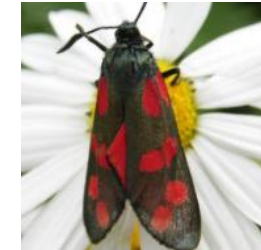


All-Ireland Pollinator Plan

How Schools can help

www.pollinators.ie



Dr Úna FitzPatrick
Senior Ecologist, National Biodiversity Data Centre
Chair & Project Manager, All-Ireland Pollinator Plan

BIODIVERSITY LOSS IS A HUGE PROBLEM



Ireland has ~31,500 species living within 117 habitats

- Of those habitats assessed only **9%** are in a good state
- Of those species assessed **17%** are threatened with extinction from Ireland

Identify simple vehicles that can be used to sell a biodiversity message to a very wide audience

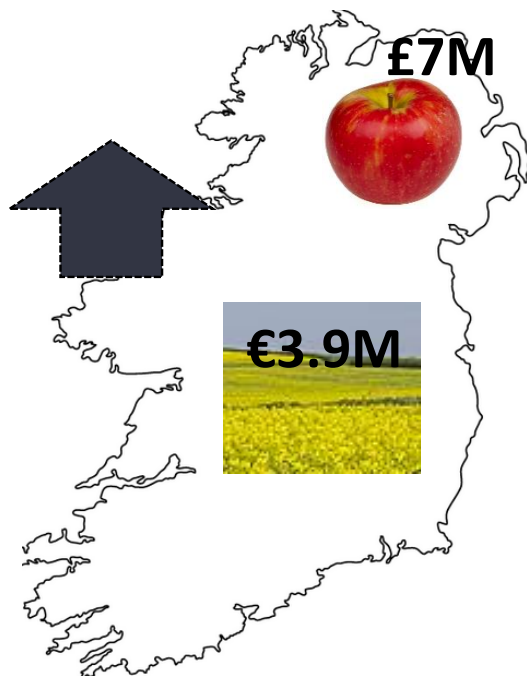


- ✓ Pollinators are an element of biodiversity that people understand & relate to
- ✓ Can be communicated as a clean & simple message
- ✓ Changes can be easily monitored
- ✓ Protecting pollinators has knock-on benefits for biodiversity generally



WHY IS POLLINATION IMPORTANT?

Economy & Wealth



The free service provided by bees
is worth up to **€59million/annum**



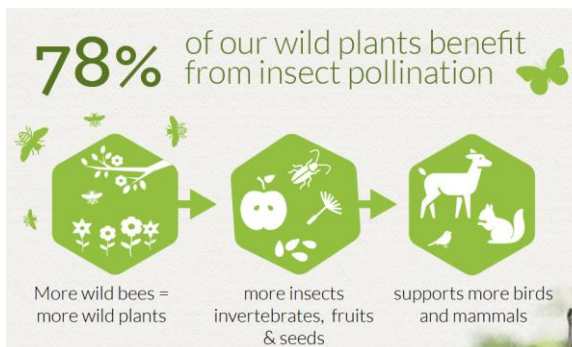
Health & Wellbeing



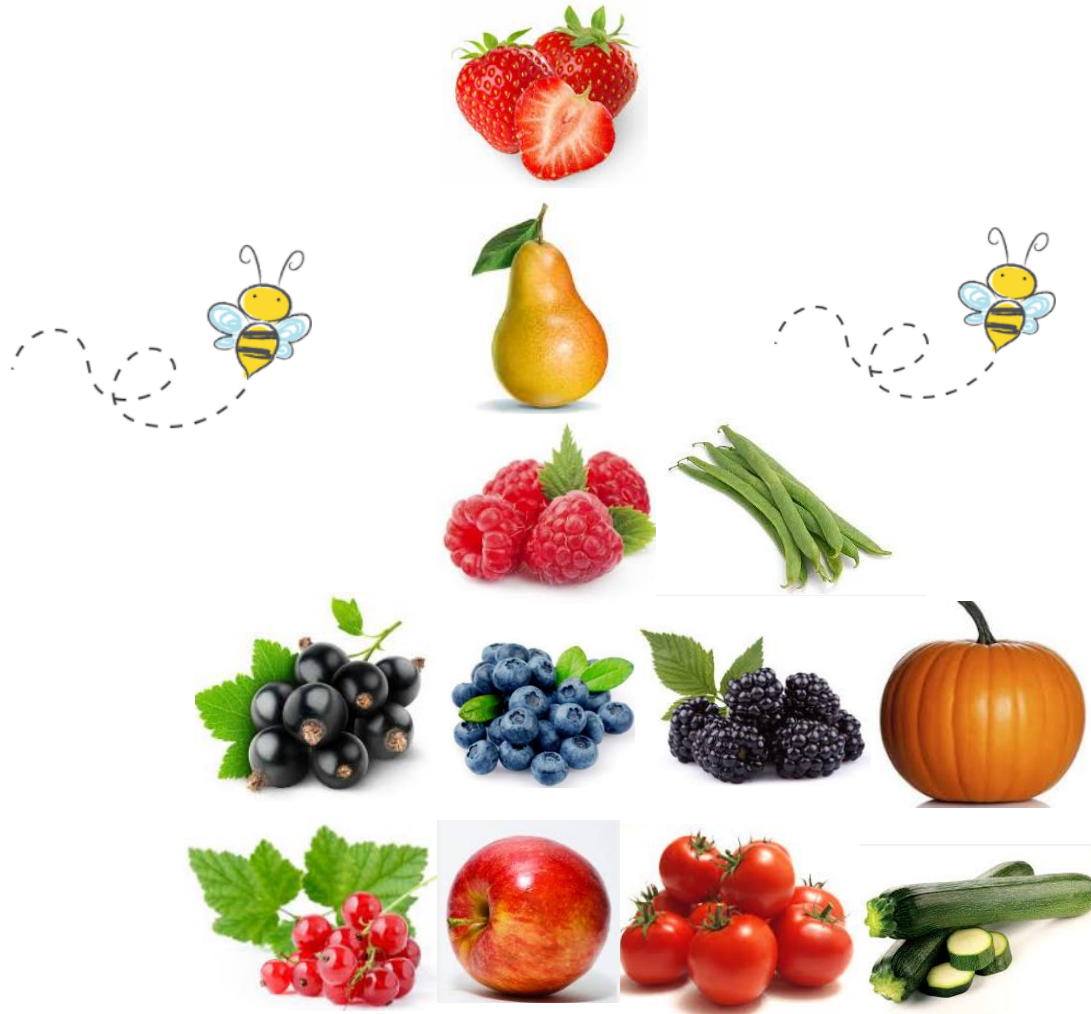
**Without bees they'll
all be off the menu**

manukahoneyusa.com

Wildlife & Landscape

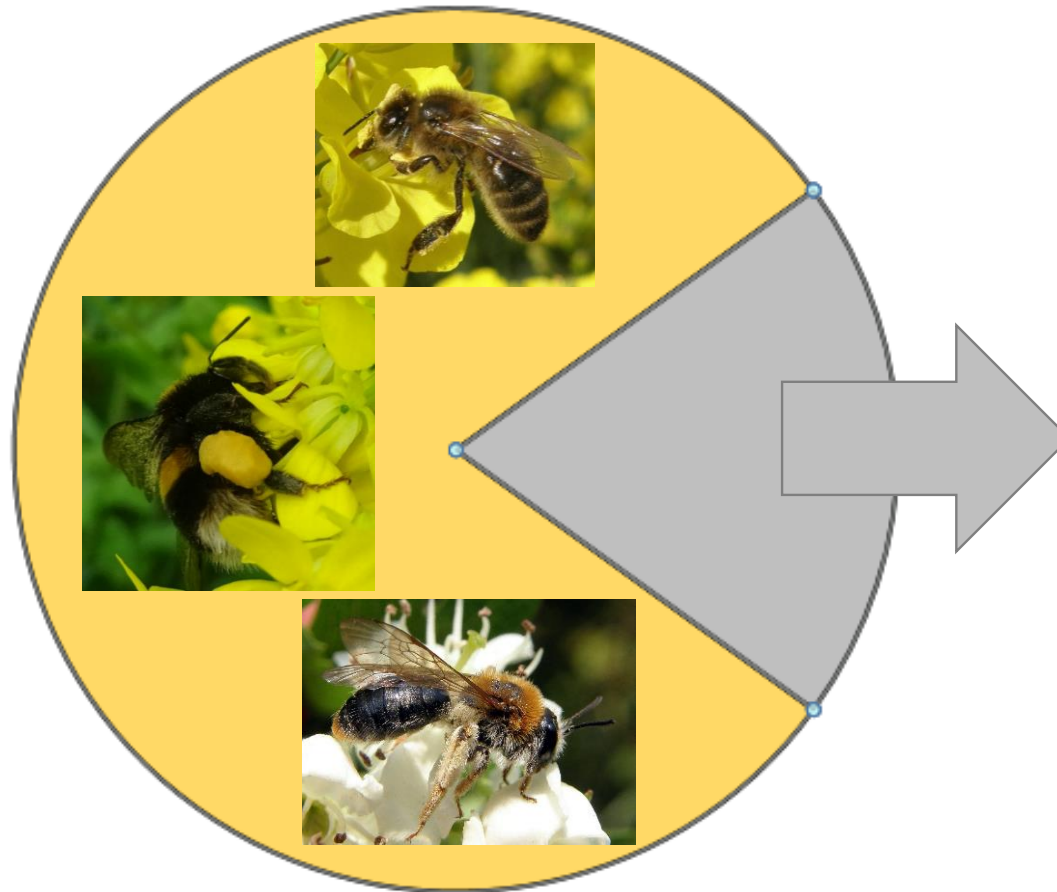


We need pollinators if we want to grow our own fruit and vegetables

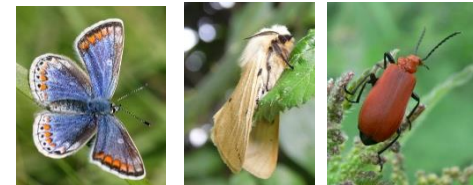


Jan Feb March April May June July Aug Sept Oct Nov Dec

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

The plight of pollinators is typical of many components of our biodiversity

Ireland has **100** bee species

Honeybee



Bumblebees



Solitary bees

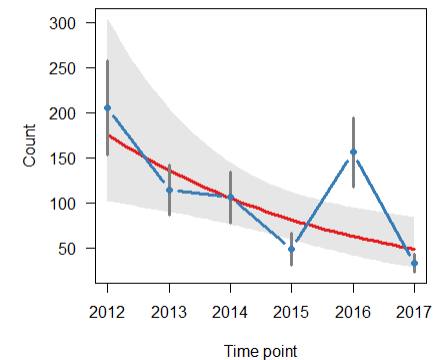


WILD POLLINATORS



One third of our 99 wild bee species are threatened with extinction from Ireland

Bumblebee Monitoring Scheme

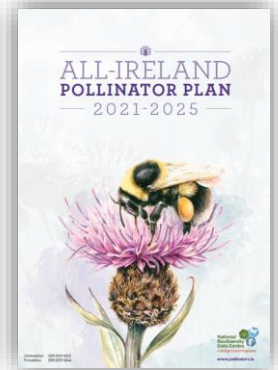
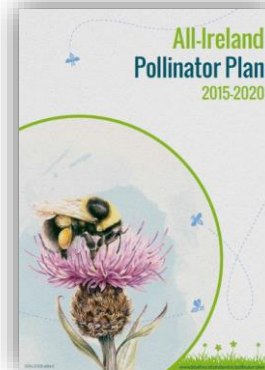


Abundance of common bumblebees has declined since 2012

Rare species are disappearing through loss of semi-natural habitats & common species are declining in abundance as a consequence of how we manage the rest of the landscape

If there is a problem what do you do?

1. Decide if it's important
2. Critically assess the problem and how serious it is
3. Identify the causes
4. Collectively agree a positive framework to address the problem
5. Identify **evidence-based actions** to help
6. Communicate these properly
7. Develop a partnership driven approach where possible
8. Track progress – is it working?



Be very clear on what you are asking people to do

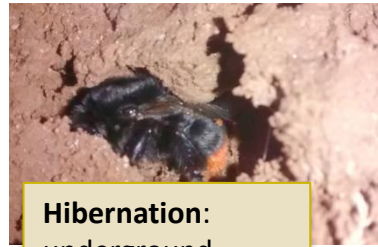


© Steven Falk

If you want to help implement the All-Ireland Pollinator Plan it is important to think about how your site can provide **food, shelter & safety**

✓ In doing this you help protect biodiversity generally

BUMBLEBEES - LIFECYCLE



Hibernation:
underground,
north facing banks

Food
source

Nest site

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



Nesting: long grass,
hedgerows

Hibernation
site

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

Food
source

New queens and males
leave the nest to find mates

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

Female workers emerge
and take over nest duties

Queen remains in
the nest laying eggs

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 thousands of flowers/day to get enough nectar to maintain the heat needed to brood her eggs



SPRING – SUMMER: nests are growing, workers are active

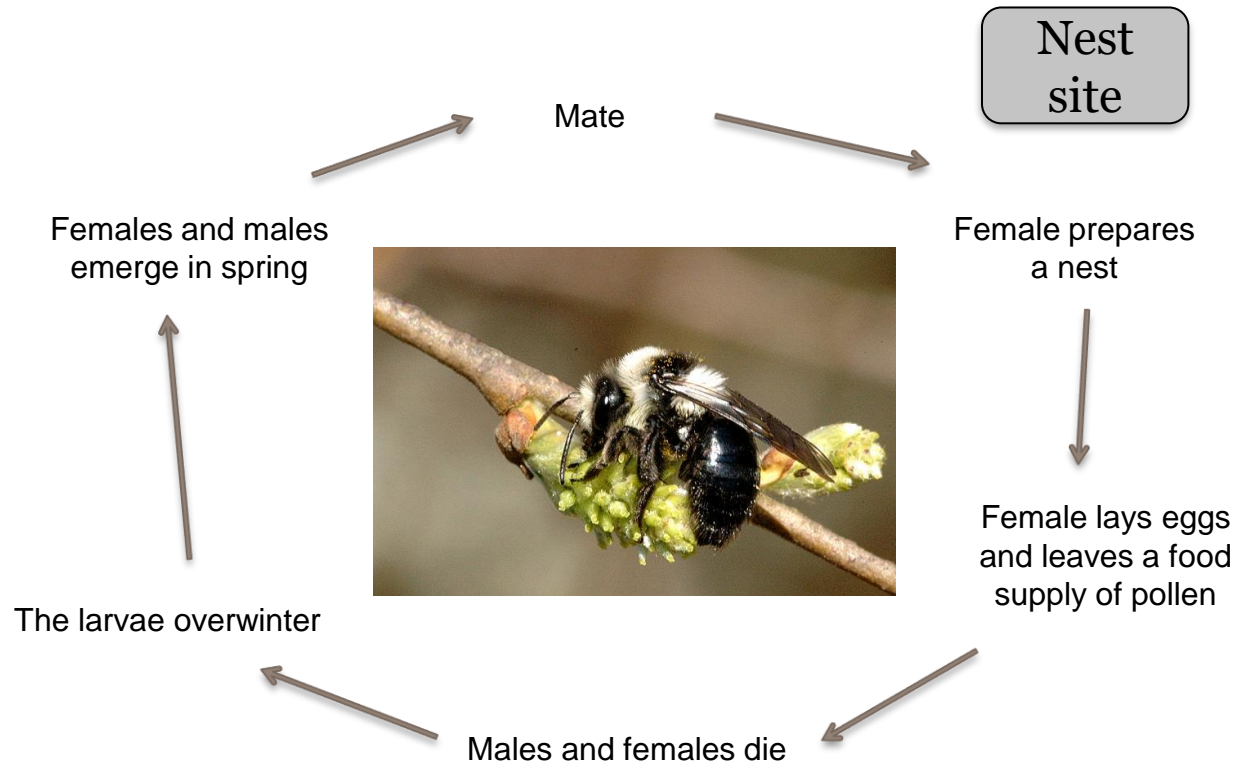


AUTUMN: queens are fattening up ready for hibernation

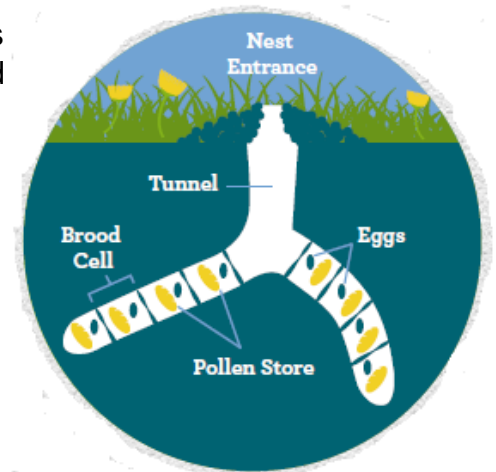
Bombus terrestris queens need to weigh at least 0.6 g to successfully hibernate and emerge next spring.



SOLITARY BEES - LIFECYCLE



Food source



WHERE DO SOLITARY BEES NEST?

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



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



Solutions should be evidence-based and carefully tailored to the target audience



- ✓ Actions are all evidence-based
- ✓ Relevant sectors feed into development
- ✓ Communication is tailored each time

- ✓ Pollinator friendly actions, each very clearly explained
- ✓ Lots of options
- ✓ All actions are pragmatic & low cost

www.pollinators.ie



Use existing networks/partnerships to encourage implementation and roll out

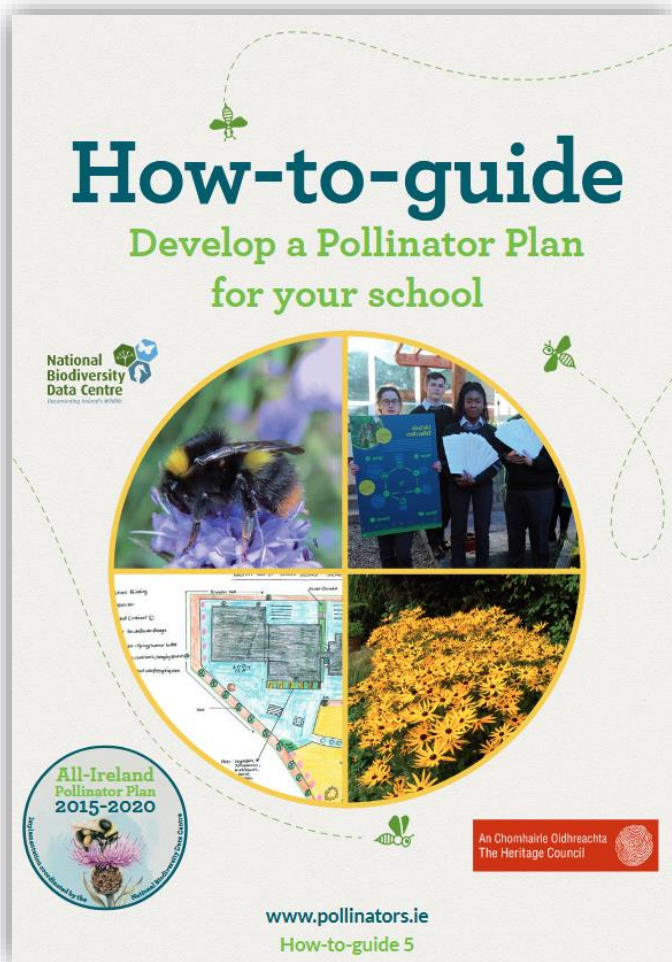
How Schools can help and what resources are available

<https://pollinators.ie/schools>



The Junior version of the All-Ireland Pollinator Plan is available in both Irish and English

1. MAKE YOUR SCHOOL POLLINATOR FRIENDLY



STEP-BY-STEP GUIDE TO DEVELOPING A POLLINATOR PLAN FOR YOUR SCHOOL

This guide is aimed at teachers, caretakers and pupils who want to make their school pollinator friendly. The creation of a School Pollinator Plan could contribute to your Eco-Schools/Green Flag application or, in the Republic of Ireland, form the basis of a Transition Year project.

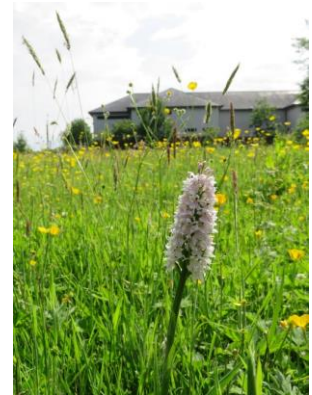
*Please NOTE: You do not have to adopt all the actions suggested here in order to develop a Pollinator Plan for your school, it is best to choose what will work for your particular school in the long term.

- 1 Form a 'Pollinator Team' to include some teachers, students and perhaps your school caretaker. This may be your Eco-schools/Green Flag Committee or a class interested in doing a nature project.
- 2 Visit our website, www.pollinators.ie, to learn more about bees and other insect pollinators.
- 3 Draw a map of your school grounds. You can use this to identify areas where you can take action to help pollinators.



<https://pollinators.ie/wordpress/wp-content/uploads/2018/05/How-to-guide-Schools-2018-WEB.pdf>

Identify areas that are **already** pollinator friendly



5

Don't Mow Let it Grow



Reduced mowing provides free superfoods for pollinators:



Don't Mow Let it Grow - not cutting grass so often is the best and cheapest way to provide more food for pollinators

Cut once a year – food and shelter



Cut regularly



Cut less frequently - food

If you want grassy areas to become more flower-rich on their own you have to **take the cuttings away** – this gradually lowers soil fertility and gives wildflowers in the soil a chance to grow

Plant native trees & hedgerows



Project: Some trees such as Willow can be planted at no cost by taking hardwood cuttings. In March-April observe Willows in your local area and note which are favoured by bees. Use these plants for hardwood cuttings next winter. To take a hardwood cutting, select vigorous, healthy stems of about pencil thickness, from the current season's growth. Trim to about 20-30cm long and plant in a pot with soil. They will root themselves and can be transplanted the following autumn.



Pollinator-friendly flower beds

7



Project: Many herbs (e.g. Rosemary, Oregano, Thyme) are excellent sources of food for pollinators. Think about making a school herb bed or herb garden that can be used by bees and also by pupils, staff and the school canteen.



Pollinator-friendly bulbs

Humans like Daffodils and Tulips because they provide colour, but pollinators don't because Daffodils and Tulips produce hardly any pollen or nectar!



Provide nest sites for wild bees

Bumblebees (20 species)



Long grass, base of hedgerow

Mining solitary bees (62 species)

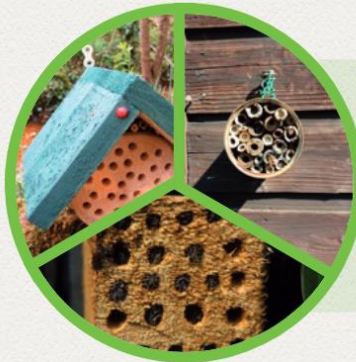


Bare ground, south/east facing banks

Cavity nesting solitary bees (15 species)



Hollow stems, holes in wood, bee nest boxes



Project: Make nest boxes for cavity-nesting solitary bees. This could be done in collaboration with your woodwork department. Small nest boxes are recommended over very large bug hotels. See our how-to-guide 'Creating wild pollinator nesting habitat'.

10

Reduce herbicide use



Project: Eliminate pesticide completely and have a weeding-by-hand day in the school in areas where weeds need to be removed.

Put up signs



<https://pollinators.ie/resources>

| 12

Raise awareness



Create a Biodiversity Walking Trail around the school

Create a Biodiversity Walking Trail

Many sports clubs have space around the perimeter of the site where people in the community come to walk or jog. These walking routes could be incorporated into a biodiversity trail along interesting existing habitats, such as hedgerow, as well as supplementing the trail with wildflower meadows; planting of native trees, a mini-woodland or orchard.

- Native trees can be planted along the route to create a 'Native Tree trail' and each tree could be identified using small signs.
- Create bee banks or erect bee hotels at points around the trail. Bird or bat boxes could also be placed on trees.
- Parts of the walking route can follow paths through meadows, created by reduced mowing.
- Foraging sites for blackberries (Bramble), elderberries (Elder trees) among others, could be marked on your biodiversity trail map.



✓ Links to health & wellbeing

<https://pollinators.ie/sports-clubs/>

If there is a problem what do you do?

1. Decide if it's important
2. Critically assess the problem and how serious it is
3. Identify the causes
4. Collectively agree a positive framework to address the problem
5. Identify **evidence-based actions** to help
6. Communicate these properly
7. Develop a partnership driven approach where possible
8. Track progress – is it working?

Track resources going into the landscape - publicly available online mapping system

'Actions for Pollinators'

Provides recognition and also facilitates local coordination

pollinators.biodiversityireland.ie



Schools



--- Attribute name ---



SHOW ALL

--- Site type ---

Businesses

Central Government

Councils-Actions

Councils-Policy changes

Environmental NGOs

Faith Communities

Gardens

Golf Courses

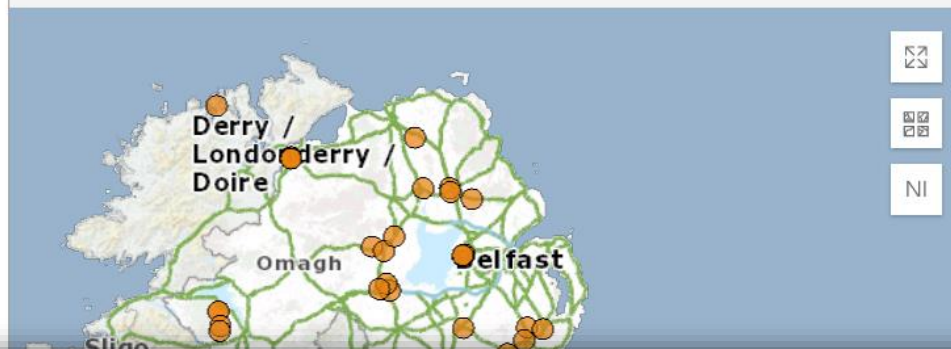
Group Water Scheme Sites

Headquarters/Campuses

Local Communities (including Tidy Towns)

OPW

Schools



NI

Site Details



Site Name

Geashill Tidy Towns - National School

Date

21/08/2017

Type

Schools

Area

3107 m2

C. Pollinator friendly planting

SPRING-flowering pollinator friendly plants/trees/shrubs - Hellebore

SUMMER-flowering pollinator friendly plants/trees/shrubs - Lavender, chives

AUTUMN-flowering pollinator friendly plants/trees/shrubs - Sedum, Sunflower



CLOSE

2. SPREAD THE WORD TO OTHERS

<https://pollinators.ie/schools>

Presentations for use when teaching about pollination:

Junior Pollinator Plan presentation 

How to create a Pollinator Plan for your school Presentation 

Presentation for students to present themselves 

Quiz to introduce Pollinator Plan 

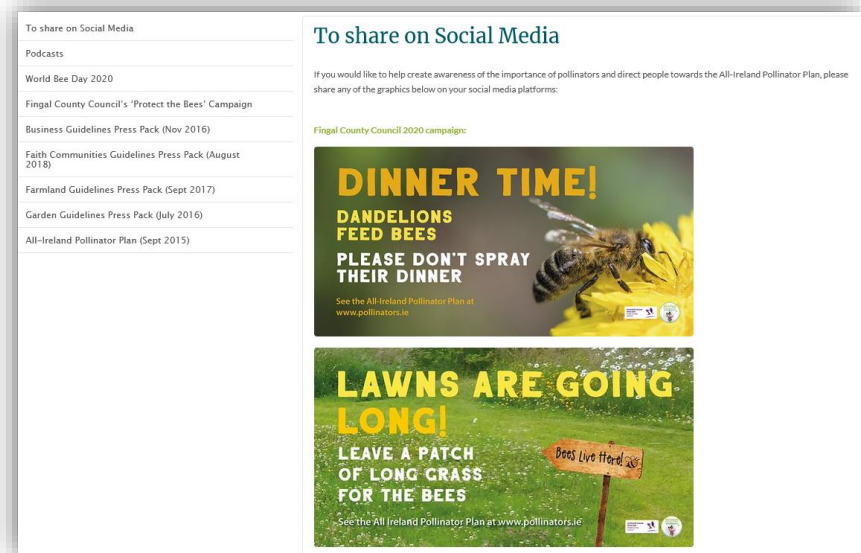
Lesson Plans:

LIST OF LESSON PLANS 

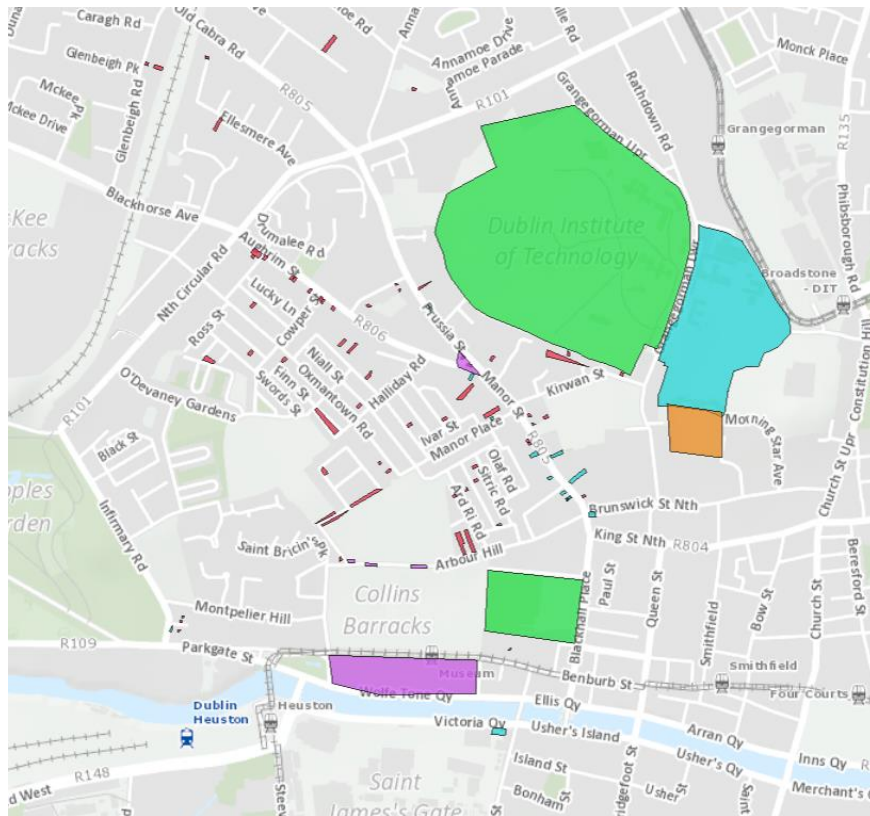
Lesson Plan 1 What is pollination 

Lesson Plan 2 Why is pollination important 

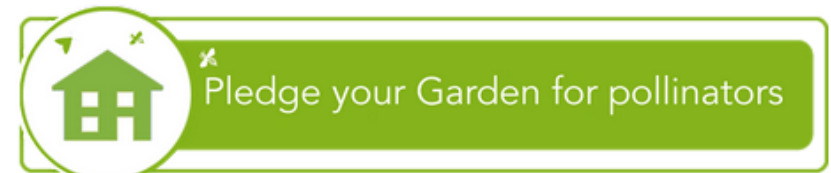
Lesson Plan 3 Who are the pollinators in Ireland 



<https://pollinators.ie/media/to-share-on-social-media>



At home, make your own garden
pollinator friendly



Encourage others in the local community
around your school to also become
pollinator friendly

Pledge your Garden for Pollinators

Our pollinating insects are in decline, with one-third of our 98 wild bee species at risk of extinction. The All-Ireland Pollinator Plan aims to reverse these declines and make the island a place where pollinators can survive and thrive. By taking simple steps in your garden, you will help provide much-needed food and shelter for our pollinating insects, while creating a beautiful, colourful garden.

See pollinators.ie/gardens for lots of advice, ideas, pollinator friendly plant lists and to download our booklet *Gardens: Actions to Help Pollinators*.

Put your garden on the Map! The Pollinator Plan's online mapping system shows locations for pollinators across the island. Please add your pollinator friendly garden to our map at: pollinators.ie/observatory/observatory

Here is just a small sample of common pollinators you may see in your garden. If you reduce grass cutting and provide pollinator friendly plants. And remember, if you help pollinators, you are also helping all our biodiversity.

The Black start bumblebee is one of the most common bumblebees in Ireland. It is very common in gardens.

The early bumblebee is a common bumblebee in Ireland. It is very common in gardens.

The Common bumblebee is a common bumblebee in Ireland. It is very common in gardens.

The Grey mining bee is a common bee in Ireland. It is very common in gardens.

The Garden Tiger moth is a common moth in Ireland. It is very common in gardens.

The Garden Tiger moth is a common moth in Ireland. It is very common in gardens.

The Garden Tiger moth is a common moth in Ireland. It is very common in gardens.

Here are just some ideas for ways you can help pollinators each month:

Month	Idea
January	Make a pollinator plan for your garden. Pollinators are becoming more scarce and need our help. Plan your garden for pollinators. See www.pollinators.ie for more information.
February	Create wildlife bee nesting sites. Express a small nest for longhorn bees. See www.pollinators.ie for more information.
March	Let Dandelions Be! Dandelions are a great food for pollinators. They are also a great source of nectar. See www.pollinators.ie for more information.
April	Run for Pollinators! Plant a pollinator friendly plant. See www.pollinators.ie for more information.
May	No Mow May! Could you leave your lawn longer in the garden during May? This will allow them to flower. See www.pollinators.ie for more information.
June	Ask your garden centre for pollinator friendly plants. See www.pollinators.ie for more information.
July	Hang a ladybird on a wall. Ladybirds are a great source of nectar. See www.pollinators.ie for more information.
August	Collect wildflower seeds. See www.pollinators.ie for more information.
September	Plant a shrub, tree or native hedgerow. See www.pollinators.ie for more information.
October	Plant a shrub, tree or native hedgerow. See www.pollinators.ie for more information.
November	Plant a shrub, tree or native hedgerow. See www.pollinators.ie for more information.
December	Plant a shrub, tree or native hedgerow. See www.pollinators.ie for more information.

<https://pollinators.ie/gardens>

3. LEARN MORE ABOUT WILD BEES

Learn about our wild Bumblebees and Solitary bees

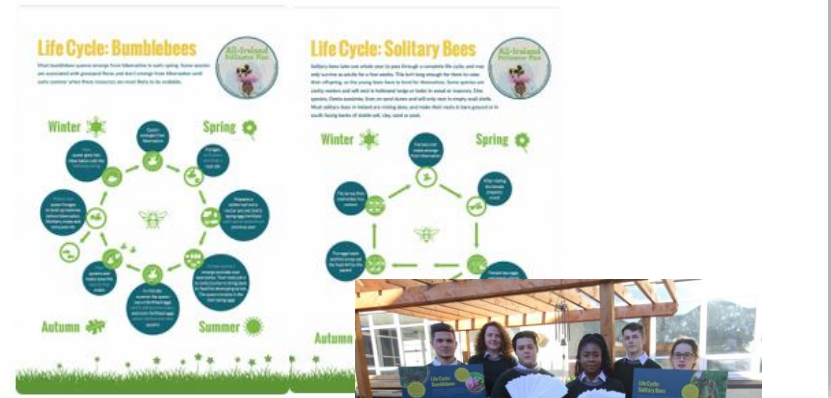


<https://pollinators.ie/videos>



<https://www.biodiversityireland.ie/shop>

Posters



<https://pollinators.ie/resources>

<https://pollinators.ie/record-pollinators>

Bees

+

Hoverflies

+

Bumblebee Monitoring Scheme

Flower-Insect Timed Count (FIT Count)

FIT Count Progress

Solitary bees for beginners

Help find the Tawny Mining bee

Track expansion in two bumblebees

Rare Bumblebee Watch

Watch for new arrivals

Wild Honey Bee Study

ID guides

Record Pollinators

Click on the photo links below to access full species accounts for each of the 99 species of bee and 180 species of hoverfly that occur in Ireland

Bee Species Accounts



Hoverfly Species Accounts



The National Biodiversity Data Centre aims to help drive pollinator conservation through better data. It is entirely reliant on the generosity of volunteer recorders who get involved and submit data on Ireland's bees and hoverflies. This is particularly important as we move forward with the implementation of the All-Ireland Pollinator Plan.


The Pollinator Plan will only be a success if we see increases in the distribution and abundance of our

Free Interactive course - there are activities and quizzes to test your progress and get feedback on answers.

<https://www.biodiversityireland.ie/identifying-irish-bumblebees/lesson.html>

Menu


- 1. Course Welcome and Introduction
 - 1.1. How to Identify and Record Common Irish Bumblebees
 - 1.2. Welcome
 - 1.3. Course structure
 - 1.4. Course structure ...continued
 - 1.5. Navigating the course
- 2. Bumblebee Biology
- 3. Identifying Common Bumblebees
- 4. Recording and Monitoring
- 5. Background to the Bumblebee Monitoring Scheme
- 6. References and Acknowledgements

Search... 


How To Identify and Record Common Irish Bumblebees

What's That Buzz?


How to Identify and Record Common Irish Bumblebees




Common carder bee




Buff-tailed bumblebee



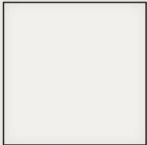
Red-tailed bumblebee




White-tailed bumblebee




Early bumblebee




Garden bumblebee



Comhairle Cathrach & Contae Luimnigh
Limerick City & County Council




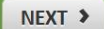
Qualitäts-Winner 2020 - Luimneach/Limerick
EUROPEAN GREEN LEAF
Award of Excellence



National Biodiversity Data Centre
Documenting Ireland's Wildlife

Click NEXT to continue

©Elizabeth Gabbett 2020

4. USE OUR DATA



<https://maps.biodiversityireland.ie>

Biodiversity Maps
Mapping Ireland's Wildlife

Biodiversity Maps is a national portal that compiles biodiversity data from multiple sources and makes it freely available on-line.

Number of records	Number of species	Number of datasets	Last updated
4,389,813	16,750	159	31/03/2021

Protected Species

Records: 799,171
Species: 292

Threatened Species

Records: 742,440
Species: 1,332

Invasive Species

Records: 69,499
Species: 174

Higher plants

Records: 1,562,648
Species: 2,794

Mammals

Records: 254,995
Species: 89

Birds

Records: 1,217,219

Fishes

Records: 50,944

Invertebrates - marine and estuarine

Records: 105,087

Species Search

Recently updated datasets	Records added
Stoneflies (Plecoptera) of Ireland	182
Ladybirds of Ireland	37
Bees of Ireland	415
Explore Your Shore	2,546
General Biodiversity Records from Ireland	454
River Biologists' Database (EPA)	347
Mammals of Ireland 2016-2025	2,822
Dragonfly Ireland 2019 to 2024	4,036
Discrete vascular plant surveys	6,653
Carrión Beetles of Ireland	949

- ✓ See maps of species
- ✓ Download datasets for use
- ✓ See what occurs around the school

Watch this animation on how to use **Biodiversity Maps** to discover what occurs near you:

<https://www.youtube.com/watch?v=zIMOzqivreo&t=17s>



When you spot something – submit a new record!

<https://records.biodiversityireland.ie>



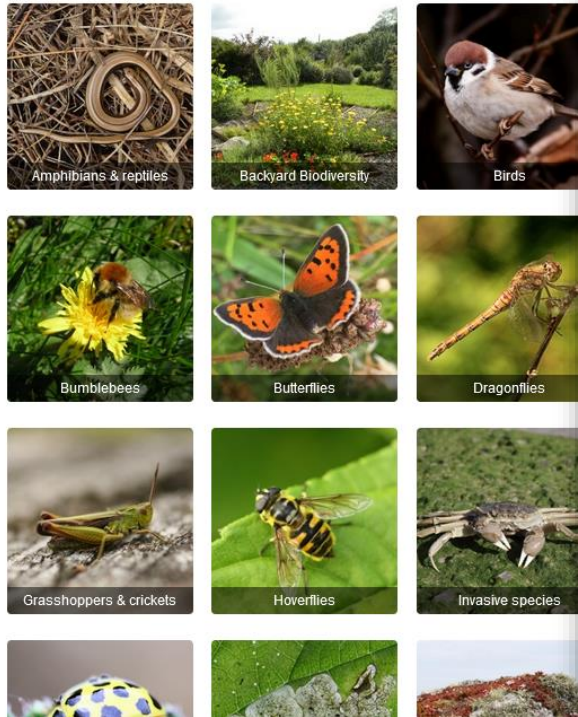
National Biodiversity Data Centre
A Heritage Council Programme

About us Contact us Mailing list Facebook Twitter

Android App iPhone App Latest news

Home Start Recording Recorder League County League Species Stats View My Records Compare Years

Start recording Recent records

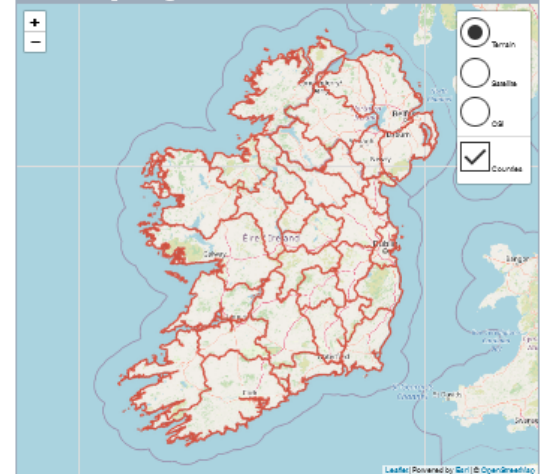


Birds

Sample details

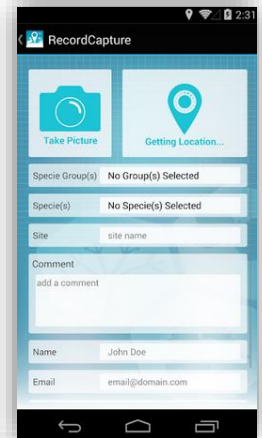
Recorder name	Recorder email
<input type="text" value="The name of the recorder"/>	<input type="text" value="someone@somewhere.com"/>
Record date	County
<input type="text" value="2021-04-12"/>	<input type="text" value="Select county"/>
Location name	Spatial reference
<input type="text" value="Townland or nearest village"/>	<input type="text" value="5123456 or 51.12345, 9.12345"/>
<small>Click on map to generate spatial reference</small>	
Additional information	
<input type="text" value="Additional information"/>	

Click map for grid reference



Observation details

Species	Activity	Abundance
<input type="text" value="Species name"/>	<input type="text" value="Activity"/>	<input type="text" value="Abundance"/>
<input type="button" value="Reset Species"/>		



4. TAKE PART IN MONITORING



Flower–Insect Timed Count (FIT Count)

Watch a 50x50cm patch of flowers for 10 minutes and record how many insects visit.



<https://biodiversityireland.ie/surveys/flower-insect-timed-count-fit-count/>



Lots of small actions, taken together, can begin to solve big problems

We are very grateful for the support of schools and we hope that we can work together with many more of you in the coming years

**National
Biodiversity
Data Centre**



A Heritage Council Programme

www.pollinators.ie

Dr Úna FitzPatrick

pollinators@biodiversityireland.ie

THANK YOU



A Heritage Council Programme



National Parks &
Wildlife Service



An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine



An initiative by
BORD BIA
IRISH FOOD BOARD