Crow ( <i>Corvus cornix</i> )	3	21/01/2023	Birds of Ireland	
bird	House Martin ( <i>Delichon urbicum</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	House Sparrow ( <i>Passer domesticus</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Lesser Black-backed Gull ( <i>Larus fuscus</i> )	2	24/04/2016	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Lesser Redpoll ( <i>Carduelis cabaret</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Little Egret ( <i>Egretta garzetta</i> )	3	20/03/2016	Birds of Ireland	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species
bird	Little Grebe ( <i>Tachybaptus ruficollis</i> )	14	21/01/2023	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
bird	Long-tailed Tit ( <i>Aegithalos caudatus</i> )	2	31/12/2011	Bird Atlas 2007 - 2011	
bird	Mallard ( <i>Anas platyrhynchos</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
bird	Meadow Pipit ( <i>Anthus pratensis</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Mistle Thrush ( <i>Turdus viscivorus</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Mute Swan ( <i>Cygnus olor</i> )	8	22/05/2016	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Peregrine Falcon ( <i>Falco peregrinus</i> )	1	26/07/1997	Birds of Ireland	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species
bird	Red Kite ( <i>Milvus milvus</i> )	3	09/07/2020	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Redwing ( <i>Turdus iliacus</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Reed Bunting ( <i>Emberiza schoeniclus</i> )	2	02/04/2023	Birds of Ireland	
bird	Rock Pigeon ( <i>Columba livia</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species
bird	Rook ( <i>Corvus frugilegus</i> )	3	22/05/2016	Birds of Ireland	
bird	Song Thrush ( <i>Turdus philomelos</i> )	2	21/03/2014	Birds of Ireland	
bird	Stock Pigeon ( <i>Columba oenas</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	White Wagtail ( <i>Motacilla alba</i> )	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Whooper Swan ( <i>Cygnus cygnus</i> )	2	21/03/2014	Birds of Ireland	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Willow Warbler ( <i>Phylloscopus trochilus</i> )	3	22/05/2016	Birds of Ireland	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
bird	Winter Wren ( <i>Troglodytes troglodytes</i> )	3	22/05/2016	Birds of Ireland	
conifer	European Larch ( <i>Larix decidua</i> )	1	08/08/2005	Species Data from the National Vegetation Database	
conifer	European Silver-fir ( <i>Abies alba</i> )	1	08/08/2005	Species Data from the National Vegetation Database	
conifer	Scots Pine ( <i>Pinus sylvestris</i> )	1	22/05/2016	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
conifer	Sitka Spruce ( <i>Picea sitchensis</i> )	1	08/08/2005	Species Data from the National Vegetation Database	
conifer	Yew ( <i>Taxus baccata</i> )	1	21/03/2014	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
fern	Bracken ( <i>Pteridium aquilinum</i> )	2	21/03/2014	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
fern	Broad Buckler-fern ( <i>Dryopteris dilatata</i> )	3	08/08/2005	Species Data from the National Vegetation Database	
fern	Hart's-tongue ( <i>Phyllitis scolopendrium</i> )	1	08/01/2012	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
fern	Maidenhair Spleenwort ( <i>Asplenium trichomanes</i> )	2	22/05/2016	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
fern	Male-fern ( <i>Dryopteris filix-mas</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
fern	Scaly Male-fern ( <i>Dryopteris affinis</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
fern	Wall-rue ( <i>Asplenium ruta-muraria</i> )	1	08/01/2012	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Alder ( <i>Alnus glutinosa</i> )	2	21/03/2014	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
flowering plant	Amphibious Bistort ( <i>Persicaria amphibia</i> )	2	02/08/2012	Water Framework Directive Lake Macrophyte Status Survey Data 2007 to 2019	
flowering plant	Ash ( <i>Fraxinus excelsior</i> )	2	21/03/2014	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Atlantic Ivy ( <i>Hedera hibernica</i> )	1	21/03/2014	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Barren Strawberry ( <i>Potentilla sterilis</i> )	2	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Beech ( <i>Fagus sylvatica</i> )	4	22/05/2016	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Bilberry ( <i>Vaccinium myrtillus</i> )	2	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Bog Stitchwort ( <i>Stellaria alsine</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Bog-myrtle ( <i>Myrica gale</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Bottle Sedge ( <i>Carex rostrata</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Bramble ( <i>Rubus fruticosus</i> agg.)	4	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Broad-leaved Dock ( <i>Rumex obtusifolius</i> )	1	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Broad-leaved Willowherb ( <i>Epilobium montanum</i> )	2	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Broom ( <i>Cytisus scoparius</i> )	1	08/08/2005	Species Data from the National Vegetation Database	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
flowering plant	Bulbous Rush ( <i>Juncus bulbosus</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Bush Vetch ( <i>Vicia sepium</i> )	2	21/03/2014	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Buttercup ( <i>Ranunculus</i> )	2	21/07/2015	Water Framework Directive Lake Macrophyte Status Survey Data 2007 to 2019	
flowering plant	Canadian Waterweed ( <i>Elodea canadensis</i> )	2	21/07/2015	Water Framework Directive Lake Macrophyte Status Survey Data 2007 to 2019	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> High Impact Invasive Species    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
flowering plant	Cat's-ear ( <i>Hypochaeris radicata</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Cleavers ( <i>Galium aparine</i> )	1	21/03/2014	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Cock's-foot ( <i>Dactylis glomerata</i> )	2	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Common Bent ( <i>Agrostis capillaris</i> )	3	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Common Bird's-foot-trefoil ( <i>Lotus corniculatus</i> )	4	29/06/2024	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Common Cow-wheat ( <i>Melampyrum pratense</i> )	1	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Common Knapweed ( <i>Centaurea nigra</i> )	1	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Common Mouse-ear ( <i>Cerastium fontanum</i> )	1	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
flowering plant	Common Nettle ( <i>Urtica dioica</i> )	2	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Common Ragwort ( <i>Senecio jacobaea</i> )	2	27/06/2017	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Common Reed ( <i>Phragmites australis</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Common Sedge ( <i>Carex nigra</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Common Sorrel ( <i>Rumex acetosa</i> )	2	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Common Spike-rush ( <i>Eleocharis palustris</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Common Yellow-sedge ( <i>Carex viridula</i> subsp. <i>oedocarpa</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Cowslip ( <i>Primula veris</i> )	1	18/04/2023	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Creeping Bent ( <i>Agrostis stolonifera</i> )	3	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Creeping Buttercup ( <i>Ranunculus repens</i> )	4	29/06/2024	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Crested Dog's-tail ( <i>Cynosurus cristatus</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Cuckooflower ( <i>Cardamine pratensis</i> )	3	19/04/2023	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Downy Birch ( <i>Betula pubescens</i> )	2	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Elder ( <i>Sambucus nigra</i> )	1	31/12/1999	BSBI tetrad data for Ireland	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
flowering plant	False Oat-grass ( <i>Arrhenatherum elatius</i> )	2	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Fool's-water-cress ( <i>Apium nodiflorum</i> )	1	21/03/2014	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Foxglove ( <i>Digitalis purpurea</i> )	4	29/06/2024	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Germander Speedwell ( <i>Veronica chamaedrys</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Goat Willow ( <i>Salix caprea</i> )	1	18/04/2021	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Gorse ( <i>Ulex europaeus</i> )	4	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Greater Stitchwort ( <i>Stellaria holostea</i> )	2	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Groundsel ( <i>Senecio vulgaris</i> )	2	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Hairy Bitter-cress ( <i>Cardamine hirsuta</i> )	1	21/03/2014	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Hairy Wood-rush ( <i>Luzula pilosa</i> )	1	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Hawthorn ( <i>Crataegus monogyna</i> )	2	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Hazel ( <i>Corylus avellana</i> )	1	21/03/2014	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Heath Bedstraw ( <i>Galium saxatile</i> )	2	08/08/2005	Species Data from the National Vegetation Database	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
flowering plant	Heath Wood-rush ( <i>Luzula multiflora</i> )	2	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Heather ( <i>Calluna vulgaris</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Hedge Bindweed ( <i>Calystegia sepium</i> )	1	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Herb-Robert ( <i>Geranium robertianum</i> )	2	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Hieracium aggregate	1	31/12/1969	BSBI tetrad data for Ireland	
flowering plant	Hogweed ( <i>Heracleum sphondylium</i> )	2	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Holly ( <i>Ilex aquifolium</i> )	6	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Honeysuckle ( <i>Lonicera periclymenum</i> )	1	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Ivy ( <i>Hedera helix</i> )	2	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Lesser Burdock ( <i>Arctium minus</i> )	1	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Lesser Celandine ( <i>Ranunculus ficaria</i> )	2	10/02/2016	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Lesser Marshwort ( <i>Apium inundatum</i> )	5	04/07/2009	Water Framework Directive Lake Macrophyte Status Survey Data 2007 to 2019	
flowering plant	Lesser Spearwort ( <i>Ranunculus flammula</i> )	2	05/07/2022	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
flowering plant	Many-stalked Spike-rush ( <i>Eleocharis multicaulis</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Marsh Pennywort ( <i>Hydrocotyle vulgaris</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Marsh Ragwort ( <i>Senecio aquaticus</i> )	2	27/06/2017	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Marsh Speedwell ( <i>Veronica scutellata</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Marsh Violet ( <i>Viola palustris</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Meadow Buttercup ( <i>Ranunculus acris</i> )	3	21/03/2014	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Meadow Vetchling ( <i>Lathyrus pratensis</i> )	1	20/06/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Meadowsweet ( <i>Filipendula ulmaria</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Pill Sedge ( <i>Carex pilulifera</i> )	2	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Pineappleweed ( <i>Matricaria discoidea</i> )	1	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Prickly Sow-thistle ( <i>Sonchus asper</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Red Clover ( <i>Trifolium pratense</i> )	3	29/06/2024	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Red Fescue ( <i>Festuca rubra</i> )	1	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Redshank ( <i>Persicaria maculosa</i> )	1	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
flowering plant	Reed Canary-grass ( <i>Phalaris arundinacea</i> )	5	12/07/2018	Water Framework Directive Lake Macrophyte Status Survey Data 2007 to 2019	
flowering plant	Ribwort Plantain ( <i>Plantago lanceolata</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Round-leaved Crowfoot ( <i>Ranunculus omiophyllus</i> )	1	21/03/2014	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Rowan ( <i>Sorbus aucuparia</i> )	3	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Rusty Willow ( <i>Salix cinerea</i> subsp. <i>oleifolia</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	<i>Salix cinerea</i>	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Sanicle ( <i>Sanicula europaea</i> )	2	12/06/2022	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Selfheal ( <i>Prunella vulgaris</i> )	1	29/06/2024	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Sessile Oak ( <i>Quercus petraea</i> )	3	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Sheep's-bit ( <i>Jasione montana</i> )	2	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Shoreweed ( <i>Littorella uniflora</i> )	16	12/07/2018	Water Framework Directive Lake Macrophyte Status Survey Data 2007 to 2019	
flowering plant	Silver Birch ( <i>Betula pendula</i> )	1	08/08/2005	Species Data from the National Vegetation Database	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
flowering plant	Slender St John's-wort ( <i>Hypericum pulchrum</i> )	1	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Smooth Sow-thistle ( <i>Sonchus oleraceus</i> )	1	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Sneezewort ( <i>Achillea ptarmica</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Soft-rush ( <i>Juncus effusus</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Strict Hawkweed ( <i>Hieracium strictiforme</i> )	1	31/12/1969	BSBI tetrad data for Ireland	
flowering plant	Sweet Vernal-grass ( <i>Anthoxanthum odoratum</i> )	3	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Taraxacum aggregate	3	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Tormentil ( <i>Potentilla erecta</i> )	3	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Traveller's-joy ( <i>Clematis vitalba</i> )	1	30/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Invasive Species: Invasive Species     Invasive Species: Invasive Species >> Medium Impact Invasive Species
flowering plant	Tufted Hair-grass ( <i>Deschampsia cespitosa</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Tufted Vetch ( <i>Vicia cracca</i> )	1	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Velvet Bent ( <i>Agrostis canina</i> )	2	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Water Mint ( <i>Mentha aquatica</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Water-pepper ( <i>Persicaria hydropiper</i> )	1	31/12/1999	BSBI tetrad data for Ireland	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
flowering plant	Wavy Hair-grass ( <i>Deschampsia flexuosa</i> )	2	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Wild Angelica ( <i>Angelica sylvestris</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Wood Anemone ( <i>Anemone nemorosa</i> )	1	18/04/2021	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Wood Sage ( <i>Teucrium scorodonia</i> )	2	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Wood-sorrel ( <i>Oxalis acetosella</i> )	2	08/08/2005	Species Data from the National Vegetation Database	
flowering plant	Yarrow ( <i>Achillea millefolium</i> )	1	25/08/2018	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	
flowering plant	Yellow Sedge ( <i>Carex viridula</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
flowering plant	Yorkshire-fog ( <i>Holcus lanatus</i> )	3	08/08/2005	Species Data from the National Vegetation Database	
fungus	<i>Agaricus cupreobrunneus</i>	1	03/09/2004	Fungal Records for Ireland	
fungus	<i>Amanita muscaria</i>	2	08/10/2016	General Biodiversity Records from Ireland	
fungus	Amethyst Deceiver ( <i>Laccaria amethystina</i> )	1	18/09/2008	General Biodiversity Records from Ireland	
fungus	Ashen Knight ( <i>Tricholoma virgatum</i> )	2	08/10/2016	General Biodiversity Records from Ireland	
fungus	Bay Polypore ( <i>Polyporus durus</i> )	1	16/09/2001	Fungal Records for Ireland	
fungus	Beech Milkcap ( <i>Lactarius blennius</i> )	2	08/10/2016	General Biodiversity Records from Ireland	
fungus	Beechwood Sickener ( <i>Russula nobilis</i> )	1	08/10/2016	General Biodiversity Records from Ireland	
fungus	Bicoloured Deceiver ( <i>Laccaria bicolor</i> )	1	03/09/2004	Fungal Records for Ireland	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
fungus	Birch Brittlepill ( <i>Russula betularum</i> )	4	05/11/2011	General Biodiversity Records from Ireland	
fungus	Birch Knight ( <i>Tricholoma fulvum</i> )	1	25/08/2004	Fungal Records for Ireland	
fungus	Birch Milkcap ( <i>Lactarius tabidus</i> )	2	08/10/2016	General Biodiversity Records from Ireland	
fungus	Blackening Brittlepill ( <i>Russula nigricans</i> )	3	08/10/2016	General Biodiversity Records from Ireland	
fungus	Blackening Waxcap ( <i>Hygrocybe conica</i> )	1	18/09/2008	General Biodiversity Records from Ireland	
fungus	Bloody Brittlepill ( <i>Russula sanguinaria</i> )	1	02/09/2005	Fungal Records for Ireland	
fungus	Blusher ( <i>Amanita rubescens</i> var. <i>rubescens</i> )	2	02/09/2005	Fungal Records for Ireland	
fungus	Brown Birch Bolete ( <i>Leccinum scabrum</i> )	1	02/09/2005	Fungal Records for Ireland	
fungus	Brown Mottlegill ( <i>Panaeolina foenisecii</i> )	1	09/09/2000	Fungal Records for Ireland	
fungus	Brown Rollrim ( <i>Paxillus involutus</i> )	5	08/10/2016	General Biodiversity Records from Ireland	
fungus	Bulbous Fibrecap ( <i>Inocybe napipes</i> )	1	18/09/2008	General Biodiversity Records from Ireland	
fungus	Burnt Knight ( <i>Tricholoma ustale</i> )	2	14/08/2010	General Biodiversity Records from Ireland	
fungus	Butter Cap ( <i>Collybia butyracea</i> var. <i>butyracea</i> )	1	18/09/2008	General Biodiversity Records from Ireland	
fungus	Cep ( <i>Boletus edulis</i> )	2	08/10/2016	General Biodiversity Records from Ireland	
fungus	Charcoal Burner ( <i>Russula cyanoxantha</i> )	5	08/10/2016	General Biodiversity Records from Ireland	
fungus	Clustered Toughshank ( <i>Collybia confluens</i> )	2	08/10/2016	General Biodiversity Records from Ireland	
fungus	Common Earthball ( <i>Scleroderma citrinum</i> )	2	18/09/2008	General Biodiversity Records from Ireland	
fungus	Common Puffball ( <i>Lycoperdon perlatum</i> )	1	08/10/2016	General Biodiversity Records from Ireland	
fungus	Common Rustgill ( <i>Gymnopilus penetrans</i> )	1	18/09/2008	General Biodiversity Records from Ireland	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
fungus	Conocybe pulchella	1	09/09/2000	Fungal Records for Ireland	
fungus	Cortinarius acutus	1	08/10/2016	General Biodiversity Records from Ireland	
fungus	Cortinarius fulvescens	1	03/09/2004	Fungal Records for Ireland	
fungus	Crab Brittle Gill (Russula xerampelina)	1	14/08/2010	General Biodiversity Records from Ireland	
fungus	Crested Coral (Clavulina coralloides)	3	05/11/2011	General Biodiversity Records from Ireland	
fungus	Deceiver (Laccaria laccata)	4	08/10/2016	General Biodiversity Records from Ireland	
fungus	Deer Shield (Pluteus cervinus)	1	03/09/2004	Fungal Records for Ireland	
fungus	Dusky Puffball (Lycoperdon nigrescens)	2	08/10/2016	General Biodiversity Records from Ireland	
fungus	Dyer's Mazegill (Phaeolus schweinitzii)	1	16/09/2001	Fungal Records for Ireland	
fungus	Entoloma plebejum	1	09/09/2000	Fungal Records for Ireland	
fungus	Entoloma politum	1	16/09/2001	Fungal Records for Ireland	
fungus	Entoloma undulatosporum	1	25/08/2004	Fungal Records for Ireland	
fungus	Fairy Ring Champignon (Marasmius oreades)	1	02/09/2005	Fungal Records for Ireland	
fungus	False Chanterelle (Hygrophoropsis aurantiaca)	2	03/09/2004	Fungal Records for Ireland	
fungus	Fleecy Milkcap (Lactarius vellereus)	2	05/11/2011	General Biodiversity Records from Ireland	
fungus	Fly Agaric (Amanita muscaria var. muscaria)	1	02/09/2005	Fungal Records for Ireland	
fungus	Fragrant Funnel (Clitocybe fragrans)	2	05/11/2011	General Biodiversity Records from Ireland	
fungus	Geranium Brittle Gill (Russula fellea)	1	18/09/2008	General Biodiversity Records from Ireland	
fungus	Ghost Bolete (Leccinum holopus)	1	25/08/2004	Fungal Records for Ireland	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
fungus	Glistening Inkcap ( <i>Coprinellus micaceus</i> )	1	08/10/2016	General Biodiversity Records from Ireland	
fungus	Greasy Green Brittlegill ( <i>Russula heterophylla</i> )	1	05/08/2009	General Biodiversity Records from Ireland	
fungus	Green Elfcup ( <i>Chlorociboria aeruginascens</i> )	1	03/09/2004	Fungal Records for Ireland	
fungus	Grey Spotted Amanita ( <i>Amanita excelsa</i> var. <i>excelsa</i> )	2	18/09/2008	General Biodiversity Records from Ireland	
fungus	<i>Hebeloma pusillum</i>	1	09/09/2000	Fungal Records for Ireland	
fungus	<i>Hebeloma senescens</i>	1	08/10/2016	General Biodiversity Records from Ireland	
fungus	<i>Hebeloma vaccinum</i>	1	09/09/2000	Fungal Records for Ireland	
fungus	Humpback Brittlegill ( <i>Russula caerulea</i> )	2	18/09/2008	General Biodiversity Records from Ireland	
fungus	Ivory Woodwax ( <i>Hygrophorus eburneus</i> )	1	18/09/2008	General Biodiversity Records from Ireland	
fungus	Jellybaby ( <i>Leotia lubrica</i> )	1	18/09/2008	General Biodiversity Records from Ireland	
fungus	<i>Lactarius plumbeus</i>	1	18/09/2008	General Biodiversity Records from Ireland	
fungus	<i>Lactarius rubrocinctus</i>	1	18/09/2008	General Biodiversity Records from Ireland	
fungus	Larch Bolete ( <i>Suillus grevillei</i> )	3	02/09/2005	Fungal Records for Ireland	
fungus	<i>Leccinum percandidum</i>	1	16/09/2001	Fungal Records for Ireland	
fungus	<i>Lepiota pseudolilacea</i>	1	08/10/2016	General Biodiversity Records from Ireland	
fungus	Lilac Bonnet ( <i>Mycena pura</i> )	2	08/10/2016	General Biodiversity Records from Ireland	
fungus	<i>Macrolepiota procera</i>	1	08/10/2016	General Biodiversity Records from Ireland	
fungus	<i>Marasmius bulliardii</i>	1	02/09/2005	Fungal Records for Ireland	
fungus	<i>Melanoleuca melaleuca</i>	1	25/08/2004	Fungal Records for Ireland	

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fungus	Mild Milkcap ( <i>Lactarius subdulcis</i> )	2	05/08/2009	General Biodiversity Records from Ireland	
fungus	Milk White Brittle Gill ( <i>Russula delica</i> )	4	14/08/2010	General Biodiversity Records from Ireland	
fungus	Milking Bonnet ( <i>Mycena galopus</i> var. <i>galopus</i> )	1	09/09/2000	Fungal Records for Ireland	
fungus	<i>Naucoria scolecina</i>	1	16/09/2001	Fungal Records for Ireland	
fungus	Nitrous Bonnet ( <i>Mycena leptcephala</i> )	1	18/09/2008	General Biodiversity Records from Ireland	
fungus	Ochre Brittle Gill ( <i>Russula ochroleuca</i> )	2	08/10/2016	General Biodiversity Records from Ireland	
fungus	Orange Grisette ( <i>Amanita crocea</i> )	3	08/10/2016	General Biodiversity Records from Ireland	
fungus	Pearly Parachute ( <i>Marasmius wynnei</i> )	1	18/09/2008	General Biodiversity Records from Ireland	
fungus	Peppery Bolete ( <i>Chalciporus piperatus</i> )	1	03/09/2004	Fungal Records for Ireland	
fungus	Pinecone Cap ( <i>Strobilurus tenacellus</i> )	1	09/09/2000	Fungal Records for Ireland	
fungus	Poisonpie ( <i>Hebeloma crustuliniforme</i> )	1	03/09/2004	Fungal Records for Ireland	
fungus	Primrose Brittle Gill ( <i>Russula sardonia</i> )	1	16/09/2001	Fungal Records for Ireland	
fungus	<i>Psathyrella prona</i> forma <i>prona</i>	1	03/09/2004	Fungal Records for Ireland	
fungus	Red Cracking Bolete ( <i>Boletus chrysenteron</i> )	1	03/09/2004	Fungal Records for Ireland	
fungus	Rooting Shank ( <i>Xerula radicata</i> )	2	18/09/2008	General Biodiversity Records from Ireland	
fungus	Rufous Milkcap ( <i>Lactarius rufus</i> )	2	03/09/2004	Fungal Records for Ireland	
fungus	Russet Toughshank ( <i>Collybia dryophila</i> )	1	09/09/2000	Fungal Records for Ireland	
fungus	<i>Russula albonigra</i>	2	02/09/2005	Fungal Records for Ireland	
fungus	<i>Russula anthracina</i>	1	18/09/2008	General Biodiversity Records from Ireland	

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fungus	Russula farinipes	2	08/10/2016	General Biodiversity Records from Ireland	
fungus	Saffron Milkcap (Lactarius deliciosus)	2	16/09/2001	Fungal Records for Ireland	
fungus	Scurfy Twiglet (Tubaria furfuracea var. furfuracea)	1	05/11/2011	General Biodiversity Records from Ireland	
fungus	Sepia Bolete (Boletus porosporus)	1	02/09/2005	Fungal Records for Ireland	
fungus	Stinkhorn (Phallus impudicus var. impudicus)	1	02/09/2005	Fungal Records for Ireland	
fungus	Straw Fibrecap (Inocybe cookei)	1	09/09/2000	Fungal Records for Ireland	
fungus	Stump Puffball (Lycoperdon pyriforme)	1	18/09/2008	General Biodiversity Records from Ireland	
fungus	Sulphur Tuft (Hypholoma fasciculare var. fasciculare)	1	16/09/2001	Fungal Records for Ireland	
fungus	Tawny Milkcap (Lactarius fulvissimus)	1	08/10/2016	General Biodiversity Records from Ireland	
fungus	The Flirt (Russula vesca)	1	02/09/2005	Fungal Records for Ireland	
fungus	The Miller (Clitopilus prunulus)	3	02/09/2005	Fungal Records for Ireland	
fungus	Tricholoma sciodes	1	18/09/2008	General Biodiversity Records from Ireland	
fungus	Ugly Milkcap (Lactarius turpis)	1	03/09/2004	Fungal Records for Ireland	
fungus	Variable Webcap (Cortinarius anomalus)	1	08/10/2016	General Biodiversity Records from Ireland	
fungus	Velvet Brittle Gill (Russula violeipes)	1	08/10/2016	General Biodiversity Records from Ireland	
fungus	Weeping Bolete (Suillus granulatus)	1	25/08/2004	Fungal Records for Ireland	
fungus	Wood Hedgehog (Hydnum repandum)	2	05/11/2011	General Biodiversity Records from Ireland	
fungus	Wood Woollyfoot (Collybia peronata)	2	05/11/2011	General Biodiversity Records from Ireland	
fungus	Woolly Milkcap (Lactarius torminosus)	1	08/10/2016	General Biodiversity Records from Ireland	

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fungus	Yellow Stagshorn ( <i>Calocera viscosa</i> )	4	08/10/2016	General Biodiversity Records from Ireland	
horsetail	Water Horsetail ( <i>Equisetum fluviatile</i> )	1	31/12/1999	BSBI tetrad data for Ireland	
insect - beetle (Coleoptera)	Beet Carrion Beetle ( <i>Aclypea opaca</i> )	1	01/05/1940	Carrion Beetles of Ireland	
insect - beetle (Coleoptera)	<i>Nicrophorus investigator</i>	1	15/09/1924	Carrion Beetles of Ireland	
insect - butterfly	Comma ( <i>Polygonia c-album</i> )	2	06/08/2019	Butterflies of Ireland pre-2022	
insect - butterfly	Common Blue ( <i>Polyommatus icarus</i> )	1	06/08/2019	Butterflies of Ireland pre-2022	
insect - butterfly	Green-veined White ( <i>Pieris napi</i> )	1	02/08/2019	Butterflies of Ireland pre-2022	
insect - butterfly	Large White ( <i>Pieris brassicae</i> )	1	06/08/2019	Butterflies of Ireland pre-2022	
insect - butterfly	Meadow Brown ( <i>Maniola jurtina</i> )	2	06/08/2019	Butterflies of Ireland pre-2022	
insect - butterfly	Orange-tip ( <i>Anthocharis cardamines</i> )	3	01/05/2019	Butterflies of Ireland pre-2022	
insect - butterfly	Painted Lady ( <i>Vanessa cardui</i> )	2	06/08/2019	Butterflies of Ireland pre-2022	
insect - butterfly	Peacock ( <i>Inachis io</i> )	2	06/08/2019	Butterflies of Ireland pre-2022	
insect - butterfly	Red Admiral ( <i>Vanessa atalanta</i> )	1	02/08/2019	Butterflies of Ireland pre-2022	
insect - butterfly	Ringlet ( <i>Aphantopus hyperantus</i> )	1	02/08/2019	Butterflies of Ireland pre-2022	
insect - butterfly	Silver-washed Fritillary ( <i>Argynnis paphia</i> )	1	31/07/1973	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	
insect - butterfly	Small Tortoiseshell ( <i>Aglais urticae</i> )	1	02/08/2019	Butterflies of Ireland pre-2022	
insect - butterfly	Small White ( <i>Pieris rapae</i> )	2	06/08/2019	Butterflies of Ireland pre-2022	
insect - butterfly	Speckled Wood ( <i>Pararge aegeria</i> )	2	22/09/2016	Butterflies of Ireland pre-2022	

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
insect - caddis fly (Trichoptera)	Anobolia nervosa	2	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Athripsodes cinereus	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Chaetopteryx villosa	2	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Grammotaulius nigropunctatus	2	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Halesus radiatus	1	31/12/1910	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Limnephilus auricula	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Limnephilus centralis	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Limnephilus flavicornis	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Limnephilus incisus	2	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Limnephilus lunatus	3	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Limnephilus marmoratus	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Limnephilus sparsus	2	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Limnephilus vittatus	2	31/12/2015	Caddisflies (Trichoptera) of Ireland	

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insect - caddis fly (Trichoptera)	Micropterna sequax	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Mystacides azurea	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Mystacides longicornis	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Neureclipsis bimaculata	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Odontocerum albicorne	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Oecetis lacustris	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Oxyethira flavicornis	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Phryganea bipunctata	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Polycentropus flavomaculatus	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Stenophylax permistus	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Tinodes waeneri	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - caddis fly (Trichoptera)	Triaenodes bicolor	1	31/12/2015	Caddisflies (Trichoptera) of Ireland	
insect - dragonfly (Odonata)	Blue-tailed Damselfly (Ischnura elegans)	1	29/07/2000	Dragonfly Ireland	

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insect - dragonfly (Odonata)	Brown Hawker ( <i>Aeshna grandis</i> )	1	07/09/2021	Dragonfly Ireland 2019 to 2024	
insect - dragonfly (Odonata)	Common Blue Damselfly ( <i>Enallagma cyathigerum</i> )	2	09/07/2019	Dragonfly Ireland 2019 to 2024	
insect - dragonfly (Odonata)	Common Darter ( <i>Sympetrum striolatum</i> )	1	29/07/2000	Dragonfly Ireland	
insect - dragonfly (Odonata)	Common Hawker ( <i>Aeshna juncea</i> )	1	29/07/2000	Dragonfly Ireland	
insect - dragonfly (Odonata)	Ruddy Darter ( <i>Sympetrum sanguineum</i> )	1	29/07/2000	Dragonfly Ireland	
insect - hymenopteran	Bombus ( <i>Bombus</i> ) <i>terrestris</i>	2	05/04/2023	Bees of Ireland	
insect - hymenopteran	<i>Bombus lucorum</i> agg.	1	22/05/2016	Bees of Ireland	
insect - hymenopteran	Common Wasp ( <i>Vespula</i> ( <i>Paravespula</i> ) <i>vulgaris</i> )	2	02/08/2019	Wasps of Ireland	
insect - hymenopteran	Large Red Tailed Bumble Bee ( <i>Bombus</i> ( <i>Melanobombus</i> ) <i>lapidarius</i> )	1	19/04/2021	Bees of Ireland	Threatened Species: Near threatened
insect - moth	Common Marbled Carpet ( <i>Chloroclysta truncata</i> )	1	04/10/2012	Moths Ireland	
insect - moth	Feathered Thorn ( <i>Colotois pennaria</i> )	1	15/11/2012	Moths Ireland	
insect - moth	Goat Moth ( <i>Cossus cossus</i> )	1	15/09/2016	Moths Ireland	
insect - moth	Grey Dagger ( <i>Acronicta psi</i> )	1	26/07/2018	Moths Ireland	
insect - moth	Hebrew Character ( <i>Orthosia gothica</i> )	1	12/04/2012	Moths Ireland	
insect - moth	July Belle ( <i>Scotopteryx luridata</i> )	1	30/06/1963	Moths Ireland	
insect - moth	Water Carpet ( <i>Lampropteryx suffumata</i> )	1	12/04/2012	Moths Ireland	
insect - stonefly (Plecoptera)	<i>Brachyptera risi</i>	1	01/02/2009	Stoneflies (Plecoptera) of Ireland	
insect - stonefly (Plecoptera)	<i>Leuctra hippopus</i>	1	01/02/2009	Stoneflies (Plecoptera) of Ireland	

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insect - stonefly (Plecoptera)	Leuctra inermis	1	01/02/2009	Stoneflies (Plecoptera) of Ireland	
insect - stonefly (Plecoptera)	Protonemura meyeri	1	01/02/2009	Stoneflies (Plecoptera) of Ireland	
insect - true fly (Diptera)	Tipula oleracea	1	31/12/1903	Craneflies of Ireland	
liverwort	Pitted Frillwort ( <i>Fossombronia foveolata</i> )	1	17/08/1975	Bryophytes of Ireland	Threatened Species: Least concern
liverwort	Violet Crystalwort ( <i>Riccia huebeneriana</i> )	1	31/12/1975	Bryophytes of Ireland	Threatened Species: Data deficient
millipede	Common Flat-backed Millipede ( <i>Polydesmus angustus</i> )	1	31/03/1977	Millipedes of Ireland	
millipede	<i>Polydesmus inconstans</i>	1	31/03/1977	Millipedes of Ireland	
terrestrial mammal	American Mink ( <i>Mustela vison</i> )	1	02/09/2018	Mammals of Ireland 2016-2025	Invasive Species: Invasive Species     Invasive Species: Invasive Species >> High Impact Invasive Species     Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
terrestrial mammal	Brown Rat ( <i>Rattus norvegicus</i> )	1	31/03/2016	Mammals of Ireland 2016-2025	Invasive Species: Invasive Species     Invasive Species: Invasive Species >> High Impact Invasive Species     Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
terrestrial mammal	Common Pipistrelle ( <i>Pipistrellus pipistrellus sensu stricto</i> )	1	14/08/2008	National Bat Database of Ireland	
terrestrial mammal	Daubenton's Bat ( <i>Myotis daubentonii</i> )	1	14/08/2008	National Bat Database of Ireland	Protected Species: EU Habitats Directive     Protected Species: EU Habitats Directive >> Annex IV     Protected Species: Wildlife Acts
terrestrial mammal	Eastern Grey Squirrel ( <i>Sciurus carolinensis</i> )	2	31/12/2012	Irish Squirrel Survey 2012	Invasive Species: Invasive Species     Invasive Species: Invasive Species >> High Impact Invasive Species     Invasive Species: Invasive Species >> EU Regulation No. 1143/2014     Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
terrestrial mammal	Eurasian Badger ( <i>Meles meles</i> )	3	10/03/2009	Road Kill Survey	Protected Species: Wildlife Acts
terrestrial mammal	Eurasian Red Squirrel ( <i>Sciurus vulgaris</i> )	5	07/07/2017	Mammals of Ireland 2016-2025	Protected Species: Wildlife Acts
terrestrial mammal	Irish Stoat ( <i>Mustela erminea</i> subsp. <i>hibernica</i> )	1	14/07/2016	Mammals of Ireland 2016-2025	

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terrestrial mammal	Lesser Noctule ( <i>Nyctalus leisleri</i> )	1	14/08/2008	National Bat Database of Ireland	Protected Species: EU Habitats Directive     Protected Species: EU Habitats Directive >> Annex IV     Protected Species: Wildlife Acts
terrestrial mammal	Pipistrelle ( <i>Pipistrellus pipistrellus sensu lato</i> )	1	14/08/2008	National Bat Database of Ireland	Protected Species: EU Habitats Directive     Protected Species: EU Habitats Directive >> Annex IV     Protected Species: Wildlife Acts
terrestrial mammal	Red Fox ( <i>Vulpes vulpes</i> )	2	18/05/2017	Mammals of Ireland 2016-2025	
terrestrial mammal	Soprano Pipistrelle ( <i>Pipistrellus pygmaeus</i> )	1	14/08/2008	National Bat Database of Ireland	Protected Species: EU Habitats Directive     Protected Species: EU Habitats Directive >> Annex IV     Protected Species: Wildlife Acts
terrestrial mammal	West European Hedgehog ( <i>Erinaceus europaeus</i> )	3	21/04/2021	Hedgehogs of Ireland	Protected Species: Wildlife Acts