



# Local Biodiversity Action Plan Ballymote County Sligo



Summer 2022
Collated in consultation with Ballymote TidyTowns volunteers,
by Woodrow Sustainable Solutions Ltd.



















#### **Acknowledgements**

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The workshops, and training materials and recordings of sessions from this whole programme are available to the public at <a href="http://woodrow.ie/resources">http://woodrow.ie/resources</a>





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#### Introduction

Ballymote is a town in south County Sligo, with a population of around 1,550 people (2016). The town and surrounding area are rich in historical and archaeological features. Ballymote Castle, over 700 years old, is a large, impressive building with a long and varied history, now situated within the Town Park. A 15<sup>th</sup> Century Franciscan Friary is present within a historic graveyard in the town. Ballymote also has an 18<sup>th</sup> Century corn mill, a 19<sup>th</sup> Century courthouse and a 19<sup>th</sup> Century market house. Three ringforts are present on the outskirts of the town, at Carrownanty, Stoneparks and Rathnakelliga, and the surrounding countryside has many other ringforts and monuments, and historic buildings such as the old Emlaghfad Church. The area also has a rich musical heritage, and has been home to some very influential traditional musicians such as Paddy Killoran, who is commemorated by a memorial stone in the town.

Ballymote Town Park is the main green area within the town. There is also a green area surrounding Emlaghfad Parish Church in the centre of the town, and other small green areas within a few housing estates. Ballymote has residents of all ages, ranging from children to elderly people. The Town Park is popular for walking and exercising, and has a playground for children. It is also located beside a nursing home and could potentially be used for recreation by some of the residents. The biodiversity of the park, and other green areas within the town, is therefore important in a number of ways: for recreational activities, for play by children, for educational purposes, as a way of enhancing the town and making it more pleasant and attractive, and also to provide relaxing and peaceful spaces in the town.



The old corn mill in Ballymote was built in 1795 and was in operation until 1941. This is one of the many important historical and cultural sites in the Ballymote area.



### Aims of the plan

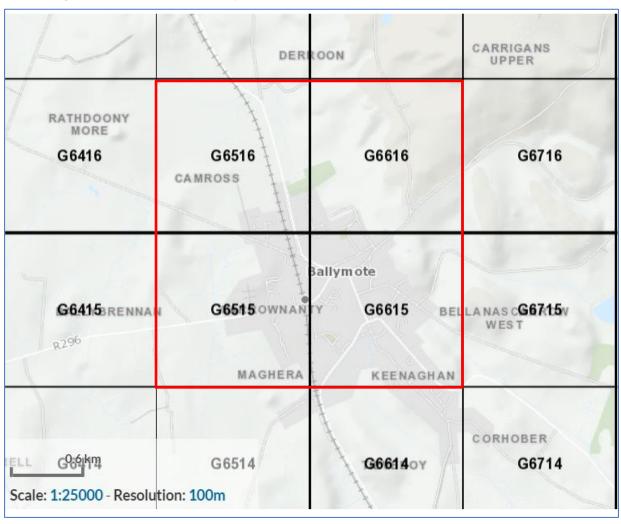
- To enhance the town for wildlife and biodiversity
- To provide recreational and relaxing spaces
- To emphasise the interesting and educational aspects of biodiversity in the town
- To make Ballymote a pleasant and attractive town for local people and visitors alike
- To improve existing green spaces in the town both aesthetically and for nature
- To encourage community involvement in protecting and enhancing the environment in the town
- To suggest further projects or biodiversity surveys that could be carried out in the town

### **Local Wildlife & Biodiversity Records**

It is often interesting to find out about the species of animals and plants that have been recorded in our local area. These records may also give us ideas for ways in which we could enhance the conditions in the locality for wildlife.

The National Biodiversity Data Centre (NBDC) collates biodiversity records from all around the country, and makes them available through its website (biodiversityireland.ie). For this purpose, the country is divided into grid squares, and records of species can be accessed for each square. The map below shows that Ballymote is partly within four 1-km squares.

Ballymote is situated partly within four 1-km grid squares. These squares are used for recording wildlife and biodiversity.



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Many species have been recorded from the area within these grid squares, including birds, plants, mammals, spiders and insects. A full list of these is given in Appendix 1. Some of the more familiar species, and some of those most likely to be seen, are given here in Table 1.

When considering birds that have been recorded in the area, there is an assessment system for the conservation status of bird species, known as BoCCI (Birds of Conservation Interest in Ireland). In this system, each bird is given a red, amber or green status, reflecting how common or rare it is, and whether populations are in decline, growing or remaining steady. The current status for each species of bird is also given in Table 1. More information on BoCCI is available on the BirdWatch Ireland website<sup>1</sup>.

Table 1: Species Recorded Around Ballymote <sup>2</sup>					
Species	Scientific Name	Birds of Conservation Concern Status (2021-2026)	Most Recent Record		
Mammals					
Pygmy shrew	Sorex minutus	-	2016		
Irish stoat	Mustela erminea subsp. hibernica	-	2016		
Wood mouse	Apodemus sylvaticus	-	2015		
Pine marten	Martes martes	-	2005		
Badger	Meles meles	-	2011		
Irish hare	Lepus timidus subsp. hibernicus	-	2015		
Brown rat	Rattus norvegicus	-	2013		
Fox	Vulpes vulpes	-	2013		
Hedgehog	Erinaceus europaeus	-	2018		
Birds					
Blue tit	Cyanistes caeruleus	Green	2021		
Magpie	Pica pica	Green	2021		
Chaffinch	Fringilla coelebs	Green	2021		
Coal tit	Periparus ater	Green	2021		
Jackdaw	Corvus monedula	Green	2021		
Treecreeper	Certhia familiaris	Green	2021		
Goldfinch	Carduelis carduelis	Green	2021		
Robin	Erithacus rubecula	Green	2021		
Goldcrest	Regulus regulus	Amber	2021		

<sup>&</sup>lt;sup>1</sup> https://birdwatchireland.ie/birds-of-conservation-concern-in-ireland/

<sup>&</sup>lt;sup>2</sup> Source: National Biodiversity Data Centre. Additional records are given in Appendix 1.

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Great Tit	Parus major	Green	2021			
Dunnock	Prunella modularis	Green	2021			
Herring gull	Larus argentatus	Green	2021			
House sparrow	Passer domesticus	Amber	2021			
Rook	Corvus frugilegus	Green	2021			
Song thrush	Turdus philomelos	Green	2021			
Swallow	Hirundo rustica	Amber	2014			
Starling	Sturnus vulgaris	Amber	2014			
Plants						
Ash	Fraxinus excelsior	-	2019			
Bramble	Rubus fruticosus	-	2019			
Broad-leaved dock	Rumex obtusifolius	-	2019			
Creeping buttercup	Ranunculus repens	-	2019			
Cuckooflower	Cardamine pratensis	-	2017			
Daisy	Bellis perennis	-	2019			
Elder	Sambucus nigra	-	2019			
Hawthorn	Crataegus monogyna	-	2019			
Red Clover	Trifolium pratense	-	2019			
Ribwort plantain	Plantago lanceolata	-	2019			
Selfheal	Prunella vulgaris	-	2019			
Sycamore	Acer pseudoplatanus	-	2019			
Dandelion	Taraxacum (aggregate)	-	2019			
White clover	Trifolium repens	-	2019			
Lesser celandine	Ranunculus ficaria	-	2017			
Mouse-ear	Cerastium fontanum	-	2017			
Greater plantain	Plantago major	-	2017			
Prickly sow-thistle	Sonchus asper	-	2017			
Primrose	Primula vulgaris	-	2017			
Shepherd's-purse	Capsella bursa-pastoris	-	2017			
Smooth hawk's-beard	Crepis capillaris	-	2017			
Smooth sow-thistle	Sonchus oleraceus	-	2017			
Amphibians						
Frog	Rana temporaria	-	2013			

### **Invasive Species**

Invasive species are non-native plants or animals which cause problems in Irish habitats, often by outcompeting or damaging the populations of native species. A few invasive species have been registered on the NBDC database from the Ballymote area, including Japanese knotweed, New Zealand flatworm and the brown rat.

Japanese knotweed is a very troublesome plant which can cover large areas, grow to 2-3 metres tall, and exclude most other plants. As it is spread easily and can re-grow from small pieces of rhizome, it should not be dug up, cut or strimmed. Information for dealing with this plant (and other invasive species), is available from Sligo County Council<sup>3</sup> and from the Invasives.ie website<sup>4</sup>.

#### Japanese knotweed (Fallopia japonica)5



³https://www.sligococo.ie/Services/RoadsandParking/Roads/InvasiveAlienPlantSpecies/#maincontent

<sup>4</sup> https://invasives.ie/

<sup>&</sup>lt;sup>5</sup> Photo by Maja Dumat, Attribution 2.0 Generic (CC BY 2.0)

### **Public Areas in the Neighbourhood**

The best way to encourage wildlife and biodiversity is to provide suitable habitats for native species. In towns and built-up areas, the natural habitats or vegetation will often have been removed or altered. Beginning to restore pieces of these natural habitats in public areas in the town, even on a small scale, is a great way to improve biodiversity in the area. As well as helping native species, this work can also enhance the area visually, and improve the pleasant atmosphere and aesthetics in the town.



The entrance to Ballymote Town Park from the Sligo Road



In Ballymote, the Town Park is the largest public area, stretching from the Sligo Road to the Gurteen Road, and has good scope for habitat creation and enhancement. Emlaghfad Parish Church, on the Top of the Rock in the centre of Ballymote, has grounds which are nicely situated for developing some good biodiversity features. Other areas to be considered are the roadside verges, the streets of the town, and the area around the cattle mart.

Emlaghfad Parish Church in the centre of Ballymote



### **Appreciating What We Have**

Sometimes it is easy to overlook the ordinary or common things that we have in our neighbourhood, and yet these features are often useful and important to other species. For example, ivy is a plant that is often cut, pulled down or criticised, and yet it is particularly valuable to several of our native species of wildlife. Ivy is important to small nesting birds, such as robins, wrens, and dunnocks. A bare tree trunk, garden wall, or earth bank provides little in the way of nesting sites; however, if these surfaces are covered with a luxuriant, evergreen layer of ivy, there are many hidden nooks and recesses where birds can build a nest. Ivy also provides important cover and places of refuge for small birds, where they can hide from predatory birds, cats or other disturbances. In addition to providing shelter for birds, ivy provides a habitat for a range of native insects, and is an important food for some caterpillars.



Ivy-covered walls and tree trunks provide benefits to a range of biodiversity

Ivy flowers are great sources of nectar and pollen. They are particularly important to pollinating insects, as they are produced in autumn, when many other plants have stopped flowering. In early winter, clusters of black fruits are produced, and these are eaten by many birds, such as blackbirds and thrushes, and in some areas are also

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important winter food for pine martens. The idea that ivy kills trees is a myth. As a plant that is native to much of Europe, ivy has evolved in the company of those trees, such as oak, ash and birch, which are native to Ireland. It is therefore normal and natural for ivy to grow on these trees.

Water can be attractive and useful to many species, such as birds and mammals that come for a drink or to bathe, or amphibians such as newts that breed in water. The small river that flows through Ballymote Town Park is a good example. Part of this has stone-built banks with little vegetation, but is still an attractive feature used by mallards and other birds. The part of the river near the railway station has a more natural woodland-like appearance with vegetated banks, and is likely to be used by insects that have an aquatic larval stage, as well as providing a habitat for plants that grow in wet areas along its banks.

The small river that flows through Ballymote Town Park



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The fast-flowing stream close to the old corn mill is also likely to have aquatic invertebrates, as well as attracting birds and mammals, while the slow-moving stream in the Town Park is very well-vegetated and could be used by amphibians such as frogs and newts.

The stream adjacent to the corn mill in Ballymote (left) and a slow-moving stream in the Town Park



Walls built of natural stone provide habitats for native plants and small animals, as well as having a natural and pleasant appearance



Walls that are built of natural stone are often very attractive features in their own right, as well as providing habitats for plants and small creatures. Small attractive ferns often colonise these walls, such as maidenhair spleenwort, rusty-back fern or wall rue. An example can be seen at the marian shrine opposite the front of Ballymote Castle, as seen on the following page. Maidenhair spleenwort grows here as well as ivy-leaf toadflax, a plant which is non-native, but nonetheless an attractive and fairly harmless little plant.

This stonework at the marian shrine in front of Ballymote Castle provides a habitat for small ferns and other plants



Trees are very important, as attractive landscape features, to provide shelter, and as habitats for various other species. In the Town Park in Ballymote, even though some areas are very wet, trees such as birch and alder are doing very well. By looking at these successful plants, we can get inspiration for what to plant in order to further enhance the area.

Groves of birch trees are growing successfully even in the damp areas of Ballymote Town Park, providing a habitat for invertebrates and birds, as well as helping to provide shelter and forming an attractive visual feature



While rooks are not always the most well-loved of birds, they are very intelligent and charismatic in their own way, and are one of our native bird species. Several of the tall trees in Ballymote Town Park are used by nesting rooks.

The inquisitive and intelligent rook is one of the native birds that nest in Ballymote Town Park<sup>6</sup>



The partly-shaded areas under trees in the Town Park have a beautiful carpet of lesser celandines in spring



 $<sup>^{\</sup>rm 6}$  Photo of a rook by Hedera.baltica, creative commons licence CC BY-SA 2.0

### **Enhancing Existing Features**

#### **Bats**

Ballymote Town Park already has some habitats that appear good for foraging and roosting bats, including tall trees with holes as potential roosts, and hedges and streams that could be used as commuting and foraging/feeding areas. No bat species are listed in the NBDC database for the Ballymote area, but they could well be present without having been officially recorded. Ireland has nine species of bats, all of which catch and eat insects during the late evening and night-time.

Some trees in Ballymote Town Park have holes that could be used by roosting bats



The park could be enhanced for bats in a few ways. Bats like areas which have plenty of hedgerows and broadleaf trees, as these areas tend to have more insects around them, and also provide shelter and protection for the bats. Native flowering plants also attract insects, and those that are scented in the evening or night, such as honeysuckle, attract insects that bats can feed on. Suggestions for additional hedgerows and trees are given in a later section of this plan. Another useful way of enhancing the park for bats would be to put up some bat boxes to give them more places to roost. Bat Conservation Ireland have produced a useful leaflet<sup>7</sup> which explains how and where to put up bat boxes, and how to make home-made bat boxes as an alternative to buying them.

<sup>&</sup>lt;sup>7</sup> Available at: https://www.batconservationireland.org/wp-content/uploads/2013/09/Leaflet\_3\_batboxes.pdf

#### **Pond Plants**

The little river in Ballymote Town Park widens out into an oval pool at one point (near the park entrance from the Sligo Road). This has no vegetation at the moment and looks like it may have a concrete base. However, some water plants could still be added by using pond planting baskets. These are containers with latticed sides that sit on the base of the pond. Aquatic plants are planted in them, using aquatic compost, and a layer of gravel or stones is placed over the compost.

The oval pool in Ballymote Town Park could have some aquatic plants added



Some native aquatic plants to consider: yellow iris8, bog bean and marsh marigold9



<sup>&</sup>lt;sup>8</sup> Photo by H. Zell (CC BY-SA 3.0)

<sup>&</sup>lt;sup>9</sup> Photo by xulescu\_g (CC BY-SA 2.0)

Various aquatic plants could be considered for planting here. While water lilies are very attractive, they prefer still or very slow-moving water, so would not be ideal in this case. However, there are some great native water plants that could be planted in baskets along both sides of the pond, such as bog bean (*Menyanthes trifoliata*), marsh marigold (*Caltha palustris*), yellow iris (*Iris pseudacorus*), mare's tail (*Hippuris vulgaris*) and water starwort (*Callitriche stagnalis*). Some suppliers of water plants and some garden centres will supply planted baskets that just need to be placed in the water, or will plant baskets to order. Bricks or paving slabs can also be placed under the baskets to adjust the depth if required, depending on the plants used. Finally, it is important not to introduce any potentially invasive non-native plants to water courses.

#### **Bird Nest Boxes**

As the largest green area in the town, Ballymote Town Park is potentially an important site for native birds. Adding hedgerows and trees are very good measures to encourage breeding birds, and these are discussed in a later section of this plan. Another thing to consider at this point is putting up nest boxes. While hedges and trees take a little time to become established, nest boxes can be put up quickly. Nest boxes can also be made easily enough, and different types can be made to suit a variety of bird species.

Bird boxes of different designs can be built to suit different bird species





- Nesting boxes or feeders for birds are useful to the birds of course, but they can
  also provide a lovely place to watch a variety of birds and to learn more about them.
   This can be a good way to get children interested in wildlife.
- It is good to provide a variety of nest boxes, including both the traditional boxes with a round hole in the front, as well as open-fronted nest boxes. The latter are preferred by some birds, such as robins and blackbirds.
- With traditional boxes, the size of the entrance hole will determine which species
  can use the box. Boxes with very small (25 mm) entrances can be used by blue
  tits or coal tits, whereas boxes with larger openings can be used by a range of
  species, including sparrows and great tits.
- Many birds are territorial, so nest boxes shouldn't all be placed together, or very
  close to each other, but instead spaced out within the space available. However,
  house sparrows are exceptions to this, as they like to live in groups. Terrace
  nesting boxes are suitable for sparrows.
- Birds are more likely to use nesting boxes that are positioned among some sort of cover, such as a tree, as these are less vulnerable to predators, rather than a box on a bare wall or fence.

A sparrow nesting box (photo from BirdWatch Ireland); a male house sparrow at a garden feeder





BirdWatch Ireland and the Heritage Council have produced a simple and useful guide to building bird boxes<sup>10</sup>, and the BirdWatch Ireland website also shows the various types of nesting boxes that are available<sup>11</sup>.

#### **Some Planting Ideas**

The following pictures and captions give some ideas and suggestions on plants to use at various points in the town, and how various changes in planting schemes can have practical benefits as well as helping biodiversity.

Spring bulbs such as bluebells, snowdrops or daffodils would give some lovely cheerful colour in partly shaded areas such as this area between the Gurteen Road and the old corn mill. Bulbs are not suitable for waterlogged areas, but some of this area seems quite suitable.



 $<sup>^{10}\</sup> Available\ at:\ https://birdwatchireland.ie/app/uploads/2021/01/5362-BirdWatchIreland-Nest-Boxes\_leaflets\_v5.pdf$ 

<sup>&</sup>lt;sup>11</sup> Available at: https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/garden-birds/nestboxes/

This entrance to the park from the Gurteen Road is nicely paved and features the Paddy Killoran memorial. Some large containers with seasonal flowers or perennials would be attractive here. The picture on the right gives one idea of the sort of planting that could be used, but there are lots of options. Fuchsias in large pots would also give a very nice summer display of flowers.





The area beside this bridge floods after heavy rain, and the grassy area at the side of the path is muddy and wet. One option is to remove a layer of the muddy soil by the path and incorporate some organic matter or gravel to increase drainage. This could be planted with moisture-plants such as valerian (shown in the picture on the right<sup>12</sup>). The yellow line shows an approximate area where this could be done. Leaving the final surface slightly lower than the path would also help water to run off the path quickly.





<sup>&</sup>lt;sup>12</sup> Photo of valerian by Lairich Rig (CC BY-SA 2.0)

These planting beds in the Town Park already have a selection of herbaceous plants and shrubs, and could have others added to increase the variety and flowering time. The pictures further down this page show two options; other suggestions are hellebores, Heuchera, Rudbeckia 'Goldsturm' and catmint.



Geranium 'Rozanne' (left) is a hardy perennial with a long flowering period every summer. Arum lily (Zantedeschia aethiopica) is also a perennial, bearing large graceful white flowers each summer, and especially likes wet soil with plenty of organic matter added.<sup>13</sup>



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<sup>&</sup>lt;sup>13</sup> Photos: Geranium by Dominicus Johannes Bergsma (CC BY-SA 3.0), Zantedeschia by Andy king50 (CC BY-SA 3.0)

This corner beside the train station has bird feeders which attract house sparrows and other birds. However, the ground under the trees is very bare. Some planting here would give some cover and refuge for the birds as well as improving the appearance. Low evergreen shrubs and perennials would suit, such as Ceanothus thyrsiflorus var. repens or Pachysandra terminalis



#### **Roadside Verges**

Roadside verges are often cut short in the manner of a lawn, as in the photos below from Ballymote. While this looks tidy, it does nothing for biodiversity and can also look a bit boring. The photo on the following page shows an example where the grass is not cut so short or so often, allowing various native flowers to bloom.

Roadside verges and areas along footpaths could be allowed to grow longer between cuts so that native flowers can develop. These in turn are useful to pollinators such as bees and butterflies.









The All-Ireland Pollinator Plan includes short, useful guide for councils<sup>14</sup> and local communities<sup>15</sup>, containing lots of practical information for managing public areas for biodiversity.

https://pollinators.ie/wordpress/wp-content/uploads/2018/05/Councils\_actions-to-help-pollinators-2018-WEB.pdf
 https://pollinators.ie/wp-content/uploads/2021/08/Local-Communities\_actions-to-help-pollinators-July-2021-WEB-JB.pdf

### **Adding New Features**

When thinking about adding new features to a public area, it is useful to consider both the needs of wildlife and the needs of the people who use the area. Luckily, many features which are good for wildlife will also make the site more pleasant and interesting for people too.

#### **Native Hedgerows**

Native hedgerows are very important to a whole range wildlife and biodiversity, especially since so much land is now taken up by hard surfaces, roads and farms. They benefit birds, pollinating insects, bats and other small creatures, and provide a habitat for various native plants which grow naturally in such places. Hedges can also greatly improve the appearance of public areas, as well as providing shelter. In urban areas, many hedges tend to consist of non-native plants such as laurel (*Prunus laurocerasus*), whereas rural hedges often consist of hawthorn and other native plants. Hedgerows containing native plants have a much higher biodiversity value. Good plant choices for native hedges include hawthorn, holly, honeysuckle, blackthorn, rowan, spindle, Guelder rose, elder and wild roses. The National Biodiversity Data Centre has produced a useful short guide on planting and maintaining hedgerows for pollinators and other wildlife<sup>16</sup>.

#### Hawthorn in blossom and in fruit





<sup>16</sup> https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Hedgerows-2018-WEB.pdf

A native hedgerow with hawthorn in blossom



The following pictures show some places in Ballymote that could have native hedges added.

Potential hedgerow location: along this bank in the Town Park, between the fence and the model railway tracks



Potential hedgerow location: along this fence in the town park, adjacent to the castle



Potential hedgerow location: some laurel has been planted here along the stream, but a native hedge would be much better for wildlife, would look more appropriate for the location, and would likely grow better too



Potential hedgerow location: at the entrance to the cattle mart and handball club, a native hedgerow along the fence on the right would be a nice feature



Potential hedgerow location: this area, in the grounds of Emlaghfad Parish Church, could be enhanced with a mixed native hedge all along the wall



#### **Bog Garden**

Much of the Town Park has wet soil. Bog gardens are suitable for wet areas and can give great displays of colour, as well as providing suitable flowers for bees, butterflies and other pollinators. Despite the name, a bog garden does not need to be acidic; it just needs to be damp, with a nice suitable selection of plants.

This area of Ballymote Town Park, near the entrance from the Gurteen Road, is an area where a bog garden could be established.



Either native or non-native plants, or a combination of both, can be used in bog gardens, as either type can provide benefits for pollinators, as well as being colourful and attractive. The following pictures show some suitable plants.

Suitable native plants for bog gardens: Lythrum salicaria (purple loosestrife), Valeriana officinalis (valerian), Caltha palustris (marsh marigold)



Suitable (non-native) plants for a bog garden: Ligularia przewalskii (golden ray), Astilbe (false goat's beard), Primula viallii (Vial's primrose)



A bog garden works best if the soil has plenty of organic matter. If the soil at the chosen location(s) in the park is very muddy or sticky, it would be worth digging in plenty of well-rotted manure, garden compost or rotted leaf litter to make the ground more suitable. More information on planting and constructing bog gardens is available from The Wildlife Trusts<sup>17</sup> and from the Royal Horticultural Society<sup>18</sup>.

#### **Shady Garden**

Different plants have different requirements in terms of their growing conditions, and we can use this to our advantage to increase the diversity of plants we grow and habitats we develop. The area of the Town Park shown in the following picture is a shady area under deciduous trees, close to the small river. This would be a great place to develop a shady garden, using plants that will thrive in these conditions.

This shady area in Ballymote Town Park could be planted with a selection of plants that grow naturally in shady conditions.



The plants in the shaded area can include both native and non-native plants. Native species such as primroses (*Primula vulgaris*), wood anemone (*Anemone nemorosa*), common violet (*Viola riviniana*), sweet woodruff (*Galium odoratum*), wild garlic (*Allium* 

<sup>&</sup>lt;sup>17</sup> https://www.wildlifetrusts.org/actions/how-make-bog-garden

<sup>&</sup>lt;sup>18</sup> https://www.rhs.org.uk/advice/profile?PID=356

ursinum), bluebells (*Hyacinthoides non-scripta*) and foxgloves (*Digitalis purpurea*) would be suitable. Other shade-loving plants such as lungwort (*Pulmonaria officinalis*), columbines (*Aquilegia* spp.), and *Heuchera* would be nice choices. Ferns are wonderful plants for a shady area, giving a variety of graceful and intricate foliage shapes. The following pictures show a few examples.

Ferns are beautiful plants and grow well in shaded areas: Polystichum setiferum (soft shield fern), Matteucia struthiopteris (shuttlecock fern), Blechnum spicant (hard fern)



In order to reduce the maintenance needed for a planting scheme like this, it is worth considering weed fabric for the area. When covered by a mulch of chipped bark, this would set off the plants very well.

#### Mini Meadows

Allowing green areas to grow more naturally by reducing mowing is an easy way to increase biodiversity. When mowing is reduced, lots of wildflowers tend to pop up without any extra effort being needed. In the Town Park, some areas of ground are very wet, and there are concerns about allowing the grass to grow tall in these areas, as it may then be difficult to cut. One option to consider is allowing small patches of meadow to grow in the drier areas, mowing around them or through them to form paths, as shown in the examples on the following page. This could be considered for the area near the Sligo Road entrance to the park (shown in the picture below), where the ground is quite firm. The grass could be trimmed in May, and again in late summer.

Patches of grass could be set aside for reduced mowing in this area, to allow wildflowers to develop





These pictures show examples of how areas of grass can be left uncut for part of the year in order to let wildflowers develop. These flowers are of benefit to pollinating insects such as bees and butterflies, and also are attractive and cheerful for people.



#### **Wetland Area**

One area of the park, behind the nursing home (shown in the picture below) has a very wet sunken channel that is difficult to manage. This could be planted with attractive species that grow naturally in these sort of conditions. Plants such as bullrushes (*Typha latifolia*), reeds (*Phragmites australis*), yellow flag Iris (*Iris pseudacorus*) and branched burr reed (*Sparganium erectum*) should work in this kind of location. This kind of reed-bed habitat is attractive to various bird species, as well as insects such as dragonflies and damselflies.



A wet channel in Ballymote Town Park which could be developed as a reedbed

#### **Raised Beds**

Raised beds are useful in areas of wet soil, as the plants are raised up away from the wet ground and the high water table. A few stone-built raised beds have already been built in the park, and the Cordylines that were planted in them seem to be growing very successfully. More raised beds could be considered as part of future projects in the park, allowing a greater variety of plants to be grown, even in the wet areas. A nice example of raised beds can also be seen on Teeling Street, allowing plants to be added to the street.

#### Cordylines growing in raised beds in Ballymote Town Park



Raised beds built using natural stone look good and provide a place where plants can be added to the streets of the town



#### **Street Trees**

Trees are important in towns for a number of reasons:

- They provide visual structure and interest in public spaces
- They provide shade and shelter
- When planted along streets, they not only beautify the area, but help to delineate routes and emphasise boundaries
- They provide nesting sites and roosting sites for birds, and cover for birds when they need to hide from birds of prey or cats
- Some trees provide pollen and nectar for pollinating insects

The following trees are good choices:

- Birch (Betula pendula)
- Fastigiate oak (Quercus robur 'Fastigiata')
- Field maple (*Acer campestre*)
- Upright hornbeam (Carpinus betulus 'Fastigiata')
- Rowan (Sorbus aucuparia)
- Wild cherry (*Prunus avium*)

The following pictures show an example of how trees could be used to enhance O'Connell Street in Ballymote. This is a particularly wide street, with plenty of space for trees, and currently has very little in the way of plants or biodiversity.

#### O'Connell Street in Ballymote could be enhanced with some trees



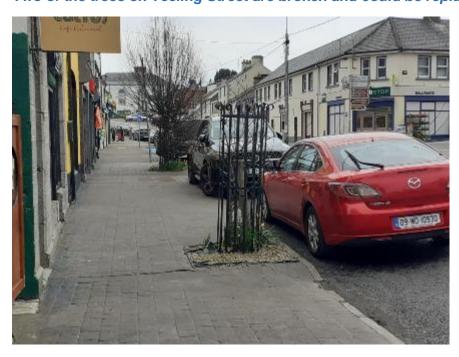


The area leading up towards the courthouse, on Teeling Street, is another area where a few trees would be nice. The lower part of Teeling Street has a few street trees already, although two of them have been broken or damaged and could be replaced with new trees.

The area leading up to the courthouse on Teeling Street could be enhanced by a few trees



Two of the trees on Teeling Street are broken and could be replaced



#### **Groves of Trees**

A grove is a small group of trees, usually with little natural undergrowth. A copse is a group of trees or bushes forming a thicket, often with dense vegetation underneath that can provide cover for birds and mammals. Groves and copses of trees are more useful to wildlife than individual trees and are also attractive features that have a natural appearance. They can also be useful in providing shelter and for screening off unsightly views or busy roads. Trees of several species, especially natives, can be bought in bare-root form between November and March. These are cheap and easy to plant, and small trees such as these can establish much easier than larger trees. Some do not need to be staked, or if planted in an exposed position they can be staked with bamboo canes for the first year.

#### Trees for wet soil

As some parts of the Town Park in Ballymote has wet soil, here are some trees for wet areas – alder (*Alnus glutinosa*), goat willow (*Salix caprea*), downy birch (*Betula pubescens*), silver birch (*Betula pendula*), river birch (*Betula nigra*), swamp cypress (*Taxodium distichum*).

The area outside Emlaghfad Parish Church, on the Top of the Rock, as shown in the following picture, would be suitable for a small grove of trees. Hornbeam (*Carpinus betulus*), field maple (*Acer campestre*) and silver birch (*Betula pendula*) are options to consider for here.





Several areas of the Town Park would be suitable for groves of trees, provided that the right species are chosen. A few examples are given in the following pictures and captions.



This part of the Town Park, near the playground, could be enhanced with a nice grove of silver birch trees



This corner of the town park is very wet and not very visually appealing. A grove of suitable trees, such as native alder, would take up some of the water and improve the appearance



Again, damp areas like this could be improved, both visually and for biodiversity, with a grove of suitable trees, such as river birch, downy birch or goat willow

#### **Alpine Beds**

The area in front of the cattle mart, on Fairgreen Road, has a long, raised area with gravel behind a concrete retaining wall. This could be considered as a site for a raised alpine bed. Alpines are hardy, low-growing perennial plants, and can give a great show of colour, as shown in the lower picture on this page.





An example of an alpine bed planted with a variety of low-growing perennial plants<sup>19</sup>



<sup>&</sup>lt;sup>19</sup> Photo by Kay Atherton (CC BY-SA 2.0)

It is not clear at present whether there is soil under the existing gravel. Ideally for an alpine bed, a mixture of soil, compost and horticultural grit would be used, into which the plants would be planted, with a layer of gravel on top. Suitable plants include creeping bellflower (*Campanula muralis*), thyme (*Thymus vulgaris*), sea thrift (*Armeria maritima*), Corsican mint (*Mentha requienii*), *Aubrieta* and saxifrages. These are all perennials, would look great in spring and summer, and would also enhance the area for biodiversity.

The back entrance to the mart and the handball club is another area where an alpine bed could be established. There is a wide area to the left of the entrance (facing inwards from the road) that is not currently in use. A low retaining wall could be built to contain the planting mixture of soil, compost and horticultural grit (and to prevent vehicles from backing onto the plants). Rocks could also be placed as features among the plants, and a layel of gravel placed on top, as in the lower picture on the previous page.





### Ideas for gardeners

Gardens can provide useful refuges for wildlife. Many people, including those who are elderly or retired, get a lot of enjoyment from watching the creatures that visit their gardens. All gardens can attract wildlife and help to enhance local biodiversity. The following is a list of recommendations to help achieve this. The All-Ireland Pollinator Plan also includes a guide to enhancing gardens for pollinators, with lists of good species to use.<sup>20</sup>

- Set up bird nesting boxes on trees or walls
- Set up bird feeders or a bird table in a place that is not accessible to cats.
- Plant biodiversity-friendly and pollinator-friendly flower beds and pots.
- Plant native shrubs that produce flowers and fruits, such as spindle or holly.
- If you have a lawn, transform it into a wildflower area. This will be cheaper and easier to maintain, more attractive, and much better for the local biodiversity.
- Let dandelions flower in spring before cutting the grass.
- Let moss grow. It does not harm trees and is useful to nest-building birds
- If you have space, plant native trees such as birch, or a native hedge of hawthorn, holly, Guelder rose and elder.
- Encourage your friends to see the benefits of wildlife gardening. Share good biodiversity-friendly plants by exchanging cuttings and growing new plants for free.
- Leave native ferns and ivy to grow on stone walls where possible.
- Do not use traditional slug pellets, which can result in the death of garden birds; use a non-toxic alternative product, or spread grit, sharp sand or crushed eggshells around sensitive plants to deter slugs and snails.
- Do not burn leaves or other garden debris; leave this material in a quiet corner where it may attract hedgehogs and invertebrates.
- Do not cut hedges and shrubs too tightly, and do not cut these during the bird nesting season (March-September).
- Avoid using toxic products to control pests. For greenfly and other aphids, just mix a squirt of liquid eucalyptus soap with water and spray on.
- Avoid buying plants that may be invasive refer to the Royal Horticultural Society guidance on this subject<sup>21</sup>.
- Do not use lawn products containing selective weedkillers or moss-killers.

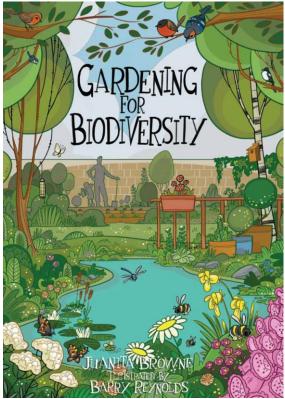
<sup>&</sup>lt;sup>20</sup> https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Gardens\_actions-to-help-pollinators-2018-WEB.pdf

<sup>&</sup>lt;sup>21</sup> https://www.rhs.org.uk/prevention-protection/invasive-non-native-plants

You can also get lots of information from books or from the leaflets and guides published as part of the All-Ireland Pollinator Plan: https://pollinators.ie/resources/. The book 'Wild Things at School', by Éanna Ní Lamhna, can be downloaded<sup>22</sup> free, and contains lots of information about wildlife, for children and adults of all ages!

These useful and practical guides are helpful for wildlife gardeners. These can be downloaded free of charge<sup>23</sup> 24





<sup>&</sup>lt;sup>22</sup> https://www.treecouncil.ie/\_files/ugd/222890\_542875fc7e854b6e83a0c186c0eda898.pdf

https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Gardens\_actions-to-help-pollinators-2018-WEB.pdf
 https://laois.ie/wp-content/uploads/Garden-Wildlife-Booklet-WEB-17MB.pdf

# Suggestions for future surveys

Learning more about our local biodiversity can often encourage more people to become interested and more involved in protecting wildlife and improving green areas in the community. Here are a few ideas for learning more about the wildlife of Ballymote.

- Newt Survey: Newts are not recorded in the NHBS database for the Ballymote area, but they are small, shy animals and could well be present. The slowmoving stream in Ballymote Town Park is well-vegetated with aquatic plants and appears suitable.
- Bat Surveys: No bat species are listed in the NBDC database for the Ballymote area, but some areas of the Town Park seem very suitable for them, and they could well be foraging and feeding around trees, hedgerows and water in the park at night. Bats can be detected and identified by their ultrasonic calls, using either hand-hand detectors at night, or by putting up static detectors in trees for about a week. This sort of survey would show whether the area has bats, and which species are present.
- Kick-sampling: This is a method of finding out which invertebrates are living in rivers and streams. Lots of insects have an aquatic stage in their life cycles, such as caddis flies, some beetles, and mayflies. Other invertebrates can also live in streams, such as flatworms, water shrimps and pond slaters. The little creatures that live in streams and rivers can also be used to indicate the quality of the water. Some of the fast-flowing streams near the old corn mill would be suitable for this sort of survey.

# Appendix 1: Biodiversity Records from Ballymote

Species name	Record count	Date of last record
Black-billed Magpie (Pica pica)	2	19/01/2021
Blue Tit (Cyanistes caeruleus)	1	19/01/2021
Chaffinch (Fringilla coelebs)	1	19/01/2021
Coal Tit (Periparus ater)	1	19/01/2021
Eurasian Jackdaw (Corvus monedula)	1	19/01/2021
Eurasian Treecreeper (Certhia familiaris)	1	19/01/2021
European Goldfinch (Carduelis carduelis)	1	19/01/2021
European Robin (Erithacus rubecula)	1	19/01/2021
Goldcrest (Regulus regulus)	1	19/01/2021
Great Tit (Parus major)	1	19/01/2021
Hedge Accentor (Prunella modularis)	1	19/01/2021
Herring Gull (Larus argentatus)	1	19/01/2021
House Sparrow (Passer domesticus)	1	19/01/2021
Rook (Corvus frugilegus)	1	19/01/2021
Song Thrush (Turdus philomelos)	1	19/01/2021
Arthurdendyus triangulatus	3	09/11/2013
Ash (Fraxinus excelsior)	1	01/08/2019
Bramble (Rubus fruticosus agg.)	1	01/08/2019
Broad-leaved Dock (Rumex obtusifolius)	1	01/08/2019
Creeping Buttercup (Ranunculus repens)	1	01/08/2019
Cuckooflower (Cardamine pratensis)	1	28/04/2017
Daisy (Bellis perennis)	1	01/08/2019
Elder (Sambucus nigra)	1	01/08/2019
Hawthorn (Crataegus monogyna)	1	01/08/2019
Japanese Knotweed (Fallopia japonica)	2	01/11/2018
Red Clover (Trifolium pratense)	1	01/08/2019
Ribwort Plantain (Plantago lanceolata)	1	01/08/2019
Selfheal (Prunella vulgaris)	1	01/08/2019
Sycamore (Acer pseudoplatanus)	1	01/08/2019
Taraxacum aggregate	1	01/08/2019
White Clover (Trifolium repens)	1	01/08/2019
7-spot Ladybird (Coccinella septempunctata)	2	29/07/2012
Carabus (Carabus) granulatus	1	22/04/2015

Common Cockchafer (Melolontha melolontha)	1	06/06/2010
Devil's Coach-horse (Ocypus (Ocypus) olens)	1	22/10/2009
Nicrophorus investigator	2	17/09/2020
Green-veined White (Pieris napi)	2	21/07/2014
Large White (Pieris brassicae)	3	12/08/2021
Meadow Brown (Maniola jurtina)	1	21/07/2014
Painted Lady (Vanessa cardui)	3	09/08/2019
Peacock (Inachis io)	4	23/08/2021
Red Admiral (Vanessa atalanta)	6	23/08/2021
Ringlet (Aphantopus hyperantus)	3	21/07/2014
Silver-washed Fritillary (Argynnis paphia)	1	03/08/2021
Small Tortoiseshell (Aglais urticae)	15	23/08/2021
Small White (Pieris rapae)	3	21/08/2019
Speckled Wood (Pararge aegeria)	3	20/04/2014
Common Earwig (Forficula auricularia)	1	18/08/2012
Bombus (Bombus) lucorum	2	01/04/2014
Bombus lucorum agg.	1	21/07/2014
Common Carder Bee (Bombus (Thoracombus) pascuorum)	2	21/07/2014
Early Bumble Bee (Bombus (Pyrobombus) pratorum)	4	12/04/2020
Large Red Tailed Bumble Bee (Bombus (Melanobombus) lapidarius)	1	29/04/2020
Small Garden Bumble Bee (Bombus (Megabombus) hortorum)	1	21/07/2014
Angle Shades (Phlogophora meticulosa)	30	16/09/2020
Antler Moth (Cerapteryx graminis)	1	01/08/2010
August Thorn (Ennomos quercinaria)	3	31/08/2011
Autumn Green Carpet (Chloroclysta miata)	1	23/10/2009
Beautiful Carpet (Mesoleuca albicillata)	3	15/06/2011
Beautiful Golden Y (Autographa pulchrina)	26	23/06/2012
Black Rustic (Aporophyla nigra)	8	30/09/2011
Bordered Beauty (Epione repandaria)	1	09/08/2009
Brick (Agrochola circellaris)	1	16/10/2009
Bright-line Brown-eye (Lacanobia oleracea)	16	20/07/2011
Brimstone Moth (Opisthograptis luteolata)	70	31/05/2020
Brindled Beauty (Lycia hirtaria)	1	02/05/2012
Brindled Pug (Eupithecia abbreviata)	3	13/04/2011

Broom Moth (Melanchra pisi)         1         02/06/2009           Brown Silver-line (Petrophora chorosata)         2         29/05/2012           chorosata)         2         29/05/2012           Brussels Lace (Cleorodes lichenaria)         4         11/07/2011           Buff Arches (Habrosyne pyritoides)         4         29/05/2012           Buff-tip (Phalera bucephala)         12         31/05/2020           Burnished Brass (Diachysia chrysitis)         2         23/06/2012           Cabbage Moth (Mamestra brassicae)         1         24/07/2009           Campion (Hadena rivularis)         4         29/05/2012           Chestnut (Conistra vaccinii)         10         19/11/2011           Chevron (Eulithis testata)         2         02/09/2009           Cinnabar (Tyria jacobaeae)         29         31/05/2020           Cinudad Border (Lomaspilis marginata)         43         25/05/2019           Clouded Border (Lomaspilis marginata)         43         25/05/2012           Clouded Silver (Lomographa temerata)         7         27/05/2012           Clouded Silver (Lomographa temerata)         7         27/05/2012           Common Carpet (Epirrhoe alternata)         100         14/08/2020           Common Heath (Ematurga atomaria)         1	Broken-barred Carpet (Electrophaes corylata)	3	29/05/2012	
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Chestnut (Conistra vaccinii)         10         19/11/2011           Chevron (Eulithis testata)         2         02/09/2009           Chinese Character (Cilix glaucata)         2         09/08/2009           Cinnabar (Tyria jacobaeae)         29         31/05/2020           Clouded Border (Lomaspilis marginata)         43         25/05/2019           Clouded Drab (Orthosia incerta)         33         05/05/2012           Clouded Silver (Lomographa temerata)         7         27/05/2012           temerata)         22         19/06/2012           Clouded-bordered Brindle (Apamea crenata)         100         14/08/2020           Common Carpet (Epirrhoe alternata)         100         14/08/2020           Common Heath (Ematurga atomaria)         1         14/08/2020           Common Marbled Carpet (Chloroclysta truncata)         55         29/05/2012           Common Pug (Eupithecia vulgata)         5         24/05/2012           Common Quaker (Orthosia cerasi)         13         21/04/2012           Common Wave (Cabera exanthemata)         4         11/07/2011           Coxcomb Prominent (Ptilodon capucina)         4         18/08/2011           Crescent (Celaena leucostigma)         4         18/08/2011           Currant Pug (Eupithecia assimilata)	,			
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Chinese Character (Cilix glaucata)         2         09/08/2009           Cinnabar (Tyria jacobaeae)         29         31/05/2020           Clouded Border (Lomaspilis marginata)         43         25/05/2019           Clouded Drab (Orthosia incerta)         33         05/05/2012           Clouded Silver (Lomographa temerata)         7         27/05/2012           temerata)         100         14/08/2012           Clouded-bordered Brindle (Apamea crenata)         100         14/08/2020           Common Carpet (Epirrhoe alternata)         100         14/08/2020           Common Heath (Ematurga atomaria)         1         14/08/2020           Common Marbled Carpet (Chloroclysta truncata)         5         29/05/2012           Common Pug (Eupithecia vulgata)         5         24/05/2012           Common Wave (Cabera exanthemata)         4         11/07/2011           Coxcomb Prominent (Ptilodon apucina)         4         13/07/2011           Crescent (Celaena leucostigma)         4         18/08/2011           Currant Pug (Eupithecia assimilata)         2         27/05/2012           Dark Arches (Apamea monoglypha)         32         19/06/2012           Dark Chestnut (Conistra ligula)         1         23/10/2009           Dark Spectacle (Abrostola triplasi	,			
Cinnabar (Tyria jacobaeae)         29         31/05/2020           Clouded Border (Lomaspilis marginata)         43         25/05/2019           Clouded Drab (Orthosia incerta)         33         05/05/2012           Clouded Silver (Lomographa temerata)         7         27/05/2012           Clouded-bordered Brindle (Apamea crenata)         22         19/06/2012           Common Carpet (Epirrhoe alternata)         100         14/08/2020           Common Heath (Ematurga atomaria)         1         14/08/2020           Common Marbled Carpet (Chloroclysta truncata)         55         29/05/2012           Common Pug (Eupithecia vulgata)         5         24/05/2012           Common Wave (Cabera exanthemata)         4         11/07/2011           Coxcomb Prominent (Ptilodon capucina)         4         13/07/2011           Crescent (Celaena leucostigma)         4         18/08/2011           Currant Pug (Eupithecia assimilata)         2         27/05/2012           Dark Arches (Apamea monoglypha)         32         19/06/2012           Dark Chestnut (Conistra ligula)         1         23/10/2009           Dark Spectacle (Abrostola triplasia)         6         31/08/2010           Dark Spectacle (Abrostola triplasia)         6         19/06/2012           Dark S	,		02/09/2009	
Clouded Border (Lomaspillis marginata)         43         25/05/2019           Clouded Drab (Orthosia incerta)         33         05/05/2012           Clouded Silver (Lomographa temerata)         7         27/05/2012           Clouded-bordered Brindle (Apamea crenata)         19/06/2012           Common Carpet (Epirrhoe alternata)         100         14/08/2020           Common Heath (Ematurga atomaria)         1         14/08/2020           Common Marbled Carpet (Chloroclysta truncata)         55         29/05/2012           Common Pug (Eupithecia vulgata)         5         24/05/2012           Common Quaker (Orthosia cerasi)         13         21/04/2012           Common Wave (Cabera exanthemata)         4         11/07/2011           Coxcomb Prominent (Ptilodon capucina)         4         13/07/2011           Crescent (Celaena leucostigma)         4         18/08/2011           Currant Pug (Eupithecia assimilata)         2         27/05/2012           Dark Arches (Apamea monoglypha)         32         19/06/2012           Dark Chestnut (Conistra ligula)         1         23/10/2009           Dark Spectacle (Abrostola triplasia)         6         31/08/2010           Dark Sword-grass (Agrotis ipsilon)         1         09/09/2009           Dark-barred Twin-spot	Chinese Character (Cilix glaucata)	2	09/08/2009	
marginata)         Clouded Drab (Orthosia incerta)         33         05/05/2012           Clouded Silver (Lomographa temerata)         7         27/05/2012           Clouded-bordered Brindle (Apamea crenata)         19/06/2012           Crenata)         19/06/2012           Common Carpet (Epirrhoe alternata)         100         14/08/2020           Common Heath (Ematurga atomaria)         1         14/08/2020           Common Marbled Carpet (Chloroclysta truncata)         55         29/05/2012           Common Pug (Eupithecia vulgata)         5         24/05/2012           Common Quaker (Orthosia cerasi)         13         21/04/2012           Common Wave (Cabera exanthemata)         4         11/07/2011           Coxcomb Prominent (Ptilodon capucina)         4         13/07/2011           Crescent (Celaena leucostigma)         4         18/08/2011           Currant Pug (Eupithecia assimilata)         2         27/05/2012           Dark Arches (Apamea monoglypha)         32         19/06/2012           Dark Chestnut (Conistra ligula)         1         23/10/2009           Dark Marbled Carpet (Chloroclysta citrata)         6         31/08/2010           Dark Spectacle (Abrostola triplasia)         6         19/06/2012           Dark Sword-grass (Agrotis ipsilon) </td <td>Cinnabar (Tyria jacobaeae)</td> <td>29</td> <td>31/05/2020</td>	Cinnabar (Tyria jacobaeae)	29	31/05/2020	
Clouded Silver (Lomographa temerata)       7       27/05/2012         Clouded-bordered Brindle (Apamea crenata)       22       19/06/2012         Common Carpet (Epirrhoe alternata)       100       14/08/2020         Common Heath (Ematurga atomaria)       1       14/08/2020         Common Marbled Carpet (Chloroclysta truncata)       55       29/05/2012         Common Pug (Eupithecia vulgata)       5       24/05/2012         Common Quaker (Orthosia cerasi)       13       21/04/2012         Common Wave (Cabera exanthemata)       4       11/07/2011         Coxcomb Prominent (Ptilodon capucina)       4       13/07/2011         Crescent (Celaena leucostigma)       4       18/08/2011         Currant Pug (Eupithecia assimilata)       2       27/05/2012         Dark Arches (Apamea monoglypha)       32       19/06/2012         Dark Chestnut (Conistra ligula)       1       23/10/2009         Dark Marbled Carpet (Chloroclysta citrata)       6       31/08/2010         Dark Spectacle (Abrostola triplasia)       6       19/06/2012         Dark Sword-grass (Agrotis ipsilon)       1       09/09/2009         Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata)       27       29/05/2012         Dotted Border (Agriopis marginaria)       11       09/0	•	43	25/05/2019	
temerata) Clouded-bordered Brindle (Apamea crenata) Common Carpet (Epirrhoe alternata) Common Carpet (Epirrhoe alternata) Common Heath (Ematurga atomaria) Common Marbled Carpet (Chloroclysta truncata) Common Pug (Eupithecia vulgata) Common Quaker (Orthosia cerasi) Common Wave (Cabera 4 11/07/2011 exanthemata) Coxcomb Prominent (Ptilodon 4 13/07/2011 capucina) Crescent (Celaena leucostigma) Currant Pug (Eupithecia assimilata) Cark Arches (Apamea monoglypha) Dark Arches (Apamea monoglypha) Dark Marbled Carpet (Chloroclysta citrata) Dark Spectacle (Abrostola triplasia) Dark Sword-grass (Agrotis ipsilon) Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata) Dotted Border (Agriopis marginaria) Dotted Clay (Xestia baja)  7 31/08/2011	Clouded Drab (Orthosia incerta)	33	05/05/2012	
crenata)         14/08/2020           Common Carpet (Epirrhoe alternata)         100         14/08/2020           Common Heath (Ematurga atomaria)         1         14/08/2020           Common Marbled Carpet (Chloroclysta truncata)         55         29/05/2012           Common Pug (Eupithecia vulgata)         5         24/05/2012           Common Quaker (Orthosia cerasi)         13         21/04/2012           Common Wave (Cabera exanthemata)         4         11/07/2011           Coxcomb Prominent (Ptilodon capucina)         4         13/07/2011           Crescent (Celaena leucostigma)         4         18/08/2011           Currant Pug (Eupithecia assimilata)         2         27/05/2012           Dark Arches (Apamea monoglypha)         32         19/06/2012           Dark Chestnut (Conistra ligula)         1         23/10/2009           Dark Marbled Carpet (Chloroclysta citrata)         6         31/08/2010           Dark Spectacle (Abrostola triplasia)         6         19/06/2012           Dark Sword-grass (Agrotis ipsilon)         1         09/09/2009           Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata)         27         29/05/2012           Dotted Border (Agriopis marginaria)         11         09/03/2012           Dotted Clay (Xestia baja)	temerata)	7	27/05/2012	
Common Heath (Ematurga atomaria)         1         14/08/2020           Common Marbled Carpet (Chloroclysta truncata)         55         29/05/2012           Common Pug (Eupithecia vulgata)         5         24/05/2012           Common Quaker (Orthosia cerasi)         13         21/04/2012           Common Wave (Cabera exanthemata)         4         11/07/2011           Coxcomb Prominent (Ptilodon capucina)         4         13/07/2011           Crescent (Celaena leucostigma)         4         18/08/2011           Currant Pug (Eupithecia assimilata)         2         27/05/2012           Dark Arches (Apamea monoglypha)         32         19/06/2012           Dark Chestnut (Conistra ligula)         1         23/10/2009           Dark Marbled Carpet (Chloroclysta citrata)         6         31/08/2010           Dark Spectacle (Abrostola triplasia)         6         19/06/2012           Dark Sword-grass (Agrotis ipsilon)         1         09/09/2009           Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata)         27         29/05/2012           Dotted Border (Agriopis marginaria)         11         09/03/2012           Dotted Clay (Xestia baja)         7         31/08/2011	` '	22	19/06/2012	
Common Marbled Carpet (Chloroclysta truncata)         55         29/05/2012           Common Pug (Eupithecia vulgata)         5         24/05/2012           Common Quaker (Orthosia cerasi)         13         21/04/2012           Common Wave (Cabera exanthemata)         4         11/07/2011           Coxcomb Prominent (Ptilodon capucina)         4         18/08/2011           Crescent (Celaena leucostigma)         4         18/08/2011           Currant Pug (Eupithecia assimilata)         2         27/05/2012           Dark Arches (Apamea monoglypha)         32         19/06/2012           Dark Chestnut (Conistra ligula)         1         23/10/2009           Dark Marbled Carpet (Chloroclysta citrata)         6         31/08/2010           Dark Spectacle (Abrostola triplasia)         6         19/06/2012           Dark Sword-grass (Agrotis ipsilon)         1         09/09/2009           Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata)         27         29/05/2012           Dotted Border (Agriopis marginaria)         11         09/03/2012           Dotted Clay (Xestia baja)         7         31/08/2011	Common Carpet (Epirrhoe alternata)	100	14/08/2020	
(Chloroclysta truncata)  Common Pug (Eupithecia vulgata) 5 24/05/2012  Common Quaker (Orthosia cerasi) 13 21/04/2012  Common Wave (Cabera 4 11/07/2011   exanthemata)  Coxcomb Prominent (Ptilodon 2 13/07/2011   capucina)  Crescent (Celaena leucostigma) 4 18/08/2011  Currant Pug (Eupithecia assimilata) 2 27/05/2012  Dark Arches (Apamea monoglypha) 32 19/06/2012  Dark Chestnut (Conistra ligula) 1 23/10/2009  Dark Marbled Carpet (Chloroclysta 6 31/08/2010   citrata)  Dark Spectacle (Abrostola triplasia) 6 19/06/2012  Dark Sword-grass (Agrotis ipsilon) 1 09/09/2009  Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata)  Dotted Border (Agriopis marginaria) 11 09/03/2012  Dotted Clay (Xestia baja) 7 31/08/2011	`	1	14/08/2020	
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Common Wave (Cabera exanthemata)  Coxcomb Prominent (Ptilodon capucina)  Crescent (Celaena leucostigma)  Currant Pug (Eupithecia assimilata)  Dark Arches (Apamea monoglypha)  Dark Chestnut (Conistra ligula)  Dark Marbled Carpet (Chloroclysta citrata)  Dark Spectacle (Abrostola triplasia)  Dark Sword-grass (Agrotis ipsilon)  Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata)  Dotted Border (Agriopis marginaria)  11/07/2011  13/07/2011  13/08/2011  27/05/2012  27/05/2012  27/05/2012  28/05/2012  29/05/2012  29/05/2012  Dotted Clay (Xestia baja)  7 31/08/2011	Common Pug (Eupithecia vulgata)	5	24/05/2012	
exanthemata) Coxcomb Prominent (Ptilodon capucina) Crescent (Celaena leucostigma) Currant Pug (Eupithecia assimilata) Dark Arches (Apamea monoglypha) Dark Chestnut (Conistra ligula) Dark Marbled Carpet (Chloroclysta citrata) Dark Spectacle (Abrostola triplasia) Dark Sword-grass (Agrotis ipsilon) Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata) Dotted Border (Agriopis marginaria) Dotted Clay (Xestia baja)  4 18/08/2011 18/08/2011 27/05/2012 27/05/2012 27/05/2012 27/05/2012 27/05/2012 28/05/2012 28/05/2012 28/09/2012 28/09/2012 28/09/2012	Common Quaker (Orthosia cerasi)	13	21/04/2012	
capucina)  Crescent (Celaena leucostigma) 4 18/08/2011  Currant Pug (Eupithecia assimilata) 2 27/05/2012  Dark Arches (Apamea monoglypha) 32 19/06/2012  Dark Chestnut (Conistra ligula) 1 23/10/2009  Dark Marbled Carpet (Chloroclysta 6 31/08/2010  citrata) 6 19/06/2012  Dark Spectacle (Abrostola triplasia) 6 19/06/2012  Dark Sword-grass (Agrotis ipsilon) 1 09/09/2009  Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata) 27 29/05/2012  (Xanthorhoe ferrugata) 11 09/03/2012  Dotted Clay (Xestia baja) 7 31/08/2011	exanthemata)	4		
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Dark Arches (Apamea monoglypha) 32 19/06/2012  Dark Chestnut (Conistra ligula) 1 23/10/2009  Dark Marbled Carpet (Chloroclysta 6 31/08/2010  citrata) 6 19/06/2012  Dark Spectacle (Abrostola triplasia) 6 19/06/2012  Dark Sword-grass (Agrotis ipsilon) 1 09/09/2009  Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata) 27 29/05/2012  Dotted Border (Agriopis marginaria) 11 09/03/2012  Dotted Clay (Xestia baja) 7 31/08/2011	Crescent (Celaena leucostigma)	4	18/08/2011	
Dark Chestnut (Conistra ligula)  Dark Marbled Carpet (Chloroclysta 6 31/08/2010  Dark Spectacle (Abrostola triplasia) 6 19/06/2012  Dark Sword-grass (Agrotis ipsilon) 1 09/09/2009  Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata) 27 29/05/2012  Dotted Border (Agriopis marginaria) 11 09/03/2012  Dotted Clay (Xestia baja) 7 31/08/2011	Currant Pug (Eupithecia assimilata)	2	27/05/2012	
Dark Marbled Carpet (Chloroclysta 6 31/08/2010 citrata)  Dark Spectacle (Abrostola triplasia) 6 19/06/2012 Dark Sword-grass (Agrotis ipsilon) 1 09/09/2009 Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata) 27 29/05/2012 (Xanthorhoe ferrugata) 11 09/03/2012 Dotted Clay (Xestia baja) 7 31/08/2011	Dark Arches (Apamea monoglypha)	32	19/06/2012	
citrata)  Dark Spectacle (Abrostola triplasia) 6 19/06/2012  Dark Sword-grass (Agrotis ipsilon) 1 09/09/2009  Dark-barred Twin-spot Carpet 27 29/05/2012  (Xanthorhoe ferrugata) 11 09/03/2012  Dotted Border (Agriopis marginaria) 11 09/03/2011	Dark Chestnut (Conistra ligula)	1	23/10/2009	
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Dark-barred Twin-spot Carpet (Xanthorhoe ferrugata)  27 29/05/2012  Carpet (Xanthorhoe ferrugata)  Dotted Border (Agriopis marginaria) 11 09/03/2012  Dotted Clay (Xestia baja) 7 31/08/2011	Dark Spectacle (Abrostola triplasia)	6	19/06/2012	
(Xanthorhoe ferrugata)  Dotted Border (Agriopis marginaria)  Dotted Clay (Xestia baja)  7  31/08/2011	Dark Sword-grass (Agrotis ipsilon)	1	09/09/2009	
Dotted Clay (Xestia baja) 7 31/08/2011		27	29/05/2012	
Dotted Clay (Xestia baja) 7 31/08/2011	Dotted Border (Agriopis marginaria)	11	09/03/2012	
	Dotted Clay (Xestia baja)	7	31/08/2011	
	Double Dart (Graphiphora augur)	11	20/07/2011	

Double-striped Pug (Gymnoscelis rufifasciata)	5	14/08/2010	
Drinker (Euthrix potatoria)	3	13/07/2011	
Dusky Brocade (Apamea remissa)	10	23/06/2012	
Ear Moth agg. (Amphipoea oculea agg.)	4	31/08/2011	
Early Grey (Xylocampa areola)	4	25/03/2012	
Early Moth (Theria primaria)	2	22/02/2011	
Early Thorn (Selenia dentaria)	14	09/03/2012	
Early Tooth-striped (Trichopteryx carpinata)	1	21/04/2012	
Elephant Hawk-moth (Deilephila elpenor)	6	29/05/2012	
Engrailed/Small Engrailed (Ectropis bistortata/crepuscularia)	1	20/05/2012	
Eyed Hawk-moth (Smerinthus ocellata)	4	06/06/2011	
Fan-foot (Zanclognatha tarsipennalis)	4	24/07/2009	
Feathered Thorn (Colotois pennaria)	5	29/10/2011	
Flame (Axylia putris)	7	13/07/2011	
Flame Carpet (Xanthorhoe designata)	33	29/05/2012	
Flame Shoulder (Ochropleura plecta)	29	23/06/2012	
Flounced Rustic (Luperina testacea)	2	03/08/2011	
Four-spotted Footman (Lithosia quadra)	1	03/08/2011	
Fox Moth (Macrothylacia rubi)	4	14/08/2020	
Foxglove Pug (Eupithecia pulchellata)	1	19/07/2009	
Frosted Orange (Gortyna flavago)	9	26/09/2011	
Garden Carpet (Xanthorhoe fluctuata)	20	27/05/2012	
Garden Tiger (Arctia caja)	43	08/07/2017	
Ghost Moth (Hepialus humuli)	7	22/06/2011	
Gold Spangle (Autographa bractea)	5	03/08/2011	
Gold Spot (Plusia festucae)	7	19/06/2012	
Gold Swift (Hepialus hecta)	1	12/07/2010	
Golden-rod Pug (Eupithecia virgaureata)	4	21/04/2012	
Green-brindled Crescent (Allophyes oxyacanthae)	11	30/09/2011	
Grey Arches (Polia nebulosa)	2	23/06/2012	
Grey Dagger (Acronicta psi)	3	07/06/2011	
Grey Pine Carpet (Thera obeliscata)	2	15/06/2010	
Grey Pug (Eupithecia subfuscata)	4	29/05/2012	
Heart & Dart (Agrotis exclamationis)	26	23/06/2012	
Hebrew Character (Orthosia gothica)	44	12/05/2012	
Hedge Rustic (Tholera cespitis)	1	19/08/2009	
Herald (Scoliopteryx libatrix)	3	31/07/2013	

Humming-bird Hawk-moth (Macroglossum stellatarum)	3	26/07/2013	
Ingrailed Clay (Diarsia mendica)	8	16/06/2012	
Iron Prominent (Notodonta dromedarius)	1	13/07/2011	
July Highflyer (Hydriomena furcata)	11	05/08/2011	
Knot Grass (Acronicta rumicis)	3	03/06/2012	
Large Wainscot (Rhizedra lutosa)	3	16/10/2009	
Large Yellow Underwing (Noctua pronuba)	37	19/06/2012	
Latticed Heath (Chiasmia clathrata)	15	08/07/2017	
Least Black Arches (Nola confusalis)	4	29/05/2012	
Least Yellow Underwing (Noctua interjecta)	1	31/08/2011	
Lesser Broad-bordered Yellow Underwing (Noctua janthe)	20	30/09/2011	
Lesser Swallow Prominent (Pheosia gnoma)	2	05/08/2009	
Lesser Yellow Underwing (Noctua comes)	18	30/09/2011	
Light Arches (Apamea lithoxylaea)	2	13/07/2011	
Light Emerald (Campaea margaritata)	6	23/06/2012	
Light Knot Grass (Acronicta menyanthidis)	1	24/05/2012	
Lunar Thorn (Selenia lunularia)	4	24/05/2012	
Map-winged Swift (Hepialus fusconebulosa form gallicus)	11	23/06/2012	
Marbled Coronet (Hadena confusa)	1	29/05/2012	
Marbled Minor agg. (Oligia strigilis agg.)	9	19/06/2012	
Marbled White Spot (Protodeltote pygarga)	1	30/06/2009	
March Moth (Alsophila aescularia)	4	22/03/2011	
May Highflyer (Hydriomena impluviata)	1	23/05/2009	
Mesapamea secalis agg.	33	31/08/2011	
Middle-barred Minor (Oligia fasciuncula)	9	23/06/2012	
Mottled Beauty (Alcis repandata)	10	23/06/2012	
Mottled Grey (Colostygia multistrigaria)	1	27/02/2012	
Mottled Pug (Eupithecia exiguata)	3	29/05/2012	
Muslin Footman (Nudaria mundana)	1	12/07/2010	
Muslin Moth (Diaphora mendica)	7	27/05/2012	
November Moth (Epirrita dilutata)	1	06/10/2010	

November Moth agg. (Epirrita dilutata agg.)	10	15/10/2011	
Oak Eggar (Lasiocampa quercus)	1	23/07/2012	
Oak-tree Pug (Eupithecia dodoneata)	6	27/05/2012	
Oblique Carpet (Orthonama vittata)	13	29/05/2012	
Pale Brindled Beauty (Phigalia pilosaria)	1	06/03/2010	
Pale Mottled Willow (Paradrina clavipalpis)	2	22/09/2010	
Pale Pinion (Lithophane hepatica)	1	23/10/2009	
Pale Prominent (Pterostoma palpina)	3	29/05/2012	
Pale-shouldered Brocade (Lacanobia thalassina)	8	29/05/2012	
Peach Blossom (Thyatira batis)	4	01/07/2011	
Pebble Prominent (Notodonta ziczac)	10	02/05/2012	
Peppered Moth (Biston betularia)	7	19/06/2012	
Pink-barred Sallow (Xanthia togata)	5	06/10/2010	
Plain Golden Y (Autographa jota)	14	03/08/2011	
Poplar Hawk-moth (Laothoe populi)	34	31/05/2020	
Powdered Quaker (Orthosia gracilis)	4	22/05/2012	
Pretty Pinion (Perizoma blandiata)	1	13/08/2010	
Purple Clay (Diarsia brunnea)	3	13/07/2011	
Red Sword-grass (Xylena vetusta)	4	14/04/2010	
Red-green Carpet (Chloroclysta siterata)	3	31/10/2009	
Red-line Quaker (Agrochola lota)	5	29/10/2011	
Red-necked Footman (Atolmis rubricollis)	2	24/06/2014	
Riband Wave (Idaea aversata)	9	03/08/2011	
Rosy Minor (Mesoligia literosa)	3	19/08/2009	
Rosy Rustic (Hydraecia micacea)	37	26/09/2011	
Ruby Tiger (Phragmatobia fuliginosa)	2	05/08/2009	
Ruddy Highflyer (Hydriomena ruberata)	4	27/05/2012	
Rustic Shoulder-knot (Apamea sordens)	8	27/05/2012	
Sallow (Xanthia icteritia)	1	03/08/2011	
Satellite (Eupsilia transversa)	1	25/02/2011	
Scalloped Hazel (Odontopera bidentata)	4	27/05/2012	
Scalloped Oak (Crocallis elinguaria)	10	03/08/2011	
Scorched Wing (Plagodis dolabraria)	2	29/05/2012	
Shaded Broad-bar (Scotopteryx chenopodiata)	26	14/08/2020	
Sharp-angled Carpet (Euphyia unangulata)	7	13/07/2011	

Shears (Hada plebeja)	1	02/06/2009
Silver Hook (Deltote uncula)	1	30/06/2009
Silver Y (Autographa gamma)	22	04/10/2013
Silver-ground Carpet (Xanthorhoe montanata)	49	31/05/2020
Single-dotted Wave (Idaea dimidiata)	8	20/07/2011
Six-striped Rustic (Xestia sexstrigata)	9	12/08/2011
Small Angle Shades (Euplexia lucipara)	5	29/05/2012
Small Dotted Buff (Photedes minima)	1	13/07/2011
Small Fan-foot (Herminia grisealis)	3	29/05/2012
Small Fan-footed Wave (Idaea biselata)	6	23/08/2011
Small Magpie (Eurrhypara hortulata)	12	31/05/2020
Small Phoenix (Ecliptopera silaceata)	16	31/08/2011
Small Seraphim (Pterapherapteryx sexalata)	3	01/07/2011
Small Square-spot (Diarsia rubi)	38	29/05/2012
Small Wainscot (Chortodes pygmina)	18	26/09/2011
Smoky Wainscot (Mythimna impura)	12	19/08/2011
Snout (Hypena proboscidalis)	15	03/08/2011
Spectacle (Abrostola tripartita)	17	16/06/2012
Spruce Carpet (Thera britannica)	6	02/05/2012
Square-spot Rustic (Xestia xanthographa)	31	08/09/2011
Straw Dot (Rivula sericealis)	54	14/08/2020
Streamer (Anticlea derivata)	1	19/05/2010
Swallow-tailed Moth (Ourapteryx sambucaria)	4	20/07/2011
Tawny Speckled Pug (Eupithecia icterata)	1	12/08/2009
True Lover's Knot (Lycophotia porphyrea)	8	23/06/2012
Turnip Moth (Agrotis segetum)	2	28/06/2011
Twin-spotted Quaker (Orthosia munda)	1	22/03/2011
V-pug (Chloroclystis v-ata)	8	13/07/2011
Water Carpet (Lampropteryx suffumata)	10	24/05/2012
White Ermine (Spilosoma lubricipeda)	89	31/05/2020
White-spotted Pug (Eupithecia tripunctaria)	9	26/08/2011
Willow Beauty (Peribatodes rhomboidaria)	9	23/08/2011
Wormwood Pug (Eupithecia absinthiata)	6	03/08/2011
Yellow-barred Brindle (Acasis viretata)	1	29/05/2009

Yellow-line Quaker (Agrochola macilenta)	1	28/10/2009
Forest Bug (Pentatoma rufipes)	2	16/09/2011
Hawthorn Shieldbug (Acanthosoma haemorrhoidale)	2	21/09/2013
Eupeodes luniger	1	16/05/2014
Gymnocheta viridis	1	21/04/2014
Leucozona lucorum	1	07/05/2017
Melanostoma scalare	3	08/05/2012
Rhingia campestris	2	07/05/2017
Sericomyia silentis	1	02/09/2012
Syrphus ribesii	2	21/04/2014
Brachydesmus superus	1	30/11/1993
Eyed Flat-backed Millipede (Nanogona polydesmoides)	1	30/11/1993
Snake Millipede (Proteroiulus fuscus)	1	30/11/1993
Salticus scenicus	2	30/06/2014
Eurasian Pygmy Shrew (Sorex minutus)	2	31/08/2016
Irish Stoat (Mustela erminea subsp. hibernica)	1	31/07/2016
Pine Marten (Martes martes)	1	31/12/2005
Wood Mouse (Apodemus sylvaticus)	1	15/07/2015

Species name	Record count	Date of last record
Japanese Knotweed (Fallopia japonica)	1	07/09/2017
Lesser Celandine (Ranunculus ficaria)	1	15/04/2017
Eurasian Badger (Meles meles)	1	11/06/2011
Irish Hare (Lepus timidus subsp. hibernicus)	1	04/10/2015
Irish Stoat (Mustela erminea subsp. hibernica)	1	30/06/2014

Species name	Record count	Date of last record
Common Frog (Rana temporaria)	1	16/03/2013
Eiseniella tetraedra	1	31/08/2006
Barn Swallow (Hirundo rustica)	1	30/06/2014
Common Starling (Sturnus vulgaris)	1	28/05/2014
Eurasian Jackdaw (Corvus monedula)	1	22/05/2015
Geophilus insculptus	1	30/11/1993
Lithobius (Lithobius) forficatus	1	30/11/1993
Lithobius (Lithobius) melanops	1	30/11/1993
Freshwater White-clawed Crayfish (Austropotamobius pallipes)	2	31/08/2006
Ash (Fraxinus excelsior)	1	31/08/2006
Common Mouse-ear (Cerastium fontanum)	1	30/08/2017
Creeping Buttercup (Ranunculus repens)	1	30/08/2017
Greater Plantain (Plantago major)	1	30/08/2017
Hawthorn (Crataegus monogyna)	1	31/08/2006
Japanese Knotweed (Fallopia japonica)	1	27/08/2019
Lesser Celandine (Ranunculus ficaria)	1	28/03/2017
Prickly Sow-thistle (Sonchus asper)	1	30/08/2017
Primrose (Primula vulgaris)	2	04/06/2017
Shepherd's-purse (Capsella bursa-pastoris)	1	30/08/2017
Smooth Hawk's-beard (Crepis capillaris)	1	30/08/2017
Smooth Sow-thistle (Sonchus oleraceus)	1	30/08/2017
Taraxacum aggregate	3	30/08/2017
White Clover (Trifolium repens)	1	30/08/2017
Leiobunum blackwalli	1	20/08/1990
Leiobunum rotundum	1	20/08/1990
Mitopus morio	1	20/08/1990
Nemastoma bimaculatum	1	20/08/1990
Paroligolophus agrestis	1	20/08/1990
Black Sexton Beetle (Nicrophorus humator)	1	14/07/1892
Elmis aenea	1	31/08/2006
Nicrophorus investigator	1	23/09/2013
Green-veined White (Pieris napi)	1	25/05/2018
Orange-tip (Anthocharis cardamines)	1	25/05/2018
Small White (Pieris rapae)	1	25/05/2018
Early Bumble Bee (Bombus (Pyrobombus) pratorum)	1	20/04/2015
Serratella ignita	1	31/08/2006
Brown Rat (Rattus norvegicus)	4	05/11/2013
Red Fox (Vulpes vulpes)	1	29/05/2013
West European Hedgehog (Erinaceus europaeus)	1	01/08/2018

Species name	Record count	Date of last record
White Stork (Ciconia ciconia)	1	03/06/1976
Japanese Knotweed (Fallopia japonica)	1	27/08/2019
10-spot Ladybird (Adalia decempunctata)	2	13/06/2016
White Ermine (Spilosoma lubricipeda)	1	23/06/2014
Eurasian Badger (Meles meles)	3	31/12/2008
West European Hedgehog (Erinaceus europaeus)	1	07/05/2021