Glenbrohane Biodiversity Action Plan
January, 2021

Rusty back fern (*Asplenium ceterach*) growing on a moss-covered stone wall in the village

Authors: Dr Frances Giaquinto CEnv MCIEEM and Phoebe O'Brien BSc Hons Botany

Contents

1 Introduction

In 2019, Glenbrohane Tidy Towns (GTT) secured Community Foundation Ireland funding to appoint an ecologist to help prepare a Biodiversity Action Plan (BAP) for the village. GTT appointed to the project Dr Frances Giaquinto, an experienced independent plant ecologist and full member of the Chartered Institute for Ecological and Environmental Management. Phoebe O'Brien, the co-vice recorder for County Clare for the Botanical Society of Britain and Ireland, assisted in the field work. She is an expert field botanist.

The funding specification was for an ecological study within the Glenbrohane area in collaboration with three to five land owners to classify habitats at landscape scale with a focus on field boundaries (hedgerows, treelines, and stone walls), assess their condition and extent, map them and define a suite of actions to enhance biodiversity.

GTT chose to have a BAP prepared for several reasons:

- GTT members and residents want to protect their local environment but they were not confident about how to start.
- Although there are wildlife experts living in the village, particularly regards moths and butterflies, there is limited botanical knowledge and GTT members were interested to find out about the native plant species in the area.
- In 2020, Ballyhoura Development CLG facilitated the preparation of 5-year Tidy Town action plans for Glenbrohane and other Tidy Town communities in Limerick and N Cork. The action plans, facilitated by Frances Giaquinto, have biodiversity and sustainability built into each Tidy Town category. The opportunity to be in receipt of Community Foundation Ireland funding for the development of a specific biodiversity action plan, in addition to the Tidy Towns action plan, has allowed the village to develop detailed and informed actions and goals for the protection of biodiversity in Glenbrohane and surrounds.

1.1 Methods

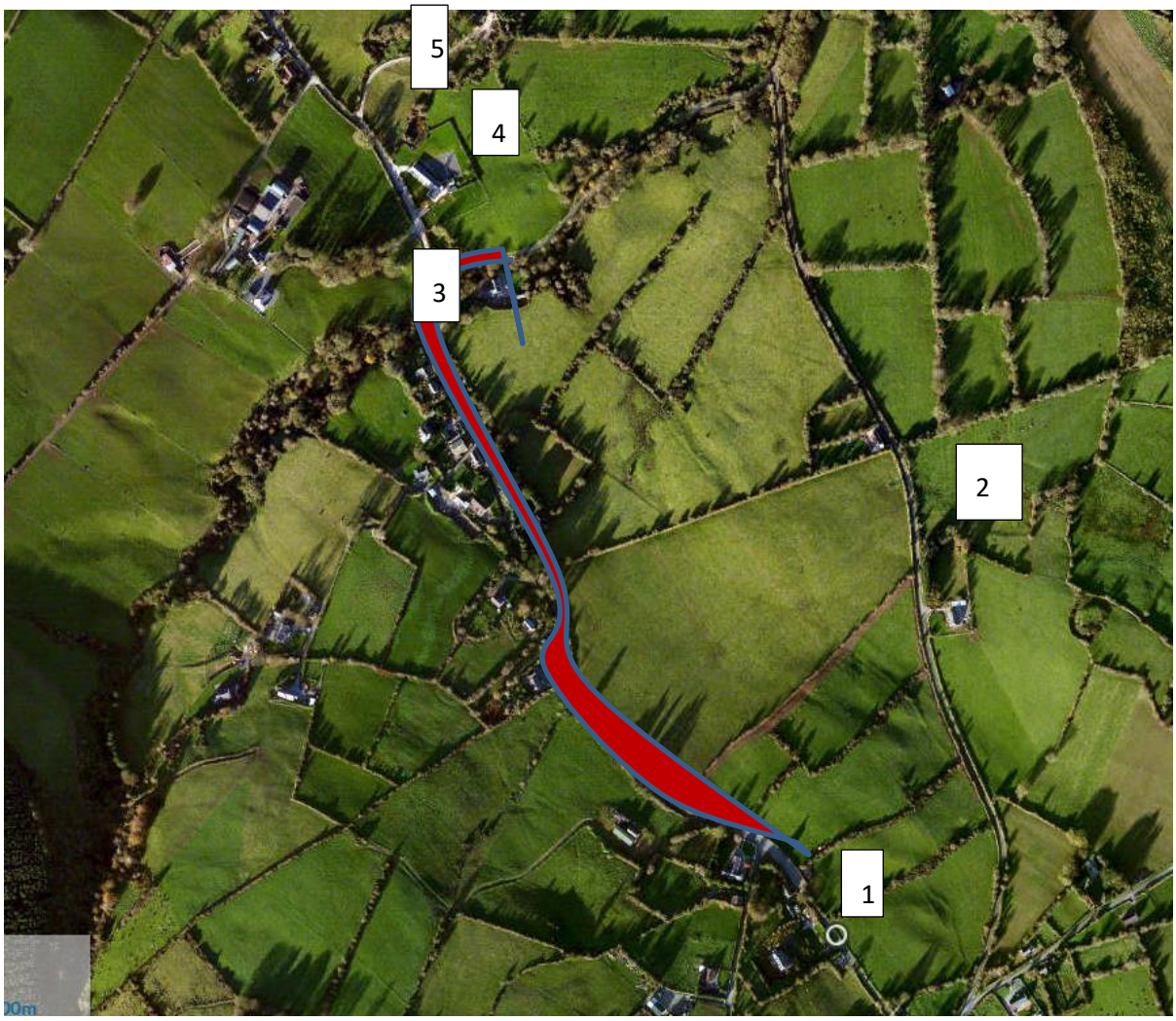
An inception meeting was held on the 25th November 2019, which provided the opportunity for Frances Giaquinto to meet with six Tidy Town members, including one landowner who is also a keen environmentalist and knowledgeable about bees, moths, and butterflies. Another TT member works with the local school which has been awarded its 5th Green Flag.

As a first step, a species survey of the village area was conducted by Giaquinto and O'Brien on June 16th 2020. Because of Covid 19 restrictions, Tidy Town members did not participate in the first survey. On the 15th July, a second survey of fields, stone walls, earth banks, hedgerows, and water bodies owned by four landowners in the immediate vicinity of the village were surveyed. Landowners, interested people from the village, and GTT members met outside with the surveyors at several times during the day. Covid-related social distancing was maintained.

Fig. 1 is a Google map of Glenbrohane village showing the areas surveyed on the 16th June and 15th July. The red highlighted area was covered on the first day, which included a walk from the bridge over the Morningstar river through the village to the church, surveying both sides of the road. In July, the numbered areas were surveyed, as shown below.

1	Fields and boundaries, Landowner 1 (Peggy's field)
2	Fields, planted trees, earth banks and other boundaries, Landowner 2 (Morgan's fields)
3	River Morningstar by the bridge in the village
4	Field behind the school, Landowner 3
5	Track, hedgerows and waterbody, Landowner 4

Figure 1. Google map of Glenbrohane village



1.2 Glenbrohane in context of the wider area

Glenbrohane (Gleann Bruachain – 'The Glen of the Little Boundary') is a rural village on the north slopes of Sliabh Riagh which is 467 metres above sea level and renowned because a high king of Ireland was defeated here. The heritage of the village is reflected in the old stone bridges and stone walls, some of which date back to the 1800s, and include the special cow and calf style between the village and the church.

The geology of the area is complex. GTT members report that Glenbrohane is predominantly red sandstone which tends to create soils that are generally acid and relatively infertile. This may be one of the reasons why local farming is relatively low intensive. Grey shale and calcareous silts are also recorded in and around the village.

Glenbrohane is located in the national 2 Km grid squares, R72M and R72H. R72M is shown by the red highlighted square in Fig. 2; R72H is the square to the left and is not highlighted.

Figure 2. Aerial view of GTT showing 2 km national grid R72M

The image shows Glenbrohane located in the national 2 km grid squares R72H and R72M. R72M is highlighted red; R72H is the square to the left

1.3 Historic species records

The National Biodiversity Data Centre (NBDC) has a quite comprehensive list of species which have been recorded by various specialists for the grid squares R72H and R72M. The lists are given in Appendices 1 and 2, and highlights are summarised here. Plants in the area have been poorly recorded to date.

Thirteen butterfly species have been recorded (Table 1) and 67 moth species. One of the landowners in the village has been involved with taking butterfly transects on his land for a number of years and he is also a moth specialist.

A number of migrating birds have been recorded, all of which have declining populations. Barn swallows, swifts, house martins are summer migrants while redwings and fieldfares are winter migrants. The protected hen harrier is also recorded in R72M.

Table 1 Butterflies recorded in and around Glenbrohane

Green-veined White (*Pieris napi*)	16/09/2012	Irish Butterfly Monitoring Scheme
Large White (*Pieris brassicae*)	26/08/2012	Irish Butterfly Monitoring Scheme
Meadow Brown (*Maniola jurtina*)	26/08/2012	Irish Butterfly Monitoring Scheme
Orange-tip (*Anthocharis cardamines*)	27/05/2012	Irish Butterfly Monitoring Scheme
Painted Lady (*Vanessa cardui*)	29/09/2012	Irish Butterfly Monitoring Scheme
Peacock (*Inachis io*)	08/09/2012	Irish Butterfly Monitoring Scheme
Red Admiral (*Vanessa atalanta*)	29/09/2012	Irish Butterfly Monitoring Scheme
Ringlet (*Aphantopus hyperantus*)	04/08/2012	Irish Butterfly Monitoring Scheme
Small Copper (*Lycaena phlaeas*)	11/08/2012	Irish Butterfly Monitoring Scheme
Small Heath (*Coenonympha pamphilus*)	28/07/2010	Irish Butterfly Monitoring Scheme Threatened
Small Tortoiseshell (*Aglais urticae*)	22/09/2012	Irish Butterfly Monitoring Scheme
Small White (*Pieris rapae*)	28/07/2012	Irish Butterfly Monitoring Scheme
Speckled Wood (*Pararge aegeria*)	22/09/2012	Irish Butterfly Monitoring Scheme

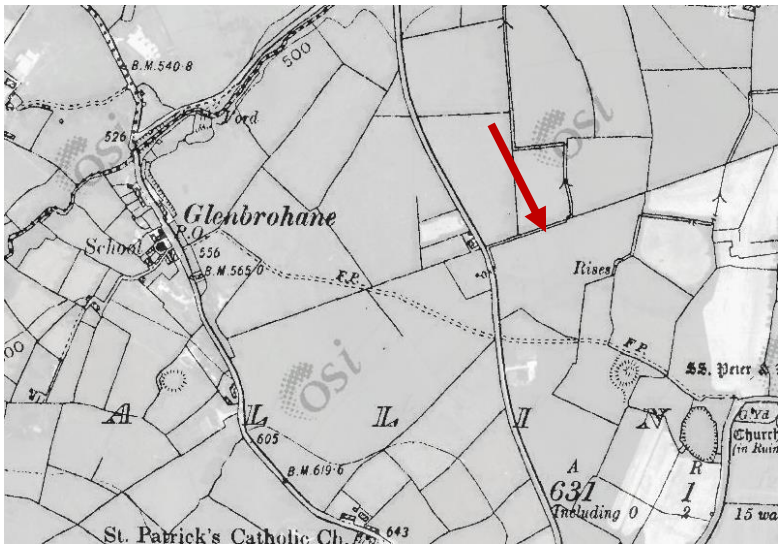
1.4 Historic maps and features

The National Inventory of Architectural Heritage (www.buildingsofireland.ie) lists the stone bridge over the River Morningstar as an example of high-quality craftsmanship. Made of sandstone and limestone, it was built c. 1810 and has vermiculated limestone voussoirs over round headed arches. This special feature makes it notable and contributes positively to the built heritage of the area.

Notable features from old maps show a straight hedgerow/ditch boundary running east-west across several fields. The section of this hedgerow owned by Landowner 1 has mature crab apples which may have been present here for nearly a hundred years.

Figure 3 OSi Cassini map dated c. 1845

The map clearly shows the straight wall/hedgerow/ditch boundary crossing several fields (red arrow). This is interesting as mature crab apples were recorded in the hedgerow. The second image, taken from digitalglobe,2011-2013, dated 1995, clearly shows the continuous tree line and hedgerow along this boundary and around adjacent fields above it. Protection and maintenance of these hedgerows and tree lines will represent one of the most important biodiversity actions that GTT and the local community can take.



2 Botanical survey

The species record from the two surveys is given in Appendix 3.

2.1 Habitat types

The following habitats identified based on Fossitt (2000) classification are shown in Table 2 and Fig. 2.

Table 2 Habitat types (Fossitt 2000)

Code	Habitat	Location
BL3	Buildings and artificial surfaces	
BC4	Flower beds and borders	Grotto and bridge
ED3	Recolonising bare ground	Driveways and in front of community centre
BL1	Stone walls and other stonework	
GS2	Dry meadows and grassy verges	Roadside in association with hedge and walls
GS1	Dry calcareous and neutral grassland	Fields and boundaries
FW4	Drainage ditches	Through planted trees, and field boundary
WS2	Immature woodland	Newly planted trees
WL1	Hedgerows	
WL2	Treelines	Apple row next to immature woodland
WS1	Scrub	At edges of grassy field
FW1	Eroding/upland rivers	River Morningstar
WN2	Woodland	Woodland around river
FL8	Other artificial lakes and ponds	

Three landowners agreed to participate and a fourth landowner allowed the surveyors to assess the track to a farm which has a pond identified on older maps. The pond was not included in the study as permission had not been obtained; however, it will be well worthwhile conducting a species record here in the future.

The following habitats were assessed at landowner properties (see Fig. 3):

Grazed fields: marked yellow (Landowners 1 and 3).

Wet acid grassland and a young tree plantation: marked green horizontal hatch (Landowner 2)

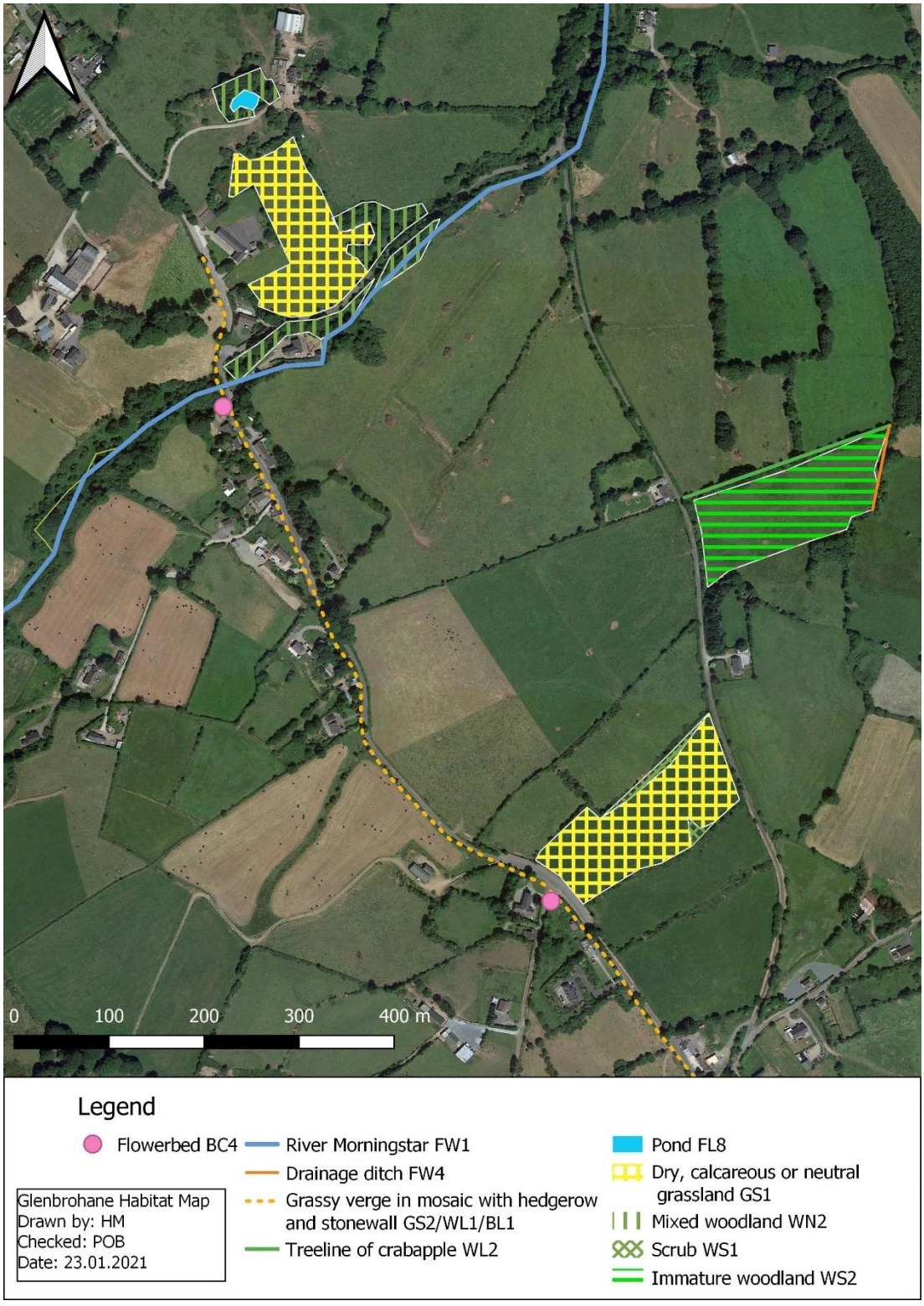
Grassy track to farm: marked green diagonal hatch (Landowner 4)

The cooperation and interest of local landowners is hugely beneficial for biodiversity planning as it provides the opportunity to cover a larger area, to consider ecological corridors, to include hedge and wall boundaries, and it facilitates larger-scale planning including the protection of migrating birds which frequent fields and pastures, such as fieldfares and redwings. Landowner 2 has an active interest in ecology and protection of biodiversity and he is involved with butterfly transects on his land. He is encouraged to share his knowledge of the local area with GTT members as part of biodiversity planning.

2.2 Description of surveyed areas

Sections 2.2.1 to 2.2.12 cover descriptions of each surveyed area.

Figure 3 Vegetation map of Glenbrohane based on Fossitt classification



2.2.1 Native and mixed ornamental hedgerows and treelines (WL1 and WL2)

The hedgerows and properties along the roadside through the village are discontinuous and varied which is usual where there is a mixture of private and council managed land (Images 1 to 5). Native plant species are repeated throughout the verges with the addition of garden species, and some variation due to shade. The mix of species include hawthorn (*Crataegus monogyna*), ash (*Fraxinus excelsior*) and elder (*Sambucus nigra*), mixed with planted trees and shrubs such as hornbeam (*Carpinus betulus*), whitebeam (*Sorbus* sp.), variegated privet (*Ligustrum* sp.), *Griselinia littoralis* (which originates from New Zealand), snowberry (*Symphoricarpos albus*) and box leaved honeysuckle (*Lonicera nitida*). These last two were commonly planted as hedging in the past but are now categorised as amber alert invasive species by the National Biodiversity Data Centre (NBDC) and therefore their spread needs to be monitored particularly where they could out compete native flowering plants.

Mature sycamore (*Acer pseudoplatanus*) and many sycamore seedlings were recorded throughout the hedgerows. Sycamore is not native to Ireland but is regarded as 'naturalised'; that is, it has been here for so long that it is now accepted as part of the natural landscape. Sycamore may play an increasingly important ecosystem function in the future because the combination of climate change and invasive alien tree diseases currently threaten our entire native tree population. Sycamore may remain resistant to the pathogens that our native trees succumb to.

There are many ash trees in the village, including ash saplings. The majority appear to have ash dieback disease caused by the invasive alien fungus, *Hymenoscyphus fraxineus*. It will be beneficial to conduct an annual survey of trees throughout the village to check their health. Dead ash can be left standing as *snags* which provide an important habitat for a wide range of invertebrates and birds, but they should be felled wherever there is a public health risk.

Further out of the village towards the church the road is separated from open pastures by a steep grassy road verge with a discontinuous hedgerow composed of hawthorn, occasional elder, and fuchsia (*Fuchsia magellanica*) which is non-native but naturalised in Ireland for many years. The left-hand side road verge walking back into the village is a high, thick and dense hedge of box leaved honeysuckle (Image 5).

In the centre of the village the mix of native and ornamental species creates a dense closed canopy which will provide food and shelter for birds and invertebrates. However, ornamental species are rarely beneficial for wildlife and invasiveness is a serious risk. Box honeysuckle and snowberry are best contained as tightly as possible. Brush cut from these species should be dried out on palettes laid out in the sun before composting because of the risk of regeneration.

Please note that the name, box leaved honeysuckle, is often confused with box (*Buxus* sp.). They are very different plants.

Griselinia is also a nutrient and water-hungry shrub which depletes the surrounding soil and results in a change in the ground flora encouraging tough weedy species and eliminating more interesting native flora.

It will be beneficial to encourage residents to replant with native species derived from local provenance stock whenever there is the opportunity. A continuous native hedgerow creates an ecological corridor connecting habitats and providing food, shelter, and nesting places for wildlife.

Image 1. Mixed native and ornamental hedge and treeline in the village.

Image 2. Further out of the village towards the church, Flowering currant *Ribes sanguineum*. dominates the hedgerow mixed with hawthorn and ash. There is the potential for hedgerow restoration here.

Image 3. Looking back towards the village, showing the hedgerow which includes native elder and non-native box honeysuckle and fuchsia. The steep grassy verge beside that hedge is dominated by creeping bent (*Agrostis stolonifera*), hedge bindweed (*Calystegia sepium*), dandelions (*Taraxacum officinale* agg.) yarrow (*Achillea millefolium*), ribwort plantain (*Plantago lanceolata*) and bush vetch (*Vicia sepium*).

Image 4. A section of native hawthorn hedgerow at the top of a steep grassy bank. Yarrow and common dog violet (*Viola riviniana*) are abundant here.

Image 5. A dense hedge of box honeysuckle. It is important to keep this tightly cut to prevent spread.

2.2.2. Road verges (GS2)

The road verges vary in their composition. In the village, there is an evident overuse of herbicide along some road kerbs and private boundaries. Further out of the village towards the church, the steep grass verges have escaped close cutting and contain an interesting array of species.

Where the road bank is open with occasional wind-shaped hawthorn and elder, devil's bit scabious (*Succisa pratensis*), common sorrel (*Rumex acetosa*), dandelions (*Taraxacum officinale* agg.), daisies (*Bellis perennis*), native hogweed (*Heracleum sphondylium*), meadow and creeping buttercup (*Ranunculus acris* and *R. repens*), ribwort plantain (*Plantago lanceolata*), bush vetch (*Vicia sepium*), red clover (*Trifolium pratense*), rough hawksbeard (*Crepis biennis*), and barren strawberry (*Potentilla sterilis*) are common.

In more shady areas, hart's tongue fern (*Asplenium scolopendrium*) and soft shield fern (*Polystichum setiferum*) flourish. In less steep sections which receive more light, meadow buttercup, native hogweed, prickly sow thistle (*Sonchus asper*), cleavers (*Galium aparine)*, hedge parsley (*Anthriscus sylvestris*), yarrow, hedge bindweed (*Calystegia sepium*) and nettles are flourishing. There are signs of planted daffodils here, also. Glenbrohane TT may like to consider native species for future bulb planting, including native snowdrops and bluebells.

Grasses in the road verge include creeping bent (*Agrostis stolonifera*) and red fescue (*Festuca rubra*).

Some invasive garden escapes were noted, including variegated yellow archangel *Lamiastrum galeobdolon subsp. argentatum*), montbretia (*Crocosmia* x *crocosmiiflora*) and lady's mantle (*Alchemilla mollis*). These are best removed before they spread. Montbretia is serious. Although often shared among gardeners as an easy to grow and resilient plant, it spreads by small underground corms and by seed, and it can quickly take over a grass verge outcompeting and eliminating native species. The corms are best dug up and rotted in a barrel of water. The liquid can then be used as a feed for garden plants. Variegated yellow archangel is a super-fast spreader and it is best dug up and rotted in a barrel of water.

Image 6. *Asplenium adiantum nigrum*

Image 7. Soft shield fern (*Polystichum setiferum*)

Image 8 Variegated yellow archangel (*Lamiastrum galeobdolon* subsp. *argentatum)* a garden escape, which is beginning to spread through the shady road verges.

2.2.3 Old stone walls and bridge (BL1)

Glenbrohane has old stone bridges and stone walls including some sections of a traditional *cow and calf* style which is an important part of Ireland's beautiful architectural heritage. These stone walls provide rich habitats for a wide range of niche species. In the section of cow and calf wall by the road verge walking up to the church, rustyback fern (*Asplenium trichomanes*) (cover photo) was recorded along with shade loving mosses. The high stone wall opposite the grotto is also interesting with abundant wall rue (*Asplenium ruta-muraria*) and rusty back fern (*A. ceterach*).

Stone walls provide nesting habitats for solitary bees, spiders, and molluscs which, in turn, provide food for birds and small mammals. Protecting this habitat is a priority action in biodiversity planning and detailed recommended actions are given in Section 3.

Image 9. A large specimen of black knapweed (*Centaurea nigra*) on the *cow and calf* wall on the road verge to the church.

Image 10. The ‘cow-and-calf’ wall is a species rich habitat with a variety of mosses, lichens, and ferns.

2.2.4 Flower beds (BC4)

There are two main flower beds in the village, around the grotto and crib, and by the bridge at the edge of the village. Both are built as attractive raised beds with stone surrounds.

Flower bed at the grotto

This is an attractive flower bed and a good size to create a bold and colourful show. The current planting scheme would have been very attractive and it is now past its best. It contains the following invasive plants which should be removed.

Spanish bluebell *(Hyacinthoides hispanica)*. This species is controlled by the same EU legislation as Japanese knotweed, which makes it an offence to knowingly disperse it or allow it to escape. The bulbs should be destroyed without delay. This can be best achieved by rotting them well in a barrel of water. The liquid can then be tipped away.

Buddleja *(Buddleja davidii).* Known as the butterfly bush because it is loved by butterflies, buddleja produces copious amounts of seed and, once established, it can be very challenging to control it from spreading throughout a locality. It is best removed, and the branches laid out on a palette until they are dried out. They can then be composted. This method is recommended because living brush can regenerate.

Fox and cubs *(Pilosella aurantiaca)* (Image 11). This is a low growing perennial in the daisy family. It is pretty and frequently available for purchase in garden centres. However, it is a prolific seed producer and once established can spread rapidly through native habitats disrupting their ecological integrity.

There is beautiful cobbled ground here. If there is someone locally who can keep this tradition going, it would be excellent to use the cobble in other areas of the village which are currently gravel/weed traps.

Image 11. Fox and cubs, a pretty garden escape which can become very invasive. The native *Pilosella officinarum*, grows close by and could be used as an alternative

Flower bed at the bridge

The flower bed at the bridge is an attractive raised stone planter with an old stone wall behind (Image 12). The current planting scheme is past its best and consists of a mix of native species, including *Polystichum setiferum* growing in the wall, encroaching ivy, an overgrown Rose of Sharon (*Hypericum calycinum*) and some perennial daisies.

This is best redesigned. Ivy can be carefully removed from the wall and the ferns allowed to flourish. Native species can provide colour for much of the year if planned well.

Image 12. Flower bed by the bridge containing a mix of native species and garden perennials and shrubs.

2.2.5 River Morningstar (WN2)

The River Morning star flows through a steep sided ravine at the edge of the village and Glenbrohane TT would like to develop a river walk along this section, possibly as a board walk.

Achieving this will be challenging, expensive, and difficult to maintain to appropriate public safety standards. Currently, the shaded riparian margin is densely colonised by two invasive plants, butterbur (*Petasites hybridus*) and Indian balsam (*Impatiens glandulifera*), both of which are less noticeable in the winter and rapidly growing during the summer. Indian balsam is regulated for control under the EU (Birds and Natural Habitats) Regulations S.I.477 (2011). This is the same legislation that controls Japanese knotweed and makes it an offence to knowingly disperse or allow to escape species listed in the schedule.

Butterbur is native but appears to have become very invasive throughout County Limerick and elsewhere. Butterbur is also present by the pump, and in the grounds of the testing station. It rapidly grows into huge stands which outcompete other native vegetation. It can spread by fragmentation so care must be taken in the way it is controlled.

Indian balsam can be controlled by pulling young plants by hand before they flower and set seed. It may take several years to eradicate because of the seed bank in the soil. It should be fully eradicated before the ground is disturbed in this area.

If Indian balsam can be effectively controlled, it will be very beneficial to restore the riparian margin with species that are typical of deep shaded locations and to showcase these upper reaches of the river as a healthy functioning ecosystem. Information boards can be placed at the bridge and elsewhere to inform residents and visitors of the value of riparian habitats and the high rate at which they are being lost.

It will be beneficial to have an embargo on any non-native planting in and near the vicinity of the river to minimise the risk of dispersal. Any soil moved from the river area is highly likely to contain invasive plants which could lead to wide dispersal. Biosecurity measures are advisable, requesting that people entering the river area wash their boots thoroughly before leaving. No digging should be allowed for any purpose.

A footpath can be created to walk into the ravine and view the river and its margins but, as far as possible, construction and disturbance of the ground is best kept to a minimum.

Image 13. The River Morningstar flows through a steep sided ravine at the edge of the village.

2.2.6 Built areas (BL3)

Church carpark

The church car park (Image 14) currently provides extensive parking spaces but, visually, it appears bleak and unkempt. Cotoneaster has been planted along the base of the wall interspersed with native weedy, undesirable plant species (Image 15). Cotoneaster berries are loved by birds which then disperse them and there are some locations in Ireland, particularly the Burren, where Cotoneaster has become yet another serious invasive species.

It will be beneficial to redesign this are by taking the following steps:

- Remove the cotoneaster along with other weedy growth from the base of the wall. The cut stumps of cotoneaster may require treating with a dab of herbicide as described for ivy to kill the roots and prevent regrowth. A plastic bag or other cover loosely tied around each treated stump will minimise the risk of harm to pollinating insects.

- Although a substantial task, it will be beneficial to paint the wall once every two years to keep it fresh.

- Regularly mow or strim the farm gate entrances at both ends of the car park (Image 16). Grasses and herbaceous species growing here are all indicative of a nutrient rich environment, including knotgrass (*Polygonum aviculare*), pineapple weed (*Matricaria discoidea*), Yorkshire fog (*Holcus lanatus*), creeping bent (*Agrostis stolonifera*) and annual meadow grass (*Poa annua*) and it will be difficult to achieve a pleasant sward of native flowers here.

- If the base of the wall is sufficiently tarmac-free, it may be possible to plant the occasional tree along the wall which will have the benefit of providing shade on summer days. Native species, such as silver birch (*Betula pendula*) and hawthorn are both suitable and will be able to withstand the dry and exposed environment. When purchasing tree saplings please ensure they are from local provenance seed and not imported. This will help to minimise the risk of introducing diseases.

- Native roses, such as dog rose (*Rosa canina*) and field rose (*Rosa arvense*) are resilient, and their single flowers are loved by pollinators. It may be possible to train these against the wall.

Image 14. Church car park

Image 15. Cotoneaster has been planted along the base of the wall.

Image 16. Farm entrance with a nutrient-loving ground flora in front. This is best regularly strimmed or mown followed by raking to lift grass clippings to keep a tidy appearance

2.2.7 Mindfulness garden and community hub

The mindfulness garden is attractively laid with a stone labyrinth, a timber pergola, a raised bed at the road boundary, and some planters. The gate was locked on the day of the survey so a detailed survey could not be made. Some initial recommendations are as follows:

- To be effectiveness as a mindfulness garden, the area needs to feel private and contained. The railings, especially with the locked gate, create a sense of being locked in or out and this will not help to create a sense of calm. It may be beneficial to consider a planting scheme to train up the railings to soften their harsh edges; if this is done, native climbing roses combined with native honeysuckle (*Lonicera periclymenum*) will provide colour, shelter, scent, and food for pollinating insects.

- Likewise, the pergola currently looks bare and unfinished. David Austen climbing or rambling roses will be perfect here. Choose single flowered varieties to support pollinators. Select varieties that are repeat flowering, disease resistant, and hardy.

- The existing planters are too small to create a pleasing symmetry. It may be beneficial to design a flower bed so that pollinator-friendly perennials and native perennials can be planted directly into the ground. This reduces the demand for regular watering and makes for a more permanent display.

- If a TT member can take responsibility for regular filling and cleaning, some seed holders for birds might bring pleasure to people using the garden to sit quietly.

2.2.8 Field 1 and its boundaries

Field 1, also known as Peggy's field, is opposite the church in Glenbrohane village, and it has been in the ownership of one family for a number of years. It is currently rented to a Glenbrohane resident who grazes it with sheep and cattle. It has never been fertilised with artificial fertilisers, and herbicide has not been applied. The fields and boundaries are mostly unchanged since 1835 according to historic maps.

It is a pleasant meadow in appearance, gently sloping towards the east with boundaries that appear to be original earth banks with some evidence of old stone walls, now colonised by magnificent large, mature hawthorn (*Crataegus monogyna*) in places with a more open scrubby margin habitat of gorse (*Ulex europeaeus*), occasional small sycamore (*Acer pseudoplatanus*), and elder (*Sambucus nigra*), providing good shelter for animals (Images 3 and 4).

On first appearance (Image 1), sweet vernal grass (*Anthoxanthum odoratum*) appears dominant. Meadow grass (*Poa pratensis*), creeping bent (*Agrostis stolonifera*), common bent (*Agrostis capillaris*), and crested dog's tail (*Cynosurus cristatus*) are also abundant, with smaller pockets of nutrient-tolerant Yorkshire fog (*Holcus lanatus*) and false oat grass (*Arrhenatherum elatius*) where animals are congregating in the shelter of the field boundary and near to the water trough.

A typical suite of meadow flowers is present with abundant white clover (*Trifolium repens*), patches of red clover (*Trifolium pratense*), mouse-ear chickweed (*Cerastium fontanum*), and creeping buttercup (*Ranunculus repens*). A small patch of yellow rattle (*Rhinanthus minor*) was found near the south boundary (Image 2).

The north boundary, originally an earth bank, is colonised by gorse, briars (*Rubus fruticosus* agg.), hawthorn, nettles (*Urtica dioica*), and creeping thistle (*Cirsium vulgare*) which is loved by bees. Occasional foxgloves are present (*Digitalis purpurea*), germander speedwell (*Veronica chamaedrys*), and autumn hawkbit (*Leontodon autumnalis*). In shadier spots beneath trees, broad buckler fern (*Dryopteris dilatata*), scaly male fern (*D. affinis*), and hart's tongue (*Asplenium scolopendrium*) are present.

Field horsetail (*Equisetum arvense*), cleavers (*Galium aparine*), and bush vetch (*Vicia sepium*) are present in the lowest part of the field where it is wetter. The sunnier south boundary has violets (*Viola* spp.) and pignut (*Conopodium majus*), and yellow rattle and thyme-leaved speedwell (*Veronica serpyllifolia*) are occasional nearby amongst the grasses where the underlying soil is free draining.

The field can be classified as GS1 – Dry, calcareous and neutral grassland, according to the Fossitt Vegetation Classification system (Fossitt, 2000). The description for GS1 is shown in Table 3.

At the top of the field, opposite the church, the ground is more nutrient rich and creeping thistle and docks are establishing. Thistles are very good for pollinators, however if their location is considered unsightly it may be beneficial to strim the thistles just before they set seed, to avoid their further spread. Sheep can open the grass sward by tight grazing leaving bare patches of open soil which can encourage undesirable species such as docks and thistles. To avoid this, overgrazing should be avoided.

Table 3 GS1. Dry calcareous and neutral grassland (Fossitt, 2000)

GS1	
This category is used for unimproved or semi-improved dry grassland that may be either calcareous or neutral, but not acid. It is associated with low intensity agriculture and typically occurs on free-draining mineral soils of various depths. Calcareous grassland is restricted in its distribution and is now largely confined to the steep slopes of esker ridges and moraines in the midlands, and to other areas with shallow and rocky limestone soils. Management and fertiliser use makes calcareous grasslands more like neutral grasslands in character and these have a wider distribution. Most old permanent pastures and less intensively managed lowland grasslands fit into this category. Grazing is a characteristic feature; unimproved dry meadows which are rarely grazed should be excluded (see dry meadows and grassy verges - GS2). Dry calcareous and neutral grassland may comprise a wide range of grasses and broadleaved herbs. Species richness varies and can be high (up to 45 species per m2). Common grasses include bents (*Agrostis spp.*), meadow-grasses (*Poa spp*.), Meadow Foxtail (*Alopecurus pratensis*), Timothy (*Phleum pratense*), fescues (*Festuca spp*.), Sweet Vernal-grass (*Anthoxanthum odoratum*), Crested Dog's-tail (*Cynosurus cristatus*), Cock's-foot (*Dactylis glomerata*) and Yorkshire-fog (*Holcus lanatus*). Grasses that are indicative of strongly calcareous soils include Downy Oat-grass (*Helictotrichon pubescens*), Yellow Oat-grass (*Trisetum flavescens*), Blue Moor-grass (*Sesleria caerulea*) and Quaking-grass (*Briza media*). Perennial Rye-grass (*Lolium perenne*) may also be present but should not dominate the sward. Common broadleaved herbs include clovers (*Trifolium spp*.), Yarrow (*Achillea millefolium*), Common Knapweed (*Centaurea nigra*), Selfheal (*Prunella vulgaris*), Common Bird's-foot Trefoil (*Lotus corniculatus*), Cat's-ear (*Hypochaeris radicata*), Lady's Bedstraw (*Galium verum*) and Oxeye Daisy (*Leucanthemum vulgare*).	

Image 1. Field 1. The light brown coloured grasses are primarily the seed heads of sweet vernal grass.

Image 2. Yellow rattle. Two plants were recorded.

Image 3. Field 1, looking towards the SE boundary.

Image 4. South boundary. This narrow strip of gorse scrub (WS1) with associated wild flowers provides valuable food and shelter for pollinating insects and other wildlife.

2.2.9 Field 2 and its boundaries (WS2)

This field, known as Morgan's field, which is adjacent to the ringfort and the field around it are not treated with herbicides or fertilisers and they have not been recently grazed (Image 5). Located in the lower part of the valley, they are wetter than Field 1 with a different, yet interesting flora. Originally classifying as Wet grassland (WS4) by Fossitt (2000) vegetation classification system, the vegetation is in the process of changing to immature woodland (WS2) because trees have been planted, it is no longer grazed, and drainage channels have been constructed.

The field has two notable features. There is a magnificent hedgerow of mature and old crab apple (*Malus sylvestris*) (Image 5) and this field margin can be seen on the map to extend towards the mountains to the west. There is also a fine bank of the prehistoric great horsetail (*Equisetum telmateia*) beneath a bank (Image 6), and an old drainage ditch.

Grassland

The grassland in the field is dominated by creeping bent (*Agrostis stolonifera*) and Yorkshire fog with smaller patches of crested dog's tail and marsh fox tail (*Alopecurus geniculatus*). Rye grass (*Lolium perenne*) is present and the landowner explained this is an old variety that may have been present in the area for many years. Bent grasses and Yorkshire fog form a dense thatch from their spreading roots which is difficult for other species to grow through. Overall, the tree saplings are struggling to emerge above the level of the grasses and it may be beneficial for the landowner to stamp down the grasses around the trees whenever there is an opportunity.

The drainage channels, mostly dry on the day of the survey, were colonised by toad rush (*Juncus bufonius*).

Native wild flowers scattered amongst the grasses, particularly towards the boundaries which each create a niche habitat, include creeping and meadow buttercup (*Ranunculus repens* and *R. acris*), marsh bedstraw (*Galium palustre*), catsear (*Hypochaeris radicata*), autumn hawkbit (*Scorzoneroides autumnalis*), selfheal (*Prunella vulgaris*), and occasional yarrow (*Achillea millefolium*). Marsh ragwort (*Senecio aquaticus*) and the hybrid *Senecio jacobaea* × *aquaticus* = *S.* × *ostenfeldii* were occasional.

Planted trees

The trees have been planted by a forestry company and how the vegetation changes will be influenced by the company's management strategy. For instance, the grass thatch will be steadily replaced by briars, followed by blackthorn and gorse scrub depending on how it is cared for.

The planted trees include a diverse mix of birch (*Betula* sp.). hazel (*Corylus avellana*), oaks (*Quercus petraea* and *Q. robur*), rowan (*Sorbus aucuparia*) and alder (*Alnus glutinosa*). This does not represent a true native woodland mix and contains species that are found right through the spectrum of woodland succession. Birch and alder are pioneers, and oak are representative of mature, late succession woodland. Nor do the species reflect the local species in the hedgerows which are mainly crab apple, willows, hawthorn, elder and ash. Ash can no longer be planted because of ash dieback disease, but if some of the trees do not survive or thrive, they are best replaced by birch and alder which can tolerate the poor soil conditions. Oaks can be planted later.

Boundaries and edges

At the boundary edges, native hogweed (*Heracleum sphondylium*), angelica (*Angelica sylvestris*), meadowsweet (*Filipendula ulmaria*), and briars are abundant. In the shade of the old earth bank and hedgerow running east-west, there is lady fern (*Athyrium filix-femina*), soft shield fern (*Polystichum setiferum*), hart's tongue (*Asplenium scolopendrium*), foxgloves (*Digitalis purpurea*), nettles, meadow vetchling (*Lathyrus pratensis*), and creeping thistle (*Cirsium vulgare*). These boundaries are shown on the 6-inch 1835 maps although the maps do not show the crab apple trees.

In the wetter ditch areas (FW4) and on the shady banks beneath mature trees, great horsetail (*Equisetum telmateia*) dominates with some reed canary grass (*Phalaris arundinacea*) along the clogged ditch at the east boundary. Rushes here include *Juncus effusus, J. acutiflorus*, with *J. bufonius* in the recently made ditches.

The boundary trees include grey willow (*Salix cinerea*), hawthorn, blackthorn (*Prunus spinosa*), and ash (*Fraxinus excelsior*), with occasional elder. The fine row of crab apple (*Malus sylvestris*) runs 200 metres along the north boundary. The ash trees are diseased with ash dieback, caused by the fatal invasive alien fungus *Hymenoscyphus fraxineus* although the level of disease is still relatively low.

Image 5. Crab apple (*Malus sylvestris*)

Image 6. Great horsetail (*Equisetum telmateia*) in the shady banks

Image 7. Toad rush (*Juncus bufonius*)

Image: David Nicholls Charnwood Lodge

2.2.10 River Morningstar (WN2)

The stretch of river east of the bridge in the village was surveyed on the 16th June and again on the 15th July. There are no invasive species immediately apparent upstream of the bridge, apart from native butterbur at the adjacent property, but below the bridge and extending intermittently along the river banks are the invasive alien species, Indian balsam (*Impatiens glandulifera*) (Image 8) and the native invasive species pendulous sedge (*Carex pendula*) (Image 10) and native butterbur (*Petasites hybridus*) (Image 9), all of which are problematic.

The deeply shaded banks have a variety of species, including ivy (*Hedera hibernica*), soft shield fern, hart's tongue, herb Robert (*Geranium robertianum*), woundwort (*Stachys sylvatica*), wood avens (*Geum urbanum*), primroses (*Primula vulgaris*), and the woodland grass *Brachypodium sylvaticum.* The ground flora is dominated in places by golden saxifrage *(Chrysosplenium oppositifolium).* On the sunnier upper banks, native hogweed, briars, germander speedwell, nettle, and ivy are present, with a small area of lords and ladies (*Arum maculatum*). In some places, the butterbur has been strimmed which has created a disturbed area. The dominant tree species along the riverbank are mature sycamore and a few diseased ash.

The steep grassy bank which runs parallel to the river on the opposite side of the lane is more interesting with a range of grassland species that have escaped close mowing because of the steepness of the bank. Here, yarrow, meadow vetchling, barren strawberry (*Potentilla sterilis*), nipplewort, dandelion, and angelica are abundant with a low incidence of yarrow and field horsetail (*Equisetum arvense*). At the top of the bank, where it is free draining and sunny, the pretty mouse-ear hawkweed (*Pilosella officinarum*) is locally abundant (Image 11). A close relative, fox and cubs (*Pilosella aurantiaca*) is a commonly grown garden plant but it is now

regarded as seriously invasive because it disperses widely by wind-blown seeds, and has tenacious stolons that encourage vegetative spread. Fox and cubs has been planted in the flower bed by the grotto; it will be much better for biodiversity if this is removed and the native mouse-ear hawkweed sown or planted instead.

Image 8. Indian balsam

Image 9. Native butterbur behaving invasively.

Image 10. Pendulous sedge

Image 11. Grassy bank on the opposite side of the road from the river.

Image 12. *Pilosella aurantiaca*, characterised by the long hairs on the upper surface of the leaves and the white downy matt of hairs on the underside.

2.2.11 Field behind the school (GS1)

The field behind the school is semi-improved, dominated by creeping bent and rye grass with a low incidence of Yorkshire fog, crested dog's tail, and meadow grass (*Poa capillaris*). It appears to be regularly and fairly intensively grazed and has a low incidence of meadow flowers. There is some creeping and meadow buttercup amongst the grasses with white clover. In the shadier, wetter areas, wood avens, cow parsley, ground ivy (*Glechoma hederacea*), nettles and cleavers are present. At the south boundary, there is a shady dip with a copse of ash trees (all showing signs of ash dieback) with an understorey of elder, blackthorn and hawthorn. Smooth rush (*Juncus effusus*) is locally abundant. The herbaceous flora here consists of germander speedwell, nettles, wood avens, and soft shield fern. In the sunnier places, yarrow becomes more evident with lady's bedstraw (*Galium verum*) growing along the top of the bank at the lane boundary.

Ragwort (*Senecio jacobaea*) is frequent at the field margins and it appears to have been cut back in places. Please note that ragwort remains toxic to grazing animals when cut and left on the ground.

The school boundary is a privet hedge, which provides reasonable shelter for nesting birds.

Image 13. The south boundary of the field behind the school.

2.2.12 Track and grass verges, water body (GS1, FL8)

To the north of the field behind the school is a farm with a track, a wet pond area and a verge that has been planted with fruit trees and fruit bushes (gooseberries, Image 14). There is an old pond here, shown on the 1837-1846 map, which has become encroached with vegetation, including bulrushes (*Tyha latifolia*) and hairy willowherb (*Epilobium hirsutum*), surrounded by alder, willows and occasional elder. An attractive patch of upright hedge parsley (*Torilis japonica*) provides food for pollinators (Images 16 and 17).

Restoration of the pond would make an excellent biodiversity project.

The grass verge is roughly cut and bare areas are conspicuous, colonised by the sweet-smelling pineapple weed (*Matricaria discoidea*) and greater plantain (*Plantago major*).

Image 14. Gooseberries (shown here) and red currants are growing along the track

Image 15. The pond area

Image 16. Upright hedge parsley

Image 17. Distinguishing between yarrow flowers (left) and upright hedge parsley (right).

3 Biodiversity action planning

The surveys of the different areas in and around Glenbrohane, and discussions with GTT members and local participating landowners have provided a wealth of information which can be used to support biodiversity action planning. Recommendations for landowners are given in Sections 3.3. More general recommendations for GTT members and the local community are given in Section 3.4 under specific topics. A three-year action plan is given in Section 3.5.

3.1 Strengths, Weaknesses, Opportunities, Challenges analysis

The following SWOC analysis identified Glenbrohane's strengths and weaknesses from a biodiversity perspective and highlights future opportunities and challenges.

Strengths	An active Tidy Town group with genuine interest in biodiversity and an excellent capacity to secure resources Local landowners with specific expertise in butterfly & moth identification Local landowners keen to take action to increase biodiversity and sustainability on their land A rural community with relatively low intensity farming in the local area Good historic species records from NBDC, including 13 species butterfly, 67 species moths, and many birds Exceptional heritage value in the old stone walls and bridges, some of which date back to the 1800s and have high biodiversity value There is an exceptional old hedgerow boundary at Field 2 with mature crab apples
Weaknesses	Currently, overuse of herbicide is evident at several private residences in the village. Herbicide, when used incorrectly, has a damaging effect on biodiversity.
Opportunities	The combination of historic species records and the records collected during the preparation of the BAP provide a valuable evidence-base on which actions can be planned. Glenbrohane has a wealth of opportunities to protect and enhance biodiversity in and around the village, given the skill sets of GTT members and landowners, the rural location, the many different habitats, and the current levels of awareness about the need to protect biodiversity at national level.
Challenges	Glenbrohane has several invasive species, some of which require control under EU legislation. All biodiversity actions must be mindful of the impact of climate change over the following years.

3.2 Recommendations for biodiversity management

The following section makes suggestions to be considered in biodiversity action planning. The suggestions are based on the findings of the surveys conducted in June and July, analysis of historic data, and discussions with GTT members and local landowners.

3.3 Recommendations for management of fields: landowners

3.3.1 Field 1 (Peggy's field)

Peggy's field is GS1 grassland which is becoming very rare in Ireland. Low intensity grazing without the use of fertilisers and pesticides is the best approach to retaining its biodiversity value.

- Avoid overgrazing with sheep which create bare patches in the grass sward that can lead to colonisation by thistles and other undesirable species.
- Strim the creeping thistle in the upper part of the field opposite the church only if residents regard it as unsightly.
- Continue current management practices, including no use of herbicide or fertiliser.
- Maintain the boundary vegetation which provides shelter for grazing animals and habitats for wildlife.
- Erect signage to alert residents and visitors that the field is being managed for wildlife. Suitable signs can be freely downloaded from the following link. https://pollinators.ie/managed-for-wildlife-signage-templates-now-available/. A local printer can make a sign using corrugated cardboard which is inexpensive and reasonably sturdy.

3.3.2 Field 2 (Morgan's field)

- Ongoing management depends on the forestry company involved. Some planted trees may not survive because of congestion by tall, thatching grasses. Please encourage the forestry company to replace with trees that are more reflective of the local flora, such as crab apple, willow, and elder. Please insist that the company sources sapling stock from local provenance and does not use imported trees which bring with them a very high risk of disease.
- Protect the crab apple boundary. Do not allow heavy machinery to compact the soil near this ancient boundary, and preserve the earth bank and ditch on which the crab apples are growing. It will be beneficial to link with the neighbouring landowner who shares the boundary to explore opportunities for joint conservation actions for this old hedgerow and treeline.

3.3.3 Field 3 (behind the school)

This field appears to have been at least partially improved and it appears to be grazed quite intensively with consequent build-up of nutrients in some areas which allows the growth of weedy species such as ragwort and docks. The bank by the lane is more interesting and current management practices (only occasional cutting) can be maintained.

The ash trees here and elsewhere are diseased with ashdieback caused by the invasive alien fungus, *Hymenoscyphus fraxineus*. Some trees can be left as dead standing 'snags' which

provide nesting habitats for a wide range of invertebrates. Trees should be felled where they represent a public hazard.

If the trees are replaced, please use species that are representative of the local area, including hawthorn, willow (grey willow (*Salix cinerea*) can become a magnificent tree when mature), crab apple, elder and birch. Ensure the trees are obtained from local stock. Imported trees bring a high risk of disease.

The upper part of the field is drier and has the potential to be managed as a traditional meadow with low intensity grazing, or by cutting in mid-April and mid-October. This maximises opportunities for native meadow flowers to establish and complete their life cycles and set seed. If a cutting regime is adopted, it is important to remove all clippings to prevent the build-up of nitrogen and other nutrients which will encourage vigorous, undesirable species and discourage colonisation by traditional meadow flowers.

3.3.4 Steep lane verges

The steep banks of some of lane verges probably means the grass verge is strimmed less frequently and this has allowed native flowers to flourish. It will be beneficial to maintain a low frequency cutting regime (no cutting between May and September) of all the lane verges in the village where it does not cause visual obstruction to traffic. Grass clippings are best lifted off and composted elsewhere to prevent build-up of nutrients in the soil which encourage weedy, undesirable species.

The bank which runs parallel to the lane beside the River Morningstar is free draining and sunny, and it also supports an interesting array of species. Manage as above.

3.3.5 Ragwort

Ragwort (*Senecio jacobaea*) is abundant in field 3 and elsewhere in the village and requires some control by all local landowners and GTT members. It is very poisonous to grazing animals and can cause fatalities if it gets into fodder. The following link provides useful information, including methods of control.
https://maps.biodiversityireland.ie/Dataset/304/Species/29601

3.4 General recommendations

Glenbrohane has a wealth of interesting and nationally important habitats which can be restored to biodiversity-rich areas with only minor changes to management. There is one exception, which is the presence of several serious invasive species, and these require a separate action plan drawn up by specialists in the field; this is discussed in Section 3.4.4.

3.4.1 Stone bridges and stone walls

- Do not power wash stone walls and bridges, and do not use herbicide at their edges. Both are counterproductive and lead to colonisation by weedy and undesirable species and increase the risk of invasive species becoming established.

- Protect sections of stone walls where native flora has become established.

- Hand remove ivy where it is encroaching walls and smothering wall-specialist plants, mosses and lichens. Where ivy roots have entrenched deeply into the stone it is best to cut the shoot 5 cm from where the root penetrates the wall. Dab on a drop of stump killer herbicide containing glyphosate and diluted according to the manufacturer's instructions. A plastic bag can be tied loosely over cut ends to prevent insects from coming into contact with the herbicide. Don't attempt to pull ivy roots out from stone work, it is likely to destabilise the structure.

- Encourage GTT members and local residents to learn how to identify specialist flora of stone walls. Information boards can be erected to assist.

- Stone bridges can be excellent habitats for bats which will roost beneath the arches. Daubenton's (*Myotis daubentonii*), Natterer's (*Myotis nattereri*), brown long-eared (*Plecotus auritus*), whiskered (*Myotis mystacinus*) and common pipistrelle (*Pipistrellus pipistrellus*) are examples. It will be worthwhile to contact Bat Conservation Ireland (www.batconservationireland.org) or the local Limerick bat group to ask for advice about a survey to record bats in the area and actions that can be taken to support their populations.

- Preserve local stone walling and cobble laying skills

3.4.2 Boundaries, hedgerows and tree lines

- The hedgerows in the village are a mix of native and ornamental species. Ornamental species include snowberry, Wilson's honeysuckle, and laurel, but these have no biodiversity value, they become invasive, and they are greedy of water and nutrients which deprives adjacent native species. As far as possible, encourage residents to consider planting native species when creating or repairing hedgerows. Native hedgerow species, such as elder, hazel, oak, and hawthorn support wildlife, whereas ornamental species tend not to.

- Ash trees are one of the dominant native tree species in the area but these are succumbing to ash dieback disease. Monitor their health. Dying trees should be felled where they create a public health hazard; others can be left as 'snags', which is the term used to describe a dead tree. Snags provide valuable habitats for a wide range of birds, small mammals and invertebrates.

- The ancient hedge/ditch boundary shown in Fig. 3 contains some mature crab apple on land owned by Landowner 2 (Morgan). This represents a wonderful example of Glenbrohane's heritage and a more detailed ecological survey will be worthwhile. The adjacent hedgerows are also dense and continuous (Fig 3) and it will be beneficial to engage with this landowner to seek cooperation for a joint programme of hedgerow management for biodiversity.

- The steep lane verges are full of wild flowers, likely because the banks are too steep to cut regularly, and it will be excellent to maintain this management approach.

- Watch out for winter heliotrope and montbretia colonising the lane verges. Prevention and early intervention can eradicate these invasive species and others without difficulty, but once they become established it can be difficult and expensive to resolve and may require extensive use of herbicides which are very damaging to biodiversity. For more information, see www.biodiversityireland.ie/projects/invasive-species.

3.4.3 Flower beds

GTT and local individuals have created several flower beds in the village, including raised stone beds at the grotto and by the bridge over the Morningstar river. These are past their best and include several plant varieties, such as fox and cubs (*Pilosella aurantiaca*), and buddleja (*Buddleja davidii*) which can become invasive. The flower bed at the grotto also contains Spanish bluebell (*Hyacinthoides hispanica*) which is regulated for control under EU legislation, so this must be removed. This is an excellent opportunity to coordinate with all interested stakeholders to redesign and replant the beds. The goal can be to create visually attractive features which are easily manageable and, at the same time, provide food and shelter for pollinating insects and birds.

As a general rule, more formal planting including the use of bedding plants and other ornamentals should be kept to the centre of the village. The raised bed at the bridge marks the point at which the village transitions into countryside, and here it is best to create a natural planting using native species. Garden plants which are prolific seed producers (e.g., cotoneaster, fox and cubs, red valerian, montbretia) should not be planted here because of the risk of dispersal into adjacent land.

The native relation of fox and cubs is mouse-ear hawkweed (*Pilosella officinarum*), and this was found growing on the steep grassy verge on the opposite side of the lane to the grotto. Seed can be collected from this very pretty, native, pollinator-friendly plant and sown in the flower bed at the bridge and in the grotto flower bed.

Recommendations for increasing biodiversity in the mindfulness garden are given in Section 2.2.7.

3.4.4 Invasive alien plant species

Invasive alien plant species are established in Glenbrohane, including Japanese knotweed, Indian balsam and Spanish bluebell which are controlled by EU legislation (Section 49 of the *European Communities (Birds and Natural Habitats) Regulations, 2011, S.I. No. 477)*, which makes it an offence to knowingly disperse species listed in the Regulations' appendices. The following actions are recommended:

Japanese knotweed

- Action was taken in 2020 to contain and eventually eradicate Japanese knotweed from the village centre. It is important to comply with the contractor's recommendations regarding treatment of the remaining infestation.
- It will be beneficial to encourage landowners with Japanese knotweed infestations at the edge of the village to ensure dispersal is prevented.

Indian balsam

Indian balsam *(Impatiens glandulifera)* is an annual plant with produces copious amounts of seed and disperses over wide areas, leading to dense infestations. It is infesting the River Morningstar downstream of the bridge and will quickly spread further downstream. Recommended actions are:

- Coordinate a group of volunteers in late May/early June to go 'balsam bashing', which means pulling the plant up from the ground. This is easy to do but it must be done before the plants flower and set seed. The green waste can be composted at the top of the river bank where it can be left undisturbed.

Spanish bluebell

Spanish bluebell has none of the lovely qualities of Ireland's native bluebell and it can become quickly invasive, smothering other native plants in the vicinity. It is frequently shared between neighbours who do not realise it is an offence under EU law to 'knowingly disperse' it.

- Dig it out of the flower bed at the grotto, taking care to remove all the bulbs. The bulbs can be rotted in a barrel of water and, when well-rotted, the liquid can be used as a liquid feed for the garden.
- Advise residents in Glenbrohane that if they have Spanish bluebell growing in their gardens, they must not share it with neighbours, nor allow it to disperse onto adjacent properties.

3.4.5 Other invasive species

Other problematic invasive species established in Glenbrohane include:

- Butterbur (*Petasites hybridus*) along the River Morningstar
- Snowberry (*Symphoricarpos albus*), Wilson's honeysuckle (*Lonicera nitida*), montbretia (*Crocosmia x crocosmiiflora*), ground elder (*Aegopodium podagra*) and variegated yellow archangel (*Lamiastrum galeobdolon subsp. argentatum*) in the hedgerows in the village and towards the church.
- Buddleja (*Buddleja davidii*) and Fox and cubs (*Pilosella aurantiaca*) in the grotto flowerbed.
- Cotoneaster along the wall opposite the church.
- Pendulous sedge (*Carex pendula*) was recorded at several location in the village. This is a native species but there have been repeated introductions and once established it is another species that can invade and become difficult to contain. Mature plants are very difficult to dig out.

A control programme for all of these species is recommended, as shown in Table 4.

Table 4 Control of invasive species in Glenbrohane

Manually pull plants out and compost at the site (balsam bashing)	Indian balsam	May/June
Seek/retain expert advice	Japanese knotweed Butterbur	asap
Dig out and rot in a barrel of water until well-rotted; then the liquid can be used as a liquid feed. Alternatively, pack into strong black sacks, tie well, and leave in the sun to 'solarise'. All material will rot in a few months	Spanish bluebell Montbretia Variegated yellow archangel. Fox and cubs	asap
Dig out when young/first appears	Pendulous sedge Montbretia	All year
Contain and prevent dispersal. Brush may regenerate, so compost well or burn. If dispersed, seek expert advice	Snowberry Wilson's honeysuckle	All year

4 Three-year plan

The following three-year plan gives a suggested layout for delivering short- and longer-term actions over the next three years. The actions are presented in descending priority.

Year	2021		2022		2023	
Months	**1-6**	**7-12**	**1-6**	**7-12**	**1-6**	**7-12**
Japanese knotweed eradication						
• Ensure a contract for ongoing treatment of Japanese knotweed in the village is in place. • Encourage other landowners to treat Japanese knotweed at their properties						
Indian balsam eradication						
• Organise a group of volunteers to balsam bash along the R. Morningstar						
Spanish bluebell eradication						
• Dig out Spanish bluebell from the grotto and rot in a barrel of water • Advise residents to check if they have Spanish bluebell in their gardens, and to remove it. At least, they must not share it with neighbours as this is breaking the law						
Other invasive species						
• Develop a plan for their removal over the next 3 years • Learn how to identify troublesome invasive species and regularly check the village. Early intervention and prevention are by far the best approaches to invasive species control						
Herbicide use in village						
• Raise awareness about Glenbrohane's rich biodiversity and heritage among residents in the village and encourage everyone to be more mindful in their use of herbicide. It is never effective as a weed killer in the long term and it is very damaging to biodiversity. • Ensure contractors and CE workers involved with road and school grounds maintenance do not use herbicide.						
Bat populations at the bridge and elsewhere						
• Secure funds to appoint Bat Conservation Ireland to conduct a detailed bat survey of the bridge and elsewhere in the village, and seek advice how best to monitor bat populations recorded and protect their populations						
Butterfly and moths						

• Ask the local landowner and butterfly enthusiast to give a talk about the butterflies and moths in the village, and encourage others to get involved. • Plan the redesign of the flower beds with butterflies and moths in mind. • Encourage residents in the village to plant garden flowers and shrubs which are supportive of the local butterfly and moth populations.						
Birds						
• A wide range of birds has been recorded in Glenbrohane and the local surrounding area, as documented by NBDC. Invite a local bird expert (Alan Mee?) to give a talk on the birds of the village and how residents can support their populations. Migrating birds, such as swallows, house martins, swifts, redwings, and fieldfares are especially threatened because of habitat loss and climate change.						
River walk						
• GTT are keen to develop a walk along the R. Morningstar; however, the spread of invasive species along the river in this section and the steep banks make a walk along the river a highly risky action which could widely disperse the invasive species and damage the local biodiversity. It is beneficial to reconsider this plan.						
Hedgerows and treelines						
• Encourage all landowners who share the old hedgerow/treeline boundary to take coordinated and cooperative action to protect it. • Ensure that tree planting in field 2 does not compact soil near the boundary and damage the roots of mature trees. • Encourage the planting of native trees throughout the village, choosing species that are appropriate to the habitat type, with grey willow, alder and birch in the wetter areas, and oak, elder, and hawthorn in the drier areas. • Monitor the health of ash trees and ensure dying trees are felled where they create a public hazard.						

Stone bridges and walls						
• Agree with CE workers and other appropriate people to stop power washing the stone walls and bridges, and not to use herbicide at their edges. • Design and install an information board about the specialist plants of stone walls and bridges. Ask an ecologist to help and ensure the images and descriptions are good enough for people to identify the plants and go on to protect them elsewhere. • Hand remove ivy where it is encroaching walls and smothering wall-specialist plants, mosses and lichens. • Encourage GTT members and local residents to learn how to identify specialist flora of stone walls.						
Flower beds						
Redesign with appropriate species, ensuring that native /non-invasive species are planted at the edge of the village.						
Raising awareness						
• Promote the biodiversity action plan and encourage landowners and residents in the local and wider area to embrace the protection of biodiversity as a priority in their daily lives. Our futures depend on it.						

4.1 Securing resources to implement the biodiversity action plan

It will be beneficial to secure funds for the following actions:

- Bat survey
- Talk by Bat Conservation Ireland on protecting bat populations in the village
- Information boards (cost of an ecologist to assist with content, design, construction and installation); plants and other wildlife of stone walls; butterflies found in the area; moths found in the area.
- Talk by local bird expert or another member of Birdwatch Ireland on the bird populations in Glenbrohane and how to protect their populations.
- Support for an ecologist to assist with the annual review of the biodiversity action plan.
- Actions against invasive species
- Raising awareness and promotion of the plan
- Volunteer costs

Appendix 1: NBDC records: R72H

Species group	Species name	Date of last record	Title of dataset	Designation
bird	Barn Swallow (Hirundo rustica)	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 (Pica pica)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Blue Tit (Cyanistes caeruleus)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Chaffinch (Fringilla coelebs)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Coal Tit (Periparus ater)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Blackbird (Turdus merula)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Chiffchaff (Phylloscopus collybita)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Kestrel (Falco tinnunculus)	23/10/2017	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 Linnet (Carduelis cannabina)	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 (Gallinula chloropus)	31/12/2011	Bird Atlas 2007 - 2011	

bird	Common Pheasant (Phasianus colchicus)	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 Starling (Sturnus vulgaris)	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 Swift (Apus apus)	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 (Columba palumbus)	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	Eurasian Jackdaw (Corvus monedula)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Eurasian Sparrowhawk (Accipiter nisus)	31/12/2011	Bird Atlas 2007 - 2011	
bird	European Goldfinch (Carduelis carduelis)	31/12/2011	Bird Atlas 2007 - 2011	
bird	European Greenfinch (Carduelis chloris)	31/12/2011	Bird Atlas 2007 - 2011	
bird	European Robin (Erithacus rubecula)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Fieldfare (Turdus pilaris)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Goldcrest (Regulus regulus)	31/12/2011	Bird Atlas 2007 - 2011	

bird	Great Tit (Parus major)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Grey Heron (Ardea cinerea)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Grey Wagtail (Motacilla cinerea)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Hedge Accentor (Prunella modularis)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Hen Harrier (Circus cyaneus)	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
bird	Hooded Crow (Corvus cornix)	31/12/2011	Bird Atlas 2007 - 2011	
bird	House Martin (Delichon urbicum)	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 (Passer domesticus)	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	Meadow Pipit (Anthus pratensis)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Mistle Thrush (Turdus viscivorus)	31/12/2011	Bird Atlas 2007 - 2011	

bird	Northern Lapwing (Vanellus vanellus)	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 - Red List
bird	Redwing (Turdus iliacus)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Reed Bunting (Emberiza schoeniclus)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Rook (Corvus frugilegus)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Song Thrush (Turdus philomelos)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Stonechat (Saxicola torquata)	31/12/2011	Bird Atlas 2007 - 2011	
bird	White Wagtail (Motacilla alba)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Willow Warbler (Phylloscopus trochilus)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Winter Wren (Troglodytes troglodytes)	31/12/2011	Bird Atlas 2007 - 2011	
insect - butterfly	Green-veined White (Pieris napi)	16/09/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Large White (Pieris brassicae)	26/08/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Meadow Brown (Maniola jurtina)	26/08/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Orange-tip (Anthocharis cardamines)	27/05/2012	Irish Butterfly Monitoring Scheme	

insect - butterfly	Painted Lady (Vanessa cardui)	29/09/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Peacock (Inachis io)	08/09/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Red Admiral (Vanessa atalanta)	29/09/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Ringlet (Aphantopus hyperantus)	04/08/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Small Copper (Lycaena phlaeas)	11/08/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Small Heath (Coenonympha pamphilus)	28/07/2010	Irish Butterfly Monitoring Scheme	Threatened Species: Near threatened
insect - butterfly	Small Tortoiseshell (Aglais urticae)	22/09/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Small White (Pieris rapae)	28/07/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Speckled Wood (Pararge aegeria)	22/09/2012	Irish Butterfly Monitoring Scheme	
insect - dragonfly (Odonata)	Common Darter (Sympetrum striolatum)	24/06/1952	Dragonfly Ireland	
insect - moth	Angle Shades (Phlogophora meticulosa)	26/06/2006	Moths Ireland	
insect - moth	Black Rustic (Aporophyla nigra)	15/10/2006	Moths Ireland	
insect - moth	Brimstone Moth (Opisthograptis luteolata)	22/07/2006	Moths Ireland	
insect - moth	Buff Ermine (Spilosoma luteum)	26/06/2006	Moths Ireland	

insect - moth	Burnished Brass (Diachrysia chrysitis)	22/07/2006	Moths Ireland	
insect - moth	Centre-barred Sallow (Atethmia centrago)	30/08/2006	Moths Ireland	
insect - moth	Cinnabar (Tyria jacobaeae)	22/07/2006	Moths Ireland	
insect - moth	Clouded Border (Lomaspilis marginata)	24/06/2006	Moths Ireland	
insect - moth	Clouded Drab (Orthosia incerta)	05/05/2007	Moths Ireland	
insect - moth	Clouded Silver (Lomographa temerata)	05/05/2007	Moths Ireland	
insect - moth	Clouded-bordered Brindle (Apamea crenata)	05/05/2007	Moths Ireland	
insect - moth	Common Pug (Eupithecia vulgata)	22/07/2006	Moths Ireland	
insect - moth	Common Quaker (Orthosia cerasi)	05/05/2007	Moths Ireland	
insect - moth	Common Rustic (Mesapamea secalis)	22/07/2012	Moths Ireland	
insect - moth	Dark Arches (Apamea monoglypha)	22/07/2012	Moths Ireland	
insect - moth	Dark Brocade (Blepharita adusta)	05/05/2007	Moths Ireland	
insect - moth	Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata)	22/07/2006	Moths Ireland	
insect - moth	December Moth (Poecilocampa populi)	28/12/2006	Moths Ireland	
insect - moth	Early Grey (Xylocampa areola)	20/04/2006	Moths Ireland	
insect - moth	Elephant Hawk-moth (Deilephila elpenor)	26/06/2006	Moths Ireland	

insect - moth	Flame Carpet (Xanthorhoe designata)	31/12/2000	Moths Ireland	
insect - moth	Flame Shoulder (Ochropleura plecta)	20/05/2007	Moths Ireland	
insect - moth	Garden Tiger (Arctia caja)	15/10/2006	Moths Ireland	
insect - moth	Gold Spot (Plusia festucae)	22/07/2012	Moths Ireland	
insect - moth	Gold Swift (Hepialus hecta)	21/07/2012	Moths Ireland	
insect - moth	Green Carpet (Colostygia pectinataria)	15/06/2006	Moths Ireland	
insect - moth	Heart & Dart (Agrotis exclamationis)	22/07/2006	Moths Ireland	
insect - moth	Hebrew Character (Orthosia gothica)	05/05/2007	Moths Ireland	
insect - moth	Humming-bird Hawk-moth (Macroglossum stellatarum)	24/09/2006	Moths Ireland	
insect - moth	Ingrailed Clay (Diarsia mendica)	22/07/2012	Moths Ireland	
insect - moth	Large Emerald (Geometra papilionaria)	16/07/2006	Moths Ireland	
insect - moth	Large Yellow Underwing (Noctua pronuba)	22/07/2012	Moths Ireland	
insect - moth	Lead Belle (Scotopteryx mucronata)	05/05/2007	Moths Ireland	
insect - moth	Least Yellow Underwing (Noctua interjecta)	31/12/2000	Moths Ireland	
insect - moth	Lesser Broad-bordered Yellow Underwing (Noctua janthe)	30/08/2006	Moths Ireland	

insect - moth	Lesser Common Rustic (Mesapamea didyma)	22/07/2012	Moths Ireland	
insect - moth	Light Arches (Apamea lithoxylaea)	22/07/2012	Moths Ireland	
insect - moth	Light Emerald (Campaea margaritata)	24/06/2006	Moths Ireland	
insect - moth	Magpie (Abraxas grossulariata)	22/07/2006	Moths Ireland	
insect - moth	Map-winged Swift (Hepialus fusconebulosa form gallicus)	22/07/2012	Moths Ireland	
insect - moth	Marbled Minor agg. (Oligia strigilis agg.)	15/06/2006	Moths Ireland	
insect - moth	Muslin Moth (Diaphora mendica)	20/05/2007	Moths Ireland	
insect - moth	Pale Tussock (Calliteara pudibunda)	31/12/2000	Moths Ireland	
insect - moth	Pale-shouldered Brocade (Lacanobia thalassina)	05/05/2007	Moths Ireland	
insect - moth	Parsnip Moth (Depressaria pastinacella)	14/07/2003	Moths Ireland	
insect - moth	Peach Blossom (Thyatira batis)	26/06/2006	Moths Ireland	
insect - moth	Pebble Prominent (Notodonta ziczac)	05/05/2007	Moths Ireland	
insect - moth	Peppered Moth (Biston betularia)	24/06/2006	Moths Ireland	
insect - moth	Plain Golden Y (Autographa jota)	26/06/2006	Moths Ireland	
insect - moth	Poplar Hawk-moth (Laothoe populi)	31/12/2000	Moths Ireland	
insect - moth	Puss Moth (Cerura vinula)	05/05/2007	Moths Ireland	

insect - moth	Riband Wave (Idaea aversata)	16/07/2006	Moths Ireland	
insect - moth	Rosy Rustic (Hydraecia micacea)	24/09/2006	Moths Ireland	
insect - moth	Rush Veneer (Nomophila noctuella)	14/07/2003	Moths Ireland	
insect - moth	Scalloped Hazel (Odontopera bidentata)	20/05/2007	Moths Ireland	
insect - moth	Scoparia ambigualis	22/07/2012	Moths Ireland	
insect - moth	Setaceous Hebrew Character (Xestia c-nigrum)	15/10/2006	Moths Ireland	
insect - moth	Sharp-angled Carpet (Euphyia unangulata)	22/07/2012	Moths Ireland	
insect - moth	Silver Y (Autographa gamma)	24/09/2006	Moths Ireland	
insect - moth	Silver-ground Carpet (Xanthorhoe montanata)	04/06/2006	Moths Ireland	
insect - moth	Small Angle Shades (Euplexia lucipara)	26/06/2006	Moths Ireland	
insect - moth	Small Square-spot (Diarsia rubi)	20/05/2007	Moths Ireland	
insect - moth	Snout (Hypena proboscidalis)	22/07/2006	Moths Ireland	
insect - moth	Spectacle (Abrostola tripartita)	22/07/2006	Moths Ireland	
insect - moth	Swallow-tailed Moth (Ourapteryx sambucaria)	16/07/2006	Moths Ireland	
insect - moth	True Lover's Knot (Lycophotia porphyrea)	22/07/2006	Moths Ireland	
insect - moth	Turnip Moth (Agrotis segetum)	15/10/2006	Moths Ireland	

insect - moth	Water Carpet (Lampropteryx suffumata)	05/05/2007	Moths Ireland	
insect - moth	White Ermine (Spilosoma lubricipeda)	05/05/2007	Moths Ireland	
terrestrial mammal	Eurasian Badger (Meles meles)	31/12/2007	Badger Setts of Ireland Database	Protected Species: Wildlife Acts

Appendix 2 NBDC records: R72M

Species group	Species name	Date of last record	Title of dataset	Designation
bird	Barn Swallow (Hirundo rustica)	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 (Pica pica)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Blue Tit (Cyanistes caeruleus)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Chaffinch (Fringilla coelebs)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Coal Tit (Periparus ater)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Blackbird (Turdus merula)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Chiffchaff (Phylloscopus collybita)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Kestrel (Falco tinnunculus)	23/10/2017	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 Linnet (Carduelis cannabina)	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 (Gallinula chloropus)	31/12/2011	Bird Atlas 2007 - 2011	

bird	Common Pheasant (Phasianus colchicus)	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 Starling (Sturnus vulgaris)	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 Swift (Apus apus)	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 (Columba palumbus)	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	Eurasian Jackdaw (Corvus monedula)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Eurasian Sparrowhawk (Accipiter nisus)	31/12/2011	Bird Atlas 2007 - 2011	
bird	European Goldfinch (Carduelis carduelis)	31/12/2011	Bird Atlas 2007 - 2011	
bird	European Greenfinch (Carduelis chloris)	31/12/2011	Bird Atlas 2007 - 2011	
bird	European Robin (Erithacus rubecula)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Fieldfare (Turdus pilaris)	31/12/2011	Bird Atlas 2007 - 2011	

bird	Goldcrest (Regulus regulus)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Great Tit (Parus major)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Grey Heron (Ardea cinerea)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Grey Wagtail (Motacilla cinerea)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Hedge Accentor (Prunella modularis)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Hen Harrier (Circus cyaneus)	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
bird	Hooded Crow (Corvus cornix)	31/12/2011	Bird Atlas 2007 - 2011	
bird	House Martin (Delichon urbicum)	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 (Passer domesticus)	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	Meadow Pipit (Anthus pratensis)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Mistle Thrush (Turdus viscivorus)	31/12/2011	Bird Atlas 2007 - 2011	

bird	Northern Lapwing (Vanellus vanellus)	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 - Red List
bird	Redwing (Turdus iliacus)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Reed Bunting (Emberiza schoeniclus)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Rook (Corvus frugilegus)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Song Thrush (Turdus philomelos)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Stonechat (Saxicola torquata)	31/12/2011	Bird Atlas 2007 - 2011	
bird	White Wagtail (Motacilla alba)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Willow Warbler (Phylloscopus trochilus)	31/12/2011	Bird Atlas 2007 - 2011	
bird	Winter Wren (Troglodytes troglodytes)	31/12/2011	Bird Atlas 2007 - 2011	
insect - butterfly	Green-veined White (Pieris napi)	16/09/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Large White (Pieris brassicae)	26/08/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Meadow Brown (Maniola jurtina)	26/08/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Orange-tip (Anthocharis cardamines)	27/05/2012	Irish Butterfly Monitoring Scheme	

insect - butterfly	Painted Lady (Vanessa cardui)	29/09/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Peacock (Inachis io)	08/09/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Red Admiral (Vanessa atalanta)	29/09/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Ringlet (Aphantopus hyperantus)	04/08/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Small Copper (Lycaena phlaeas)	11/08/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Small Heath (Coenonympha pamphilus)	28/07/2010	Irish Butterfly Monitoring Scheme	Threatened Species: Near threatened
insect - butterfly	Small Tortoiseshell (Aglais urticae)	22/09/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Small White (Pieris rapae)	28/07/2012	Irish Butterfly Monitoring Scheme	
insect - butterfly	Speckled Wood (Pararge aegeria)	22/09/2012	Irish Butterfly Monitoring Scheme	
insect - dragonfly (Odonata)	Common Darter (Sympetrum striolatum)	24/06/1952	Dragonfly Ireland	
insect - moth	Angle Shades (Phlogophora meticulosa)	26/06/2006	Moths Ireland	
insect - moth	Black Rustic (Aporophyla nigra)	15/10/2006	Moths Ireland	
insect - moth	Brimstone Moth (Opisthograptis luteolata)	22/07/2006	Moths Ireland	
insect - moth	Buff Ermine (Spilosoma luteum)	26/06/2006	Moths Ireland	

insect - moth	Burnished Brass (Diachrysia chrysitis)	22/07/2006	Moths Ireland	
insect - moth	Centre-barred Sallow (Atethmia centrago)	30/08/2006	Moths Ireland	
insect - moth	Cinnabar (Tyria jacobaeae)	22/07/2006	Moths Ireland	
insect - moth	Clouded Border (Lomaspilis marginata)	24/06/2006	Moths Ireland	
insect - moth	Clouded Drab (Orthosia incerta)	05/05/2007	Moths Ireland	
insect - moth	Clouded Silver (Lomographa temerata)	05/05/2007	Moths Ireland	
insect - moth	Clouded-bordered Brindle (Apamea crenata)	05/05/2007	Moths Ireland	
insect - moth	Common Pug (Eupithecia vulgata)	22/07/2006	Moths Ireland	
insect - moth	Common Quaker (Orthosia cerasi)	05/05/2007	Moths Ireland	
insect - moth	Common Rustic (Mesapamea secalis)	22/07/2012	Moths Ireland	
insect - moth	Dark Arches (Apamea monoglypha)	22/07/2012	Moths Ireland	
insect - moth	Dark Brocade (Blepharita adusta)	05/05/2007	Moths Ireland	
insect - moth	Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata)	22/07/2006	Moths Ireland	
insect - moth	December Moth (Poecilocampa populi)	28/12/2006	Moths Ireland	
insect - moth	Early Grey (Xylocampa areola)	20/04/2006	Moths Ireland	
insect - moth	Elephant Hawk-moth (Deilephila elpenor)	26/06/2006	Moths Ireland	

insect - moth	Flame Carpet (Xanthorhoe designata)	31/12/2000	Moths Ireland	
insect - moth	Flame Shoulder (Ochropleura plecta)	20/05/2007	Moths Ireland	
insect - moth	Garden Tiger (Arctia caja)	15/10/2006	Moths Ireland	
insect - moth	Gold Spot (Plusia festucae)	22/07/2012	Moths Ireland	
insect - moth	Gold Swift (Hepialus hecta)	21/07/2012	Moths Ireland	
insect - moth	Green Carpet (Colostygia pectinataria)	15/06/2006	Moths Ireland	
insect - moth	Heart & Dart (Agrotis exclamationis)	22/07/2006	Moths Ireland	
insect - moth	Hebrew Character (Orthosia gothica)	05/05/2007	Moths Ireland	
insect - moth	Humming-bird Hawk-moth (Macroglossum stellatarum)	24/09/2006	Moths Ireland	
insect - moth	Ingrailed Clay (Diarsia mendica)	22/07/2012	Moths Ireland	
insect - moth	Large Emerald (Geometra papilionaria)	16/07/2006	Moths Ireland	
insect - moth	Large Yellow Underwing (Noctua pronuba)	22/07/2012	Moths Ireland	
insect - moth	Lead Belle (Scotopteryx mucronata)	05/05/2007	Moths Ireland	
insect - moth	Least Yellow Underwing (Noctua interjecta)	31/12/2000	Moths Ireland	
insect - moth	Lesser Broad-bordered Yellow Underwing (Noctua janthe)	30/08/2006	Moths Ireland	

insect - moth	Lesser Common Rustic (Mesapamea didyma)	22/07/2012	Moths Ireland	
insect - moth	Light Arches (Apamea lithoxylaea)	22/07/2012	Moths Ireland	
insect - moth	Light Emerald (Campaea margaritata)	24/06/2006	Moths Ireland	
insect - moth	Magpie (Abraxas grossulariata)	22/07/2006	Moths Ireland	
insect - moth	Map-winged Swift (Hepialus fusconebulosa form gallicus)	22/07/2012	Moths Ireland	
insect - moth	Marbled Minor agg. (Oligia strigilis agg.)	15/06/2006	Moths Ireland	
insect - moth	Muslin Moth (Diaphora mendica)	20/05/2007	Moths Ireland	
insect - moth	Pale Tussock (Calliteara pudibunda)	31/12/2000	Moths Ireland	
insect - moth	Pale-shouldered Brocade (Lacanobia thalassina)	05/05/2007	Moths Ireland	
insect - moth	Parsnip Moth (Depressaria pastinacella)	14/07/2003	Moths Ireland	
insect - moth	Peach Blossom (Thyatira batis)	26/06/2006	Moths Ireland	
insect - moth	Pebble Prominent (Notodonta ziczac)	05/05/2007	Moths Ireland	
insect - moth	Peppered Moth (Biston betularia)	24/06/2006	Moths Ireland	
insect - moth	Plain Golden Y (Autographa jota)	26/06/2006	Moths Ireland	
insect - moth	Poplar Hawk-moth (Laothoe populi)	31/12/2000	Moths Ireland	

insect - moth	Puss Moth (Cerura vinula)	05/05/2007	Moths Ireland	
insect - moth	Riband Wave (Idaea aversata)	16/07/2006	Moths Ireland	
insect - moth	Rosy Rustic (Hydraecia micacea)	24/09/2006	Moths Ireland	
insect - moth	Rush Veneer (Nomophila noctuella)	14/07/2003	Moths Ireland	
insect - moth	Scalloped Hazel (Odontopera bidentata)	20/05/2007	Moths Ireland	
insect - moth	Scoparia ambigualis	22/07/2012	Moths Ireland	
insect - moth	Setaceous Hebrew Character (Xestia c-nigrum)	15/10/2006	Moths Ireland	
insect - moth	Sharp-angled Carpet (Euphyia unangulata)	22/07/2012	Moths Ireland	
insect - moth	Silver Y (Autographa gamma)	24/09/2006	Moths Ireland	
insect - moth	Silver-ground Carpet (Xanthorhoe montanata)	04/06/2006	Moths Ireland	
insect - moth	Small Angle Shades (Euplexia lucipara)	26/06/2006	Moths Ireland	
insect - moth	Small Square-spot (Diarsia rubi)	20/05/2007	Moths Ireland	
insect - moth	Snout (Hypena proboscidalis)	22/07/2006	Moths Ireland	
insect - moth	Spectacle (Abrostola tripartita)	22/07/2006	Moths Ireland	
insect - moth	Swallow-tailed Moth (Ourapteryx sambucaria)	16/07/2006	Moths Ireland	
insect - moth	True Lover's Knot (Lycophotia porphyrea)	22/07/2006	Moths Ireland	

insect - moth	Turnip Moth (Agrotis segetum)	15/10/2006	Moths Ireland	
insect - moth	Water Carpet (Lampropteryx suffumata)	05/05/2007	Moths Ireland	
insect - moth	White Ermine (Spilosoma lubricipeda)	05/05/2007	Moths Ireland	
terrestrial mammal	Eurasian Badger (Meles meles)	31/12/2007	Badger Setts of Ireland Database	Protected Species: Wildlife Acts

Appendix 3 Species records from BAP surveys conducted in June and July 2020

Common name	Scientific name	Authority	Irish name
Crested Dog's-tail	*Cynosurus cristatus*	L.	Coinfhéar
Yorkshire-fog	*Holcus lanatus*	L.	Féar an chinn bháin
Annual Meadow-grass	*Poa annua*	L.	Cuise bliantúil
Ash	*Fraxinus excelsior*	L.	Fuinseog
Autumn Hawkbit	*Scorzoneroides autumnalis*	(L.) Moench	Crág phortáin
Barren Strawberry	*Potentilla sterilis*	(L.) Garcke	Sú talún bréige
Barren Strawberry	*Potentilla sterilis*	(L.) Garcke	Sú talún bréige
Beech	*Fagus sylvatica*	L.	Feá
Berberry	*Berberis*		
Black Spleenwort	*Asplenium adiantum-nigrum*	L.	Fionncha dubh
Blackberry	*Rubus fruticosus agg.*		Dris
Blackthorn	*Prunus spinosa*	L.	Draighean
Bracken	*Pteridium aquilinum*	(L.) Kuhn in Decken	Raithneach mhór
Broad Buckler-fern	*Dryopteris dilatata*	(Hoffm.) A. Gray	Raithneach leathan
Broad-leaved Dock	*Rumex obtusifolius*	L.	Copóg shráide
Broad-leaved Willowherb	*Epilobium montanum*	L.	Saileachán leathan
Bulrush	*Typha latifolia*	L.	Coigeal na mban sí
Bush Vetch	*Vicia sepium*	L.	Peasair fhiáin
Cat's-ear	*Hypochaeris radicata*	L.	Cluas chait
Cleavers	*Galium aparine*	L.	Garbhlus
Cock's-foot	*Dactylis glomerata*	L.	Garbhfhéar
Colt's-foot	*Tussilago farfara*	L.	Sponc
Columbine	*Aquilegia*		
Common Bent	*Agrostis capillaris*	L.	Feorainn mhín
Common Chickweed	*Stellaria media*	(L.) Villars	Fliodh
Common Dog-violet	*Viola riviniana*	Reichb.	Fanaigse
Common Figwort	*Scrophularia nodosa*	L.	Donnlus

Common Knapweed	*Centaurea nigra*	L.	Mínscoth
Common Mallow	*Malva sylvestris*	L.	Lus na meall Muire
Common Nettle	*Urtica dioica*	L.	Neantóg
Common Ragwort	*Senecio jacobaea*	L.	Buachalán buí
Common Sorrel	*Rumex acetosa*	L.	Samhadh bó
Common Whitebeam	*Sorbus aria*	(L.) Crantz	Fionncholl
Common x Marsh Ragwort	*Senecio jacobaea × aquaticus = S. × ostenfeldii*	Druce	--
Copper maple	*Acer platanoides*		
Cow Parsley	*Anthriscus sylvestris*	(L.) Hoffm.	Peirsil bhó
Crab Apple	*Malus sylvestris*	(L.) Mill.	Crann fia-úll
Creeping Bent	*Agrostis stolonifera*	L.	Feorainn
Creeping Buttercup	*Ranunculus repens*	L.	Fearbán (reatha)
Creeping Cinquefoil	*Potentilla reptans*	L.	Cúig mhéar mhuire
Creeping Thistle	*Cirsium arvense*	(L.) Scop.	Feochadán reatha
Crested Dog's-tail	*Cynosurus cristatus*	L.	Coinfhéar
Curled dock	*Rumex crispus*	L.	Copóg chatach
Daffodils	*Narcissus*		
Daisy	*Bellis perennis*	L.	Nóinín
Dandelion	*Taraxacum agg.*		Caisearbhán
Devil's-bit Scabious	*Succisa pratensis*	Moench	Odhrach bhallach
Dog-rose	*Rosa canina*	L.	Feirdhris
Elder	*Sambucus nigra*	L.	Trom
Elm	*Ulmus*		
Enchanter's-nightshade	*Circaea lutetiana*	L.	Fuinseagach
European Larch	*Larix decidua*	Mill.	--
False Oat-grass	*Arrhenatherum elatius*	(L.) P. Beauv. ex J.S. Presl & C. Presl	Coirce bréige
False-brome	*Brachypodium sylvaticum*	(Hudson) P. Beauv.	Brómas bréige

Field Horsetail	*Equisetum arvense*	L.	Scuab eich ghoirt
Flowering Currant	*Ribes sanguineum*	Pursh	--
Fox-and-cubs	*Pilosella aurantiaca*	(L.) F.W. Schultz & Sch. Bip.	--
Foxglove	*Digitalis purpurea*	L.	Lus mór
Fuchsia	*Fuchsia magellanica*	Lam.	Fiúise
Garlic	*Allium sp.*		
Germander Speedwell	*Veronica chamaedrys*	L.	Anuallach
Giant Butterbur	*Petasites japonicus*	(Siebold & Zucc.) Maxim.	--
Golden privet	*Ligustrum ovalifolium Aureum*		
Gorse	*Ulex europaeus*	L.	Aiteann gallda
Great Horsetail	*Equisetum telmateia*	Ehrh.	Feadóg
Great Willowherb	*Epilobium hirsutum*	L.	Lus na Tríoinóide
Greater Plantain	*Plantago major*	L.	Cuach Phádraig
Greater Plantain	*Plantago major*	L.	Cuach Phádraig
Greater Stitchwort	*Stellaria holostea*	L.	Tursarraing mhór
Grey Willow	*Salix cinerea*	L.	Saileacha liath
Griselinia	*Griselinia littoralis*		
Ground-elder	*Aegopodium podagraria*	L.	Lus an easpaig
Ground-ivy	*Glechoma hederacea*	L.	Athair lusa
Groundsel	*Senecio vulgaris*	L.	Grúnlas
Guelder-rose	*Viburnum opulus*	L.	Caor chon
Hart's-tongue Fern	*Asplenium scolopendrium*	L.	Creamh na muice fia
Hawthorn	*Crataegus monogyna*	Jacq.	Sceach gheal
Hebe	*Hebe*		
Hedge Bindweed	*Calystegia sepium*	(L.) R. Br.	Ialus fáil
Herb-Robert	*Geranium robertianum*	L.	Ruithéal rí
Hoary Willowherb	*Epilobium parviflorum*	Schreb.	Saileachán liath
Hogweed	*Heracleum sphondylium*	L.	Feabhrán

Honeysuckle	*Lonicera periclymenum*	L.	Féithleann
Hornbeam	*Carpinus betulus*	L.	Crann sleamhain
Indian Balsam	*Impatiens glandulifera*	Royle	Lus na pléisce
Irish Ivy	*Hedera hibernica*	(G. Kirch.) Bean	--
Japanese Knotweed	*Fallopia japonica*	(Houtt.) Ronse Decraene	Glúineach bhiorach
Knotgrass	*Polygonum aviculare*	L.	Glúineach bheag
Lady-fern	*Athyrium filix-femina*	(L.) Roth	Raithneach Mhuire
Lady's Bedstraw	*Galium verum*	L.	Boladh cnis
Lady's mantle	*Alchemilla*		
Lesser Burdock	*Actium minus*	(Hill) Bernh.	Cnádán
Lesser Stitchwort	*Stellaria graminea*	L.	Tursarraing bheag
Lesser Trefoil	*Trifolium dubium*	Sibth.	Seamair bhuí
Maidenhair Spleenwort	*Asplenium trichomanes*	L.	Lus na seilge
Male-fern	*Dryopteris filix-mas*	(L.) Schott	Raithneach mhadra
Marsh Foxtail	*Alopecurus geniculatus*	L.	Fiteog cham
Marsh Thistle	*Cirsium palustre*	(L.) Scop.	Feochadán corraigh
Marsh-bedstraw	*Galium palustre*	L.	Rú corraigh
Meadow Buttercup	*Ranunculus acris*	L.	Fearbán feír
Meadow Vetchling	*Lathyrus pratensis*	L.	Peasairín buí
Meadowsweet	*Filipendula ulmaria*	(L.) Maxim.	Airgead luachra
Montbretia	*Crocosmia pottsii × aurea = C. × crocosmiiflora*	(Lemoine ex Burb. & Dean) N.E. Br.	Feileastram dearg
Mouse-ear-hawkweed	*Pilosella officinarum*	F. Schultz & Schultz-Bip.	Searbh na muc
Nasturtium	*Tropaeolum*		
Nipplewort	*Lapsana communis*	L.	Duilleog Bhríde
Nostoc blue-green algae	*Nostoc commune*		
Osier	*Salix viminalis*	L.	Saileánach
Pendulous Sedge	*Carex pendula*	Hudson	Cíb chrom

Perennial Rye-grass	*Lolium perenne*	L.	Seagalach buan
Petty Spurge	*Euphorbia peplus*	L.	Gearr nimhe
Pignut	*Conopodium majus*	(Gouan) Loret in Loret & Barrandon	Cúlarán
Pineappleweed	*Matricaria discoidea*	DC.	Lun na hiothlann
Prickly Sow-thistle	*Sonchus asper*	(L.) Hill	Bleachtán colgach
Primrose	*Primula vulgaris*	Hudson	Sabhaircín
Red Campion	*Silene dioica*	(L.) Clairv.	Coireán coilleach
Red Clover	*Trifolium pratense*	L.	Seamair dhearg
Red Fescue	*Festuca rubra*	L.	Feisciú rua
Reed Canary-grass	*Phalaris arundinacea*	L.	Cuiscreach
Remote Sedge	*Carex remota*	L.	Cíb scartha
Ribwort Plantain	*Plantago lanceolata*	L.	Slánlus
Rosebay Willowherb	*Chamerion angustifolium*	(L.) Holub	Lus na tine
Rose-of-Sharon	*Hypericum calycinum*	L.	Lus buí Mhanannáin
Rowan	*Sorbus aucuparia*	L.	Caorthann
Rustyback	*Asplenium ceterach*	L.	Raithneach rua
Scaly Male-fern	*Dryopteris affinis*	(Lowe) Fraser-Jenk.	Raithneach ghainneach
Selfheal	*Prunella vulgaris*	L.	Duán ceannchosach
Sharp-flowered Rush	*Juncus acutiflorus*	Ehrh. ex Hoffm.	Fiastalach
Shining Crane's-bill	*Geranium lucidum*	L.	Crobh geal
Short-fruited Willowherb	*Epilobium obscurum*	Schreb.	Sealeachán caol
Shrubby Cinquefoil	*Potentilla fruticosa*	L.	Tor cúigmhéarach
Silverweed	*Potentilla anserina*	L.	Briosclán
Sitka Spruce	*Picea sitchensis*	(Bong.) Carrière	--
Small-leaved Lime	*Tilia cordata*	Mill.	Teile
Smooth Sow-thistle	*Sonchus oleraceus*	L.	Bleachtán mín
Snowberry	*Symphoricarpos albus*	(L.) S.F. Blake	Póirín sneachta

Soft Shield-fern	*Polystichum setiferum*	(Forsskål) T. Moore ex Woynar	Ibheag bhog
Soft-rush	*Juncus effusus*	L.	Geataire
Spanish Bluebell	*Hyacinthoides hispanica*	(Mill.) Rothm.	--
Spear Thistle	*Cirsium vulgare*	(Savi) Ten.	Feochadán colgach
Spirea	*Spirea*		
Square-stalked St John's-wort	*Hypericum tetrapterum*	Fries	Beathnua fireann
Sticky Mouse-ear	*Cerastium glomeratum*	Thuill.	Cluas luchóige ghreamaitheach
Sweet Vernal-grass	*Anthoxanthum odoratum*	L.	Féar cumhra
Sycamore	*Acer pseudoplatanus*	L.	Seiceamóir
Thale Cress	*Arabidopsis thaliana*	(L.) Heynh. in Holl & Heynh.	Tailís
Thyme-leaved Speedwell	*Veronica serpyllifolia*	L.	Lus an treacha
Toad Rush	*Juncus bufonius*	L.	Buafluachair
Tufted Vetch	*Vicia cracca*	L.	Peasair na luch
Tutsan	*Hypericum androsaemum*	L.	Meas torc allta
Upright Hedge-parsley	*Torilis japonica*	(Houtt.) DC.	Fionnas fáil
Wall spray cotoneaster	*Cotoneaster horizontalis*		
Wall-rue	*Asplenium ruta-muraria*	L.	Luibh na seacht ngábh
Wavy Bitter-cress	*Cardamine flexuosa*	With.	Searbh-bhiolar casta
White Clover	*Trifolium repens*	L.	Seamair bhán
Wild Angelica	*Angelica sylvestris*	L.	Gallfheabhrán
Wild Plum	*Prunus domestica*	L.	Baláiste
Wild Privet	*Ligustrum vulgare*	L.	Pribhéad
Willow sp.	*Salix sp.*		
Wilson's Honeysuckle	*Lonicera nitida*	E.H. Wilson	--
Winter Heliotrope	*Petasites fragrans*	(Villars) C. Presl	Plúr na gréine
Wood Avens	*Geum urbanum*	L.	Machall coille
Yarrow	*Achillea millefolium*	L.	Athair thalún

Yellow Archangel	*Lamiastrum galeobdolon subsp. argentatum*	(Smejkal) Stace	Neantóg Mhuire
Yellow-rattle	*Rhinanthus minor*	L.	Gliográn
Yorkshire-fog	*Holcus lanatus*	L.	Féar an chinn bháin