Carbury Village
Biodiversity Action Plan 2021-25

Plan produced by:

Green Pine Consultants

Dr Fiona Mac Gowan, Consultant Ecologist & Botanist

Contents

Acknowledgements & Contact Details

We hope that the Biodiversity Action Plan will be beneficial in guiding local actions to promote and protect biodiversity in the coming years.

Getting Involved:

If you wish to get involved with any of the actions outlined in this Plan, please contact either:

Carbury Village Tidy Towns (Chairperson or Secretary)

or

Kildare County Council Heritage Officer:

Phone: 045 980791
Fax: 045 980835
Email: heritageofficer@kildarecoco.ie
Website: http://www.kildare.ie/countycouncil/Heritage/index.html

If you would like to apply for LEADER funding towards implementing some actions in the Plan, please email the LEADER team on info@countykildarelp.ie or call us on 045 895450. You can also check out our website: https://www.countykildarelp.ie/

Photographs: Photos used in this Plan are courtesy of members of Carbury Village Tidy Towns, Dr Fiona MacGowan, Suzanne Behan and Brian Gaynor.

Section 1:

Introduction

The Village of Carbury is a small rural village in the north-western corner of County Kildare. The principal waterway in the immediate vicinity is the River Boyne.

Carbury's most famous landmark is Carbury Castle on Carbury Hill. The Castle you see today was built in the fourteenth century by the family of Bermingham, the descendants of Pierce de Bermingham, one of the early English settlers in Ireland.

In 1569, Sir Henry Colley was granted the Manor of Carbury by Queen Elizabeth I. It was Sir Henry who remodelled the Castle with characteristic features of Elizabethan chimneys, thought to be the only example of their type in Ireland.

Since the village was bypassed in 2014 following completion of the upgrade to the R402, the Residents Association has worked tirelessly to develop and promote the village. In 2016, a Historical Information Booklet was launched and a Visitor Information Board erected in the centre of the village.

Carbury Village Tidy Towns has entered the National SuperValu Tidy Towns Competition over the past six years, improving each year on the overall marks awarded. The Village won a Tidy Towns Endeavour Award in 2016. This was awarded to the village in recognition of the people and businesses who have collaborated as a community to work to improve the environment and make the village a better place. The Residents Association endeavours to continue this spirit of Togetherness and Collaboration into the future.

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 Carbury. The Plan is not intended to be a static document but rather to be regularly reviewed and updated over its life.

A healthy natural world is crucial to our way of life; it provides us with clean air & water, food, shelter, and much more!

Process to Produce This Plan

At the end of 2019, Carbury Village Tidy Towns submitted an Expression of Interest to be part of an upcoming initiative entitled the *Kildare Community Biodiversity Project*. The project was an initiative between County Kildare LEADER Partnership and the Heritage Officer in Kildare County Council. It was funded by the LEADER programme for 2014-2020. Green Pine Consultants and Dr. Fiona MacGowan were contracted to deliver the project. The team brought together qualifications in biology, ecology, botany, and landscape architecture, as well as skills in working with community groups.

The project kicked off in February 2020 with a launch night in Newbridge Town Hall. There were over 75 people in attendance from the ten communities that were selected to take part. The project involved recce visits to assess biodiversity in each community, as well as a series of free public training workshops, and the development of local Biodiversity Action Plans. Due to Covid 19 restrictions, the training sessions took place in September and October via Zoom Meetings. These were open to all stakeholders and members of the public with an interest in making their locality a better place for people and nature. During this process, the views of all participants were sought during the workshops and through a questionnaire. Several community groups attended the training sessions and their input was invaluable to the production of this Plan.

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.

"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

Section 2:

Biodiversity in

Our Area

Carbury Village is picturesquely situated in north Kildare at the base of Carbury Hill. This hill has been a dramatic focus for north Kildare people for millennia with pre-Christian and Christian burials together with the wonderfully atmospheric Carbury Castle. Standing on Carbury Hill gives a good impression of the landscape within which the village sits with Carbury Bog lying to the north and the headwaters of the mighty River Boyne encircle the southern edges of the village. The village itself features a few spots of biodiversity interest with a lovely flower bed of pollinator-friendly plants and a wildflower meadow complete with grass paths in the old graveyard beside the Castle. At the end of the village there is a fantastic, informative mural covering both the social and natural history of the area. Please note that further details on your local conservation site details can be found at: www.npws.ie/protected-sites/

Carbury Village has two sites of national natural heritage interest nearby: Carbury Bog Natural Heritage Area and the source of the River Boyne.

Main Biodiversity Sites

There are numerous places of important biodiversity value in Carbury Village. The following are some of the main ones in and around the village.

Site of Biodiversity Interest

Carbury Village Centre: In the centre of the village there are two ornamental flowerbeds of high biodiversity value. Most of the plants selected will support the needs of the different pollinator species. This ties in with the national effort encouraged by the All-Ireland Pollinator Plan.

Community Garden: Thanks to the work of the local community, a small community garden at the end of the village beside the R402 has been created for local people to enjoy. This space includes small ornamental herb and pollinator friendly flower beds. There is also a wonderful mural on the boundary wall which highlights different aspects of local heritage including the wildlife of the area.

Carbury Castle & Old Carbury Graveyard: The old stone walls of the Castle support several plant species with ivy being the most prominent. Ivy growth on old buildings often needs specialist trimming in order to protect the walls but it must be remembered that ivy is one of the most important native plants in our countryside. The flowers and berries are a valuable late source of food for pollinators and birds during the autumn and winter. The grassland of the old graveyard is attractively managed leaving wildflowers to bloom between the mown grass paths.

Carbury Bog (NHA 001388): an area of national conservation value lying at the north western end of the Bog of Allen, this bog is a Natural Heritage Area. Privately owned, this site features good examples of several different habitat types, such as raised bogs and cutover bog edged with scrub and birch and willow dominated woodland.

Grand Canal (pNHA 002104): The Grand Canal flows nearby on its way from Allenwood towards Edenderry. According to the NPWS site synopsis 'The Grand Canal is a man-made waterway linking the River Liffey at Dublin with the Shannon at Shannon Harbour and the Barrow at Athy. The Grand Canal proposed Natural Heritage Area (pNHA) comprises the canal channel and the banks on either side of it. The canal system is made up of a number of branches - the Main Line from Dublin to the Shannon, the Barrow Line from Lowtown to Athy, the Edenderry Branch, the Naas and Corbally Branch and the Milltown Feeder. The Kilbeggan Branch is dry at present, but it is hoped to restore it in the near future. Water is fed into the summit level of the canal at Lowtown from Pollardstown Fen, itself a pNHA. A number of different habitats are found within the canal boundaries - hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland.'

Bog of Allen Nature Centre: Carbury is lucky to be in proximity of the headquarters of the Irish Peatland Conservation Council (IPCC) at Lullymore West, 8km south of the village. The IPCC have set up a very informative display and nature garden that are open to the public. They also regularly hold open events where lots can be learned. Volunteer effort is always welcomed as they work to conserve various sites including the nearby Lodge Bog North where a boardwalk makes the bogland landscape accessible to all. See www.ipcc.ie for more information.

Recent Progress

A lot of work has been carried out in recent years already to enhance the town's biodiversity. The following are some examples of these:

- Swift boxes and calling system were installed in 2020
- 500 native trees were organised to be planted in Spring 2021 to create a new farm hedgerow
- The removal of some laurel planting has begun around the village, with plans in place to replace more of it with native trees and shrubs.
- Suppliers of pollinator friendly bulbs were identified for 2021 planting
- Ongoing maintenance of Fairy Garden & Bug Hotel
- Ongoing maintenance and enhancement of village mural area
- In autumn 2020, members of the local community took part in the Kildare Community Biodiversity Project. It involved three biodiversity training sessions (all online) and led to the production of this Action Plan.

Swift boxes and a calling system were installed in the Village in 2020

Wildlife of Kildare

Badger

Robin
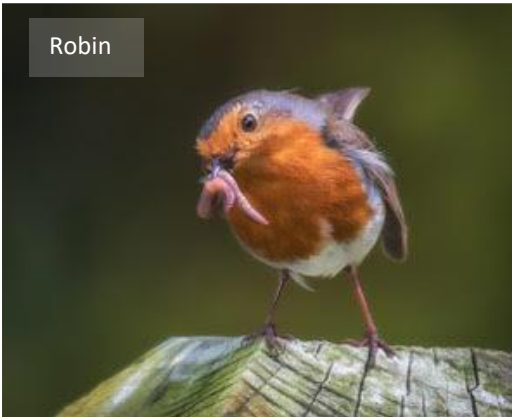
Red Squirrel

Great Spotted Woodpecker

Rabbit

A collection of photos courtesy of Kildare wildlife photographer Suzanne Behan

Grey Wagtail

Red Fox

Mute Swan

Kingfisher

Section 3: A Call to Action

This is a shared plan of action for the village to build on the recent progress made to improve areas for biodiversity and to start developing other opportunities to maximise the village's full biodiversity potential. In doing so this will hopefully engage new people and groups in managing their local green space with biodiversity in mind. The plan has four main objectives, each with several targets and actions:

1. **Objective 1:** Making Carbury Village wildlife friendly

2. **Objective 2:** Raising awareness of local wildlife and how to protect it.

3. **Objective 3:** Collecting evidence to track change and measure success.

4. **Objective 4:** Build local capacity to manage and record biodiversity.

Did you know: Irish pollinators are estimated to contribute €59 million annually to the Irish economy!

Objective 1: Making Carbury Village biodiversity friendly

All types of land can be used to increase the levels of biodiversity in the village including built features and green spaces. Each landowner whether public or private can also play their part in enhancing their lands for biodiversity.

No.	Action	Who	When
Target 1.1 Make the village's public spaces more biodiversity friendly			
1.1.1	Explore the opportunity to open up the attenuation ponds on the R402 opposite the junction to Carbury Village as a local community wetland amenity. This could include access in the form of a boardwalk, pond dipping platform and signage.	Paul Lynam	2021-2025
1.1.2	Explore the opportunity to maximise the visual biodiversity value of the junction and entrance roads to Carbury Village by: A. Managing the grass verges as wildflower meadow. This can be either a hay meadow or a bulb and shortcut wildflower meadow. B. Creating a pollinator friendly flower bed in place of the stone chippings - Varadkar's Stone. C. Removing all Laurel shrubs planted. D. Planting native hedgerow along the unplanted sections of the field boundaries.	Committee	2021-2025
1.1.3	Use pollinator friendly planting in all containers and hanging baskets in the village.	Vanessa Kelly	2021-2025
1.1.4	Explore the opportunity to manage the lawn space outside Carbury Parish Church as a wildflower meadow. Maintain mown fringes along the roadside and a mown path through it.	Joan Potterton	2021
1.1.5	Explore the opportunity to plant native Yew tree(s) (*Taxus baccata*) in the front lawn of Carbury Parish Church.	Joan Potterton	2021
1.1.6	Explore the opportunity to manage the areas of meadow in the old graveyard by cutting and lifting the hay once a year in Aug / early September.	Joan Potterton	2021
1.1.7	Augment the daffodil planting on the grass verge from Kelly's Castle Inn to the Mural with pollinator friendly bulb planting. This will extend the flowering season, add colour and benefit pollinators. Consider managing the verge as a shortcut wildflower meadow during the summer months.	Kevin Curran	2021-2025
1.1.8	Further enhance the biodiversity value of the Mural: A. Manage the grass area, or a section of it, as a bulb and shortcut wildflower meadow. B. Replace the dead tree in the herb bed with a native Rowan (*Sorbus aucuparia*). C. Create a pollinator friendly flower bed at the entrance point from the main road (R402). D. Leave 20cm of grass uncut at the base of the wall, to safeguard bee nesting habitat.	Kevin Curran	2021-2025
1.1.9	Enhance the biodiversity and visual value of the junction of the Edenderry Rd (R402) and the Derrinturn Rd (R403): A. Infill planting with pollinator friendly herbaceous perennials and bulbs on the roundabout. B. Install a central focal point on the roundabout; either a sculpture depicting an aspect of local heritage or plant a specimen native Oak (*Quercus robur*). C. Manage the grass bank on the village side and the grass verge on the	Committee	2021-2025

Target 1.1 Make the village's public spaces more biodiversity friendly

No.	Action	Who	When
	Derrinturn side as wildflower meadows with Kildare Co. Co.		
1.1.10	Explore the opportunity to maximise the potential of the old Dispensary (Council owned) for community and biodiversity use. Orchards, native tree planting and wildflower meadows would be suitable options.	Vanessa Kelly	2021-2025

Target 1.2 Make the village's private lands more biodiversity friendly

No.	Action	Who	When
1.2.1	Run a 'Free Garden Tree Giveaway' for all residents in Feb/March. Tree mix (whips only) to include: Rowan, Birch, Hazel and Wild Cherry.	Paul Lynam	2021
1.2.2	Explore the opportunity to create garden wildlife ponds with interested residents.	Committee	2021-2025
1.2.3	Continue to work with Kelly's Castle Inn on maintaining and planting flower beds in the village centre with herbs and pollinator friendly herbaceous perennials.	Vanessa Kelly	2021-2025
1.2.4	Explore the opportunity to carry out the following biodiversity habitat enhancement works at the Ardkill Cul-de-Sac (all actions should be agreed with the residents): A. Replace the Laurel hedge with a native hedgerow. B. Manage the lawn space as a bulb and short cut wildflower meadow.	Paul Lynam	2021
1.2.5	Support residents on biodiversity enhancement projects in their gardens such as the removal of laurel and replacement with native planting.	Committee	2021-2025

Target 1.3 Make the village's surrounding lands more biodiversity friendly

No.	Action	Who	When
1.3.1	Carry out a hedgerow resilience project by augmenting existing hedgerows in the surrounding landscape with new trees such as Oak, Wild Cherry, etc. This will future-proof hedgerows against the potential impacts of Ash Dieback.	Committee	2021-2025
1.3.2	Engage with KCC & Transport Infrastructure Ireland about removing all the Laurel planted as part of the realignment of the R402. These should be replaced with a native tree and shrub mix. All plants should be native Irish provenance only.	Paul Lynam	2021-2025
1.3.3	Explore the opportunity to work with the landowner to raise awareness about Carbury Bog NHA as a special part of the greater Carbury landscape.	Committee	2021-2025

Target 1.4 Deliver species-specific conservation projects

No.	Action	Who	When
1.4.1	Promote the village as a 'Swift Village' by creating nesting opportunities (Swift boxes on existing buildings and bricks for new developments including new residential and industrial sites), raising awareness locally of the issues facing the species and monitoring existing and new nest box sites. This could be delivered in partnership with local environmental Non-Government Organisations such as Wild Kildare who require local people to help monitor population numbers.	Kevin Curran; local eNGOs	2021-2025
1.4.2	Carry out a Brimstone butterfly project: plant their larval food plant the native Buckthorn bush and run a promotional event about the species / project. Source native Purging buckthorn (Rhamnus cathartica). May be suitable ground at the attenuation ponds.	Committee	2021-2025

Objective 2: Raising awareness of local biodiversity & how to protect it

It is important to raise awareness so that the public, community & residential groups, and businesses know how to help our wildlife.

No.	Action	Who	When
Target 2.1 Increase the number of people within the community who are aware of their local biodiversity and who understand the need to conserve it			
2.1.1	Install small information signs on the timber fencing beside the Mural covering aspects of the natural heritage of the area.	Committee	2021-2025
2.1.2	Maintain the mural and interpretation sign at the Mural	Committee	2021-2025
2.1.3	Install small information signs covering the different plants, and the biodiversity supported by it, in the pollinator friendly flower beds in the village. These can be made by the local children or a local artist.	Committee	2021-2025
2.1.4	Install information posts along the looped walk: the path along the Edenderry Rd (R402) and other key points of interest. These should cover information on local wildlife as well as other aspects of local heritage.	Committee	2021-2025
2.1.5	Run a minimum of 1 wildlife related event (e.g. walks, talks, workshops) each year. This should use the results of the questionnaire in the back of this Plan as a guide for topics of interest and how to deliver them during Covid 19. These events should include: ● A walk and presentation of the results of the survey carried out on the natural and social heritage of Carbury Castle. ● A wildflower identification walk of the natural areas along the R402 and village. These can be delivered as Carbury Village only events or in partnership with other neighboring communities where appropriate.	Committee	2021-2025
2.1.6	Use the local notice board to raise awareness of local biodiversity and conservation issues.	Sylvia Lynam	2021-2025

No.	Action	Who	When
Target 2.2 Support education opportunities in schools at all levels			
2.2.1	Ensure the local schools have copies of the All-Ireland Pollinator Plan guides for schools and the Junior All-Ireland Pollinator Plan and are aware of all the resources available at www.pollinators.ie/resources	Liz Lynam	2021
2.2.2	Support the local schools with wildlife events / activities. Where possible this should utilise the different areas of habitat on the campus. This can be a wildlife walk, talk, or workshop.	Committee	2021-2025
2.2.3	Install signage to maximise outdoor learning about the different areas of biodiversity habitat on the school grounds. These can be created by the school pupils as part of art class activities.	Committee	2021-2025

No.	Action	Who	When
Target 2.3 Provide clear information to different sectors within the community on how they can take actions to enhance their spaces for biodiversity			
2.3.1	Participate in, and if necessary help organise, a half day weed control workshop to raise awareness of the harmful effects of herbicide use on human health and for biodiversity to different landowners around the village. This workshop should also cover alternative weed control solutions where weed control is necessary and encourage a change of mindset in other situations where 'weeds' could be allowed to grow. Consider partnering with other local communities.	Committee	2021-2025
2.3.2	Participate in, and if necessary, help organise, a series of county wide farm talks (min. of 2 per year) that will positively enhance biodiversity in the landscape e.g. utilizing farm green infrastructure for the farm business, farm woodland grants, etc. Communicate the details of each event with the local farming community.	Committee	2021-2025
2.3.3	Ensure the different sectors within the community have copies of the relevant All-Ireland Pollinator Plan resource guides e.g. sporting organisations, faith communities, etc.	Committee	2021-2025
2.3.4	Promote to the All-Ireland Pollinator Plan guides using the local notice board.	Sylvia Lynam	2021
2.3.5	Implement a policy of no Invasive plant species in new planting schemes in the village. e.g. no Laurel (*Prunus laurocerasus*)	Committee	2021-2025
2.3.6	Engage with Kildare County Council to ensure that all new developments in the village incorporate best practice green infrastructure design principles (e.g. use of bioswales) and biodiversity features (e.g. Swift bricks, see Action 1.4.1). Green infrastructure design should ideally be done at the planning and design stage. Where plans have developed beyond planning, engage with the developers about the benefits that green infrastructure design can deliver for them.	Committee	2021-2025
2.3.7	Help raise awareness of how reducing the use of rodenticides will benefit other garden wildlife such as hedgehogs.	Committee	2021-2025

Objective 3: Collecting evidence to track change & measure success

To ensure that our actions are making a difference we need to gather a baseline of data on our wildlife and then measure our success or lack thereof against this. This data can be gathered through regular surveys and Citizen Science efforts. This plan sets out the following targets to achieve this:

Target 3.1 Build a baseline of data on local biodiversity and track changes

No.	Action	Who	When
3.1.1	Monitor the Swift population numbers in the village annually and the uptake of any newly installed Swift boxes.	Committee	2021-2025
3.1.2	Facilitate Wild Kildare's 'Moth Atlas' for the county	Committee	2021-2025
3.1.3	Develop at least 1 bumblebee transect in the village and submit records to the NBDC	Committee	2021-2025
3.1.4	Develop at least 1 butterfly transect in the village and submit records to the NBDC	Committee	2021-2025
3.1.5	Record all biodiversity records onto the National Biodiversity Data Centre. Encourage other members of the community to do likewise.	Committee	2021-2025
3.1.6	Record and map all biodiversity actions delivered at: https://pollinators.biodiversityireland.ie/	Paul Lynam	2021-2025

Target 3.2 Measure progress of this Plan on a regular basis

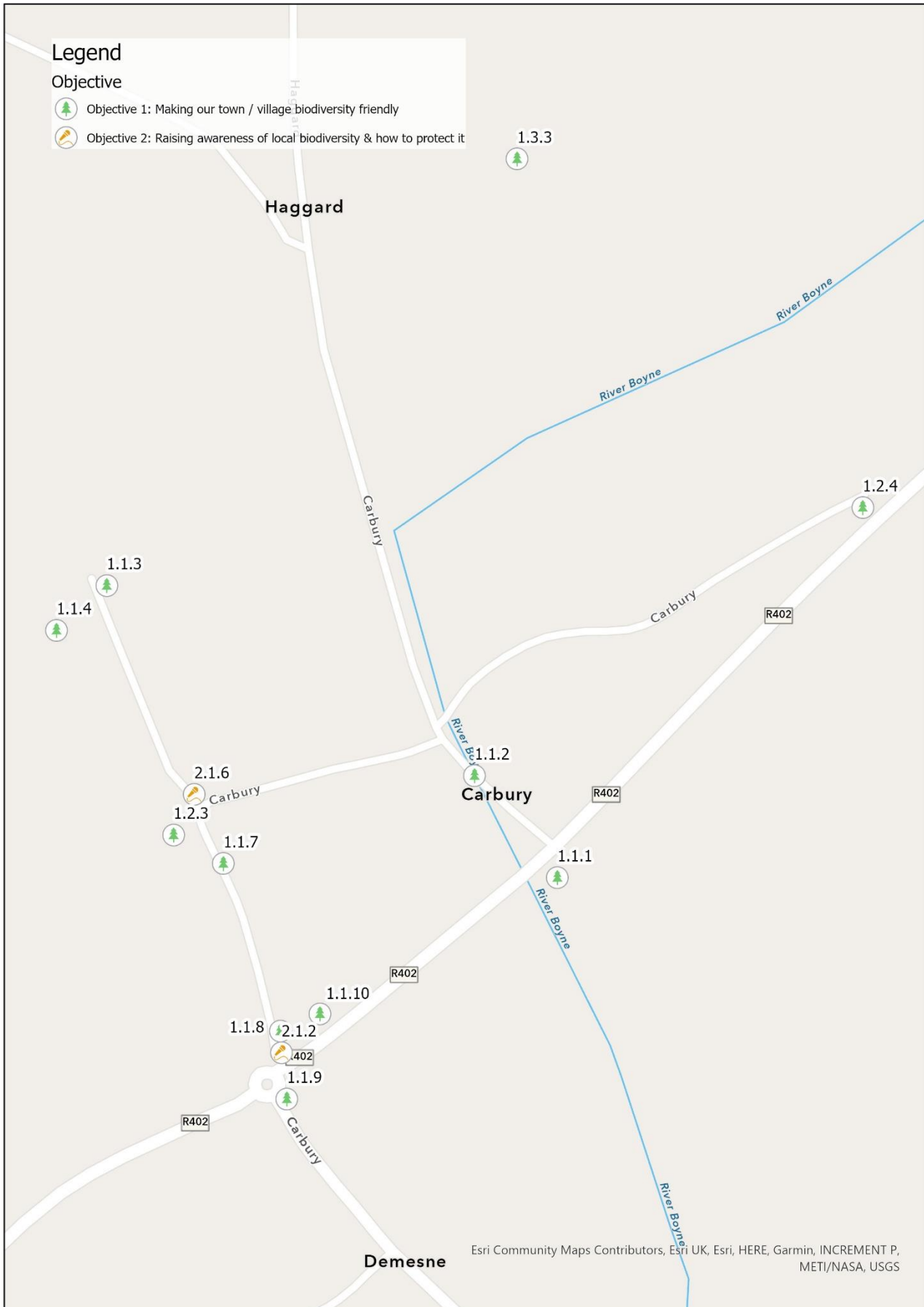| No.	Action	Who	When
3.2.1	Set up a group that will be responsible for carrying out an annual review and steering the delivery of this BAP. This should include representatives of different sectors within the community.	Committee	2021-2025
3.2.2	The group shall carry out an annual review of the Action Plan.	Committee	2021-2025
3.2.3	Carry out a more detailed mid-term review of the Action Plan.	Committee	2021-2025
3.2.4	Carry out a full detailed review of the Action Plan in the final year.	Committee	2021-2025
3.2.5	Plan for the updating / renewing of a subsequent 5-year plan to run from 2026-2030.	Committee	2021-2025

Objective 4: Build local capacity to manage & record biodiversity

The following targets and actions aim to ensure that we have the resources and capacity to carry out the actions identified in Objectives 1-3.

No.	Action	Who	When
Target 4.1 Build the capacity within the community to manage and record biodiversity			
4.1.1	Identify all wildlife groups active in the Carbury area and make contact and offer help / partner on local projects.	Committee	2021-2025
4.1.2	Identify sources of native wildflowers (this should include Yellow Rattle) as places for community seed collections - this can include other donor sources in the county	Liz Lynam	2021
4.1.3	Create an email list of local volunteers who can be called upon for practical conservation volunteering events throughout the year such as management of wildflower meadows, invasive species removal, tree planting, etc. (ensure GDPR guidelines are taken)	Committee	2021-2025
4.1.4	Hold an event to communicate this BAP to the local community.	Committee	2021-2025
4.1.5	Participate in a meeting of all 10 Kildare 2020 BAP applicants to discuss opportunities for collaboration to deliver selected projects outlined in this Plan.	Committee	2021-2025

No.	Action	Who	When
Target 4.2 Build up local resources of materials and equipment to manage and record biodiversity			
4.2.1	Utilise the community polytunnel as a space to grow all the village's pollinator friendly flowers, wildflowers and plants for use in new community planting schemes. This will create the opportunity to raise funds by selling native plants and pollinator friendly plants.	Committee	2021-2025
4.2.2	Source meadow maintenance equipment for community use. Options available are to 1) purchase equipment, potentially in partnership with other neighbouring towns and villages; 2) work with the private sector to build up their capacity for managing meadows (hire companies and / or local landscape contractors), or 3) to work with KCC for them to build internal capacity / resources or 4) explore the potential to work with the local vintage tractor/farm machinery group. This would open up the possibility of having a community event perhaps during Heritage Week in August where a traditional hay-making event could be held. If working with other neighbouring groups then an annual schedule for its use, maintenance /servicing plans, insurance & other costs should be agreed in advance.	Committee	2021-2025
4.2.3	Build up a stock of biodiversity educational resources such as identification guide books. Liaise with the local library.	Liz Lynam	2021-2025
4.2.4	Build up a stock of biodiversity recording equipment such as bat detectors, moth traps, etc.	Committee	2021-2025

Mapping the Actions

Legend

Objective

🌲 Objective 1: Making our town / village biodiversity friendly

🖌️ Objective 2: Raising awareness of local biodiversity & how to protect it

Haggard

1.3.3

River Boyne

River Boyne

Carbury

1.2.4

1.1.3

1.1.4

Carbury

R402

2.1.6

Carbury

1.2.3

1.1.7

R402

1.1.2

Carbury

R402

1.1.1

River Boyne

R402

1.1.10

1.1.8 2.1.2

.402

1.1.9

R402

Carbury

River Boyne

Demesne
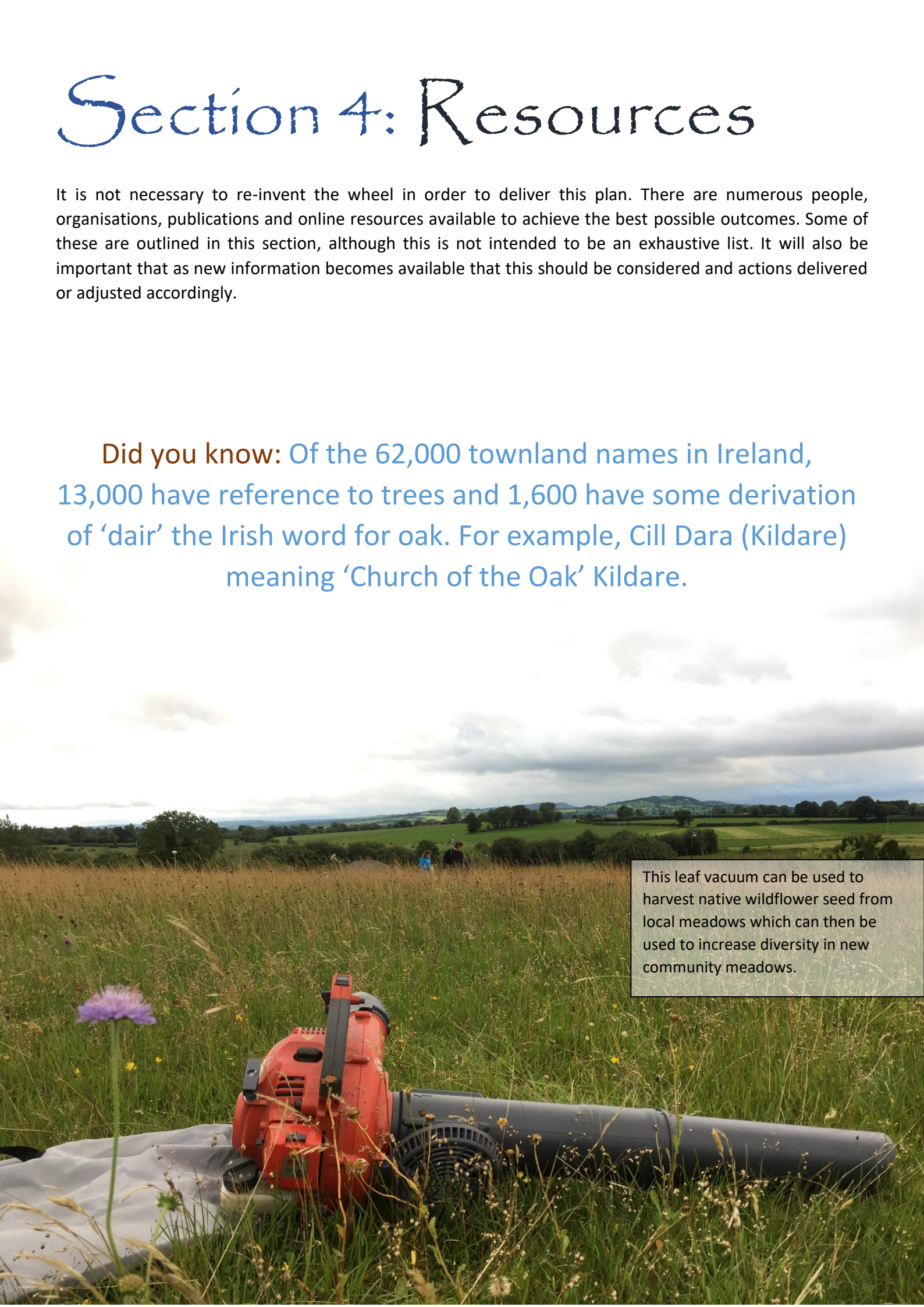
Section 4: Resources

It is not necessary to re-invent the wheel in order 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 will also be important that as new information becomes available that this should be considered and actions delivered or adjusted accordingly.

Did you know: Of the 62,000 townland names in Ireland, 13,000 have reference to trees and 1,600 have some derivation of 'dair' the Irish word for oak. For example, Cill Dara (Kildare) meaning 'Church of the Oak' Kildare.

This leaf vacuum can be used to harvest native wildflower seed from local meadows which can then be used to increase diversity in new community meadows.

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	• https://www.batconservationireland.org/ • https://kildarebatgroup.wordpress.com/
Birdwatching	• http://www.birdwatchkildare.com/?page_id=23 • https://birdwatchireland.ie/irelands-birds-birdwatch-ireland/ • www.irishbirding.com
Children's Biodiversity Activities	• 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/
General Biodiversity Issues	• https://www.biodiversityireland.ie/ • www.npws.ie
Habitat Boxes	• 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	• 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 • https://63273-649646-raikfcquaxqncofqfm.stackpathdns.com/wp-content/uploads/2019/04/Hedgerow-CasestudyASPaul21-Send-for-New-Website.pdf • https://mosart.ie/wp-content/uploads/2016/02/Irish-Hedgerows-Networks-for-Nature.pdf • www.hedgelaying.ie
Interpretative Signage	• https://www.nature.scot/sites/default/files/2019-11/Guidance%20-%20Natural%20heritage%20interpretation_1.pdf • https://www.heritagecouncil.ie/content/files/bored_of_boards_1mb.pdf • https://pollinators.ie/resources/signage-templates/
Invasive Alien Species	• https://invasivespeciesireland.com/ • https://www.fisheriesireland.ie/Invasive-Species/invasive-species.html
Local Biodiversity News	• https://www.facebook.com/Wild-Kildare-1437313092971392/ • http://www.birdwatchkildare.com/ • https://kildarebatgroup.wordpress.com/ • http://www.kildare.ie/CountyCouncil/Heritage/Biodiversity/
Nature Trails	• http://www.walkingroutes.ie/WalkingTrails/Kildare
Orchards	• http://www.irishseedsavers.ie/blog/wp-content/uploads/2014/10/CreatingAnOrchard.pdf • https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/11466/1973262.pdf • http://www.wetlandsystems.ie/goephow.html • https://www.theorchardproject.org.uk/
Peatlands	• www.ipcc.ie • www.bordnamona.ie/transform/biodiversity • www.abbeyleixbog.ie
Pollinator Friendly Planting Schemes	• https://pollinators.ie/resources/ • https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Planting-Code-2018-WEB.pdf • www.rhs.org.uk
Pollinators	• https://pollinators.ie/
Recording Biodiversity	• https://www.biodiversityireland.ie/record-biodiversity/
Reducing Herbicide Use	• https://greensideup.ie/16-natural-alternatives-to-herbicide-why-you-should-use-them/
Schools & Biodiversity	• https://greenschoolsireland.org/biodiveristy/ • https://pollinators.ie/schools/ • http://www.heritageinschools.ie/teachers-resources/strand/living-things-science/p3?q=&c=

Subject	Link(s)
	• https://www.eckilkenny.ie/images/Biodiversity_Plan_for_Schools.pdf • http://www.heartoftheglens.org/cms/wp-content/uploads/2017/12/Teachers-Outdoor-Learning-Resource.pdf • http://www.ipcc.ie/discover-and-learn/resources/
Swifts	• https://birdwatchireland.ie/our-work/surveys-research/research-surveys/swift-surveys/ • www.swiftconservation.ie/
Tree Identification & Selection	• https://www.treecouncil.ie/nativeirishtrees • https://drive.google.com/file/d/0B-qemRFHRDRSVnh3bmxGOEVaMHc/edit • http://www.clarecoco.ie/services/planning/publications/tree-design-guide-for-towns-and-villages-in-co-clare-2017-28115.pdf
Wildflower Meadows	• https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Wildflower-Meadows-2018-WEB.pdf
Wildflowers	• http://www.wildflowersofireland.net/index.php • www.bsbi.org
Wildlife Ponds	• https://www.wildlifetrusts.org/actions/how-build-pond • https://invasivespeciesireland.com/wp-content/uploads/2017/10/AQUATICS_BOOK5.pdf
Woodland	• http://www.woodlandsofireland.com/sites/default/files/Management%20Guidelines%20for%20Ireland%27s%20Native%20Woodlands%202017.pdf • https://www.forestryfocus.ie/social-environmental-aspects/biodiversity-and-nature-conservation/biodiversity-in-forests/conservation-and-restoration/ • http://www.woodlandsofireland.com/sites/default/files/Silvicultural%20Guidelines%20for%20Native%20Trees.pdf • https://www.wildlifetrusts.org/wildlife-advice/how-manage-woodland-wildlife

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 Environment Action Fund – Kildare County Council	Formerly known as LA21, this fund covers small community environmental projects.
Community Foundation for Ireland	The Community Foundation for Ireland has funded biodiversity surveys and action plans under their Environment and Nature programme. https://www.communityfoundation.ie/insights/news/environment-and-nature-fund-2019
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
Waters & Communities	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: http://watersandcommunities.ie/community-water-officers/
Trees on the Land	This charity aims to increase the amount of native Irish trees across Ireland. https://www.treesontheland.com/
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

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/
County Kildare LEADER Partnership CLG	If your idea is eligible in principle for LEADER funding, a Project Development Officer will work with you to develop specifications of your project, help you with procurement, and assist in bring forward an application for funding. Funding is available in the following categories: capital, training, marketing, and analysis and development	Telephone: (045) 895 450. Email info@countykildarelp.ie. Website: www.countykildarelp.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.	https://iwt.ie/
BirdWatch Ireland Kildare	For information on Ireland's birds.	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/
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 (Waters & Communities)	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.	http://watersandcommunities.ie/
Carbury Village Tidy Towns	Local Tidy Towns group.	-

Bat Conservation Ireland	An all-Ireland charity that promotes the conservation of bats and their habitats.	https://www.batconservationireland.org/
Kildare Bat Group	Members of Bat Conservation Ireland with a particular interest in Kildare bats.	https://kildarebatgroup.wordpress.com/
Kildare Animal Foundation	A local non-profit organisation dedicated to the welfare of cats, dogs and small animals.	https://animalfoundation.ie/
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/
Kildare Community 4 Climate Action	This is a network of groups and individuals who are working together for climate action and community resilience in Kildare. The network originated as a result of the LEADER-funded "Communities 4 Climate Action" training programme that was held in 2019.	https://www.facebook.com/KildareC4CA/

The All-Ireland Pollinator Plan is one of the best sources of information on how to make our community spaces better for pollinators and wildlife in general. Check out the resources section of their website here:

https://pollinators.ie/resources/

Habitat Management Guidelines

Wildflower Meadows:

Before creating any new meadows, it is important to consider and plan for the maintenance requirements. If the proper planning is not done at the outset it may cause considerable hassle down the line. This is particularly important for the end of season cut of a hay meadow as the grass could be knee height. Remember meadows are managed landscapes! You will need to consider the following:

- Who is going to cut the meadow?
  - Is it volunteers, the local authority or a contractor?
  - Or for larger meadows can it be conservation grazed?
- How are they going to cut it?
  - Have they got the right equipment suitable for the site?
- How are you going to gather and remove the cuttings from the site?
- What are you going to do with the cuttings after they have been removed from the site?

There are a few different types of wildflower meadows that you may consider depending on your site and preferences. Each requires different management. We have listed two such types of meadows here:

Hay Meadows:

- Cut 1-2 times per year, once at the beginning of the season to remove any winter growth and a final cut in mid-August to September (if there are late flowering species then you may consider delaying the cut)
- Mow the fringes along paths, car parks and roadsides
- Mow paths through larger meadows to encourage people to use them
- Put up signs to let people know what you are doing
- Increase species diversity as needed by harvesting local seed and either over-seeding it on the grass after it has been cut or by growing the seed on as plug plants for planting out the following spring.
- Control listed noxious weeds.

Short Cut Meadows:

- Cut approximately every 6 weeks from mid-April through to autumn
- Mow the fringes along paths, car parks and roadsides
- Mow paths through larger meadows to encourage people to use them
- Put up simple signs to let people know what you are doing
- Increase species diversity as needed by harvesting local seed and either over-seeding it on the grass after it has been cut or by growing the seed on as plug plants for planting out the following spring.

For more information visit the All-Ireland Pollinator Plan website and resources page:

https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Wildflower-Meadows-2018-WEB.pdf

Designing and Planning for New Tree Planting in Community Spaces:

For the creation of new areas of community woodlands, copses, avenues or individual trees on community spaces the most important thing to remember is 'Right Tree Right Place'. Remember that for all larger woodland creation projects and works on existing woodlands, you should always seek expert advice before proceeding.

The following are some of the practical considerations that should help guide you in the design and planning for smaller tree planting projects:

|	
Local Site Considerations	Soil - is it very wet or free draining?
	Is the site designated (as natural, built or archaeological) or adjoining a designated site or site of particular biodiversity interest? If so, check with relevant organisation for approval.
	For larger planting schemes, do you need to prepare the site for planting?
	Do you need to protect against rabbits / hares / deer?
	Check for overhead powerlines or underground services.
Practical Design Considerations	Consider safety and sightlines - set back from primary paths in public spaces or at road junctions
	Consider whether anti-social behaviour is a problem in the area and manage for it in advance
	Where possible, include other community amenities as part of larger planting schemes - paths, outdoor classrooms, natural play, picnic tables, etc.
	Consider neighbouring houses before planting.
	Where possible, plant small groups of trees in public spaces instead of lots of individual trees. This will be easier to maintain.
	When planting trees at larger sizes you'll need to stake and tie them. Remember to adjust tree ties each year and remove after 2-3 years.
Community & Stakeholder Consultation	Consult with local community to gain support for the works. Be innovative with how you engage local families and children in the development of the woodland e.g. dedicate a tree to each family resident next to the project, carry out volunteer tree planting events, develop ancillary amenities such as benches and natural play, etc.
	Communicate the plans with the person or organisation responsible for maintaining the green spaces (i.e. local authority, contractor or local volunteer) to avoid accidental damage to the trees.
	Agree a plan for managing around the base of individual trees to avoid damage from lawnmowers and strimmers.

For more practical information, check out the Trees on the Land website: https://www.treesontheland.com/planting-guide

Managing for Pollinators:

- Think about their essential needs – food, water, & shelter – and try to provide these where possible because just like us they cannot survive without them.
- Use pollinator friendly perennials (and small shrubs such as lavender) instead of annual bedding plants in flower beds and containers (see Appendix 2 for some options).
- For butterflies and moths, consider the larval foodplants of these species. For example, the nettle is the foodplant for the caterpillars of 5 species of butterfly.
- Minimise the use of herbicide for managing weeds. Where possible try to embrace these native wildflowers for their visual interest and biodiversity value.
- Check out the All-Ireland Pollinator Plan for lots of practical tips and ideas on managing for pollinators: https://pollinators.ie/

Did you know: 100 crops provide 90% of the world's food. Of these, 71 are pollinated by bees!
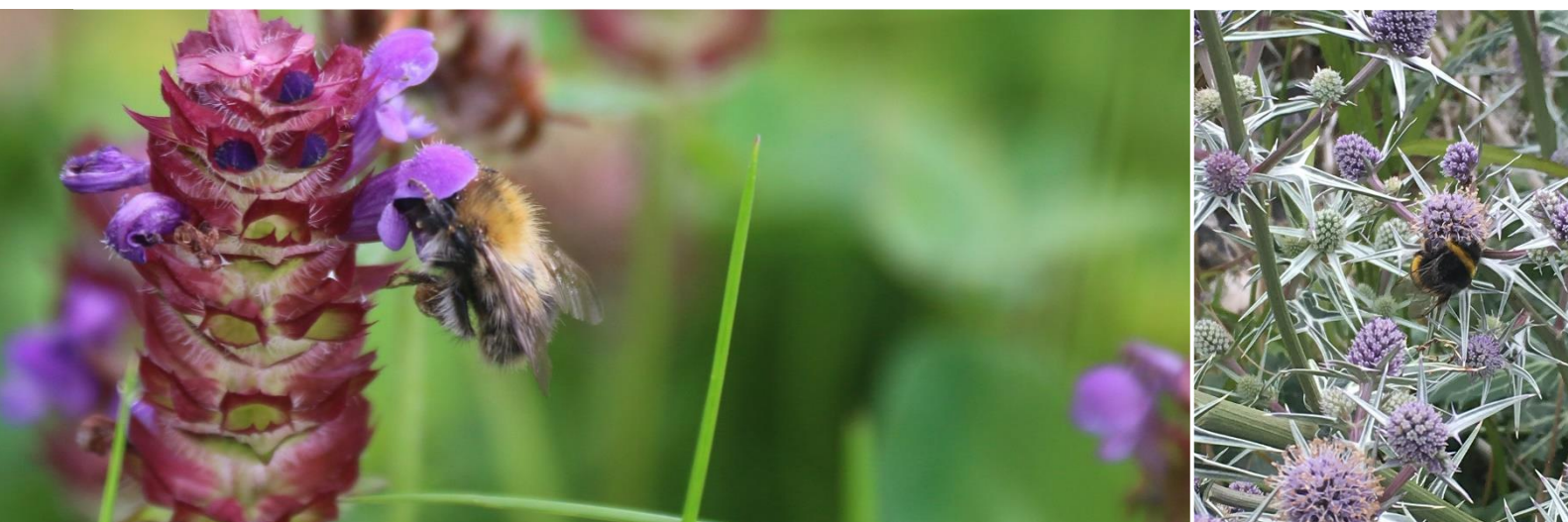
Planting for Biodiversity

Pollinator-friendly plant list recommended for community / garden flowerbeds	
Herbaceous Perennials – tall for the back of beds	Herbaceous Perennials – short for the front of beds
Japanese anemones (*Anemone* x hybrid) – pink and white (autumn); *Verbena bonariensis* (late summer); **Foxgloves** (*Digitalis* spp) (early summer) – both pink and white varieties; **Mullein** (*Verbascum* spp) (summer); **Fennel** (*Foeniculum vulgare*); **Teasel** (*Dipsacus* sp.) - Goldfinches love their seeds in winter. - Some **Rudbeckia daisies** will add bold colour too.	*Sedum* **'Autumn Joy'** (autumn); **Masterwort** (*Astrantia major*) (available in various shades of pink and white, long flowering from summer into autumn); **Yarrow** (*Achillea* spp) (summer into autumn); **Avens** (*Geum* sp.) – brightly coloured with long-lasting flowers; **Columbine/Granny's bonnet** (*Aqiliegia* sp) (early summer) **Macedonian scabious** (*Knautia macedonica*). **Hardy Geraniums/Cranesbills** (*Geranium* spp) in a mix of colours, blue, pink and white. These plants (particularly blue varieties such as 'Johnson's blue') partner well with Lady's mantle (*Alchemilla mollis*) which are particularly lovely planted along the edges of beds. **Lenten Hellebores** (*Helleborus orientalis*) will give winter and spring interest. **Penstemons:** A semi-woody perennial with tubular flowers that last from early summer right through to late autumn. **Lady's mantle** (Alchemilla mollis): attractive green flowers and leaves that flop over bed edges.
Also consider: - Herb species are great for pollinators as well as providing food for ourselves: chives, thyme, rosemary, oregano / marjoram and sage. - Native wildflowers add great colour and biodiversity interest & will be a great addition to flowerbeds. Some may be crucial for different species of native biodiversity as food plants.	

General list of shrub and tree species recommended for biodiversity enhancement:

Native Hedgerow Mix Species to Select From	Planting & Managing a Native Hedgerow for Biodiversity

The main hedging species is:
- Hawthorn / Whitethorn (*Crataegus monogyna*)

Smaller percentages of the following species:
- Elder (*Sambucus nigra*)
- Blackthorn (*Prunus spinosa*)
- Hazel (*Corylus avellana*)
- Holly (*Ilex aquifolium*)
- Privet (*Ligustrum vulgare*)
- Spindle (*Euonymus europaeus*)
- Guelder rose (*Viburnum opulus*)
- Dog rose (*Rosa canina*)

Trees such as Oak (*Quercus robur*), Crab apple (*Malus sylvestris*), etc. should be planted randomly along the length

- Plant @ 4-8 plants per metre
- Plant in a double staggered row where possible
- Allow 1.5-2m width for a mature hedge – the wider the better!
- Cut on a 3-year cycle so that the it can flower and fruit
- Cut outside the bird nesting season (1st March-31st August) unless for road safety reasons

Pollinator-friendly trees and shrubs recommended for community / garden flowerbeds	
Wildlife-friendly tree species	**Wildlife-friendly shrub species**
Pedunculate oak (*Quercus robur*) – prefers neutral/limestone soils **Sessile oak** (*Quercus petraea*) – prefers slightly acid soils **Willow** (*Salix* spp) – good for damp/ waterside conditions **Hazel** (*Corylus avellana*) – likes neutral to limey soils **Alder** (*Alnus glutinosa*)– good for damp/ waterside conditions **Aspen** (*Populus tremula*) **Silver birch** (*Betula pendula*) **Downy birch** (*Betula pubescens*) - good for damp/ waterside conditions **Yew** (*Taxus baccata*) – note that 'fastigiata' is the upright form (Irish Yew) **Holly** (*Ilex aquifolium*) **Rowan / Mountain ash** (*Sorbus aucuparia*) – flowers and fruit for spring and autumn interest **Whitebeam** (*Sorbus aria*) – flowers and fruit for spring and autumn interest **Crab apple** (*Malus sylvestris*) – flowers and fruit for spring and autumn interest **Wild cherry** (*Prunus avium*) – flowers in spring and colourful fruit and leaves in autumn	**Fruit bushes** e.g. the native Raspberry (*Rubus idaeus*) and Blackberry (*Rubus fruticosus*). Also Currants and Gooseberries (*Ribes* spp.). **Ling heather** (*Calluna vulgaris*) - prefers acid/peaty soil conditions **Bell heather** (*Erica cinerea*) - prefers acid/peaty soil conditions **Broom** (*Cytisus scoparius*) terrific colour, blooming through April & May. **Firethorn** (*Pyracantha*)* - a very thorny climber, good for wall cover with creamy blossoms in summer and colourful berries in autumn. Different species have different coloured berries ranging from yellow through orange to scarlet red. **Honeysuckle/Woodbine** (*Lonicera periclymenum*) – a climber with beautifully scented flowers, particularly in the evening when they attract nectar-seeking moths. **Dog rose** (*Rosa canina*) – a climber with beautiful flowers in June and red rosehips in autumn. **Elder** (*Sambucus nigra*) – creamy flowers (most important ingredient in a very tasty cordial!) in June and black berries in autumn (only edible when cooked, great for jams and jellies) **Spindle tree** (*Euonymus europaeus*) – strikingly beautiful orange seeds carried in bright pink capsules called 'cardinals' hats' **Blackthorn** (*Prunus spinosa*) – featuring sloe berries in autumn **Purging Buckthorn** (*Rhamnus catharticus*) – an uncommon shrub – the favourite food plant of the Brimstone butterfly **Alder-buckthorn** (*Frangula alnus*) – a rare native also favoured by the Brimstone butterfly. **Privet** (*Ligustrum vulgare*) **Guelder rose** (*Viburnum opulus*) – beautiful flowers and berries. **Gorse** (*Ulex europaeus*) – the heady, coconut aroma of its bright yellow flowers is the smell of an Irish summer's day.

*indicates a species not native to Ireland but non-invasive and wildlife friendly.

Selecting Plants

Point of Note	Reason
Use native plants including wildflowers where possible	- Native wildlife has adapted alongside these species and so they will typically support more wildlife than exotic species - It conserves our local flora
For native species; only use Irish provenance stock	- They are better suited to the Irish climate - It helps conserve local genetics - Minimise the risk of importing new pests and diseases. - Supports local Irish growers

Invasive Alien Species

Invasive Alien Species (IAS) are plants or animals that were introduced and are causing problems for native biodiversity. It is important that we can recognise the main IAS and take appropriate steps to control them:

- Avoid using IAS in new planting schemes and where possible remove existing ones. Encourage other local groups, landowners and the local authority to do the same.
- Raise awareness of IAS by delivering talks and posting on social media about them and the problems they cause.
- Carry out IAS surveys and submit records to the National Biodiversity Data Centre and the local authority.

Species	Problem(s)
Some of the Common Terrestrial Plant IAS	
Himalayan Balsam (*Impatiens glandulifera*)	• Can dominate riverbanks and outcompete native flora
Japanese knotweed (*Fallopia japonica*)	• Can dominate riverbanks and outcompete native flora • Can negatively impact built structures
Giant Hogweed (*Heracleum mantegazzianum*)	• Can dominate riverbanks and outcompete native flora • Can cause serious skin burns to humans
Giant Rhubarb (*Gunnera tinctoria*)	• Can dominate riverbanks and outcompete native flora
Monbretia (*Crocosmia* spp.)	• Can dominate grassy areas and outcompete native ground flora
Spanish Bluebell (*Hyacinthoides hispanica* and hybrids)	• They hybridize with native Bluebells
Cherry laurel (*Prunus laurocerasus*)	• Can take over woodland and prevent native ground flora & saplings from growing.
Rhododendron ponticum	• Can take over woodland and prevent native ground flora & saplings from growing.
Pheasant Berry (*Leycesteria Formosa*)	• Can take over native woodland and prevent native ground flora & saplings from growing.
Some of the Common Aquatic Plant IAS	
Floating pennywort (*Hydrocotyle ranunculoides*)	• Can grow up to 20cm per day and may quickly dominate a waterbody. • Forms thick mats which can look like land & so be a danger to people & livestock • Impedes water flow and chokes waterways which can make it difficult for boats and angling and can increase the risk of flooding. • Poses a threat to plants and fish by blocking out light and impeding access to fish feeding and resting spaces.
Curly Leaved Waterweed (*Lagarosiphon major*)	• Capable of forming very dense infestations in suitable habitats & occupying the full water column in waters up to 6m deep with significant impacts on native wildlife. • Serious threat to tourism, angling, boating & other recreational pursuits as well as conservation goals.
Parrot's feather (*Myriophyllum aquaticum, Myriophyllum brasiliense, Myriophyllum proserpinacoides*)	• Can produce a thick raft of vegetation. • A fragment as small as 5mm can re-grow. • Poses a threat to plants & fish by blocking out light & reducing oxygen levels. • Can choke waterways so increasing the risk of flooding.
New Zealand pigmyweed (*Crassula helmsii*)	• Can regenerate from tiny fragments & therefore easily takes over new areas. • Forms very dense mats which overgrow native plants and reduces light levels.
Water primrose (*Ludwigia grandiflora*)	• Currently only recorded from one site in Ireland. • Grows into a thick carpet which can out-grow native species and clog waterways.
Water fern (*Azolla filiculoides*)	• Produces a thick mat of floating vegetation. • Danger can lie when people and livestock attempt to walk on it. • The plants are so small, at no bigger than 2.5cm, that it can easily be transported on other plants as a contaminant. • Reduces oxygen levels in the water.

Equipment Checklist

The following is a list of some useful equipment to help manage your wild habitat and carry out Citizen Science work. Please make sure that any tools or machinery are only operated by suitably trained persons, that they are kept in good repair, all necessary health and safety precautions are followed, and that they are fully insured. The same applies to any contractors hired to undertake works on your behalf. Please note that due to Covid 19 it is worth considering any other special health measures and equipment that may need to be taken when carrying out community work.

Equipment	Description	Tick (✔)
Wildflower Meadows		
Polytunnel	It is useful to have at least one community polytunnel to grow wildflower plugs from locally harvested seed that can then planted out into local public meadows. It is ideally located in a secure place where dedicated person(s) responsible for managing the plugs can have access to it. Suitable venues include a community garden / allotment garden and in schools (where the pupils can grow some trays on as part of a school project). These can double up during the main growing season for fruit and vegetable growing.	
Meadow Cutting Tools / Machinery	For larger meadows: consider using a local contractor with the right equipment. Where it's not practical to get a contractor then some of the following machinery / tools may be considered: • Power scythe with hay rake and mini-baler or a buck rake (this could be purchased in partnership with other local groups or by Kildare County Council) • Brush cutter • Hand held scythe, hay forks and rakes	
Seed Harvesting	There are a few ways of harvesting your own wildflower seed. For most, it may be simply harvesting seed by hand, in which case you will need something to put it into e.g. a paper yogurt cup or cotton pillow sack are ideal. To collect certain seed such as Yellow Rattle seed on a larger scale it would be worth purchasing or hiring a leaf vacuum.	
Seed Storage	To dry the collected wildflower seed you can simply spread it out in cardboard box(es). If the seed is fully dry when collected it can also be stored in breathable pillow cases / sacks in a cool dry room. Do not store in plastic bags or containers as the seeds may sweat and spoil.	
Everyday Habitat Management		
Hand Tools	It is useful to have a stock of general tools available for carrying out community volunteer days such as tree planting, basic invasive species control of selected species, etc. You can always ask volunteers to bring their own but it is useful to have some spares. These will include: spades, loppers, saws, rakes, wheelbarrows, buckets, lump hammer, mattock, etc.	
Hand Held Power Tools	Similar to the hand tools above, having some hand-held power tools for the group may be useful. A cordless drill is probably the most important of these. Other power tools may be available either privately from members / volunteers or through rental hire as needed.	
Safety Equipment	It is very important that all volunteers have the necessary protective clothing for the jobs being carried out. Some of the basic equipment worth having a supply of include Hi-Viz vests, ear muffs, gloves, dust masks, visors and safety goggles.	
Citizen Science & Community Events		
Identification resources	There are identification books for all the common species groups and habitats. The National Biodiversity Data Centre also has swatches available from their online shop.	
Bats	Consider having a few bat detectors (and torches!) for bat events, as most people may not have one. The Magneta Bat5 is a good starter model.	
River Sampling	River sampling events are great for families and children. For these you'll need some trays or buckets, charts and fishing nets.	
Butterfly and Bumblebee Events	Pollinator workshops and events are always popular to run during the summer. They are even better when there is a field element to it and it is useful to have a few butterfly nets and some potting jars to help identify specimens.	
Moth Identification	Another really great Citizen Science project is the identification of moths. It is useful for the community to have (or have access to) a few moth light traps with suitable batteries and chargers and the identification guide books (both for micro and macro moths).	
Bird Identification	For bird identification events it can be useful to have a few spare pairs of binoculars (although it is normal to ask people to bring their own).	

Examples of Wildflower Meadow Maintenance Equipment

Polytunnel used to grow plugs

Pillow cases used to store dry wildflower seed

Leaf vacuum used to harvest wildflower seed

A power scythe is ideal for cutting smaller to medium sized meadows

The hay rake can help gather hay for ease of collection

Larger machinery may be necessary for bigger meadows

Examples of Equipment for Citizen Science and Community Events

Moth trap used to identify moths

Swatches from the NBDC

Butterfly nets

Did you know: The National Biodiversity Data Centre has taken in over 650,000 species sightings as of November 2020

Mood Board

Interpretation

A biodiversity sign, useful on sites with lots of natural interest.

Murals are a great option to brighten up a dull wall.

Biodiversity interpretation post, a relatively inexpensive option.

Sculptures

A bespoke sculptural feature in Ennis Town Centre.

An artistic willow weave sculpture on the roundabout beside Kildare Shopping Centre.

Wildflower Meadows

Encourage people to use them by mowing paths and installing seating and breakout points.

They are great for natural play and add interest to otherwise dull mown grasslands.

They can be used in a range of different settings to deliver multiple economic, social & environmental benefits.
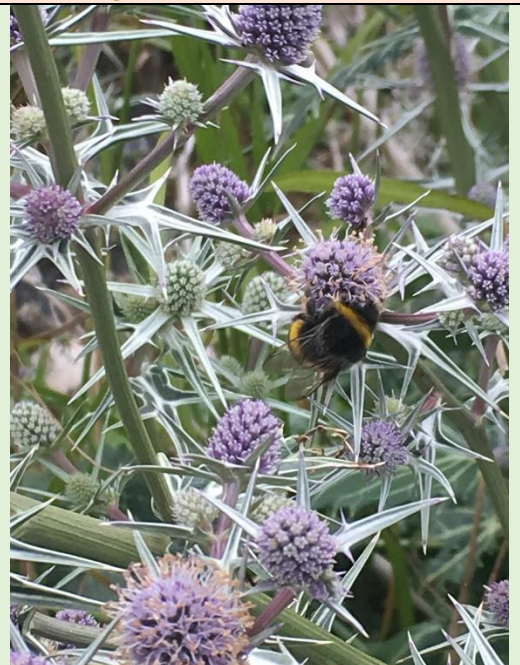

They are a part of our cultural heritage and landscape and can be used to encourage tourism.

Pollinator Beds

Use native wildflowers in mixes where possible as they have added benefits for wildlife and they are every bit as attractive as non-native species.

Perennial pollinator-friendly plants add visual interest, reduce annual work and costs, and are great for wildlife.

Natural Play

Natural play uses natural features to create play opportunities.

They can be much more cost effective to install and maintain and are often much more interesting.

Natural features such as earth banks and planting make great play features and can be used in combination with slides, etc.

Natural habitats such as meadows and woodlands are great natural playgrounds.

Edible Woodlands

Forest gardening is a way of managing woodlands for productive uses such as wild food and timber products. Each layer of the woodland is managed for this including the canopy, shrub and ground floor. They have been developed in a wide range of settings including private gardens, schools, public green spaces, residential spaces (such as above in Manchester, England), etc.

Edible hedges are a form of linear woodland which uses a wide range of berry and nut species to create a hedge.

Bioswales can be used in urban areas to manage and treat rainwater runoff from roads, car parks and other hard surfaces. They allow the water to drain slowly into the ground. Vegetation helps treat the water and add biodiversity value & visual interest.

Green roofs, even on small canopies such as above, deliver a wide variety of environmental benefits such as clean air, retain and improve water quality, have air cooling effects add visual interest and are great for biodiversity.

Green walls can soften grey urban spaces and deliver a wide range of other benefits such as sequester carbon, reduce the urban heat island effect, increase biodiversity, etc.

This bioswale, in an urban park setting, is allowed to fill up during heavy rain water events and drain slowly after. It has become an amenity within the park and has significantly increased the amount of biodiversity within the park. Residential and public green spaces should be designed to deliver multiple benefits like this park achieves.

In a lot of cases green walls can simply be created by planting climbers such as native ivy (*Hedera helix*) on bare walls – they are particularly good to cover up dull block work walls (photo above shows a newly planted wall in Portlaoise).

Section 5: Results of Questionnaire

Did you know: 5 native butterfly species rely on the common nettle as their larval foodplant

The purpose of the questionnaire was to gather information from the ten communities on biodiversity-related issues relevant to them and their local area. It gathers information about the importance of biodiversity in their everyday lives, local sites or features of biodiversity value, preferences for events going forward, and their willingness to get involved in delivering actions such as those set out in this plan.

It was delivered as an online survey using Google Forms during the training period from September to November 2020. All participants were invited to complete the questionnaire as part of the training. Forty-five people responded to the questionnaire and the results are explained below.

Question 1: How important is the natural environment to your everyday life?

All 45 participants from across the ten communities answered this question. Options were provided on a scale of 1 to 5, with 5 being 'very important' and 1 being 'not important'.

There were thirty-five respondents who gave it a rating of 5, nine gave it a rating of 4 and one gave it a rating of 3.

Conclusion: Overall the natural environment is very important in the everyday lives of the people who responded to this questionnaire. This would suggest that it is important that we conserve biodiversity in local communities and there will be an appetite amongst them to see actions carried out that will do this.

Question 2: List 3 ways that you think nature and biodiversity can deliver benefits for your community or site of interest (Carbury Village Responses Only).

The responses listed a range of different ecosystem services that benefit the village. These included the important role that nature can play in fostering a sense of place and pride in the village, and creating a healthy environment for us all to live in. The responses also recognised the benefits of nature-based projects for the Tidy Towns competition and the positive links that these projects can forge with other communities in the county. Other responses included the benefit of habitat creation for conserving specific groups of wildlife such as pollinators and the importance for raising awareness and education amongst the public.

Question 3: List your top 3 biodiversity hot spots in your locality (Carbury Village Responses Only).

The responses highlight a range of sites both in the village and in the surrounding landscape that are seen as important for biodiversity. The biodiversity hotspots that were mentioned included the village and the pollinator friendly flowerbeds, the grass verges leading into the village, the green area beside the mural, and the green area opposite the church. The R402 junction including the attenuation pond were listed as important sites for biodiversity and the village. Carbury Bog and Ardkill Bog were also listed as important sites surrounding the village.

Question 4: Would you like to get involved in helping biodiversity in your local area? (Carbury Village Responses Only).

All respondents stated that they would be interested in getting involved in helping biodiversity in Carbury Village through running / participating in events, and in helping to create and manage new wild areas in the village such as converting existing grass areas to wildflower meadows.

Question 5: To raise awareness of local biodiversity, which of the following would you like to be covered through community training events such as evening talks, webinars, walks, etc. (responses for 10 groups)

Events related to pollinators and pollinator-friendly planting, wildflowers and wildflower meadows, and trees, woodlands and hedgerows were the most popular responses with each of these receiving over 30 mentions each. Events about general wildlife of Kildare, invasive species, birds and wetlands were also popular with each receiving over 20 mentions each. The full list of responses is shown below.
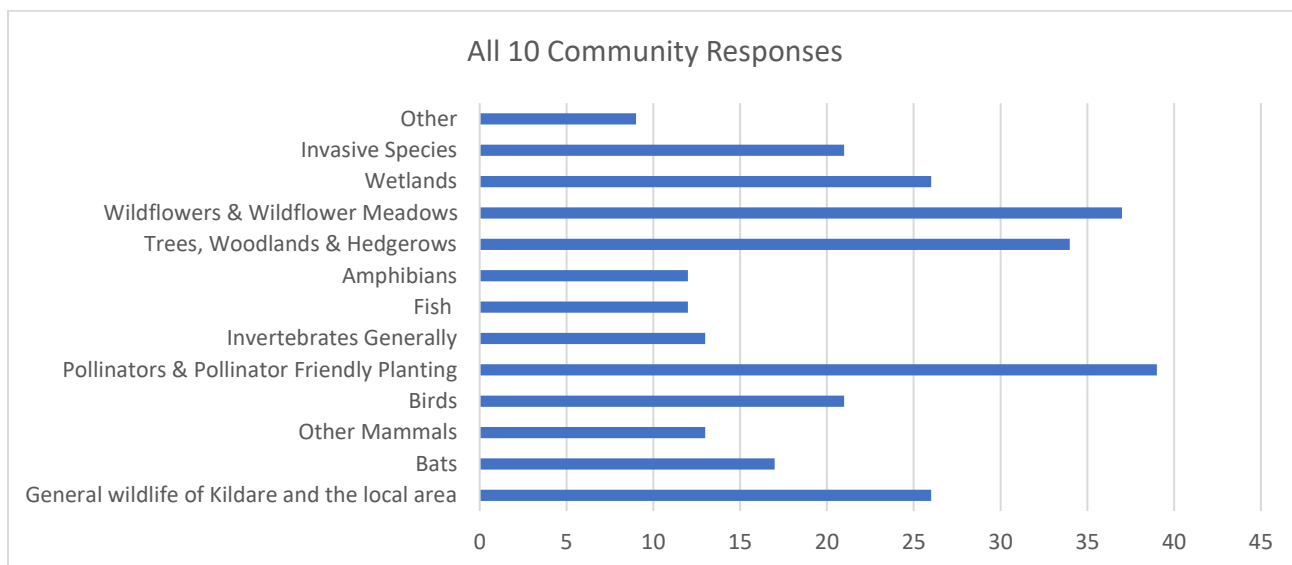
There were no 'other' suggestions from the respondents from Carbury Village.

Question 6: Covid 19 has changed how talks / workshops / presentations are delivered, at least in the short term, with webinars becoming more widely used. Which of the following would be your preferred format for community biodiversity events during this period?

The majority of the responses were for a mix of different event types, with each obviously taking appropriate measures in relation to Covid 19. Of the singular event types, outdoor walks and talks were the most favoured, followed by webinars.
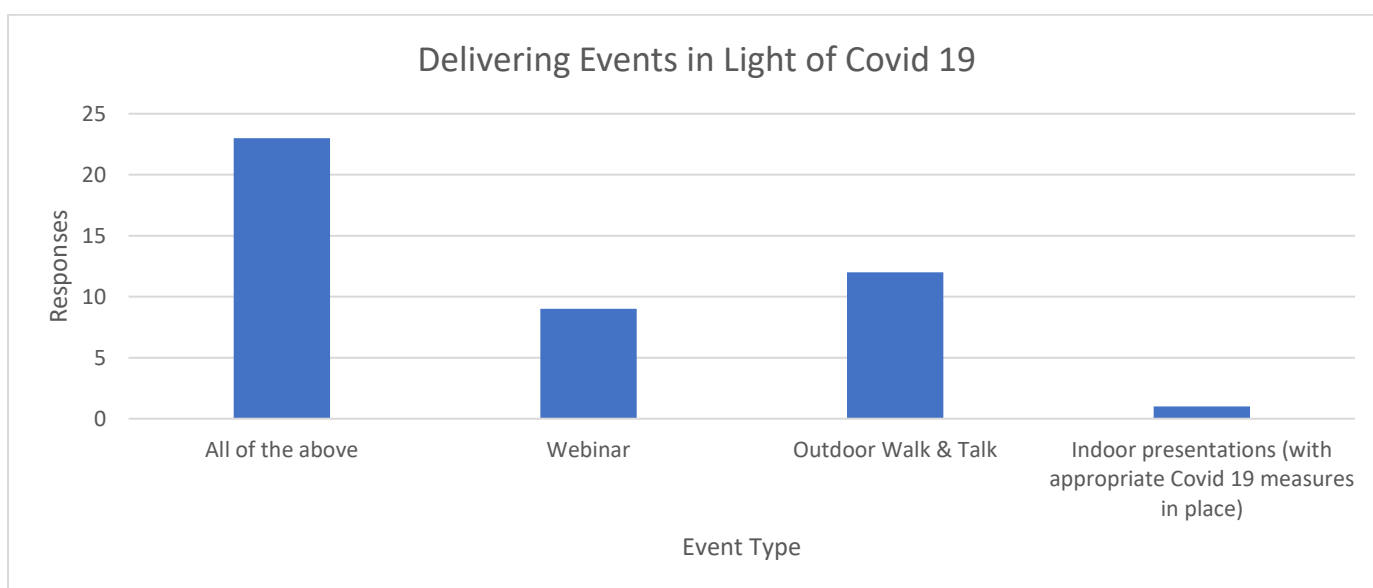
Responses shown: All 10 communities

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