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Councils:

actions to help pollinators

All-Ireland Pollinator Plan 2015-2020

Implementation coordinated by the National Biodiversity Data Centre

National Biodiversity Data Centre
Documenting Ireland's Wildlife

www.pollinators.ie

Guidelines 4

WHO are our pollinators?

Honeybee

Bumblebee

Solitary bee

While other insects play a role, most pollination on the island of Ireland is carried out by bees. We have one type (species) of managed honeybee and 97 different wild bees. That includes 20 bumblebee and 77 solitary bee species. Research shows that reliable pollination services depend not only on healthy honeybee populations, but also on an abundance and diversity of wild bees and other insect pollinators.

WHAT do our pollinators need to survive?

Just like us, pollinators need food and a safe place to live. Experts agree that inadequate nutrition is a major cause of declines. We want pollinators to be there when we need them, but our landscape doesn't provide the abundance and diversity of flowering plants that they need to survive throughout their life cycle. To have a healthy balanced diet, they need to be able to feed on pollen and nectar from a range of different flowers from MARCH through to OCTOBER. Spring is when hunger gaps are most likely to occur. It is important to prioritise increasing native plants (trees, shrubs, wildflowers) across the landscape to provide food for pollinators. Pollinators also need plenty of safe nesting habitats - long grass, bare earth, crevices in dry stone walls or wood - that are free from pesticides.

WHY do we need to help our pollinators?

Pollinators are important to farmers that grow pollinator dependent crops, to gardeners that want to grow their own fruits and vegetables and for the health of our environment. The annual value of pollinators is at least €53 million in the Republic of Ireland and £603 million in the UK. Furthermore, 78% of our wild plants require insect pollination. Without pollinators, these flowers would disappear, and our countryside would be a very different and less beautiful place.

All-Ireland Pollinator Plan 2015-2020

One third of our 98 bee species are threatened with extinction from the island of Ireland. If we want them to be there to pollinate crops and wild plants for future generations we need to manage the landscape in a more pollinator friendly way and create a joined-up network of diverse and flower-rich habitats. The All-Ireland Pollinator Plan 2015-2020 is supported by over 68 governmental and non-governmental organisations who have pledged to deliver 81 actions to achieve this goal and make Ireland, North and South, more pollinator friendly.

www.pollinators.ie

Meadow, Belfast City Council

Benefits to Councils in supporting the All-Ireland Pollinator Plan

Councils can play a leading role in implementing the Plan by making their land more pollinator friendly. In the Republic of Ireland this will involve County and City Councils. In Northern Ireland it will involve Borough, District and City Councils.

To help pollinators we need to ensure that they have food, shelter and safety from chemicals such as pesticides. Many pollinator friendly actions simply require us to manage the land in a slightly different way than we have become used to. It is not about letting the landscape go wild, but about managing it in a way that is sustainable for pollinators so that they can survive and continue to provide us with their vital service.

Parks and open spaces can also play the important role of increasing connectivity between pollinator friendly sites in the wider countryside. It is not only Councils who are being asked to play a role. Guidelines targeting farmers, local community groups, gardeners, businesses, transport authorities and others are also being produced.

- Enhancing the local landscape for pollinators supports local food producers
- Making the landscape more pollinator friendly protects the ability of local people to grow their own fruits and vegetables
- Taking actions for pollinators will lead to general biodiversity enhancement
- Many actions identified are either cost neutral or could lead to cost savings
- Many actions can be supported by the wider community such as Tidy Towns, Ulster in Bloom, or by local or national NGOs. It may also involve working with Local Community Development Committees (LCDCs), Area Working Groups, Development Partnerships etc. to plan and implement actions.
- Actions taken for pollinators can contribute to the Green Flag Award for parks under the sustainability, conservation and community involvement criteria.
- Actions taken may also help local community groups e.g., in the Tidy Towns competition (ROI) or in Ulster in Bloom.

The All-Ireland Pollinator Plan is about everyone working together and contributing to making the landscape more pollinator friendly. An online mapping tool (Actions for Pollinators) has been developed to track each contribution. Where a Council is taking action to support pollinators, the system will ensure that those efforts are recognised.

Actions Councils can take to help pollinators - providing food, shelter and safety

Please select some actions you could take and help us work together to protect pollinators

We know that each Council is different, so we have suggested a range of pollinator friendly actions to choose from. Step-by-step instructions on each action are provided.

A Protect what you have

The easiest and most important thing you can do is identify and protect existing areas that are already good for pollinators

Action 1 — Manage and restore semi-natural habitats and their native plants

Action 2 — Identify and protect existing sources of food and shelter for pollinators on general council land

B Alter the frequency of mowing

Changing the frequency of mowing allows wildflowers (food) to flower among the longer grass. This is the most cost-effective way to provide food for pollinators

Action 3 — Identify at least 10 locations that are mown under a pollinator friendly regime (5 cut & lifts per year)

Action 4 — Aim to create at least 5 meadows (one cut & lift per year)

Action 5 — Identify at least 10 flagship roadside verges that are managed to be pollinator friendly (one cut & lift per year)

Action 6 — Introduce a layered mowing approach to other roadside verges

C Pollinator friendly planting

Take the actions below to ensure you have flowers blooming that can provide food for pollinators from March-October

Action 7 — Plant a native perennial wildflower meadow

Action 8 — Plant a native hedgerow

Action 9 — Replace grass with a dense clover sward

Action 10 — For future ornamental tree planting select from pollinator friendly species

Pollinator friendly roadside verge in NI - Don't Mow Let it Grow

Pollinator friendly roundabout - Fingal

Pollinator friendly containers - Maynooth

Action 11 £
For new works ensure 75% of ornamental planting is pollinator friendly

Action 12 £
In future ornamental maintenance planting try to select from the pollinator friendly planting code

Action 13 -£
Make some urban planters pollinator friendly

Action 14 £ £
Make some urban roundabouts pollinator friendly

D Provide nesting habitats

In addition to food, wild pollinators need safe places to live.

Action 15 -£
Manage hedgerows for pollinators

Action 16 -£
Bare earth/sand banks for wild pollinator nesting

Action 17 -£
Holes in wood or concrete for wild pollinator nesting

Action 18 £ £
Install a bee hotel

E Reduce use of pesticides

Pesticides include insecticides, fungicides and herbicides, all of which can be harmful to pollinators.

Action 19 -£ £
Reduce or eliminate the use of pesticides (herbicides, insecticides & fungicides)

Action 20 -£ £
Adopt the pollinator friendly pesticide code

Key

-Costs of each action range from zero/cost savings -£ to most expensive £ £ £

-Effort required to carry out each action indicated by the number of spades

-**Our FAVOURITE** actions are marked with a bee

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Actions Councils can take to help pollinators - other

Please select some actions you could take and help us work together to protect pollinators

F Raise awareness

Action 21 Build actions on pollinators into existing frameworks and initiatives

Action 22 Fund pollinator projects on council land to demonstrate best practise to other sectors (reference sites)

Action 23 Put up signage to identify pollinator friendly habitats on council land

Action 24 Promote & distribute pollinator friendly guidelines to other sectors locally

Action 25 Promote & distribute the Junior Pollinator Plan to local schools

Action 26 Facilitate or deliver training on pollinators and how to take action to protect them

Action 27 Fund a special pollinator award in the Tidy Towns or Ulster in Bloom competition

Action 28 Promote and get involved in other pollinator related initiatives

G Tracking progress

Action 29 Log your 'Actions for Pollinators' on the mapping system to ensure your efforts are recognised

Action 30 Take part in the Bumblebee Monitoring Scheme to help track changes in wild pollinator numbers on council land

Raise awareness of pollinators in the local area

Semi-natural grassland

Food & shelter

A. Identify and protect existing areas that are good for pollinators

Within council land there will already be some areas that are very good for pollinators and are acting as refuges in an otherwise inhospitable landscape. The most important thing you can do is to recognise and protect these. These may be semi-natural habitats, but they could also be areas within general council land.

1 Action	Areas where it might apply	Staff who could assist
Action 1: Manage and restore semi-natural habitats and their native plants on council land Ensure these are mapped and/ or audited so that they can be recognised and protected	Semi-natural habitats that fall under council land e.g., meadows, woodland, coastal sites, heathland etc.	Senior management

2 Action	Areas where it might apply	Staff who could assist
Action 2: Identify and protect existing sources of food and shelter for pollinators on general council land Ensure these are mapped and/ or audited so that they can be recognised and protected	• Flowering hedgerows (food & shelter) • Patches of wildflowers on disused ground (food) • Short grass meadows (food) • Small wild areas with bramble/ ivy (food) • Existing earth banks (shelter) • Dry stone walls (shelter) • Allotments These areas can be very small. Signage could be used to identify these areas where appropriate.	Heritage officers, biodiversity officers or others with this remit to identify areas and communicate as appropriate to other council staff

Ivy is a very important food source for pollinators in autumn

Prioritise native plants

For pollinators, it is important to prioritise the management and restoration of native plants over ornamental varieties. An estimated 78% of our native flowering plants require insect pollination. In return, they provide those pollinators with food (nectar and pollen) throughout the year. This means those insects will be there when we need them to pollinate our crops. Increasing the number of native flowers and trees that occur on council land not only provides food for pollinators, it creates a colourful and dynamic landscape that is pleasant to live in or to visit.

Wild area with Bramble and Ivy - Tipperary County Council

Use stock of local provenance

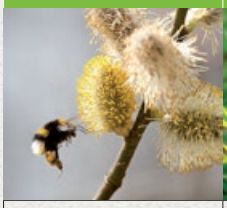
Often increasing or restoring native plants occurs through changes to site management. Although this is a slower process, it is cheaper and more sustainable as only plants that should naturally occur there will survive and thrive.

In areas where you can enhance native species by deliberate planting, it is important to use stock or seed of local provenance. This means that it is sourced locally and is adapted to the local climate and soil conditions. Many of our wild pollinators have evolved to emerge from hibernation in the short window when our native species are in flower. If you buy stock (e.g. Hawthorn) from central Europe there can be a three week difference in the flowering times compared to those sourced locally. Local provenance seed or stock may be more expensive, however the benefits greatly outweigh any additional initial costs.

Info Box:

Wildflower seed bought from elsewhere (e.g., southern England) will not be adapted to our climate and soil conditions. It also creates a risk of genetic pollution to our native wildflower populations.

Table: Examples of important native plants for pollinators

Trees & Shrubs	Wildflowers				
					
Blackthorn Bramble Broom Crab apple Elder Gorse Guelder Rose Hawthorn Hazel Honeysuckle Ivy Rowan Whitebeam Wild Cherry Wild Privet Wild Rose Willow	Bird's-foot-trefoil Bugle Cowslip Creeping buttercup Dandelion Germander speedwell Harebell Red clover Selfheal Tormentil White clover Wild Thyme	Agrimony Autumn hawkbit Cat's ear Creeping thistle Devil's Bit Scabious Field Scabious Goldenrod Knapweed Meadow buttercup Meadow Vetchling Ox-eye daisy Spear thistle Vetch Wild carrot Wild marjoram Yarrow Yellow rattle	Bluebell Brassica Dead nettles Foxglove Herb Robert Hogweed Lady's Bedstraw Lesser celandine Weld Ramsons Red campion Willowherb Woundworts Vetches Wild strawberry	Charlock Coltsfoot Deadnettle Forget me not Geranium Hawksbeard Mullein Mustard Poppy Red bartsia Speedwells Willowherb Vetch	Angelica Bisort Bogbean Crowfoot Cuckoo flower Meadowsweet Fleabane Purple Loosestrife Marsh marigold Mint Ragged Robin Valerian Willowherb Woundwort
Woodland, Hedgerow	**Short grass meadows**	**Long grass meadows**	**Hedges, borders, woodland edge**	**Disturbed ground**	**Ponds, wetlands**

Other semi-natural habitats (heaths, dunes, bog) are also rich in plants and provide pollinators with a diverse diet.

The humble Dandelion is one of the most important food sources for pollinators in spring. We need to change our view of this unpopular wildflower and see them as a welcome splash of colour in spring.

Food

B. Alter the frequency of mowing of grassy areas to allow more native plants to flower

On areas of grass, changing the frequency of mowing allows common wildflowers such as Clovers, Knapweed and Bird's-foot-trefoil to naturally grow amongst the longer grass. This is the most cost-effective way to provide food for pollinators and other insects. This is not a reduction in management effort, but a reallocation to provide additional benefits.

Consulting with the local community and keeping them informed of plans can allay fears that changed mowing regimes are due to lack of management. Signage can also be used to identify areas as deliberate.

3 Action	Areas where it might apply	Staff who could assist
Action 3: Identify at least 10 locations that are mown under a pollinator friendly regime (5 cut and lifts per year) Don't mow until 15th April and then cut on a 6 weekly rotation. Cuttings should be lifted. These areas could be combined with pollinator friendly spring flowering bulb planting (e.g., Snowdrop, Crocus, Allium). This regime keeps grass at a manageable level while increasing the growth of wildflowers as a food source for pollinators. Not cutting until mid-April allows Dandelions to flower but not set seed. Dandelions are a vital food source for pollinators in spring. Cutting at the end of May and not again until mid-late July will increase the growth of important plants like Clover, Selfheal, Cuckooflower and Bird's-foot-trefoil.	• Parks • Roadside verges • Pavement verges • Greenways • Roundabouts • Off-road walking/cycle routes • Waterway towpaths • Housing estates • Old graveyards These areas of species rich grass tend to be colourful and still look well managed Signage can be used to identify these areas as deliberate	Facilities Manager Roads Section: Area Engineer Parks and Gardens Heritage officers, biodiversity officers or others with this remit could assist in identifying suitable locations and advising on management

Note: These locations can be small areas, but the greater their size, the greater the benefit to pollinators. It is also worth considering connectivity when deciding on their location.

Info Box:

On Council land many grassy areas are cut from mid-February on a 22 cuts per year cycle with the grass mulched back in. This may look tidy but it creates a sterile grassy desert for pollinators. A cost equivalent action would be to move some areas to a pollinator friendly mowing regime (Action 3).

Pavement verge cut on a 6-weekly rotation versus one with short grass: pollinator friendly mowing can provide food for pollinators where shortly mown grass does not.

Info box:

Mowing Regime	Approximate costs per HA (2016)
22 Cuts per year, grass mulched back in	€2,464.00+vat Cost inclusive of equipment, labour and fuel
5 Cuts per year with cuttings lifted	€2,437.00+vat Cost inclusive of equipment, labour, fuel and waste disposal

Cost benefit analysis based on prices from a large landscaping company in ROI. Prices are based on flat ground accessible with ride on equipment and within a 40km radius of Dublin, rates would reduce for larger areas.

Guidance for when mowing is contracted out: Identify at least ten locations and mow under a pollinator friendly regime - five cut and lifts per year. Mowing height should be set to 3 inches.

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

If necessary, this can be increased or decreased depending on the use of the area, but grass should not be cut from the beginning of March until mid-April or from the end of May until mid-July.

An English and bilingual signage template is available for download from the website. The bilingual version is compliant with the regulations made under the Official Languages Act for use on public land in the Republic of Ireland. Space has been left on the template for councils to add their own logo before use.

Meadow - Belfast City Council

4 Action	Areas where it might apply	Staff who could assist
Action 4: Aim to create at least 5 meadows (one cut and lift per year) Identify areas of grass that could be left uncut until late August-early September. One cut and lift per year. Meadows managed in this way will allow wildflowers to bloom throughout the pollinator season and also provide undisturbed areas for nesting. The annual cut in September should be removed to reduce soil fertility over time. Over a number of years the meadow will naturally become more flower-rich with local species that are adapted to the site's conditions – all without spending money on wildflower seed. Cutting paths through the middle or keeping a short border at the edge will demonstrate that these meadows are being managed and allow the public to enjoy the resource.	• Parks • Off-road walking/cycling routes • Greenways • Towpaths • Old graveyards • Housing estates The creation of a long flowering meadow can be an excellent resource for pollinators but should be viewed as a long term action. The longer it is in place and managed to remove the final cut each year, the more flower-rich it will become and the more attractive it will be. It may be more appropriate to place these in areas where it is obvious to the public that their creation is deliberate, with signage used to demonstrate this.	Facilities Manager Roads Section: Area Engineer Parks and Gardens Heritage officers, biodiversity officers or others with this remit could assist in identifying suitable locations and advising on management

It may take a number of years before your meadow becomes less grassy and more flower-rich. It will gradually improve year upon year if the grass cut is lifted. In the early years pernicious weeds (e.g., Ragwort) should be removed. A number of resources are available on the Pollinator Plan website including: How-to-guide on creating and managing a wildflower meadow, How-to-guide on collecting and using local pollinator friendly wildflower seed to naturally improve meadows. This is something that local community groups or schools could get involved in.

Pollinator friendly roadside verge - Fingal

5 Action	Areas where it might apply	Staff who could assist
Action 5: Identify at least 10 flagship roadside verges that are managed to be pollinator friendly (one cut and lift per year) Identify areas that could be left uncut until late August-early September. One cut and lift per year. The annual cut should be removed to reduce soil fertility over time.	• Roadside verges Councils are likely to have areas where the location and soil type lends itself to the creation of a wildflower rich roadside verge. It is proposed these are used as flagship locations and identified using signage.	Roads Section: Area Engineer Parks and Gardens (ROI) Heritage officers, biodiversity officers or others with this remit could assist in identifying suitable locations and advising on management

Note: To get the most from this action, it is important that expert advice is sought on the location of these verges. They should be in areas that will quickly become wildflower rich and provide maximum reward for your efforts. If sites with very fertile soil are chosen it could initially lead to more rank grassy verges that will look less attractive in the short term.

For more information on managing roadside verges for biodiversity see **Don't Mow Let it Grow http://dontmowletitgrow.com**

6 Action	Areas where it might apply	Staff who could assist
Action 6: Introduce a layered mowing approach to other verges Identify areas where the edge of the roadside verge would be cut regularly with the strip behind mown less frequently. This allows a flower rich strip behind.	• Roadside verges This approach can reduce the need for traffic management during mowing and is also pollinator friendly.	Roads Section: Area Engineer Parks and Gardens (ROI)

Note: there will be areas where it is not appropriate to have long grass due to health and safety concerns about littering or dog fouling.

Actions 5 and 6 will only be relevant to Councils in ROI.

Ecoseeds: native perennial wildflower meadow

Food

C. Pollinator friendly planting

Traditionally, ornamental planting in urban areas has not considered pollinators. Often flowers that are not good sources of pollen or nectar are planted and so do not provide food for bees and other insects. Future planting projects should incorporate some plants that will look similarly attractive but are also pollinator friendly.

Pollinators need food from early spring through to autumn - planting should try to ensure that there is a continual supply of food during this time. Spring and early summer are when hunger gaps are most likely to occur, making it particularly important to provide plants that will flower during these times. Actions are listed here and suggested planting lists are provided in the Appendix (pollinator friendly planting code).

7 Action	Areas where it might apply	Staff who could assist
Action 7: Plant a native perennial wildflower meadow Identify areas where it may be possible to create a native perennial wildflower meadow using commercially purchased seed. In the short term, this would be more flower-rich than the meadow in Action 4, but it is also more costly and requires careful planning. Please be aware that some existing amenity grassland sites will be unsuited to the immediate creation of a high quality wildflower meadow due to high soil fertility. Meadows should be cut once a year in late August-early September with the cuttings removed. The diversity of wild flowers in meadows increases if cuttings are removed to gradually reduce soil fertility.	• Parks • Roadside verges • Off-road walking/cycling routes • Greenways This could be considered where areas have undergone other works as an alternative to normal reseeding If wildflower meadows are being created along new roadside verges or greenways topsoil should not be applied The creation of a wildflower meadow can be an excellent resource for pollinators but should be viewed as a long term action.	Heritage officers, biodiversity officers or others with this remit could assist in identifying suitable locations and advising on management

If you do have an appropriate site, it is very important to buy local provenance native wildflower seed that is pollinator friendly and suitable for your soil type.

Planting perennial wildflowers is much more cost effective and a better source of food for pollinators than continually planting annuals.

Green hay could be used as an alternative to buying seed. This is where a hay crop from a nearby species rich meadow is transported to the site and spread to distribute seeds.

Once your perennial meadow is established you should consider brush harvesting in September to collect the seed and use in other locations to save on future costs.

See website: How-to-guide on creating and managing a native wildflower meadow.

Native wildflowers planted along Waterford Greenway

8 Action	Areas where it might apply	Staff who could assist
Action 8: Plant a native hedgerow Identify areas where it may be possible to plant a native hedgerow. Use stock of local provenance (sourced & grown locally). Choose a selection of species from page 26 which suit your location. An ideal native hedge has 75% Hawthorn and 25% of at least four other species such as Willow, Blackthorn, Hazel, Holly, Dog rose, Whin and Guelder rose in a 30m length. It is best to plant between October and March, but not when the ground is waterlogged or frozen. Additional expert advice should be sought on planting and management.	• Parks • Roadside verges • Off-road walking/cycling routes • Greenways • New housing schemes	Roads Section: Area Engineer Parks & Gardens Heritage officers, biodiversity officers or others with this remit could assist in identifying suitable locations and advising on management

9 Action	Areas where it might apply	Staff who could assist
Action 9: Replace improved grass with a dense clover sward Identify areas where improved grass could be entirely replaced with a dense permanent clover mix. Red and white clovers will provide colour, and are a very important food source for pollinators in summer. Grasses should be minimised in the clover mix planted as the clovers will fix Nitrogen and boost grass growth if seeds are present.	• Roundabouts • Off-road walking/cycle routes • Greenways Could be adopted in areas that have undergone other works as an alternative to normal reseeding. Not suitable for high use areas at it won't withstand heavy footfall.	Roads Section: Area Engineer Housing Section Parks & Gardens

Planting Yellow-rattle in meadows encourages other wildflower growth

Pollinator friendly perennial planting

10 Action	Areas where it might apply	Staff who could assist
Action 10: For future ornamental tree planting select from pollinator friendly species Incorporate a mix of pollinator friendly trees that will flower from spring through to autumn [list of street trees and open space trees in Appendix]. These should be in line with Tree Management Strategies and wider planting policies.	Could be incorporated into future street and open space tree planting programmes	District Manager Roads Section: Area Engineer Planning Parks & Gardens Housing Section

11 Action	Areas where it might apply	Staff who could assist
Action 11: For new works ensure 75% of ornamental planting is pollinator friendly For new works with ornamental planting adopt the pollinator friendly planting code and try to ensure that 75% of planting is with pollinator friendly species [list in appendix; along with advice on pollinator friendly perennial planting schemes].	• New council developments • Housing schemes • New roads or road realignments • New roundabouts	District Manager Facilities Manager Roads Section: Area Engineer Parks & Gardens Housing Section

12 Action	Areas where it might apply	Staff who could assist
Action 12: In future ornamental maintenance planting try to select from the pollinator friendly planting code Incorporate pollinator friendly shrubs, perennial plants or annuals into future planting programmes to provide food for pollinators from spring through to autumn [list in appendix].	• Parks • Housing estates • Sections of off-road walking/ cycle routes	District Manager Roads Section: Area Engineer Parks & Gardens Housing Section

Info Box:

Tulips and Daffodils create attractive visual displays in spring but are not a good food source for pollinators. Where used, it is recommended they be combined with more pollinator friendly bulb planting (e.g., Snowdrop, Crocus, Muscari, Allium).

Pollinator friendly planting in Merrion Square Dublin

Maynooth Tidy Towns - incorporating pollinator friendly perennials

13 Action	Areas where it might apply	Staff who could assist
Action 13: Make some urban planters pollinator friendly Identify some urban planters where the standard annual bedding mix could be partly/fully replaced by perennial pollinator friendly plants [list in appendix].	• Urban planters • Areas of annual bedding	District Manager Parks & Gardens **Potential partners:** Local community groups, businesses

14 Action	Areas where it might apply	Staff who could assist
Action 14: Make some urban roundabouts pollinator friendly Identify some roundabouts that could be planted in a pollinator friendly way without impacting line of sight e.g., pollinator friendly mowing, replace grass with clover, bulb planting (Crocus, Alliums) or permanent pollinator friendly perennial plants in centre [list in appendix].	• Roundabouts	District Manager Roads Section: Area Engineer Parks & Gardens **Potential partners:** Local community groups, businesses

Info box: Pollinator friendly perennial planting versus annual bedding

Planting regime	Approximate costs per m^2 (2016)	Typical replacement
Pollinator friendly perennials	€10-13 (9 x 9cm pots)	Life span of 10-12 years if well planted and well maintained. Small amount of annual replacement may be required depending on the site
	€17-19 (6 x 2L pots)	
Annual bedding	€10-29	Twice per year

Based on prices from a large Irish perennial plant nursery. Typical annual bedding costs were provided by a Council in ROI.

Pollinator friendly roundabouts

Flowering hedgerow

Shelter

D: Provide wild pollinator nesting habitat: hedgerows, earth banks and hotels

Nesting habitat for wild bees (bumblebees and solitary bees) is unobtrusive and easy to create. Wild bees live in small colonies and are entirely focussed on finding enough pollen and nectar to feed themselves and their offspring. They are not aggressive, have no interest in interacting with humans, and do not present any risk to the public. Where nesting habitat is being created, it could be kept away from busy paths or playgrounds to further reduce any public concerns.

There are 20 different species of bumblebees in Ireland. They nest on the ground in long grass, often at the base of a hedgerow. We have 62 species (types) of solitary bees who are mining bees. They nest by burrowing into bare ground or south/east facing banks of bare earth (soil, sand, clay, peat). The remaining 15 solitary bee species are cavity nesting bees who nest in south facing stone walls, masonry, wooden structures or commercially available bee nest boxes.

15 Action	Areas where it might apply	Staff who could assist
Action 15: Manage hedgerows for pollinators Hedgerows provide both food and nesting areas for pollinators. Flowering hedgerows that contain Willow, Blackthorn and Hawthorn provide vital food in spring when wild bees come out of hibernation. Bramble is a good source of food in summer, and Ivy in the autumn.	• Parks with existing hedgerows or areas where new hedgerows are to be created • Hedgerows along roadsides (where sightlines are not impacted)	Roads Section: Area Engineer Parks & Gardens

Cut hedgerows every three years to encourage flowering. Avoid having all the hedges cut the same year, so that there is always some that will bloom and fruit in the area every year or cut one third of the hedge annually. The shape of the cut should be "A" shaped rather than the commonly observed low box shape.

Make sure the bases of hedgerows are not sprayed. This will allow flowering plants like Clovers, Vetches and Knapweed to provide additional food throughout the season and ensures nesting pollinators are safe.

Keep vegetation sparse on any sandy earth, or earth and stone banks e.g. by strimming, weeding, cutting, to provide nest sites for solitary bees. Do not spray areas where solitary bees are being encouraged to nest.

If vegetation beside and under hedgerows needs to be cut, do so between September and March to allow bumblebees to nest during the summer.

For additional information see website: How-to-guide on creating and managing hedgerows for pollinators

Earth bank

16 Action	Areas where it might apply	Staff who could assist
Action 16: Bare earth/sand banks for wild pollinator nesting Using just a spade, you can create and maintain bare earth banks for mining solitary bees where natural ridges/banks occur. This is the best and most cost effective way to create nesting habitat for solitary bees. Once established, they should be maintained by manual scraping back to bare soil on an annual basis. Do not spray areas where solitary bees are being encouraged to nest.	• Coastal sites • Edges of tracks/lawns • Roadsides • Riverbanks • Natural ridges • Housing estates • Parks Solitary bees commonly only fly 100m from their nest to feed. It is important to create nest sites close to food sources.	Heritage officers, biodiversity officers or others with this remit to identify appropriate areas and encourage local community groups or relevant council staff to create/ manage. **Potential partners:** Local community groups

17 Action	Areas where it might apply	Staff who could assist
Action 17: Holes in wood or concrete for wild pollinator nesting Where wooden or concrete fencing exists in public areas, consider drilling small south or east facing holes for cavity nesting solitary bees. These holes should be 10cm in depth and 4-8mm diameter. A range of different diameters is best. They are added once, ideally at a height of 1.5-2m (or as high as possible). Alternatively, drill holes in a pallet block and attach this to the fence post. Do not treat wood where cavity nesting solitary bees are being encouraged to nest.	• Any wooden fencing on council land • Community buildings This action will be most effective if small numbers of holes are drilled in areas that are close to food sources.	Heritage officers, biodiversity officers or others with this remit to identify appropriate areas and encourage local community groups or relevant council staff to create/ manage. **Potential partners:** Local community groups

Holes in wood

Info Box:

Traditional management of hedgerows on public land is often not pollinator friendly. If council hedgerows are not in flower in April-May they are not good for pollinators and other wildlife.

Bee hotel

18 Action	Areas where it might apply	Staff who could assist
Action 18: Bee hotels for wild pollinators Incorporate small numbers of solitary bee nest boxes into the local community for cavity nesting solitary bees. Bee hotels can be useful and are a good awareness raising tool, but actions 16 and 17 are preferable ways to create nest sites. A number of small hotels is better than one large one in terms of minimising the risks of disease and predators killing the bees.	• Any free common land where bee hotels could be kept (avoiding areas prone to vandalism) e.g., parks, allotments, schools Bee hotels will only be used by bees if they are situated close to food sources.	Heritage officers, biodiversity officers or others with this remit to identify appropriate areas and encourage local community groups or relevant council staff to create/ manage. **Potential partners:** Local community groups, schools etc.

See website for a detailed How-to-guide on creating wild pollinator nesting habitat.

Reduce pesticide use

Saftey

E. Reduce the use of pesticides

In some cases, the use of pesticides (insecticides, fungicides and herbicides) is necessary e.g., the use of herbicides along railway tracks to ensure the health and safety of train passengers. In other cases, we have fallen into a pattern of using them as a way of tidying or sanitising our environment. To minimise negative impacts on pollinators it is important that pesticides are used sustainably. This means they should ***only be used when necessary,*** *and efforts should be made to minimise their impact on non-target species like bees. Pesticides should always be applied* ***exactly*** *according to manufacturer guidelines.*

19 Action	Areas where it might apply	Staff who could assist
Action 19: Reduce or eliminate the use of pesticides (herbicides, insecticides & fungicides)		
Aim to eliminate the use of herbicide, fungicide and insecticide in some locations	• County Hall and Civic Centres • Council Offices • Libraries • Heath Centres (NI) • Community Centres • Leisure Centres • Graveyards • Green Flag Sites	Facilities manager Roads Section: Area Engineer Parks & Gardens
Identify sites where pesticide use could be reduced to 10% of previous planned maintenance spraying regimes	• Green Flag Sites	Facilities manager Parks & Gardens
Limit chemical control related to turf culture to only sports areas	• Across council land	Facilities manager Roads Section: Area Engineer Parks & Gardens
For ornamental gardens (e.g., Rose Gardens) replace chemical pesticides and chemical fertilizers with organic products. Reduce fungicide use by using foliar feeds to make the plants more resistant	• Ornamental gardens	Parks & Gardens

Stoneybatter Resident's Campaign for a Chemical free Dublin. Other residents groups are establishing similar zones in their area.

For spot treating on hard surfaces, and spraying edges of paths adopt a policy of not spraying until the 15th April. This allows Dandelions and other wild plants to flower and provide a vital source of food in spring.	• Across council land	Facilities manager Roads Section: Area Engineer Parks & Gardens
Eliminate the use of herbicides along south facing edging with bare soil to support solitary bee nesting	• South facing edging in parks, along pavements	Heritage officers, biodiversity officers or others with this remit to identify areas and communicate as appropriate to other council staff
Have spraying buffer zones around important pollinator habitat Signage should be used to identify these areas	• Across council land	Heritage officers, biodiversity officers or others with this remit to identify areas and communicate as appropriate to other council staff
Identify if there are streets/areas where community groups are willing to take responsibility for manual weed control	• Appropriate residential areas	Heritage officers, biodiversity officers or others with this remit to identify areas/groups. Outreach Department **Partners:** Local community groups

20 Action	Areas where it might apply	Staff who could assist
Action 20:Ensure best practise where the use of pesticides cannot be avoided Adopt the All-Ireland Pollinator Plan pesticide best practice code and communicate to relevant staff One page pesticide code provided in Appendix. This could be laminated and provided to staff vehicles.	• Across council land.	District Manager Facilities Manager Roads Section: Area Engineer Parks & Gardens Housing Section

Info Box:

On Council land, herbicides are having the greatest negative impact on pollinators. Pollinators need a range of flowers to feed on from spring through to autumn. The overuse of herbicides is making it very difficult for them to find enough food to survive in our landscape.

Pollinator workshop

F. Raise public awareness of pollinators within the local area

For the All-Ireland Pollinator Plan 2015-2020 to be successful we need to raise public awareness so that people know the importance of pollinators and understand why we all need to take action.

Councils can play a leading role through their influencing power and ability to reach elected representatives and rate payers.

21 Action	Areas where it might apply	Staff who could assist
Action 21: Build actions on pollinators into existing frameworks and initiatives	• City, County or Local Development Plans • Sustainability criteria of the Green Flag Award Scheme (parks) • Green Infrastructure strategies • Climate adaptation plans	Senior management Heritage officers, biodiversity officers or others with this remit to suggest incorporation where appropriate

22 Action	Areas where it might apply	Staff who could assist
Action 22: Fund pollinator projects on council land to demonstrate best practice to other sectors Fund the creation of best practice pollinator habitat on council land. These can be used as case studies and reference sites to other sectors	• Across council land	Senior management Heritage officers, biodiversity officers or others with this remit to coordinate

23 Action	Areas where it might apply	Staff who could assist
Action 23: Put up signage to identify pollinator friendly habitats on council land Put up signage explaining the importance of pollinators and what is being done on council land to support the All-Ireland Pollinator Plan.	• Across council land	Heritage officers, biodiversity officers or others with this remit

An English and bilingual signage template is available for download from the website. The bilingual version meets the language criteria for use on public land in the Republic of Ireland. Space has been left for the inclusion of council logos

24 Action	Areas where it might apply	Staff who could assist
Action 24: Promote & distribute pollinator friendly guidelines to other sectors Parallel guidelines are available on actions local communities, gardeners, farmers & businesses can take to help pollinators. These could be promoted where appropriate. See the Pollinator Plan website for high resolution, print-ready PDFs of these guidelines.	• Local community groups • Council events • Libraries	Heritage officers, biodiversity officers or others with this remit to fund print runs of guidelines for distribution

25 Action	Areas where it might apply	Staff who could assist
Action 25: Promote & distribute the Junior Pollinator Plan to local schools The Junior Plan is a child friendly version of the original Plan and has actions for schools	• Local schools and youth groups • Libraries • Education Centres	Heritage officers, biodiversity officers or others with this remit

26 Action	Areas where it might apply	Staff who could assist
Action 26: Facilitate or deliver training on pollinators and how to take action to protect them Resources provided through the All-Ireland Pollinator Plan website	• Council staff • Local community groups	Heritage officers, biodiversity officers or others with this remit to organise

27 Action	Areas where it might apply	Staff who could assist
Action 27: Fund a special pollinator award in the Tidy Towns or Ulster in Bloom competition Sponsor an award that recognises the town that has made most efforts to make their local area more pollinator friendly	• Tidy Towns and Ulster in Bloom competitions	Heritage and Biodiversity Officers across Councils could come together to collectively sponsor the award.

28 Action	Areas where it might apply	Staff who could assist
Action 28: Promote and get involved in other pollinator related initiatives	• See website for list of existing projects e.g., Save our Magnificent Meadows, Grow Wild, Don't Mow, Let it Grow, Bee-Licious, Bi	Heritage officers, biodiversity officers or others with this remit

See website to download the Junior Pollinator Plan (Action 25).

G. Tracking progress and recognition for efforts

Progress in the implementation of the All-Ireland Pollinator Plan 2015-2020 will be carefully tracked. Success is not measured in having the Plan, but by knowing that it is working. A publicly available online mapping system will track existing and new pollinator friendly actions taken around the country and provide recognition to those who are helping.

The All-Ireland Bumblebee Monitoring Scheme is a citizen science initiative managed by the National Biodiversity Data Centre. It will be used to track changes in wild pollinators as the Plan is implemented.

29 Action	Areas where it might apply	Staff who could assist
Action 29: Log your existing and new 'Actions for Pollinators' on the mapping system to ensure your efforts are recognised A publicly available online mapping system will allow all those who take pollinator friendly actions to log their location and the action(s) taken. This will track the build-up of food, shelter and safety for pollinators in the landscape. It is hoped councils will use the system to log what they are doing and show the restoration and creation of pollinator resources in their area. Once established, the system will help coordinate efforts locally between councils, community groups, schools etc. pollinators.biodiversityireland.ie	• All actions taken on council land can be logged and recognised	Heritage officers, biodiversity officers & other staff as relevant GIS staff

30 Action	Areas where it might apply	Staff who could assist
Action 30: Take part in the Bumblebee Monitoring Scheme Identify interested people and set up at least one bumblebee monitoring scheme walk within key sites. In this scheme volunteers walk a fixed 1-2km route once a month between March and October and record the diversity and abundance of bumblebees that they see. The scheme is run by the National Biodiversity Data Centre who provide full support and training. The scheme is vital in tracking what is happening with wild pollinators in the landscape, and can be used to assess the effectiveness of any pollinator friendly actions that are being taken locally. Email info@biodiversityireland.ie for more information	• Across council land	Coordinated by Heritage officers, biodiversity officers or others with this remit – could be in collaboration with other council staff or through local community groups

Appendix

Pollinator friendly planting code

Experts agree that inadequate nutrition is a major cause of pollinator declines. We want pollinators to be there when we need them, but our landscape doesn't provide the abundance and diversity of flowering plants that they need to survive throughout their life cycle. To have a healthy balanced diet, bees need to be able to feed on pollen and nectar from a range of different flowers from early spring to autumn.

It is important to prioritise increasing native plants (trees, shrubs, wildflowers) across the landscape to provide food for pollinators.

Spring → **Autumn**

Willow

Dandelion

Clover

Knapweed

Bramble

Ivy

Good native hedgerow species for pollinators:

Hazel (Feb-Apr)
Willow (Mar-May)
Blackthorn (Mar-May)
Hawthorn (Apr-Jun)
Broom (Apr-Jun)
Wild Cherry (Apr-May)

Bramble (May-Sept)
Wild Privet (May-Jul)
Crab apple (May-Jun)
Elder (May-Jun)
Whitebeam (May-Jun)
Rowan (May-Jun)

Wild Rose (Jun-Jul)
Honeysuckle (Jun-Oct)
Guelder Rose (Jun-Jul)
Raspberry (Jun-Aug)
Ivy (Sept-Nov)
Gorse (Jan-Dec)

These species are not recommended for hedgerows: Horse Chestnut, Beech, Laburnum, Lilac, Lime.
These species can be considered invasive and should not be planted: Fuchsia, Cherry Laurel, Rhododendron, Sycamore, Snowberry.

Deliberately planting horticultural or ornamental plants

Important: In towns and villages non-native horticultural or ornamental plants can be an important additional food source for pollinators. It is important to choose species that are good sources of nectar and pollen. However, you should not plant these in natural or semi-natural habitats. They should also not be planted in farmland (outside of farm gardens).

- Perennial plants are generally better sources of pollen and nectar than annuals. They are also cost effective as they grow and flourish over the following years. In contrast to seasonally replaced annual bedding, perennial plants can look less attractive to the public when they have finished flowering. This can be minimised by carefully selecting perennials and mixing them with ornamental grasses. See advice on perennial planting, including pollinator friendly planting suggestions on page 34.

- Traditional annual bedding plants like Geraniums, Begonias, Busy Lizzy, Petunias, Polyanthus or Salvia splendens have virtually no pollen and nectar and are of little value to pollinators. If you are choosing bedding plants, do not select F1 and F2 hybrids. If you are using annuals you should try to select scented, single-flowered varieties. The block planting of these can be an excellent source of food for pollinators.

- We have provided lists of pollinator friendly trees, shrubs, climbers, perennials, annuals and bulbs. Please note that these are not exhaustive lists. There are lots of other species that are also pollinator friendly and could be incorporated where appropriate. The best guide is to observe what the bees themselves are feeding on in parks/gardens and to increase the amount of these plants.

Street Trees

Roadside margins can be difficult locations in which to establish trees. Those suggested are pollinator friendly, resistant to pruning and should not cause any structural damage or create health and safety issues.

Lime (Tilia) species have fragrant flowers and produce a lot of nectar, however care is needed in the selection of cultivars as many can grow to large tree size proportions that will exceed allotted roadside space. Some are also very attractive to aphids and can lead to honeydew drip onto cars below (e.g., *Tilia* × *europaea*, *T. platyphyllos*). Those suggested below are smaller and don't attract aphids, therefore producing no dripping.

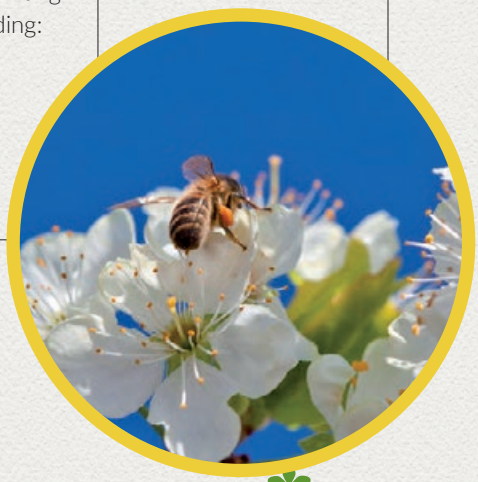
Species	Flowering
Juneberry Tree *Amelanchier x grandiflora* 'Robin Hill'	Small white flower April. Good autumn colour
Upright Hawthorn *Crataegus monogyna* 'Stricta'	White flowers May
Pillar crab *Malus tschonoskii*	Scented white flowers May. Can set fruit.
Callery pear *Pyrus calleryana* 'Chanticleer'	White flowers April-May. Can set fruit.
Rowan Sorbus acuparia varieties	White flowers May-June
Lime: *Tilia cordata 'Greenspire'; Tilia x europaea* 'Euchlora'	Pale yellow flowers June-July

Open Space Trees

While the range of trees favourable to pollinators capable of growing on open spaces is very large, actual selection is very much dependent on the situation thus **expert advice should be sought.**

Species	Flowering
Horse Chestnut *Aesculus hippocastanum*	White flowers May-June
Juneberry Amelanchier species (not *A. lamarckii* which may be invasive)	White flowers April
Indian bean tree *Catalpa bignonioides*	White flowers May - July

Hawthorn Crataegus species	White flowers May – June
Apple Malus species/*cultivars*	White, pink, red flowers May
Foxglove tree *Paulownia tomentosa*	Lavender blue flowers May
Wild Cherry *Prunus avium*	White flowers April
Bird Cherry *Prunus padus*	White flowers April
Japenese flowering cherry *Prunus serrulata* 'Tai Haku' Japanese flowering cherries are available in a wide range of cultivars, those with single flowers most pollinator attractive, however the attractiveness of specific cultivars is unclear and not well documented	Large white flowers April
Pear Pyrus species and cultivars	White flowers May
Rowan Sorbus species/cultivars	White flowers May-June
Willow Salix are fast growing and are excellent trees for pollinating insects producing large quantities of nectar and pollen. However choice of an appropriate species/cultivar for the right situation requires careful consideration. Priority should always be given to native species, but recommended non-native species include: *Salix aegyptiaca* (early spring flowering) *Salix alba* (spring flowering) *Salix alba* 'Liempde' *Salix alba* var. *vitellina*	Flowers in catkins in spring
Lime Tilia can grow to very large trees, so careful selection is required. Although the range and diversity of Tilia is very large, only a small selection is recommended including: *Tilia americana* 'Redmond' *Tilia cordata* *Tilia x europea* *Tilia platyphyllos* *Tilia tomentosa*	White flowers in summer



Bulbs, Annuals, Biennials, Perennials, Climbers & Shrubs

This list of ornamental plants is taken directly from the RHS Perfect for Pollinators list https://www.rhs.org.uk. Potentially invasive species have not been included. Highlighted species are those recognised to be particularly good for pollinators in Ireland, based on expert opinion (this is not exhaustive).

Autumn

BULBS

- **Colchicum species** (Autumn crocus)
- **Crocus species** (Crocus, autumn-flowering)

PERENNIALS

- *Aconitum carmichaelii* (Carmichael's monk's hood)
- *Actaea simplex* (Simple-stemmed bugbane)
- *Anemone × hybrida* (Japanese anemone)
- *Anemone hupehensis* (Chinese anemone)
- **Aster species and hybrids** (Michaelmas daisy)
- ***Campanula poscharskyana*** (Trailing bellflower)
- *Ceratostigma plumbaginoides* (Hardy blue-flowered leadwort)
- Chrysanthemum species & hybrids (Chrysanthemum)
- **Dahlia species & hybrids** (Dahlia)
- *Helianthus × laetiflorus* (Perennial sunflower)
- *Leucanthemella serotina* (Autumn ox-eye)
- **Salvia species** (Sage, autumn flowering)

CLIMBERS

- *Clematis heracleifolia* (Tube clematis)
- *Hedera colchica* (Persian ivy)

SHRUBS

- *Arbutus unedo* (Strawberry tree)
- *Elaeagnus × ebbingei* (Ebbinge's silverberry)
- *Elaeagnus pungens* (Silverthorn)
- *Fatsia japonica* (Japanese aralia)

Winter

BULBS

- **Crocus species** (Crocus, winter-flowering)
- *Eranthis hyemalis* (Winter aconite)
- ***Galanthus nivalis*** (Common snowdrop)

PERENNIALS

- **Helleborus species and hybrids** (Hellebore, winter flowering)

CLIMBERS

- *Clematis cirrhosa* (Spanish traveller's joy)

SHRUBS

- *× Fatshedera lizei* (Tree ivy)
- *Lonicera × purpusii* (Purpus honeysuckle)
- **Mahonia species** (Oregon grape)
- ***Salix aegyptiaca*** (Musk willow)
- *Sarcococca confusa* (Sweet box)
- *Sarcococca hookeriana* (Sweet box)
- ***Viburnum tinus*** (Laurustinus)

Spring

BULBS

- **Crocus species** (Crocus, spring-flowering)
- ***Muscari armeniacum*** (Armenian grape hyacinth)
- *Ornithogalum umbellatum* (Common star of Bethlehem)

BIENNIALS

- **Erysimum species** (Wallflower)
- *Lunaria annua* (Honesty)

PERENNIALS

Arabis alpina subsp. *caucasica* (Alpine rock cress)
Armeria juniperifolia (Juniper-leaved thrift)
Aubrieta species (Aubretia)
Aurinia saxatilis (Gold dust)
Bergenia species (Elephant ear)
Doronicum × *excelsum* (Leopard's bane)
Erysimum 'Bredon' (Wallflower 'Bredon')
Euphorbia amygdaloides (Wood spurge)
Euphorbia characias (Mediterranean spurge)
Euphorbia cyparissias (Cypress spurge)
Euphorbia epithymoides (Cushion spurge)
Euphorbia nicaeensis (Nice spurge)
Helleborus species & hybrids (Hellebore, spring flowering)
Iberis saxatilis (Alpine candytuft)
Iberis sempervirens (Perennial candytuft)
Lamium maculatum (Spotted dead nettle)
Pulmonaria species (Lungwort)

SHRUBS

Berberis darwinii (Darwin's barberry)
Chaenomeles species (Japanese quince)
Cornus mas (Cornelian cherry)
Cotoneaster conspicuus (Tibetan cotoneaster)
Enkianthus campanulatus (Redvein enkianthus)
Erica × darleyensis (Darley dale heath)
Erica carnea (Alpine heath)
Hebe species (Hebe)
Mahonia species (Oregon grape, spring flowering)
Pieris formosa (Lily-of-the-valley bush)
Pieris japonica (Lily-of-the-valley bush)
Prunus incisa 'Kojo-no-mai' (Cherry 'Kojo-no-mai')
Prunus tenella (Dwarf Russian almond)
Ribes nigrum (Blackcurrant)
Ribes rubrum (Redcurrant)
***Salix hastata* 'Wehrhahnii'** (Halberd willow 'Wehrhahnii')
Salix lanata (Woolly willow, male form only)
Skimmia japonica (Skimmia)
Stachyurus chinensis (Stachyurus)
Stachyurus praecox (Stachyurus)
Vaccinium corymbosum (Blueberry)

Summer

BULBS

Allium species ornamental and edibles (when allowed to flower) (Allium)

ANNUALS

Ageratum houstonianum (Flossflower)
Amberboa moschata (Sweet sultan)
Anchusa azurea (Large blue alkanet)
Anchusa capensis (Cape alkanet)
Antirrhinum majus (Snapdragon)
Argemone platyceras (Crested poppy)
Borago officinalis (Borage)
Calendula officinalis (Common marigold)
Callistephus chinensis (China aster)
Centaurea cyanus (Cornflower)
Centratherum punctatum (Manaos beauty)
***Cerinthe major* 'Purpurascens'** (Honeywort 'Purpurascens')
Clarkia unguiculata (Butterfly flower)
Cleome hassleriana (Spider flower)
Consolida ajacis (Giant larkspur)
Cosmos bipinnatus (Cosmea)
Cosmos sulphureus (Yellow cosmos)
Cucurbita pepo (Courgette)
Cuphea ignea (Cigar flower)
Echium vulgare (Viper's bugloss)
Eschscholzia californica (California poppy)
Gilia capitata (Blue thimble flower)
Glebionis segetum (Corn marigold)
Gypsophila elegans (Annual baby's breath)
Helianthus annuus (Common sunflower, avoid pollen free cultivars)
Helianthus debilis (Cucumberleaf sunflower)
Heliotropium arborescens (Common heliotrope)
Iberis amara (Wild candytuft)
Lavatera trimestris (Annual lavatera)
Limnanthes douglasii (Poached egg flower)
Linaria maroccana (Annual toadflax)
Lobularia maritima (Sweet alyssum)
Malope trifida (Large-flowered mallow wort)
Nemophila menziesii (Baby blue eyes)
Nicotiana alata (Flowering tobacco)
Nicotiana langsdorffii (Langsdorff's tobacco)

Nigella damascena (Love-in-a-mist)
Nigella hispanica (Spanish fennel flower)
Papaver rhoeas (Poppy)
Phacelia campanularia (Californian bluebell)
Phacelia tanacetifolia (Fiddleneck)
Phaseolus coccineus (Scarlet runner bean)
Reseda odorata (Garden mignonette)
Ridolfia segetum (False fennel)
Sanvitalia procumbens (Creeping zinnia)
Scabiosa atropurpurea (Sweet scabious)
Tagetes patula (French marigold)
Tithonia rotundifolia (Mexican sunflower)
Trachymene coerulea (Blue lace flower)
Tropaeolum majus (Garden nasturtium)
Verbena × hybrida (Garden verbena)
Verbena rigida (Slender vervain)
Vicia faba (Broad bean)
Zinnia elegans (Youth and old age)

BIENNIALS

Alcea rosea (Hollyhock)
Angelica archangelica (Angelica)
Angelica gigas (Purple angelica)
Campanula medium (Canterbury bells)
Dianthus barbatus (Sweet william)
Digitalis species (Foxglove)
Eryngium giganteum (Miss Willmott's ghost)
Lychnis coronaria (Rose campion)
Matthiola incana (Hoary stock)
Myosotis species (Forget-me-not)
Oenothera species (Evening primrose)
Onopordum acanthium (Cotton thistle)
Verbascum species (Mullein)

PERENNIALS

Achillea species (Yarrow)
Actaea japonica (Baneberry)
Agastache species (Giant hyssop)
Amsonia tabernaemontana (Eastern bluestar)
Anthemis tinctoria (Dyer's chamomile)
Aquilegia species (Columbine)
Aruncus dioicus (Goat's beard, male form only)
Asparagus officinalis (Common asparagus)
Astrantia major (Greater masterwort)
Buphthalmum salicifolium (Yellow ox-eye)
Calamintha nepeta (Lesser calamint)
Campanula *carpatica* (Tussock bellflower)
Campanula glomerata (Clustered bellflower)
Campanula lactiflora (Milky bellflower)
Campanula latifolia (Giant bellflower)
Campanula persicifolia (Peach-leaved bellflower)
Catananche caerulea (Blue cupidone)
Centaurea *atropurpurea* (Purple knapweed)
Centaurea dealbata (Mealy centaury)
Centaurea macrocephala (Giant knapweed)
Centaurea montana (Perennial cornflower)
***Cirsium rivulare* 'Atropurpureum'** (Purple plume thistle)
Coreopsis species (Tickseed)
Crambe cordifolia (Greater sea kale)
Cynara cardunculus including Scolymus Group (Globe artichoke and cardoon)
Cynoglossum amabile (Chinese forget-me-knot)
Dahlia species (Dahlia)
Delosperma floribundum (Ice plant)
Delphinium elatum (Candle larkspur)
Dictamnus albus (Dittany)
Echinacea purpurea (Purple coneflower)
Echinops species (Globe thistle)
Erigeron species (Fleabane)
Eriophyllum lanatum (Golden yarrow)
Eryngium × tripartitum (Eryngo)
Eryngium alpinum (Alpine eryngo)
Eryngium planum (Blue eryngo)
Erysimum × allionii (Siberian wallflower)
Eupatorium maculatum (Eupatorium 'Purple Bush')
Euphorbia cornigera (Horned spurge)
Euphorbia sarawschanica (Zeravshan spurge)
Ferula communis (Giant fennel)
Foeniculum vulgare (Fennel)
Fragaria × ananassa (Garden strawberry)
Gaillardia × grandiflora (Blanket flower)
Gaura lindheimeri (White gaura)
Geranium species (Cranesbill, summer-flowering)
Geum species (Avens, summer-flowering)
Helenium species (Helen's flower)
Heliopsis helianthoides (Smooth ox-eye)
Hesperis matronalis (Dame's violet)
Inula species (Harvest daisy)
Knautia macedonica (Macedonian scabious)
Lathyrus latifolius (Broad-leaved everlasting pea)
Leucanthemum × superbum (Shasta daisy)

Liatris spicata (Button snakewort)
Limonium platyphyllum (Broad-leaved statice)
Linaria purpurea (Purple toadflax)
Lythrum virgatum (Wand loosestrife)
Malva moschata (Musk mallow)
Mentha spicata (Spearmint)
Monarda didyma (Bergamot)
Nepeta × faassenii (Garden catmint)
***Origanum* 'Rosenkuppel'** (Marjoram 'Rosenkuppel')
Paeonia species (Peony)
Papaver orientale (Oriental poppy)
Persicaria amplexicaulis (Red bistort)
Persicaria bistorta (Bistort)
Phlox paniculata (Perennial phlox)
Phuopsis stylosa (Caucasian crosswort)
Polemonium caeruleum (Jacob's ladder)
Potentilla species (Cinquefoil)
Rudbeckia species (Coneflower)
Salvia species (Sage)
Scabiosa caucasica (Garden scabious)
Scabiosa columbaria (Small scabious)
***Sedum spectabile* & hybrids** (Ice plant)
Sedum telephium (Orpine)
Sidalcea malviflora (Checkerbloom)
Solidago species (Goldenrod)
Stachys byzantina (Lamb's ear)
Stachys macrantha (Big sage)
Stokesia laevis (Stokes' aster)
Tanacetum coccineum (Pyrethrum)
Tanacetum vulgare (Tansy)
Telekia speciosa (Yellow ox-eye)
Teucrium chamaedrys (Wall germander)
Verbena bonariensis (Purple top)
Veronica longifolia (Garden speedwell)
Veronicastrum virginicum (Culver's root)

CLIMBERS

Campsis radicans (Trumpet honeysuckle)
Convolvulus tricolor (Dwarf morning glory)
Hydrangea anomala subsp. *petiolaris* (Climbing hydrangea)
Jasminum officinale (Common jasmine)
Parthenocissus tricuspidata (Boston ivy)
Pileostegia viburnoides (Climbing hydrangea)

SHRUBS

Aesculus parviflora (Bottlebrush buckeye)
Brachyglottis (Dunedin Group) 'Sunshine' (Brachyglottis 'Sunshine')
Brachyglottis monroi (Monro's ragwort)
Buddleja globosa (Orange ball tree)
Bupleurum fruticosum (Shrubby hare's ear)
Callicarpa bodinieri var. *giraldii* (Beautyberry)
Caryopteris × *clandonensis* (Caryopteris)
Cornus alba (Red-barked dogwood)
Elaeagnus angustifolia (Oleaster)
Erica vagans (Cornish heath)
***Erysimum* 'Bowles's Mauve'** (Wallflower 'Bowles's Mauve')
Escallonia species (Escallonia)
Hebe species (Hebe)
Hydrangea paniculata (Paniculate hydrangea, cultivars with many fertile flowers e.g. 'Kyushu', 'Big Ben', 'Floribunda', 'Brussels Lace')
Hyssopus officinalis (Hyssop)
Kalmia latifolia (Mountain laurel)
Laurus nobilis (Bay tree)
Lavandula × intermedia (Lavandin)
Lavandula angustifolia (English lavender)
Lavandula stoechas (French lavender)
Lavatera olbia (Tree lavatera)
Ligustrum ovalifolium (Garden privet)
Ligustrum sinense (Chinese privet)
Olearia species (Daisy bush)
Perovskia atriplicifolia (Russian sage)
Phlomis species (Sage)
Photinia davidiana (Stranvaesia)
Prostanthera cuneata (Alpine mint bush)
Ptelea trifoliata (Hop tree)
Pyracantha species (Firethorn)
Rosmarinus officinalis (Rosemary)
Spiraea japonica (Japanese spiraea)
Tamarix ramosissima (Tamarisk)
Thymus species (Thyme)
Viburnum lantana (Common wayfaring tree)
Weigela florida (Weigelia)
Zauschneria californica (Californian fuchsia)

Perennial planting schemes

Pollinator friendly perennial plants are excellent sources of pollen and nectar. They are much more attractive to bees when planted in blocks rather than as single plants. Having a pollinator friendly perennial bed is an excellent way to provide food for pollinators across their lifecycle.

Perennials can be used to great effect in traffic islands and public spaces, providing a strong visual impact and giving a good display of flowers over a long period. Pollinator friendly perennial planting should be designed to provide a food source from spring through to autumn. In addition they are:

- Low maintenance
- Easy to establish
- Have strong visual impact
- More cost effective than bedding schemes over the long term
- Less maintenance than lawn mowing
- Provides a natural style of planting
- Provides habitat and nesting materials for birds and insects

Costing: Pollinator friendly perennial planting versus annual bedding

Planting regime	Approximate costs per m^2 (2016)	Typical replacement
Pollinator friendly perennials	€10-13 (9 x 9cm pots)	Life span of 10-12 years if well planted and well maintained. Small amount of annual replacement may be required depending on the site
	€17-19 (6 x 2L pots)	
Annual bedding	€10-29	Twice per year

Based on prices from a large Irish perennial plant nursery. Typical annual bedding costs were provided by a Council in ROI.

Key Points:

- Soil preparation before planting is essential
- Dense planting will reduce weeding
- Regular maintenance is important
- Use only good quality plants from a reliable source

Suggested plant lists:

These are examples of planting selections that have been used to create pollinator friendly perennial beds in Ireland. These mixes create an attractive and colourful display for the public while also providing food for pollinators. Grass is included to provide colour and structure in autumn/winter.

Option A

Little Experience with Perennials		Flowering
Aster 'Asran' / 'Stardust'	Pollinator	Aug - Sept
Crocosmia 'Babylon'	Pollinator	Aug - Sept
Geranium 'Cambridge'	Pollinator	May - Aug
Hemerocallis 'Stella d'or'	Pollinator	May - Aug
Nepeta 'Walkers Low'	Pollinator	May - July
Oregano 'Golden'	Pollinator	June - July
Rudbeckia 'Goldstrum'	Pollinator	July - Aug
Sedum 'Autumn Joy'	Pollinator	July - Aug
Stachys 'Byzantina'	Pollinator	July - Aug
Stipa arundinacea	Grass	

Plants from List A are easy to grow and maintain, ideal to start off with.

Option B

Some Experience with Perennials		Flowering
Achillea 'Moonshine'	Pollinator	May - Aug
Allium schnoeprasum	Pollinator	June - July
Anemone 'Splendens'	Pollinator	July - Aug
Aster 'Little Carlow'	Pollinator	Sept - Oct
Calamagrostis 'Karl Foerster'	Grass	
Calamintha	Pollinator	Aug - Sept
Fennel	Pollinator	July - Sept
Kniphofia	Pollinator	July - Sept
Lamium 'Pink Chablis'	Pollinator	April - Aug
Lavender	Pollinator	May - July
Leucanthemum	Pollinator	July - Aug
Monarda Jacob Cline	Pollinator	July - Aug
Osteospermum ecklonis	Pollinator	May - Aug
Salvia nemerosa	Pollinator	May - July
Stachys 'Hummelo'	Pollinator	July - Aug
Stipa 'Ponytails'	Grass	
Symphytum 'Wisley Blue'	Pollinator	April - May
Thyme	Pollinator	June - July

Plants from List B can be added to schemes to provide more interest in colour and form

Note: Spanish Bluebells are invasive. Only native, local provenance Bluebells should be planted.

Perennial planting schemes can be underplanted with spring bulbs to provide early food for bees	
Crocus	Pollinator
Snowdrop	Pollinator
Muscari	Pollinator
Bluebells - native	Pollinator
Stipa arundinacea	Grass

Maintenance:

Good ground preparation is essential to minimise maintenance in the future.

- Removal of all root weeds before planting such as scutch grass, bindweed etc. will reduce weeding later on. Sometimes it is best to leave the site fallow for a season to sort out any issues.
- The soil must be well drained and not compacted, and have good nutritional content. Organic material can be added. There is usually no need to add fertiliser.
- Plants ideally should contain a slow release fertiliser in the pot and should be watered well before planting.
- In the first few months after planting beds will have to be weeded by hand as hoeing can damage spreading plants. This should be done regularly, maybe three or four times in year one depending on the weed population. When the perennials have established and provided dense cover, the frequency of weeding can be reduced.
- In year two and onwards, weed the beds at the beginning of and end of the growing season, and spot check for the odd weed in between.
- Watering may have to be taken into consideration during dry spells.
- Leave dead stems on plants for the winter as they provide protection for the plants, offer food and habitat and nesting materials for wildlife, prevent weed seeds from germinating and increase the organic matter.
- The dead foliage can be removed in spring by mass pruning to approx. 10cm height when there is new growth appearing. Some plants like Grasses & Thymes will look good without pruning back.
- Organic matter like compost can be added to keep the soil in good condition.

Planting time:
March-April is the best time for planting as the plants will have plenty time to root in before summer. If planted in June then weeds will have already established and they will be easy to remove, but the plants have less time to root in and provide ground coverage.

Life span of perennial planting:
The life span of a well planted and well maintained perennial scheme is 10 to 12 years, maybe longer, which is about the same as a shrub bed. Small amount of replacements may be required depending on the site but in general the plants are trouble free.

Thanks to Young Nurseries who voluntarily provided suggested perennial plant lists and example costings.

Best Practice in the Use of Pesticides

In additional to the honeybee who lives in hives, we also have 20 different types of bumblebees and 77 different types of solitary bees in Ireland. Bumblebees and solitary bees live entirely in the wild. We need healthy populations of all these bees to carry out pollination if we want to have wildflowers in the landscape, be able to grow our own fruits and vegetables, or buy affordable, locally grown apples or strawberries in our shops. Bees and other pollinators can only survive in a landscape that provides them with food, shelter and safety throughout the year. Already, one third of our 98 bee species are threatened with extinction from Ireland.

Insecticides pose the greatest direct hazard to insect pollinators. However, herbicides are having a much greater negative impact on pollinators because they are so widely used.

Herbicides, Fungicides and Plant Growth Regulators typically have little or no toxicity to pollinators, but many of the plants we spray as weeds are vital sources of food for pollinators, especially in early spring. Pollinators need a range of flowers to feed on from spring through to autumn. The overuse of these chemicals is making it very difficult for them to find enough food to survive in our landscape.

Food for pollinators

Pesticides should be used sparingly and only when absolutely necessary, such as in the treatment of invasive species like Japanese Knotweed

Do's

- Check the label and select pesticides that are less harmful to pollinators
- Always read, understand and follow the product label instructions fully
- Treat only the target area
- Spot treat rather than use blanket sprays
- Follow the buffer zone instructions on the product label
- Leave areas of pollinator-friendly habitat free from all pesticides. These include areas of clover or wildflowers, the base of hedgerows, and any natural areas.
- Minimize spray drift to non-target areas by:
  - Using equipment that reduces drift
  - Checking the weather forecast before application and be mindful of changing conditions.
  - Ensure that you spray when the wind is blowing away from beehives and pollinator-friendly habitat.

Don'ts

- Do not apply pesticides to bees or other pollinating insects
- Do not spray flower-rich areas (including weeds) when flowers are in bloom and providing food for bees. Plants that we might consider weeds like dandelions, vetches, clovers, dead-nettles and knapweed are important food sources as they provide high quality pollen and nectar for bees.
- Do not apply pesticides to areas that have been identified as important nesting areas for wild pollinators
- Do not apply pesticides to standing water.

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National Biodiversity Data Centre
Documenting Ireland's Wildlife

About the National Biodiversity Data Centre
The National Biodiversity Data Centre is a national organisation that collects and manages data to document Ireland's wildlife resource, and to track how it is changing.

Find out what biodiversity has already been recorded in your local area:
maps.biodiversityireland.ie

Help us to build up the knowledge of biodiversity in your local area by submitting sightings to
records.biodviersityireland.ie

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NIEA Northern Ireland Environment Agency
www.daera-ni.gov.uk

www.pollinators.ie