

# Coolagown Biodiversity Action Plan

## Wildlife in Coolagown

### 1. The Spout

**Speckled Wood (*Pararge aegeria*)**  
This widespread butterfly can be found in partially shaded woodland, hedgerows, shrubs, and gardens and can often be seen perched in pools of sunlight. Adults are in flight between April and September, and mostly feed on honeysuckle, but also Bramble, Dandelion and Ragwort for nectar.

**Common Frog (*Rana temporaria*)**  
Ireland's only native frog species, the Common Frog, is protected under the EU Habitats Directive (92/43/EEC Annex V, Bern Convention Appendix II) and the Wildlife Act (1976, amended 2000). This amphibian needs damp, sheltered habitats close to water, and can be found from lakes and ponds, grasslands and marshes, to woodlands, heath and peatlands. In spring frogs migrate to freshwater bodies to mate and spawn, and often return to the same breeding site each year.

### 2. Cill An Oir

**Starling (*Sturnus vulgaris*)**  
Starlings are protected under the Wildlife Act (1976, amended 2000) and are amber listed under Birds of Conservation Concern in Ireland. Found in a wide range of habitats including woodlands, grasslands, farms, and suburban fringing fruits, weeds cereals and insects.

**Barn Swallow (*Hirundo rustica*)**  
The barn swallow is protected under the Wildlife Act (1976, amended 2000) and is amber listed under Birds of Conservation Concern in Ireland. This migrant from South Africa can be seen from March to September over farmlands, lakes, rivers, and suburban fringing insects. The mudges in flight and building bowl shaped nests of mud under eaves of houses and barns.

**Seven Spot Ladybird (*Coccinella septempunctata*)**  
This is one of the common and widespread of Ireland's 19 ladybird species, and can often be seen in many habitats including gardens, hedgerows, and field margins from March feeding on Aphids. They hibernates during the winter months.

**Common Carder Bumblebee (*Bombus pascuorum*)**  
There are 21 bumblebee species in Ireland. This common species is found in many habitats with flowers including gardens, parks, woodland edges and meadows.

### 3. The Paddocks

**Small Tortoiseshell Butterfly (*Aglia urticae*)**  
Common and widespread found in many habitats including woodlands, hedgerows, grasslands and gardens. Caterpillars feed on nettles and adults can be seen in flight from March to September, feeding nectar of and pollinating a variety of flowers. These butterfly hibernates in survive winter in sheltered sites, such as tree holes and sheds.

**Peacock Butterfly (*Aglais io*)**  
Common, widespread butterfly found in many habitats including woodlands, hedgerows, grasslands and gardens. Caterpillars feed on nettles. Its orange eye spots help to keep away predators like birds and rodents. These butterflies hibernates to survive winter in sheltered sites, such as tree holes and sheds.

### 4. The Long Road

**Common Pipit (*Pipilo pipitoides*)**  
One of the smallest and most common of Ireland's nine bat species, all of which are strictly protected under the EU Habitats Directive (92/43/EEC Annex IV, and Wildlife Act (1976, amended 2000). They can be seen at dusk foraging insects like midges and moths and roost in crevices of roofs, old stone buildings and bridges, and hollows of mature trees.

**Hawthorn (*Crataegus monogyna*)**  
This native tree is a common hedgerow species and an important source of nectar and pollen for pollinators from May to June and red haws for birds from August.

**Honeycuckoo (*Luscinia svecica*)**  
This deciduous climber can be seen weaving through other shrubs and trees of hedgerows and woodlands. The tubular, creamy to yellow, pink, tinted flowers bloom from June to October and are an important food source to pollinators like butterflies and bumblebees at day and moths at night. Berries are eaten by birds like Thrushes and Goldfinches in Autumn.

### 5. Coole Holy Well

**Willow Warbler (*Phylloscopus trochilus*)**  
Amber listed on Birds of Conservation Concern in Ireland. Visitor to Ireland from April to September migrating from central and southern Africa, often found in areas of willow and scrub, woodlands, and hedgerows feeding on insects and nesting in sheltered areas close to or on ground.

**Blowball (*Physalis peruviana*)**  
This native blowball forms carpets in woodlands and along hedgerows. As a perennial bulb it will grow in the same location for several years. Its ball shaped violet flowers bloom from April to June and are an important early nectar source for pollinators like bees and butterflies.

**European Otter *Lutra lutra***  
The European Otter is of high conservation interest, protected under the EU Habitats Directive (92/43/EEC), Wildlife Act (1976, amended 2000), Bern Convention Annex II, and CITES Annex I. It lives in freshwater bodies or coastal areas with freshwater sources including rivers, lakes, and estuaries. They live in burrows known as holt, and mark their territory with sprouts, feeding on various fish including stickleback, salmon, eels, and frogs. The nearby River Bluewater SAC is an important site for Otters.

### 6. Lifespace Park

**Yellowhammer (*Emberiza citrinella*)**  
The Yellowhammer is declining in population in Ireland and is not listed under Birds of Conservation Concern in Ireland. It is found in a range of habitats including hedgerows, farmland, and woodland edges, feeding on seeds, grains, insects and berries.

**Bilberry (*Vaccinium myrtillus*)**  
Bilberry known as 'Frostbar' is a low growing shrub blooming from April to July with pink bell-shaped flowers and forming dark blue-purple berries in autumn which are an important food source for birds and mammals. It grows on acidic soils in woodlands, heaths and bogs.

**Bull-tip Moth (*Pterodon bursephala*)**  
The Bull-tip moth is a night flying moth and can be seen in flight from May to July in woodland, hedgerows, and gardens. Caterpillars are hairy and black and yellow in colour, feeding on trees like Birch, Oak, and Hawth.

**Badger (*Meles meles*)**  
Badgers are protected under the Wildlife Act 1976 (amended 2000), and Bern Convention Appendix II. This nocturnal mammal can be found in woodland and farmland, and feeds on insects, fruits and small mammals. It lives in underground tunnels and burrows called setts.

### 7. Kilbarry Wood

**Common Pipit (*Pipilo pipitoides*)**  
One of the smallest and most common of Ireland's nine bat species, all of which are strictly protected under the EU Habitats Directive (92/43/EEC Annex IV, and Wildlife Act (1976, amended 2000). They can be seen at dusk foraging insects like midges and moths and roost in crevices of roofs, old stone buildings and bridges, and hollows of mature trees.

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This deciduous climber can be seen weaving through other shrubs and trees of hedgerows and woodlands. The tubular, creamy to yellow, pink, tinted flowers bloom from June to October and are an important food source to pollinators like butterflies and bumblebees at day and moths at night. Berries are eaten by birds like Thrushes and Goldfinches in Autumn.

This map was created for Coolagown. Map design and illustrations were created by Cork Nature Network graphic designer, Amy McCarthy.

Produced by Ronja Crede, Cork Nature Network  
for Coolagown Development Group



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## **1. INTRODUCTION**

The Coolagown Community Biodiversity Action Plan is a 5-year plan which aims to set out recommended, informed actions to help conserve and enhance biodiversity in the Coolagown area.

The plan sets out actions for 7 sites identified of importance and interest to biodiversity and was developed by Cork Nature Network in close consultation with the Coolagown Development Group and the local community, for the community. The involvement of the community is an integral part in the development of the biodiversity action plan, and in the consequent implementation of actions.

The plan was developed in close consultation with the chair of Coolagown Development Group, expert advice of experienced ecologists, and public consultation. The plan is funded by the Community Foundation Ireland.

### **What is Biodiversity?**

The term biodiversity 'biological diversity' refers to the variety of all life on earth, or found in an area, which includes the variety of plants, animals, fungi and microorganisms such as bacteria.

### **Background and Projects in Coolagown**

Coolagown Development Group was established in 1991. In 2008, a Local Biodiversity Plan for Coolagown was developed for Coolagown Development Group by Limosa Ecological and Environmental Consultancy. The study area covered a total of 11 townlands throughout which habitats were assessed, areas of ecological interest identified, and management opportunities proposed for locals to be involved in the conservation and enhancement of biodiversity. It was noted this plan should be seen as a starting point to understanding Coolagown's biodiversity and should be built upon, including bat surveys to identify the species using the area. Since 2008, some actions have been undertaken and this Biodiversity Action Plan is intended as an update, and to build on the previous plan.

Coolagown Development Group have been actively involved with Tidy Towns and have undertaken actions to promote wildlife and pollinator friendly planting which has been carried out throughout the village including wildflower projects along Long Road, Joyce's Gate and Barrett's Dyke, flower beds and hangers of ornamental and native flowers, shrubs and tree planting and road verge areas left to grow wild for the management of wildlife. A mini orchard has been planted along the Long Road. Several bird houses and feeders as well as bat boxes have been installed throughout the village, as well as a bug hotel on Barrett's Dyke. There are signs throughout the village informing about the natural heritage of Coolagown, including information signs on wildlife and trees. Coolagown took initiative to plant a miniature woodland of shrubs and trees at Lifespace Park, consisting of native species including Hazel, Rowan, Hawthorn and Blackthorn. Coolagown Development Group and local residents are actively involved and very prominent in the management of the Coillte Kilbarry Wood, including the installation of bird boxes and information signs here.

### **Aim of the Plan**

In February of 2023, Cork Nature Network CLG was contracted by Coolagown Development Group to undertake research and develop a Local Biodiversity Action Plan for a number of sites in the Coolagown area. The plan was initiated with the recognition for the need to develop a plan to improve local habitats for biodiversity and to identify a series of actions for the local community to be involved in the conservation and enhancement of biodiversity in their locality.

## **2. METHODOLOGY**

Desktop research was undertaken to obtain existing information on the study area, designated sites for nature conservation and protected species, and to identify and review plans that have been developed for Coolagown for habitats and species i.e. The Local Biodiversity Plan 2008 (Limosa Ecological and Environmental Consultancy, 2008), and projects and actions for biodiversity that have been and are currently being undertaken.

A key component to the plan was community involvement. This was achieved by: i) a survey to help inform the plan, ii) a public consultation meeting iii) an event held with the local school and, iv) feedback on the draft plan. Results can be found in Appendix 1. Public Consultation Results.

### **i) Paper and Online Survey**

A survey to obtain feedback, visions, aims and ideas of local residents was developed by Cork Nature Network and distributed by hand to 150 residents in Coolagown in July 2023. An online version of the form was shared over Google Docs. The surveys were kept anonymous. The results were reviewed and summarised by broad response groups.

### **ii) Public Consultation Meeting**

On August 14<sup>th</sup> a Public Consultation Meeting was held in Kilmagner National School to inform about the biodiversity action plan, present progress to date, increase awareness and encourage engagement, and to help inform the plan by gaining feedback, visions, aims and ideas of actions that locals would like to see undertaken in Coolagown.

### **iii) Event in Local School**

In September one of the expert ecologists, Albert Nolan organised a biodiversity workshop with primary school students of Kilmagner National School as part of community outreach, to educate, raise awareness and encourage engagement. On request by Coolagown Development Group a list of recommended actions for the school to be involved in protecting and enhancing the school grounds to encourage biodiversity was provided by Albert Nolan.

### **iv) Final Consultation on the Draft**

The draft plan was shared through email by Coolagown Development Group to the attendees of the public consultation meeting and other community interest groups. Feedback was obtained on the measures and discussions held. The final plan was then agreed.

## **Survey Sites**

Coolagown village is located in Co. Cork approx. 8km east of Fermoy and has a population below 200. It lies between the Blackwater and Bride River valleys. The Blackwater River SAC runs about 5km to the north, and to the south of Coolagown and hosts 35 EU protected species and 9 EU protected habitats. The study sites are located within the townlands of Coolagown, Coole Upper, Kilbarry, and Knockdromaclogh.

An initial visit to Coolagown was undertaken to, in consultation with Coolagown Development Group, identify the sites of specific ecological interest with potential to be enhanced for biodiversity to be included for recommended actions in the Coolagown Biodiversity Action Plan. Seven sites were identified. These are 1. The Spout, located across the road of the western entrance of McDonnell

Brothers Limited, 2. Cill An Oir, 3. The Paddocks, 4. The Long Road, 5. Coole Holy Well, 6. Lifespace Park, 7. Kilbarry Wood.



**Figure 1: Map of Coolagown showing the seven sites surveyed for the Coolagown Biodiversity Action Plan.**

## Ecological Surveys

Four ecologists were contracted to undertake ecological surveys to record invertebrates, mammals, birds, and plants, to classify habitats of the study sites, and provide informed recommendations of actions to protect and improve these areas for biodiversity. These were undertaken between May and August of 2023. Each ecologist submitted a survey report of their findings with species lists and recommended actions for this biodiversity action plan. The full species lists can be found in the document ‘Additional Supplementary Information’ produced by Cork Nature Network.

Species of conservation concern that are known to be threatened and are protected in Ireland were highlighted as these demand particular care, to ensure these species and their habitats are protected and monitored. Species recorded during the surveys were compared against lists including Birdwatch BoCCI 2020-2026 Red and Amber listed species of high conservation priority (Gilbert, Standbury and Lewis, 2021), the Wildlife Act (1976 and amendments), EU Habitats Directive (92/43/EEC), and the Checklist of Protected and Threatened Species in Ireland (Nelson *et al.*, 2019).

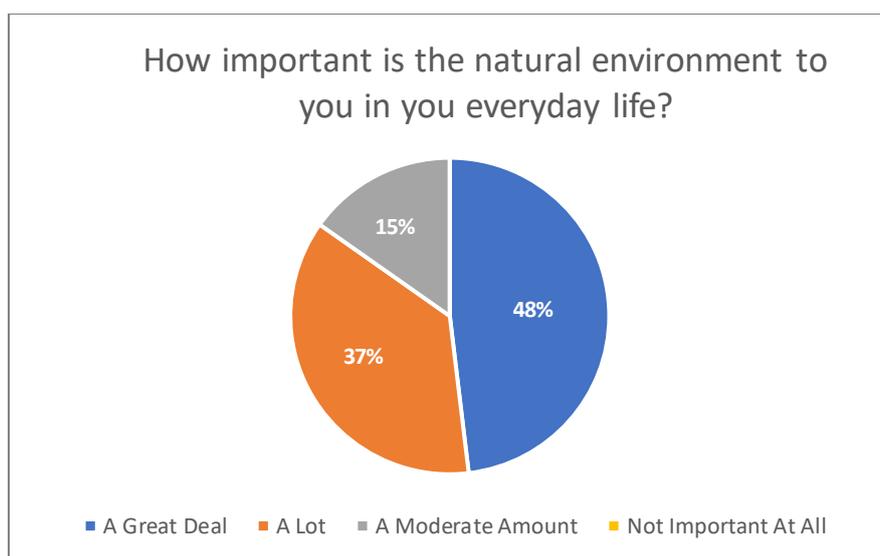
The sites were studied, and habitats identified through field visits. The main habitats present at each study site were classified following Fossitt’s 2000 “A Guide to Habitats in Ireland”.

### 3. RESULTS

#### 3.1. DESKTOP

##### i) Paper and Online Survey

A total of 79 responses were received. The survey found residents of Coolagown care greatly about the natural environment. The question “How important is the natural environment to you in your everyday life” was presented with options on a scale of “a great deal, a lot, a moderate amount, not important at all”. The majority 48% selected they care “a great deal”, 37% care “a lot” and only 15% “a moderate amount”. No respondents selected “not important at all”.



**Figure 2: Pie-chart showing percentage of responses to the survey question “How important is the natural environment to you in your everyday life”.**

*“Do you encourage biodiversity in your garden or street and if so what measures do you undertake?”* The most popular action was areas of wildflowers and designated areas left to grow wild as stated by 23 and 15 participants respectively. This was closely followed by planting pollinator friendly plants (13), reduced mowing (12) and planting trees (8), shrubs and hedgerows for wildlife (8).

*“What do you think are the biggest threats and challenges to biodiversity in Coolagown”.* Heavy volume of traffic leading to noise and air pollution was found to be the greatest concern, mentioned by 15 respondents. This was followed by Pollution (12), chemical pesticide and fertiliser use (8), climate change (8), littering and fly tipping (7), mismanagement of hedgerow (6), intensive agricultural practices (6), habitat loss (5), tight cutting of lawns and keeping gardens “too tidy” (4). Three people raised concern on lack of awareness, participation and cooperation, two on suburban developments and hard infrastructure and one the removal of ditches.

*“What areas and/or features in Coolagown are most valuable to biodiversity”.* The majority found Kilbarry Wood to be most valuable, mentioned by 39 people. This was followed by Long Road (23), and Coole Holy Well (13). Also valuable are public areas of wildflowers (12), Lifespace Park (11), hedgerows and road verges left to grow wild and managed for wildlife (11), and planting of pollinator friendly flowers, trees and shrubs throughout the village (11).

Respondents gave ideas of actions to conserve and enhance habitats and biodiversity for “List any sites in your locality that you would like to see improved for nature, biodiversity and public amenity”, and “Do you have any suggestions for future actions you would like to see made for nature, biodiversity and public amenity in Coolagown?”. These have been summarised by broad response groups in the table below.

Sites which residents would like to see improved included Kilbarry Wood, Long Road, residential gardens, Coole Holy Well, the housing estates Cill An Oir and the Paddocks, green public areas adjacent to McDonnell’s, Coole glen area, and hedgerows. Also mentioned were Lifespace Park, Rathbarry Wood, and Collatrim stream. The most popular suggestions were more planting of native trees, shrubs and flowers, continued development of green spaces and road verges as wild spaces and reduced chemical pesticide and fertiliser use.

**Table 1: Survey responses, ideas of actions for habitats and biodiversity by broad response groups.**

<b>Broad Response Group</b>	<b>No.</b>
More planting of native trees and shrubs and flowers	9
Continue developing more public green areas and road verges as "wild spaces" with wildflowers and left to "run wild"	9
Reduced use of chemical pesticides and fertilisers	4
Installing a beehive	4
New nature trails/greenways	4
Improved management practices of hedgerows for wildlife	4
Protect, restore and create new wetlands/ponds	3
Educate and provide information/ public awareness campaigns on how to help habitats and biodiversity	3
Prevent and reduce water pollution, monitor and maintain good water quality (Q Value Analysis), e.g. Collatrim Stream	3
Litter mitigation measures e.g., CCTV cameras, litter picking stations	2
Reduced mowing scheme	2
Improved public access to green spaces e.g. path to Coole Holy Well	2
More butterfly gardens/corners	2
Biodiversity information signs	2
Wormery for composting	1
Energy efficient lighting	1
More bird boxes	1
Ongoing surveys of local wildlife	1
Biodiversity plan for the housing estates	1
Encourage planting of fruiting trees and shrubs that can be harvested and provide habitat and food for wildlife	1
Engage with farmers to encourage species rich cover crops to maintain soil quality and increase carbon sequestration	1
Public waste and dog waste bins	1

The survey found locals have a positive view and appreciation of the actions that have been undertaken in Coolagown for biodiversity and habitats. Statements included the following.

- “I think the area has changed hugely in the past 18 years we have been residents of Coolagown. In our opinion all the changes have been very positive and have really enhanced the area. I believe a lot of changes have been ahead of the curve and one I always feel inclined to draw people’s attention to is the magnificent rainwater harvester located at the local church that serves the watering needs of all plants in the common areas of our community.”
- “I think there has been tremendous work done in Coolagown for nature and biodiversity.
- “The local community here are doing a fantastic job and should be applauded for their efforts.”

## **ii) Public Consultation Meeting**

There were 33 attendees at the public consultation meeting, 30 of which were residents of Coolagown, as well as representatives of the Cork County Council, and The Avondhu press. Participants were split into groups for discussions and asked to write their visions and ideas on sticky notes which were collected for feedback to help inform the plan. Please note due to limited number of attendees no group was set up to discuss the hedgerows at Long Road.

A common aim expressed by all participants was to protect, encourage, and increase wildlife and habitats in the Coolagown area. The importance and significance of collaboration between stakeholders, citizen groups and individuals and their engagement in order to address challenges and achieve goals was highlighted. The following summaries were made.

- We want to maintain and enhance the area for biodiversity, putting owl boxes on the mature oaks, and regularly test and monitor the water quality of the stream that runs through Coole Holy Well.
- We want to increase wildlife, especially more bees, and get hedgehogs back to the area. We want to put up bird boxes, create a wildflower meadow on the amenity grasslands at the end of The Paddocks. We could plant native fruit bearing hedges and shrubs beneficial to wildlife and the residents will be able to harvest the fruits.
- We want to create a wildflower meadow or let the amenity grasslands grow wild while leaving a central area for playing and recreation. We want to plant more trees.
- Kilbarry woods is already beautiful. We would like to encourage more wildlife, for example by installing bat boxes, owl boxes, leaving log piles for insects and more.
- We would like more signage of the biodiversity in the area. Install bat boxes and hedgehog boxes in the area.
- There is a rainwater harvesting feature which collects and distributes rainwater from the roof of the village church. If possible, we could use the rainwater for a water feature for aquatic wildlife.
- We would like more signage of the biodiversity in the area. Install bat boxes and hedgehog boxes in the area. There is a rainwater harvesting feature which collects and distributes rainwater from the roof of the village church. If possible, we could use the rainwater for a water feature for aquatic wildlife.

## Key Themes, Goals & Actions Identified

### Kilbarry Wood

- Nestboxes to attract more owls.
- Logpiles for insects and other wildlife.
- Manage the current monoculture of conifers to allow more sunlight in and encourage more native species.

### Lifespace Park

- Improve areas for pollinators.
- Create a wetland area to support local wildlife and enhance biodiversity.
- Undertake hedgehog friendly measures eg. hedgehog boxes.
- Install bat boxes.
- Install hedgehog boxes.
- Install owl boxes.
- Logpiles for insects and other wildlife.
- More signage on biodiversity

### The Paddocks & Cill An Oir

- Create and manage wildflower meadows for wildlife.
- Plant and improve hedgerows.
- Plant an area of edible fruiting shrubs and trees for wildlife and residents to forage.
- Install bird boxes.
- Install hedgehog boxes.
- Logpiles for wildlife.
- Plant more native trees.

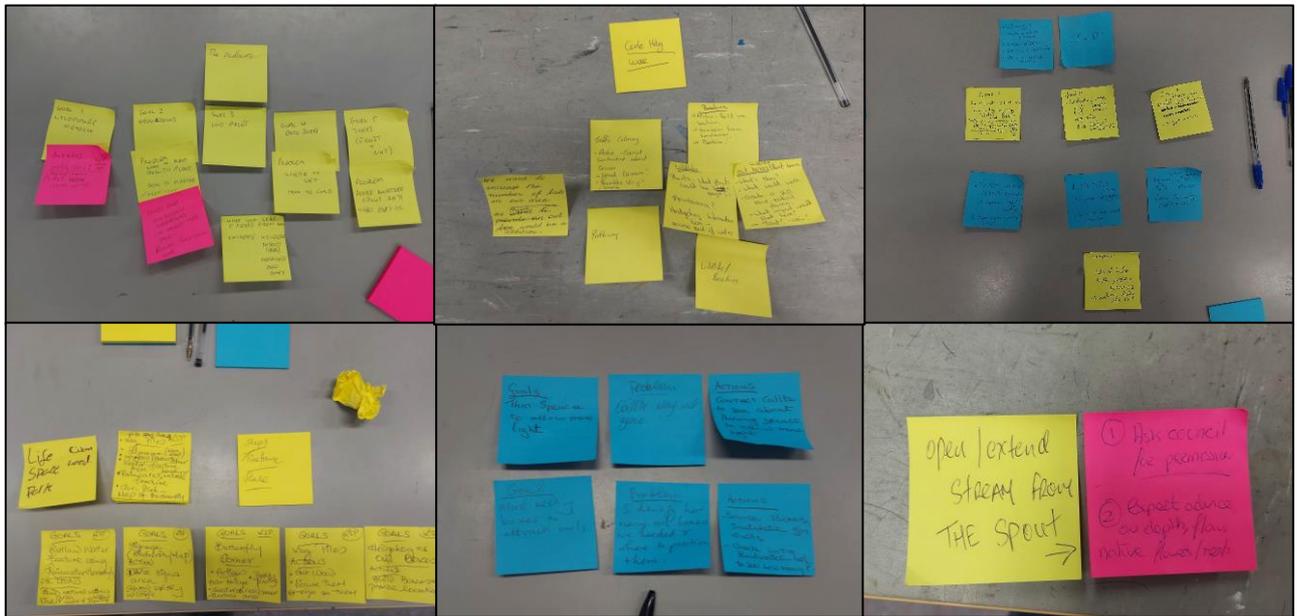
### The Spout

- Improve and manage the quality of the ditch and stream and introduce more native aquatic species to improve the habitat for wildlife.
- Plant native trees.

### Coole Holy Well

- Install bat boxes.
- Install bird boxes.
- Install hedgehog boxes.
- Plant more native species.
- Introduce a beehive of native *Apis mellifera mellifera* to the area.
- Manage and maintain water quality for wildlife.
- Traffic calming measures.

An outcome of the public consultation meeting was education, awareness, and engagement. Post meeting a local group took the initiative to put up bird boxes in Kilbarry wood *per comms*. John Feeney 2023. It was noted some of these were stolen and security measures may need to be devised to prevent this for future actions.



**Figure 2: Sticky notes showing goals and ideas brainstormed by participants during group discussions at the public consultation meeting.**



**Figure 3: Group discussions in action at the public consultation meeting at Kilmagner National School.**

### iii) Event in Local School

As part of the community outreach and involvement ecologist Albert Nolan undertook a nature walk and workshop with local primary school students at Kilmagner National School on 19<sup>th</sup> September 2023. The students discovered and learned about their local biodiversity and the insects that live around them. The workshop included talks and games, looking for and identifying insects and plants on the school grounds, and a taxidermy bat was brought along for educational purposes.

Kilmagner NS is located on the N72 in the townland of Kilmagner approx. 2.4km from Coolagown village. The school has a large amenity grassland at the northern end used as a playing pitch and space

where students can discover nature. There is a tall hedgerow on the east boundary with shrubs such as Gorse, Hawthorn and Bramble which is a great habitat for mammals, birds and insects. Recommendations for actions were given by Albert Nolan for Kilmagner NS. The full list of recommendations can be found in Appendix 1.

- **Bug Hotel, Bat & Bird Boxes**

Students could be involved in making a bug hotel to be placed in the section of Lifespace Park across the car park to create additional habitat for insects, and bat and bird boxes put on some larger trees in Kilbarry Wood for additional nesting opportunities for wildlife. Local groups such as Men's Shed could be involved in making kits that can be assembled by the students.

- **Erect a Polytunnel**

The school is very interested in putting up a polytunnel. A polytunnel could be used to grow vegetables and included as part of the school's healthy eating policy. This would also help develop their growing skills and increase contact with soil and nature.

- **Create a Sensory Space**

The polytunnel space could also be used as a sensory space with addition of chairs and tables. The space will be all weather allowing time in nature and could be a space to relax, sit and read.

- **Planting for Tidy Towns**

The students could grow pollinator friendly flowers around the school or in a space in conjunction with Tidy Towns.

- **Plant an Edible Grove for Wildlife and Climate Action**

An edible grove could be created by students with fruiting trees and shrubs. Edible groves have many benefits for the environment and biodiversity. When they mature, they provide berries and nuts for animals like Thrushes, Starlings, Hedgehogs and Foxes, and flowers provide pollen and nectar for pollinators like bees, butterflies, and moths. The fruits can also be picked and eaten by the community helping to reduce food miles. Species recommended include Hazel, Elderberry and Crab Apple.

- **Plant Pollinator Friendly Bulbs**

Pollinator friendly bulbs such as Bluebell *Hyacinthoides non-scripta*, and Snow Drop *Galanthus nivalis* could be planted between shrubs. These perennials will provide additional annual pollen and nectar for pollinators.

- **Hedgerow**

The mature hedgerow on the eastern boundary of the school would make an ideal outdoor classroom. The students could monitor the hedgerow in the different seasons, and record, draw, and photograph any plants and animals they find.

- **Plant Vegetable Beds**

The school has three plant beds. Vegetables and flowers could be started in the proposed polytunnel and used to plant up the beds.



**Figure 4: The biodiversity workshop event at Kilmagner National School. Photo provided by Kilmagner NS.**

## **3.2 ECOLOGICAL SURVEY RESULTS**

### **Birds**

Two bird surveys were undertaken, one early season on 18.5.23 and one late season on 03.07.23. In May, 5 of the 7 sites were surveyed: Kilbarry Wood, Lifespace Park, Cill An Oir, Long Road and Coole Holy Well, between 7:15 and 9:45 am. All 7 sites were surveyed in July, between 18:15 and 21:25 pm.

A total of 32 bird species were recorded across all sites surveyed. The number of species and the BoCCI Amber and Red listed birds of conservation priority recorded at each site have been summarised below. The full list of recorded species can be found in Appendix 2 Ecological Surveys.

- Kilbarry Wood - 24 species (2 Amber; Goldcrest and Willow Warbler. 2 Red; Meadow Pipit and Yellowhammer)
- Lifespace Park - 8 species (3 Amber; Barn Swallow, House Sparrow, Willow Warbler)
- Cill An Oir - 10 species (5 Amber; Barn Swallow, Greenfinch, House Martin, House Sparrow, Starling)
- The Paddocks - 5 species (1 Amber; Goldcrest)
- Long Road - 13 species (2 Amber; House Martin, House Sparrow. 1 Red; Meadow Pipit)

- Coole Holy Well- 15 species (2 Amber; Goldcrest, Willow Warbler)
- The Spout - 4 species (No threatened species of conservation concern)

## **Mammals**

The mammal survey was carried out on 12.05.23, with bats surveyed from sunset 21:15 to 23:15, and other mammal signs from 18:00 to 21:00. All seven sites were surveyed. There were 9 species recorded, and non-descript mammal burrows likely from rabbit and mice. The full list of species recorded can be found in Appendix 2 Ecological Surveys.

- Kilbarry Wood - 8 species (Badger, Fox, European Rabbit, Deer, Common and Soprano Pipistrelle, Leisler's Bat, Brown Long-eared Bat)
- Lifespace Park - 1 species (Leisler's Bat)
- Cill An Oir & The Paddocks - no species recorded.
- Long Road - 3 species (Fox, European Rabbit, Common Pipistrelle)
- Coole Holy Well - 3 species (Eurasian Otter, Common and Soprano Pipistrelle)
- The Spout - no species recorded.

## **Protected Mammals**

The Badger is a protected species under the Wildlife Act 1976 (amended 2000), and Berne Convention Appendix III which list vulnerable and endangered species requiring protection. Evidence of their presence in the Coolagown area was also found during the 2008 surveys for the Local Biodiversity Plan.

The Eurasian Otter is of high conservation interest, listed as 'near threatened' under the IUCN Red List most recent assessment (Loy et al., 2022), the otter and its habitats are protected under the EU Habitats Directive (92/43/EEC) Annex II meaning its protection requires the designation of SACs (Special Areas of Conservation) and Annex IV which requires EU countries to establish a system of strict protection for the otter. In Ireland the Eurasian otter is a protected species in 45 SACs, including the nearby Blackwater River SAC. The otter is also protected under Wildlife Act 1976 (amended 2000), and as a species requiring special protection under Berne Convention Annex II. It is listed under CITES (Convention on International Trade in Endangered Species of Wildlife and Flora) Annex I meaning it is threatened with extinction and trade is only allowed in exceptional circumstances.

There were 4 bat species recorded, the Common Pipistrelle, Soprano Pipistrelle, Leisler's Bat, and Brown Long-eared Bat. Ireland has 9 bat species all of which and their roosts are strictly protected under the EU Habitats Directive (92/43/EEC) Annex IV, and Wildlife Act (1976, amended 2000).

It should be ensured these species and their habitats are protected and monitored.

## **Insects**

Two half day invertebrate surveys were undertaken in July 2023. Four sites were surveyed. At both Kilbarry Wood and Lifespace Park 13 species were recorded, 10 species were recorded at Cill An Oir, and 16 at Coole Holy Well. A total of 36 insect species were recorded across all sites surveyed. There were no threatened or protected species found. It was recommended by our expert ecologist that focusing on protecting the community of insects rather than individuals is most important for this biodiversity action plan. The full list of species recorded can be found in Appendix 2 Ecological Surveys.

- Butterflies & Moths (Lepidoptera) – 4 species
- Wasps, Bumblebees (Hymenoptera) – 5 species
- Beetles (Coleoptera) – 4 species
- Shieldbugs, Leafhoppers, Aphids (Hemiptera) – 3 species
- Flies (Diptera) – 6 species
- Spiders (Arachnids) – 2 species
- Woodlice (Isopoda) – 2 species
- Oter Insect Species – 3 species

## Plants

There were two botanical surveys conducted, one early survey on 02.05.23 and a late survey on 24.07.23 at Kilbarry Wood, Lifespace Park, Cill An Oir, the Long Road, and Coole Holy Well. The full list of species recorded can be found in Appendix 2 Ecological Surveys.

While the spout was not surveyed during the botanical survey, suggestions for suitable aquatic plants to be added to the Spout area to benefit its aquatic fauna such as the Common Frog were given upon request by Coolagown Development Group.

A total of 118 species of trees, shrubs, climbers, wildflowers, grasses, sedges and rushes, ferns and other vascular plants were recorded across the sites. Kilbarry wood had most species recorded (72), followed by the Long Road (43), Lifespace Park (39), Coole Holy Well (28) and Cill An Oir (9).

## Protected and Invasive plants

There were no threatened or protected species of conservation priority recorded.

Three non-native, potentially invasive species were found at Kilbarry Wood, Coole Holy Well, and Long Road: the Butterfly Bush, Winter Heliotrope and Montbretia. Invasive species are those introduced to Ireland which have the ability to threaten and outcompete our native fauna and flora. It is recommended that these should be constantly monitored and managed to prevent further spread.

## Survey Sites

### Habitats

**Table 2: Habitat classifications for each site surveyed for the Coolagown Biodiversity Action Plan as per Fossitt, 2000.**

Site	Habitat (Fossitt, 2000)
1.The Spout	FW4 Drainage ditches WL1 Hedgerows ED3 Recolonising bare ground BC4 Flower bed and borders
2.Cill An Oir & 3.The Paddocks	GA2 Amenity grassland (improved) WD5 Scattered trees and parkland
4.Long Road	WL1 Hedgerows
5.Coole Holy Well	WN2 Oak-ash-hazel woodland BL1 Stonewalls and other stoneworks
6.Lifespace Park	WL1 Hedgerows

	WS2 Immature woodland FW4 Drainage ditches
7.Kilbarry Wood	WN2 Oak-ash-hazel woodland WN1 Oak-birch-holly woodland WD2 Mixed broadleaved/conifer woodland WD4 Conifer plantation

## 1.The Spout

Grid Ref. W 87380 97226, (52. 127096, -8.185009). Area 141 m<sup>2</sup>

The Spout site is located across the road of the western entrance of McDonnell Brothers Limited. There are two ditches at this site, water features which are a valuable habitat for biodiversity. There are flower beds and borders surrounding the ditches. The water on site is partially supplied by a well from the wetland west of the spout behind the hedgerows (*Per comms.* John Feeney 2023).

The surveys examined the two ditches in view of restoration of the habitat for Common Frog *Rana temporaria* which is a protected species under the EU Habitats Directive Annex V, Irish Wildlife Act 1976, and Berne Convention Appendix III. Although tadpoles were not recorded at this site during the ecological surveys undertaken as part of this biodiversity action plan, it is known from the Local Biodiversity Plan for Coolagown, 2008 and *per comms.* that this is a historical spawning site for the Common Frog. From the ecological surveys an improved ramp with a gentler slope, or in the form of rocks and the introduction of a variety of aquatic vegetation has been recommended as part of the actions to help maintain good water quality and enhance the habitat to support a wider diversity of wildlife.

It was recommended to plant native marginal species at this site and to introduce native plants to aid in oxygenation, remove excess nutrients and to provide cover for frogs and other wildlife. These include Yellow Iris, Marsh Marigold, White Water Lily, and Watercress.



**Figure 5: 2023 Google Maps Street View. Image Capture: Sep 2019. Looking south. The Spout site with water features and hedgerow(right), across from McDonnell Brothers Limited Company.**



**Figure 6: 2023 Google Maps Street View. Image Capture: Sep 2019. Looking west. The Spout site showing one of two ditches which is a known spawning site for Common Frog and has a wooden ramp for wildlife access, the hedgerow, and flower beds.**

## **2. Cill An Oir & 3. The Paddocks**

Grid Ref. W87117 96491, (52.120487, -8.1888267); W87045 96503, (52.120591, -8.1898734). Area 2419m<sup>2</sup>; 900m<sup>2</sup>

Cill An Oir and The Paddocks are residential estates which lie adjacent to each other. The sites are managed for amenity. There are scattered trees of pruned Beech *Fagus sylvatica*, and ornamental shrubs. The amenity grassland is tightly mown with wildflowers of daisy, white clover, red clover, selfheal and common bird's foot trefoil recorded.

Barn Swallows were recorded as singing and flying around residences in the July bird survey and on 14<sup>th</sup> August nests were observed by Cork Nature Network surveyors, confirming breeding occurs. The Barn Swallow is a BoCCI amber list species. Other amber listed species such as the Goldcrest, Greenfinch, House Martin, House Sparrow and Starling were also recorded. A colony of House Sparrows were observed in both May and July in treelines and hedgerows bordering the residential properties. During the public consultation meeting and in the public surveys undertaken as part of the biodiversity action plan, residents reported having seen hedgehogs in residential gardens and driveways.

The sites were recommended as an ideal site for the possible establishment of a wildflower meadow, wild non-managed areas and management regimes to create native species rich grassland habitat to attract beneficial pollinators and create habitat for wildlife.



**Figure 7: 2023 Google Maps Street View. Image Capture: Sep 2019. Looking east. Showing the amenity grasslands, scattered trees and ornamental hedges.**



**Figure 8: 2023 Google Maps Street View. Image Capture: Sep 2019. Looking west. Showing the entrance of the Paddocks site with part of the trimmed amenity grasslands. Trees were planted circa. 2009.**

#### **4.The Long Road**

Grid Ref. W87532 96365, (52.119361, -8.1827578). Area 6076m<sup>2</sup>

At the Long Road site the hedgerows along the road were surveyed. There are areas of ornamental planting, shrubs and pollinator friendly flowers at the entrance to the Long Road just outside the survey site. A small orchard has been planted here with apple trees *Malus domestica*. Following the road to the east, road verges have been left to grow wild for the management of wildlife. The hedgerows in the study site were found to be thin with open spaces in a number of locations. Species noted included native Hawthorn, Hazel, and Pussy Willow, interspersed with Bramble and climbers Hedge Bindweed, Irish Ivy and Honeysuckle.

Hedgerows are an important habitat that support a diversity of species, providing food, shelter, breeding and nesting sites, and commuting routes for bats. Hedgerows are known as 'wildlife corridors' connecting otherwise fragmented isolated patches of habitats, which allow animals safe

movement between habitats for migration, finding food, mates, shelter, and hibernation sites. Common Pipistrelle bats were recorded during the mammal survey commuting along the treeline.

It was recommended to plant native hedgerow species of shrubs and trees in gaps to create a fuller hedge, such as Blackthorn, Rowan and Hawthorn, and to develop a management programme to maintain the hedgerows for wildlife.

Potentially invasive Montbretia and Winter Heliotrope were noted within the hedgerows during the plant survey, which have the potential to outcompete and outgrow the native plants present which thus can lead to a loss of species and habitat. It was recommended for Montbretia and Winter Heliotrope to be monitored and managed to prevent spread.

The BoCCI red listed Meadow Pipit, and amber listed House Martin and Barn Swallow were observed flying around an adjacent barn and foraging in and around the site. A family with fledged young of amber listed House Sparrow were recorded indicating successful breeding occurs.



**Figure 9: 2023 Google Maps Street View. Image Capture: Sep 2019. Showing part of the hedgerows along the Long Road site.**

## **5. Coole Holy Well, Coole Upper**

Grid Ref. W86138 95128, (52.108207, -8.2030622). Area 3284m<sup>2</sup>

Coole Holy Well is a site of pilgrimage, southwest of the ruins of Coole Abbey, church and graveyard. It is bordered by an old stone wall to the east and agricultural fields to the west. A stream runs throughout the site with a small brick weir. An old bridge with exposed stonework and gaps has the potential as a site for bat roosting. Eurasian Otter spraint was recorded on a rock near the bridge, indicating that otters actively use the site as a habitat.

The main habitats at Coole Holy Well are WN2 Oak-ash-hazel woodland with several stands of large mature trees including Horse Chestnut and Oak, Ash, Beech and Elder, and BL1 Stonewalls and other stoneworks. The mature trees provide deadwood and are grown with Irish ivy which provides a valuable habitat to support a diversity of wildlife. The site has been wooded for a long time, with the area of woodland at Coole Holy Well marked on the Ordnance Survey Ireland 6-inch first edition map (surveyed between 1829-1834).

The invasive Montbretia and Winter Heliotrope were recorded at this site, and it was recommended this species is monitored and managed to prevent further spread. It is noteworthy that the BoCCI amber listed Goldcrest and Willow Warbler were recorded with several territorial males noted on site indicating that breeding occurs.

Cooles Holy Well was recommended as an ideal site to install nesting sites for Dipper and Pied Wagtail under bridges and as a site to survey moths.



**Figure 10: 2023 Google Maps Street View. Image Capture: Oct 2009. Coole Holy Well site entrance through the gap in the wall.**



**Figures 11&12: Photographs showing the Holy Well, and one of the mature Horse Chestnuts at Coole Holy Well.**



**Figure 13: Part of the stream with the weir at Coole Holy Well.**

## **6. Lifespace Park**

Grid Ref. W87366 97374, (52.128432, .81852245). Area 3355 m<sup>2</sup>

Lifespace Park is situated on the N72, south of Kilbarry Wood. It is a narrow strip of woodland, planted by Coolagown Development Group circa. 2008, with a car park and picnic area, information signs and a small woodland area with a walking trail across the road. The main habitat consists of WL1 Hedgerows, and WS2 Immature Woodland dominated by Hazel and native Rowan, Holly, Hawthorn, and Blackthorn. There are FW4 drainage ditches along the N72 road on the walking trail across the car park.

Butterfly bush *Buddleja davidii* was recorded during the botanical survey, and though it was noted as a good nectar source for pollinators, constant monitoring and removal is recommended as the species can become highly invasive.

During the bird surveys BoCCI amber listed House Sparrows were recorded and confirmed to be breeding on site in the treeline and hedgerow adjacent to the site. Territorial males of amber listed Willow Warbler were recorded, and Barn Swallows observed feeding on insects. Leisler's bat was recorded foraging over the adjacent field.

It was recommended that a small bug hotel or wood pile would be suitable here in the section across the road from the car park to provide additional nesting opportunities for solitary bees. This site was also recommended as a potential site for a small community wetland habitat.



**Figures 14&15: Photos showing part of the hedgerow bordering Lifespace Park carpark, the immature woodland at the Lifespace Park site respectively.**

## **7. Kilbarry Wood**

Grid Ref. W88104 97688, (52.131265, -8.1744605). Area 0.3km<sup>2</sup>

Kilbarry wood is a 30-hectare mixed broadleaved woodland located between the Blackwater River SAC and the Bride River valleys. It is managed by Coillte and Coolagown Develop Group is very involved and active in the management of the wood. There are a car park, two loop trails, viewing points as well as wildlife information signs throughout the wood. Parts of the woodland are long standing, marked on the Ordnance Survey Ireland 6-inch first edition map (surveyed between 1829-1834).

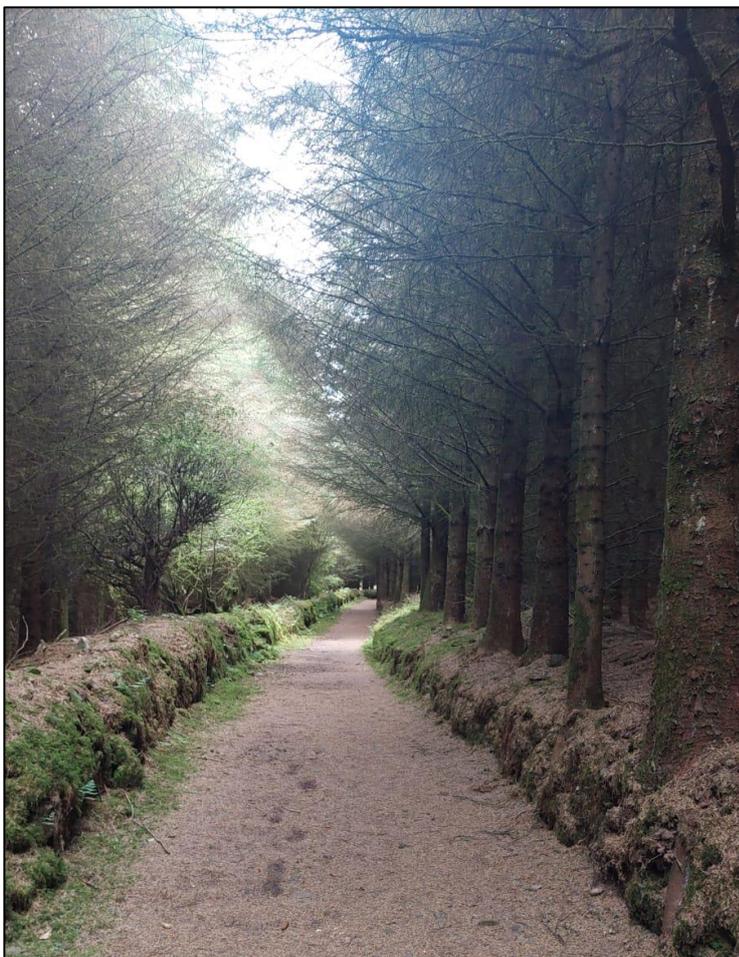
The main habitats are WN2 Oak-ash-hazel woodland, WN1 Oak-birch- holly woodland, WD2 Mixed broadleaved/conifer woodland, and WD4 Conifer Plantation. The monoculture plantation of conifers towards the south end of the wood has dense tree cover leaving little light to the forest floor and thus low understory structure and less diversity of plant and animal species. It was recommended to manage the conifer plantations so as to create a corridor or edge habitat of native tree species to encourage biodiversity.

There are several mature oak and beech trees with cracks and hollows and dense ivy growth, as well as standing dead wood within the woodland which are important habitat that can support a diversity of wildlife. These have been noted as sites with potential for bat roosting in the mammal survey report, as well as a stone shed opposite the car park with gaps in the stonework. Common Pipistrelle, Soprano Pipistrelle, Leisler's Bat and Brown Long-eared bats were recorded commuting and foraging in Kilbarry Wood. Other mammals recorded include live sightings of European Rabbit and signs of Badger, Fox, and Deer.

The bird survey found BoCCI amber listed Willow Warbler on site with several territorial males, and a family with fledged young of Goldcrest indicating successful breeding occurs. The BoCCI red listed Meadow Pipit and Yellowhammer were also recorded, both heard in a field bordering the site. The Yellowhammer was also frequently heard in Kilmagner and Kilbarry during the 2008 habitat surveys for the Local Biodiversity Plan for Coolagown. *Per comms.* John Feeney 2023, Barn Owls have been sighted in the area of the wood.



**Figure 16: Broadleaved woodland at Kilbarry Wood with mature oak. Photo courtesy of Craig Gibbon.**



**Figure 17: Conifer plantation at Kilbarry Wood. Photo courtesy of Craig Gibbon.**

## 4. ACTIONS

### Actions for Biodiversity

Three tables have been set out for this biodiversity action plan, which outline recommended actions to conserve and enhance biodiversity in Coolagown.

Table 1. Recommendations for the Community, Coolagown Development Group.....Pg 24

Table 2. Recommendations for Householders.....Pg 37

Table 3. Recommendations for Kilmagner National School.....Pg 42

Useful Resources & Guidance.....Pg 45

The timeframes are tbc (Priority actions 1 = 1 year. 2= 2 years, 3= 3-5 years).

**Table 1. Recommendations for the Community, Coolagown Development Group**

1. Mammals				
Aim	Action	Location	Timeframe	Suggestions & Useful Resources
1.1 To increase potential roosts available for local bats	1.1.1. To install bat boxes for roosting and hibernation	Kilbarry Wood, Coole Holy Well		Identify where to place. Install on larger mature trees, walls or posts. Source or build bat boxes. Identify who will be involved in the construction. Guidance on installing and examples of bat boxes available at Bat Conservation Ireland: <a href="https://www.batconservationireland.org/irish-bats/bat-roosts/775-2">https://www.batconservationireland.org/irish-bats/bat-roosts/775-2</a> BirdWatch Ireland build a bat roost box: <a href="https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/nestbox-designs-for-birds-and-wildlife/">https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/nestbox-designs-for-birds-and-wildlife/</a>
1.2. To encourage winter hibernation areas for hedgehogs	1.2.1. To create hedgehog hibernation boxes. To leave piles of logs and leaves for hedgehogs to hibernate.	Lifespace Park, The Paddocks, Cill An Oir, Coole Holy Well		Source or build hedgehog boxes. Identify suitable locations. Local men's shed could be involved with making the hedgehog boxes, for schools or community groups to build. Guidance on building hedgehog boxes and examples available at: Irish Hedgehog Survey <a href="https://www.irishhedgehogsurvey.com/helping-hedgehogs">https://www.irishhedgehogsurvey.com/helping-hedgehogs</a>

				<p>Hedgehog Street  <a href="https://www.hedgehogstreet.org/help-hedgehogs/hedgehog-homes/">https://www.hedgehogstreet.org/help-hedgehogs/hedgehog-homes/</a>          Ulster Wildlife. <i>How to build a hedgehog home.</i>  <a href="https://www.ulsterwildlife.org/help-wildlife/help-wildlife-home/help-hedgehogs/how-build-hedgehog-home">https://www.ulsterwildlife.org/help-wildlife/help-wildlife-home/help-hedgehogs/how-build-hedgehog-home</a></p>
<b>2. Birds</b>				
<b>Aim</b>	<b>Action</b>	<b>Location</b>	<b>Timeframe</b>	<b>Suggestions &amp; Useful Resources</b>
2.1 To increase potential nesting sites for birds	2.1.1 Install nestboxes for Birdwatch Ireland Birds of Conservation Concern (BoCCI) and native garden birds	Kilbarry Wood, Cill An Oir, The Paddocks		<p>Identify which bird species the community wish to install nestboxes for. Source or build the appropriate nestboxes.</p> <p>Consider Swallow, Swift, and House Martin nest boxes, especially where natural nest sites are fewer and in cases where a known nest was lost. Protect and maintain existing nests where possible and carry out works that impact nests outside the breeding season only. Ensure the nest entrance is not blocked and leave a clear flight path. Other BoCCI recorded species in Coolagown included meadow pipit, goldcrest, willow warbler, starling, house sparrow, greenfinch.</p> <p>There are different nestbox designs to suit the specific needs of different bird species. Advice on choosing, building, installing, and maintaining nestboxes and photographs available from BirdWatch Ireland at: <a href="https://birdwatchireland.ie/app/uploads/2019/09/Nestboxes-factsheet.pdf">https://birdwatchireland.ie/app/uploads/2019/09/Nestboxes-factsheet.pdf</a></p>
	2.1.2 To create nesting sites for Dipper and Pied Wagtail by installing nest boxes under bridges	Coole Holy Well		<p>Grey wagtail builds nests along streams such as the Coole Well stream, frequently under bridges. A Grey Wagtail and Dipper Nest Box can be installed under both bridges on site. Nest boxes such as the example below from the NHBS can be used by both dipper and grey wagtail and be placed under both bridges on site: <a href="https://www.nhbs.com/vivara-pro-woodstone-grey-wagtail-and-dipper-nest-box">https://www.nhbs.com/vivara-pro-woodstone-grey-wagtail-and-dipper-nest-box</a></p>

	2.1.3 To improve potential nesting sites for Barn Owl by installing nestboxes.	Kilbarry Wood		<p>Identify suitable site, position and number of boxes. Source or identify who will build the box. Seek professional advice and assistance for installation. Site could be a mature tree, isolated, at woodland edge, in a hedgerow, or in a derelict abandoned building. BirdWatch Ireland guides recommend e.g. undisturbed sites away from human activity, at least 200m away from large busy roads, place nestbox 3m or higher, leave clear flight path to nestbox, face nestbox away from prevailing winds.</p> <p>Guidance on nest boxes including barn owl available from Birdwatch Ireland  <a href="https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/nestbox-designs-for-birds-and-wildlife/">https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/nestbox-designs-for-birds-and-wildlife/</a>  Lusby J., McCarthy A., Birdwatch Ireland, 2022. ACRES Guidance Document for the Barn Owl Nest Box Action.  <a href="https://www.gov.ie/pdf/?file=https://assets.gov.ie/231433/c17c98a1-d360-4372-be85-e714ae8a1ffe.pdf#page=null">https://www.gov.ie/pdf/?file=https://assets.gov.ie/231433/c17c98a1-d360-4372-be85-e714ae8a1ffe.pdf#page=null</a></p> <p><i>*For additional advice please see pg. 47 Advice on Barn Owl Nestboxes</i></p>
<b>3. Invertebrates</b>				
<b>Aim</b>	<b>Action</b>	<b>Location</b>	<b>Timeframe</b>	<b>Suggestions &amp; Useful Resources</b>
3.1 To improve areas for pollinators	3.1.1. To improve the existing butterfly corner for butterflies by planting native species beneficial to butterflies and caterpillars.	Life Space Park		<p>Eg; Hawthorn, Hazel, Birds Foot Trefoil, Holly, Clovers, Meadow Vetchling, Honeysuckle. Ivy is an important food plant and cover for roosting and overwintering. Nettles are important for butterflies, leave patches grow. Could choose an area away from public access or fence off for safety.</p> <p>Refer to the NBDC pollinator plan for ideal native plants for pollinators. NBDC, <i>Gardening for Butterflies – Helping Butterflies with Native Plants</i>. Available at:</p>

				<a href="https://biodiversityireland.ie/app/uploads/2023/06/Rewilding-Your-Garden-WEB.pdf">https://biodiversityireland.ie/app/uploads/2023/06/Rewilding-Your-Garden-WEB.pdf</a>
3.2 To provide nesting and overwintering sites to help solitary bees	3.2.1. Create a small bug hotel or wood pile	Lifespace Park (section across the road from car park)		Tips on bee hotels and earth banks available in NBDC All-Ireland pollinator plan. NBDC, <i>How-to-guide. Creating wild pollinator nesting habitat</i> . Available at: <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf</a>
	3.2.2. Create an earth bank for solitary mining bees	Kilbarry Wood, Coole Holy Well		Tips on bee hotels and earth banks available in NBDC All-Ireland pollinator plan. NBDC, <i>How-to-guide. Creating wild pollinator nesting habitat</i> . Available at: <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf</a>
3.3 To survey and create areas to support moths	3.3.1 Create a moon-garden for moths	Coole Holy Well		Moths are attracted to certain flower species. Plant variety of native, fragrant, pale coloured, flowers eg., Honeysuckle, Michaelmas daisy (Sea Aster), Rosebay Willowherb, White and Red Campion, Field Scabious, Hemp-agrimony, Marjoram, Lesser Butterfly-orchid.  NBDC All Ireland Pollinator Plan, MothIreland, and Mayo DarkSky Park guide on protecting nocturnal pollinators, <i>How-to-guide: Protecting nocturnal pollinators</i> . Available at: <a href="https://pollinators.ie/new-how-to-guide-protecting-nocturnal-pollinators/">https://pollinators.ie/new-how-to-guide-protecting-nocturnal-pollinators/</a>
	3.3.2. Survey for moths and study moth numbers	Kilbarry Wood, Coole Holy Well		Surveying can help identify and raise awareness of the diversity of moths present in Coolagown and identify further actions that could be implemented to benefit these. By reporting records to eg. MothIreland or the NBDC it will also contribute to building Ireland's moth record.

				<p>Consider joining or contacting MothsIreland for information and guidance. In case of deliberately trapping moths and using light trapping a licence is required from Moths Ireland.</p> <p>MothsIreland information and guidance on Ireland's moths and moth surveying: <a href="https://www.mothsireland.com/">https://www.mothsireland.com/</a></p>
<b>4. Improving Habitats for Biodiversity</b>				
<b>Aim</b>	<b>Action</b>	<b>Location</b>	<b>Timeframe</b>	<b>Suggestions &amp; Useful Resources</b>
4.1 Improve hedgerows for wildlife, for food, shelter, and as wildlife corridors.	4.1.1. Plant native trees and shrubs	Lifespace Park, The Spout, Hedgerow Area Long Road		<p>Plant native hedgerow species eg: Hawthorn, Blackthorn, Honeysuckle, Willow, Rowan, Elder, Crab Apple.</p> <p>Manage and maintain hedgerows, ideally with only occasional light maintenance strimming outside the bird breeding season, every 2-3 years.</p> <p>The Heritage Council, <i>Conserving Hedgerows</i>. Available at: <a href="https://actionforbiodiversity.ie/app/uploads/2023/07/conserving_hedgerows_2mb.pdf">https://actionforbiodiversity.ie/app/uploads/2023/07/conserving_hedgerows_2mb.pdf</a></p> <p>NBDC All Ireland Pollinator Plan, <i>How-to-guide. Hedgerows for pollinators</i>. Available at: <a href="https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Hedgerows-2018-WEB.pdf">https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Hedgerows-2018-WEB.pdf</a></p>
	4.1.2. Develop a management plan for hedgerows.	Lifespace Park, The Spout, Hedgerow Area Long Road		*As above
4.2 Create a food source to help support birds, mammals, and invertebrates.	4.2.1. Plant a small fruit forest of native shrubs and trees.	The Paddocks		<p>Plant native fruiting shrubs and trees which will help support wildlife while also providing a food source for residents of the estate. Identify native species to plant, where to plant, how to maintain. Eg: Blackthorn, Rose Hips (Dog Rose), Elder, Hawthorn, Hazelnut, Wild Strawberry, Wild Raspberry, Apple, Sweet Chestnut.</p> <p>All Ireland Pollinator Plan. E.g., Pollinator friendly planting code</p>

				<a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf</a>
4.3 Create dead wood habitat to support wildlife	4.3.1. Create log piles or use wood pallets to create habitat for insects, shelter and hunting ground for small mammals, amphibians and reptiles and hibernating and overwintering wildlife.	Kilbarry Wood, Lifespace Park, Coole Holy Well		<p>Create log piles or use wood pallets to provide a habitat for insects, their larvae and wildlife like hedgehogs.</p> <p>Source the dead wood, secure and manage it to ensure it remains undisturbed.</p> <p>Some logs could be drilled with small holes of various sizes to create a home for solitary bees. We have 101 species of bees in Ireland and 77 of these are solitary bees.</p> <p>To educate and prevent robbing of logs, signage could be installed.</p> <p>NBDC All-Ireland pollinator plan, <i>How-to-guide. Creating wild pollinator nesting habitat</i>. Available at: <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf</a></p> <p>Royal Horticultural Society, <i>Dead Wood and Compost Heap Habitats</i>. <a href="https://www.rhs.org.uk/wildlife/dead-wood-compost-heap-habitats">https://www.rhs.org.uk/wildlife/dead-wood-compost-heap-habitats</a></p> <p>RSPB, <i>Create a Logpile for Wildlife</i>. <a href="https://www.rspb.org.uk/helping-nature/what-you-can-do/activities/create-a-log-pile-for-wildlife">https://www.rspb.org.uk/helping-nature/what-you-can-do/activities/create-a-log-pile-for-wildlife</a></p> <p>Natural History Museum, <i>How to make a log pile to provide shelter for garden wildlife</i>. (Please note conservation of the stag beetle is mentioned in many UK based guides, we do not currently have records of the stag beetle in Ireland). <a href="https://www.nhm.ac.uk/discover/how-to-make-a-log-pile-to-provide-shelter-for-garden-wildlife.html">https://www.nhm.ac.uk/discover/how-to-make-a-log-pile-to-provide-shelter-for-garden-wildlife.html</a></p>
	4.3.2. Leave existing dead wood in situ	Kilbarry Wood, Lifespace Park, Coole Holy Well		<p>*As above</p> <p>Hollows of standing deadwood may be used by birds like great spotted woodpecker, bats and other mammals. Dead wood provides habitat for insects and their larvae. Sheltered conditions can also provide hibernacula and cover for frogs and hedgehogs.</p>

<p>4.4 Create a native woodland corridor to encourage biodiversity</p>	<p>4.4.1. Manage conifer plantations to create a corridor or hedge habitat of native tree species.</p>	<p>Kilbarry Wood</p>		<p>Current conifer plantations at south of Kilbarry Wood could make positive contributions to biodiversity if well managed. The current canopy closure allows little light leading to loss of understory structure and lower diversity of flora and fauna. With permission from and in liaison with Coillte, explore the possibility of establishing a corridor for native tree species here.</p> <p>Small areas of wet habitat should be left to avoid drainage where possible, and scrub, hedgerows and other marginal and additional habitats be retained to allow for adequate buffer zones.</p>
<p>4.5 Create native species-rich grassland habitats</p>	<p>4.5.1. Create designated areas of wildflower meadows, wild non-managed areas, and management regimes.</p>	<p>The Paddocks, Cill An Oir</p>		<p>Involve residents to design areas of wildflower meadows on amenity grasslands. Consider leaving sections grow wild to encourage native local species. A section could be left to grow in the middle of amenity grassland, or everything left to grow with a path mown through it. Consider a reduced mowing scheme. If choosing to plant wildflowers ensure they are native. Eg; Hazel, Rowan, Broom, Holly or pollinator friendly perennials.</p> <p>NBDC All Ireland Pollinator Plans &amp; <i>How-to-guide. Creating and restoring meadows in local communities and gardens.</i> <a href="https://actionforbiodiversity.ie/app/uploads/2023/07/Meadow-Guideline-2023-WEB.pdf">https://actionforbiodiversity.ie/app/uploads/2023/07/Meadow-Guideline-2023-WEB.pdf</a></p>
<p>4.6 Pant more native Irish shrub and tree species</p>	<p>4.6.1. Replace ornamental shrubs at Cill and Oir and the Paddocks with native species if feasible</p>	<p>The Paddocks, Cill An Oir</p>		<p>Native shrubs eg; Hazel, Rowan, Broom, Holly or pollinator friendly perennials. All Ireland Pollinator Plan. E.g., Pollinator friendly planting code <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf</a></p>

	4.6.2. Plant more native Irish tree species	Around Coolagown Village		E.g. Native Hawthorn, Willow, Oak, Blackthorn, Rowan, Ash, Crab Apple. All Ireland Pollinator Plan. Pollinator friendly planting code <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf</a>
<b>5. Actions for Water</b>				
<b>Aim</b>	<b>Action</b>	<b>Location</b>	<b>Timeframe</b>	<b>Suggestions &amp; Useful Resources</b>
5.1 Improve water accessibility for wildlife	5.1.1. Improve existing pond ramps to allow wildlife including frogs and hedgehogs safe access.	The Spout		The existing ramps at the spout site are a bit too steep, a gentler sloping ramp would allow easier access. Ramps of natural materials like the existing ones are recommended. A natural edge of native reeds and sedges could also be planted to allow access.
5.2 Create natural cover around the water's margins to improve habitat for wildlife.	5.2.1. Plant native marginal plants, place additional rocks around the water's edge, use plant pots as frog shelter.	Along the gully and water tank margins at the Spout.		Plant native marginal plants eg; Yellow Iris <i>Iris pseudacorus</i> , Arrowhead <i>Sagittaria sagittifolia</i> , Amphibious Bistort <i>Persicaria amphibia</i> , Purple Loosestrife <i>Lythrum salicaria</i> , Branched Bur-Reed <i>Sparganium erectum</i> and Lesser Water-parsnip <i>Berula erecta</i> and Lesser Spearwort <i>Ranunculus flammula</i> . These areas will also work as habitats for wildlife visiting the gully. Placing plant pots on their sides and partially burying them will provide shelter for frogs.
	5.2.2. Create planting beds on shelves for planting edge of water plants.	The Spout		Planting beds can be created e.g. on shelves, edged by rounded stones and filled with soil for planting edge-of-water plants such as Marsh Marigold and Yellow Iris. Oxygenators may be needed. Avoid Canadian Pond weed and other invasive species. Only buy from reputable sources, as unwanted plants such as duck weed, once introduced to a pond, can never be successfully removed.  Eg; Marsh Marigold <i>Caltha palustris</i> , Water Cress <i>Nasturtium officinale</i> , Hornwort <i>Ceratophyllum demersum</i> , White Water Lily <i>Nymphaea alba</i> , Yellow Water Lily, <i>Nuphar lutea</i> , Spiked Watermilfoil <i>Myriophyllum spicatum</i> , Common Water-Starwort <i>Callitriche stagnalis</i>

5.3 Improve and maintain good water quality and aquatic habitat to support biodiversity.	5.3.1. Introduce native aquatic oxygenating plant species into areas of open water, to help add oxygen, remove excess nutrients and provide shelter.	The Spout		Eg; Marsh Marigold <i>Caltha palustris</i> , Water Cress <i>Nasturtium officinale</i> , Hornwort <i>Ceratophyllum demersum</i> , White Water Lily <i>Nymphaea alba</i> , Yellow Water Lily, <i>Nuphar lutea</i> , Spiked Watermilfoil <i>Myriophyllum spicatum</i> , Common Water-Starwort <i>Callitriche stagnalis</i>
	5.3.2. Establish monitoring and management measures to prevent colonisation of vigorous aquatic plants.	The Spout		Vigorous plants include e.g. Bulrush <i>Typha latifolia</i> , Common Reed <i>Phragmites australis</i> . These could colonise the sides of the gully and open water areas which will diminish surface areas of water. They may shade out other plant species vital for fauna already present. Annual removal of these will help maintain open areas of water allowing aquatic fauna to thrive.
	5.3.3. Develop a water quality monitoring plan and procedure.	Coole Holy Well		Regularly test and monitor the water quality of the streams. Consider possibility of engaging locals in this as a citizen science project to test water quality using the Q-value invertebrate system. (Eg. The Citizen Science Stream Index) LAWPRO <a href="https://lawaters.ie/citizen-science/">https://lawaters.ie/citizen-science/</a>
	5.3.4. Increase stream substrate roughness to create habitats to support a diverse range of species.	Coole Holy Well		Increase stream substrate roughness by Eg., Placing additional scattered exposed rocks in the stream for dipper to breed on. This will also create riffles, glides and pools which create habitat for a more diverse range of macroinvertebrate species which in turn support birds, fish, and frogs.
5.4 Improve connectivity along the Coole Holy Well stream to redevelop natural processes, allow fish passage and increase upstream prey for otter.	5.4.1. Remove part of the weir to allow fish passage and increase upstream prey for otter.	Coole Holy Well		Consider the possibility of removing one or two blocks of the weir to allow fish passage. If feasible given the historical value and permissions allow.
5.5 Create a community wetland habitat to encourage and support biodiversity.	5.5.1. Create a small wildlife pond and establish a management plan for this.	Lifespace Park (across the road from Lifespace Park car park)		The pond can be small freestanding made of old plant pots and containers or dug into the earth. The pond could be filled with rainwater naturally over time or using the rainwater harvesting project.

				<p>Where required check permissions and regulations and seek expert advice on the depth and introducing native plants.</p> <p>E.g. Wildfowl and Wetlands Trust. <i>Mini Wetlands - Make a Big Splash for Nature</i>. <a href="https://www.wwt.org.uk/wetlands-can/mini-wetlands/">https://www.wwt.org.uk/wetlands-can/mini-wetlands/</a></p> <p>An Taisce Legacy4LIFE Ponds for Biodiversity, <i>How to manage and create a pond for wildlife</i>.  <a href="https://actionforbiodiversity.ie/app/uploads/2023/09/How-to-create-a-wildlife-pond.pdf">https://actionforbiodiversity.ie/app/uploads/2023/09/How-to-create-a-wildlife-pond.pdf</a>  <a href="https://actionforbiodiversity.ie/app/uploads/2023/10/How-to-create-and-manage-a-Pond-poster.pdf">https://actionforbiodiversity.ie/app/uploads/2023/10/How-to-create-and-manage-a-Pond-poster.pdf</a></p> <p>The Wildlife Trust. <i>How to create a mini pond</i>.  <a href="https://www.wildlifetrusts.org/actions/how-create-mini-pond">https://www.wildlifetrusts.org/actions/how-create-mini-pond</a></p>
<b>6. Invasive Species</b>				
<b>Aim</b>	<b>Action</b>	<b>Location</b>	<b>Timeframe</b>	<b>Suggestions &amp; Useful resources</b>
6.1. Prevent and control spread of invasive Montbretia, Winter Heliotrope, and Buddleia so they do not outcompete native species.	6.1.1. Develop constant monitoring and management plan to control and prevent further spread.	Coole Holy Well, Lifespace Park, Hedgerow Area Long Road, Kilbarry Wood		<p><i>Crocoshmia x crocosmiiflora</i>, <i>Petasites pyrenaicus</i>, <i>Buddleia davidii</i>, are introduced species. They are invasive and have the potential to outgrow native flora already present which could cause the loss of valuable species and habitat.</p> <p>Seek expert advice. Assess if a contractor is needed.</p> <p>Invasive Species Ireland Initiative  <a href="https://invasives.ie/">https://invasives.ie/</a></p>
	6.1.2. Develop a removal plan. Receive expert advice on methods suitable for removing Winter Heliotrope and Montbretia.	Coole Holy Well, Hedgerow Area Long Road, Kilbarry Wood		<p>Eg: These species can be removed by chemical or non-chemical treatments such as digging. All material must be disposed of and handled in a manner that prevents further spread.</p> <p>Seek expert advice. Assess if a contractor is needed.</p> <p>Invasive Species Ireland Initiative  <a href="https://invasives.ie/">https://invasives.ie/</a></p>

7. Awareness, Education, Engagement				
Aim	Action	Location	Timeframe	Suggestions & Useful Resources
7.1 Signage and educational materials to raise awareness of local biodiversity and encourage engagement in actions for local biodiversity.	7.1.1 Install information signs on native local biodiversity and actions to help.	Kilbarry Wood, The Spout, Cill An Oir, The Paddocks, Hedgerow Area Long Road, Coole Holy Well		Could highlight main species of native plants and animals present, their importance, how they are connected, and actions to help them. Could include QR code to scan and download a pdf format with a smart phone (linking to a website or Facebook Page). Engage and review where to install signs with the local community.
	7.1.2. Install “Wildlife Area” signs to raise awareness that an area managed for wildlife is being entered, and minimise disturbance.	Kilbarry Wood, The Spout, Cill An Oir, The Paddocks, Hedgerow Area Long Road, Coole Holy Well		Could also include animal crossing warning signs for hedgehogs, and for frogs along the gully where common frog is known to breed and spawn (e.g., across McDonnell’s Brothers Limited)
	7.1.3. Install biodiversity friendly grassland regime signage.	The Paddocks Cill An Oir		Install signage to inform residents and visitors of biodiversity enhancement measures and help management adhere to the scheme. NBDC All-Ireland Pollinator Plan signage: <a href="https://pollinators.ie/resources/signs/">https://pollinators.ie/resources/signs/</a>
	7.1.4. Install a biodiversity map of the Coolagown area and wildlife present.	Lifespace Park		The map could include a QR code to scan with smart phone devices to download the map. Cork Nature Network has produced a map for this biodiversity action plan which may be used.
	7.1.5. Produce guided nature trail leaflets for nature walks in Coolagown giving information on the wildlife present.	To be decided		Guided nature trails and walks Eg; Kilbarry wood, Lifespace Park. Leaflets could be left in community centre and be available for download on a community Facebook page or website.
7.2. Prevent and reduce littering and fouling	7.2.1. Install signage and waste bins to minimise dog fouling	Kilbarry Wood		The entrance of Kilbarry wood may be a suitable position.

	7.2.2. Develop additional measures to reduce and prevent littering and fly-tipping.	Lifespace Park		E.g. signage, CCTV
7.3. Develop a Dark Sky area, reduce light pollution. To improve habitat for nocturnal wildlife like bats and pollinators such as moths.	7.3.1. Night walk around the community or garden to map the level of lit and dark areas and identify lights that could be turned off or dimmed and put on motion detectors. Implement the results.	Village area		
	7.3.2. Use warm tinted red/orange LEDs for outdoor areas. Follow bat lighting guidelines.	Village area		Eg; LED luminaries in warm white spectrum. No upward tilt with an upward light ratio of 0% (accessories such as baffles, hoods or louvres can be used to direct light and reduce light spill).  Bat Conservation Trust ILP, Bats and artificial lighting in the UK. Bats and the Built Environment Series, 2018: <a href="https://cdn.bats.org.uk/uploads/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?v=1542109349">https://cdn.bats.org.uk/uploads/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?v=1542109349</a> NBDC All Ireland Pollinator Plan, MothIreland, and Mayo DarkSky Park guide on protecting nocturnal pollinators, <i>How-to-guide: Protecting nocturnal pollinators</i> . Available at: <a href="https://pollinators.ie/new-how-to-guide-protecting-nocturnal-pollinators/">https://pollinators.ie/new-how-to-guide-protecting-nocturnal-pollinators/</a>
	7.3.3. Coordinate with McDonnell's factory to determine if light spill from premises onto the hedgerow could be reduced.	The Spout		*As above

7.4 Introduce the native Irish Honeybee to educate, raise awareness and help to increase and preserve local biodiversity.	7.4.1. Introduce a beehive of native <i>Apis mellifera mellifera</i> . Seek expert guidance on how to introduce and maintain a beehive.	To be decided		Liaise with the community and seek expert guidance.  The Native Irish Honeybee Society: <a href="https://nihbs.org/">https://nihbs.org/</a> The Federation of Irish Beekeeper's Association Clg: <a href="https://irishbeekeeping.ie/">https://irishbeekeeping.ie/</a>
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#### **Additional useful resources**

NBDC Ireland's Portal for Biodiversity Action Plans has resources, useful links, and guidance on recording biodiversity: <https://actionforbiodiversity.ie/resources/>

The NBDC All Ireland Pollinator Plan has resources for community groups available here: <https://pollinators.ie/communities/resources-for-community-groups/>

**Table 2. Recommendations for Householders**

Aim	Action	Location	Timeframe	Suggestions & Useful Resources
1.1 Garden practices to encourage and conserve wildlife	1.1.1. Reduced mowing scheme	Gardens		<p>To allow wildflowers to bloom at their times of year and complete their lifecycle, providing nectar and pollen to pollinators and seeds to birds.</p> <p>NBDC All-Ireland Pollinator Plan Guides. All resources for gardens available at: <a href="https://pollinators.ie/gardens/">https://pollinators.ie/gardens/</a> How-to-guide. Creating and restoring meadows in local communities and gardens. <a href="https://pollinators.ie/wp-content/uploads/2023/04/Meadow-Guideline-2023-WEB.pdf">https://pollinators.ie/wp-content/uploads/2023/04/Meadow-Guideline-2023-WEB.pdf</a> Gardens: actions to help pollinators (Guidelines 2) <a href="https://pollinators.ie/wp-content/uploads/2022/12/Garden-Pollinator-Guidelines-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Garden-Pollinator-Guidelines-2022-WEB.pdf</a></p>
	1.1.2. Designate a patch or strip on garden perimeter to grow naturally to encourage native grasses and wildflowers to grow.	Gardens		<p>Native flowers like bird-foot trefoil, clover self-heal, dead nettle, knapweed, devils-bit-scabious, vetches, daisies, dandelion and orchids may grow. If choosing to plant wildflowers, ensure they are native.</p> <p>*As above All Ireland Pollinator Plan. E.g., Pollinator friendly planting code <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf</a></p>
	1.1.3. Develop a charter with householders to pledge gardens to wildlife including a wide range of measures e.g. leaving uncut areas.	Gardens		<p>Pledge your garden for pollinators and add your garden to NBDC’s “Actions for Pollinators” map to help track pollinator friendly sites across Ireland.</p> <p>All Ireland Pollinator Plan: <a href="https://pollinators.ie/pledge-your-garden-for-pollinators/">https://pollinators.ie/pledge-your-garden-for-pollinators/</a></p>
	1.1.4. Avoid chemical pesticides (herbicides, fungicides, insecticides), slug pellets, and	Gardens		

	rodenticides where possible.			
	1.1.5. Plant native trees, shrubs and climbers	Gardens		Consider native species e.g., Hawthorn, blackthorn, willow, rowan, elder, crab apple, hazel, elder, dog-rose, Irish ivy, holly, honeysuckle. All Ireland Pollinator Plan. E.g., Pollinator friendly planting code <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf</a>
1.2. To provide nesting and freshwater sites for birds	1.2.1. Install nestboxes for Birdwatch Ireland Birds of Conservation Concern (BoCCI) and native garden birds	Gardens		Choose a nest box designed for the bird you want to encourage. E.g., hole type, open fronted, or swift, swallow and house martin nest boxes. Advice on choosing, building, installing, and maintaining nestboxes, and photos available at BirdWatch Ireland <a href="https://birdwatchireland.ie/app/uploads/2019/09/Nestboxes-factsheet.pdf">https://birdwatchireland.ie/app/uploads/2019/09/Nestboxes-factsheet.pdf</a>
	1.2.2. Provide bird bath & water dish to drink and clean feathers.	Gardens		Hanging off tree branches or free standing. Set up in a safe location away from cats. Refresh water and clean dish regularly. E.g. RSPB, Bird Bath and Water Dish <a href="https://www.rspb.org.uk/helping-nature/what-you-can-do/activities/make-the-perfect-bird-bath">https://www.rspb.org.uk/helping-nature/what-you-can-do/activities/make-the-perfect-bird-bath</a>
1.3. To enable corridors for hedgehogs and other small mammals	1.3.1. Leave a small hole in perimeters like fences to allow hedgehogs and other wildlife access to the garden.	Gardens		The Irish Hedgehog Survey for information about hedgehogs, “Helping Hedgehogs” guide, recording sightings, photographs <a href="https://www.irishhedgehogsurvey.com/">https://www.irishhedgehogsurvey.com/</a> ; <a href="https://biodiversityireland.ie/surveys/irish-hedgehog-survey/">https://biodiversityireland.ie/surveys/irish-hedgehog-survey/</a> Hedgehog Street, Hedgehog Homes. <a href="https://www.hedgehogstreet.org/help-hedgehogs/hedgehog-homes/">https://www.hedgehogstreet.org/help-hedgehogs/hedgehog-homes/</a> Ulster Wildlife, How to Build Hedgehog Homes. <a href="https://www.ulsterwildlife.org/help-wildlife/help-wildlife-home/help-hedgehogs/how-build-hedgehog-home">https://www.ulsterwildlife.org/help-wildlife/help-wildlife-home/help-hedgehogs/how-build-hedgehog-home</a>
1.4. To encourage winter hibernation areas for hedgehogs	1.4.1. To create hedgehog hibernation boxes. To leave leaf and log piles for hedgehogs to hibernate.	Gardens		*As Above

1.5. Create mini garden wetlands – to attract and support insects, plants, birds, mammals and amphibians.	1.5.1. Create a small free-standing pond in a container or dig a wildlife pond.			<p>Select native plants eg., E.g., yellow iris, marsh woundwort, meadowsweet, hemp agrimony, purple loosestrife, marsh marigold, ragged robin.</p> <p>Avoid fish in your pond as these eat insect eggs and tadpoles.</p> <p>Include a gentle sloping edge or features like logs and rocks to allow animals easy entry and exit.</p> <p>E.g. Wildfowl and Wetlands Trust. <i>Mini Wetlands - Make a Big Splash for Nature</i>. <a href="https://www.wwt.org.uk/wetlands-can/mini-wetlands/">https://www.wwt.org.uk/wetlands-can/mini-wetlands/</a>  An Taisce Legacy4LIFE Ponds for Biodiversity, <i>How to manage and create a pond for wildlife</i>.  <a href="https://actionforbiodiversity.ie/app/uploads/2023/09/How-to-create-a-wildlife-pond.pdf">https://actionforbiodiversity.ie/app/uploads/2023/09/How-to-create-a-wildlife-pond.pdf</a>  <a href="https://actionforbiodiversity.ie/app/uploads/2023/10/How-to-create-and-manage-a-Pond-poster.pdf">https://actionforbiodiversity.ie/app/uploads/2023/10/How-to-create-and-manage-a-Pond-poster.pdf</a>  The Wildlife Trust. <i>How to create a mini pond</i>.  <a href="https://www.wildlifetrusts.org/actions/how-create-mini-pond">https://www.wildlifetrusts.org/actions/how-create-mini-pond</a></p>
	1.5.2. Create a free - standing bog garden in a container or dig a bog garden.			<p>Wildfowl and Wetlands Trust. <i>Mini Wetlands - Make a Big Splash for Nature</i>. <a href="https://www.wwt.org.uk/wetlands-can/mini-wetlands/">https://www.wwt.org.uk/wetlands-can/mini-wetlands/</a></p>
1.6. To provide nesting and overwintering sites to help solitary bees	1.6.1. Create a small bug hotel	Gardens		<p>Tips on bee hotels and earth banks available in NBDC All-Ireland pollinator plan. NBDC, <i>How-to-guide. Creating wild pollinator nesting habitat</i>. Available at:  <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf</a></p>
	1.6.2. Create an earth bank for mining bees	Gardens		*As Above
1.7. Create areas to support moths and butterflies	1.7.1. Create a “moon garden” and “butterfly corner” of native flowering plants to provide a food	Gardens		<p>Native, night scented, pale coloured flowers for moths eg., honeysuckle, sea aster, rosebay willowherb, field scabious, marjoram, lesser butterfly orchid.</p>

	source for larval and flying life-cycle stages of moths and butterflies.			For butterflies e.g., Birds-foot trefoil, holly, clovers, meadow vetchling, nettles and ivy.  How-to-guide. Protecting nocturnal pollinators. <a href="https://pollinators.ie/new-how-to-guide-protecting-nocturnal-pollinators/">https://pollinators.ie/new-how-to-guide-protecting-nocturnal-pollinators/</a> NDBC, Ireland's butterfly series. Gardening for Butterflies. Helping butterflies with native plants <a href="https://biodiversityireland.ie/gardening-for-butterflies-helping-butterflies-with-native-plants/">https://biodiversityireland.ie/gardening-for-butterflies-helping-butterflies-with-native-plants/</a>
1.8. Improve hedgerows for wildlife, for food, shelter, and as wildlife corridors.	1.8.1. Plant native trees and shrubs and climbers in hedgerow gaps or to create a hedgerow.	Gardens		Consider native species e.g., Hawthorn, blackthorn, willow, rowan, elder, crab apple, hazel, elder, dog-rose, irish ivy, holly, honeysuckle.  The Heritage Council, <i>Conserving Hedgerows</i> <a href="https://actionforbiodiversity.ie/app/uploads/2023/07/conserving-hedgerows-2mb.pdf">https://actionforbiodiversity.ie/app/uploads/2023/07/conserving-hedgerows-2mb.pdf</a> NBDC All Ireland Pollinator Plan, <i>How-to-guide. Hedgerows for pollinators</i> . Available at: <a href="https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Hedgerows-2018-WEB.pdf">https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Hedgerows-2018-WEB.pdf</a> All Ireland Pollinator Plan. E.g., Pollinator friendly planting code <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf</a>
	1.8.2. Develop a management plan for hedgerows	Gardens		Ideally only occasional light maintenance strimming outside the bird breeding season, every 2-3 years  *As Above
1.9. Create a food source to help support birds, mammals, and invertebrates.	1.9.1. Plant a small fruit forest of native shrubs and trees.	Gardens		All Ireland Pollinator Plan. E.g., Pollinator friendly planting code <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf</a>
1.10. Create dead wood habitat to support wildlife	1.10.1 Log piles or wood pallets to create habitat for insects, shelter and hunting ground for small mammals, amphibians and reptiles	Gardens		NBDC All-Ireland pollinator plan, <i>How-to-guide. Creating wild pollinator nesting habitat</i> . Available at: <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf</a>

	and hibernating and overwintering wildlife.			Royal Horticultural Society, <i>Dead Wood and Compost Heap Habitats</i> . <a href="https://www.rhs.org.uk/wildlife/dead-wood-compost-heap-habitats">https://www.rhs.org.uk/wildlife/dead-wood-compost-heap-habitats</a> RSPB, <i>Create a Logpile for Wildlife</i> . <a href="https://www.rspb.org.uk/helping-nature/what-you-can-do/activities/create-a-log-pile-for-wildlife">https://www.rspb.org.uk/helping-nature/what-you-can-do/activities/create-a-log-pile-for-wildlife</a> Natural History Museum, <i>How to make a log pile to provide shelter for garden wildlife</i> . (Please note conservation of the stag beetle is mentioned in many UK based guides, we do not currently have records of the stag beetle in Ireland). <a href="https://www.nhm.ac.uk/discover/how-to-make-a-log-pile-to-provide-shelter-for-garden-wildlife.html">https://www.nhm.ac.uk/discover/how-to-make-a-log-pile-to-provide-shelter-for-garden-wildlife.html</a>
	1.10.2. Leave existing dead wood in situ	Gardens		Hollows of standing deadwood may be used by birds like great spotted woodpecker, bats and other mammals. Dead wood provides habitat for insects and their larvae. Dead wood can also provide hibernacula and cover for frogs and hedgehogs.
1.11. Citizen Science Projects to educate, raise awareness and encourage engagement in actions for local biodiversity.	1.11.1. Participate in NBDC bee and butterfly monitoring projects. One off FIT (flower insect timed) counts of pollinators or weekly insect surveys.			NBDC Flower Insect Timed Count: <a href="https://biodiversityireland.ie/surveys/fit-counts/">https://biodiversityireland.ie/surveys/fit-counts/</a> NBDC Monitoring Schemes for Citizen Science: <a href="https://biodiversityireland.ie/monitoring/">https://biodiversityireland.ie/monitoring/</a> NBDC Submit wildlife sighting records: <a href="https://records.biodiversityireland.ie/">https://records.biodiversityireland.ie/</a>
	1.11.2. Participate in Birdwatch Ireland's annual Garden Bird Survey			To identify garden birds visiting your garden and help record how populations are doing. <a href="https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-garden-bird-survey/">https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-garden-bird-survey/</a>
	1.11.3. Submit casual wildlife sightings to the NBDC Citizen Science Portal.			NBDC Backyard Biodiversity Recording portal <a href="https://biodiversityireland.ie/surveys/backyard-biodiversity/">https://biodiversityireland.ie/surveys/backyard-biodiversity/</a>

**Additional useful resource for actions for biodiversity in gardens:** Julia Browne, Local Authority Heritage Officer Network. *Gardening for Biodiversity*. Available at <https://laois.ie/wp-content/uploads/Garden-Wildlife-Booklet-WEB-17MB.pdf>

**Table 3. Recommendations for Kilmagner National School**

Aim	Action	Location	Timeframe	Suggestions & Useful Resources
1.1. Citizen Science Projects to educate, raise awareness and encourage engagement in actions for local biodiversity.	1.1.1. Participate in NBDC bee and butterfly monitoring projects. One off FIT (flower insect timed) counts of pollinators or weekly insect surveys.	School		NBDC Flower Insect Timed Count: <a href="https://biodiversityireland.ie/surveys/fit-counts/">https://biodiversityireland.ie/surveys/fit-counts/</a> NBDC Monitoring Schemes for Citizen Science: <a href="https://biodiversityireland.ie/monitoring/">https://biodiversityireland.ie/monitoring/</a> NBDC Submit wildlife sighting records: <a href="https://records.biodiversityireland.ie/">https://records.biodiversityireland.ie/</a>
	1.1.2. Participate in BirdWatch Ireland's annual Garden Birds Survey	School		BirdWatch Ireland Irish Garden Bird Survey <a href="https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-garden-bird-survey/">https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-garden-bird-survey/</a>
1.2. To increase potential nesting sites for birds	1.2.1. Install nestboxes for Birdwatch Ireland Birds of Conservation Concern (BoCCI) and native garden birds.	School		BirdWatch Ireland <a href="https://birdwatchireland.ie/">https://birdwatchireland.ie/</a> Birdwatch Ireland Nestbox Designs for Birds and Wildlife <a href="https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/nestbox-designs-for-birds-and-wildlife/">https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/nestbox-designs-for-birds-and-wildlife/</a>
	1.1.2. Provide bird bath & water dish to drink, clean feathers and remove parasites and bacteria	School		Hanging off tree branches or free standing. Set up in a safe location away from cats. Refresh water and clean regularly.  E.g., RSPB, Bird Bath and Water Dish <a href="https://www.rspb.org.uk/helping-nature/what-you-can-do/activities/make-the-perfect-bird-bath">https://www.rspb.org.uk/helping-nature/what-you-can-do/activities/make-the-perfect-bird-bath</a>
1.3. Provide additional nesting sites for bees	1.3.1. Install a small bee hotel	School, Lifespace Park (section across the car park)		Local group such as Men's Shed could be involved in making kits which can be assembled by students.  Tips on bee hotels and earth banks available in NBDC All-Ireland pollinator plan. NBDC, <i>How-to-guide. Creating wild pollinator nesting habitat</i> . Available at: <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf</a>

1.4. To increase potential roosts for local bats	1.4.1. To install bat boxes for hibernation	Kilbarry Wood, Coole Holy Well		<p>Local group such as Men’s Shed could be involved in making kits which can be assembled by students.</p> <p>Guidance on installing bat boxes available at Bat Conservation Ireland:  <a href="https://www.batconservationireland.org/irish-bats/bat-roosts/775-2">https://www.batconservationireland.org/irish-bats/bat-roosts/775-2</a></p> <p>Birdwatch Ireland Nestbox Designs for Birds and Wildlife  <a href="https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/nestbox-designs-for-birds-and-wildlife/">https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/nestbox-designs-for-birds-and-wildlife/</a></p>
1.5. Improve hedgerows for wildlife, for food, shelter, and as wildlife corridors	1.5.1. Develop a management and monitoring programme to maintain and protect hedgerows	Mature hedgerow on eastern boundary Kilmagner N.S.		<p>Students could monitor the hedgerow in different seasons and record draw and photograph plants and animals they find. Manage and maintain hedgerows, ideally with only occasional light maintenance strimming outside the bird breeding season, every 2-3 years.</p> <p>The Heritage Council, <i>Conserving Hedgerows</i>. Available at:  <a href="https://actionforbiodiversity.ie/app/uploads/2023/07/conserving_hedgerows_2mb.pdf">https://actionforbiodiversity.ie/app/uploads/2023/07/conserving_hedgerows_2mb.pdf</a></p> <p>NBDC All Ireland Pollinator Plan, <i>How-to-guide. Hedgerows for pollinators</i>. Available at: <a href="https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Hedgerows-2018-WEB.pdf">https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Hedgerows-2018-WEB.pdf</a></p>
1.6. Create additional food source to help support insects, birds and mammals	1.6.1. Plant an edible grove of native shrubs and trees	School		<p>Plant native fruiting shrubs and trees will help support wildlife while also providing berries and nuts which can also be picked by the community.</p> <p>Identify native species to plant, where to plant, how to maintain.  Eg: Elderberry, Crab Apple, Blackthorn, Rose Hips (Dog Rose), Elder, Hawthorn, Hazelnut, Wild Strawberry, Wild Raspberry, Apple, Sweet Chestnut.</p> <p>All Ireland Pollinator Plan. E.g., Pollinator friendly planting code  <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf</a></p> <p>All Ireland Pollinator Plan Resources for Schools  <a href="https://pollinators.ie/schools/">https://pollinators.ie/schools/</a></p>

	1.6.2. Erect a polytunnel and plant vegetable and native flower beds	School		<p>Kilmagner National School has three plant beds. Vegetables and native flowers could be started in the proposed polytunnel and used to plant up the beds, which will help support wildlife and could be included as part of the school's healthy eating policy.</p> <p>The polytunnel space could be used as a sensory space and help develop the students' growing skills and increase contact with soil and nature.</p>
	1.6.3. Plant native pollinator friendly flowers and bulbs	School and Coolagown Village		<p>Native pollinator friendly bulbs eg Bluebell <i>Hyacinthoides non-scripta</i>, and Snow Drop <i>Galanthus nivalis</i> could be planted between shrubs and will provide additional annual pollen and nectar for pollinators. Students could be involved in growing flowers in conjunction with Tidy Towns.</p> <p>All Ireland Pollinator Plan. E.g., Pollinator friendly planting code <a href="https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf</a></p> <p>All Ireland Pollinator Plan Resources for Schools <a href="https://pollinators.ie/schools/">https://pollinators.ie/schools/</a></p>

## Useful Resources & Guidance

The following section outlines general resources which may be useful in carrying out recommended actions. Please note, all resources linked in this section are also linked in the ‘Suggestions & Useful Resources’ column of the Actions for Biodiversity tables.

### 1. Photographs

#### Hedgehogs



Hedgehog houses and leaf piles providing additional shelter for hedgehogs. Photo by Alexas\_Fotos, Pixabay.



Example of a hedgehog house. Photo by Steve Kidgell, Hedgehog Street, at <https://www.hedgehogstreet.org/help-hedgehogs/hedgehog-homes/>

#### Birds

There are different types of nestboxes. Open fronted nestboxes attract birds such as Robins and Wrens. Hole-type nestboxes can be used by birds such as Starlings, Great Tits, and Sparrows.



Open fronted nestbox. Source: Apex Robin Box, NHBS, <https://www.nhbs.com/apex-robin-box>



Hole-type nestbox being used by Starlings. Source: neelam279 on Pixabay.

#### Bats

Bat roost boxes can help provide additional shelter for bats. Guidance can be found at Bat Conservation Ireland

<https://www.batconservationireland.org/irish-bats/bat-roosts>



Example of a bat box. Photo by Yaquina on flickr, CC BY 20.0 DEED <https://creativecommons.org/licenses/by/2.0/>

## Insects

Small bee hotels and piles of logs with holes of various sizes can provide additional habitat for solitary cavity nesting bees as shown below. Creating earth banks can provide habitat for mining bees. Tips on bee hotels and earth banks are available in the NBDC, *How-to-guide. Creating wild pollinator nesting habitat*. Available at: <https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf>



Photographs showing examples of a small insect hotel, log pile, and solitary bee using an insect hotel. Photographs free to use under [Pixabay Content Licence](https://pixabay.com/en/content-licence/)



Example of a Whiskey Barrel Pond. Photo by Geek2Nurse on flickr, CC BY NC 2.0 DEED <https://creativecommons.org/licenses/by-nc/2.0/>

### Small Garden Wetlands

Creating a small freestanding pond out of a container or digging a small pond in your garden can provide valuable habitat for a diversity of insects, mammals, birds, and amphibians. Examples and guidance can be found from the Wildfowl and Wetlands Trust. *Mini Wetlands - Make a Big Splash for Nature*.

<https://www.wwt.org.uk/wetlands-can/mini-wetlands/>

An Taisce Legacy4LIFE Ponds for Biodiversity, *How to manage and create a pond for wildlife*.

<https://actionforbiodiversity.ie/app/uploads/2023/09/How-to-create-a-wildlife-pond.pdf>

## 2. Advice on Barn Owl Nestboxes



Example of a Barn Owl nest box near Lodge Wood, Drakes Broughton by Jeff Gogarty, CC BY-SA 2.0 <<https://creativecommons.org/licenses/by-sa/2.0>>, via Wikimedia Commons

Advice provided by ecologist Alex Johns.

The following document covers everything and applies to everywhere not just farms. It will help locals decide what to do.

Lusby J., McCarthy A., Birdwatch Ireland, 2022. ACRES Guidance Document for the Barn Owl Nest Box Action. Available at: <https://www.gov.ie/pdf/?file=https://assets.gov.ie/231433/c17c98a1-d360-4372-be85-e714ae8a1ffe.pdf#page=null>

Supplementary information:

- Nest box must maintain the same position for five years;
- Place nest boxes at least 3m above ground level;
- Barn owl nest boxes can be placed indoors or outdoors and therefore must be of suitable design informed by the location(s) selected;
- If rodenticides are used, you must implement an integrated pest management approach to rodent control on the land – the use of rodenticides must be justified and be in accordance with the product label – maintain records regarding their use;
- Barn owl nest box(es) must not be located within 500m of a motorway or dual carriageway and must be below 300m in altitude (altitude above sea level);

- Once in place, do not approach the nest box(es). It is an offence to cause disturbance to a breeding pair or at the nest site. Essential maintenance is permitted during the month of December only.

Ideally, the outdoor nest box would be situated out of prevailing weather conditions, around 4-5m off the ground and on a bare trunk so low hanging branches won't block the view of the box from any passing owls.

The large trees in Kilbarry Wood and the holy well area would be suitable for installation, but it is advised to make sure there is clear space in front of the box, with no branches blocking their flight paths. There should be a clear view of the box from the surrounding land. The box shouldn't be placed inside the woodland, as barn owls are open habitat species. Where the woodland borders the fields would be a good location, facing out onto the fields in clear view. This could also be done at the well, facing west out onto the surrounding open land at the edge of the well area. The more open the area, the more likely the box will become occupied as owls will be hunting in these open areas at night. There is also suitable habitat in the surrounding area such as grass margins, arable grassland and stubble/cereal fields.

The following resources have additional information about nest boxes - suitable locations, building the box, installing and maintaining.

BirdWatch Ireland, A guide to Barn Owl nest boxes: <https://youtu.be/JHTpckUoQ7Q?si=xJ2yFvxw4JpK-cvg>

BirdWatch Ireland Outdoor Barn Owl Nest Plan, and Lusby J., O'Clery M., 2021. Barn Owls in Ireland. Information on the ecology of Barn owls and their conservation in Ireland. Available at: <https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/nestbox-designs-for-birds-and-wildlife/>

### **3. General Resources for Recommended Actions**

NBDC Ireland's Portal for Biodiversity Action Plan has resources, useful links, and guidance on recording biodiversity: <https://actionforbiodiversity.ie/resources/>

The NBDC All Ireland Pollinator Plan has resources for community groups available here: <https://pollinators.ie/communities/resources-for-community-groups/>

#### **Actions for Biodiversity in Gardens**

Julia Browne, Local Authority Heritage Officer Network. *Gardening for Biodiversity*. Available at: <https://laois.ie/wp-content/uploads/Garden-Wildlife-Booklet-WEB-17MB.pdf>

NBDC Ireland's Portal for Biodiversity Action Plans has resources, useful links, and guidance on recording biodiversity: <https://actionforbiodiversity.ie/resources/>

[NBDC All-Ireland Pollinator Plan Guides](https://pollinators.ie/gardens/). All resources for gardens available at: <https://pollinators.ie/gardens/>

#### **Mammals**

The Irish Hedgehog Survey for information about hedgehogs, "Helping Hedgehogs" guide, and recording sightings <https://www.irishhedgehogsurvey.com/>; <https://biodiversityireland.ie/surveys/irish-hedgehog-survey/>

Hedgehog Street, Hedgehog Homes. <https://www.hedgehogstreet.org/help-hedgehogs/hedgehog-homes/>

Ulster Wildlife, How to Build Hedgehog Homes. <https://www.ulsterwildlife.org/help-wildlife/help-wildlife-home/help-hedgehogs/how-build-hedgehog-home>

## **Birds**

BirdWatch Ireland – Bird ID, Advice and Guidance <https://birdwatchireland.ie>

Irish Garden Birds [www.irishgardenbirds.ie](http://www.irishgardenbirds.ie)

BirdWatch Ireland, Feeding your Garden Birds. <https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/garden-birds/feeding-your-garden-birds>

BirdWatch Ireland, Irish Garden Bird Survey. <https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-garden-bird-survey/>

RSPB, Bird Bath and Water Dish <https://www.rspb.org.uk/helping-nature/what-you-can-do/activities/make-the-perfect-bird-bath>

## **Pollinators and Plants**

Gardens: actions to help pollinators (Guidelines 2) <https://pollinators.ie/wp-content/uploads/2022/12/Garden-Pollinator-Guidelines-2022-WEB.pdf>

How-to-guide. Creating wild pollinator nesting habitat <https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf>

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

How-to-guide. Creating and restoring meadows in local communities and gardens. <https://pollinators.ie/wp-content/uploads/2023/04/Meadow-Guideline-2023-WEB.pdf>

How-to-guide. Protecting nocturnal pollinators. <https://pollinators.ie/new-how-to-guide-protecting-nocturnal-pollinators/>

Flyers and pollinator friendly plant lists – Top ten pollinator friendly plants for different pollinators, Pollinator friendly planting code <https://pollinators.ie/wp-content/uploads/2022/12/Pollinator-Planting-Code-Guide-2022-WEB.pdf>

NDBC, Ireland's butterfly series. Gardening for Butterflies. Helping butterflies with native plants <https://biodiversityireland.ie/gardening-for-butterflies-helping-butterflies-with-native-plants/>

## **Mini Wetlands**

Wildfowl and Wetlands Trust. *Mini Wetlands - Make a Big Splash for Nature.* <https://www.wwt.org.uk/wetlands-can/mini-wetlands/>

An Taisce **Legacy4LIFE Ponds for Biodiversity**, *How to manage and create a pond for wildlife.* <https://actionforbiodiversity.ie/app/uploads/2023/09/How-to-create-a-wildlife-pond.pdf>;  
<https://actionforbiodiversity.ie/app/uploads/2023/10/How-to-create-and-manage-a-Pond-poster.pdf>

The Wildlife Trust. *How to create a mini pond.* <https://www.wildlifetrusts.org/actions/how-create-mini-pond>

## **Citizen Science**

NBDC, Citizen Science Projects and Beginners Guide to Recording.

<https://biodiversityireland.ie/projects/citizen-science/>

NBDC, Record your wildlife sightings. <https://records.biodiversityireland.ie/start-recording>

## **REFERENCES**

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CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) Appendices. Available at: <https://cites.org/eng/app/index.php>

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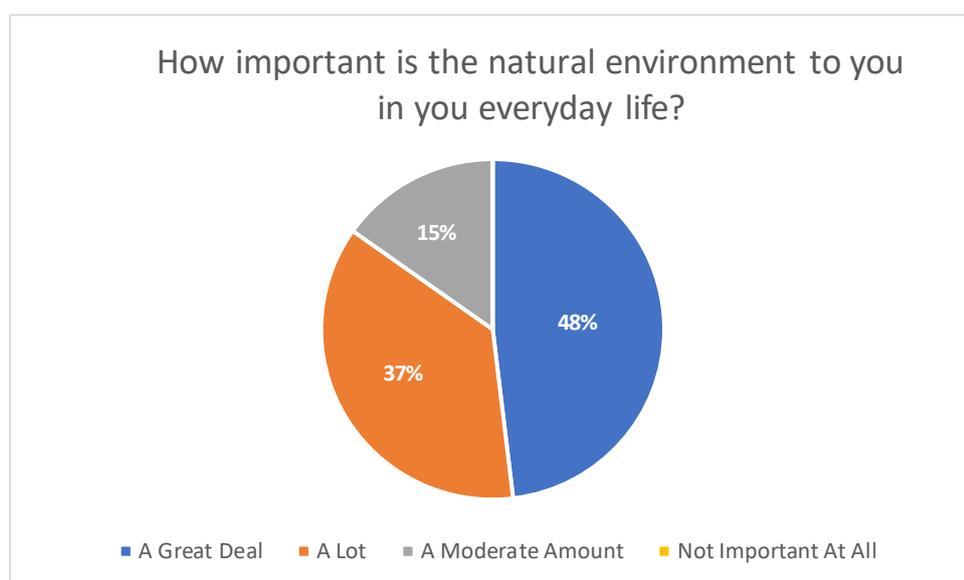
## APPENDICES

### Appendix 1. Public Consultation Results

#### i) Paper and Online Surveys

In total 79 responses were received. 74 on paper, 5 online through Google Forms. The surveys were analysed and results from the paper digitalised. A summary of responses is listed below.

#### How important is the natural environment to you in your everyday life?



#### What areas and / or features in Coolagown are most valuable to nature and biodiversity?

- The Long Road planting (apple trees, wildflower areas)
- Kilbarry Wood
- The Spout
- Barret's Dyk (Wildflower planting and bug hotel)
- Life Space Park
- Coole Holy Well
- The green in Coolagown, beautifully maintained community gardens
- Water ponds and wetlands
- Wildflower and flower bed areas in the village
- Uncut areas and wildflower margins
- Bird houses
- Bee hotel
- Pollinator friendly plants and trees
- Rainwater harvesting system
- Natural hedgerows and fields

- Trees and gardens
- Longer unmown grass
- Awareness raising in the community.
- The stream (Colitrum which flows into River Bride)
- Clear watercourses with good water quality, diversity of native flora and fauna
- Bottle bank for recycling
- Road verges
- Ribbon Wood area

**What do you think are the biggest threats and challenges to biodiversity in Coolagown?**

- Traffic volume, speed, noise and fumes. Heavy load traffic passing through.
- Traffic driving on grass margins and impeding on wildflowers.
- Littering and pollution. Seeing more of fly tipping locally/
- Climate change
- Habitat loss
- Decline in wetlands and forests.
- Poor management of hedgerows, one side of roads getting rid of hedgerows, hedgerows being cut too low and in nesting season (though less common now)
- Pollution of the stream (Colitrium). Water pollution
- Pollution from slurry and sprays
- Intensive agriculture; monoculture, clearing of hedgerows for agricultural purposes, over usage of Nitrates, contributing to loss of habitats.
- Manicured greens
- Weedkiller, fertilisers, pesticides
- Grazing
- Non deciduous foresting
- New buildings, suburban type infrastructure like plastic fencing
- Concrete and filling in drain ditches.
- Removal of ditches
- Lack of awareness and participation
- People taking advantage of bottle and can recycling and creating waste/ rubbish.
- Fly tipping “seeing more of locally unfortunately”
- Lack of cooperation from people
- “People taking advantage of bottle & can recycling stations and creating waste and rubbish – could a camera be installed and help keep our community beautiful”
- “People in Coolagown are very protective and appreciative of their wonderful environment”
- “ I think a commendable effort has already been made in Coolagown”

**Do you encourage biodiversity in your garden or street and if so, what measures do you undertake?**

- Involvement in the Glas scheme and the latest Acres scheme. Area fenced off near the stream as a wildlife habitat.
- Planting and encouraging growth of native shrubs, hedges, trees including apple trees.
- Choosing native flowering plants that attract pollinators.
- Planting trees and hedges every year around the farm

- Pond
- Vegetable garden
- Flower beds
- Designated area left to grow wild (15 respondents)
- Growing wildflowers and bee friendly plants, planting Bee Bombs (native wildflower mixes) (23 respondents)
- Only cutting grass occasionally, reduced mowing, no mow areas
- Don't cut lawn too tight or often.
- Cutting the lawn in sections leaving sections of wildflowers for bees and insects
- Leave apples on ground for hedgehogs to collect.
- Leaving areas grow wild, having a wild garden.
- Green areas
- Leaving woodlands in natural state
- Using no or little chemicals ie. Weed killers, harsh fertilisers, pesticides. Using natural weed killers
- Sensible approach to biodiversity on roads, road margins and hedge cutting while also in the interest of motorists, cyclists and pedestrians' safety.
- Bird boxes, insect hotels, bird feeders and seed baskets
- Let ditches on property grow wild.
- Compost grass cuttings and house waste
- Biodiversity strip in fields on farm in Ballymurphy BIOBride project.
- "A 3 acre wildlife habitat has been left ungrazed on the farm for the past 10 years"

**Please list any sites in your locality that you would like to see improved for nature, biodiversity and public amenity**

- "Bee hives could be a positive initiative, is there a site away from residential areas that could support this. There are many sites suitable for growing bee/butterfly friendly plants and easier option than bee hives – every family could grow one plant"
- More advice. More trees and bushes that are good for biodiversity in gardens grow more hedges with native species"
- Rathbarry Wood
- "Bees- is there an area that a beehive could be incorporated safely and securely"
- Coole Well
- "Extend wildflowers to the full length of the long road on both sides where possible. Raised flower bed at McDonnell junction. Install beehives"
- The hedge on the Hair-Pin corner on the bottom of the long road. Also at the top when cars meet at main Dungarvan Road"
- Further dedicated areas of wildflowers
- Coole glen area
- The long road
- More bird boxes on trees
- Green areas
- We have lots of green areas in Coolagown along with wildflowers and hedgerows for wildlife to live"
- Regularly check for water quality on watercourses in area – Q Rating"

- Woodland walk and Long Road
- All public areas should be used to improve the environment and increase biodiversity
- Water feature from natural spring in village. Develop life space park on right side for wetland habitat
- More wildflowers
- Long Road
- Would like to see greenways around the area with improved public access
- Kilbarry wood, life space park, Coole Holy Well, Residential Gardens
- Clean Colitum stream
- Kilbarry Wood
- “Our amenity areas could be managed to encourage more biodiversity although I see this is being done already”
- Beehives. Native wildflowers and grasses all along Long Road. Owl boxes in Kilbarry Woods.
- Gardens, hedgerows, Cill An Oir, The Paddocks
- Hedgerows. Plant wildflowers
- “Road verges opposite Coole Abby ruins, down as far as Galbin’s Corner ideally – one field away from the wildlife habitat”
- “I think there has been tremendous work done in Coolagown for nature and biodiversity. Including agricultural land in the biodiversity plan would be of enormous benefit”
- Kilbarry Wood
- Area by McDonnells
- More native trees in Kilbarry
- Explore options for green area at Cill An Oir
- Less Grass Cutting
- Trees along the road should be trimmed not cut
- Public waste and dog waste bin

“I think the area has changed hugely in the past 18 years we have been residents of Coolagown. In our opinion all the changes have been very positive and have really enhanced the area. I believe a lot of the changes have been ahead of the curve and one I always feel inclined to draw people’s attention to is the magnificent rainwater harvester located at the local church that serves the watering needs of all the plants in the common areas of our community”.

“Hedgerows allowed to grow to full height and not cut before seed (haw, etc.) is taken by birds/other mammals with 1 metre boundary setup to allow different plant species to grow that cattle prefer over monoculture grass plus allow rodents to roam for owl to hunt, shrews, voles etc. Only the bottom of the hedgerow’s to be cut to allow crowns of trees to fully develop and provide cover for animals in increasing heat”.

**Do you have any suggestion for any future actions you would like to see made for nature, biodiversity, and public amenity in Coolagown?**

- Kilbarry wood needs better track signage.
- Weed killers to be used to a minimum.
- Plant more trees.
- I would like to see nature and biodiversity being looked after.
- A walkway like a nature trail

- Ongoing surveys of the local environment and wildlife cameras
- Biodiversity Plan for two housing estates
- “I liked the long grass that was left to grow near the bottle bank. I thought it was good for the bees and other wildlife. Maybe more of this in other areas”
- “Anything that helps pollinators like bees etc. perhaps to encourage and educate people in what steps they can take in their own garden or on their own property to promote biodiversity”.
- “Tree planting in residential properties”
- “Biodiversity Action Plan for Cill An Oir and The Paddocks”
- No weedkiller/ pesticides. Install litter picking stations – one at Kilbarry Woods and in Coolagown village. Energy efficient lighting. Public awareness campaign
- “We could probably all do more in our gardens with a bit of knowledge and effort”.
- Nature garden
- Stop pollution of the Colitrum stream
- Wild gardens. If a balance can be achieved between appearance and good wildlife habitat”
- More native tree planting
- Water feature in village
- “What’s being done is great. Hard to improve on it”.
- Wetland habitat at Coole and at top of the village. Save the bees and wildlife. Protect our habitats. Clean up litter and minimise waste in households. Support local projects and markets.
- Ongoing funding for maintenance and education about habitats
- Avoid using chemicals. Plant native species.
- “The local community here are doing a fantastic job and should be applauded for their efforts”
- “Consider redeveloping the area on the Kilbarry Side of Coolagown Cross by removing trees and replanting with flowering trees, shrubs and plants”
- More butterfly gardens. More birdhouses and flower areas.
- Local school to apply for green flag school status. The long road has potential to be an even greater biodiverse landscape. Local authority should be responsible or the PPN.
- Wormery for compost
- Park and public walkways
- “Can’t think of any currently as looks like great job is being done in the village already. Maybe if verges wide enough keep length wild and inside of verge lower to be able to walk safely”
- Greenwalks
- Encourage more wildlife into the area bees, hedgehogs,
- “I wonder what can be done to mind hedgehogs. Have found a few in the garden and found a dead one on the drive”
- Continued wildling of the public green areas”
- Encourage the planting of fruiting trees/bushes which can be harvested, thereby reinforcing the vital connection between the natural world and the survival of us as a human race”
- Remove the metal fence between the church and stacks and put a flowering hedge in its place
- Biodiversity information in Rathbarry Wood and Coole Holy Well
- “We think that Coolagown is well maintained and very well kept”
- More trees, especially native oak

- Biodiversity strips in fields around Coolagown

“There has been a huge effort put in to create a beautiful area in Coolagown. I think Coolagown has a lot of biodiversity actions ongoing, but I think it would be a pity if these actions take away from the impact of the tireless efforts put into consistently over a long time to create a cared for and beautifully maintained area. I believe that Coolagown goes far beyond what the vast majority of communities do in preserving biodiversity, but a balance should be struck between the wild and the maintained so that the efforts of the Coolagown group are readily visible to those that love in and transit through our community.”

“To be fair the facilities are very good. Commit to not using any chemicals. Engage with farmers to reduce fertiliser input which is leading to run off into rivers. Also reduce/eliminate pesticide, herbicide and insecticide use. Encourage the use of species rich cover crops to lower inputs into the soil and not disturb the soil therefore increasing carbon sequestration.”

## ii) Public Consultation Meeting

### Community Ideas and Feedback for Actions for the Biodiversity Action Plan

#### Public Consultation Meeting Results

##### 1. Vision Statement

*“What do I want my local area to look like in 5 years from now?”*

- Be aspirational
- 50% grounded
- 50% outlandish

*“What needs to happen in 3 years, 1 year to achieve this vision?”*

Summary of group discussions:

#### **Lifespace Park**

The group would like more signage of the biodiversity in the area. Install bat boxes and hedgehog boxes in the area.

There is a rainwater harvesting feature which collects and distributes rainwater from the roof of the village church. If possible, the rainwater system could be used or a water feature for aquatic wildlife. A natural spring in the spout area across McDonnell’s.

#### **Cooles Holy Well**

The group would like to maintain and enhance the area for biodiversity, putting owl boxes on the mature oaks, and regularly test and monitor the water quality of the stream that runs through this site.

#### **The Spout**

There used to be an open stream towards Kilbarry. The group would like to open this up again if feasible and keeping road safety in mind, to encourage wildlife associated with aquatic habitats, and natural aquatic plants.

### **The Paddocks**

The group wants to increase wildlife, especially more bees, and get hedgehogs back to the area. To put up bird boxes and create a wildflower meadow on the amenity grasslands at the end of the Paddocks. It was suggested planting native fruit bearing hedges and shrubs beneficial to wildlife and the residents will be able to harvest the fruits.

### **Cill An Oir**

The group wants to create a wildflower meadow or let the amenity grasslands grow wild while leaving a central area for playing and recreation. They want to plant more trees.

### **Kilbarry Woods**

The group expressed Kilbarry woods is already beautiful. They would like to encourage more wildlife, by for example installing bat boxes, owl boxes, leaving log piles for insects and more.

## **2. Goals & Problems**

*“What do I want to achieve in my area”.* Be specific eg. *“I want to encourage more bats in the area.”*

*“What are the problems affecting my area?”* Be specific.

*“What problems will prevent us from achieving our vision/goals?”*

Summary of group discussions:

### **Kilbarry Woods**

Clear out the Spruce trees to bring in more sunlight.

Install more owl boxes, and seek advice and guidance on how many boxes to install, suitable locations etc.

Open the stream from the spout and improve the existing habitat for biodiversity such as by changing depth. Introduce any other native species into the stream.

### **Coole Holy Well**

The group expressed a problem is that residents must drive to enjoy this area, which creates more traffic and pollution. It is currently unsafe to walk along the road. It was suggested installing traffic calming measures or a footpath from the Holy Well to the Spout.

The group would like to introduce a beehive to the area, at a safe distance so the bees do not disturb visiting locals. The beehive can be used for education purposes for the community and local schools. Guidance would be needed on how to introduce the beehive.

### **Lifespace Park**

The group would like to create a wetland feature. It was noted drought in summer could be a problem.

They would like to leave log piles for wildlife, but a problem is people robbing them for fire fuel. A solution could be putting up information signs to explain why the log piles are there and their benefit to wildlife.

### **Cill An Oir/The Paddocks**

The group would like to plant a wildflower meadow and cut hedges and grass less often. Advice would be needed on how to maintain a hedgerow.

### 3. Actions

“What actions do we to take to achieve our goals?”

- Timeframe.
- Scale.

#### **Kilbarry Wood**

Goal- More nesting boxes to attract more owls. Problem is knowing how many are needed, where to position them and sourcing suitable boxes. Receive guidance and check with Birdwatch Ireland for advice.

#### **Lifospace Park**

Goal – Devise more signage on biodiversity including a map showing the area.

#### **Holy Well**

Goal- Increase wildlife. Introducing a beehive of native *Melifera melifera* in permission with landowners.

#### **The Spout**

Goal- Open the natural stream back up if possible. Receive guidance form an ecologist on which native species to introduce into it and what can be done to do this.

Goal- Plant native trees along the existing hedgerow, and receive guidance for which native species to plant, and how to cut and maintain it. Find out if there is a grant or funding for this.

Goal- Wildflower meadow and leaving an area grow wild to allow local native species to grow. Plant more trees.

### **Group Discussion Results**

The following results were written on sticky notes during group discussions of the public consultation meeting.

#### **Kilbarry Wood**

**Goal 1-** Thin spruce to allow more light in.

**Problem–** Coillte may not agree.

**Actions–** Contact Coillte to see about thinning spruce to allow more light in.

**Goal 2-** More nesting boxes to attract more owls.

**Problem –** Identify how many boxes are needed, where to position them and how to source suitable boxes.

**Actions-** Source boxes suitable for owls. Check with Birdwatch Ireland for guidance.

#### **The Spout**

**Goal 1-** Open the stream back up from the spout or extend it.

**Problem -** Ask council for permission

**Action** - Seek expert advice on the depth and flow of the water feature, and native aquatic plants to introduce.

### **The Paddocks**

**Vision what the area looks like 5 years from now:** *“Increased wildlife, especially insects like bees and hedgehogs. Bird boxes.”*

**Goal 1** – Wildflower Meadow

**Actions** – Reduce mowing, plant native Irish seeds.

**Goal 2** – Hedgerows & Fruit Forest

**Problem-** Identifying what species to plant, how to plant these, and how to maintain for the residents and the wildlife. Where to get, and how to fund.

**Actions-** Planting shrubs with edible fruits amongst the tree edge. Eg., blackthorn, rose hips (like dog roses), elder, hawthorn, hazelnut, wild strawberry, raspberry, bilberry, apple trees, sweet chestnuts. Identify where to source and if funding is available.

**Goal 3** – Log Piles

**Goal 4** – Bird Boxes

**Problem** – People worried about rats

### **Lifespace Park**

#### **Goals**

Signage – Main map of area with full details. Map of biodiversity at the car park.

Improve the existing butterfly corner.

Create a water / wetland feature for example by using rainwater harvested in the village from the rainwater harvesting project, to support local wildlife and enhance biodiversity.

Install Hedgehog Boxes

Install Bat Boxes

Install Owl Boxes

Make log piles to attract wildlife such as invertebrates and hedgehogs.

#### **Problems**

Drought in the summer months could make rainwater supply unreliable to maintain the water feature.

Wood from log piles can be robbed for firewood.

Knowledge on how to maintain hedgehog boxes, especially in winter these might get waterlogged.

#### **Actions**

Build a natural wetland area and identify native aquatic plants to plant.

Devise signage ie. A biodiversity map showing the area and information on wildlife present.

Source wood for the log piles, secure them and produce and install signage on them to educate and prevent robbing.

Guidance on hedgehog boxes, bat boxes, owl boxes, and creating wetlands.

Build the hedgehog, bat and owl boxes and identify suitable locations for them.

## Coole Holy Well

**Vision:** “We want to increase the number of bats in our area. We think an owl box would also be an addition”

Goal 1 - Install Bat boxes

Goal 2 - Install Owl boxes

Goal 3- Install Hedgehog hibernation box

Goal 4 - Install a ramp or easy access point for wildlife out of water

Goal 5 - Introduce a beehive of native *Melifera melifera* with permission with landowners.

Goal 6 - Traffic calming measures (Contact the council, speed camera?, rumble strip?, signs)

Goal 7 - Pathway from the spout across McDonnell’s to Coole Holy Well.

Goal 8- Identify what plants could be brought in

Goal 9- Guidance on how to maintain the area for wildlife

### **iii) Event at Local School**

The following is the Coolagown Biodiversity Report outlining recommended actions for Kilmagner National School to protect and enhance habitats and biodiversity, provided by Albert Nolan after visiting Kilmagner National School for a nature workshop as part of the biodiversity action plan.

## **Coolagown Biodiversity Report**

### **Recommendations for Kilmagner National School.**

**Introduction.** Kilmagner National School is located on the busy N72 road just a few km from the village of Coolagown. The school is blessed with a large space at the back of the school that functions both as a playing pitch and a space where the students can discover and have fun in nature.

On the day of my visit to the school I was thrilled to see that as part of their daily break the kids were allowed dig with small trowels in the soil, and all came away with muddy hands after the workshop.

There is a tall hedgerow along the boundary, and this is a brilliant wildlife habitat for birds, insects and bats.

**Recommendations. Erect a Polytunnel.** The school were very interested in putting up a polytunnel. This could be used for growing vegetables and included as part of the schools healthy eating policy.

This would also help develop their growing skills and increase contact with the soil and nature.

**Sensory space.** This space could also be used as a sensory space by the addition of a few chairs and tables. This space will be all weather allowing time out in nature and away from the busy school. It could also be a space to relax, sit and read.

**Planting for tidy towns.** The students could also grow pollinator friendly flowers for planting around the school or in a space in conjunction with the tidy towns.

**Recommendations. Plant an Edible Grove.** The students could create an edible grove with small trees and shrubs. When they mature, they would provide berries and nuts for birds and animals and flowers for pollinators.

**Climate Action.** Edible groves have many benefits for the environment and biodiversity.

The fruits can be picked and eaten by the community helping to reduce food miles.

This grove would be pollinator friendly as the flowers will provide pollen and nectar for bees, butterflies, moths and other insect species.

The different fruits will be eaten by birds like thrushes and starlings and also animals like foxes.

**Recommended species.** Gooseberry. Hazel. Blackcurrant. Elderberry. Flowering currant. Crab apple.

Mulch with cardboard and bark mulch for the first year to keep down grass. If the weather is very dry it will need some watering, but the mulch will help retain water.

**Recommendation.** Pollinator friendly bulbs could also be planted between the shrubs, and these would naturalize and provide additional pollen and nectar for bees.

Crocus, snowdrop, bluebell and grape hyacinth are all pollinator friendly species.

**Hedgerow.** There is a mature hedgerow forming part of the boundary of the school. This is a great natural resource and would make an ideal outdoor classroom.

The students could monitor the hedgerow in the different seasons and record, draw and photograph any plants or creatures they find.

**Vegetable beds at front of School.** The school has three fine beds and all of the vegetables and flowers could be started in the proposed polytunnel and used to plant up these beds.

## Appendix 2. Ecological Surveys - List of Species

Species recorded during the bird, mammals, insect and botanical surveys undertaken as part of the Coolagown Biodiversity Action plan in the study sites; 1. The Spout, 2. Cill An Oir, 3. The Paddocks, 4. The Long Road, 5. Coole Holy Well, 6. Lifespace Park, 7. Kilbarry Wood.

### Birds

Table 1: Birds recorded in 2023 by Alex Johns in Coolagown, colour coded as by BoCCI 202-2026 birds of conservation priority.

Common Name	Latin Name	BoCCI	Annex-I	Sites Recorded
Barn Swallow	<i>Hirundo rustica</i>	Amber	No	Kilbarry Wood Lifespace Park Long Road Cill An Oir
Blackbird	<i>Turdus merula</i>	Green	No	Kilbarry Wood Coole Holy Well Long Road
Blackcap	<i>Sylvia atricapilla</i>	Green	No	Kilbarry Wood Coole Holy Well
Blue Tit	<i>Cyanistes caeruleus</i>	Green	No	Kilbarry Wood Cill An Oir Long Road Coole Holy Well
Bullfinch	<i>Pyrrhula pyrrhula</i>	Green	No	Kilbarry Wood
Buzzard	<i>Buteo buteo</i>	Green	No	Kilbarry Wood
Chaffinch	<i>Fringilla coelebs</i>	Green	No	Kilbarry Wood Cill An Oir The Paddocks Coole Holy Well Long Road
Chiffchaff	<i>Phylloscopus collybita</i>	Green	No	Kilbarry Wood Long Road

				Coole Holy Well
Coal Tit	<i>Periparus ater</i>	Green	No	Kilbarry Wood
Collared Dove	<i>Streptopelia decaocto</i>	Green	No	Kilbarry Wood
Dunnock	<i>Prunella modularis</i>	Green	No	Kilbarry Wood Coole Holy Well
Goldcrest	<i>Regulus regulus</i>	Amber	No	Kilbarry Wood The Paddocks Coole Holy Well
Goldfinch	<i>Carduelis carduelis</i>	Green	No	Cill An Oir The Spout The Paddocks
Great Tit	<i>Parus major</i>	Green	No	Kilbarry Wood Long Road The Paddocks Coole Holy Well
Greenfinch	<i>Chloris chloris</i>	Amber	No	Cill An Oir
Hooded Crow	<i>Corvus cornix</i>	Green	No	Kilbarry Wood
House Martin	<i>Delichon urbicum</i>	Amber	No	Cill An Oir Long Road
House Sparrow	<i>Passer domesticus</i>	Amber	No	Lifespace Park Cill An Oir Long Road
Jackdaw	<i>Corvus monedula</i>	Green	No	Kilbarry Wood Lifespace Park Long Road The Spout Coole Holy Well
Long-tailed Tit	<i>Aegithalos caudatus</i>	Green	No	Lifespace Park
Magpie	<i>Pica pica</i>	Green	No	Kilbarry Wood
Meadow Pipit	<i>Anthus pratensis</i>	Red	No	Kilbarry Wood

				Long Road
Pied Wagtail	<i>Motacilla alba</i>	Green	No	Lifespace Park Cill An Oir The Paddocks
Robin	<i>Erithacus rubecula</i>	Green	No	Kilbarry Wood Lifespace Park Cill An Oir Long Road Coole Holy Well
Rook	<i>Corvus frugilegus</i>	Green	No	Kilbarry Wood Long Road The Spout
Song Thrush	<i>Turdus philomelos</i>	Green	No	Kilbarry Wood Coole Holy Well
Starling	<i>Sturnus vulgaris</i>	Amber	No	Cill An Oir
Treecreeper	<i>Certhia familiaris</i>	Green	No	Coole Holy Well
Willow Warbler	<i>Phylloscopus trochilus</i>	Amber	No	Kilbarry Wood Lifespace Park Coole Holy Well
Woodpigeon	<i>Columba palumbus</i>	Green	No	Kilbarry Wood The Spout Coole Holy Well
Wren	<i>Troglodytes troglodytes</i>	Green	No	Kilbarry Wood Lifespace Park Long Road Coole Holy Well
Yellowhammer	<i>Emberiza citrinella</i>	Red	No	Kilbarry Wood

**Total Number of Species: 32**

## Mammals

Table 2: Mammals recorded in Coolagown in 2023 by David Daly.

Mammals			
Common Name	Scientific Name	Sites Recorded	Comments
Badger	<i>Meles meles</i>	Kilbarry Wood	Hair noted in barbed wire along mammal track from woodland int surrounding agricultural field at ITM58858 3597406
Fox	<i>Vulpes vulpes</i>	Kilbarry Wood Hedgerow Area Long Road	Scat noted throughout the woodland Scat noted along roadside verge at hedgerow site
European Rabbit	<i>Oryctolagus cuniculus</i>	Kilbarry Wood Hedgerow Area Long Road	Live rabbits recorded in fields adjacent to woodland Burrows along roadside verge ITM587578 596503
Deer	N/A	Kilbarry Wood	Droppings recorded along forest track to the south of the woods
Eurasian Otter	<i>Lutra lutra</i>	Coole Holy Well	Otter spraint on rock near bridge
Non-descript mammal burrows	N/A	Kilbarry Wood	Throughout woodland, likely rabbits and mice
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Kilbarry Wood Hedgerow Area Long Road Coole Holy Well	Commuting and foraging in Kilbarry Wood Recorded commuting along treeline at hedgerow site Foraging, with social calls at the well site
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	Kilbarry Wood Coole Holy Well	Commuting and foraging in Kilbarry Wood Foraging, with social calls at the well site
Leisler's Bat	<i>Nyctalus leisleri</i>	Kilbarry Wood Lifespace Park	Commuting and foraging in Kilbarry Wood Observed foraging over agricultural field by Lifespace Park
Brown Long-eared Bat	<i>Plecotus auratis</i>	Kilbarry Wood	Commuting and foraging in Kilbarry Wood
<b>Total Number of Species: 9</b>			

## Invertebrates

Table 3: Invertebrates recorded Coolagown in 2023 by Albert Nolan.

Invertebrates		
Common Name	Scientific Name	Sites Recorded
<b>Butterflies</b>		
Green-veined White Butterfly	<i>Pieris napi</i>	Cill An Oir Coole Holy Well
Speckled Wood Butterfly	<i>Pararge aegeria</i>	Kilbarry Wood Lifespace Park Cill An Oir Coole Holy Well
Ringlet Butterfly	<i>Aphabtopus hyperantus</i>	Kilbarry Wood
Meadow Brown Butterfly	<i>Maniola jurtina</i>	Kilbarry Wood
Large White Butterfly	<i>Pieris brassicae</i>	Lifespace Park Cill An Oir
Peacock Butterfly	<i>Aglais io</i>	Lifespace Park Cill An Oir
Small Tortoiseshell Butterfly	<i>Aglais urticae</i>	Lifespace Park Cill An Oir Coole Holy Well
Red Admiral Butterfly	<i>Vanessa atalanta</i>	Lifespace Park Cill An Oir
Painted Lady Butterfly	<i>Vanessa cardui</i>	Cill An Oir
<b>Moths</b>		
Buff-tip Moth	<i>Phalera bucephala</i>	Kilbarry Wood
White Ermine Moth	<i>Spilosoma lubricipeda</i>	Kilbarry Wood
<b>Bumblebees</b>		
Common Carder Bumblebee	<i>Bombus pascuorum</i>	Lifespace Park Cill An Oir Coole Holy Well
White-tailed Bumblebee	<i>Bombus lucorum</i>	Lifespace Park Cill An Oir Coole Holy Well
<b>Beetles</b>		
Soldier Beetle	<i>Rhagonycha flava</i>	Kilbarry Wood
Click Beetle	<i>Athous haemorrhoidalis</i>	Kilbarry Wood
Seven-spot Ladybird	<i>Coccinella septempunctata</i>	Cill An Oir

Nettle Weevil	<i>Phyllobius pomaceus</i>	Kilbarry Wood
<b>Flies</b>		
Hoverfly sp.	<i>Helophilus pendulus</i>	Lifespace Park
<b>Shieldbugs</b>		
Hawthorn Shieldbug	<i>Acanthosoma haemorroidale</i>	Lifespace Park
<b>Spiders</b>		
Garden Cross Spider	<i>Dysdera crocata</i>	Coole Holy Well
Crab Spider	<i>Misumena vatika</i>	Coole Holy Well
<b>Additional Insect Species</b>		
Harvestman	Unknown	Lifespace Park
Common Rough Woodlouse	<i>Porcellio scaber</i>	Kilbarry Wood Lifespace Park
Pill Bug	<i>Armadillidium vulgare</i>	Kilbarry Wood Lifespace Park
Centipede	Unknown	Kilbarry Wood Lifespace Park
Common Frog Hopper	<i>Philaenus spumarius</i>	Coole Holy Well
Blackfly	<i>Aphis fabae</i>	Coole Holy Well
Lacewing	<i>Chrysoperla carnea</i>	Coole Holy Well
Greenbottle Fly	<i>Lucilia caesar</i>	Coole Holy Well
Bluebottle Fly	<i>Calliphora erythrocephala</i>	Coole Holy Well
Crane-fly	<i>Tipula maxima</i>	Coole Holy Well
Mosquito	<i>Culex sp.</i>	Coole Holy Well
Notch horned cleg Fly	<i>Haematopota pluvialis</i>	Coole Holy Well
Yellow ophion	<i>Ophion luteus</i>	Coole Holy Well
<b>Gall Wasps</b>		
Oak Apple Gall Wasp	<i>Biorhiza pallida</i>	Kilbarry Wood
Spangle Gall Wasp (Oak)	<i>Neuroterus quercusbaccarum</i>	Kilbarry Wood
<b>Total Number of Species: 36</b>		

## Plants

Table 4: Plants recorded in Coolagown in 2023 by Craig Gibbon.

Common Name	Scientific Name	Sites Recorded
Apple	<i>Malus domestica</i>	The Long Road
Ash	<i>Fraxinus excelsior</i>	Kilbarry Wood Coole Holy Well
Barren Strawberry	<i>Potentilla sterilis</i>	Kilbarry Wood
Beech	<i>Fagus sylvatica</i>	Kilbarry Wood Cill An Oir Coole Holy Well
Billberry	<i>Vaccinium myrtillus</i>	Kilbarry Wood
Birch	<i>Betula pubescens</i>	Kilbarry Wood
Bitter Vetch	<i>Lathyrus linifolius</i>	Kilbarry Wood
Blackthorn	<i>Prunus spinosa</i>	Kilbarry Wood Lifespace Park
Blue bells	<i>Hyacinthoides non-scripta</i>	Kilbarry Wood Coole Holy Well
Bracken Fern	<i>Pteridium aquilinum</i>	The Long Road Kilbarry Wood
Bramble	<i>Rubus fruticosus agg.</i>	Kilbarry Wood Lifespace Park Coole Holy Well The Long Road Cill An Oir
Buttercup (Meadow)	<i>Ranunculus acris</i>	Lifespace Park The Long Road
Buttercup (Creeping)	<i>Ranunculus repens</i>	Kilbarry Wood Coole Holy Well
Butterfly Bush	<i>Buddleia davidii</i>	Lifespace Park
Celandine	<i>Ficaria verna syn.</i>	Kilbarry Wood
Chicory	<i>Chicorium intybus</i>	The Long Road
Cleaver	<i>Galium aparine</i>	Kilbarry Wood Lifespace Park Coole Holy Well

Common Bird's Foot Trefoil	<i>Lotus corniculatus</i>	Lifespace Park Cill An Oir
Common Dog Violet	<i>Viola riviniana</i>	Kilbarry Wood
Common Figwort	<i>Scrophularia nodosa</i>	Kilbarry Wood
Common Reed	<i>Phragmites australis</i>	Lifespace Park
Common Sorrel	<i>Rumex acetosa</i>	The Long Road
Common Vetch	<i>Vicia sativa subsp. Segetalis</i>	Kilbarry Wood
Cow Parsley	<i>Anthriscus sylvestris</i>	Kilbarry Wood The Long Road
Creeping Cinquefoil	<i>Potentilla reptans</i>	Lifespace Park
Creeping Thistle	<i>Crisium arvense</i>	The Long Road
Daisy	<i>Bellis perennis</i>	Kilbarry Wood The Long Road Cill An Oir Lifespace Park
Dandelion	<i>Taraxacum spp.</i>	Lifespace Park Cill An Oir Kilbarry Wood
Duckweed	<i>Lemna minor</i>	The Long Road
Early Dog Violet	<i>Viola reichenbachiana</i>	Kilbarry Wood
Elder	<i>Sambucus nigra</i>	Kilbarry Wood Coole Holy Well
Enchanter's Nightshade	<i>Circaea luteniana</i>	Kilbarry Wood Coole Holy Well
Fern sp. (Common Polypody)	<i>Polypodium vulgare</i>	Kilbarry Wood
Fern sp. (Hard Fern)	<i>Blechnum spicant</i>	Kilbarry Wood
Fern sp. (Broad Buckler Fern)	<i>Dryopteris dilatata</i>	Kilbarry Wood Coole Holy Well
Fern sp. (Male Fern)	<i>Dryopteris filixmas</i>	Kilbarry Wood Coole Holy Well
Fern sp. (Soft Shield Fern)	<i>Polystichum setiferum</i>	Kilbarry Wood Coole Holy Well
Fern sp. (Harts-tongue Fern)	<i>Asplenium scolopendrium</i>	Kilbarry Wood Coole Holy Well
Fern sp. (Maidenhair Spleenwort)	<i>Asplenium trichomanes</i>	Coole Holy Well

Flowering Current	<i>Ribes sanguineum</i>	Kilbarry Wood
Foxgloves	<i>Digitalis purpurea</i>	Kilbarry Wood
Germander Speedwell	<i>Veronica chamaedrys</i>	Kilbarry Wood
Gorse	<i>Ulex europaeus</i>	Kilbarry Wood
Great Willow Herb	<i>Epilobium hirsutum</i>	Lifespace Park The Long Road
Greater Stitchwort	<i>Stellaria holostea</i>	Kilbarry Wood
Greater Wood Rush	<i>Luzula Sylvatica</i>	Kilbarry Wood
Ground Elder	<i>Aegopodium podagraria</i>	Kilbarry Wood
Groundsel	<i>Senecio vulgaris</i>	Lifespace Park
Hawthorn	<i>Crateagus monogyna</i>	Kilbarry Wood Lifespace Park The Long Road
Hazel	<i>Corylus avellana</i>	Lifespace Park The Long Road
Hedge Bindweed	<i>Calystegia sepium</i>	Lifespace Park The Long Road Coole Holy Well
Hedge Woundwort	<i>Stachys sylvatica</i>	Lifespace Park Coole Holy Well
Hemlock	<i>Conium maculatum</i>	Kilbarry Wood
Herb Robert	<i>Geranium robertianum</i>	Kilbarry Wood Lifespace Park The Long Road Coole Holy Well
Hogweed	<i>Heracleum sphondylium</i>	The Long Road
Holly	<i>Ilex aquifolium</i>	Kilbarry Wood Lifespace Park
Honeysuckle	<i>Lonicera periclymenum</i>	Kilbarry Wood The Long Road
Hop Trefoil	<i>Frifolium campestre</i>	Lifespace Park
Horse Chestnut	<i>Aesculus hippocastanum</i>	Coole Holy Well
Irish Ivy	<i>Hedera hibernica</i>	Kilbarry Wood Lifespace Park

		The Long Road Coole Holy Well
Knapweed	<i>Centaurea nigra</i>	Lifespace Park
Larch	<i>Larix spp.</i>	Kilbarry Wood
Lesser Spearwort	<i>Ranunculus flammula</i>	The Long Road
Lesser Celandine	<i>Ranunculus ficaria</i>	Kilbarry Wood
Long Stalked Crane's Bill	<i>Gernaium columbinum</i>	Lifespace Park
Lords and Ladies	<i>Arum maculatum</i>	Kilbarry Wood Coole Holy Well The Long Road
March Ragwort	<i>Jacobeia aquatica</i>	Coole Holy Well
Marsh Marigold	<i>Caltha palustris</i>	The Long Road
Marsh Woundwort	<i>Stachys palustris</i>	Coole Holy Well
Meadowseet	<i>Filipendula ulmaria</i>	Kilbarry Wood The Long Road
Montbretia	<i>Crocsmia x Cocosmiiflora</i>	The Long Road Coole Holy Well
Mountain Ash (Rowan)	<i>Sorbus aucuparia</i>	Lifespace Park
Navalwort	<i>Umbelicus rupestris</i>	Kilbarry Wood Coole Holy Well
Nettle	<i>Urtica dioica</i>	Lifespace Park
Oak	<i>Quercus ronur</i>	Kilbarry Wood Coole Holy Well
Oppostie-leaved Golden Saxifrage	<i>Chrysosplenium oppositifolium</i>	Coole Holy Well
Ox Eye Daisy	<i>Leucanthemum vulgare</i>	Lifespace Park The Long Road
Perforate St John's Wort	<i>Hypericum perforatum</i>	Kilbarry Wood Lifespace Park
Pignut	<i>Conopodium majus</i>	Kilbarry Wood
Pineapple Weed	<i>Matricaria discoidea</i>	Lifespace Park
Plantain (Broadleaf)	<i>Plantago major</i>	Kilbarry Wood Lifespace Park The Long Road

Plantain (Ribwort)	<i>Plantago lanceolata</i>	Kilbarry Wood The Long Road
Prickly Sow Thistle	<i>Sonchus asper</i>	Lifespace Park
Purple Loosestrife	<i>Lythrum salicaria</i>	The Long Road
Pussy Willow	<i>Salix caprea</i>	Lifespace Park The Long Road
Red Bartsia	<i>Odontites vernus</i>	The Long Road
Red Campion	<i>Silene dioica</i>	The Long Road
Red Clover	<i>Trifolium pratense</i>	Kilbarry Wood Cill An Oir The Long Road
Ribbed Meliot	<i>Melilotus officinali</i>	The Long Road
Rowan	<i>Sorbus aucuparia</i>	Kilbarry Wood
Scots Pine	<i>Pinus sylvestris</i>	Kilbarry Wood
Self Heal	<i>Prunella vulgaris</i>	Kilbarry Wood Cill An Oir The Long Road
Sheep's Sorrel	<i>Rumex acetosella</i>	Kilbarry Wood Coole Holy Well
Short-Fruited Willowherb	<i>Epilobium obscurum</i>	Lifespace Park
Silverweed	<i>Potentilla anserina</i>	Lifespace Park The Long Road
Sitka Spruce	<i>Picea sitchensis</i>	Kilbarry Wood
Soft Rush	<i>Juncus effusus</i>	Kilbarry Wood The Long Road
Spear Thistle	<i>Cirsium vulgare</i>	Lifespace Park The Long Road
Stinging Nettle	<i>Urtica dioica</i>	Kilbarry Wood Cill An Oir The Long Road
Sweet Chestnut	<i>Castanea sativa</i>	Kilbarry Wood
Sycamore	<i>Acer pseudoplatanus</i>	Kilbarry Wood Lifespace Park
Syticky Mouse Ear	<i>Cerastium glomeratum</i>	Kilbarry Wood
Trailing Tormentil	<i>Potentilla anglica</i>	Kilbarry Wood

Tufted Vetch	<i>Vicia cracca</i>	The Long Road
Water Cress	<i>Nasturtium officinale</i>	Coole Holy Well The Long Road
White Clover	<i>Trifolium repens</i>	Kilbarry Wood Lifespace Park The Long Road Cill An Oir
Wild Carrot	<i>Daucus carota</i>	Lifespace Park The Long Road
Winter Heliotrope	<i>Petasites pyrenaicus</i>	The Long Road
Wood Anemone	<i>Anemone nemerosa</i>	Kilbarry Wood
Wood Avens	<i>Geum avens</i>	Kilbarry Wood Coole Holy Well
Wood Sage	<i>Teucrium scorodonia</i>	Kilbarry Wood
Wood Sedge	<i>Carex sylvatica</i>	Kilbarry Wood
Wood Sorrel	<i>Oxalis acetosella</i>	Kilbarry Wood
Wood Speedwell	<i>Veronica montana</i>	Kilbarry Wood Lifespace Park
Woodruff	<i>Galium odoratum</i>	Kilbarry Wood
Yarrow	<i>Achillea millefolium</i>	The Long Road
Yellow Iris	<i>Iris pseudacorus</i>	Lifespace Park
Yellow Pimpernel	<i>Lysmachia nemorum</i>	Kilbarry Wood
<b>Total Number of Species = 118</b>		

### Appendix 3. Maps



Figure 1: Map of Coolagown showing the seven sites surveyed for the Coolagown Biodiversity Action Plan.

# Wildlife in Coolagown

## 2. Cill an Oir 3. The Paddocks

### Starling (*Sturnus vulgaris*)

Starlings are protected under the Wildlife Act (1976, amended 2000) and are amber listed under Birds of Conservation Concern in Ireland. Found in a wide range of habitats including woodlands, grasslands, farms, and suburbs foraging fruits, seeds cereals and insects.

### Barn Swallow (*Hirundo rustica*)

The barn swallow is protected under the Wildlife Act (1976, amended 2000) and is amber listed under Birds of Conservation Concern in Ireland. This migrant from South Africa can be seen from March to September over farmlands, lakes, rivers, and suburbs foraging insects like midges in flight and building bowl shaped nests of mud under rafters of houses and barns.

### Seven Spot Ladybird (*Coccinella septempunctata*)

This is one of the common and widespread of Ireland's 19 ladybird species, and can often be seen in many habitats including gardens, hedgerows, and field margins from March feeding on Aphids. They hibernate during the winter months.

### Common Carder Bumblebee (*Bombus pascuorum*)

There are 21 bumblebee species in Ireland. This common species is found in many habitats with flowers including gardens, parks, woodland edges and meadows.

## 5. Coole Holy Well

### Willow Warbler (*Phylloscopus trachilus*)

Amber listed under Birds of Conservation Concern in Ireland. Visitor to Ireland from April to September migrating from central and southern Africa, often found in sites of willow and scrub, woodlands, and hedgerows feeding on insects and nesting in sheltered areas close to or on ground.

### Bluebell (*Hyacinthoides non-scripta*)

This native bluebell forms carpets in woodlands and along hedges. As a perennial bulb it will grow in the same location for several years. Its bell shaped violet flowers bloom from April to June and are an important early nectar source for pollinators like bees and butterflies.

### Eurasian Otter *Lutra lutra*

The Eurasian Otter is of high conservation interest, protected under the EU Habitats Directive (92/43/EEC), Wildlife Act (1976, amended 2000), Bern Convention Annex II, and CITES Annex I. It lives in freshwater bodies or coastal areas with freshwater sources including rivers, lakes, and estuaries. They live in burrows known as holt, and mark their territory with spraints, feeding on various fish including stickleback, salmon, eels, and frogs. The nearby River Blackwater SAC is an important site for Otters.

## 6. Lifespace Park

### Small Tortoiseshell Butterfly (*Aglais urticae*)

Common and widespread found in many habitats including woodlands, hedgerows, grasslands and gardens. Caterpillars feed on nettles and adults can be seen in flight from March to September, feeding nectar of and pollinating a variety of flowers. These butterflies hibernate to survive winter in sheltered sites, such as tree holes and sheds.

### Peacock Butterfly (*Aglais io*)

Common, widespread butterfly found in many habitats including woodlands, hedgerows, grasslands and gardens. Caterpillars feed on nettles. Its azure eye spots help to keep away predators like birds and rodents. These butterflies hibernate to survive winter in sheltered sites, such as tree holes and sheds.

## 1. The Spout

### Speckled Wood (*Pararge aegeria*)

This widespread butterfly can be found in partially shaded woodland, hedgerows, shrubs, and gardens and can often be seen perched in pools of sunlight. Adults are in flight between April and September, and mostly feed on honeysuckle, but also Bramble, Dandelion and Ragwort for nectar.

### Common Frog (*Rana temporaria*)

Ireland's only native frog species, the Common Frog, is protected under the EU Habitats Directive (92/43/EEC) Annex V, Bern Convention Appendix III and the Wildlife Act (1976, amended 2000). This amphibian needs damp, sheltered habitats close to water, and can be found from lakes and ponds, grassland and marshes, to woodlands, heath and peatlands. In spring frogs migrate to freshwater bodies to mate and spawn, and often return to the same breeding site each year.

## 7. Kilbarry Wood

### Yellowhammer (*Emberiza citrinella*)

The Yellowhammer is declining in population in Ireland and is red listed under Birds of Conservation Concern in Ireland. It is found in a range of habitats including hedgerows, farmland, and woodland edges, feeding on seeds, grains, insects and berries.

### Bilberry (*Vaccinium myrtillus*)

Bilberry known as "Frochan" is a low growing shrub blooming from April to July with pink bell-shaped flowers and forming dark blue-purple berries in autumn which are an important food source for birds and mammals. It grows on acidic soils in woodlands, heaths and bogs.

### Buff-tip Moth (*Phalera bucephala*)

The Buff-tip moth is a night flying moth and can be seen in flight from May to July in woodland, hedgerows, and gardens. Caterpillars are hairy and black and yellow in colour, feeding on trees like Birch, Oak, and Hazel.

### Badger (*Meles meles*)

Badgers are protected under the Wildlife Act 1976 (amended 2000), and Bern Convention Appendix III. This nocturnal mammal can be found in woodland and farmland, and feeds on insects, fruits and small mammals. It lives in underground tunnels and burrows called setts.

## 4. The Long Road

### Common Pipistrelle (*Pipistrellus pipistrellus*)

One of the smallest and most common of Ireland's nine bat species, all of which are strictly protected under the EU Habitats Directive (92/43/EEC) Annex IV, and Wildlife Act (1976, amended 2000). They can be seen at dusk foraging insects like midges and moths and roost in crevices of roofs, old stone buildings and bridges, and hollows of mature trees.

### Hawthorn (*Crataegus monogyna*)

This native tree is a common hedgerow species and an important source of nectar and pollen for pollinators from June to June and red haws for birds from August.

### Honeysuckle (*Lonicera periclymenum*)

This deciduous climber can be seen weaving through other shrubs and trees of hedgerows and woodlands. The tubular, creamy to yellow, pink tinted flowers bloom from June to October and are an important food source for pollinators like butterflies and bumblebees at day and moths at night. Berries are eaten by birds like Thrushes and Bullfinches in Autumn.



This map was created for Coolagown. Map design and illustrations were created by Cork Nature Network graphic designer, Amy McCarthy.



Figure 2: Biodiversity Map of Coolagown showing the sites studied and a selection of species recorded during the ecological surveys for the Coolagown Biodiversity Action Plan. Map design and illustrations by Cork Nature Network graphic designer Amy McCarthy, content Ronja Crede.