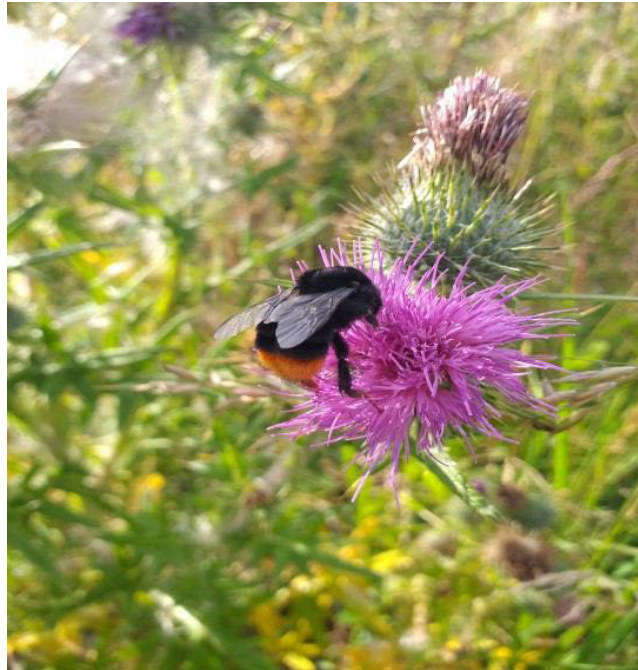


Carrigaline Town Pollinator Plan



**An Roinn Tithíochta,
Rialtas Áitiúil agus Oidhreachta**
Department of Housing,
Local Government and Heritage



**Cork
County Council**
Comhairle Contae Chorcaí

Prepared by Tony Nagle on behalf of Cork County Council

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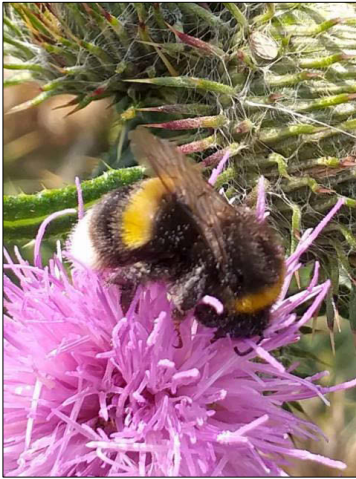
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Introduction

What Are Pollinating Insects?

Pollinating insects (bees, butterflies, moths, hoverflies and other insects) play a vital role in the natural process of pollination. Pollination is essential for many of our food crops, trees, fruit trees, flowers and wildflowers. Insect pollinators fly from plant to plant in search of pollen and nectar and by doing so they transfer pollen from one plant to another thereby facilitating the fertilisation and reproduction of these plants. Pollination by bees is essential for the production of one third of the food crops we eat and the majority of our wildflowers benefit from being pollinated by insects.



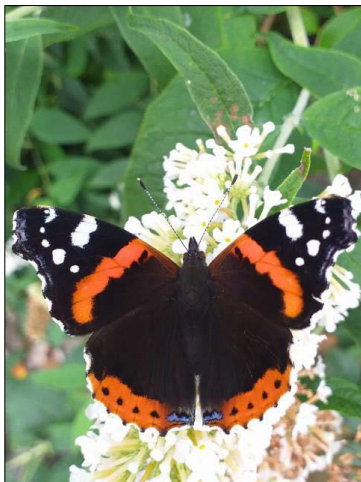
White-tailed Bumblebee



Solitary Bee
(*Halictus rubicundus*)



Honeybee



Red Admiral Butterfly



Emperor Moth



Hoverfly (*Sphaerophoria* spp)

Pollinators are among the most familiar and colourful of Ireland's insects. In Ireland there are 20 species of bumblebee, 77 species of solitary bee and a single species of managed bee (the Honey Bee), 36 species of butterfly, more than 1400 species of moth and 180 species of hoverfly. They all play a

role in pollinating our trees, wildflowers and crops but bees are the most important group and it is estimated that they account for a large proportion of pollination in Ireland.

Pollinators require suitable breeding conditions to build nests in the case of bees; butterflies and moths depend on larval food plants and hoverflies need suitable nesting habitat varying from dead wood to ponds and puddles. It is essential for the success of any pollinator plan to provide adequate nesting/breeding conditions for a range of pollinators as well as providing a broad and seasonal range of pollinator-friendly plants for foraging. Some pollinator plans have focused almost exclusively on the provision of foraging plants while neglecting to retain or provide adequate breeding habitats or larval food plants. Failure to address the breeding requirements of pollinators will reduce the effectiveness of a pollinator plan. Particular attention should be given to the retention of 'wild' habitats such as woodland, hedgerows, 'rough ground', ponds, puddles and man-made features such as stone walls. In the absence of such habitats, artificial nesting conditions can be provided in the form of 'bee scapes', 'bee hotels', dead wood, wet areas and by planting important food plants such as Birdsfoot Trefoil, Nettle and a range of native trees ranging from Hawthorn to Oak.

Why Are Pollinators in Trouble?

Unfortunately, many of Ireland's pollinating insects have undergone serious declines in recent decades and the rate of decline is accelerating. Bumblebees are declining at a rate of 3.7% annually compared to the global average figure of 1%. One third of our 97 native bee species are threatened with extinction within the next 10 years. Butterflies are declining at an average of 2.6% per year and this is considerably higher than the global average figure of 1.8%. The reasons behind these worrying declines are varied but they include agricultural intensification, afforestation and urbanisation, all of which result in habitat loss. The widespread use of insecticides and herbicides has had a serious impact on pollinators and wildlife in general.

The Purpose of This Plan

Studies in Britain have shown that the six commonest bumblebees in Britain (Buff-tailed, Red-tailed, Garden, Early, Common Carder and White-tailed Bumblebees) now often have higher population densities in urban areas than in the surrounding countryside and the situation is likely to be similar in the more intensively farmed areas of Ireland. Therefore, managing public spaces in urban areas can have a very positive impact for pollinators. This plan has been prepared as part of Cork County Councils effort to provide suitable habitat for pollinators in the public spaces it manages. It includes proposals for the management of public spaces in the town of Carrigaline with a view to increasing food and shelter opportunities for pollinator insects. The plan identifies areas which are already of high value for pollinators where minimal intervention is required. It also includes recommendations for more wildlife friendly management of areas which are traditionally more intensively managed. This includes roadside verges, parklands and amenity areas. The principles of the proposed approach follow those set out in the All-Ireland Pollinator Plan Sectoral [Guidelines for Councils](#) and include, in brief:

1. Identify and protect any existing suitable pollinator foraging habitat



Small Copper butterfly on Bramble

In some ways, protecting existing pollinator resources is perhaps the easiest and most important measure that can be undertaken in each town. Existing habitat can include areas of rough grassland or infrequently-mown grassland, hedgerows, riverbanks, small wild areas with bramble, nettle or ivy, stone walls, allotments and flowerbeds that have already

been planted with pollinator-friendly flowers.

2. Adjust mowing practices on grassland areas

Altering the frequency of mowing can facilitate the transformation of grassland areas into habitats that are more suitable for pollinating insects. Frequent mowing on a weekly or fortnightly basis inhibits the growth of wildflowers and deprives pollinating insects of a potentially widespread food resource. Reducing the frequency of mowing regimes can greatly improve the abundance of wildflowers. On Council land many grassy areas receive up to 22 cuts per year from mid-February onwards and the cut grass is often mulched back in to the lawn. This may look tidy to us but it creates a sterile grassy desert for pollinators. A cost equivalent action would be to change some areas to a pollinator friendly mowing regime where the grass-cuttings are removed (vital to reduce nutrient levels for many wildflower species) and composted. Depending on the site, mowing can be

- reduced to three or four week cuts, producing what is known as a flowering lawn;
- reduced to six-week cuts, creating a temporary 6-week meadow;
- reduced to a single cut at the end of each season, (ideally mid to late September) thereby creating a wildflower meadow.

A pollinator-friendly mowing regime could adapt the following timetable:

- First cut and lift after the 15th April (Dandelions are a vital early food source for pollinators in spring)
- Second cut at the end of May
- Third cut in mid/late July (maximises the growth of Clovers and other wildflowers)
- Fourth cut at the end August
- Fifth cut after mid-October

Reducing the frequency of mowing will result in a financial saving.

If necessary, additional wildflower species (e.g. Yellow Rattle) that will enhance the biodiversity value of the site can be added by seeding or plug planting over time. It is possible to create a wildflower meadow by completely reseeding the site with wildflower seeds but this is a time-consuming and expensive undertaking that often involves the use of herbicides to clear the site of grasses and other vegetation. It is vitally important to remove grass cuttings for composting as decaying grass fertilises the soil and perpetuates the cycle of grass dominance at the expense of wildflowers.

3. Planting pollinator friendly flower beds and trees

Flowerbeds can be very effective pollinator foraging habitats provided the right plants are in place. Many existing urban flower beds contain flowers that are appealing to human eyes but are of no value to pollinating insects. Traditional annual bedding plants such as Geraniums, Begonias, Busy Lizzy, Petunias, Polyanthus or Salvia splendens have virtually no pollen or nectar and are of little value to pollinators. The substitution of non-pollinator friendly flowers with varieties that are attractive to pollinators (and the public!) can greatly increase foraging habitat for pollinators in urban and suburban areas.

When choosing a selection of pollinator-friendly plants it is very important to recognise that not all pollinator plants suit every pollinator. Differences in anatomical structure mean that some flowers that are suitable for larger species may not be suitable for smaller species. Bumblebees for instance, are divided into long-tongued and short-tongued species and their preferences vary accordingly. It is also very important to choose a mixture of plants that will provide nectar and pollen throughout the spring and summer months to cater for species that are active early in the year as well as species that are active later in the year. A suggested list of plants is provided in Appendix 1 and this chart outlines the typical growing season and the types of pollinators likely to be attracted. A more extensive list of suitable plants is available in the [All-Ireland Pollinator plan in Councils – Actions to Help Pollinators](#) guidance prepared by the National Biodiversity Data Centre.



Planting pollinator-friendly trees (especially some of our native species) provides additional foraging habitat for pollinators in urban landscapes. Scrub or transitional woodland is an important habitat for many bee species. Early flowering trees such as Goat Willow are used by virtually all spring-flying bees. Trees provide hollow twigs and dead wood for various aerial nesters. Trees also create windbreaks providing shelter and allowing some parts of a site to attain higher temperatures than the surrounds. It is very important to prioritise the management and restoration of native plants over ornamental varieties wherever possible. Many ornamental tree species are of little or no value as foraging habitat for pollinators.

Native trees are also used as larval food plants by many of our moths and some of our butterflies and their autumn fruits provide a valuable food resource for a variety of bird and mammal species. The Alder Buckthorn (pictured left) has a very restricted range in Ireland (and is rarely included in planting schemes) but it is one of only two larval food plants for the Brimstone Butterfly. Its flowers are also used by many pollinating insects including bees and hoverflies and it is unusual in that it continues to flower long after the first berries have formed.

4. Provide pollinator nesting habitat

The provision of suitable pollinator nesting habitats is vital to the success of any pollinator plan. Pollinating insects need a variety of different nesting habitats. Some species of bumblebee nest on or just below the surface whereas others build their nests underground accessed by tunnels that can vary in length from a few centimetres to more than a metre. Most bumblebee species will use the old burrows of small mammals (mice and voles). Solitary bees build their nests in places such as south-facing earthen banks, old walls and dead wood.



A '**Bee scrape**' (pictured below) is one of the best ways to provide nesting habitats for a variety of solitary or mining bees of which there are 62 species in Ireland. Exposing small areas of soil (1 metre x 1 metre) on well-drained south-facing locations can provide suitable nesting habitat for many species of solitary or mining bee. Ideally, locations varying from vertical scrapes in banks to flat areas on well-drained soils should be chosen to create nesting habitats for different solitary bee species. Bee scrapes need to be maintained throughout the breeding season (March-September)

by ensuring that the scrapes are kept clear from encroaching vegetation during the summer months. Care should be taken to avoid disturbance (e.g. trampling) to the scrapes once they have been created.

Artificial nest sites (commonly known as '**bee hotels**') can be provided for some of the 15



species of cavity-nesting solitary bees in or close to suitable foraging areas by placing sawn logs (pictured left) on east or southeast-facing locations ideally within 100 metres of foraging sites. The logs can be placed individually or in small housing structures. Holes varying in diameter from 4-10 mm should be drilled into the sawn side of the log at a depth of 15 cm to attract

different species of bees. Drill the holes at a slight upward angle to prevent water-logging. If a housing structure is being used, lengths of bamboo or reeds can be placed in the gaps between the logs as these provide additional nesting habitats for other cavity-nesting species. Bee hotels should ideally be placed at a height of 1 to 1.5 metres above the ground.

Butterflies and moths tend to lay their eggs on various native grasses, herbs and trees that are subsequently used as food plants by the emerging caterpillars. The Common Nettle (pictured left) is used by 5 of Ireland's butterfly species: Red Admiral, Painted Lady, Small Tortoiseshell, Peacock and Comma. Other important larval food plants include Birdsfoot Trefoil, native Violet species and a range of wild grass species including Cock's-foot and Couch Grass. Preserving corner areas containing a mixture of these species will provide vital egg-laying habitat for a variety of butterfly and moth species. Many of these plant species will also thrive in 'wildflower' meadows (see Appendix 2).

180 species of hoverfly have been recorded in Ireland and different species require a variety of different nesting habitats. Adult hoverflies feed largely on nectar and pollen but the larvae of hoverflies (depending on the species) feed on aphids, ant larvae, living plant tissue and decaying plant tissue so their nesting requirements are varied but include leaves of trees, wet mud, ponds and puddles.

5. Reduce the use of pesticides

Pesticides are known to be extremely harmful to pollinating insects. Herbicides eliminate wildflowers and nesting vegetation whereas insecticides are fatally harmful to pollinators. Fungicides are harmful to some species of hoverfly. Pesticides should only be used when absolutely necessary and great care should be applied in their use.

How the Plan Was Prepared

A meeting was held in September 2020 with Council staff and a number of suggested sites in and around Carrigaline were visited. Proposed management of these areas and possible constraints were discussed. The sites were revisited and surveyed for existing flora and potential pollinator nesting areas in September and October and a draft proposal describing the sites, proposed measures and details regarding implementation was prepared. The plan was finalised following consultations with staff of Cork County Council including the Council Ecologist and also involved liaison with Carrigaline Tidy Towns Group.

What the Plan Contains

The plan includes recommendations for management of public spaces including public parks, roadside verges, roundabouts, riverside banks and housing states managed by Cork County Council. Not all publicly-owned land is included in the current plan but it is hoped that the number of such areas will be expanded over the coming years.

The plan does not include proposals for management of privately owned land or residential estates that are not managed by Cork County Council, however, it is hoped that the management of open areas on privately owned land will be influenced by the measures adopted in this plan. The plan has been prepared by taking account of the needs of the people of the town as well as the local pollinators and public lands that are currently used for sports, general amenity purposes and recreation will not be adversely affected by any of the measures in the plan.

Certain alterations to grass-mowing regimes will occur in some areas but public access will not be impacted by any of these measures and indeed it is hoped that the public will explore and enjoy the results of these measures as they become apparent over time.

Safety concerns are fully acknowledged and respected in the plan and none of the recommended measures will result in any obstruction to traffic or walkways at any location within the town.

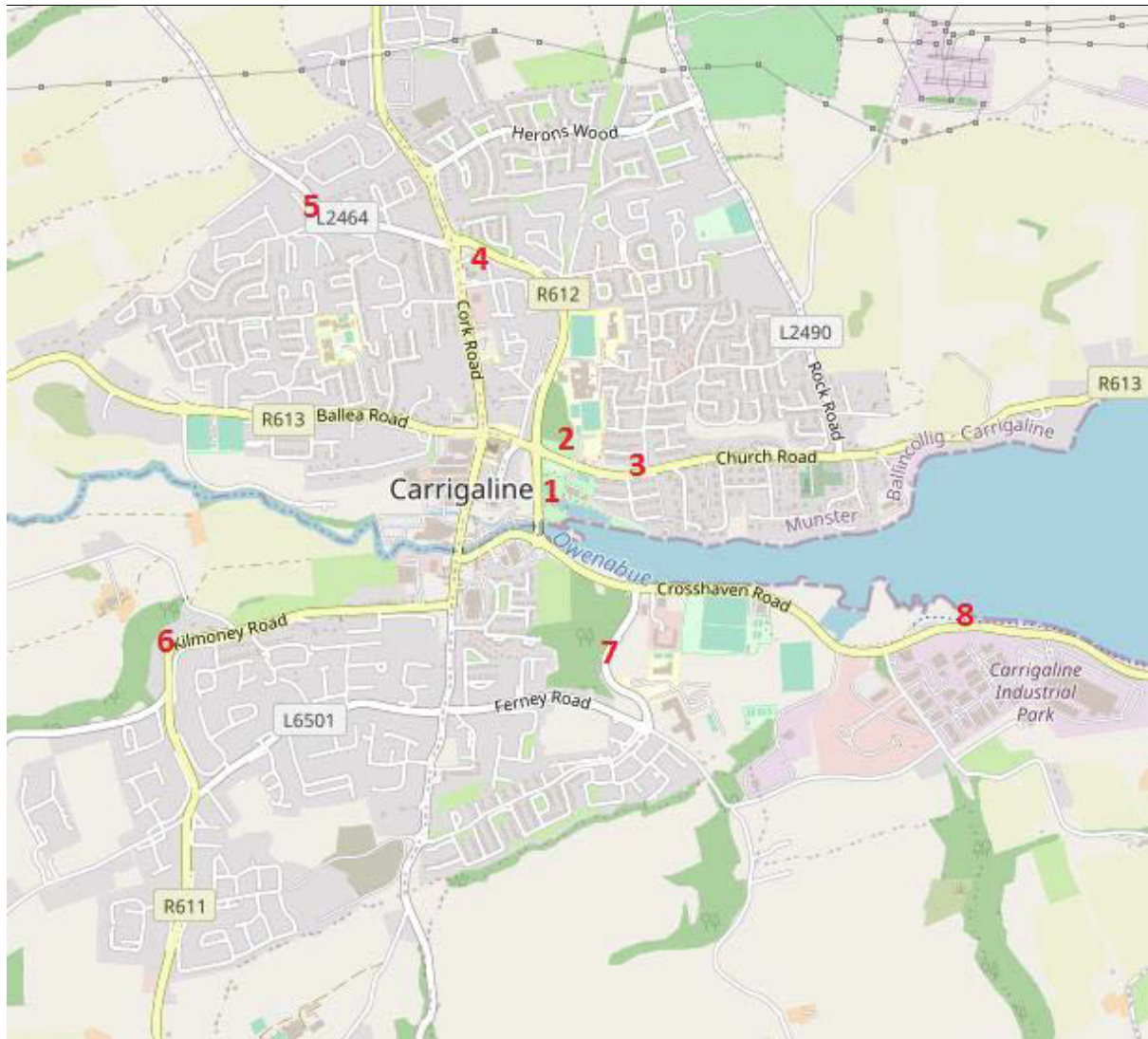
How the Plan Will Be Implemented

The plan will be implemented by Cork County Council staff and members of Carrigaline Tidy Towns Group.

Management Recommendations

A number of areas within Carrigaline Town which are within the management control of Cork County Council have been proposed to be incorporated into this plan. These sites were identified through field survey and consultation with local staff of Cork County Council. The areas are described and management recommendations for each of these sites are set out below. The sites are shown on Figure 1 below. Ideally, additional sites can be added each year based on the same suggested guidelines.

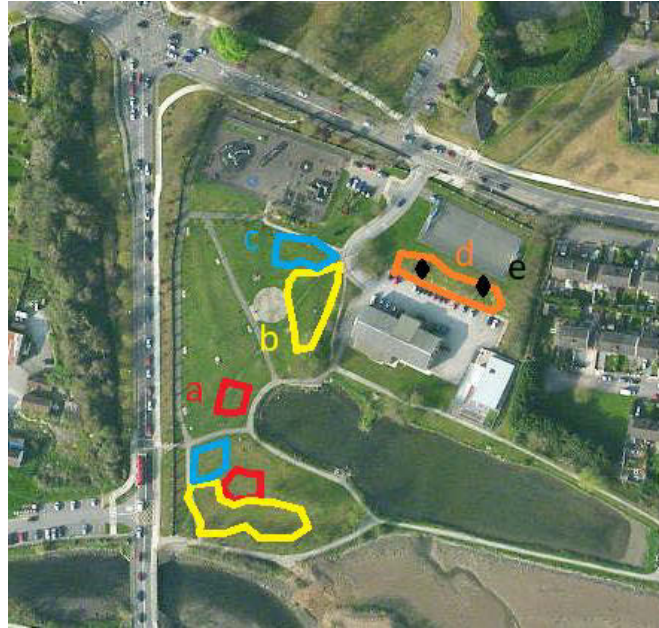
Figure 1. Pollinator Plan sites in Carrigaline.



1. Carrigaline Community Park

Site Description

This public amenity area is bounded on the west by the Eastern Relief Road, Church Road to the north and the River Owenabue estuary to the south. A brackish pond is located in the southeast of the park. It is a popular park and is used by many people each day for physical exercise and relaxation. The grass areas of the park are regularly mown and are of minimal value to pollinators. Two small wet patches in the southwest of the park have been developed as pollinator-friendly mini-meadow habitats and contain some pollinator-friendly plants including White Clover, Ragwort and Yarrow.



Management Recommendation

(a) Extending the area of the mini meadows and linking them would greatly increase the area of habitat for pollinators at this site. One cut and lift in early to mid-September will improve the variety of wildflowers.

(b) Grass areas elsewhere on the site could be transformed into flowering lawns by reducing mowing to three or four week cycles.

(c) Two small groves of native woodland using small trees such as Goat Willow, Bird Cherry, Guelder Rose, Buckthorn, Spindle, Hawthorn and Crab Apple could be planted in this area to provide early season flowers for pollinators. These groves would also serve to highlight the importance and the attractiveness of using native trees to the large numbers of townspeople who frequent the park.

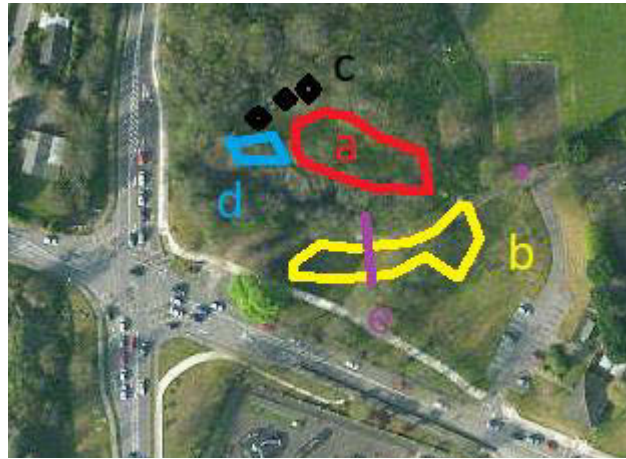
(d) The south-facing grass bank on the north side of the Community Centre car-park could be transformed into a wildflower meadow by reducing mowing to a single cut and lift in early to mid-September.

(e) Two or three bee-scrapes of exposed soil (1m x 1m) could be created on the above bank to provide nesting habitat for solitary bees.

2. Water Park

Site Description

This park contains a freshwater pond and surrounding woodland and it is a popular amenity for the town of Carrigaline. The pond and the wood provide interesting habitats for a wide variety of plant and animal species and the limestone bedrock produces luxuriant vegetation cover of several important pollinator-friendly plants including Fool's Watercress, Water Mint, Water-plantain, Common Figwort, Red Clover, Greater Willowherb, Primrose, Hedge Woundwort, Spear Thistle, Smooth Sowthistle and Hogweed all occur in the vicinity. Tree varieties around the pond include Alder, Ash, Hawthorn, Weeping Willow, Grey Willow and Sycamore. The surrounding parkland and woodland contain additional species including Wych Elm, English Elm, Beech and Pedunculate Oak. A number of invasive species were recorded around the pond including Winter Heliotrope, Montbretia and Snowberry. Most of the grass areas are currently being managed as regularly cut lawns and they are of minimal value to pollinators.



Management Recommendations

- (a) An area of 6-week meadow on the north side of the pond would enhance the site for pollinators.
- (b) A change in grassland management on the south and east of the pond from regular mowing to a 4-week cycle would enhance the site as a pollinator habitat by enabling pollinator-friendly species to flower such as White Clover.
- (c) The grass area on the north side of the Youth Centre could be improved for pollinators by managing it as a three or four-week flowering lawn by reducing the frequency of mowing. This measure would allow species such as White Clover to flower.
- (d) Two or three bee-scrapes of exposed soil (1m x 1m) could be created in unshaded areas to the north of the pond to provide nesting habitat for solitary/mining bees.
- (e) The invasive species growing in the vicinity (especially Winter Heliotrope) should be controlled and ideally eradicated.

3. Church Road Grass Verge

Site Description

The grass verges either side of the entrance to Water Park Estate form a large area of grassland and they have been left uncut for the past year. Several pollinator-friendly herbs including Red Clover and White Clover, Knapweed, Ragwort, Yarrow, Dandelion and Autumn Hawkbit occur here. A line of trees (mainly Pedunculate Oak) grows along the south of the site. The north side of the meadow is bounded by gardens and there is a substantial area of Bramble and Honeysuckle adjoining the gardens in the west section but the non-native Staghorn sumac has spread from a garden and has become invasive in one area.



Management Recommendations

(a) The grassland should continue to be managed as a wildflower meadow area with a single cut and lift in mid to late September. The introduction of Yellow Rattle would assist the colonisation of additional pollinator-friendly plants. The verge adjacent to the footpath could be cut regularly to a width of 1m to maintain a managed appearance and a winding path (1m in width) could also be cut through the meadow.

(b) Two or three 1m x 1m bee scrapes to provide mining bee nesting habitat could work well on well-drained soil locations in each of the two meadow sections.

(c) The invasive Staghorn sumac should be controlled and it could be replaced by native trees such as Goat Willow, Hawthorn and Bird Cherry and these trees would provide early flowers for pollinators.

4. Eastern Relief Road

Site Description

The grass verge on the south side of the road where it joins the R611 is a large area of urban grassland. An old, largely intact hedgerow of Ash, Hawthorn, Elder, Bramble and Nettle forms the south boundary and a line of closely planted Scot's Pine has been planted in front of the hedgerow. This area is mainly maintained as a regularly mown lawn but a substantial section in the south of the site has been allowed to grow uncut and important pollinator plants including Red Clover, Silverweed, Dandelion, Yarrow and the recent introduction Bilbao's Fleabane occur in this section and occasionally in the mown area. Winter Heliotrope is established in the hedgerow in the southeast and is encroaching on the meadow section.



Management Recommendations

- (a) This area could be transformed into a valuable pollinator habitat by replacing the current approach with a six-week meadow. The roadside and footpath verges could be cut more regularly to maintain a managed appearance.
- (b) Winter Heliotrope in the southeast corner should be eradicated with a careful application of herbicide to prevent further spread. Treatment will need to be repeated for two or three years after the initial application.

5. Dun Eoin Grass Verge

Site Description

This grassland verge is located on the outskirts of the town on the Ballinrea Road and it is currently maintained as a regularly mown lawn of minimal use to pollinators. A line of Lime trees has been planted in the centre. Important pollinating plants including Clover, Dandelion, and Groundsel are present in the lawn. The site is bordered on the west by a low stone wall and recently planted Ash, Birch and Larch.



Management Recommendations

(a) This site could be significantly improved for pollinators by creating a six-week meadow. 1 x metre strips bordering the road and the footpath could be cut more regularly to maintain a managed appearance.

6. Kilmoney Road Grass Verge

Site Description

This site consists of the grass verges on both sides of the road on a sharp corner of the Kilmoney Road. The site is bordered on the north by a Beech and Elm-dominated hedgerow with some Hawthorn, Nettle and Bramble. The grass area is currently maintained as a regularly mown lawn of minimal use to pollinators. Winter Heliotrope is well established in the hedgerow and is encroaching on the grass verge. The verge on the south side of the road is also regularly mown. Dandelion and Yarrow (important pollinator plants) are present. The south verge is free of Winter Heliotrope.



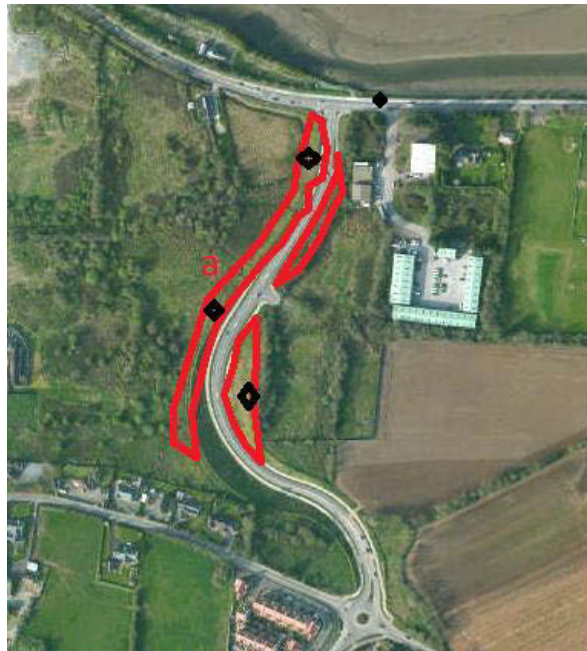
Management Recommendations

- (a) Mowing could be reduced to three or four week cycles on the north side to produce a flowering lawn.
- (b) Winter Heliotrope would need to be eradicated on the north side of this site or it will continue to spread into the verge.
- (c) Mowing could be reduced to a six-week cycle on the south side and this would create a six-week meadow to provide a valuable food resource for pollinators. 1 x metre strips bordering the road and the footpath could be cut more regularly to maintain a managed appearance.

7. Kilnagleary Road Grass Banks

Site Description

This is a substantial area of linear meadow created on both sides of a new road as a result of the continuing expansion of Carrigaline. The road cuts through an area of scrub-encroaching farmland and there is a significant wood of Oak, Ash, Beech, Holly, Alder, Grey Willow and Goat Willow on the west side. The grass management regime has been changed to a single cut and lift in September and it has the potential to become a significant pollinator habitat. It was not possible to assess the variety of pollinator-friendly plants currently growing here as the site had recently been mowed. The entire length of both sides of the verge has been planted with lines of non-native Japanese Cherry trees that are however favoured by many bee species.



Management Recommendations

- (a) The present policy of a single cut and lift in September is highly beneficial to pollinators and this practice should be continued. Yellow Rattle could be seeded here to accelerate the transformation to wildflower meadow.
- (b) Three or four 1m x 1m bee scrapes on each side placed on south-facing, well-drained sites would provide nesting habitat for solitary/mining bees.

8. Crosshaven Walk

Site Description

The Crosshaven Walkway has been created in recent years on the old railway line. This public amenity facility is very popular with local people who use it for walking and exercise purposes. The walkway connects Carrigaline to Crosshaven along the southern shore of the Owenabue estuary. Mowing has been reduced on many of the grass areas to six weeks and there are sections that are managed on a single cut and lift. Several important pollinator wildflowers were recorded including Red Clover, Bird's foot Trefoil, Cowslip, Dandelion and Knapweed. Many species of native tree occur including Hawthorn, Blackthorn and Grey Willow. The highly invasive Winter Heliotrope is widespread.



Management Recommendations

- (a) The present policy of using different approaches to grass management including six-week meadows and single cut and lift in September appears to be working and should be continued and extended where possible. Yellow Rattle could be seeded in single cut and lift areas to accelerate the transformation to wildflower meadow.
- (b) Three or four 1m x 1m bee scrapes on each side placed on south-facing, well-drained sites would provide nesting habitat for solitary/mining bees.
- (c) Winter Heliotrope should be controlled and eradicated (with careful application of herbicide) especially in areas where it is encroaching on open grassland. Complete eradication will be extremely difficult because the plant appears to be long-established and is very widespread.

Table 1. Summary of management recommendations.

Site No.	Site Name	Site Description	Area m ²	Target	Management Recommendations
1a	Carrigaline Community Park	Two small meadow areas in the southwest.	100	Create a wildflower meadow.	A single cut and lift each September.
1b	Carrigaline Community Park	Open grassland areas in the southwest and northeast.	2000	Create a flowering lawn.	A flowering lawn could be created in these areas by reducing the mowing cycle to 3 or 4 week intervals.
1c	Carrigaline Community Park	Open grassland areas in the southwest and northeast.	100	Two native small tree groves (approx. 50m ²)	Plant 8-12 trees: Goat Willow, Crab Apple, Bird Cherry, Hawthorn, Buckthorn.
1d	Carrigaline Community Park	Grass bank north of car-park.	300	Create a wildflower meadow.	A single cut and lift each September.
1e	Carrigaline Community Park	Grass bank north of car-park.	3	Provide solitary/mining bee habitat.	Create three 1m x 1m bee-scrapes on the bank and keep the scrapes free of vegetation.
2a	Water Park	Grass area north of pond.	500	Create a 6 week meadow.	Reduce mowing to a six-week cut and lift cycle.
2b	Water Park	Grass areas south and east of the pond.	1000	Create 3-4 week flowering lawns.	Reduce mowing to a 3 or 4 – week cut and lift cycle.
2c	Water Park	Unshaded area north of pond.	3	Create 3 bee-scrapes.	Create three 1m x 1m bee-scrapes on the bank and keep the scrapes free of vegetation.
2d	Water Park	Unshaded area north.	10	Create a pollinator-friendly flowerbed.	Plant a selection of pollinator-flowers that will provide pollen and nectar from March to September. (See Appendix 1).
2e	Water Park	Pond area and outflow stream.		Eradicate Winter Heliotrope and other invasive species.	Careful spot-spraying of herbicide. Avoid spraying near water. The process will need to be repeated for 2-3 years.
3a	Church Road Grass Verge	Grassland areas.	3000	Create wildflower meadows.	A single cut and lift each September. Seed with Yellow Rattle. Mow verges regularly.
3b	Church Road Grass Verge	Grassland areas.	3	Create 2 or 3 bee scrapes in each section.	Create three 1m x 1m bee-scrapes and keep the scrapes free of vegetation and trampling.

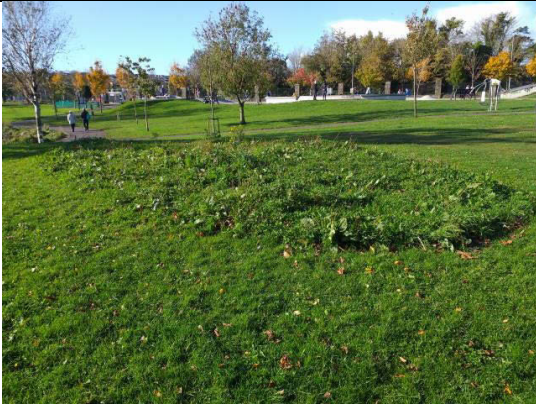
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3c	Church Road Grass Verge	North perimeter.		Control invasive Buckshorn.	Control/eradicate non-native Buckshorn and replace with Hawthorn, Goat Willow, and Bird Cherry.
4a	Eastern Relief Road	Grass areas	1600	Create a 6-week meadow.	Reduce mowing to a six-week cut and lift cycle.
4b	Eastern Relief Road	Hedgerow in southeast		Eliminate Winter Heliotrope	Careful spot-spraying with herbicide. The process will need to be repeated for 2-3 years.
5a	Dun Eoin Grass Verge	Grass area on south side of Ballinrea Road.	700	Six-week meadow.	Reduce mowing to a six-week cut and lift cycle.
6a	Kilmoney Road Grass Verge	Grass verge on north side of road.	160	Create a flowering lawn.	Reduce mowing to a 3 or 4-week cut and lift cycle.
6b	Kilmoney Road Grass Verge	Grass verge on north side of road.		Eliminate Winter Heliotrope	Careful spot-spraying with herbicide. The process will need to be repeated for 2-3 years.
6c	Kilmoney Road Grass Verge	Grass verge on south side of road.	350	Create a 6-week meadow.	Reduce mowing to a six-week cut and lift cycle.
7a	Kilnagleary Road Grass banks	Transition meadow areas on both sides of the road.	6750	Create wildflower meadow strips.	A single cut and lift each September. Yellow Rattle could also be seeded to accelerate the transformation to wildflower meadow.
7b	Kilnagleary Road Grass banks	Transition meadow areas on both sides of the road.		Create mining bee nesting habitat.	Three 1m x 1m bee scrapes could be created on both banks. They would need to be kept clear of vegetation and free from disturbance.
8a	Crosshaven Walk	Walkway with grass and woodland verges.	800	Continue with existing grass management.	Meadow areas should have a single cut and lift in mid to late September. Yellow Rattle could be seeded. 6-week meadows should be mowed on a six-week cut and lift cycle.
8b	Crosshaven Walk	Walkway with grass and woodland verges.	3	Create mining bee habitats.	Three 1m x 1m bee scrapes could be created on both banks. They would need to be kept clear of vegetation and free from disturbance.
8c	Crosshaven Walk	Walkway with grass and		Control Winter Heliotrope.	Careful spot-spraying of herbicide. Avoid spraying near water.

Carrigaline Town Pollinator Plan

		woodland verges.			
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Site Pictures



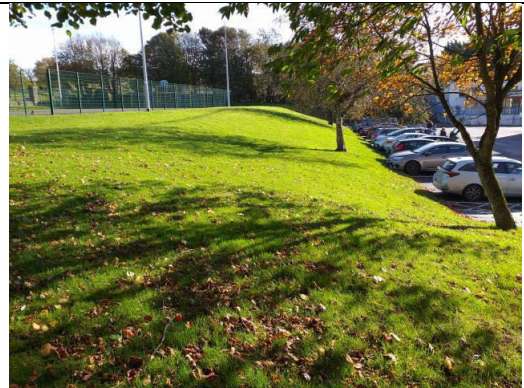
1(a) Community Park: small meadow area.



1(a) Community Park: small meadow area.



1(b) Community Park: open grassland area.



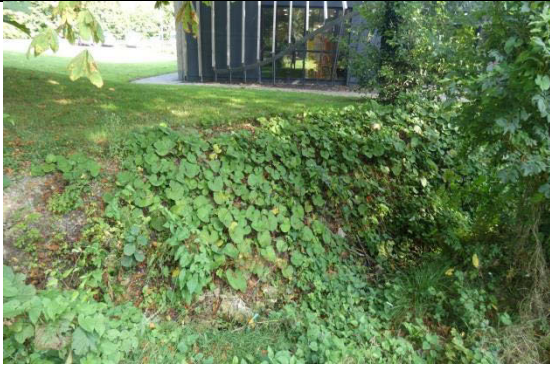
1(d/e) Community Park: grass bank at car-park.



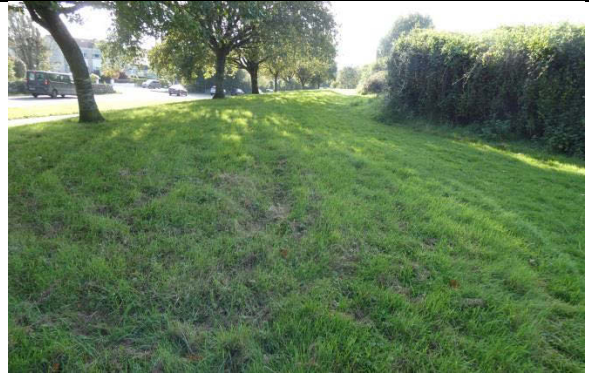
2(b) Water Park: grass area south of pond.



2(e) Town Park: stream outflow.



2(e) Winter Heliotrope infestation at stream outflow.



3(a) Church Road (north of Waterpark Estate entrance) wildflower meadow.



3(b) Church Road wildflower meadow area suitable for bee scrapes.



4(a) and 4(b) Eastern Relief Road grass area.



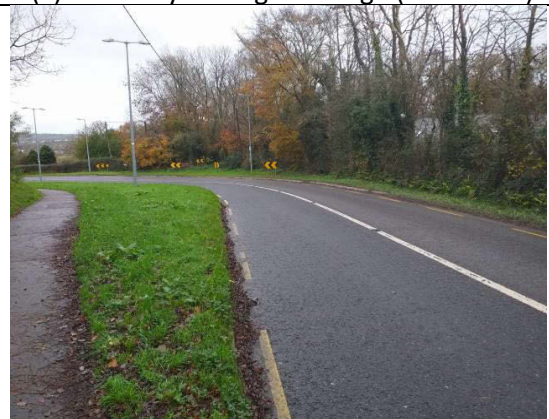
5(a) Dun Eoin grass verge (south side).



6(a) Kilmoney Road grass verge (north side).



6(b) Kilmoney Road Winter Heliotrope.



6(c) Kilmoney Road grass verge (south side).



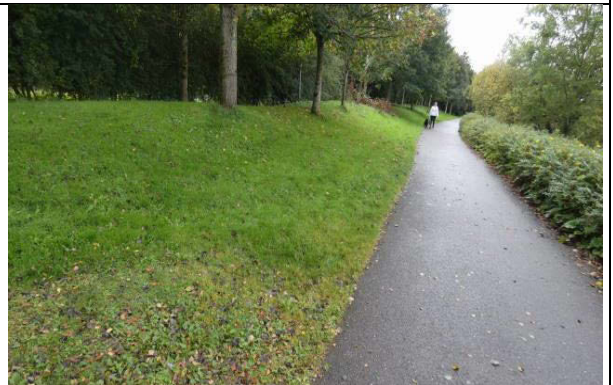
7(a) Kilnagleary Road grass bank (east side).



7(b) Kilnagleary Road grass bank (west side).



8(a) Crosshaven Road Walk grass and tree verge.



8(b) Crosshaven Road Walk grass bank suitable for bee scrapes.

Table 1 Summary of sites and proposed measures.

Site No.	Site Name	Site Description	Area m ²	Target	Management Recommendations
1a	Carrigaline Community Park	Two small meadow areas in the southwest.	100	Create a wildflower meadow.	A single cut and lift each September.
1b	Carrigaline Community Park	Open grassland areas in the southwest and northeast.	2000	Create a flowering lawn.	A flowering lawn could be created in these areas by reducing the mowing cycle to 3 or 4 week intervals.
1c	Carrigaline Community Park	Open grassland areas in the southwest and northeast.	100	Two native small tree groves (approx. 50m ²)	Plant 8-12 trees: Goat Willow, Crab Apple, Bird Cherry, Hawthorn, Buckthorn.
1d	Carrigaline Community Park	Grass bank north of car-park.	300	Create a wildflower meadow.	A single cut and lift each September.
1e	Carrigaline Community Park	Grass bank north of car-park.	3	Provide solitary/mining bee habitat.	Create three 1m x 1m bee-scrapes on the bank and keep the scrapes free of vegetation.
2a	Water Park	Grass area north of pond.	500	Create a 6 week meadow.	Reduce mowing to a six-week cut and lift cycle.
2b	Water Park	Grass areas south and east of the pond.	1000	Create 3-4 week flowering lawns.	Reduce mowing to a 3 or 4 –week cut and lift cycle.
2c	Water Park	Unshaded area north of pond.	3	Create 3 bee-scrapes.	Create three 1m x 1m bee-scrapes on the bank and keep the scrapes free of vegetation.
2d	Water Park	Unshaded area north.	10	Create a pollinator-friendly flowerbed.	Plant a selection of pollinator-flowers that will provide pollen and nectar from March to September. (See Appendix 1).
2e	Water Park	Pond area and outflow stream.		Eradicate Winter Heliotrope and other invasive species.	Careful spot-spraying of herbicide. Avoid spraying near water. The process will need to be repeated for 2-3 years.
3a	Church Road Grass Verge	Grassland areas.	3000	Create wildflower meadows.	A single cut and lift each September. Seed with Yellow Rattle. Mow verges regularly.

3b	Church Road Grass Verge	Grassland areas.	3	Create 2 or 3 bee scrapes in each section.	Create three 1m x 1m bee-scrapes and keep the scrapes free of vegetation and trampling.
3c	Church Road Grass Verge	North perimeter.		Control invasive Buckshorn.	Control/eradicate non-native Buckshorn and replace with Hawthorn, Goat Willow, and Bird Cherry.
4a	Eastern Relief Road	Grass areas	1600	Create a 6-week meadow.	Reduce mowing to a six-week cut and lift cycle.
4b	Eastern Relief Road	Hedgerow in southeast		Eliminate Winter Heliotrope	Careful spot-spraying with herbicide. The process will need to be repeated for 2-3 years.
5a	Dun Eoin Grass Verge	Grass area on south side of Ballinrea Road.	700	Six-week meadow.	Reduce mowing to a six-week cut and lift cycle.
6a	Kilmoney Road Grass Verge	Grass verge on north side of road.	160	Create a flowering lawn.	Reduce mowing to a 3 or 4-week cut and lift cycle.
6b	Kilmoney Road Grass Verge	Grass verge on north side of road.		Eliminate Winter Heliotrope	Careful spot-spraying with herbicide. The process will need to be repeated for 2-3 years.
6c	Kilmoney Road Grass Verge	Grass verge on south side of road.	350	Create a 6-week meadow.	Reduce mowing to a six-week cut and lift cycle.
7a	Kilnagleary Road Grass banks	Transition meadow areas on both sides of the road.	6750	Create wildflower meadow strips.	A single cut and lift each September. Yellow Rattle could also be seeded to accelerate the transformation to wildflower meadow.
7b	Kilnagleary Road Grass banks	Transition meadow areas on both sides of the road.		Create mining bee nesting habitat.	Three 1m x 1m bee scrapes could be created on both banks. They would need to be kept clear of vegetation and free from disturbance.
8a	Crosshaven Walk	Walkway with grass and woodland verges.	800	Continue with existing grass management.	Meadow areas should have a single cut and lift in mid to late September. Yellow Rattle could be seeded. 6-week meadows should be mowed on a six-week cut and lift cycle.
8b	Crosshaven Walk	Walkway with grass and woodland verges.	3	Create mining bee habitats.	Three 1m x 1m bee scrapes could be created on both banks. They would need to be kept clear of vegetation and free from disturbance.
8c	Crosshaven Walk	Walkway with grass and woodland verges.		Control Winter Heliotrope.	Careful spot-spraying of herbicide. Avoid spraying near water.

Other Recommendations

Raising Awareness

It is important to inform the public about the rationale behind the pollinator plan. The conversion of tightly-mown lawns into wildflower meadows can be seen initially to some as untidy management or neglect but if the reasons for the new approach are clearly explained to the public widespread acceptance, approval and support usually follows. Public acceptance can be achieved through the provision of signs that explain the importance of pollinators and their habitats, meetings with community groups, school visits and social media.

Monitoring Progress

The success of the plan can be monitored in a number of ways. Ideally, a small group of people (consisting of County Council staff and members of the Tidy Towns Committee) could meet twice a year outlining proposed actions (based on recommendations in the town pollinator plan) early in the year and a second meeting outlining actions that have been implemented. Informing the public of the reasons behind the measures undertaken is vital to the success of the plan but criticisms and positive suggestions should be noted. It is important to monitor the success of each of the measures but wildflower meadows will need particular attention, especially in the early years as the succession to wildflower meadow status is a gradual process and the benefits may not be apparent for some years after the process has begun. Invasive species are a problem at some sites (especially Winter Heliotrope but also Japanese Knotweed) and these will require ongoing attention until they are finally eradicated.

Monitoring of pollinator use of the sites is important and this can be done on a casual basis by noting the numbers of bees, bumblebees, hoverflies and butterflies using the sites (always choose a sunny, calm day if possible). The National Biodiversity Data Centre host a number of monitoring schemes and it would be a good idea to join at least one of these schemes e.g. the [Bumblebee Monitoring Scheme](#) (advice and identification assistance is provided for beginners) or the [Butterfly Monitoring Scheme](#). It would be a good idea to record the species and numbers using the sites and to note sites that appear to be more successful than others and to identify reasons why this may be the case (it could be related to the varieties and numbers of plants present or perhaps because there is not enough suitable nesting habitat available nearby).

Pollinator plan measures will need to be monitored throughout the year to ensure that adequate numbers of foraging plants are in place at critical times of the year. Grassland management measures will need to be assessed to measure the development of pollinator-friendly wildflowers.

A suggested monitoring programme could involve the following steps:

Measure	Timing	Recording Pollinator Plants	Recording Pollinator Activity
Assess early pollinator activity	Mid-February to mid-April (One or two visits over this period)	Record presence or absence of early flowering plants such as Willows, Bluebells Note plants with greatest levels of pollinator use. Record plants with lowest or zero level of pollinator use.	Record presence or absence of pollinator groups: bees, bumblebees, hoverflies, butterflies. Record numbers. Record to species level where confident of identification.
Assess late spring activity	Late April to May (One or two visits over this period)	Record presence or absence of pollinator-friendly plants. Note plants with greatest levels of pollinator use. Record plants with lowest or zero level of pollinator use.	Record presence or absence of pollinator groups: bees, bumblebees, hoverflies, butterflies. Record numbers. Record to species level where confident.
Assess early summer activity	June (One visit in this period)	Record presence or absence of pollinator-friendly plants. Note plants with greatest levels of pollinator use. Record plants with lowest or zero level of pollinator use.	Record presence or absence of pollinator groups: bees, bumblebees, hoverflies, butterflies. Record numbers. Record to species level where confident.
Assess late summer activity	July to August (One or two visits over this period)	Record presence or absence of pollinator-friendly plants. Note plants with greatest levels of pollinator use. Record plants with lowest or zero level of pollinator use.	Record presence or absence of pollinator groups: bees, bumblebees, hoverflies, butterflies. Record numbers. Record to species level where confident.
Assess early autumn activity (prior to mowing)	September (One visit in this period)	Record presence or absence of pollinator-friendly plants. Note plants with greatest levels of pollinator use. Record plants with lowest or zero level of pollinator use.	Record presence or absence of pollinator groups: bees, bumblebees, hoverflies, butterflies. Record numbers. Record to species level where confident.

The Cost of Implementing the Plan

Pollinator plans can be implemented at minimal cost and with relatively limited effort by adopting a number of alterations to existing maintenance and planting policies. Most of the grassland management recommendations for example require significantly reduced mowing effort and this should result in an automatic reduction in the costs associated with mowing and strimming practices. Planting regimes may need to be adjusted (minimally in some cases) by making changes to the range of plants chosen for public spaces to a selection of equally colourful and attractive pollinator-friendly annual and perennial plants. Perennial plants tend to be much better sources of pollen and nectar for pollinators and if managed properly, a perennial mix will not need re-sowing.

Tree-planting (where required) should ideally be focussed on using native trees and shrubs and a number of useful contact details are provided in Appendix 1. Local plant suppliers should be informed of the new requirements associated with the pollinator plan (many garden centres and landscape

professionals are already aware of the need to stock pollinator-friendly flowers, shrubs and trees) but again, it is always best practice to plant native trees and shrubs of Irish provenance wherever possible.

A number of grants are available for some of the measures particularly in relation to native tree planting and these include the Public Woodland Scheme, Neighbourwood Scheme and the Native Woodland Scheme.

- The [Public Woodland Scheme](#) is a new initiative from the Department of Agriculture specifically designed to “encourage Public Bodies to establish new native woodlands on suitable bare land.” This scheme provides 100% funding for planting and maintenance for the first four years. Funding is also available for trails, signage and a woodland playground.
- The [Neighbourwood Scheme](#) run by the Department of Agriculture, Food and the Marine provides up to 85% funding for the establishment of new woodland, the enhancement of existing woodland and/or the provision of recreational facilities in woodland sites of between 0.1 ha to a maximum area of 12 ha.
- The [Native Woodland Scheme](#) is designed to protect and expand native woodland in Ireland. Grants are available for the conservation of existing woodland and the establishment of new woodland.

The Importance of Choosing Native Trees and Shrubs of Irish Provenance

Many species of pollinating insects depend on native trees and shrubs for nectar and pollen sources particularly in spring (especially bees and hoverflies). Native trees and shrubs are also extremely important for the larval stage of many of our moth and butterfly species. Native trees and shrubs have adapted to Irish conditions and so too have many of our insects and birds. A Hawthorn tree imported from continental Europe for example may come into flower a number of weeks later than a Hawthorn of Irish provenance. Many Irish insects (and some bird species e.g. Blue Tit) time their breeding cycles to coincide with the period when native trees and shrubs come into flower and leaf. Any alteration to these established natural cycles could potentially have negative impacts on the breeding cycles of at least some native species. Imported trees also carry the risk of disease introduction (Ash Dieback, currently spreading throughout the country resulted from imported Ash) and invasive species such as the Oak Processionary Moth (which devastates oak trees) has recently been recorded in Ireland and may well have arrived on imported oak trees.

Yellow Rattle and its Biodiversity Significance

Yellow Rattle is a native annual species that was formerly widespread and common in Ireland. It still occurs widely but is now largely confined to rough grassland areas and meadows. Yellow Rattle is favoured by many pollinators but its most significant value relates to its ability to improve conditions for wildflowers by parasitizing the roots of grasses. Grasses often out-compete wildflowers, especially in the first few years of establishment when nutrient levels are still relatively high. Most wildflower species prefer low nutrient levels in the soil and this is why it is very important to remove cuttings after mowing and never apply fertilisers to the meadow. Yellow Rattle is perhaps the single most important species in many wildflower meadows and should be considered for use in any single cut and lift grassland site.

Dealing with Invasive Species

Invasive plant species are mostly plants that were originally introduced for a specific purpose, usually ornamental. Many introduced plant species do not spread and therefore do not pose a threat to our natural flora. A number of introduced species however have adapted to Irish conditions and several of these have become highly invasive and pose a threat to large areas of the Irish landscape. Invasive species generally have no natural enemies and often thrive in Ireland's mild and moist climate. *Rhododendron ponticum* is one of the best known invasive plant species and it now poses a serious threat to large areas of native woodland and other habitats in Ireland. Several invasive species have been encountered during survey work for the current pollinator plans. Japanese Knotweed and especially Winter Heliotrope appear to be widespread in many towns.

Japanese Knotweed is a highly invasive plant that can impede water flow by obstructing waterways. It can also damage built structures and it out-competes native flora. Japanese Knotweed is difficult to eradicate and usually needs specialist treatment. It is very important that the plant is not disturbed prior to treatment as it can regenerate from rhizome fragments and stem sections.

Winter Heliotrope has been the most frequently encountered invasive species and it can dominate large areas by out-competing native flora. Winter Heliotrope was ironically introduced as a winter food plant for bees. It can be controlled by using an application of a glyphosate-based herbicide after flowering in February to March or spraying in midsummer or later but before the foliage begins to die back. Repeated treatments may be necessary over a number of years.

Wildflower Seeds

It is very important to ensure that when creating a wildflower meadow it is always best to allow nature take its course for the first few years. Given the correct management many species will colonise naturally. Wildflower seed mixes are not necessary at most sites but if results continue to be slow (in terms of species variety) it is vitally important that only locally sourced native wildflower seeds (of Irish provenance) are used. Garden plants should only be planted in designated flower beds and should never be introduced to natural habitats such as wildflower meadows.

This plan only relates to public lands managed by Cork County Council. Advice can of course be given to individuals, resident associations and private companies but all advice should be based on the measures recommended in the All-Ireland Pollinator Plan (and strictly adhered to in this plan).

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- Falk, S. & Lewington, R. (2016). *Field guide to the bees of Great Britain and Ireland*. Bloomsbury Wildlife, London.
- Harding, J.M. (2008). *Discovering Irish Butterflies and their habitats*. Jesmond Harding, Maynooth.
- Kirk, W.D.J. & Howes, F.N. (2012). *Plants for Bees: A Guide to the Plants that Benefit the Bees of the British Isles*. International Bee Research Association, Monmouth, Wales.
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- National Biodiversity Data Centre. All-Ireland Pollinator Plan 2021-2025.
- Prys-Jones, O.E. & Corbet, S.A. (2014). *Bumblebees*. Pelagic Publishing, Exeter.

Useful Links

[All-Ireland Pollinator Plan](#)

[Bumblebee Conservation Trust](#)

[Councils: actions to help pollinators](#)

[Communities: actions to help pollinators](#)

[Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads. Transport Infrastructure Ireland \(formerly National Roads Authority\)](#)

Appendix 1

Suggested pollinator-friendly flowers and shrubs that could be planted in a flowerbed or (in some cases) flower pots/boxes based on their suitability for bumblebees (long and short-tongued), solitary bees, hoverflies and butterflies for a flowerbed. A variety of plants have been chosen to ensure seasonal availability of pollen and nectar. A wider range of plants is available on the All-Ireland Pollinator Plan website [here](#).

English Name	Latin Name	Flowering	Native (N) or Non-Native (A)	Perennial Biennial Annual Tree or Shrub	Bumblebee Long-tongued	Bumblebee Short-tongued	Solitary Bees	Hoverflies	Butterflies
Crocus	Crocus species	Feb-Mar	A	P					
Arabis (Rock-cress)	Arabis alpina	Mar-May	A	P					
Grape Hyacinth	Muscari species	Mar-May	N/A	P					
Aubretia	Aubretia deltoidea	Apr-May	A	P					
Barberry	Berberis darwinii	Apr-May	A	P					
Borage	Borago officinalis	Apr-Oct	A	A					
Honesty	Lunaria annua	Apr-Jun	A	B					
Meadow-foam	Limnanthes douglasii	Apr-Sep	A	A					
Phacelia	Phacelia tanacetifolia	Apr-Dec	A	A					
Rosemary	Rosmarinus officinalis	Apr-Jun	A	Shrub					
Wallflower	Erysumum species	Apr-Jun	A	P					
Catmint	Nepeta species	May-Sep	A	P					
Hebe	Hebe species	May-July	A	Shrub					
Lily-of-the-valley	Convallaria majalis	May-Jun	A	P					
Lupin	Lupinus species	May-July	A	A/P					

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English Name	Latin Name	Flowering	Native (N) or Non-Native (A)	Perennial Biennial Annual Tree or Shrub	Bumblebee Long-tongued	Bumblebee Short-tongued	Solitary Bees	Hoverflies	Butterflies
Mignonette	Reseda odorata	May-Sep	A	A/B					
Mustard, White	Sinapsis alba	May-Sep	A	A					
Thyme	Thymus species	May-Aug	N/A	Shrub					
Allium (Garden)	Allium giganteum	June-Aug	A	P					
Anchusa	Anchusa azurea	June-Sep	A	P					
Anise hyssop	Agastache foeniculum	June-Oct	A	P					
Arnica	Arnica montana	June-Aug	A	P					
Bellflower	Campanula species	June-Sep	A	P					
Chicory	Chicorium intybus	June-Oct	A	P					
Gaillardia	Gaillardia species	June-Sep	A	A/P					
Hound's Tongue	Cynoglossum species	June-Aug	A	A/P					
Hyssop	Hyssopus officinalis	June-Oct	A	Shrub					
Jacob's Ladder	Polemonium caeruleum	June-Aug	A	P					
Lavender	Lavandula angustifolia	June-Aug	A	Shrub					
Lucerne	Medicago sativa	June-July	A	P					
Nemophila	Nemophila species	June-Oct	A	A					
Peony	Paeonia species	June-July	A	P					
Sage	Salvia officinalis	June-Aug	A	Shrub					
Salvia (May Night)	Salvia x sylvestris	June-Sep	A	P					
Sneezeweed	Helenium species	June-Oct	A	P					

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English Name	Latin Name	Flowering	Native (N) or Non-Native (A)	Perennial Biennial Annual Tree or Shrub	Bumblebee Long-tongued	Bumblebee Short-tongued	Solitary Bees	Hoverflies	Butterflies
Viper's bugloss	Echium vulgare	June-July	N/A	B					
Aster	Aster species	July-Oct	A	P					
Basil	Ocimum species	July-Sep	A	A/P					
Coneflower	Rudbeckia species	July-Oct	A	A/P					
Dahlia	Dahlia species	July-Sep	A	P					
Heuchera	Heuchera species	July-Sep	A	P					
Nasturtium	Tropaeolum majus	July-Sep	A	A					
Snapdragon	Antirrhinum majus	July-Sep	A	P					
Verbena	Verbena species	July-Nov	A	P					

Appendix 2

Native or long-established pollinator-friendly flowers and shrubs that are highly beneficial to pollinators (especially bees).

English Name	Latin Name	Flowering	Native (N) or Non-Native (A)	Perennial Biennial Annual Tree or Shrub	Bumblebee Long-tongued	Bumblebee Short-tongued	Solitary Bees	Hoverflies	Butterflies
Primrose	<i>Primula vulgaris</i>	Dec-May	N	P					
Blackthorn	<i>Prunus spinosa</i>	Feb-May	N	Tree					
Gorse	<i>Ulex europaeus</i>	Feb-June	N	Shrub					
Marsh Marigold	<i>Catha palustris</i>	Feb-June	N	P					
Willow species	<i>Salix</i> species	Feb-May	N/A	Tree					
Butterbur	<i>Petasites hybridus</i>	Mar-May	N	P					
Cherry (Wild)	<i>Prunus avium</i>	Mar-May	N	Tree					
Coltsfoot	<i>Tussilago farfara</i>	Mar-Apr	N	P					
Comfrey (Common)	<i>Symphytum officinale</i>	Mar-June	N	P					
Dandelion	<i>Taraxacum officinale</i>	Mar-Oct	N	P					
Red Dead-nettle	<i>Lamium purpureum</i>	Mar-Oct	N	A					
Veronica species	<i>Veronica</i> species	Mar-Sep	N	A/P					
Bilberry	<i>Vaccinium myrtillus</i>	Apr-June	N	P					
Bluebell	<i>Hyacinthoides non-scripta</i>	Apr-June	N	P					
Charlock	<i>Sinapsis arvensis</i>	Apr-July	N	A					
Crab Apple	<i>Malus Sylvestris</i>	Apr-May	N	Tree					
Cuckoo flower	<i>Cardamine pratensis</i>	Apr-June	N	P					
Forget-me-nots	<i>Myosotis</i> species	Apr-Sep	N	A/P					
Bird Cherry	<i>Prunus Padus</i>	May-June	N	Tree					
Blackberry	<i>Rubus Fruticosus</i>	May-Sep	N	P					
Broom	<i>Cytisus scoparius</i>	May-June	N	P					
Buckthorn	<i>Rhamnus cathartica</i>	May	N	P					

English Name	Latin Name	Flowering	Native (N) or Non-Native (A)	Perennial Biennial Annual Tree or Shrub	Bumblebee Long-tongued	Bumblebee Short-tongued	Solitary Bees	Hoverflies	Butterflies
Bugle	Ajuga reptans	May-July	N	P					
Cranesbill	Cranesbill species	May-Sep	N	P					
Hawkweed	Hieracium species	May-Nov	N	P					
Hawthorn	Crataegus monogyna	May-June	N	Tree					
Holly	Ilex aquifolium	May-June	N	Tree					
Mint species	Mentha species	May-Oct	N/A	P					
Poppy species	Papaver species	May-Oct	N/A	A/P					
St John's wort	Hypericum species	May-Aug	N	P					
Red Clover	Trifolium pratense	May-Sep	N	P					
Thrift	Armeria maritima	May-July	N	P					
Vetch species	Vicia species	May-Sep	N	A/P					
Yellow Rattle	Rhinanthus minor	May-Aug	N	P					
Agrimony	Agrimonia eupatoria	June-July	N	P					
Autumn Hawkbit	S. autumnalis	June-Oct	N	P					
Bird's-foot trefoil	Lotus corniculatus	June-Sep	N	P					
Carrot, Wild	Daucus carota	June-Aug	N	B					
Catsear	Hypochaeris radicata	June-Sep	N	P					
Figwort species	Scrophularia species	June-Sep	N	P					
Foxglove	Digitalis purpurea	June-Sep	N	B/P					
Heather, Bell	Erica cinerea	June-Oct	N	Shrub					
Heath cross-leaved	Erica tetralix	June-Sep	N	Shrub					
Knapweed	Centaurea nigra	June-Sep	N	P					
Hogweed	Heracleum sphondylium	June-Sep	N	B/P					
Mallow species	Malva species	June-Sep	N/A	P/Shrub					
Meadowsweet	Filipendula ulmaria	June-Aug	N	P					

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English Name	Latin Name	Flowering	Native (N) or Non-Native (A)	Perennial Biennial Annual Tree or Shrub	Bumblebee Long-tongued	Bumblebee Short-tongued	Solitary Bees	Hoverflies	Butterflies
Mullein	Verbascum species	June-Aug	N/A	B					
Oxeye Daisy	Leucanthemum vulgare	June-Aug	N	P					
Purple Loosestrife	Lythrum salicaria	June-Aug	N	P					
Radish, Wild	Raphanus species	June-July	A	A/P					
Ragwort	Senecio jacobea	June-Oct	N	B/P					
Raspberry	Rubus idaeus	June-Aug	N	B/P					
Red Bartsia	Odontites vernus	June-Sep	N	A					
Rose species	Rosa species	June-July	N/A	Shrub					
White Clover	Trifolium repens	June-Sep	N	P					
Fleabane	Pulicaria dysenterica	July-Sep	N	P					
Goldenrod	Solidago virgaurea	July-Oct	N	P					
Hemp-nettle	Galeopsis tetrahit	July-Sep	N	A					
Nipplewort	Lapsana communis	July-Oct	N	A/P					
Rosebay Willowherb	Chamerion angustifolium	July-Sep	N	P					
Scabious species	Scabiosa, Knautia, Succia	July-Aug	N	P					
Woundworts	Stachys species	July-Sep	N	A/P					
Stonecrop	Sedum species	July-Sep	N	P					
Teasel	Dipsacus species	July-Aug	N/A	B					
Thistle species	Cirsium & Carduus	July-Sep	N	A/P					
Wood sage	Teucrium scorodonia	July-Aug	N	P					
Heather (Ling)	Calluna vulgaris	Aug-Sep	N	Shrub					
Ivy	Hedera helix	Sep-Nov	N	Climber					

