



Kildare County Council
Comhairle Contae Chill Dara

Narraghmore Biodiversity Action Plan 2023-28



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Narraghmore Biodiversity Action Plan 2023-28

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Acknowledgements & Contact Details

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Mels of Narraghmore, The Old Hardware, St. Laurence's GAA, St. Laurences National School, Resident's Associations of Lipstown Manor, Oak Park, The Orchard, Hill view Terrace, Narraghmore Tidy Towns Volunteers & Narraghmore Development CLG.

We would also like to thank Kildare County Council for funding this Plan to help guide us in our actions going forward.

Getting Involved:

If you wish to get involved with any of the actions outlined in this Plan, please feel free to contact the following email address:

Narraghmorecommc@gmail.com

And / Or

Kildare County Council Biodiversity Officer

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Photographs

Photographs used in this Plan are courtesy of Lorraine Wyse from Narraghmore Tidy Towns, Brian Gaynor, Dr Mary O'Connor and Dr Fiona MacGowan.

Summary of Principles, Objectives and Targets

We are currently in the middle of a biodiversity crisis. This is not just a problem for countries in other parts of the world. Here in Ireland, a Biodiversity Crisis was officially declared by the Dáil in 2019. Although we lost most of our native woodland's long ago, we still are seeing declines in native biodiversity across the country. To stop this decline, we will need to increase our efforts significantly at all levels of society including at the local level.

General principles:

The following general principles guide this Plan and actions:

1. Protect what you have! As a first step, ensure the protection of the existing sites and features of biodiversity interest in the local area and the network of green corridors connecting them. Where gaps exist in the network strive to connect them.
2. Less is more! Work with, rather than against nature to make actions taken for biodiversity conservation more efficient. Areas of natural succession and 'untidy' spaces with nettles, briars, etc. are positive for nature and reduce unnecessary maintenance.
3. Manage more areas of amenity grasslands less intensively as meadow. This includes grasslands on roadside verges, parks, residential estates, gardens, commercial estates, and elsewhere in the local area.
4. Increase native tree cover where space allows in the local area.
5. Move towards the elimination of herbicide in the local area.
6. Take steps to control and eradicate invasive species in the local area.
7. Raise awareness and engage the local community on issues and actions to conserve biodiversity in the area. This can include practical volunteer events, talks and walks, children's events, etc.
8. Monitor and survey biodiversity in the area to inform decision making processes and the success of current actions.
9. Encourage and promote actions to make the community more self-sufficient and reduce its environmental footprint, including the people, landowners, businesses, and other land managers in it.
10. Try to understand the big picture and be aware that some actions considered to be beneficial may not always be of benefit to biodiversity and nature in every setting. For example, planting trees is usually a good idea, but not if we are trying to protect a rare grassland and its associated flora and fauna.
11. Remember that people can benefit from biodiversity, as much as biodiversity can benefit from people. Strive to make our community spaces, and all new developments, places that deliver a range of environmental, cultural, and economic benefits. For example, trees can improve drainage and air quality, sequester carbon, provide shade and shelter, create habitat for biodiversity, and much more.
12. A coordinated response to climate change and biodiversity decline is required and is taken into account in the preparation of this BAP. Here wherever possible actions that are beneficial to both climate change and biodiversity are recommended, helping to mitigate and adapt to climate change as well as to conserve and restore biodiversity.

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Preface to the Objectives, Targets and Actions:

This is a shared plan of action for Narraghmore community to build on recent progress and help increase biodiversity in the area. The plan has five Objectives each with specific targets and a list of actions. These targets (listed below) and actions, which are detailed in Section 3, are to be considered as guides for the community to achieve these Objectives. Their implementation is dependent on the resources available to the community of Narraghmore including volunteer time, funding, and external support. Many of the actions are proposed to be delivered as part of the Kildare LBAP Network, which is due to be established in summer / autumn 2023. Even achieving some of these targets and actions will help make Narraghmore a better place for biodiversity.

Objective 1 Make room for biodiversity in Narraghmore

Target 1.1	Make room for biodiversity and increase the scope for biodiversity learning at St Laurence's National School
Target 1.2	Make room for biodiversity in the The Band Hall / Narraghmore Community Centre
Target 1.3	Develop new opportunities for biodiversity in Mel's Hardware Store & Car Park
Target 1.4	Make room for biodiversity in residential estates and gardens
Target 1.5	Develop new opportunities for biodiversity in the village centre
Target 1.6	Manage the approach roads in a biodiversity friendly manner
Target 1.7	Develop new opportunities for biodiversity with St. Laurence's GAA
Target 1.8	Protect and strengthen existing features of biodiversity importance and links between them including Narraghmore Nature Reserve
Target 1.9	Explore opportunities for biodiversity and farm green infrastructure on surrounding farms
Target 1.10	Mitigate against the potential impacts of Ash Dieback in the community
Target 1.11	Ensure new community planting projects are carried out in a sustainable manner

Objective 2 Controlling Invasive Alien Species

Target 2.1	Take measures to control Invasive Alien Species in the community
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Objective 3 Move towards the elimination of pesticide use in the local area

Target 3.1	Move towards the elimination of pesticide use in the local area
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Objective 4 Raising awareness of biodiversity

Target 4.1	Raise awareness of local biodiversity and biodiversity projects
Target 4.2	Increase biodiversity street art and signage
Target 4.3	Work with the local authority on issues of biodiversity concern
Target 4.4	Promote and support positive actions to encourage more sustainable lifestyles and individual choices

Objective 5 Citizen Science: Collecting evidence to track change and measure success

Target 5.1	Monitor and record biodiversity and biodiversity actions taken
Target 5.2	Build the capacity within the community to manage and record biodiversity
Target 5.3	Review the Biodiversity Action Plan

Section 1: Introduction

Narraghmore (Irish: An Fhorrach Mhór) is a village in south County Kildare, Ireland. It is a village of great antiquity, and has been the scene of many historical events. Narraghmore or An Fhorrach Mhór means Place of Great Assembly. Historically Tithes and Dues would have gathered here; disputes were resolved, affiliations with borders established and legal issues, decided upon. The place of assembly was at a place where old routes and pathways intersected - and there are no less than six roads coming into Narraghmore! The Anglicisation of An Forrach Mór into N-orrhagh mor, Narraghmore came about during the Norman invasion of Ireland.

The parish of Narraghmore, is situated on the river Griese, a branch of the Barrow, and on the road from Dublin to Castledermot. The village lies 6.4km from Ballitore and has the M9 motorway and R448 road to the west and the R418 road to the east.

The population is 378 (as of latest i.e. 2016 Census expected to be updated 2022 Census). The village is served by St. Lawrence's National School which is actually located adjacent to the village of Crookstown, which is c. 3km to the south of Narraghmore. The largest Community Sports resource is St. Laurence's GAA Club which is located c. 2km to the south-west of the village. There has been a pub, grocery and hardware in Narraghmore (An Forrach Mór) since at least early 1900s. There is a Community-run shop & tearoom and Community Centre located in the Village.

The area is a rich agricultural part of the county with patches of woodlands, hedgerows, and watercourses criss-crossing the landscape which support a range of associated wildlife. The range of landowners and landscape managers will require sensitivity in delivery of this action plan. However, there is a high level of interest existing within the community for promoting biodiversity, and coupled with the high nature base, there is some very valuable work that can be done to preserve and improve the locality with regards biodiversity. This work will also likely provide a new opportunity to develop community inclusion, interaction, and plenty of very meaningful and enjoyable activity for young and old to be part of.

This Biodiversity Action Plan aims to guide the local community and stakeholders in their efforts to protect and restore some of this natural heritage and maximise the benefits that nature can provide for the people of Narraghmore. The Plan is not intended to be a static document but rather to be regularly reviewed and updated over its life.



Orange-tip butterfly – it's larval foodplant is the Cuckooflower

What is Biodiversity?

Biodiversity refers to the variety and variability of all living things including plants, animals, microbes, fungi and people. It also includes the places where plants and animals live (known as habitats), the interactions among living things (the web of life) and their environment (ecology).

Biodiversity is all around us, everywhere and in our everyday life. It forms complex systems that sustain life on Earth. Each part of the system is important no matter how small or trivial it may seem to us. Think of it as a puzzle; having a biodiverse system allows us to see the full puzzle but when we start to remove different pieces, or species, the picture loses important parts.

We rely completely on biodiversity to provide us with the basic elements we need such as clean air and water, food, fuel, building products and medicines. We also rely on it for the many free 'services' such as nutrient recycling, pollination and water filtration etc. It is therefore vital that we make space for nature in our towns, villages and countryside for us to continue living full and healthy lives.

Finally, we should respect the wonder of nature in all its glory and diversity and recognise that it has its own intrinsic value i.e. that nature has value in its own right, independent of human uses, even if it does not directly or indirectly benefit humans.

“Biodiversity underpins the functioning of the ecosystems on which we depend for food and fresh water, health and recreation, and protection from natural disasters. Its loss also affects us culturally and spiritually. This may be more difficult to quantify, but is nonetheless integral to our wellbeing” - Ban Ki-moon, Secretary General of the United Nations



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Why Protect Biodiversity?

A Biodiversity Crisis was declared by the Dáil in 2019. On the 29th May 2019, during a Dáil Eireann debate, the Minister for Culture, Heritage & the Gaeltacht Deputy Josepha Madigan made an address which included the following excerpts (the full address is available here):

<https://www.oireachtas.ie/en/debates/debate/dail/2019-05-29/35/>)

'We are losing biodiversity around the globe at a rate unprecedented in human history. The number of plants, insects, mammals, and birds that are threatened or endangered grows every year, while the land, ocean and atmosphere are being altered to an unparalleled degree.

A few weeks ago, the United Nations' platform on biodiversity and ecosystem services published its global assessment report and advised that unless action is taken to reduce the intensity of drivers of biodiversity loss, there will be a further acceleration in the global rate of species' extinction, which is already at least tens or hundreds of times higher than it has averaged in the past 10 million years.

It is not just over there in the Amazon basin or Borneo. Although we cut down our forests centuries ago, biodiversity in Ireland still demonstrates worrying and ongoing declines.... My Department reports every six years to the EU on the status of habitats and species protected by the EU habitats directive. We recently submitted the draft report for the past six years and it shows that Irish habitats, especially the peatlands, grasslands, and some of the marine habitats, remain under enormous pressure.... I have also seen reports that insects are declining on a massive scale throughout Europe. Insects are the most abundant terrestrial organisms on the planet and of paramount importance to the ecosystem services that sustain life on earth. These are services such as pollination, natural pest control, nutrient recycling, and decomposition services. Of course, insects are also the main food for many fish, birds, and mammals. The occurrence and spread of invasive and non-native species in Ireland are also increasing for all environments.

All of this makes for very sobering and worrying reading. To stop this decline, we will need to increase our efforts significantly at all levels of society."



Why is Biodiversity in trouble?

In 2019, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services¹ (IPBES) listed seven major global drivers of biodiversity loss. These drivers also affect biodiversity at the national and local level. In the same year, Ireland's latest report (Article 17) on the Status of EU Protected Habitats and Species² found that of the 59 habitat types and 60 species assessed, 85% of the habitats and 30% of the species were in an 'unfavourable' status (i.e. Inadequate or Bad), indicating no improvement on the 2013 assessments or a continuing decline in condition, extent and numbers. The report identified the main pressures on habitats as:

- Ecologically unsuitable grazing levels, which can be undergrazing (or even abandonment) as well as overgrazing;
- Pollution of fresh waters & coastal marine waters;
- Drainage and / or cutting of peatlands;
- Invasive species; and
- Recreational pressures.

When habitats become degraded there is a negative knock-on effect on the species that these habitats support. Considering that all habitats and species assessed in the Article 17 report are afforded legal protection, with SAC (Special Area of Conservation) designation for many of these habitats and species, the high level of unfavourable assessments is of concern and highlights the plight of biodiversity for habitats and species not specifically protected under EU directives. The government has committed to a broad range of actions with commitments across government departments to restore degraded ecosystems and species.

Main Drivers of Biodiversity Loss (IPBES)

1. People's disconnect with nature

Connectedness to nature is the extent to which people are aware of their natural world and dependence on it. As human societies became industrialised and urbanised this connection with the natural world was lost. This disconnection is at the heart of our environmental crisis and alongside the lack of recognition for the value and importance of nature (Driver 2) are often the precursor to the remaining drivers listed here.

2. Lack of recognition for the value and importance of nature

In many areas of human activity, nature has been taken for granted. The value of ecosystem services - the services that nature provides to us & which support our societies - has not been counted & nature's intrinsic value is rarely recognised.

3. Invasive Species and Disease

Invasive species out compete native species for space, food and other resources and can fundamentally alter local ecosystems. For example, the introduction of the grey squirrel has resulted in a dramatic decline in the native red squirrel population and invasive plants such as Cherry Laurel continue to harm native habitats (native woodlands in the case of Cherry Laurel). The global trade in animals and plants also risks the spread of pathogens to which native species have no resistance, e.g. Ash Dieback Disease.

4. Pollution

Pollution has devastating direct effects on biodiversity, particularly in freshwater and marine habitats. Examples include the plastics, chemicals including pesticides, and nutrients released into the environment.

5. Climate Change

The climate crisis is dismantling ecosystems at every level - extreme weather events destroy habitats; warmer temperatures change the timing of natural events and the distribution of species and their range is also changing.

6. Direct exploitation of organisms

Logging, hunting, and fishing and the extraction of soils and water particularly at industrial scale has significant negative impact on biodiversity.

7. Changing use of sea and land

Human land management for intensive agriculture, deforestation, industrialisation, extractive industries and urbanisation leads to an increase in habitat loss, degradation and fragmentation.

¹ The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services: <https://ipbes.net/>

² National Parks & Wildlife Service: <https://www.npws.ie/publications/article-17-reports/article-17-reports-2019>

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One may feel powerless at this depressing list and yes, most of biodiversity loss will have to be addressed at a statutory level but the main thing to realise and understand is that these problems are occurring on our own doorsteps and therefore we can do something to make a positive change!

Habitat destruction refers to rainforests being cleared in Brazil and Borneo but it also refers to hedgerows being cut back too hard, herbicide being sprayed along ditches and verges and wildflowers in our lawns being unable to flower due to over-mowing!

In the words of our former President and former UN Special Envoy on Climate Change Mary Robinson, current chair of The Elders, we need a 'moonshot mentality' meaning we can still head into our best future world but positive leadership between civil society, business and governments is needed to deliver this. She feels that while the transition to net zero is generally depicted as sacrifices and costs, a green transition actually has the capacity to raise standards of living all over our planet. In her own words:

"I think the world has to have a wake-up moment of responsibility now. It's not a guilt trip. It's not making accusations to people. It's saying we have to manage this and manage it well, because our best world is still in front of us. We can get there."

So, What Can Narraghmore Do?

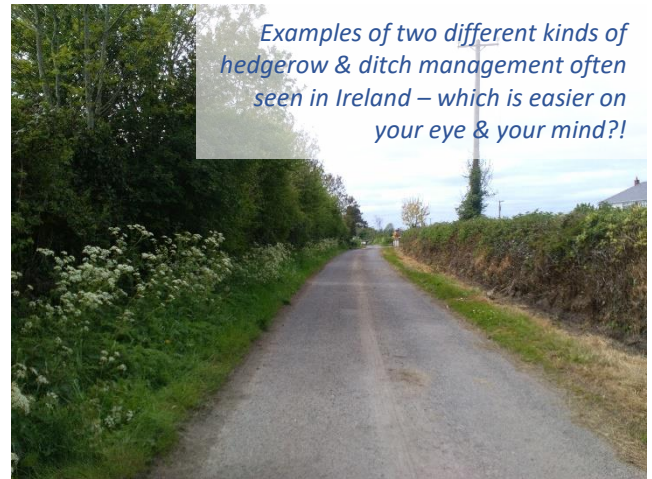
This Biodiversity Action Plan was produced on behalf of Narraghmore to act as a professionally guided tool with which to tackle the Biodiversity Crisis on their own doorstep. This BAP is also intended as a document to help inform all who are interested so that they can help on their own patches – private gardens, sports grounds, farms etc. There is no need to feel helpless in the face of this crisis – we can all do something to help!



Section 2 overleaf of this Community Biodiversity Action Plan will point out the biodiversity highlights in the Narraghmore area.

Section 3 will list the biodiversity objectives and targets for Narraghmore, and the actions that will achieve them.

Finally, **Section 4** and the **Appendices** feature the resources that can assist the community efforts that will be needed to ensure the protection and enhancement of biodiversity locally in Narraghmore.



Section 2: Biodiversity in Our Area

Narraghmore is located in an area defined in the Co. Kildare Landscape Character Assessment as the Eastern Transition Zone between the Eastern Uplands bordering Wicklow and the lowlands of Kildare. This landscape comprises an agricultural landscape dominated by low rolling hills and river valleys.

The geology of the area is dominated by rocks of Silurian era. These comprise the Carrighill formation which is considered to be the youngest and finest grained formation [of the Kilcullen Group]. It consists of bedrock greywacke, siltstones, and shales.

Sub-soils are limestone till, and soils are 'a fine loamy drift with limestones'. The soils and subsoil appear to be well drained, so it is expected that most rainfall on the site would percolate to ground rather than flowing into surface water features.

Biodiversity is mainly centred on watercourses, residual peatlands and plantation woodlands of broadleaf and conifers and a network of hedgerows.

Local watercourses include the 'Mullaghmoynne West' stream and the Kildoon River, and subsequently meets the River Barrow at Kilberry, approx. 20 km downstream of Narraghmore Village.

Water quality in the Kildoon River is not monitored as part of the Water Framework Directive status assessments. However, the section of River Barrow at its point of confluence is of 'Good' status. The other main watercourse in the locality is the River Griese and its minor tributaries, which is recorded as being of 'Good' status.

Some areas of peatland and residual cutover peatlands occur locally in particular in the Blackrath West Area, now the Narraghmore Nature Reserve comprising residual peatlands and Forestry Plantations.

Please note that further details on your local conservation site details can be found at: www.npws.ie/protected-sites/



Some of the wildlife photographed in the area by local wildlife enthusiast Lorraine Wyse:

- Top left: Cuckooflower
- Bottom left: 5-spot burnet moth on Common knapweed
- Bottom centre: Comma butterfly
- Right: Devil's-bit scabious



Main Biodiversity Sites

There are numerous places of important biodiversity value in Narraghmore and the surrounding environs. The following are some of these.

Some Local Sites of Biodiversity Interest

River Griese

The River Griese is a fast flowing river of south west Kildare. The river rises near Dunlavin, County Wicklow and forms part of the County Wicklow / Kildare border and flows southwest eventually draining into the River Barrow in the Jerusalem townland, just north of Carlow Town.

The Griese is a significant tributary River of the River Barrow and supports a variety of important fish species, however, it is not included in the River Barrow and River Nore SAC, Site Code: 002162. The river supports a good population of brown trout a run of salmon parr, salmon fry, and the occasional fully-grown fish. Lampreys, eels, and smaller species such as stone loach and three-spined sticklebacks also populate the river.

An Inland Fisheries Board inspection carried out during 2016 rated the river at between 8 and 9 on its 1 to 10 scale for number of fish, fish quality, and water quality. The local angling association is proud of such a high rating and are committed to retaining or even improving it.

Narraghmore Nature Reserve also call Blackrath West Wetland Site

Ballitore Game and Wildlife Conservation Association (BGWCA) manages an area of Coillte owned land known as Narraghmore Bog Nature Reserve. The site includes a series of wildlife ponds, remnant bog/wet heath habitat, conifer plantation and some areas of birch wood.

The nature reserve is a fantastic local amenity for adults and children alike and has been used by both local schools and scout groups for education and recreational purposes. This is a great example of a State Body, in Coillte, supporting and working with a local Conservation Organisation in preserving and developing an amenity for future generations to enjoy.

In the Wetland Survey of Kildare, this site is called Blackrath West with the following site summary:

- **Habitats:** CUTOVER BOG, WET HEATH, BOG WOODLAND
- **Description:** The central component comprises cutover bog that has regenerated to Wet Heath. The site supports low Sphagnum moss cover (ca 10%). *Cladonia portentosa* and *Calluna vulgaris* dominate this habitat. The heath component is surrounded by commercial conifer forestry.
- **Data Source:** Kildare County Council
- **Rating:** Local conservation value (high value)

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Recent Progress

The following are just some examples of actions taken in recent years to increase biodiversity in the community:

Residential Estate Wildflower Meadow Project

Areas of previously tightly mown lawn grass in the communal areas in a few of the housing estates have been allowed to grow and be maintained as wildflower meadows.

Tree Planting

In recent years Narraghmore Tidy Towns group have engaged in tree planting on approach roads into Narraghmore. The residents in the Orchard estate have also planted a new native hedgerow along the front boundary of the estate to provide habitat for wildlife and screening for the residents.

Pollinator-friendly Planting

Narraghmore Tidy Towns have moved towards pollinator friendly plants in the flowerbeds and containers in the village centre.


Citizen Science Work

Narraghmore is lucky to have some keen Citizen Scientists, who have helped record some of the wildlife in the area. The records have been submitted to the National Biodiversity Data Centre. Some of the species and habitats recorded include a wet grassland rich in orchids and other associated flora, moths such as the Lunar hornet moth and 5-spot burnet, and butterflies such as Comma, Orange-tip, and Meadow brown.



Section 3: A Call to Action

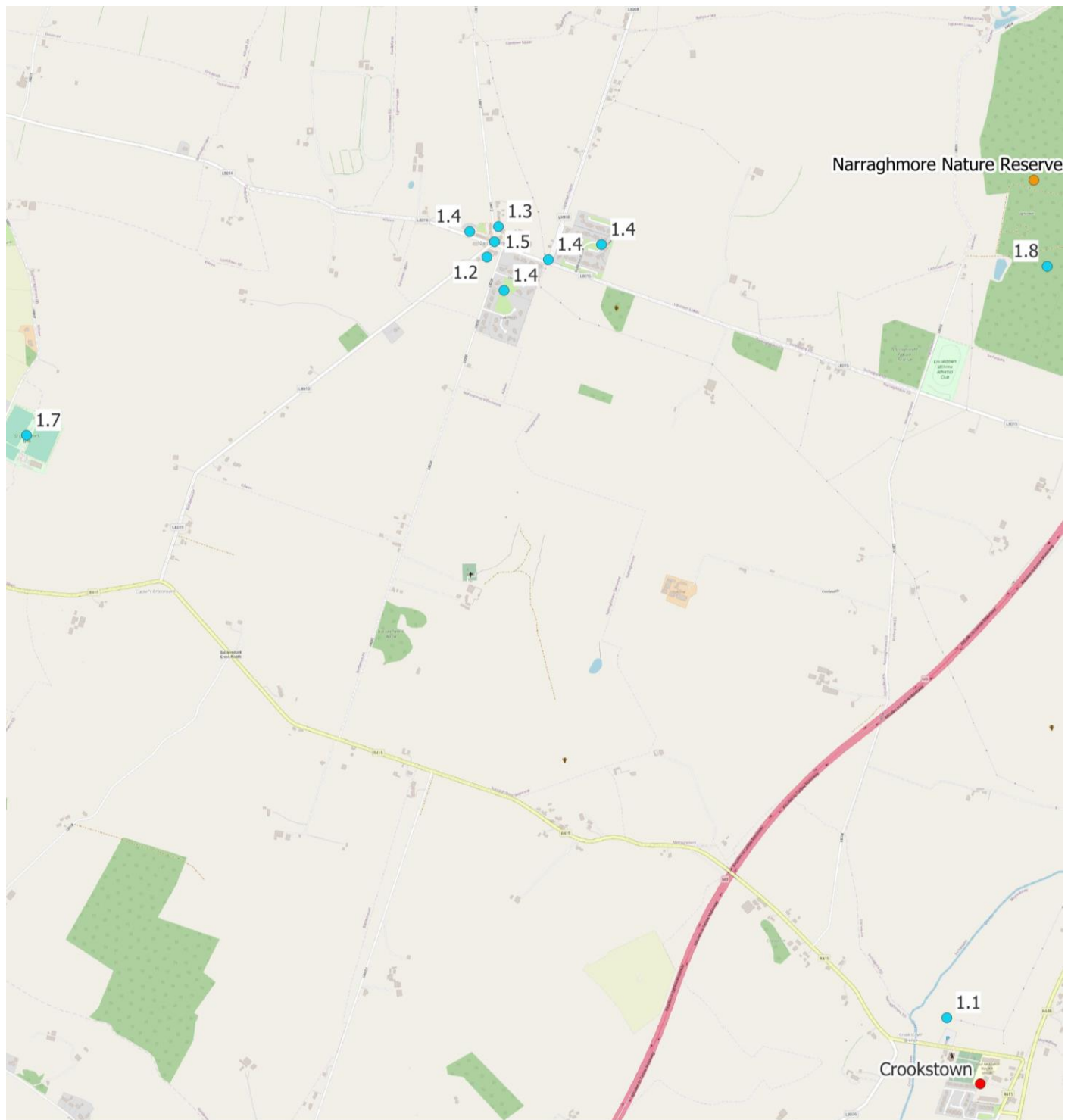
This is a shared plan of action for the community to build on recent progress and help Narraghmore reach its full biodiversity potential. The plan has five objectives, each with specific actions to help achieve them. Actions proposed

to be delivered in partnership with the Kildare LBAP Network are highlighted with the icon .

Objective 1 Make room for biodiversity in Narraghmore	
Target 1.1	Make room for biodiversity and increase the scope for biodiversity learning at St Laurence’s National School
Target 1.2	Make room for biodiversity in the The Band Hall / Narraghmore Community Centre
Target 1.3	Develop new opportunities for biodiversity in Mel’s Hardware Store & Car Park
Target 1.4	Make room for biodiversity in residential estates and gardens
Target 1.5	Develop new opportunities for biodiversity in the village centre
Target 1.6	Manage the approach roads in a biodiversity friendly manner
Target 1.7	Develop new opportunities for biodiversity with St. Laurence’s GAA
Target 1.8	Protect and strengthen existing features of biodiversity importance and links between them including Narraghmore Nature Reserve
Target 1.9	Explore opportunities for biodiversity and farm green infrastructure on surrounding farms
Target 1.10	Mitigate against the potential impacts of Ash Dieback in the community
Target 1.11	Ensure new community planting projects are carried out in a sustainable manner
Objective 2 Controlling Invasive Alien Species	
Target 2.1	Take measures to control Invasive Alien Species in the community
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Target 5.2	Build the capacity within the community to manage and record biodiversity
Target 5.3	Review the Biodiversity Action Plan

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Site-Specific Biodiversity Targets



Legend

- Neighbouring Community
- Selected Community Site
- Target



Objective 1: Make room for biodiversity in Narraghmore

This objective aims to deliver practical benefits on the ground to help increase biodiversity in Narraghmore. Ten targets have been identified to deliver this objective. These are spread across a range of public and private spaces to where nature can be better accommodated.

Why:

- This Objective aims to conserve and increase habitats and native species in the village and surrounding landscape that will support biodiversity. This includes the conservation of existing and / or creation of new ecological corridors for species to move easily from one area to another.
- To deliver benefits for the wider environment e.g., carbon sequestration, improve soil processes and condition, improve air and water quality, etc.
- To make the village of Narraghmore a greener, more attractive place to live, visit, and do business.
- To create opportunities for people of all ages to experience the natural world in their everyday lives and foster a greater appreciation of it.
- Deliver on the aims and objectives of local and national policies e.g. National Biodiversity Action Plan, All-Ireland Pollinator Plan, etc.

Target 1.1	Make room for biodiversity and increase the scope for biodiversity learning at St Laurence’s National School
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Target 1.1: Make room for biodiversity and increase the scope for biodiversity learning at St Laurence's National School

Biodiversity Loss Drivers Addressed: 1, 2, 4, 5, 7

No.	Action
1.1.1	<p>Maximise the learning potential of the school campus by utilising unused green areas / corners as outdoor classrooms and school gardens. These spaces will also become on site havens for biodiversity. Some ideas include:</p> <ul style="list-style-type: none"> • Plant any open boundaries around the school, including the new pitch field, with native hedgerows. • Utilise the spaces around the northern and eastern side of the school building as different outdoor classroom spaces. These could include different garden spaces such as a wildlife garden, GIY garden, sensory garden, etc. • Manage an area of meadow adjacent to the new pitch area. Small groups of native trees and / or traditional Irish fruit trees could also be planted in this area. • Manage the green spaces to the front of the school in the car park area as shortcut or long meadow. • Increase the number of raised beds in the grounds of the school to allow pollinator friendly and edible species to be grown by the kids. • Develop a nature trail walk around the grounds and adjacent field. • Select areas to put up bird and bat boxes, consult with Kildare Bat Group and BirdWatch Ireland.
1.1.2	The school should eliminate the use of herbicides within the school grounds.
1.1.3	Utilise local community biodiversity sites of interest for school outings and learning events. For example explore the opportunity to gain access to the River Griese to allow for pond/river dipping and facilitator led nature study around aquatic habitats. This might involve improving access to allow for the safe delivery of events.

Target 1.2: Make room for biodiversity in the The Band Hall / Narraghmore Community Centre

Biodiversity Loss Drivers Addressed: 1, 2, 5, 7

No.	Action
1.2.1	<p>Explore the potential to improve the grounds for biodiversity and community use. It is recommended that a landscape plan would be developed for the grounds of the band hall and it may be worth applying for a community grant for this. The plan should consider the following ideas:</p> <ul style="list-style-type: none"> • Near the Cordyline Palm and the road frontage it is suggested to plant a native hedge <i>circa</i> 5m in length, the hedge should be mostly hawthorn interspersed with native shrub species such as spindle, hazel, and sweet-briar. The verge strip to the front of the hedgerow should be maintained as a meadow strip. • Remove the Cordyline palm and replace with a tree of native provenance. • It is proposed that along the block wall in the backyard of the band hall a raised bed is built to support climbers and shade tolerant plants, in particular native species such as honeysuckle and Ivy. Alternatively (or in combination with the planters) this wall could be painted as a mural highlighting the Narraghmore Nature Reserve.

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	<ul style="list-style-type: none"> ● The gravel area at the back of the band hall may support an age friendly / disability accessible garden with raised beds, to support pollinators through the planting of pollinator friendly species and edibles and contain a seating area. ● A small area of natural play could be incorporated into the plan for the grounds of the band hall. ● It is proposed to plant a native hedgerow along the eastern boundary of the band hall site. ● Investigate the removal of the Leyland hedge and replace it with a native hedgerow. ● The tall treeline at the back of the site supports some ash which may need to be replaced overtime due to ash dieback and this can be monitored. ● Select areas to put up bird and bat boxes, consult with Kildare Bat Group and BirdWatch Ireland.
1.2.2	The Community Centre should move to eliminate the use of herbicides within the grounds.
1.2.3	Utilise the grounds for community biodiversity events such as biodiversity talks and workshops (e.g. wildlife identification workshops, plant propagation, etc.)

Photo Board



The front entrance could be improved by planting a native hedge with a meadow strip to the front of it



The wall in the back of the community centre could be used to highlight local biodiversity with a mural and combined with native climbing plants



The corner of the gravel driveway in the community centre garden could be converted to a garden space for use by the community



The long linear lawn could be better utilised for community use and biodiversity through native hedgerow planting, meadow management, natural play, and community garden spaces

Target 1.3: Develop new opportunities for biodiversity in Mel's Hardware Store & Car Park

Biodiversity Loss Drivers Addressed: 1, 2, 3, 4, 5, 7

No.	Action
1.3.1	<p>Consider the use of different green infrastructure features in the development of the car park and outdoor dining space. This could include some of the following ideas:</p> <ul style="list-style-type: none"> ● Plant a native hedgerow between the proposed car parking and the outdoor dining area. ● Replace the newly planted laurel hedge with a native hedgerow. ● Manage the grass verge on the roadside as a shortcut meadow. ● Create pollinator friendly flowerbeds in the proposed outdoor dining area to create a more pleasant dining experience and improve the biodiversity value of the space. Install small signs in the flowerbeds to highlight importance of the correct species for pollinators. ● Include rain gardens / bio-swales (see Info Box overleaf) in the car park to control rainwater run-off and help set out the parking areas. Trees planted in these spaces will also provide shade for parked cars. ● Replace some of the paving to the front of the pub where the road was realigned with pollinator friendly flowerbeds, rain gardens and trees.

Photo Board



The laurel hedge on the roadside bank should be replaced with a native hedgerow and the grass verge managed as a shortcut meadow



The proposed redevelopment of the car park presents an opportunity to install green infrastructure features to make room for biodiversity and deliver a range of other benefits

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Info Box: Rain Gardens and Bioswales

Rain gardens and bioswales can simply be described as vegetated landscape features designed to slow down and hold on to rainfall, slowly releasing it. They can be used alongside Sustainable Drainage Systems (SuDS) and other landscape features such as ponds, wetlands, trees, meadows as part of a sustainable and holistic approach to rainwater management in the urban environment. These features help to delay the peak flow of rainwater experienced after a rainfall event, more accurately mimicking what you'd expect in the natural water cycle, where vegetation and the natural landscape slow down water.

Bioswales

These are wide channels or large basins designed to allow water to move along them and infiltrate into the ground as it passes along. An overflow pipe is typically included to handle excess water.



Rain Gardens

A rain garden is a shallow area of ground or dip which receives run-off from roofs and other hard surfaces. It is planted with plants that can tolerate periods of waterlogging and drought. Storm water fills the depression and then drains.

They can be either in-ground rain gardens or rain garden planters. In-ground rain gardens are vegetated shallow depressions at ground level such as this one on Main Street in Tramore, Co Waterford.

Rain garden planters are designed to take-in rainwater from roofs into planters. For information on how to build a rain garden planter see Dublin City Council's guide: <https://www.dublincity.ie/sites/default/files/2021-04/a-how-to-guide-to-rainwater-planters-english.pdf>



Case studies:

- NatureRX Rain Garden Pilot (Dublin based): <https://www.biurban.ie/rain-garden-project>
- 10000 Rain Gardens for Scotland Project: <https://www.10kraingardens.scot/about-the-campaign/>


Target 1.4: Make room for biodiversity in residential estates and gardens

Biodiversity Loss Drivers Addressed: 1, 2, 3, 4, 5, 7

General Actions for All Estates

No.	Action
1.4.1	Create a network of pollinator corridors through the common green areas in the estates. This could consist of areas of more long and short cut meadows and targeted at the areas not used for ball games and other recreation requiring lawn grass. For larger meadows, incorporate mown paths to allow residents to access the meadow and ensure grass along pathways is cut more frequently. See Appendix 1.
1.4.2	<p>Increase tree cover in the open spaces especially small groups or pockets of trees, these could favour native trees and fruit trees (use local traditional varieties where possible). Where this is done ensure good management of the trees going forward which can include (See Appendix 3):</p> <ul style="list-style-type: none"> • Eliminate herbicide for the control of vegetation (where this is the current practice). • As much as possible avoid planting trees as individuals, instead plant trees in small groups and manage the vegetation underneath less intensively • Use leaf litter to mulch around the base of trees each autumn. Strimmers and ride-on-mowers should not be used against the base of trees as they can kill or weaken them. • Monitor any tree ties and stakes used on planted trees on an annual basis. Adjust as necessary and remove once the trees can stand unsupported without bending or shifting in the ground (typically 1.5-3 years depending on the size of the tree at planting). Note: Tree ties and stakes are only required on trees planted at larger sizes – they are not required for younger tree whips.
1.4.3	Plant new native hedgerows along open boundaries of the common green areas and estate perimeter boundaries. See Appendix 3.
1.4.4	In existing flowerbeds and containers use pollinator friendly herbaceous perennials to infill any gaps and to replace annual bedding plants where these are used. Where possible engage keen local gardeners to source the plants and use this as an opportunity for a community event on plant propagation. See Appendix 2.
1.4.5	<p>Manage hardstanding areas (paths, roads, and car parking areas) and around site infrastructure in lawn areas (e.g. manhole covers, road signs, utility boxes, etc.) using environmentally sensitive methods:</p> <ul style="list-style-type: none"> • Use non-herbicidal methods for weed control on hard standing areas such as mechanical sweepers. • Strim around site infrastructure located in lawns rather than using herbicide. • Collect fallen leaves on hard standing areas for reuse as mulch around trees and in flowerbeds. • Where possible create swales and rain gardens to manage rainwater runoff.
1.4.6	<p>Encourage residents in estates to take actions in their gardens to increase biodiversity by posting on social media, running wildlife gardening workshops / talks, and through word-of-mouth. The following are some ideas for them to consider:</p> <ul style="list-style-type: none"> • Eliminate the use of herbicides • Leave corners / pockets of the garden to be managed less intensively • Manage part(s) of the lawn less intensively • Erect and maintain bird boxes and baths (these require regular maintenance) • Use native shrubs and trees as much as possible and avoid using invasive species • Construct a wildlife pond • Use pollinator friendly plants in flowerbeds and containers - where possible work with other keen local gardeners to source / share suitable plants from splitting / cuttings • Compost green waste and reuse once ready in garden beds as mulch • Manage rainwater runoff from roofs and hardstanding areas e.g. harvest rainwater for reuse in the home / garden and / or create rain gardens

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	<p>The <i>'Biodiversity for Gardening'</i> booklet has lots more ideas and tips: https://laois.ie/wp-content/uploads/Garden-Wildlife-Booklet-WEB-17MB.pdf</p> <p>This can also be applied to individual homeowners in the community outside of the estates. Indeed, as these homes often have bigger gardens, they therefore have more scope to carry out actions for biodiversity such as planting trees, creating meadows, etc.</p>
1.4.7 	<p>Engage with Kildare County Council through the Kildare LBAP Network to ensure that any future residential developments are designed with green infrastructure principles in mind.</p> <p>This should include the protection of existing biodiversity features or ecological corridors of importance on the site, and the development of new green spaces and features that deliver multiple environmental and social benefits e.g. vegetated bioswales and / or rain gardens in the common green spaces can minimise rainwater runoff from the site.</p>

Specific Actions for **Oak Park** identified in the training to begin the process of increasing biodiversity on the estate

No.	Action
1.4.8	<p>Explore the opportunity to increase the area of native habitat within the main common green space. This will include:</p> <ul style="list-style-type: none"> Planting native hedgerows along the boundary of the common green area where none exists. See Appendix 3. Managing selected areas of the large lawn grass less intensively as meadow with mown paths maintained through them. See Appendix 1. Plant pockets of native trees at selected locations. Given the name of the estate and the size of the green area then more groves of Oak trees would be appropriate. Consider developing a composting area to manage the meadow cuttings and other green waste from the common green spaces.

Specific Actions for **Orchard Park** identified in the training to begin the process of increasing biodiversity on the estate

No.	Action
1.4.9	<p>In Orchard Park, a small public space is already used as a mini vegetable plot. This could be expanded into the nearby space and used as a small community edible garden space.</p> <p>In existing flowerbeds and containers use pollinator friendly herbaceous perennials to infill any gaps and to replace annual bedding plants where these are used. Where possible engage keen local gardeners to source the plants and use this as an opportunity for a community event on plant propagation. See Appendix 2.</p>
1.4.10	<p>Expand on the area of meadow at the entrance to the estate to other suitable parts of the common green areas. This could include:</p> <ul style="list-style-type: none"> A strip in front of the new native hedgerow planted along the front boundary. The sloping banks on the main green space to the interior could be managed as short cut meadow and already has a good species diversity. The wedge of grass between the main common green area and the estate boundary treeline. <p>These meadows can simply be created by changing the management regime to suit the meadow type desired. See Appendix 1.</p>

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Specific Actions for Lipstown Manor identified in the training to begin the process of increasing biodiversity on the estate

No.	Action
1.4.11	Explore the opportunity to manage selected parts of the common green areas less intensively as meadow. This could be done in a staged way to allow residents to become comfortable with the look and management requirements needed. These meadows can simply be created by changing the management regime to suit the meadow type desired. See Appendix 1.
1.4.12	Plant a native hedgerow and fruit trees to open boundary at the back of the estate (north eastern side). See Appendix 3.
1.4.13	Convert the gravel beds at the entrance to the estate to either a shortcut meadow or pollinator friendly herbaceous border.

Specific Actions for Hill View Terrace identified in the training to begin the process of increasing biodiversity on the estate

No.	Action
1.4.14	The existing flowerbed on the Bog Road opposite the estate requires maintenance and additional planting to infill existing gaps. These should be planted with a mix of pollinator friendly species. It is also recommended that all containers are planted with pollinator friendly herbaceous perennials to infill any gaps and replace annual bedding plants where these are used, such perennials have deeper rooting and are less water hungry than annual bedding plants. Where possible engage keen local gardeners to source the plants and use this as an opportunity for a community event on plant propagation. See Appendix 2.
1.4.15	Explore the opportunity to manage the grass verge to the front of the estate less intensively as a shortcut meadow. This meadow can simply be created by changing the management regime to suit the meadow type desired. See Appendix 1.
1.4.16	Explore the opportunity to replace the length of Cherry laurel hedge on the Bog Road in front of the entrance to the estate with a native hedge.

Photo Board



Utilise the large common green area in Oak Park better for biodiversity and the residents. It is large enough to accommodate a lovely meadow, hedging and more tree planting



Use this space to create an edible garden using different groundcover plants, shrubs and climbers

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The sloping grass bank in the main common green area in the Orchard could be managed as a shortcut meadow – it is already quite diverse in flora



The front green area of the Orchard has been developed with biodiversity in mind with a new meadow, native hedge and fruit trees – the meadow could be further extended along the front of the hedge



The stone entrances at Lipstown Manor would benefit from a greener approach, either shortcut meadow or pollinator friendly herbaceous border



Unused parts of the common green areas would be better managed as meadow



The open estate boundaries in Lipstown Manor would be improved with native hedging



Grass verge outside Hill View Terrace could be managed as a shortcut meadow

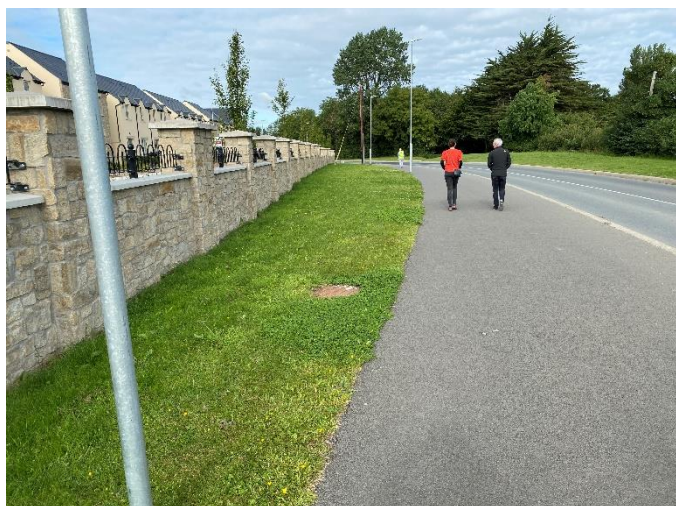
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Target 1.5: Develop new opportunities for biodiversity in the village centre

Biodiversity Loss Drivers Addressed: 1, 2, 4, 5, 7

No.	Action
1.5.1 Ⓢ Ⓢ-Ⓢ	<p>Engage with the Kildare LBAP Network to explore the potential to get a public realm plan developed for the village centre that incorporates green infrastructure features such as trees and rain gardens. This could include some of the following ideas:</p> <ul style="list-style-type: none">● Create pollinator friendly flowerbeds in village centre. Install small signs in the flowerbeds to highlight importance of the correct species for pollinators and other wildlife.● Include bio-swales in the car park to control rainwater run-off and help set out the parking areas. Trees planted in these spaces will also provide shade for parked cars.● Replace some of the paving in village centre with pollinator friendly flowerbeds, rain gardens and trees.

Photo Board



Grass verge outside the new housing estate that could be managed as a shortcut or hay meadow



Grass verges at the base of the stone walls beside the canal could be managed less intensively

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Target 1.6: Manage the approach roads in a biodiversity friendly manner

Biodiversity Loss Drivers Addressed: 1, 2, 4, 5, 7



No.	Action
1.6.1 	Engage with Kildare County Council through the Kildare LBAP Network to implement less intensive grass cutting regimes on suitable roadside verges on the approach roads - a grass verge management plan for the village that identifies the timing and frequency of cuts for the different verges should be developed and implemented in partnership with Kildare County Council. Suitable verges include the wider verges and verges that won't interfere with road safety or sightlines if managed as meadow. See Appendix 1 .
1.6.2	Strengthen hedgerows on approach roads as needed. This could include: <ul style="list-style-type: none"> • Where there are large gaps / breaks in hedgerows engage with the landowners about planting them with native trees • Where Ash is the dominant tree species then engage with the landowner about planting other native trees to increase diversity • Raise awareness of proper hedgerow management and timing among landowners / land managers in the community (see Appendix 3). • Discuss with local landowners the potential to move to a 3 year rotation on management/cutting where it doesn't interfere with road safety.
1.6.3 	Engage with Kildare County Council through the Kildare LBAP Network to ensure herbicides are not used to control vegetation on roadside verges, stone walls, or other roadside infrastructure. See Objective 3.

Photo Board



Wider grass verges on approach roads could be managed less intensively to encourage wildflowers such as cow parsley



Hedgerow trees could be planted or allowed to grow on approach roads where overhead wires are not an issue

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Target 1.7: Develop new opportunities for biodiversity with St. Laurence's GAA
Biodiversity Loss Drivers Addressed: 1, 2, 5, 7

No.	Action
1.7.1	Strengthen existing native hedges as required, filling in gaps and augmenting them with native trees where Ash is dominant.
1.7.2	Install Swift boxes and a caller on the northern or western facade of the clubhouse. The booklet by BirdWatch Ireland has lots of information about how best to carry this out: https://birdwatchireland.ie/publications/saving-swifts-guide/
1.7.3	Participate in the GAA's new Green Club Programme aimed at making clubs around Ireland more sustainable and biodiversity friendly: https://www.gaa.ie/my-gaa/community-and-health/green-clubs-sustainability/

Target 1.8: Protect and strengthen existing sites and features of biodiversity importance and links between them including Narraghmore Nature Reserve
Biodiversity Loss Drivers Addressed: 1, 2, 3, 4, 5, 7

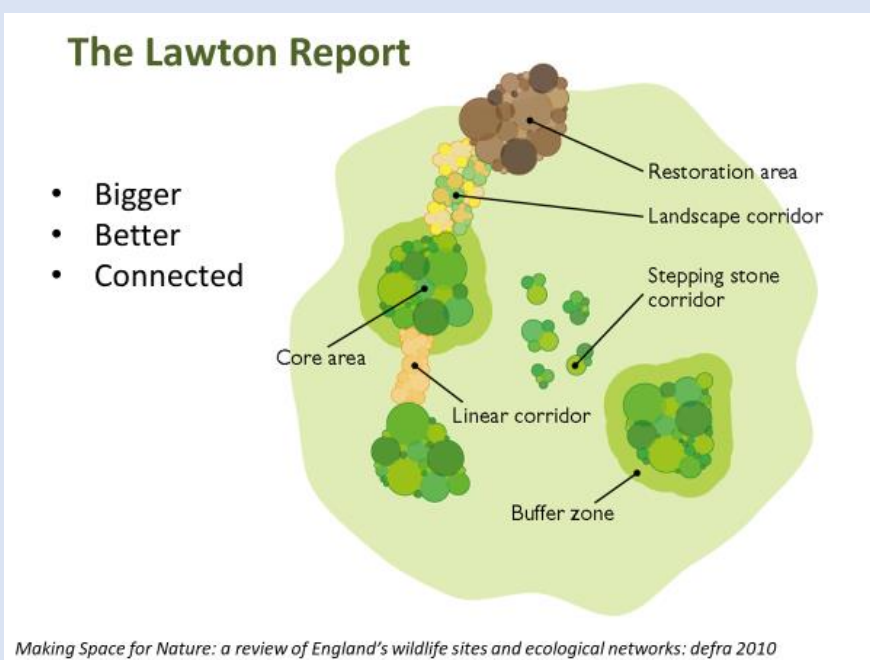
No.	Action
1.8.1	<p>Conserve and build upon the existing green infrastructure or biodiversity features of importance in the community and the network of ecological corridors in the landscape. Some of these features and corridors in Narraghmore include Narraghmore Nature Reserve; farm hedgerows; wide treelines; woodlands; local watercourses; and species rich grasslands such as the wet grassland near the GAA club.</p> <p>As a first step, these important features and corridors should be surveyed and mapped and that the conservation of them built into local area plans and any future developments. These plans could be coordinated through the Kildare LBAP Network to ensure the linkage of countywide ecological corridors in urban and rural landscapes. Local knowledge helping to inform decisions being made and implemented for your locality can be crucial.</p>
1.8.2	Where gaps have been identified between natural sites in the landscape take steps to connect them. For example, if there is a break between hedgerows or areas of woodland in the landscape then engage with the landowner(s) in between to see if they would allow new hedging or tree planting to connect them.
1.8.3	<p>Explore the opportunity to build better links between the village, including its residents and visitors, and Narraghmore Nature Reserve.</p> <p>This will first of all involve building on the links between the local community groups for the village and the Ballitore Game and Wildlife Conservation Association and Coillte to discuss ideas and opportunities for the Nature Reserve and the community. Some ideas to consider would include:</p> <ul style="list-style-type: none"> ● Installing interpretation signage and art work within the village highlighting the rich biodiversity in the reserve. ● Improving accessibility in the Nature Reserve for local people including car parking and trails. ● Using the site for community events such as nature walks. ● Fundraise for site management e.g. drain blocking programme in deeper peats. ● Survey ecological corridors between the Nature Reserve and the surrounding countryside that connect with the village e.g. hedgerows. Strengthen any gaps in these corridors where possible.
1.8.4	Promote through the Kildare LBAP Network the better management of hedgerows and trees with the land managers and contractors. Attention should be given to the best timing and to the proper cutting /

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	trimming of them to promote biodiversity. See Appendix 3 and https://www.farmingfornature.ie/resources/best-practice-guides/hedgerow-management/ .
1.9.5 	Work with neighbouring communities through the Kildare LBAP Network to create new, and strengthen existing, ecological corridors. Several of the neighbouring communities are also participating in the biodiversity training and production of biodiversity action plans.

Info Box: The Lawton Report – Making Space for Nature

This action is adapted from *Making Space for Nature: A review of England's Wildlife Sites and Ecological Network* (2010). It concluded 'that England's collection of wildlife sites is generally too small and too isolated' and that 'we need a step-change in our approach to wildlife conservation, from trying to hang on to what we have, to one of large-scale habitat restoration and recreation'. The report coined the phrase: our wildlife sites need to be 'better, bigger, more and joined up'. The report, and its findings and recommendations, can be applied to our current situation here in Ireland.



Main Findings of Lawton Report

- Many wildlife sites are too small
- Losses of certain habitats have been so great that insufficient remains to halt additional biodiversity losses
- With the exception of Natura 2000 sites and sites such as NHAs, most of semi-natural habitats important for wildlife are generally insufficiently protected and under-managed
- Many of the natural connections in our countryside have been degraded or lost, leading to isolation of sites
- Climate change will make matters worse for many habitats and species



Proposed Solutions/Actions "MORE, BIGGER, BETTER AND JOINED"

- Improve the quality of current sites by better habitat management (and enhance heterogeneity)
- Increase the size of current wildlife sites
- Create new sites
- Enhance connections between, or join up, sites, either through physical corridors, or through 'stepping stones'
- Reduce the pressures on wildlife by improving the wider environment, including through buffering wildlife sites
- Better management of existing sites > Bigger sites > More sites > Enhance connectivity > New corridors
- The impacts of climate change mean that these actions will be even more important in the future

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Target 1.9: Explore opportunities for biodiversity and farm green infrastructure on surrounding farms

Biodiversity Loss Drivers Addressed: 1, 2, 3, 4, 5, 6, 7

No.	Action
1.9.1 	Liaise with the Kildare LBAP Network to develop and promote training workshops and events for local farmers and smallholders on sustainable farming methods that will also increase farm biodiversity. This can include talks aimed at increasing farm tree cover / agroforestry systems, improving farm soil health, nutrient management, organic farming, etc.
1.9.2	<p>Work with tree planting charities to carry out a farm tree cover project which would support interested farmers and smallholders with the provision of native trees for the creation of new, and strengthening of existing, native hedgerows and farm woodland.</p> <p>This could aim to have a farm woodland masterplan for interested landowners in Narraghmore that would include farmers, smallholders, and homeowners and in particular should focus on linking smaller woodland features with the <i>Narraghmore/Blackrath West Nature Reserve</i>.</p> <p>This will require the services of an ecologist with an understanding of the needs of farmers and agricultural systems.</p>
1.9.3 	Liaise with the Kildare LBAP Network to encourage farmers and smallholders to consider the tradition of managing 'Hare's corners' in small pockets around the farm. See Info Box below.

For more extensive list of ideas and guidance visit some of the farming environmental charities / organisations:

- Irish Agroforestry Forum: <https://www.irishagroforestry.ie/>
- Farming for Nature: <https://www.farmingfornature.ie/>
- Irish Organic Association: <https://www.irishorganicassociation.ie/>
- Teagasc: <https://www.teagasc.ie/>
- Soil Association (UK based charity): <https://www.soilassociation.org/>

Info Box: The Hare's Corner, an old Irish farming tradition

The Hare's Corner is an age-old tradition in Ireland where small areas are left for nature around a farm. People knew that wildlife needed spots free from human intervention - clearing and tidying. The concept has been taken on and expanded in Co. Clare by the Burrenbeo Trust where they are encouraging farmers to consider small projects such as pocket woodlands, mini orchards, small ponds and green sheds for corners of their farms (<https://burrenbeo.com/thc/>).


Such small areas can be of huge value for biodiversity on busy farms where the intensification of agriculture over recent decades has left little room for nature. Returning to this tradition of our forebears and spreading the idea to other counties in Ireland has the capacity to slowly but surely increase the space for nature that the Biodiversity Crisis so badly needs.



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Target 1.10: Mitigate against the potential impact of Ash Dieback



Biodiversity Loss Drivers Addressed: 1, 2, 3

No.	Action
1.10.1 	Liaise with the Kildare LBAP Network to promote the planting of other suitable native tree species into hedgerows in the urban and rural landscape where Ash is overly dominant. Any planting in sensitive habitats should only be carried out with the advice of an ecologist.
1.10.2	Record any Ash trees showing resistance to the disease to Teagasc. These trees may act as a source of disease resistant trees in the future. Teagasc are actively working on this project: https://www.teagasc.ie/news--events/news/2022/managing-ash-dieback.php
1.10.3	Where possible, for mature Ash trees of important biodiversity / aesthetic value in the community, collect, remove, and destroy Ash leaf litter in autumn from under the tree. This is currently the only effective option to reduce spread of the disease as it disrupts the fungus's life cycle and thereby reduces spore production the following summer.

See **Appendix 4** for further detail on Ash Dieback (*Hymenoscyphus fraxineus*).

Target 1.11: Ensure new community planting and meadow projects are carried out in a sustainable manner

Biodiversity Loss Drivers Addressed: 1, 2, 3, 4, 5

No.	Action
1.11.1	Use native trees for new community woodlands and hedgerows. These should be of Irish origin and provenance i.e. seeds of native Irish species sourced, sown and grown in Ireland.
1.11.2	Do not plant trees, wildflower seed, or ornamental plants in places where they will have a negative impact on special or protected habitats and landscapes and resident flora and fauna. You must not plant on unenclosed land, moorland, wetland, heathland, bog or unimproved or minimally improved pasture or old meadow that has never been ploughed. Similarly, you must not plant on land falling within an SAC, SPA, NHA or any other designation without prior approval from the NPWS or other relevant body.
1.11.3	For the creation and upkeep of flowerbeds in the community: <ul style="list-style-type: none"> • Where possible, use locally sourced propagated plants within the community • For any new purchased garden centre plants aim to use plants grown organically • Use pollinator friendly perennials and not annual bedding • Use peat free compost for any pots / containers in the community • Keep community flowerbeds, containers and ornamental plants to key selected sites in the community - they are not suitable in the countryside or in any natural habitats or landscapes.
1.11.4	To create new meadows on existing grassland simply manage the grassland accordingly (see Appendix 1). Do not sow with wildflower seed mixes (see Action 4.1.5).
1.11.5 	Engage with Kildare County Council and other community groups through the Kildare LBAP Network to explore options for the efficient and sustainable management of meadows. This includes exploring options for cutting the meadows, and the removal and disposal of grass cuttings created. Consideration should be given to organising the management of the different community meadows collectively (including residential areas, sports clubs, schools, parks, etc.) rather than individually both within the village and between neighbouring towns / villages.
1.11.6 	Engage with Kildare County Council through the Kildare LBAP Network about the potential for them to set up a nursery to grow native trees (sourced from known trees and woodlands of local genetic origin), hedging, and horticultural plants for use in flowerbeds in the village and around the county.

Objective 2: Controlling Invasive Alien Species

This objective aims to help control the spread of invasive alien species in the community on both public and private lands. They are defined by Invasives.ie as *animals, plants or pathogens that would not naturally occur in Ireland but are here because of human activity. When introduced, they survive and thrive to the point of negatively impacting on our wildlife, on the services nature provides, on our economy, and the way we live.* <https://invasives.ie/>

Why:

- Invasive species are one of the main drivers of biodiversity loss both globally and here in Ireland. It is important for all communities to understand the problem and take steps to tackle it.
- As well as contributing to native biodiversity loss, invasive species have other negative impacts for our society. Some have negative human health impacts (e.g. Giant Hogweed) while others can cause damage in their receiving environment (e.g. Himalayan Balsam can lead to riverbank erosion and Japanese knotweed can damage built infrastructure). Control measures for different invasives, once they have become established, can be expensive and time consuming to carry out.
- Carrying out surveys will identify the extent of the problem and guide targeted control measures.
- Taking a landscape scale approach to tackling the problem will help identify the sources of the problem species, which can often be outside the community area, but which have the potential to infest / reinfest in the future if not tackled.
- Many invasive plant species are still available for purchase and are widely used in new planting schemes. This exacerbates the problem by spreading them to new areas – native and non-invasive alternatives are available and should be used.
- Tackling invasive species will help deliver on the aims and objectives of local and national policies e.g. National Biodiversity Action Plan, etc.

Target 2.1 Take measures to control Invasive Alien Species in the community









Cherry Laurel is one of the most widely planted hedging plants in the country despite its negative impacts on our native woodlands

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Target 2.1: Take measures to control invasive alien species in the community

Biodiversity Loss Drivers Addressed: 1, 2, 3

No.	Action
2.1.1 	Liaise with Kildare LBAP Network to advocate to Kildare County Council for a strategic plan at county level for invasive species control. Example: Dún Laoghaire-Rathdown County Council have developed a roadmap for their council area to control invasive species: https://www.dlrcoco.ie/sites/default/files/atoms/files/dlr_ias_action_plan_lr.pdf
2.1.2 	Liaise with Kildare LBAP Network to get an invasives survey produced for the village and surrounding landscape and develop and implement management plans for recorded species. The scope of the survey should be set by the community and the most immediate threats (local knowledge is very important). Note: it is important to survey potential corridors in the surrounding landscape which invasive species may travel e.g. rivers, roadsides, etc. Control measures taken in the community maybe unsuccessful if the source of the problem is elsewhere and it isn't addressed.
2.1.3 	Liaise with Kildare LBAP Network to engage with Kildare County Council to train members of staff in the local authority (grounds staff and relevant officers), local employment schemes, and the Tidy Towns how to identify common invasive species. See Appendix 7 for a list of some of the common terrestrial plant species recorded in the area. It is also important to remain vigilant for any new invasive species that could potentially establish in the area and report them to the local NPWS staff and / or Kildare County Council.
2.1.4 	Engage with Kildare LBAP Network to develop a countywide campaign to raise awareness about invasive species including alternative plant species that are better for biodiversity e.g., alternatives to Cherry Laurel. This can be done by arranging talks, workshops, posting on social media, and by setting examples by removing them from public sites and not using them in new planting schemes.
2.1.5 	Engage with Kildare LBAP Network to work with local market suppliers & garden centres to promote native and non-invasive species over invasive plants.
2.1.6 	Engage with Kildare LBAP Network to work with Kildare County Council and other state landowners to adopt a ban on the use of invasive plant species in new planting schemes on public lands and community spaces.
2.1.7	Use trees of Irish provenance and origin rather than imported stock for hedgerows and woodland planting i.e. seeds of native Irish species sourced, sown and grown in Ireland.

Objective 3: Move towards the elimination of pesticide use in the local area

This objective aims to move the community towards a pesticide free environment. One target with three actions has been identified to help start moving away from pesticide use in the community.

Why:


- Pesticides, including herbicides and rodenticides, have negative implications for biodiversity, the environment, and human health. If they get into waterways such as drains, streams, rivers, canals, and lakes, it can impair their water quality and lead to negative impacts on aquatic life and any potential human use.
- Herbicide and other pesticides can also negatively impact the biological component of soils, crucial for producing food.
- Deliver on the aims and objectives of local and national policies e.g. National Biodiversity Action Plan, All-Ireland Pollinator Plan, etc.

Target 3.1 Move towards the elimination of pesticide use in the local area



Target 3.1: Move towards the elimination of pesticide use in the local area

Biodiversity Loss Drivers Addressed: 1, 2, 4

No.	Action
3.1.1 	<p>Liaise with Kildare LBAP Network to move towards the elimination of pesticides, including herbicide and rodenticide, use in the public spaces. This should begin with a review of current use, with the immediate aim of eliminating its use near sensitive habitats (e.g. rivers and drains), and its use on sites used by children or of public health concern (e.g. schools, playgrounds, etc.). This should then extend to all other public areas as soon as possible thereafter.</p> <p>The Pesticide Action Network are a UK charity focused solely on tackling the problems caused by pesticides and promoting safe and sustainable alternatives in agriculture, urban areas, homes and gardens and we reference their pesticide free towns campaign here. https://www.pan-uk.org/</p> <p>What are the alternatives to using herbicides/pesticides in our urban spaces?</p> <p>There are a range of different approaches available to councils and other land managers that decide to stop using pesticides. The effectiveness of each method will vary greatly depending on the local context and environment and, in most cases, a suite of different approaches will be required to replace pesticides.</p> <p>Raising public awareness is absolutely key to the success of going herbicide-free. Councils and other land managers must ensure they communicate their plan of action, and their reasons for change, to the public. If local residents understand the health and environmental benefits they are much more likely to support the initiative and accept a higher level of ‘weediness’. It is also possible to get local volunteers to help with jobs such as hand weeding.</p> <p>Alternative approaches for weed control are described in the Info Box on pesticides overleaf.</p>
3.1.2	Encourage private landowners to go pesticide free on their lands. This can be communicated through a combination of local media and word-of-mouth.
3.1.3	Engage with the public, land managers, and landowners in the community to tackle the cultural perception of what is considered to be ‘tidy’ and ‘untidy’, and learning to accept and appreciate the vital role that these plants that are considered as ‘weeds’ play in a healthy environment.

Info Box: Herbicide/Pesticide

Did you know that chemically all herbicides are actually pesticides? Therefore, they will also harm animals as well as plants – and that includes us humans! Pesticide includes, herbicide, insecticide, nematicide, molluscicide, piscicide, avicide, rodenticide, bactericide, insect repellent, animal repellent, microbicide and fungicide.

Did you know that a single drop of herbicide/pesticide is enough to breach the drinking water limit in a small stream for up to 30km of its length! Yet people will spray many, many drops of herbicide into their local environment in their gardens or along ditches adjacent to their homes, schools or playing fields – probably oblivious to the harm they are causing. We need to think about what we are happy to put into our natural environment as our knowledge of biodiversity tells us that we humans are an intricate part of biodiversity too. We are, therefore, also affected by abuses of our environment as climate change consequences worldwide are now teaching us.

Alternative thinking: As with nearly all things in life, pesticides have their uses – especially in the eradication of invasive alien plant species which are damaging Irish biodiversity through habitat destruction daily. However, weeds are a subjective matter – a dandelion is not a weed to a bumblebee but the best source of food and sustenance when you've just woken up starving from your winter hibernation! So, the first thought always needs to be: is that plant really a weed? Is it really bothering me? Is it causing problems to anyone or anything?

Alternatives to herbicide/pesticide use:

- To do nothing or do less: this involves recognising that herbicide has been overused and used unnecessarily
- Hot foam systems, like hot water systems, kill plants using heat, but can be used in all weather conditions. This gives them a major advantage over chemical herbicides which can only be sprayed under ideal weather conditions.
- Hand weeding is an option particularly for smaller areas such as playgrounds and on paths running through parks. Use physical methods: this is the age-old method of physically pulling up, snipping or hoeing out plants that are in the wrong place. Plants need their leaves to photosynthesise (i.e. make their own food), therefore if their leaves are continually removed they will not survive. This should only apply to making paving safer for pedestrians or clearing formal flower or vegetable beds. We need to change our mindset about what really is a weed in other situations!
- Acetic acid (vinegar) dilutions have been used very effectively to control weeds on hard surfaces in a variety of situations. Acetic acid is biodegradable and poses no risk of bioaccumulation.
- Other types of manual approaches are available in the form of differing types of mulching. This is a particularly useful approach in ornamental beds and in parks.
- Steel brushing can be used for large scale areas such as pavements and roads and in combination with the use of acetic acid spraying can be a very effective alternative.
- High pressure hot water treatments can be particularly effective and also have other uses such as chewing gum removal.
- Electronic control systems that kill stems and roots instantly and are particularly suited to dealing with invasive species are also available.
- Using new technologies: e.g. hot foam machines etc. These are often costly and may be out of the reach of most small communities but they can still be discussed with local authorities and large landowners.

In the event that herbicide/pesticide use is deemed necessary e.g. by contractors working in your locality then the Department of Agriculture guidelines re. responsible use of pesticides in public areas must be followed. The Department has produced a very helpful leaflet entitled 'Straight a's for Amenity' and it is available to download at: <https://www.pcs.agriculture.gov.ie/media/pesticides/content/sud/ResponsiblePesticideUsePublicAmenityGardenAreas200217.pdf>

Objective 4: Raising awareness of biodiversity

This objective aims to raise awareness of biodiversity in the wider community. Four targets have been identified including installing street furnishings and art, social media, and community events to achieve this objective.

Why:



- To create awareness and appreciation of biodiversity around us so that we can get the support and knowledge necessary to better protect and conserve it (these are the first two drivers identified by the IPBES Report outlined in Section 1). These drivers are often the precursor to the other main biodiversity loss drivers identified such as pollution, invasive species, habitat loss, etc.
- Raise awareness of and provide updates on local biodiversity projects so that local people understand what is going on and why. This may also be used to encourage people in the community to get involved with local community and residential groups who are active in conserving biodiversity in their area.
- To provide information to the public about actions they can take to increase biodiversity in their lives (e.g. in their gardens) or reduce their impact on biodiversity loss by making more sustainable lifestyle choices.
- The biodiversity themed trails, street art and signage, as part of the wider practical actions for biodiversity, can help make the village a more attractive place for people to live, visit, and do business.
- Deliver on the aims and objectives of local and national policies e.g. National Biodiversity Action Plan, All-Ireland Pollinator Plan, etc.

Target 4.1	Raise awareness of local biodiversity and biodiversity projects
Target 4.2	Increase biodiversity street art and signage
Target 4.3	Work with the local authority on issues of biodiversity concern
Target 4.4	Promote and support positive actions to encourage more sustainable lifestyles and individual choices



Target 4.1: Raise awareness of local biodiversity and biodiversity actions

Biodiversity Loss Drivers Addressed: 1, 2

No.	Action
4.1.1	<p>In association with local schools and community groups develop a series of information and activity packs on aspects of local biodiversity. In particular it may be worth liaising with the River Griese Trout and Salmon Anglers Association on developing information and activity packs for the River Griese.</p> <p>It is also worth considering liaising with the management committee of the Narraghmore Nature Reserve, including Ballitore Game and Wildlife Conservation Association (BGWCA) and Coillte, for the development of information and activity packs centred on the habitats and species found within the Nature Reserve. Grants may be available from Kildare County Council Heritage or Biodiversity Officer for this purpose.</p>
4.1.2	<p>Use different forms of local media to raise awareness and to reach out to the community about actions and issues relating to biodiversity in the community. It may be worth having a dedicated member of the local tidy towns group to engage on biodiversity issues. For example, the Parish Newsletter and on popular social media platforms Facebook / Instagram / Twitter etc.</p> <p>It may also be worthwhile to have a young person involved to engage their peers with content on local biodiversity and environmental issues using the latest social media platforms such as Tik-Tok.</p>
4.1.3 	<p>Liaise with the Kildare LBAP Network to request, participate in, and / or promote biodiversity training talks and workshops over the course of this Plan. The exact topics will depend on the key messages that the community group would like to convey and skills they want to pass to the community, and the areas of biodiversity interest of people in the community. Some ideas for talks / workshops include:</p> <ul style="list-style-type: none"> • Biodiversity in the local area; covering local natural designated sites, other biodiversity sites of interest, and species of note in the local area – this could be a talk delivered in partnership with the local NPWS Ranger. • Workshops on ‘gardening for biodiversity’ • Workshops for residential associations on how they can increase biodiversity in their estate • Wildlife identification events flora/fauna identification day with a local expert or nature walks exploring and learning about the habitats and species of the Narraghmore Nature Reserve– bat walks and talks are great family events for the summer. Other event ideas include woodland walks and plant id workshops, dawn chorus, etc. <p>Tapping into other events: Nowadays wildlife charities are regularly running events for the public both online and in person. Any of these that are of relevance to the local community should be promoted.</p>
4.1.4	<p>Raise awareness and conduct training on the All-Ireland Pollinator Plan and its resources in the local community. Share links to the All-Ireland Pollinator Plan website including its resources and relevant content (https://pollinators.ie/).</p> <p>Also share their relevant resources guides directly with different sectors in the community e.g. schools, faith communities, sports clubs, gardens, etc.</p>
4.1.5 	<p>Liaise with the Kildare LBAP Network to request, participate in, and / or promote nature-based activity events for children over the course of this Plan. Some ideas include: woodland camping; wildlife detective; mini beast hunts; pond dipping; woodwork and nature crafts; and nature art and walks.</p>
4.1.6	<p>Promote nature-based activities & skills on local social media for people to carry out with their children.</p>

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4.1.7	Encourage members of the community to get involved in the delivery of actions outlined in this Plan. Some of the suitable actions include tree planting, meadow management, planting and maintenance of flowerbeds and other planting schemes, litter picks along watercourses and other sensitive habitats, invasive species control (for certain species), installing habitat boxes, helping run biodiversity events and children's nature-based activities, etc.
4.1.8 	<p>Liaise with the Kildare LBAP Network to organise campaigns to raise awareness of issues of biodiversity concern. The following are some issues of concern (it is not intended to be an exhaustive list):</p> <ul style="list-style-type: none"> • The problem of introducing wildflower seed mixes to grasslands in the community. See: https://pollinators.ie/wildflower-seed/ • The threats to native bee species through the importation of honeybee and bumblebee colonies. The Native Irish Honey Bee Society is an established group with the aim to conserve the native Irish honeybee: https://nihbs.org/ • The importance of soil health and biodiversity and actions needed to improve it. • The impact of increased lighting in the landscape (e.g. on greenways, sports pitches, etc.) on wildlife such as bats and moths. Bat Conservation Ireland produced a guidance document on bats and lighting: https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIrelandGuidelines_Lighting.pdf

Target 4.2: Increase biodiversity street art and signage

Biodiversity Loss Drivers Addressed: 1, 2

No.	Action
4.2.1	<p>Develop biodiversity murals at locations within Narraghmore village such as the Community Centre where the community may highlight local habitats and species of note. In particular, the wildlife of the local Narraghmore Wildlife Reserve could be highlighted. The development of murals could be a cross community effort and involve local artists and community groups such as Tidy Towns, Scouts, Community Band Hall Committee, GAA etc.</p> <p>See overleaf the example of the mural project in Abbeyleix, Co Laois.</p>
4.2.2	<p>Develop biodiversity interpretation signage for Narraghmore village. The community may explore opportunities to create signs, including illustrations or photographs of information related to the local habitats and species of note e.g. the wildlife of Narraghmore Wildlife Reserve.</p>

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Info Box: Biodiversity Street Art





Street utility boxes are often dull but essential parts of the streetscape in towns and villages across the country. However, many community groups have turned them into colourful and informative features by painting biodiversity murals on them with the permission of the relevant authorities.

Abbeyleix Tidy Towns is a good example of how to maximise their value for the local community and to raise awareness of local biodiversity. The painted murals on Main Street’s bins and service boxes are of local biodiversity found on Abbeyleix bog which is located on the edge of the town. As well as raising local biodiversity awareness the murals also help create stronger links between the town centre and the bog for the community and for visitors.



Target 4.3: Work with the Local Authority on issues of biodiversity concern

Biodiversity Loss Drivers Addressed: 1, 2, 3, 5, 7

No.	Action
4.3.1 	<p>Maintain awareness of proposed developments in the area and engage in the planning and development process for Narraghmore, including adding observations on proposed developments.</p> <p>Also liaise with the Kildare LBAP Network to engage fully with the development of County and Local Development plans to ensure biodiversity is included in all plans and projects proposed for the Narraghmore area as well as broader environmental planning and sustainable transport etc. This could include lobbying for the use of green infrastructure instead of grey infrastructure where possible e.g. in relation to sustainable drainage, and ecological connectivity in the wider landscape.</p>
4.3.2 	<p>Liaise with the Kildare LBAP Network to engage with Kildare County Council to ensure that all suitable new buildings should incorporate appropriate biodiversity habitat boxes and features e.g., Swift bricks and callers, bat boxes, etc.</p>
4.3.3 	<p>Liaise with the Kildare LBAP Network to engage with Kildare County Council to ensure the protection of existing biodiversity features or ecological corridors of importance on new development sites, and the development of new green spaces and features that complement them. See Target 1.8.</p>
4.3.4 	<p>Liaise with the Kildare LBAP Network to engage with Kildare County Council to ensure that no known invasive species should be planted as part of any new developments. This includes Cherry Laurel which is commonly used for hedging. See Objective 2.</p>

Info Box: Green Infrastructure in Community Spaces

The European Commission defines green infrastructure as a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services such as water purification, air quality, space for recreation and climate mitigation and adaptation. This network of green (land) and blue (water) spaces can improve environmental conditions and therefore citizens' health and quality of life. It also supports a green economy, creates job opportunities and enhances biodiversity.







1. Permeable driveways to help reduce flood risk	6. Bat roosts, bird boxes and other wildlife features designed into buildings	11. Native, wildlife-friendly plants of local origin used in gardens & landscaping
2. Trees, hedgerows, water and other habitats integrated with development	7 Renewable energy and water efficiency built in from the outset	12 Wildlife-permeable boundaries between gardens and open space
3. Wildflower verges along roads and formal open spaces	8. Safe, attractive, connected pedestrian and cycle routes	13. Allotments and community orchards for local food
4. Lighting designed to avoid disturbing wildlife	9. Features and corridors to help invertebrates, hedgehogs, and other mammals	14. Street trees for wildlife, shade and improved air quality
5. Sustainable urban drainage, swales and rain gardens for wildlife and flood relief	10. Wildlife friendly green roofs and walls	15. Interpretation panels to help people understand the needs of wildlife and the environment

Infographic Source: Wildlife Trusts <https://www.wildlifetrusts.org/news/new-guidelines-call-homes-people-and-wildlife>

Target 4.4: Promote and support positive actions to encourage more sustainable lifestyles and individual choices

Biodiversity Loss Drivers Addressed: 1, 2, 4, 5, 6

No.	Action
4.4.1 	<p>Liaise with the Kildare LBAP Network to promote and support initiatives that make Narraghmore community, more sustainable both now and as they develop in the future. Some ideas include:</p> <ul style="list-style-type: none"> • Make the village fully pedestrian and bicycle friendly to encourage less car use locally. • Promote more planting of edible plants throughout the village on public and private lands and the creation of more community managed edible gardens. • Explore the potential for Narraghmore to become a sustainable energy community. See SEAI's Community Energy Project: https://www.seai.ie/community-energy/sustainable-energy-communities/start-an-energy-community/ • Manage rainwater sustainably in new developments. • Reduce Narraghmore's waste by following the principle of '6 Rs': refusing, reducing, reusing, repairing, recycling, and rotting. Only after these six elements are exhausted should something be considered waste. <p>For further ideas and information on sustainability see Ecolise (the European network for community-led initiatives on climate change and sustainability): https://www.ecolise.eu/</p>
4.4.2 	As part of the Kildare LBAP Network , use Narraghmore's collective voice of local community / residential groups, businesses, and individuals to advocate for better environmental and biodiversity protection at the local, county, and national level with local elected officials.
4.4.3 	As part of the Kildare LBAP Network , promote and support campaigns that encourage individuals to consider more environmentally sustainable lifestyle and consumer choices e.g. shop local campaigns, source food from local producers and / or grow your own, manage household waste separately (recycling, composting and general waste), stop food waste (stopfoodwaste.ie), reduce single use plastics, insulate your home, use public transport or car pool to work, etc.
4.4.4 	As part of the Kildare LBAP Network , promote the UN Sustainable Development Goals (SDGs) in the community and use them to help guide local community actions, planning, and land use decisions: https://sdgs.un.org/goals . Tidy Town's National Competition supports making the UN SDGs relevant to National Competition Categories.
4.4.5	Organise community screenings of films of sustainability, climate and biodiversity interest.



Objective 5: Collecting Evidence to Track Change and Measure Success

This objective aims to encourage and support people in the community with biodiversity recording and monitoring. Three targets have been identified to achieve this objective.

Why:

- Understanding the trends in biodiversity loss / gain at the local, national, and international levels are crucial to developing targeted solutions to address the problems and build on the successes.
- To help build up a picture of the health of the habitats and species in the area, which can act as an indicator of the overall health of biodiversity.
- The training of Citizen Scientists by experts equips local people to accurately monitor and record biodiversity in their area. For more specialist surveys, communities should engage the services of professional ecologists.
- Monitor actions taken to see if they are making a difference for biodiversity in the area.
- Help identify threats and opportunities for biodiversity.
- Deliver on the aims and objectives of local and national policies e.g. National Biodiversity Action Plan, All-Ireland Pollinator Plan, etc.

Target 5.1 Monitor and record biodiversity and biodiversity actions taken

Target 5.2 Build the capacity within the community to manage and record biodiversity

Target 5.3 Review the Biodiversity Action Plan



Info Box: Who are Citizen scientists?

All of us have the capacity to be Citizen scientists! This term refers to ordinary people being able to help with the scientific recording of biodiversity in our everyday lives. This has been transformed in Ireland with the advent of the National Biodiversity Data Centre (NBDC) who run the website www.biodiversityireland.ie. The NBDC describe citizen science as ‘*data collection by members of the public to help answer research questions. Having a strong recording community is essential to citizen science*’. The NBDC website has become a hub for knowledge about Irish biodiversity. It features maps of the recorded occurrences of species of our Irish flora and fauna and information about their ecology and population trends. This is all vital information for scientists to use in order to assess how different species are doing over the years – a factor that has become crucial with our Biodiversity Crisis. For instance, this is one of the reasons why we know that one third of our bee species are in decline in Ireland – the NBDC has the figures to back this up.

The graphic representation below shows how Citizen science works with the NBDC from their webpage:

Citizen Science - National Biodiversity Data Centre (biodiversityireland.ie)

The other consideration is how Narraghmore can use citizen science to help track how the actions of this BAP are working over the years. Doing things like pollinator FIT counts (flower-insect timed counts) can give lots of information as to how the local species and habitats are doing in general.

How your input helps national and global conservation



Submit your records and datasets to National Biodiversity Data Centre



Your data will help us to track Ireland's progress towards our goals to conserving biodiversity



We will share your data with the Global Biodiversity Information Facility, a global biodiversity database of more than 6 billion records

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Target 5.1: Monitor and record biodiversity and biodiversity actions taken

Biodiversity Loss Drivers Addressed: 1, 2, 5, 7

No.	Action
5.1.1	<p>Monitor and record different pollinator species. Some recording activities to consider include:</p> <ul style="list-style-type: none"> • Establish at least one bumblebee and / or butterfly transect in the community. • Increase the number of moth records by encouraging interested member(s) of the public to put out moth traps in their gardens on a regular basis. Note: A licence is required to operate a moth trap and can be got from the NPWS. • Identify any solitary bee nesting sites in the community and monitor the species and populations. Solitary bees make up the majority of our native bee species and are crucial for pollinating wildflowers. See the link below* for further information on these species and good nesting habitats. https://biodiversityireland.ie/app/uploads/2022/05/ActionSheet_Solitary-Bees-WEB-2.pdf • Carry out a Flower Insect Timed Counts (FIT Counts) the methodology of which is outlined in the https://pollinators.ie/record-pollinators/fit-count/ This allows the community to monitor any change in the abundance of flower visiting insects. This is a great activity for children and schools.
5.1.2	<p>Monitor and record other specific habitats and species in the community. The exact habitat or species will depend on the conservation status of the species or habitat, the interest of people in the community, their willingness and availability to get involved, and resources available to carry out professional surveys. Some ideas include:</p> <ul style="list-style-type: none"> • Continue to monitor the orchid species in the grasslands beside the GAA club grounds. • Monitor any new habitat bat boxes installed in the community such as bird and bat boxes. • Monitor local populations of other key stone species such as mammals and birds particularly in Narraghmore Nature Reserve and on farmlands. These species are indicator species for the quality of local habitats and ecosystems, the advice of an ecologist is recommended in setting up mammal monitoring devices such as trail cams and spraint surveys. • Promote the BirdWatch Ireland garden bird survey. All records should be submitted to BirdWatch Ireland. BirdWatch Ireland link: https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-garden-bird-survey/taking-part-in-the-irish-garden-bird-survey/
5.1.3	<p>Monitor any newly created meadows and verges in the community for different wildflowers, grasses, and other associated species. For support on this, link with the BSBI (Botanical Society of Britain and Ireland, https://bsbi.org/) to highlight any plant occurrences or populations of local or national importance in the Narraghmore area. There is also the potential to run flora id courses in conjunction with Kildare County Council.</p>

Note: Where more detailed information on habitats or species are required then an ecologist should be engaged to carry out surveys of the area. These may be required to build up a more comprehensive list of species and habitats in the area.

All records should be submitted to the National Biodiversity Data Centre (<https://biodiversityireland.ie/>).

Where there is a concern of a significant pollution incident contact the EPA complaints section where there are links to the relevant local statutory bodies: <https://www.epa.ie/our-services/compliance--enforcement/whats-happening/make-an-environmental-complaint/>

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Info Box: Pollinators

Who are the pollinators?

Pollinators are species of insects who carry out the pollination of flowering plants that is vital for fruit and seeds to be produced. Many are aware of honeybees being pollinators but they are only one out of 99 native bee species in Ireland. The other 98 wild bee species are 21 bumblebees and 77 solitary bee species. In addition to bees, moths, butterflies, wasps, hoverflies, and ants can all act as pollinators – unwittingly transferring pollen with them from flower to flower as they seek tasty nectar to drink or gather pollen itself for their young to eat.




Why pollinators?

You may wonder what is all the fuss about pollinators in particular? Why are they the species that are being focussed on? The truth is that pollinator species are great indicators of the health of an ecosystem i.e. if there is a good number of various pollinator species then this means that there is enough food and nesting habitat for them i.e. enough healthy plants and undamaged natural habitats. So quite apart from pollinators being fascinating creatures – their presence or absence tells us a great deal about the state of biodiversity more generally. Also, they are relatively easy to recognise, if not at species level but at group level and it isn't always necessary for the citizen scientist to identify at species level e.g. FIT counts simply need the insect group identified – bumblebees, butterflies etc.




Target 5.2: Build the capacity within the community to monitor and record biodiversity

Biodiversity Loss Drivers Addressed: 1, 2, 5, 7

No.	Action
5.2.1 	As part of the Kildare LBAP Network , engage with the local libraries to encourage them to be well stocked with biodiversity books, identification guidebooks, information leaflets, booklets, All Ireland Pollinator Plan guides, any other relevant information resources, and recording equipment. For example, the Heritage Council and Kildare Library Service have introduced Citizen Science Kits to selected libraries in County Kildare in 2023.
5.2.2 	As part of the Kildare LBAP Network , engage and support local schools with the supply of biodiversity recording equipment and identification resources. This can include posters, charts, guidebooks, swatches, pond dipping equipment, nets, pots, etc.
5.2.3 	As part of the Kildare LBAP Network , consider developing ecological training for local teachers and youth leaders and building up resources with local schools to create outdoor classroom areas for nature study.

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	For example, water sampling and kick sampling resources to examine the macroinvertebrates that live in the local stream. This would be suitable for older age groups.
5.2.4 	As part of the Kildare LBAP Network , liaise with the Kildare and West Wicklow Education and Training Board to support https://kildarewicklow.etb.ie/ opportunities for access to funding for training and access to existing community education opportunities.

Info Box: Biodiversity Atlases

There is a wealth of information out there to inform us all on how populations of plants and animals have changed over recent decades. This can help when it comes to planning and prioritising biodiversity projects but also in helping to raise awareness and inform the public about the real state of affairs for species that may once have been common.

Many of these productions are freely accessible online but the trick is knowing where to look! A prime example is the production in 2023 of the Plant Atlas 2020 by the Botanical Society for Britain & Ireland (BSBI). See: <https://bsbi.org/plant-atlas-2020-in-ireland> for an introduction to this hugely valuable publication and how to use it as a tool for informing you about your local flora. Some other atlases include:

The Mammal Atlas of Ireland which can be downloaded as a pdf here: https://biodiversityireland.ie/app/uploads/2021/11/Mammal_Atlas_web.pdf

The Bird Atlas for Europe is available to research at this link: <https://birdwatchireland.ie/bird-atlas-maps-for-all-of-europe-now-online/>



Target 5.3: Review the Biodiversity Action Plan *Biodiversity Loss Drivers Addressed: 1, 2*

No.	Action
5.3.1	Consider having an official launch of the BAP at the outset.
5.3.2	Carry out annual reviews of the Biodiversity Action Plan. This review should be used to identify progress on actions delivered, updates, and plans for the upcoming year.
5.3.3	Have an overall review of the Plan before it expires in 2028 and update it for the next agreed period of time.

Section 4: Resources

It is not necessary to re-invent the wheel to deliver this plan. There are numerous people, organisations, publications, and online resources available to achieve the best possible outcomes. Some of these are outlined in this section, although this is not intended to be an exhaustive list. It is also important that as new information becomes available that this should be considered and actions delivered or adjusted accordingly.

Links to useful online resources

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

Subject	Link(s)
Bats	<ul style="list-style-type: none"> • https://www.batconservationireland.org/ • https://kildarebatgroup.wordpress.com/
Birdwatching	<ul style="list-style-type: none"> • https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/
BSBI Plant Atlas for Ireland	<ul style="list-style-type: none"> • https://bsbi.org/plant-atlas-2020-in-ireland
Children's Biodiversity Activities	<ul style="list-style-type: none"> • https://birdwatchireland.ie/our-work/fun-learning/for-kids/ • https://www.woodlandtrust.org.uk/blog/2020/03/kids-nature-activities-self-isolation/ • https://www.rspb.org.uk/fun-and-learning/
Farming & Biodiversity	<ul style="list-style-type: none"> • https://www.farmingfornature.ie/ • https://www.irishagroforestry.ie/ • https://www.irishorganicassociation.ie/ • https://www.teagasc.ie/
General Biodiversity Issues	<ul style="list-style-type: none"> • https://www.biodiversityireland.ie/ • www.npws.ie
Habitat Boxes	<ul style="list-style-type: none"> • https://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-How-to-Guide-1-ALT_FINAL.pdf • https://birdwatchireland.ie/app/uploads/2019/09/Nestboxes-factsheet.pdf • https://www.batconservationireland.org/wp-content/uploads/2015/05/BCIrelandGuidelines_BatBoxes.pdf
Hedgerows	<ul style="list-style-type: none"> • https://www.farmingfornature.ie/resources/best-practice-guides/hedgerow-management/ • https://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-How-to-Guide-3-FINAL-1.pdf • https://www.heritagecouncil.ie/content/files/conserving_hedgerows_2mb.pdf • www.hedgelaying.ie
Invasive Alien Species	<ul style="list-style-type: none"> • https://invasives.ie/ • https://www.fisheriesireland.ie/Invasive-Species/invasive-species.html
Local Biodiversity News	<ul style="list-style-type: none"> • https://www.facebook.com/Wild-Kildare-1437313092971392/ • http://www.birdwatchkildare.com/ • https://kildarebatgroup.wordpress.com/ • http://www.kildare.ie/CountyCouncil/Heritage/Biodiversity/
Meadow Creation & Restoration	<ul style="list-style-type: none"> • https://pollinators.ie/wp-content/uploads/2023/06/Meadow-Guideline-2023-WEB.pdf
Orchards	<ul style="list-style-type: none"> • http://www.irishseedsavers.ie/blog/wp-content/uploads/2014/10/CreatingAnOrchard.pdf • https://www.theorchardproject.org.uk/
Peatlands	<ul style="list-style-type: none"> • www.ipcc.ie • www.bordnamona.ie/transform/biodiversity • www.abbeyleixbog.ie
Pollinator Friendly Planting Schemes	<ul style="list-style-type: none"> • https://pollinators.ie/resources/
Pollinators	<ul style="list-style-type: none"> • https://pollinators.ie/
Recording Biodiversity	<ul style="list-style-type: none"> • https://www.biodiversityireland.ie/record-biodiversity/

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Schools & Biodiversity	<ul style="list-style-type: none"> • https://greenschoolsireland.org/biodiveristy/ • https://pollinators.ie/schools/ • http://www.heritageinschools.ie/teachers-resources/strand/living-things-science/p3?q=&c= • https://www.eckilkenny.ie/images/Biodiversity Plan for Schools.pdf • http://www.ipcc.ie/discover-and-learn/resources/ •
Signage	<ul style="list-style-type: none"> • https://www.heritagecouncil.ie/content/files/bored_of_boards_1mb.pdf • https://pollinators.ie/resources/signage-templates/
Soils	<ul style="list-style-type: none"> • https://www.soilassociation.org/
Swifts	<ul style="list-style-type: none"> • https://birdwatchireland.ie/publications/saving-swifts-guide/ • www.swiftconservation.ie/
Trees and Woodlands	<ul style="list-style-type: none"> • https://www.treecouncil.ie/nativeirishtrees • http://www.woodlandsofireland.com/sites/default/files/Management%20Guidelines%20for%20Ireland%27s%20Native%20Woodlands%202017.pdf • https://leafireland.org/
Wildflower Identification	<ul style="list-style-type: none"> • http://www.wildflowersofireland.net/index.php • www.bsbi.org
Wildlife Ponds	<ul style="list-style-type: none"> • https://www.farmingfornature.ie/your-farm/resources/best-practice-guides/building-a-wildlife-pond-on-your-land/ • https://burrenbeo.com/thc/the-hares-corner-ponds/ • https://invasivespeciesireland.com/wp-content/uploads/2017/10/AQUATICS_BOOK5.pdf • https://www.antaisce.org/ponds

Biodiversity Podcasts

The following is a list of some podcasts on biodiversity.

Subject	Link(s)
<i>In Your Nature:</i> Birds & general wildlife in Ireland	https://inyournature.buzzsprout.com/
<i>Farming for Nature:</i> Biodiversity on the farm	https://www.farmingfornature.ie/resources/podcasts/
<i>Naturefile:</i> All sorts of Irish ecology topics expertly presented	https://www.rte.ie/radio/podcasts/series/2407-naturefile/
<i>Root and Branch:</i> Each episode features a different native Irish tree	https://www.rte.ie/radio/podcasts/22155202-root-and-branch-birch-the-lyric-feature/
<i>Wild Flower (Half) Hour:</i> great wildflower information	https://tunein.com/podcasts/Podcasts/Wild-Flower-(Half)-Hour-p1065716/
Climate	https://climateambassador.ie/podcast/
Birds and Biodiversity	https://podcasts.apple.com/ie/podcast/in-your-nature/id1554068928
General Biodiversity	https://www.rte.ie/radio/podcasts/series/2407-naturefile/

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Potential project funders

The following table outlines some of the potential sources of funding to help deliver the actions outlined in this Plan. It is also worth remembering other traditional forms of fundraising such as working with local businesses, bucket collections, table quizzes, etc.

Fund / Funding Body	Description
LEADER Programme, County Kildare LEADER Partnership CLG	To discuss potential project ideas and the availability of funding, contact the County Kildare LEADER Partnership offices at (045) 895 450 or email info@countykildarelp.ie . Website: www.countykildarelp.ie/
Kildare County Council	For additional information in relation to funding for biodiversity and heritage projects, contact the Heritage Officer - Tel. 045 980791 or email heritageofficer@kildarecoco.ie
Community Foundation for Ireland	The Community Foundation for Ireland has funded biodiversity surveys and actions under their Environment and Nature programme. https://www.communityfoundation.ie/grants/types-of-grants/environment-and-nature-fund
Heritage Council	The Heritage Council supports a wide range of heritage projects throughout the country through our annual grants programme. https://www.heritagecouncil.ie/funding
Local Authority Waters Programme	Their aim is to support communities and stakeholders in the delivery of local water quality projects and initiatives and have an annual grant package available. Contact your local officer to discuss potential projects by searching: https://lawaters.ie/funding/
NeighbourWood Scheme	This Forestry Service grant supports the creation and enhancement of new native community woodland schemes over 1ha in size (up to 12ha size) including the improvements to woodland facilities such as trail infrastructure. https://www.agriculture.gov.ie/media/migration/forestry/grantandpremiumschemes/2015/NeighbourWoodScheme240717.pdf
An Taisce	An Taisce is currently running a project supporting community groups with the creation of wildlife ponds. Visit their website for further details: https://www.antaisce.org/ponds

Useful contacts & sources

To help deliver the actions it will be important to work with a range of local and national stakeholder groups. The following outlines some of these. It is worth remembering that there may also be local individuals in your community who have particular interests and skillsets worth tapping into to deliver the actions. Remember that skills other than ecological skills can be an important asset when delivering certain actions.

Organisation / Group	Area of Expertise	Contact Details
Kildare County Council	The local Heritage Officer is available to discuss and provide information on biodiversity and heritage related matters and projects.	Tel. 045 980791 or email heritageofficer@kildarecoco.ie
Kildare Public Participation Network	Public Participation Networks (PPNs) act as an independent structure to facilitate public participation in policy and decision making with the local authorities. Community and voluntary, social inclusion, and environmental groups are encouraged to join Kildare PPN.	Telephone: 045 980700 Email: admin@kildareppn.ie Website: https://www.kildareppn.ie/
Wild Kildare	Local volunteer environmental organisation.	https://www.facebook.com/Wild-Kildare-1437313092971392/
Irish Wildlife Trust	National environmental charity covering all aspects of biodiversity. Laois and Offaly have an active	https://iwt.ie/

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	branch that are available to support community biodiversity projects.	
BirdWatch Ireland	For information on Ireland's birds. There is an active branch in Laois.	https://birdwatchireland.ie/
National Parks and Wildlife Service	Responsible for managing the Irish State's nature conservation responsibilities.	https://www.npws.ie/
All-Ireland Pollinator Plan	National Plan with the aim of creating an Ireland where pollinators can survive & thrive.	https://pollinators.ie/
National Biodiversity Data Centre	National centre for the collection, collation, management, analysis and dissemination of data on Ireland's biological diversity.	https://www.biodiversityireland.ie/
Vincent Wildlife Trust	National environmental charity with the aim of conserving and research into selected Irish mammals.	https://www.vincentwildlife.ie/
Dublin Naturalists' Field Club	The Field Club is concerned with the conservation and protection of scarce and threatened plants and animals and the protection of sites of scientific interest.	https://dnfc.net/
Botanical Society of Britain & Ireland	National organisation that promotes the study, understanding and enjoyment of British and Irish botany.	https://bsbi.org/ireland
The Local Authority Waters Programme	A shared service working with Local Authorities and State agencies to meet obligations under the EU Water Framework Directive for the development and implementation of River Basin Management Plans in Ireland.	https://lawaters.ie/
Bat Conservation Ireland	An All-Ireland charity that promotes the conservation of bats and their habitats.	https://www.batconservationireland.org/
Kildare Bat Group	Local charity that promotes the conservation of bats and their habitats.	https://kildarebatgroup.wordpress.com/
Irish Peatland Conservation Council	A national charitable organisation with the aim of conserving and protecting a representative sample of Irish bogs, and to campaign on bog-related issues.	http://www.ipcc.ie/
Trees on the Land	An All-Ireland charity that aims to increase the amount of native Irish tree cover.	https://www.treesontheland.com/
Environmental Protection Agency	The EPA is committed to protecting people and the environment from the harmful effects of pollution. As part of this commitment, we provide a simple system for members of the public to make complaints about environmental pollution, disturbance or damage.	https://www.epa.ie/our-services/compliance--enforcement/whats-happening/make-an-environmental-complaint/

Appendix 1: Managing Community Meadows

A meadow is a semi-natural habitat that ecologists refer to as a semi-natural grassland. This means that its natural function and biodiversity are intact, but its existence is dependent on some human management. On the island of Ireland, a meadow left to its own devices, without any management, would eventually regenerate into woodland. There are a few common types of meadow described below that groups could consider as an alternative to short lawn grass. In addition, the All-Ireland Pollinator Plan has developed new guidelines on meadow creation and restoration: <https://pollinators.ie/wp-content/uploads/2023/06/Meadow-Guideline-2023-WEB.pdf>



Shortcut Meadow

This is a low meadow that is great for small areas or where the taller hay meadows are not suitable. It can be full of nectar rich wildflowers such as clovers, bird's-foot trefoil, dandelions, selfheal, and more.

Cutting: cut and lift every 4-6 weeks starting in mid-April and finishing in mid to late October.



Hay Meadow

This meadow aims to mimic the old agricultural hay meadow, once common across Ireland but now mostly gone. The grasses & other wildflowers support a range of wildlife. Over the winter the vegetation is short.

Cutting: this meadow requires a cut and lift at the end of the summer. This is typically carried out in Aug-Sept after most of the plants have set seed. The exact timing is site specific and is dependent on the species present and the landowner's needs / preferences. Additional cut and lifts may be required in the autumn or early spring to remove autumn / winter growth.



Roadside verges

The grass verges of roadsides can be a great space to increase biodiversity in your local area. A mower's width (approx. 50cm) can be mown regularly on the roadside of the grass verge whilst inside this can be left unmown until September - managed the same way as the hay meadows described above. This allows wildflowers and grasses to bloom and provides valuable nesting and resting habitats for pollinators, other invertebrates and mammals. If the verge is wide enough it can also be a good place to plant the occasional tree - especially on approach roads. It is recommended to use signs in these situations as people become familiar with this new method of verge management.

Cutting: The roadside edge of ~50cm width requires mowing regularly during the growing season. The inner meadow verge requires management as one of the two meadows mentioned above.

Meadow Creation & Maintenance:

Planning

The change of management from traditional lawn grass to meadow, whilst delivering many positive benefits for biodiversity and the environment, also presents maintenance challenges. With proper planning these can be overcome. Some things to consider at the outset:

1) What type of meadow is suitable for your location?

A few meadow options are listed above but the choice of meadow for each site will depend on practical issues, aesthetics, and personal / community preferences.

2) How are you going to cut the meadow?

Currently most communities rely on landscape / grass maintenance contractors to manage them and their public grasslands. Their equipment is typically not suited to cutting the longer grass in a meadow. It requires specialist equipment. For smaller meadows then this can be done using handheld scythes and / or handheld power tools such as strimmers, brush cutters or a power scythe. Larger meadows may require the assistance of contractors or local farmers who would be willing to cut and take the grass cuttings away.

- In larger areas, cut out from the centre. This gives mammals and birds in the meadow a chance to naturally move from the area
- If possible, let the grass cuttings lie for a few days. This allows more seed to drop and gives any insects a chance to escape! A dry cut is also easier to lift, particularly if it is being done manually.

The management of a community meadow offers the potential for an annual community event. It could include showcasing the old tradition of scything – perfect as a Heritage Week event. There may even be the opportunity to organise a community event that could tie in with tie in a local vintage club if they have old hay meadow equipment!

3) What are you going to do with the grass cuttings?

Finding a sustainable use for the hay / grass cuttings is important and one of the trickiest aspects of the meadow management. Some ideas include:

- Community or personal composting - this may only be practical for smaller meadows. It should not be composted near sensitive habitats such as a watercourse.
- For larger meadows, if there is an interested farmer in the area, they may be able to use it as fodder or for bedding. If this is not an option, then consult with Kildare County Council to explore your options and support with this issue.

Creating a Meadow

For existing grasslands, simply allow the grass to grow and maintain it as a meadow suitable for your requirements. It is not recommended that any wildflower seed be purchased for the purposes of adding it to the grassland. The grass sward will likely already contain a mix of grasses and other wildflowers naturally.

The seed of the annual wildflower Yellow Rattle (*Rhinanthus minor*) may be added to proposed hay meadows if it is not present and soil conditions suit. Seed should only be sourced from the local area from old unimproved meadows with the permission of the landowner.

Cutting Requirements

As per the tables above for the different meadow types.

Mown Fringes & Paths

Maintain the fringes on a regular basis along footpaths, seating areas, roads, and car parks. If the meadow is big enough, mow paths through it to allow access and opportunities for natural play, learning and other social benefits.

Meadows and the Law

It is the responsibility of the landowner to control plants listed under the Noxious Weeds Act 1936. Currently these are Ragwort, Thistle, Dock, Common Barberry, Male Wild Hop Plant, and Wild Oat.

Appendix 2: Note on Pollinator Friendly Planting

A crucial point to note before we go further with this section is that **the most beneficial areas** for pollinators and indeed other wildlife species are **natural, undisturbed habitats** such as native, wild grasslands such as in the photograph (i.e. not lawns, golf courses, playing pitches or pasture fields). This intuitive point has been recently scientifically established through research by Russo *et al.* (2022) of Trinity College Dublin and the All-Ireland Pollinator Plan (<https://pollinators.ie/conserving-diversity-in-irish-plant-pollinator-networks/>). Therefore, managing as many of our mown lawn areas as possible as meadows for biodiversity (see 3.2 below) is the absolute best action we can take for local biodiversity.



If, however, you are dealing with pots, planters and flowerbeds in gardens and the urban situation, then native Irish plants wherever possible are always the best choice.

Traditionally in recent years, community groups have turned to annual bedding plants such as Pelargoniums, Petunias, and Begonias for lots of colour. They are, however, of no use to pollinator species as the pollen has either been bred out of them or they have so many petals, the pollinators cannot physically access the pollen!

There are many other plants, a lot of them familiar as the beautiful cottage garden plants long used by Irish gardeners, that are pollinator-friendly. Another fantastic feature of these plants is that they are sustainable – they do not require replanting annually because they are perennial, and this also means that they require less watering – making them eminently sustainable in this time of Climate and Biodiversity Crisis. Where possible, using plants sourced locally from keen gardeners is a cost effective and sustainable way of creating new or adding to existing flower beds. Various time-honoured propagation methods are simple to learn and encourage the exchange of organic locally grown plants which are not treated with pesticides often invisible to the gardener but lethal to the insects we are trying to help. Several community garden groups around the country organise plant swaps which support this ethos of exchange of organic plants and gardening expertise. A list of pollinator friendly plants for different situations and seasons can be found in the All-Ireland Pollinator Plan Planting Code (<https://pollinators.ie/resources/>).

Planting bulbs to support pollinators

Another gardening action that can lengthen the time period of both pollinator food value and human interest is to plant spring-flowering bulbs into lawn areas. Pollinator-friendly spring bulbs are Snowdrops, Crocuses, and Grape hyacinths. The ever-popular daffodils and tulips unfortunately, are of no biodiversity value but even mixing through crocuses, snowdrops and grape hyacinths will be of some value. Planting these three bulb types through lawn areas is great for adding a splash of colour early in the season, announcing the arrival of spring! The delay in the first cut until the bulbs leaves have died back, allows other wildflowers such as dandelions to flower, also vital for emerging pollinators. Bulbs should only ever be considered for amenity grasslands; they are not suitable for use in species rich semi-natural grasslands. Planting bulbs such as these is considered a biodiversity-friendly gardening action but not a habitat creation action such as natural meadow actions outlined below.



Appendix 3: Tree Planting Design & Maintenance Considerations

Woodland Planting Design Considerations

Trees deliver a wide range of benefits and where possible we should aim to increase tree cover in our communities without disturbing other existing habitats of biodiversity importance e.g. wetlands, semi-natural grasslands etc.



Hedgerows

Hedgerows have huge nature value as wildlife corridors, connecting sites and linking them with their surrounding landscape. Mixed native hedgerows are the best for biodiversity and should be the number one choice for any new hedgerow. Avoid using Cherry Laurel for any new hedges as they are highly invasive. To increase biodiversity further the vegetation at the base of the hedgerows should be managed less intensively.



Small Groups & Clusters of Trees

Smaller groups of trees are ideal for smaller common / public green spaces and parks. They are also useful in breaking up larger green spaces while still maintaining mostly open space where this is a requirement. By planting trees in blocks rather than singly, it offers the opportunity to eliminate grass cutting directly underneath the trees. This reduces the potential damage from lawnmowers and strimmers and creates additional habitat to support wildlife e.g. bumblebees.



Woodlands (Small to Large)

A woodland can be thought of as an area of land with trees as the dominant vegetation type. In community settings they can vary from small pockets to larger areas of woodland. They support native wildlife and offer opportunities for recreation and amenity. The photo shows a newly planted woodland in a residential estate. Note how the grass underneath is left uncut which creates additional habitat, reduces grass maintenance, and avoids the potential for accidental damage to the trees from lawnmowers.



Shelterbelts

A shelterbelt is a linear strip of trees, anything from 2-20m width, that is designed principally to reduce wind speed and provide sheltered areas – ideal for sports grounds! They are also great for screening and act as important wildlife corridors. As for the woodland above, the grass underneath is left uncut creating additional habitat.



Orchards & Food Forests

These woodland types are great for community spaces as they not only provide benefits for biodiversity, but they also provide people with fruit and the potential for community events at blossom and harvest time.

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The following are some practical tips for new tree planting design and maintenance:

- **Marking Out:** Set out all tree planting areas and inform grounds maintenance staff to avoid accidental damage to trees.
- **Setting Back:** It is important to set back from walls, roads, kerbs, blacktopping, and buildings. Do not plant against field stone walls (these are an important habitat in their own right).
- **Appropriate Planting:** Do not plant trees in places where they will have a negative impact on special or protected habitats and landscapes and resident flora and fauna. In most cases native tree planting is beneficial for the local environment and for biodiversity support. However, in certain situations planting trees can damage existing rare habitats and cause permanent habitat change. You must not plant trees on unenclosed land, moorland, wetland, heathland, bog or unimproved or minimally improved pasture or old meadow that has never been ploughed. Similarly, you must not plant on land falling within an SAC, SPA, NHA or any other designation without prior approval from the NPWS or relevant statutory body.

Similarly, it is important to consider your neighbours. Large trees may not be appropriate next to a building or garden where they will excessively block light or views, or otherwise interfere with their enjoyment of their property.

- **Site Conditions:** Design the planting mix to take account of local site conditions such as soil type, shelter, etc.
- **Scrub:** Avoid interfering with scrub and do not select scrubby areas for tree planting, they are best left alone.
- **Licence Requirements:** As of the production of this Action Plan, if any single block of new woodland planting exceeds 0.1 hectares (0.25 acres) then a Forest Service licence is required. This minimum area may be subject to change and so it should be checked in advance. A registered forester is required to carry out this on your behalf.
- **Maintenance Around New Trees:** Brambles, nettles, thistles and other common weeds all deter grazing and browsing animals and others who may trample or eat your trees. They are a cost-effective and natural alternative to barbed wire and plastic tree guards and will protect and shelter your trees if you let them. They also add additional wildlife value to new planting schemes.

Grasses and other herbaceous vegetation will compete with young trees for nutrients and light and the trees will grow more slowly on account of this during the first few years. Under the ground however they will be establishing strong roots which will serve them well in future and they will make use of the valuable shelter provided. After 1-2 years, the trees will have put roots below the other vegetation layer and you will find they take off and grow up fast, quickly shading out these plants. In the meantime, the grasses and other vegetation will provide important habitat for wildlife.

In general, any tall vegetation that is falling or hanging over the newly planted trees should be pulled or trampled as these can cause trees to lean or fork. This may be required 2-3 times in the first two seasons after planting. This is also a good opportunity to take a head count and note any failures. Do not use herbicide to control vegetation around trees, this is damaging for biodiversity and can also damage soil growing conditions for the trees.

- **New Tree Planting:** The following are some practical tips for planting new trees:
 - Where possible use bare root whips in planting schemes. These are preferable to standards as they establish quicker, have a higher success rate, and are less expensive to supply and plant.
 - Tree stakes and ties are only required for larger trees. These should be monitored during the year for defects that may damage the trees. Similarly, the ties should be loosened as the tree grows to avoid damage. All ties and stakes should be removed once the tree can stand unsupported without bending or shifting in the ground. This usually takes about 18 months to 3 years depending on the size the tree was planted at.
 - When planting new areas of woodland, avoid straight lines. Plant in small groups of the same species with the larger species concentrated to the back or centre of the mix and smaller species to the front or perimeter.
 - Planting spacings for new woodland areas: this will depend on specific project requirements. However, a 2-metre centre guide can be used where biodiversity is the primary aim of the planting scheme.

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- The planting season for bare root whips is November to March. It is best to plant as early in the bare root season as possible to allow plants time to bed in and minimise losses in the case of a dry spring or summer.
- It is important to avoid any accidental damage caused by lawnmowers or strimmers. In general, it is best to avoid the use of these close to the base of trees as they can very quickly ring-bark a tree which will lead to the death of the tree. Allowing the vegetation to grow under new tree planting is the best way to avoid damage while providing additional habitat.

Hedgerow & Shelterbelt Planting

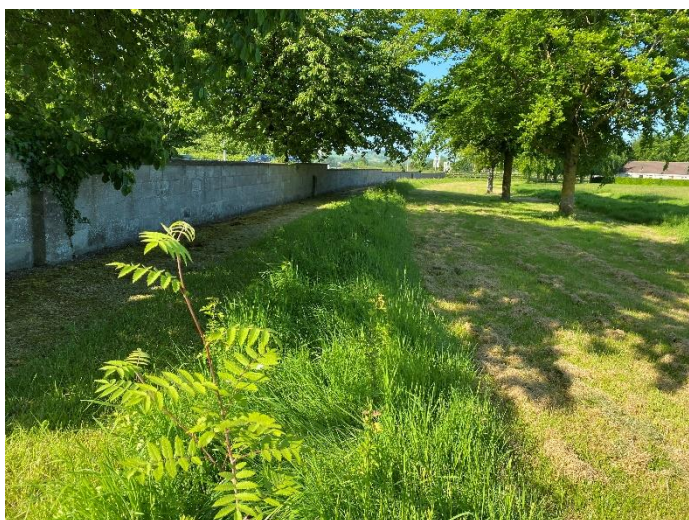
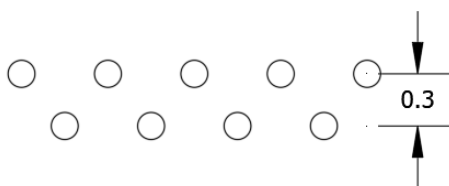
Native hedgerows and shelterbelts are suitable for use along site boundaries to provide biodiversity habitat, shelter, screening, and to act as a deterrent to would-be intruders and livestock, while allowing small mammals such as hedgehogs to pass through.

A hedge or hedgerow is a line of closely spaced shrubs with or without occasional trees, planted and trained to create a barrier or to delineate the boundary of an area. These are a common feature in the Irish landscape.

A shelterbelt is a linear strip of trees, anything from 2-20m width, that is designed principally to reduce wind speed and provide sheltered areas. They are also great for screening and act as important wildlife corridors.

Planting Design Considerations for Hedgerows

A hedgerow can be planted at anything from 3-8 plants per metre during the bare root season (Nov-March). For best results, it should be planted in double staggered row approximately 30cm wide. Use a string line to achieve a straight line at planting.



Newly planted native hedgerows along site boundaries – while it is hard to make out the trees from the other vegetation in the photos, the long grass can actually help the new trees by providing shelter, prevent the ground from drying out excessively during dry spells, and deterring rabbits. They also provide habitat for a host of other wildlife.

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Maintaining Hedgerows for Biodiversity

The ideal hedgerow to support biodiversity is tall, wide and dense at the base, with a wide, uncultivated, grassy margin and that is connected with other hedgerows, woodlands, and natural habitats in the landscape. This applies to most hedgerows on farms, residential estates, commercial properties, roadsides, gardens, etc. where space and site safety considerations allow.

The following graph has been adapted from the Irish charity *Farming for Nature's* guidelines on hedgerow management. Their website and leaflet has further information on why and how to manage hedgerows for biodiversity: <https://www.farmingfornature.ie/resources/best-practice-guides/hedgerow-management/>

Getting Started

- Carry out a simple assessment of the hedgerows and other site / field boundaries including the species and condition
- Tailor the management of each hedgerow to suit the hedgerow and the needs of the landowner. Avoid over management of hedgerows as regular tight cutting of a hedge can reduce the biodiversity potential of it. The most important action for established hedgerows can often mean doing nothing - at least for a while - until it is taller and wider. Some of the encroaching vegetation into the margins of the neighbouring fields / green spaces (e.g. blackthorn and briars) may need to be kept cut back when they are young to prevent them becoming established.
- Ideally, established hedgerows should be allowed to grow upwards and outwards
- Tall hedgerows with plenty of trees should be given just a side trim.
- Where there is a row of trees but the hedge is gappy at the base, consider cutting back sections to allow more light in and therefor encourage greater diversity.
- Hedges with wide grass or wildflower margins and short hedges with few or no trees are better cut in an A-shape so the broad base allows light and encourages a dense growth at the ground level which is better for ground nesting birds.
- Avoid cutting all hedgerows at once, consider a 3-5 year rotation to allow flowers and berries to grow in alternate sections.
- For hedgerows in poorer conditions, fill gaps in hedges by planting more diverse native species (of Irish origin and provenance). Consider coppicing or laying the leggy, gappy areas (for more information on laying hedgerows see <https://hedgelaying.ie/>). If livestock are causing a lot of damage, it may be better to fence them back until the hedgerow is more established and resilient.
- For new hedgerows in fields with livestock then fence up to 2m out from the hedgerow base.

Further Actions & Considerations

- Manage in a landscape context rather than an individual hedgerow context. This means strengthening and managing the wider network of field / site boundaries in the landscape with biodiversity in mind including other hedgerows, treelines, drains / ditches, banks, stone walls, etc.
- Delay trimming as late as possible outside the bird nesting season - maybe until January and February (though make sure the ground isn't prone to becoming too wet / soft) as the surviving berry crop will provide valuable food for wildlife.
- Similarly, allow the hedgerow bases and other field / site margins to flower and set seed before cutting.
- Avoid using chemical sprays or fertilisers near hedgerows as they can have a negative impact on biodiversity that live there.
- For roadside hedgerows, the health and safety of road users takes precedence over other considerations. These may be cut during the year as needed to maintain sight lines and road safety.
- If planting a new hedge, consider banking it like old hedgerows; this creates more than one habitat.
- Hedgerow cutting is usually undertaken with a flail, but a circular saw is a less damaging alternative which results in a cleaner cut and encourages better re-growth.
- If there are any invasive plants in the hedge then take the appropriate measures should be taken to control and eradicate them.
- The cutting of hedgerows must be carried out in accordance with Section 40 of the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000 and the Heritage Act 2018. These Acts stipulate that it is an offence to destroy vegetation on uncultivated land between the 1st of March and the 31st August each year. There are exemptions to this to allow for the maintenance of sight lines for road safety reasons.

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Species Selection for Woodlands, Hedgerows and Shelterbelts

It is recommended that native species should be used for new woodland, hedgerows, and shelterbelts. Non-native invasive species, such as Cherry Laurel (*Prunus laurocerasus*), Snowberry (*Symphoricarpos albus*), *Rhododendron ponticum*, etc. should be avoided in all circumstances.

Plants should only be sourced from certified Irish native seed origin and provenance. This will help prevent the import of pests and diseases. For example, Ash Dieback was brought in on imported tree stock and has now spread across the country. It is also important to avoid using 'improved' or forestry selected genotypes of native trees as they will narrow the genetic base of our native trees.

The following table lists some of the native trees and shrubs. Please note the selection of the exact species mix and percentage of each will depend on site conditions, landowner requirements, and availability of suitable tree stock.

Species	Notes
Small trees / shrub species	
Hawthorn (<i>Crataegus monogyna</i>)	This is the most common hedgerow species in the Irish countryside. It can be used as the principal species for most sites. It creates a good quality stock proof barrier due to its thorns and dense habitat after cutting. Good show of cream flowers in May and red berries in autumn but this will only happen on bushes that are not cut that year.
Blackthorn (<i>Prunus spinosa</i>)	Another common hedgerow species. This is always the first to blossom in the hedgerows with white flowers in March before the leaves appear in April followed by purple fruit known as sloes in autumn. This is a particularly thorny species.
Hazel (<i>Corylus avellana</i>)	A small tree that favours limestone soils. Deciduous with large green leaves, catkins in early spring and hazelnuts in autumn.
Guelder Rose (<i>Viburnum opulus</i>)	A beautiful native shrub with large white blossoms in spring and scarlet red berries in autumn. Deciduous, its leaves turn deep red before they fall. Usually found in hedgerows along drains as it needs damp conditions to thrive.
Dog Rose (<i>Rosa canina</i> agg.)	A scrambling climber that will grow through other shrubs. Striking white flowers in June with bright scarlet hips in autumn. Thorny branches with small green deciduous leaves.
Purging Buckthorn (<i>Rhamnus catharticus</i>)	A native but uncommon deciduous shrub, favours damp, limestone soils. Green oval leaves with small white flowers in spring with green to black berries in autumn. The foodplant of the Brimstone butterfly caterpillars.
Spindle (<i>Euonymus europaeus</i>)	A green-branched shrub, deciduous with leaves turning bright red before they fall. Dramatically hot-pink coloured fruit that open out to reveal orange seeds. It favours limestone to neutral soils. Often found growing with Guelder rose in the wild.
Holly (<i>Ilex aquifolium</i>)	An evergreen shrub/small tree. Prickly leaves. Male and female trees needed for berries to be produced. White flowers in spring and summer with the famous red berries in autumn and winter.
Elder (<i>Sambucus nigra</i>)	A common shrub of high biodiversity value with large heads of cream flowers in early summer and dark berries favoured by the birds in September. It germinates easily in most soil types but it does favour nutrient-rich areas.
Willow/Sally (<i>Salix</i> species)	A common tree of damp ground, willows have a high biodiversity value with their catkins being an extremely important food resource for pollinator species in early spring. Very fast growing, it can take a lot of cutting but it will grow on damp ground where other species might be slow to grow.
Larger trees	
Pedunculate Oak (<i>Quercus robur</i>)	Both native oaks are of huge biodiversity importance supporting nearly 300 other species of insect, bird, lichen, fern etc. This species prefers heavy, damp, lowland soils.
Sessile Oak (<i>Quercus petraea</i>)	As above, this Oak species is hugely important for biodiversity. This is the species more suited to uplands and will grow in lighter, poorer soils than <i>Q. robur</i> .

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Species	Notes
Downy Birch (<i>Betula pubescens</i>)	This native tree is typical of bog edges and will happily grow on damp, peaty soils. Deciduous with small leaves, catkins in spring, good golden leaf colour in autumn.
Silver Birch (<i>Betula pendula</i>)	This is a tall native tree with an open crown that is similar to the Downy birch but needs good drainage.
Yew (<i>Taxus baccata</i>)	A native conifer, slow-growing evergreen with dense foliage thus making a good year-round screen. Both male and female trees needed to produce the red berries which are poisonous to humans but eaten by birds. Leaves are toxic to livestock and therefore it was widely planted in graveyards
Rowan (<i>Sorbus aucuparia</i>)	Native, does well in neutral to peaty soils. Clusters of cream flowers in spring with red berries favoured by birds in late summer to early autumn.
Crab Apple (<i>Malus sylvestris</i>)	Native, deciduous small tree. White & pink blossom, small green fruit in autumn.
Wild cherry (<i>Prunus avium</i>)	A small tree featuring many drooping clusters of white blossoms in spring with red cherries in late summer. Deciduous with lots of autumn colour on the leaves. Likes fertile soil but will tolerate clays.
Bird cherry (<i>Prunus padus</i>)	Another small native cherry with upright clusters of white flowers and black fruit in autumn. Great for birds. Prefers damp, fertile soils.
Alder (<i>Alnus glutinosa</i>)	A small tree that favours damp ground. The alder likes to have its roots in wet areas and is often found on stream and riverbanks in the wild.
Irish whitebeam (<i>Sorbus hibernica</i>)	Native to Ireland, favours limestone soils, deciduous. Attractive white undersides to oval leaves, cream groups of flowers in spring and red berries in autumn.
*Ash (<i>Fraxinus excelsior</i>)	The Ash is Ireland's most common tree species in the hedgerows. Ash dieback disease came into Ireland through the importation of Ash saplings from mainland European nurseries in the last decade. The disease has now been recorded in every county in Ireland and is expected to kill at least 90% of our Ash trees over the next decade. The only hope for the survival of Ash trees in Ireland is that a small percentage will prove immune to it.

*Please note that Ash, which is our most common hedgerow tree species is not available for planting due to the presence of Ash Dieback.



Appendix 4: Ash Dieback

Unfortunately, our Ash (*Fraxinus excelsior*) trees all over Ireland are facing into a very uncertain future as the invasive fungal pathogen known as Ash Dieback (*Hymenoscyphus fraxineus*) is now well established across every county in Ireland. Foresters' opinions on the survival rates of Ash in the landscape range between 1% and 10%. This is a stark reality that we must acknowledge and therefore protecting the Ash trees we have left is important too in order to monitor them for signs of resistance. Monitoring Ash trees in the local landscape is a project that may interest the local community groups to work on over the coming years. Scientists believe the key to survival of the Ash species is the genetic biodiversity of wild Ash trees i.e. some trees are bound to have a natural immunity if there is enough genetic diversity within the Irish Ash population. Therefore, hopefully several of the Ash trees in the local community will survive and thrive but unfortunately only time will tell.



Note the typical brown patches on these infected ash leaves

What does ash dieback look like?

Ash dieback can affect ash trees of all ages. Younger trees are killed off quicker, as seen in hurley ash plantations but in general, all affected trees will show some or all these symptoms:

- Leaves develop brown patches in the summer.
- Leaves wilt and turn black. Leaves might shed early.
- Dieback of the shoots and leaves is visible in the summer.
- Lesions develop where branches meet the trunk. These are often diamond-shaped and dark brown.
- Inner bark looks brownish-grey under the lesions.
- New growth from previously dormant buds further down the trunk. This is known as epicormic growth and is a common response to stress in trees.

The fungus overwinters in leaf litter on the ground, particularly on ash leaf stalks. It produces small white fruiting bodies between July and October which release spores into the surrounding atmosphere. These spores can travel many kilometres to land on fresh ash leaves and infect another tree. The fungus then grows inside the tree, eventually blocking its water transport systems, causing it to die.

Leafless, outer branches of a diseased ash. Also note the epicormic growth i.e. green leaf shoots on the main branch but not on the outer branches.



There is some good news! A very small proportion of ash trees are showing natural tolerance to the fungal disease. This means that they show minor symptoms and the disease does not have noticeable impact on their growth or health. Teagasc is working to identify such trees and build up a gene bank with the ultimate goal of producing tolerant ash seed and restore ash trees to Irish forests and hedgerows. This is where you come in! The community can get familiar with their local ash trees and monitor them over the coming years. Any that show resistance should be highlighted to Teagasc and hopefully this beautiful species that plays such a huge role in our Irish culture and heritage will not be lost to us.

Sources:

<https://treecouncil.org.uk/wp-content/uploads/2020/06/Tree-Council-Ash-dieback-tree-owners-guide-FINAL.pdf>

<https://www.teagasc.ie/crops/forestry/research/ash-resistance-to-ash-dieback/>

Appendix 5: An Taisce Wildlife Pond Project






Wildlife ponds and other wetland features can be one of the most biodiversity rich habitats in urban settings. An Taisce currently has a project underway to raise awareness and engage communities about these small wetland habitats and their importance for biodiversity, water quality and climate adaptation. It describes ponds as *'extraordinary reservoirs of biodiversity and have a critical role as Ireland faces our significant biodiversity loss. Over 50% of Ireland's amphibian wetlands have been lost to drainage, industrial peat extraction, pollution and natural senescence in the past 100 years. Of the 12,200 small enclosed water bodies across Ireland, 8,000 are less than a hectare in extent and the smallest categories have been subject to the greatest pressures. Ponds have been demonstrated to host more biodiversity than rivers and lakes, particularly macroinvertebrates and less common species (2/3 of all freshwater species!). Permanent and naturally vegetated ponds are excellent at carbon sequestration (Gilbert et al., 2014). Taylor et al. (2019) found that small ponds sequestered 20-30 times the amount of carbon compared with woodlands, grasslands and other habitats'*.

Ponds can be considered for most sites, from small gardens to large parks. Careful design and construction are essential to ensure they are successful and deliver maximum value for the community.



Appendix 6: Making and Leaving Room for Biodiversity

Some species can benefit from additional assistance for nesting, hibernating or resting spaces. These can be in the form of habitat boxes designed specifically for this species or by leaving areas largely unmanaged - untouched by human hands! Some to consider include:





	<p>Bee Boxes</p> <p>These days there are many types of bee boxes that can be made or bought. It is now advised to move away from the large Bee/Bug hotels as disease can spread rapidly where there are big numbers of insects. So small is beautiful! They can be homemade with advice from websites such as the pdf below.</p> <p>https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Nesting-2018-WEB.pdf</p>
	<p>Solitary Bee Banks</p> <p>Patches of bare earth on well drained, sunny south or west facing banks (or an aspect in between) can provide nesting opportunities for solitary bees. It is important that there is a good supply of flowers nearby for the bees to feed from. For further details please see:</p> <p>https://biodiversityireland.ie/app/uploads/2022/05/ActionSheet_Solitary-Bees-WEB-2.pdf</p>
	<p>Swift Boxes</p> <p>The Swift (<i>Apus apus</i>) is an extraordinary migrant bird species. It overwinters in Africa before coming back to Ireland in late spring / early summer. Over millennia it has evolved to live alongside humans with house gables and gutterings replacing its original cliff face nesting sites. It has suffered declines for several reasons, one of which is a lack of nesting sites due to better maintenance and draught-proofing of houses. We can help by providing nest boxes on suitable buildings. For further information please see BirdWatch Ireland's guide: https://birdwatchireland.ie/publications/saving-swifts-guide/</p>
	<p>Bat Boxes</p> <p>According to Kildare Bat Group, of the nine confirmed resident species of bats in Ireland, seven have been recorded and confirmed in Co Kildare. Local groups can aid the conservation efforts by working with bat specialists to install bat boxes at identified locations in the community where it is deemed appropriate.</p> <p>https://kildarebatgroup.wordpress.com/</p>
	<p>The Hare's Corner</p> <p>This is an old Irish tradition that was carried out on farms across the country in the past. It is a beautiful idea and the concept of creating a mini wildlife sanctuary in today's world makes so much sense. It acts a safe place for insects, birds, mammals, and plants to flourish without the constant tidying that us humans bring to nature. There is lots of potential with this action: you could have a small example in your own garden and a larger one in your local park or nearby farm.</p>

Appendix 7: Common Terrestrial Plant Invasive Species

The following are just some of the more common terrestrial plant species that are found in Co Kildare.

Species	Description
 <p>Cherry Laurel <i>Prunus laurocerasus</i></p>	<p>Means of Spread: Some spread by berries being eaten by birds but most spread is by layering and suckering. It is still widely sold in garden centres / nurseries and used in landscaping schemes. Most popular garden hedging species.</p> <p>Main Risks: Forms thick impenetrable thickets that cast year-round shade, suppressing natural vegetation. All parts of the plant contain the highly poisonous chemical compound cyanide, therefore wear gloves when dealing with it.</p> <p>Control: Excessive growth can be tackled by continuous cutting back (it's important to avoid it flowering and setting seed). However, to eradicate it requires cutting back hard and the stem treatment with herbicide. With bigger plants growing freely in woodland situations it grows back strongly after being cut and will spread from lateral roots and shoots. For the community, it will be important to create awareness about it's problems and discourage its use in the community.</p>
 <p>Japanese Knotweed <i>Fallopia japonica</i></p>	<p>Means of Spread: Plant is sterile in Ireland and only spreads through root and stem material, accidentally or deliberately moved by human action, or washed along rivers. As little as 0.6g of root or stem required to regenerate.</p> <p>Main Risks: Seriously damages houses, buildings, hard surfaces, and infrastructure growing through hard surfaces, usually where weaknesses already exist. It forms dense thickets, shading out natural vegetation.</p> <p>Control: Control must only be carried out by professionals. Professional treatment required for several years but costs fall sharply as amount of foliage to be treated reduces.</p>
 <p>Rhododendron <i>Rhododendron ponticum</i></p>	<p>Means of Spread: Produces large quantities of viable seed (3000-7000 per flower) i.e possibly one million seeds per plant! Readily layers i.e. forms new growth, where branches touch the ground. It is still widely sold in garden centres / nurseries and is used for game cover and in forestry landscaping.</p> <p>Main Risks: Forms thick impenetrable stands that casts year-round shade, suppressing natural vegetation, exacerbated by the very acidic nature of leaf litter.</p> <p>Control: Excessive growth can be tackled by cutting back, but herbicide treatment is required to eradicate, with application over several years required to tackle seed bank in soil. Large plants will need to be dealt with professionally but small saplings can be simply pulled up, crucially before they flower after 4-5 years of growth.</p>
 <p>Traveller's joy <i>Clematis vitalba</i></p>	<p>Means of Spread: Also known as Old Man's Beard this climbing species with small cream flowers in summer and woolly/hairy seed heads in autumn that will spread on the wind. A garden escapee, probably deliberately planted in hedges and woodland in the past.</p> <p>Main Risks: This deciduous climber can form dense thickets that blanket trees, shrubs and ground flora, ultimately depriving them of light.</p> <p>Control: Excessive growth can be tackled by cutting back, but herbicide treatment is required to eradicate, with application over 2-3 years required to deal with regrowth. Large plants will need to be dealt with professionally but small saplings can be simply pulled up.</p>

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Species	Description
 <p>Winter Heliotrope <i>Petasites pyrenaicus</i></p>	<p>Means of Spread: Winter heliotrope is a persistent perennial i.e. it doesn't stop growing. It has an extensive rhizome system so the plant spreads vegetatively. Ireland only has male plants so no seed is produced.</p> <p>Main Risks: Winter heliotrope forms dense colonies of plants that outcompete native species. The dense growth creates abnormal shade in Irish habitats e.g. woodlands. With its strong growth in late winter & early spring this allows it to outcompete native woodland spring flora.</p> <p>Control: The EPA carried out an in-depth study of the control of Winter heliotrope in 2019. The rhizomes, stems & leaves all have the potential to generate new plants, so particular care should be taken to avoid transport of soil or vegetation off site. The EPA guide contains best practice guidelines which point towards the use of Synergon herbicide as having the best results, but it cannot be used near trees. Where this plant occurs under trees, this just leaves either glyphosate use or physically digging out the plants. However, another point to consider is if a plant population is growing along a stream or waterway. Both these methods have the potential to negatively impact upon the waterway and any other sites downstream. Often the best work that can be done by a local community is to limit the extent of the Winter Heliotrope in their local area and where colonies exist, to confine them to its current area.</p>
 <p>Pheasantberry <i>Leycestria formosa</i></p>	<p>Means of Spread: Also known as Himalayan honeysuckle this is a deciduous shrub and its seeds are dispersed by water and by birds and mammals. Still widely sold in garden centres/nurseries and popular as game cover.</p> <p>Main Risks: Forms thick impenetrable thickets that shades out natural vegetation.</p> <p>Control: Control of this plant can be carried out by a local community. Individual plants can be dug out in early Spring (i.e. February/March) before seed is set. Leave plants on site to dry and rot down.</p>
 <p>Three-cornered leek <i>Allium triquetrum</i></p>	<p>Means of Spread: Small herbaceous perennial, spreads vegetatively and by seed. A garden escape and scheduled species.</p> <p>Main Risks: Outcompetes native plants at the base of hedgerows and along road verges. This is a scheduled invasive species i.e. its presence in the wild should be reported to www.invasives.ie</p> <p>Control: Control of this plant can be carried out by a local community. Individual plants can be dug out in early Spring (i.e. February/March) before seed is set. Leave plants on site to dry and rot down. The plant has a very distinctive three-angled stem. Both it and the leaves smell strongly of garlic.</p>
 <p>Himalayan balsam <i>Impatiens glandulifera</i></p>	<p>Means of Spread: This pretty plant was deliberately planted in the past along river banks. Its seeds drop into the water and then get spread further downstream. This is why it must be dealt with on a catchment-wide basis.</p> <p>Main Risks: It shades out native flora and then in winter when it dies back, it leaves the river/stream banks exposed and susceptible to erosion.</p> <p>Control: Despite being so problematic, it is easily pulled up and therefore is one that can be dealt with by community groups. It is worth remembering though that even if a catchment-wide project cannot be achieved, then local plant removal is still worthwhile as it will help the native flora to return and will lower the number of seed that spreads.</p>

Appendix 8: Soils and Biodiversity

Soil physical properties (edaphic factors) affect the diversity of organisms living in the soil environment. These include soil structure, temperature, pH, and salinity. Soils are home to more than 25% of the earth's total biodiversity and support many natural processes on which we all depend:

- life on land and water,
- nutrient cycling and retention,
- food production,
- pollution remediation,
- hydrological processes and the conservation
- climate regulation and carbon sinks, carbon sequestration.

There is increasing evidence that shows that multiple sustainability goals can be addressed simultaneously when soil organisms are put at the focus of land management; this is because the activity and interactions of soil organisms are intimately tied to multiple processes that ecosystems and human society rely on.

The Soil Food Web

The **soil food web** (see image on the next page) is the community of organisms living all or part of their lives in the soil. It describes a complex living system and an often-overlooked area of biodiversity in the soil and how it interacts with the environment, plants, and animals. Processes in this biologically active part of soils support vital processes such as nutrient cycling, water storage capacity, and carbon fixation in our soils. A healthy soil microbiome supports local biodiversity and climate resilience.

Rethinking our Relationship with Soils

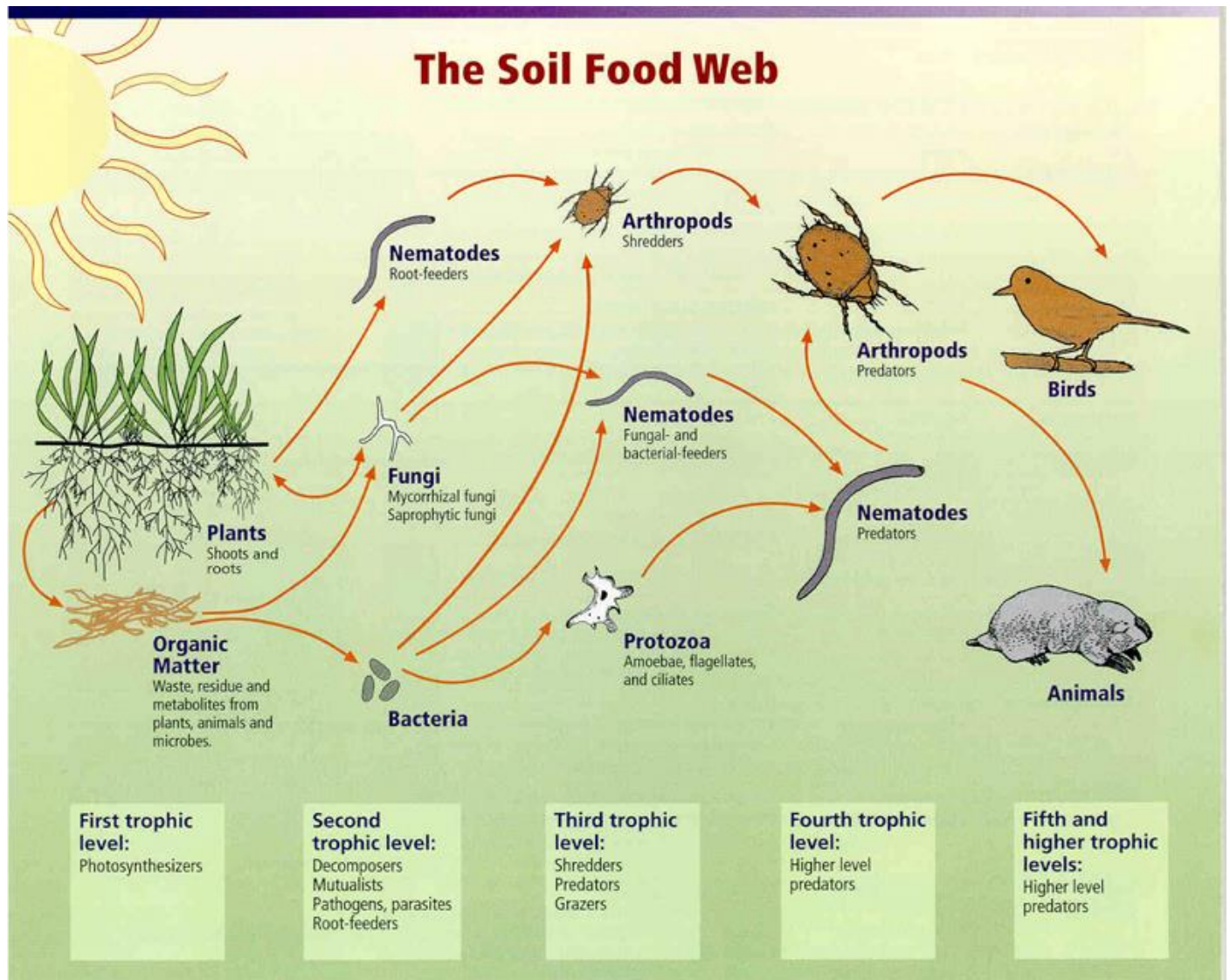
It's important that we start to re-think our relationship our soils and their management including in urban areas, town parks and amenity grasslands. Traditional management of amenity grasslands and landscaped areas has relied heavily on inorganic fertilisers and pesticides (fungicides, insecticides, and herbicides). There have come to be accepted as normal management practice and even essential for urban green space management. This approach is totally unsustainable, in ecological terms.

Natural grasslands and woods are self-sustaining systems, so we need to start thinking of our parks and urban green areas as eco-systems which should have minimal management input and to maintain healthy soils with well-balanced biological and natural physical/chemical processes and cycles.

Useful Links

[7-ways-to-save-our-soils-2016.pdf \(soilassociation.org\)](#)

<https://www.teagasc.ie/crops/soil--soil-fertility/soil-analysis/soil-sampling/>



Relationships between soil food web, plants, organic matter, and birds and mammals
 Image courtesy of USDA Natural Resources Conservation Service
http://soils.usda.gov/sqi/soil_quality/soil_biology/soil_food_web.html.

Appendix 9: Legal Protection of Biodiversity in Co Kildare

Biodiversity is the different plant and animal life that can be found in a place. We in Kildare live within our natural environment. The protection of this environment provides many benefits to the community. Over time the impact of people on the environment in County Kildare has degraded some habitats. With greater understanding of the importance of the protection of nature various laws, help protect and maintain our precious natural environment within our County.

Our natural environment is legally protected on a European, National and County basis.

The main legislation to protect Biodiversity in Ireland is the Wildlife Acts 1976 to 2022.

This is a collective citation for the following:

- [Wildlife Act 1976 \(no. 39 of 1976\)](#)
- [Wildlife \(Amendment\) Act 2000 \(no. 38 of 2000\)](#)
- [Wildlife \(Amendment\) Act 2010 \(no. 19 of 2010\)](#)
- [Wildlife \(Amendment\) Act 2012 \(no. 29 of 2012\)](#)
- [Heritage Act 2018 \(no. 15 of 2018\), Part 3](#)
- [Planning, Heritage and Broadcasting \(Amendment\) Act 2021 \(no.11 of 2021\), Chapter 3](#)
- [Flora \(Protection\) Order, 2022](#)

Nature conservation legislation was substantially enlarged and improved by the Wildlife (Amendment) Act, 2000 and the Birds and Natural Habitats Regulations.

The Acts affords strict **protection for species** from injury and disturbance and also to their necessary **habitat** (e.g. breeding, resting sites). There are 32 species of mammal protected under the act, all birds, 86 plants and 3 invertebrates.

Species Protected under the Wildlife Act

32 Species of Mammal	All Birds	
86 Plants	3 Invertebrates	 

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European Law- Special Protection Areas and Special Areas of Conservation

Much of our Environmental Law comes from obligations under European Union laws. For example, the Birds Directive, Directive 2009/147/EC, requires the protection of habitats of particular importance to bird life. These habitats are designated as Special Protection Areas for Birds (SPA's). In County Kildare, we have an important bird habitat in Poulaphouca Reservoir which is a designated SPA.

An SPA provides for the protection of the habitat. Activities such as directly threatening birds for example egg taking and the destruction of nests are prohibited. Hunting on such sites is strictly controlled and the hunting of some birds is not permitted.

Another EU law which provides habitat protection is the Habitats Directive (Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna). This Directive provides for the creation of a network of European Sites known as Natura 2000 sites. SPAs for birds are included in this network for nature. Other areas supporting habitats and species of conservation importance are protected under the Habitats Directive as Special Areas of Conservation. These European Sites are strictly protected, they recognise that the habitat protected is important on a European wide basis. Under the Habitats Directive, any project or work on the site which would potentially cause damage must be assessed in a scientific manner. These plans can only be approved if they represent an overriding interest and there is not an alternative. If a European site is damaged by necessary works, then Compensatory Habitat must be provided to ameliorate the damage. Kildare has several SACs.

The most 'protected' conservation sites for Biodiversity in County Kildare are the **European Sites** i.e. the **7 SACs** and **1 SPA** in County Kildare and are shown on the Map 1 overleaf.

Natural Heritage Areas

There is also, under the Wildlife Amendment Act 2000, provision for the protection of National Heritage Areas which are recognised as protecting nationally important habitats.

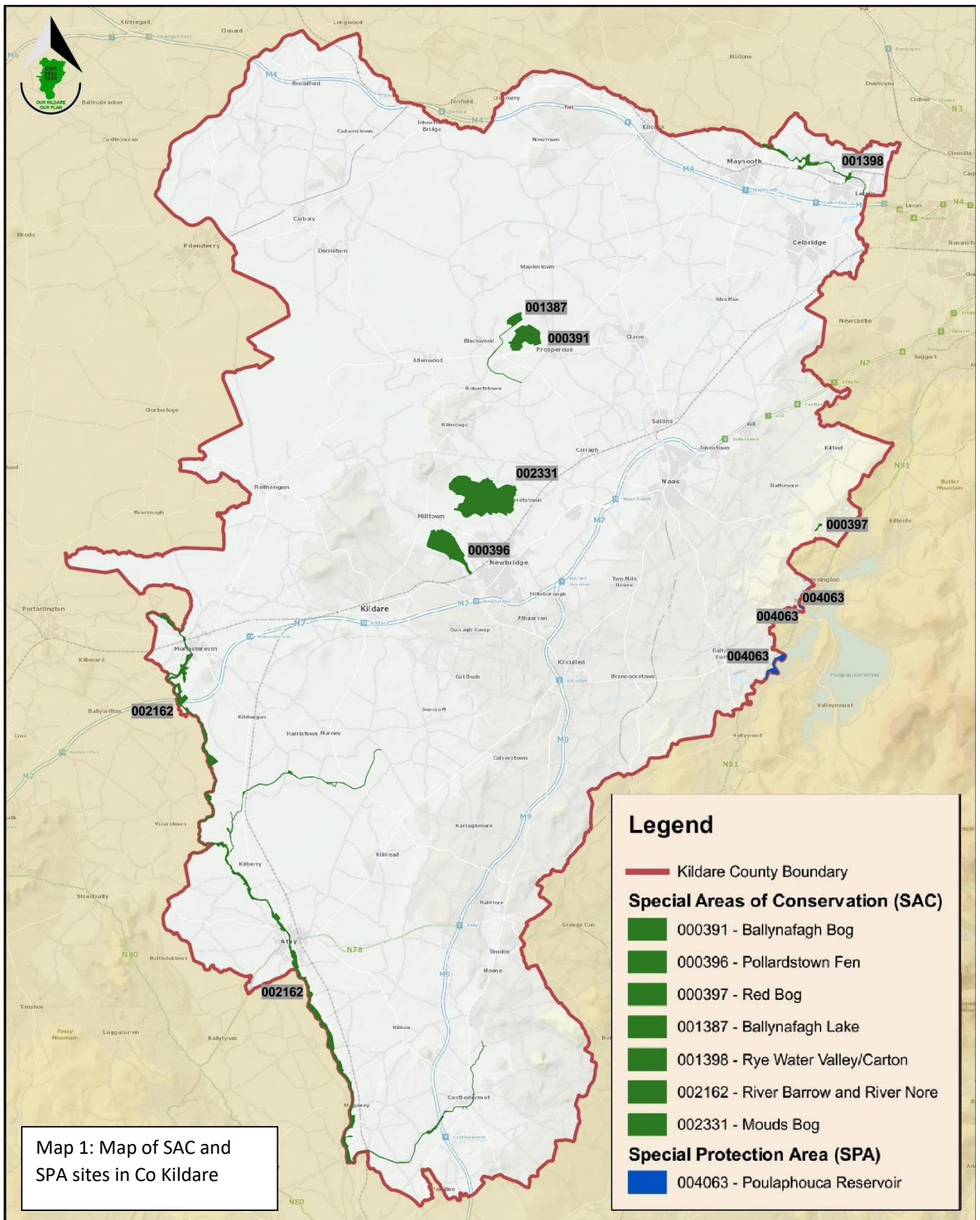
The EU Biodiversity strategy for 2030 aims to protect nature and reverse the degradation of ecosystems.

Protected under Wildlife Amendment Act 2000 from the date they have been formally proposed.

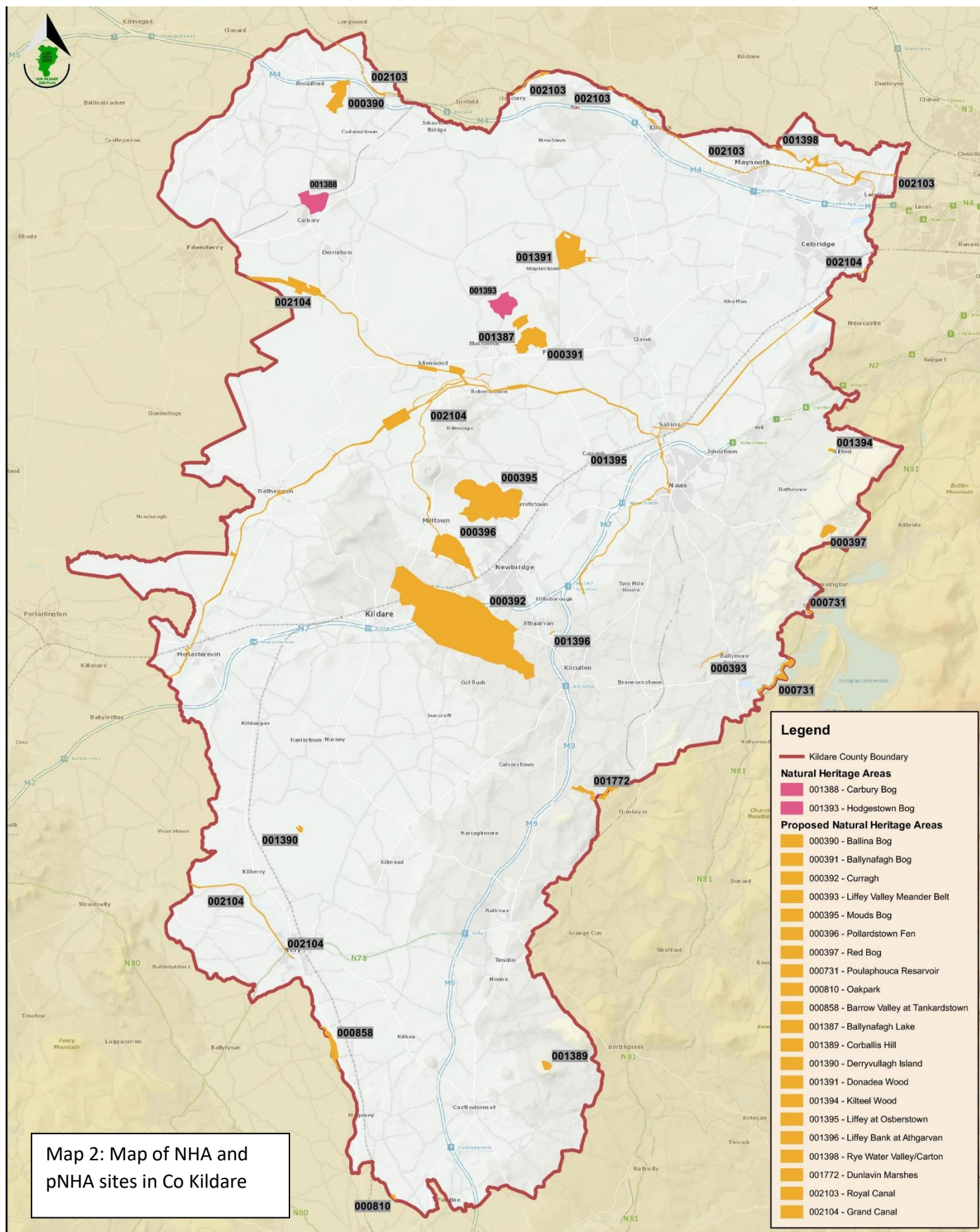
Proposed NHAs have **limited protection** but are treated the same as NHAs under the **County Development Plan** which has legal standing under the Planning and Development Act 2000. The table below lists all the sites in Co Kildare (see Map 2 on following pages).

Site Code	Site Name	Site Code	Site Name
Natural Heritage Areas		000858	Barrow Valley at Tankardstown
001388	Carbury Bog	001387	Ballynafagh Lake
001393	Hodgestown Bog	001389	Corballis Hill
Proposed Natural Heritage Areas		001390	Derryvullagh Island
000390	Ballina Bog	001391	Donadea Wood
000391	Ballynafagh Bog	001394	Kilteel Wood
000392	Curragh	001395	Liffey at Osberstown
000393	Liffey Valley Meander Belt	001396	Liffey Bank at Athgarvan
000395	Mouds Bog	001398	Rye Water Valley / Carton
000396	Pollardstown Fen	001772	Dunlavin Marshes
000397	Red Bog	002103	Royal Canal
000731	Poulaphouca Reservoir	002104	Grand Canal
000810	Oakpark		

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Role of Local Authorities in protection of Biodiversity

As a public authority Kildare Co. Council (KCC) has **obligations to protect biodiversity** under The European Communities (Birds and Natural Habitats) Regulations 2011 477/2011.

KCC exercises **consent functions** (e.g. water management, road development, housing and planning) which may have implications for or effects on nature conservation. It is mandatory to exercise these functions so as to secure compliance with the Wild Birds and Natural Habitats Directives.

For **European Sites, (SACs and SPAs)** and **candidate** European Sites Public Authorities are compelled to take appropriate steps to: 1) avoid deterioration of natural habitats; 2) avoid significant disturbance of species; 3) avoid pollution; 4) take appropriate enforcement action; and 5) a Public Authority must also strive to avoid deterioration of natural habitats and species **outside** a European or Candidate European Sites

Other Environmental Legislation of Importance to Biodiversity

The **Strategic Environmental Assessment (SEA) Directive (CEC, 2001)**;

- Aims to ensure a high level of environmental protection and that environmental considerations are taken into account when preparing, adopting and implementing **public plans and programmes**.
- It promotes sustainable development by ensuring that environmental assessment is carried out of certain plans and programmes likely to have significant effects on the environment.
- Public plans and programmes covered by the Strategic Environmental Assessment (SEA) Directive are subject to an **environmental assessment** during their preparation and before their adoption, e.g. The Kildare County Development Plan.

The **Environmental Impact Assessment (EIA) Directive, as codified (CEC, 2011)**.

- Ensure that projects above given thresholds likely to have significant effects on the environment are subject to a comprehensive assessment of environmental effects prior to development consent being given.

Laws to Protect our Water

Ireland's water resources are protected through the implementation of EU and national legislation.

- Water Framework Directive
- River Basin Management Plan 2018 - 2021
- Nitrates Directive
- Management of Surface Water Runoff in Urban Areas

Forthcoming Laws for Nature Conservation

EU Nature Restoration Law

This proposed new law aims to repair damage done to Europe's nature by 2050.

It will be the first-ever legislation that explicitly targets the restoration of Europe's nature, to repair the 80% of European habitats that are in poor condition, and to bring back nature to all ecosystems, from forest and agricultural land to marine, freshwater and urban ecosystems. Under this proposal for a Nature Restoration Law, legally binding targets for nature restoration in different ecosystems will apply to every Member State, complementing existing laws. The aim is to cover at least 20% of the EU's land and sea areas by 2030 with nature restoration measures, and eventually extend these to all ecosystems in need of restoration by 2050.

Narraghmore Biodiversity Action Plan 2023-28

This Biodiversity Action Plan was produced for the community of Narraghmore and funded by Kildare County Council and the Municipal District Local Property Funds.



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