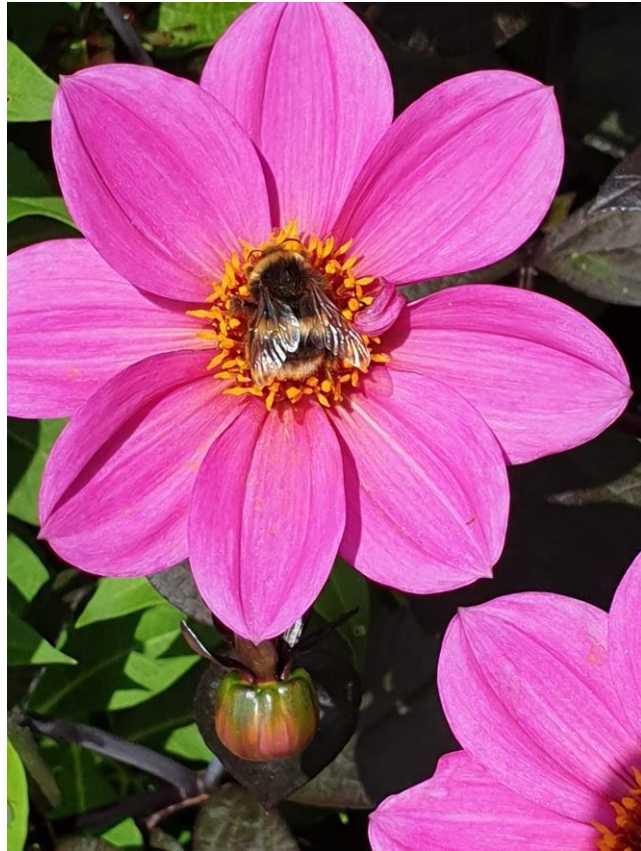


TidyTowns: *Nature & Biodiversity in your locality* – the whys & the hows!



A presentation by
Dr Fiona Mac Gowan
Ecologist, Botanist &
TidyTowns adjudicator

What is the importance of Biodiversity and Ecology?

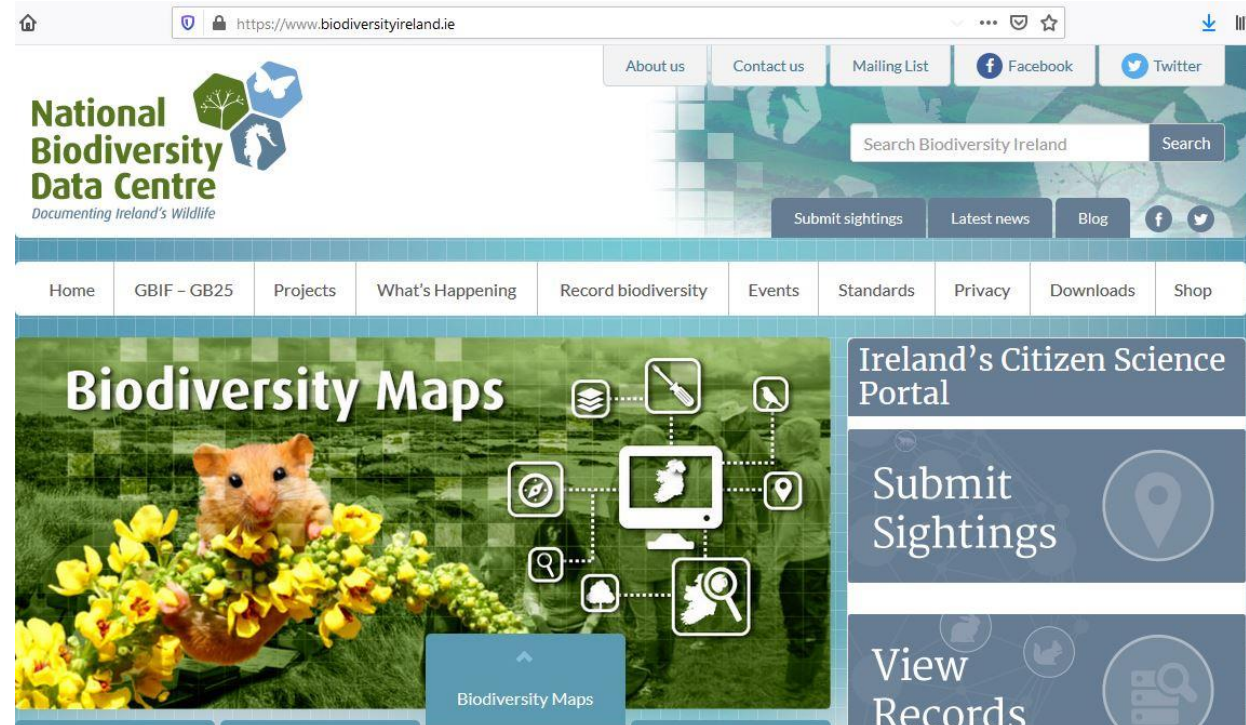
- **Humans are an integral part of the Biodiversity of Earth and our actions can influence it in both a positive and negative way.**
- **Ecology deals with the inter-relations between organisms and the places in which they live. This can refer to human beings' dealings and interactions with both the habitats and species around them.**
- **So Biodiversity and Ecology affect our lives every day without us even realising it!**

Why Protect Biodiversity?

- 'Biodiversity crisis'
- Bumble bee numbers alone have decreased 17% since 2012 – from an already low base
- Curlews are down to ca 200 pairs from 200,000 in the 1990's
- Loss of habitats primary reason
- And for pollinator species its also loss of food and herbicide misuse

National Biodiversity Data Centre gathering records since 2012 (www.biodiversityireland.ie)

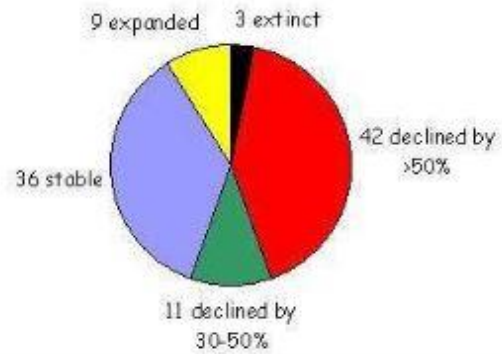
- The Data Centre was established by the Heritage Council in 2007 and is funded by the Heritage Council and the Department of Culture, Heritage and the Gaeltacht. The Centre is operated under a service level agreement by Compass Informatics Limited, an information and location technologies company focussed on applications in natural resources and planning



Bumble bee numbers alone have decreased 17% since 2012 – from an already low base

ARE POLLINATORS DECLINING IN IRELAND?

National Biodiversity Data Centre
Documenting Ireland's Wildlife



More than half of Ireland's bee species have undergone substantial declines in their numbers since 1980.

Two species have become extinct

One third of our 98 wild bee species are threatened with extinction from Ireland

6 species are critically endangered,
10 endangered
14 vulnerable



The Great Yellow Bumblebee is our most threatened bumblebee – it has recently been 'adopted' by Mayo County Council

BEES IN IRELAND

Ireland has **99** bee species:

Honeybee



Bumblebees



Solitary bees



WILD POLLINATORS

BUMBLEBEES - LIFECYCLE



Underground,
north facing banks

Food
source

Nest site



Long grass, hedgerows

Feeds &
finds a nest

Queen emerges from
hibernation in early spring

Prepares a pollen loaf and a nectar
pot and starts laying eggs fertilised
with sperm stored from previous year

Hibernation
site

Mated new queen feeds to build
up reserves before hibernation.
Workers, males and old queen die



Female workers emerge
and take over nest duties

Food
source

New queens and males
leave the nest to find mates

Queen remains in
the nest laying eggs

In mid-late summer the
queen lays unfertilised eggs
which will become males.
She also allows some new
queens to develop

Food
source

BUMBLEBEES NEED FOOD SOURCES THROUGHOUT THE YEAR

EARLY SPRING: queens are establishing nests

In the early days of the nest it is estimated that a *Bombus terrestris* queen may have to visit as many as 6000 flowers/day to get enough nectar to maintain the heat needed to brood her eggs



SPRING – SUMMER: nests are growing, workers are active

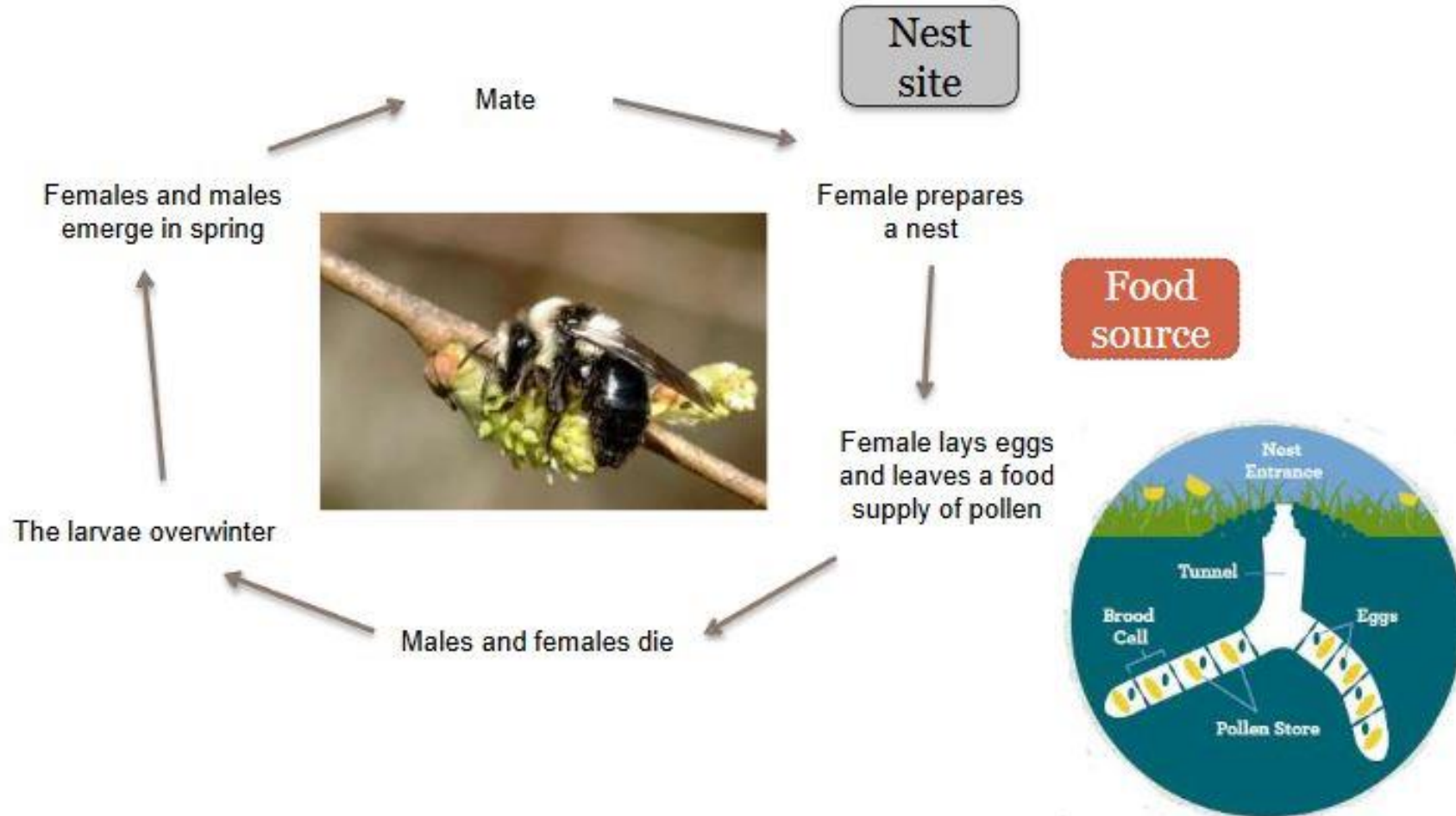


AUTUMN: queens are fattening up ready for hibernation

Bombus terrestris queens need to weigh at least 0.6 g to successfully hibernate and emerge next spring.



SOLITARY BEES - LIFECYCLE



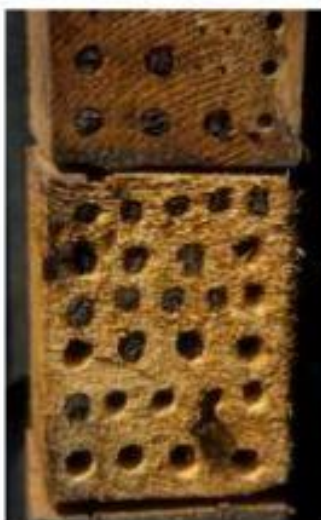
WHAT DO SOLITARY BEES NEED?

62 species (**80%**) are mining bees who nest in bare ground or south/east facing banks of bare earth (soil, sand, clay, peat)



WHERE DO SOLITARY BEES NEST?

15 species are cavity nesting bees who nest in south facing stone walls, masonry wooden structures or commercially available nest boxes

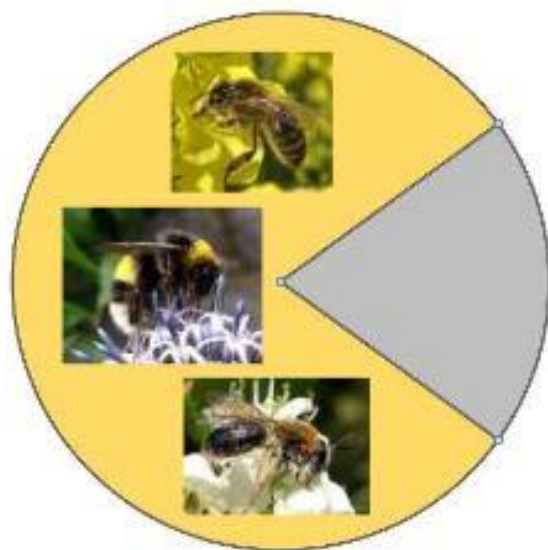


BIG IS NOT BETTER!



Without pollinators we'd have less diversity on our dinner plates and less colour in the countryside

WHO ARE THE POLLINATORS IN IRELAND?



Most pollination of crops and wild plants is carried out by bees



The rest is provided by various other flower visiting insects, particularly flies

Ireland's wild bees – favourite food in 2020!



This is based on 1,800 bee records that were submitted to the National Biodiversity Data Centre in 2020 that also included information on what the bee was spotted feeding [on](#)

Top 10 plants across the year:

In order of number of submitted foraging sightings:

1. Dandelion (more than double number of sightings of Bush Vetch!)
2. Bush Vetch
3. Clovers (Red & White)
4. Heather
5. Cotoneaster
6. Bramble
7. Knapweed
8. Thistles
9. Apple Blossom
10. Willow

Top plants each month 2020:

Month	Most important food plants – in descending order
February	Garden heathers, Hellebores, Dandelion, Crocus
March	Dandelion* , Garden heathers, Willow, Lungwort
April	Dandelion** , Bush Vetch, Rosemary, Garden heathers, Willow
May	Bush Vetch, Dandelion, Cotoneaster, Apple blossom, Red Clover
June	White Clover, Bramble, Bird's-foot-trefoil, Bush Vetch
July	Thistles, Clovers, Bramble, Lavender, Woundworts
August	Knapweed* , Buddleia, native heathers, Thistles, Ragwort
September	<i>Verbena bonariensis</i> , native heathers, Devil's-bit-scabious, Knapweed
October	Ivy, sunflowers

* indicates where this was a clear favourite over the other species (based on the data received). Wild bees are typically active from February until October.

Remember this slide –
I'll be asking questions
later!

So this is where TidyTowns comes in!

- Endless possibilities for projects that suit your town or village
- Where to look for inspiration and guidance?
- First of all review your current work and projects and see if anything can be altered/changed to make the work more biodiversity-friendly

Grass mowing regime



Don't mow, let it grow!



Ivy!

Crucially important for
biodiversity in Ireland

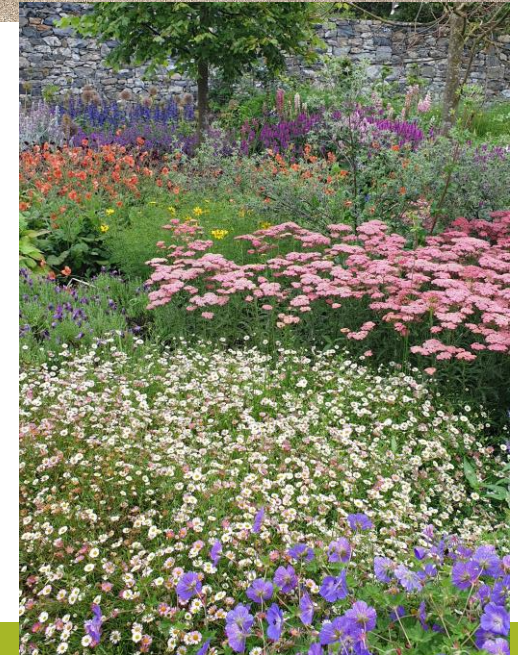
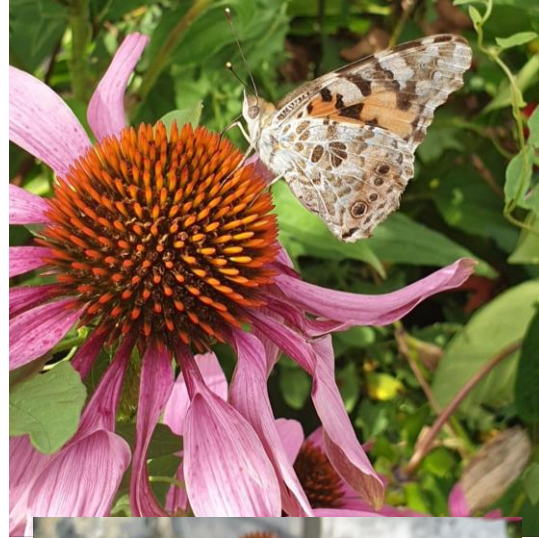


Nettles

- Another hugely important plant
- Did you know that it is the food plant of five different Irish butterfly species?!



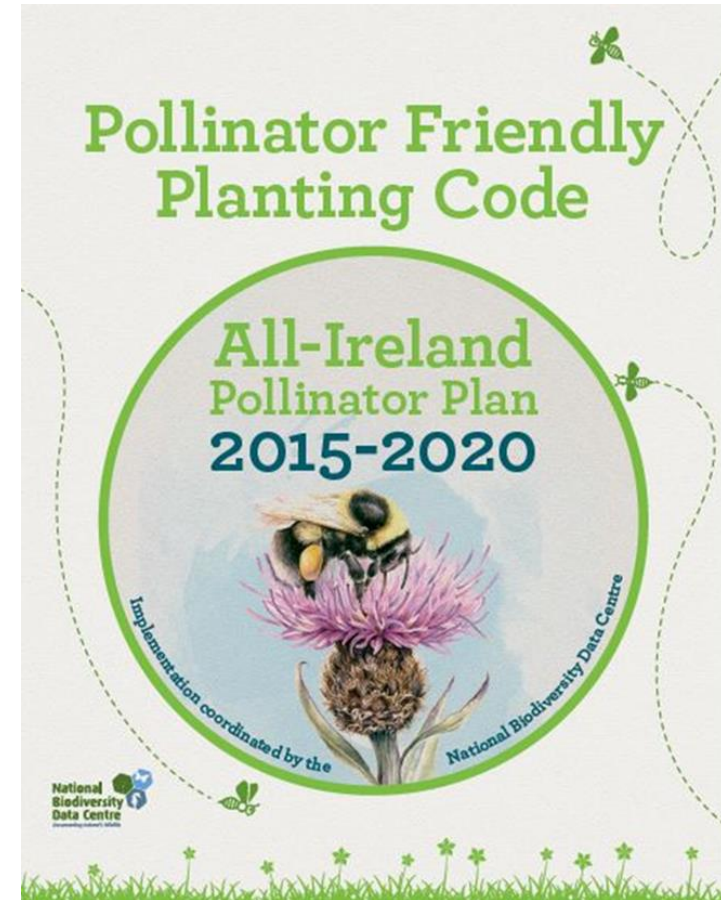
Flower planting regime



Talk to your local Garden centre



https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Gardens_actions-to-help-pollinators-2018-WEB.pdf

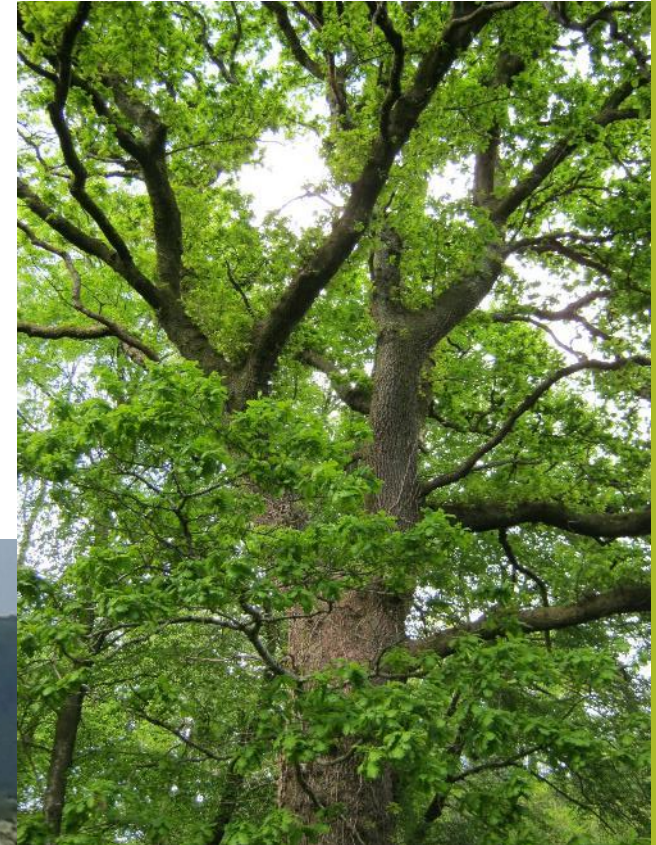


<https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Planting-Code-2018-WEB.pdf>

Tree planting regime



- Individual trees – native?
- Hedgerows
- Edible hedges
- Community orchards
- Trees as flood controls



Are you aware of the Irish charity 'Trees on the Land'?
www.treesontheland.com

Weed control



Lots of guidance out there.....



https://pollinators.ie

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National Biodiversity Data Centre Documenting Ireland's Wildlife

All-Ireland Pollinator Plan

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https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/plants-for-pollinators

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All-Ireland Pollinator Plan

One third of our bee species are threatened with extinction from Ireland. This is because we have drastically reduced the amount of food (flowers) and safe nesting sites in our landscapes. The **All-Ireland Pollinator Plan** is about all of us, from farmers to local authorities, to schools, gardeners and businesses, coming together to try to create an Ireland where pollinators can survive and thrive. The first Plan covers the period 2015-2020 and a new version will be developed to cover 2021-2025. To see what can be done by each sector, click on the appropriate link below.

Farmland

Councils

Communities

Businesses

RHS Plants for Pollinators

Wild bees and other pollinators are in decline. One way gardeners can help is by planting garden flowers that provide forage for a wide variety of pollinating insects

Using scientific evidence, our extensive experience and the records of gardeners and beekeepers, we've selected a range of year-round flowering Plants for Pollinators to tackle the decline in pollinator numbers.

Find Plants for Pollinators

https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/plants-for-pollinators#nav-gardens



How-to-guide

Creating wild pollinator nesting habitat



Pollinator-friendly HERBS

Our pollinating insects are in decline. One third of our 99 bee species are at risk of extinction. By choosing pollen-rich herbs for your garden, you will help provide much-needed food for our Bumblebees and other pollinating insects as well as creating a colourful garden that you can use. There are lots of pollinator-friendly herbs to choose from.

To learn more about the All-Ireland Pollinator Plan, see www.pollinators.ie



Culinary herbs

Communities

How can Local Communities help Pollinators?



Local communities can lead the way in creating an Ireland where pollinators can thrive. To find out how to make your community pollinator friendly, download our publication: [Local Communities: actions to help pollinators](#)

Suitable
wildlife

Arna Bhainistiú don bhFiadhúlra Managed for Wildlife

www.pollinators.ie

Features of our Local Communities

- Range of 24 low/no-cost pollinator-friendly plants
- Pollinator-friendly planting lists
- Important advice for purchasing plants
- Information about our pollinators

National Biodiversity Data Centre
Forbairt na hÉireann ó dháinseal
Documenting Ireland's Wildlife

SuperValu Tidy Towns

Le hurafocht ó Oifigí Oidhreachta & Oifigí Bíthéagsúlachta na nOdarás Áitiúil ar fud na hÉireann
Sponsored by the Heritage Offices & Biodiversity Offices of Local Authorities across Ireland

Pollinator Friendly Planting Code

All-Ireland Pollinator Plan 2015-2020

Implementation coordinated by the

National Biodiversity Data Centre

National
Biodiversity
Data Centre
www.nationalbiodiversitydatacentre.ie



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



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 x hybrida* (Japanese anemone)
- Anemone hepahensis* (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 x 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)

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

- x Fatshedera lizei* (Tree ivy)
- Lonicera x 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

Pollinator-friendly planting





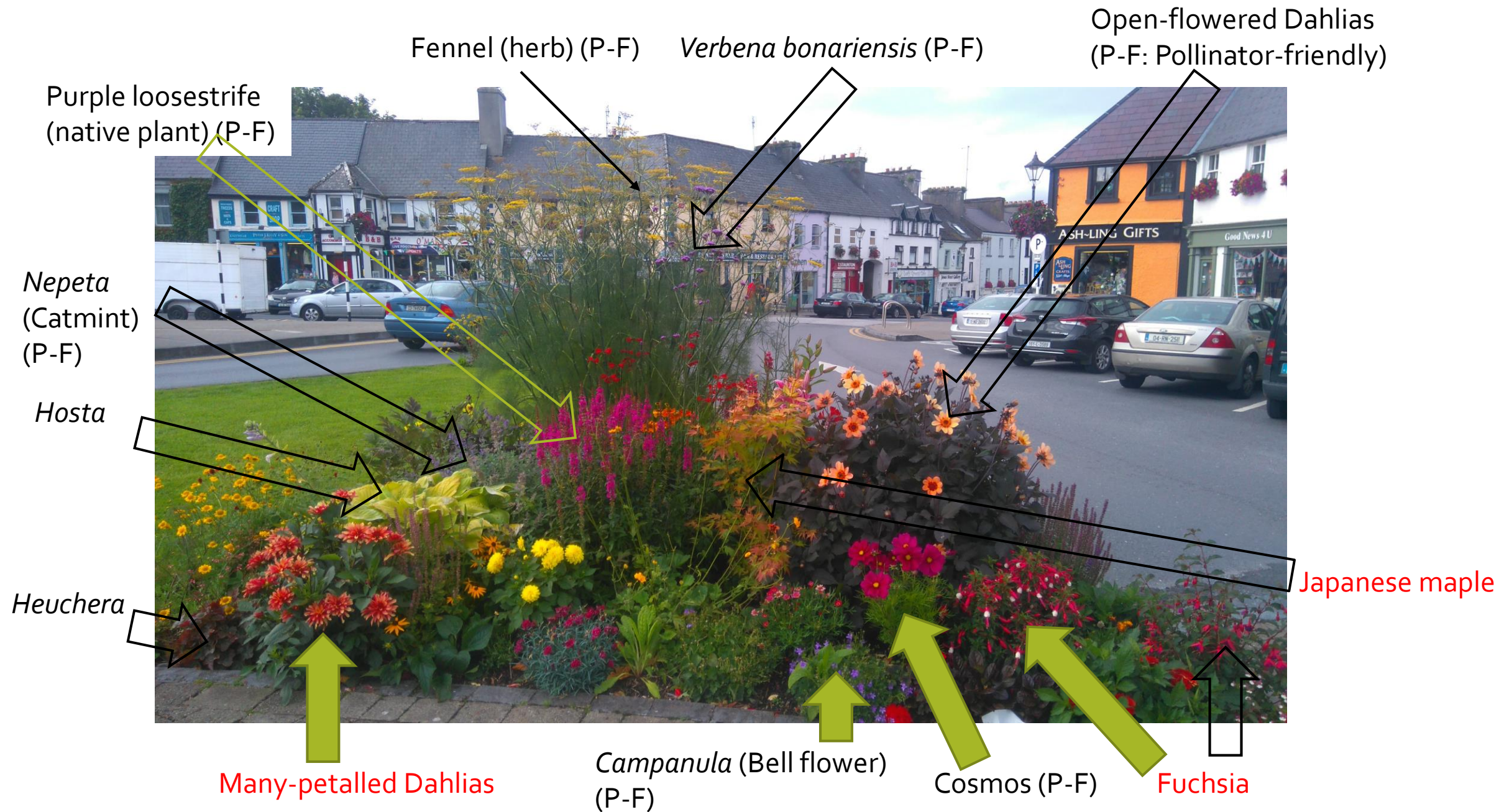


Ornamental grass,
great for structure,
this is possibly
Purple moor-grass
(*Molinia caerulea*)

Red bistort
(*Persicaria amplexicaulis*)

Hardy Geraniums (Cranesbills)





Purple loosestrife
(native plant) (P-F)

Fennel (herb) (P-F)

Verbena bonariensis (P-F)

Open-flowered Dahlias
(P-F: Pollinator-friendly)

Nepeta
(Catmint)
(P-F)

Hosta

Heuchera

Many-petalled Dahlias

Campanula (Bell flower)
(P-F)

Cosmos (P-F)

Fuchsia

Japanese maple



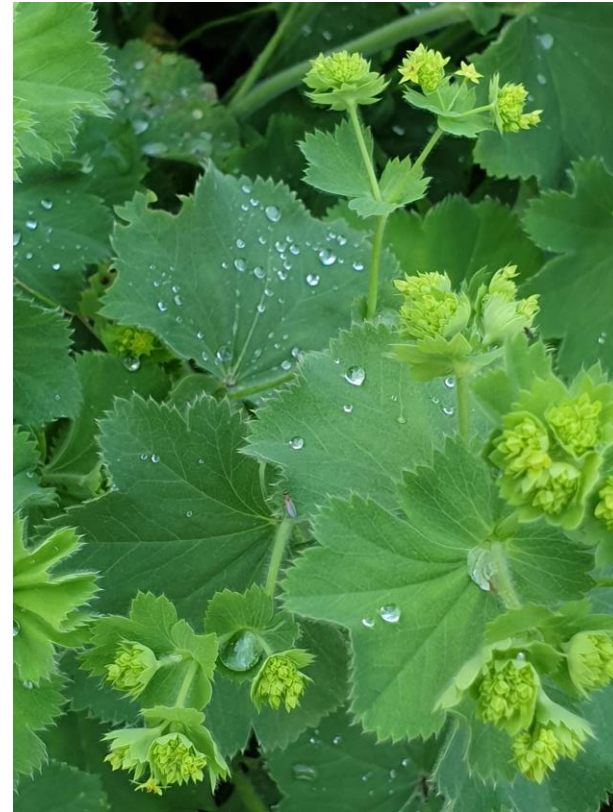
Penstemon

- Several different colours
- Loves limestone soils
- Flowers from April to November



Lady's mantle (*Alchemilla mollis*)

- Native Irish plant
- Great for the edges of a bed
- Even looks good in the rain!





***Astrantias* (Masterworts)**

- Long-lived perennial plant
- Flowers from spring to autumn
- Several colours





Japanese anemones

- Great for Autumn colour (pink & white varieties)
- Flowers from August to November
- Good height (50-100cm)

Heathers

Great for winter and spring colour and a favourite of the bees





***Sedum* 'Autumn joy'**

- Great autumn colour
- Flowers from July until first frosts
- Butterflies love it!





Hardy Geraniums (Cranesbills)

- Many colours – blues through to pinks to whites
- Flowers from April to August
- Plants last many years



Orchards & Edible hedges



Pollinator-friendly hanging baskets are possible!





**Gardeners'
World.com**

From the team at Gardeners' World Magazine



- **Calibrachoa 'Cabernet Series'**
- **Bidens aurea**
- **Lobelia maritima**
- **Lobularia maritima**
- **Petunia 'Easy Wave White'**
- **Helitropium arborescens 'White Queen'**
- **Verbena 'Temari Coral Pink'**
- **Diascia 'Little Dancer'**
- **Lobelia 'Little Dancer'**
- **Dwarf lavender e.g. Bella series such as 'Kew Red' or 'Munstead'**
- **Thyme**

Pot planting

Old vs New



Pollinator-friendly Container Planting



Lobularia maritima 'Violet Queen' is great as colourful edging and ground cover.



Long season appeal



Erysimum 'Bowles's Mauve' just keeps on flowering, making it a useful addition to the patio

Shady patio? No problem



The Cosmos Apollo series have shorter stems, making them useful



Pieris japonica 'Valley Valentine' thrives in a large pot in a shady spot

**Gardeners'
World.com**

From the team at Gardeners' World Magazine

Pollinator-friendly containers are possible!



Daisy family plant e.g.:
Michaelmas daisies;
Chrysanthemum
species;
Perennial sunflowers;
Pot marigolds etc.



Bidens, particularly
yellow varieties are
great for pollinators.
Also the trailing plant
Bacopa has been
shown to be
pollinator-friendly

Community herb gardens/pots



Pollinator-friendly HERBS

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National Biodiversity Data Centre
Increasing Ireland's Biodiversity



Angelica



Chives



Fennel



Mint



Oregano



Rosemary



Sage



Summer & Winter Savoury



Thyme



Culinary herbs