

# All-Ireland Pollinator Plan



Dr Úna FitzPatrick  
Steering Group Chair; Project co-ordinator  
National Biodiversity Data Centre

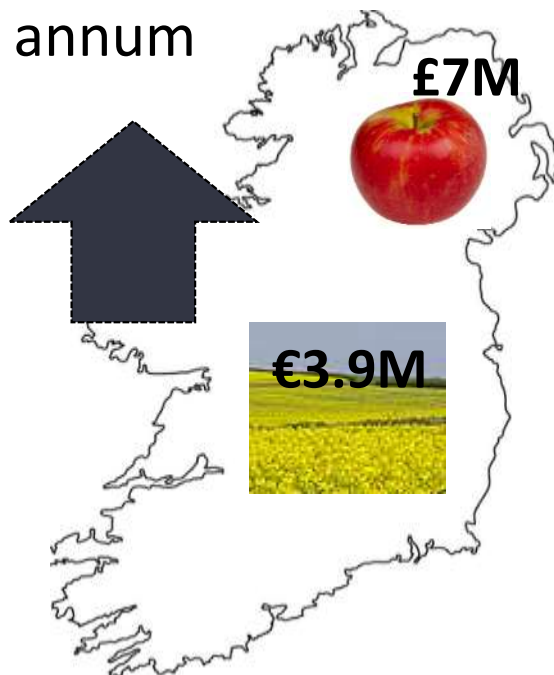
[ufitzpatrick@biodiversityireland.ie](mailto:ufitzpatrick@biodiversityireland.ie)

# WHY IS POLLINATION IMPORTANT?

## Economy & Wealth



€53million/  
annum



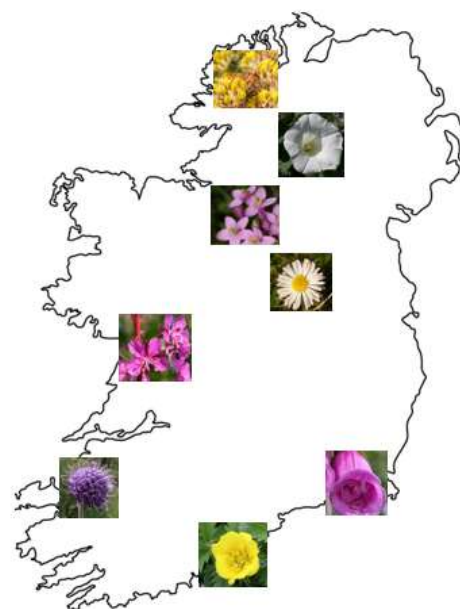
## Health & Wellbeing



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

[manukahoneyusa.com](http://manukahoneyusa.com)

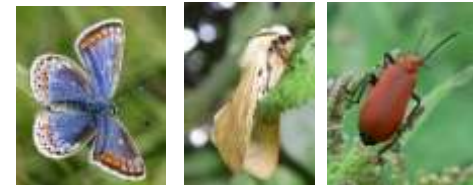
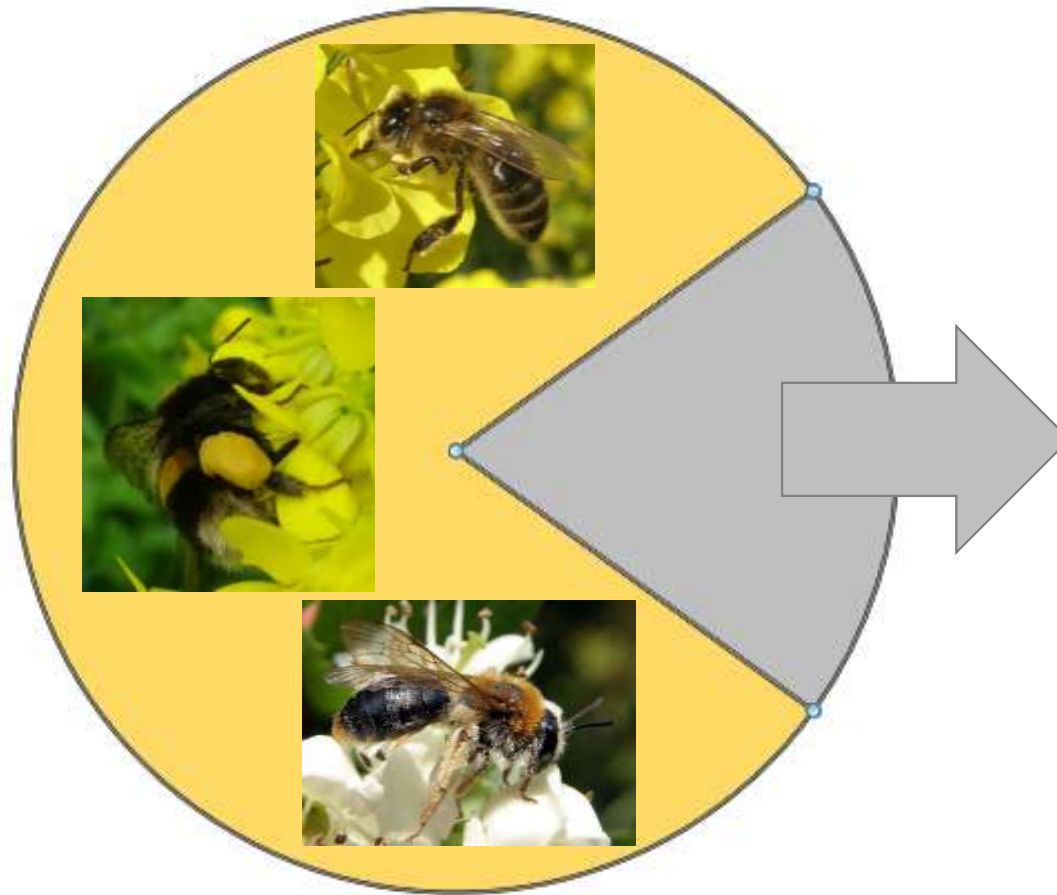
## Wildlife & Landscape







# WHO ARE THE POLLINATORS IN IRELAND?



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

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

# BEES IN IRELAND

Ireland has **98** bee species:

Honeybee



Bumblebees



Solitary bees



**WILD POLLINATORS**



# POLLINATION SERVICE CANNOT BE PROVIDED BY HONEYBEES ALONE

**UK** - if all honeybee hives were used for crop pollination, they could only provide about **one third** of the service required by crops. The rest is provided free of charge by wild pollinators.

The economic contribution of pollination by wild bees was recently assessed as £1,800 or €2,400 per hectare.

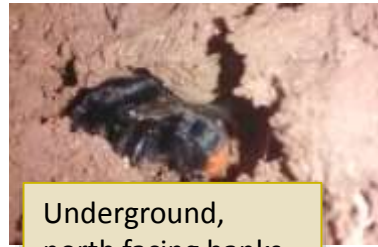
**To maintain pollination you need healthy honeybees in combination with a diversity and abundance of wild pollinators**



# BUMBLEBEES – 20 DIFFERENT TYPES IN IRELAND



# BUMBLEBEES - LIFECYCLE



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



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 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

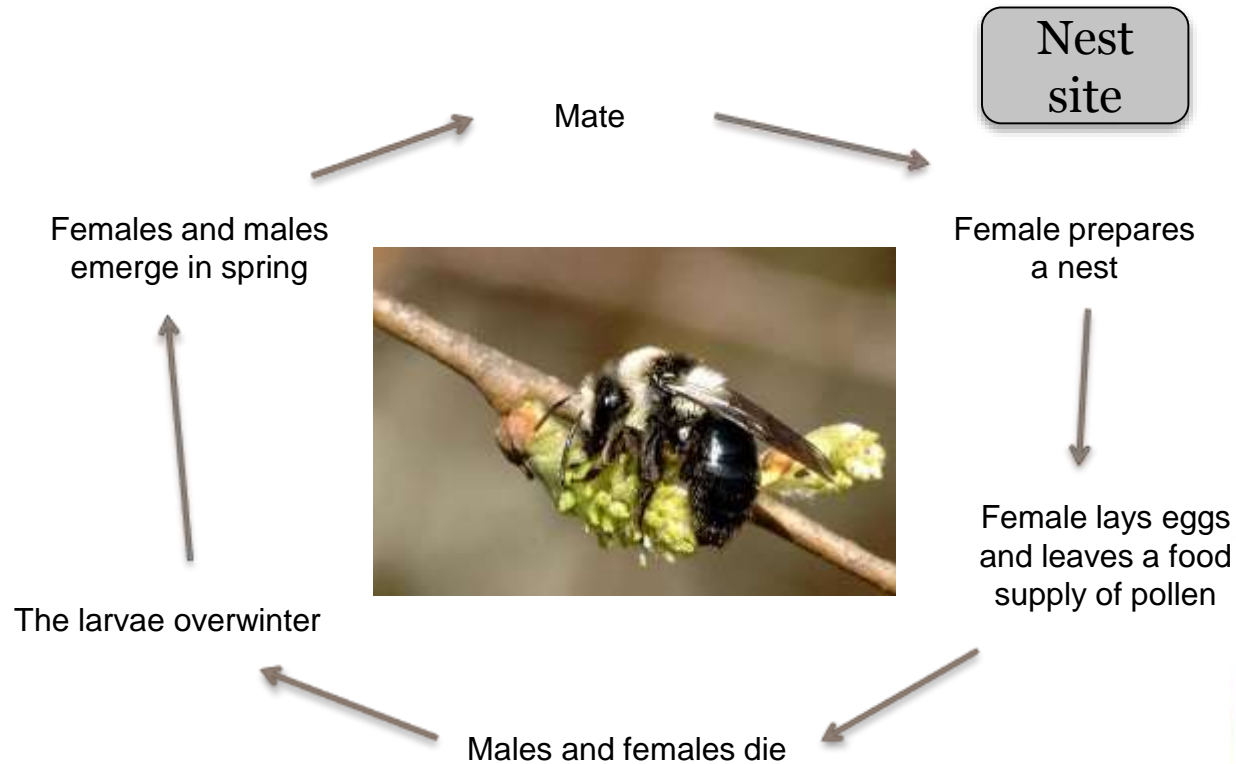
*Bombus terrestris* queens need to weigh at least 0.6 g to successfully hibernate and emerge next spring.



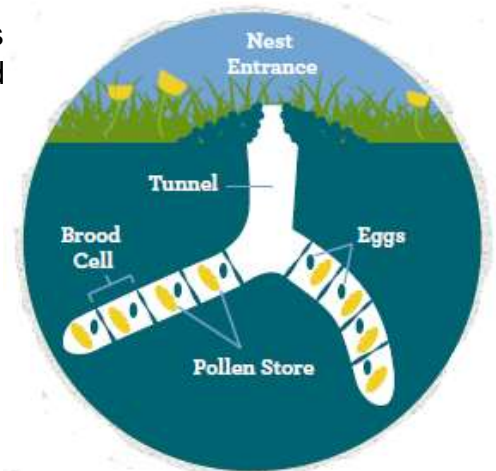
# SOLITARY BEES – 77 DIFFERENT TYPES IN IRELAND



# SOLITARY BEES - LIFECYCLE



Food  
source





## WHERE DO SOLITARY BEES NEST?

62 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



To ensure pollination of Irish crops and wild plants we need:

***Healthy honeybee colonies in combination with high abundance and species richness in wild bee populations, as well as other wild pollinators***

# ARE POLLINATORS DECLINING IN IRELAND?



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 bee species are threatened with extinction from Ireland**

**6** species are critically endangered,  
**10** endangered  
**14** vulnerable





# WHY ARE POLLINATORS DECLINING?

Bees are declining because we've drastically reduced the areas where they can nest and the amount of food our landscape provides for them.

We've also inadvertently introduced pests and diseases that negatively impact their health, and we subject them to levels of pesticides that make it difficult for them to complete their life cycles.

HABITAT LOSS: **HOMELESSNESS**

GENERAL DECLINE IN WILDFLOWERS: **HUNGER**

PESTS AND DISEASE: **SICKNESS**

PESTICIDES: **POISONING**

CLIMATE CHANGE: **CHANGING ENVIRONMENT**



# WHAT CAN WE DO?

HABITAT LOSS: **HOMELESSNESS**

GENERAL DECLINE IN WILDFLOWERS: **HUNGER**

PESTS AND DISEASE: **SICKNESS**

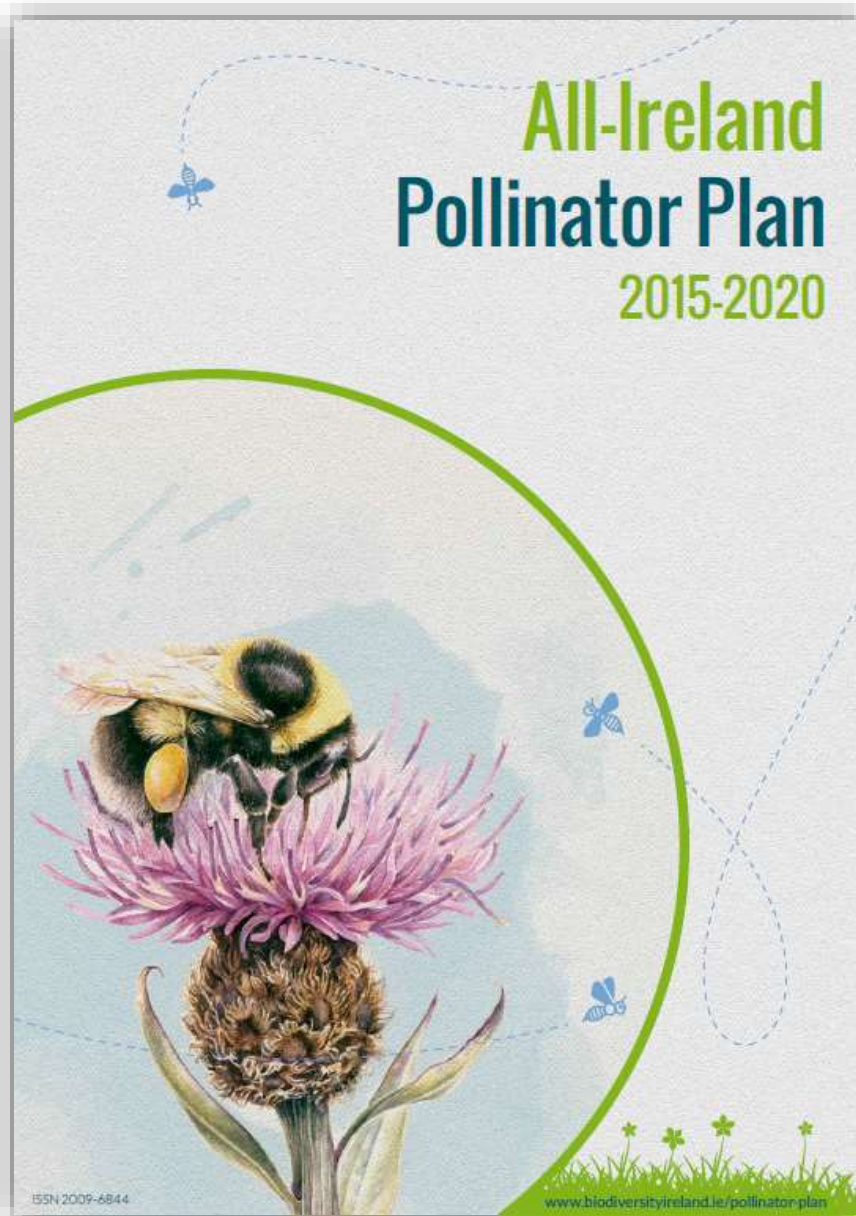
AGROCHEMICALS: **POISONING**

CLIMATE CHANGE: **CHANGING ENVIRONMENT**



John Fogarty

1. Accept that pollination is important
2. Recognise there is a problem
3. Start to build a framework for positive action



- Published on 17<sup>th</sup> September 2015
- Developed by a 15 member steering group
- Included a consultation phase which involved both public & stakeholder engagement
- **68** governmental and non-governmental organisations have agreed the shared Plan
- Identifies **81 actions** to make Ireland pollinator friendly

[www.biodiversityireland.ie/pollinator-plan](http://www.biodiversityireland.ie/pollinator-plan)



# The Plan is supported by **68** organisations



The number of supporting organisations is continuing to increase since publication of the Plan

# All-Ireland Pollinator Plan 2015-2020

*Creating an Ireland where pollinators can survive and thrive*

Raising awareness of  
pollinators and how to  
protect them

11

Managed pollinators –  
supporting beekeepers  
& growers

7

## MAKING IRELAND POLLINATOR FRIENDLY

*Provide food and shelter across all types of land  
so that our pollinators can survive and thrive*

Farmland  
Public land  
Private land

42

Expanding our knowledge  
on pollinators and  
pollination service

11

Collecting evidence to  
track change and measure  
success

6

+ 4 general actions

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** for pollinators

*Your site could be any piece of land you have responsibility for e.g., local area, a school, campus, farm, park, allotment, business property, roadside verge, OPW historic property, National Trust property, golf course, garden ...*



# Somewhere safe to live



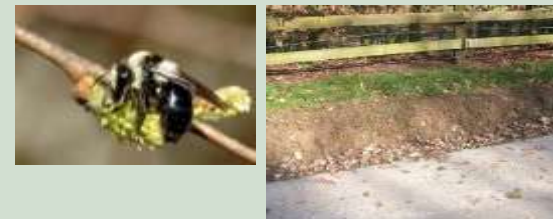
Minimise the use of pesticides

## Bumblebees (20 species)



Long grass, base of hedgerow

## Mining solitary bees (62 species)



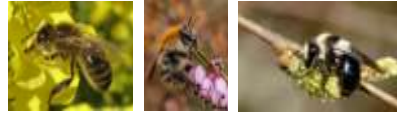
Bare ground, south/east facing banks

## Cavity nesting solitary bees (15 species)



Hollow stems, holes in wood, bee nest boxes

# Enough food to eat



- Food from spring through to autumn
- A range of plants – balanced diet

## Important food sources:



Willow  
(Feb-May)



Dandelion  
(Mar-Oct)



Clover  
(May-Sept)



Bramble  
(May-Sept)



Hawthorn (5-6)  
 Ivy (9-11)  
 Bird's foot trefoil (6-9)  
 Knapweed (6-9)  
 Scabious (7-8)  
 Senecio (6-9)  
 Thistle (7-9)  
 Vetch (5-9)  
 Achillea (7-9)  
 Bluebell (4-6)  
 Brassica (4-8)  
 Butterbur (3-5)  
 Charlock (4-7)  
 Coltsfoot (3-4)  
 Daucus carota (6-8)  
 Dead-nettle (2-11)  
 Fleabane (7-8)  
 Forget-me-not (4-9)  
 Foxglove (6-9)  
 Geranium sp (5-9)  
 Goldenrod (7-10)  
 Hawksbeard (6-9)  
 Heathers (8-9)  
 Hogweed (6-9)  
 Melilotus (6-9)  
 Mignonette (5-9)  
 Mustard (5-9)  
 Radish (6-7)  
 Rape (4-6)  
 Red bartsia (6-9)  
 Rosebay willowherb (7-9)  
 Stachys (7-9)  
 Turnip (5-8)  
 Veronica (3-9)  
 Vetchling (5-8)  
 Wild marjoram (7-9)

These plants are either good for all bees,  
 or particularly important for honeybees,  
 bumblebees or solitary bees



Horse chestnut (4-6)  
 Lime (6-7)  
 Sycamore (4-6)  
 Apple (4-5)  
 Plum (4-5)  
 Currant (4-5)  
 Cherry (4-5)  
 Raspberry (6-8)  
 Firethorn (5-6)  
 Berberis (4-5)  
 Borage (4-10)  
 Rosemary (4-6)  
 Thyme (5-8)  
 Lavender (6-8)  
 Sage (6-8)  
 Basil (7-9)  
 Oregano (6-8)  
 Aster (7-10)  
 Allium (6-8)  
 Comfrey (3-6)  
 Crocus (2-3)  
 Bellflower (6-9)  
 Calamint (5-9)  
 Catmint (5-9)  
 Coneflower (7-10)  
 Delphinium (6-7)  
 Gaillardia (6-9)  
 Globe thistle (7-8)  
 Heathers (8-9)  
 Phacelia (4-12)  
 Poppy (5-10)  
 Pulmonaria (3-5)  
 Rock rose (5-7)  
 Salvia (6-9)  
 Stonecrop (7-9)  
 Sunflower (8-10)  
 Verbena (7-10)  
 Viper's bugloss (6-7)

**NATIVE - BEST**

**PLANTED**



# Native plants



Hedgerows, grassy verges/banks

Meadows or areas of long grass

Edges of tracks that are not sprayed

Wilder corners that are not sprayed

Hawthorn (5-6)  
Ivy (9-11)  
Daucus carota (6-8)  
Goldenrod (7-10)  
Hogweed (6-9)  
Melilotus (6-9)  
Mignonette (5-9)  
Rosebay willowherb (7-9)  
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Rape (4-6)  
Turnip (5-8)  
Fleabane (7-8)  
Charlock (4-7)  
Red bartsia (6-9)

Good for all bees, or particularly important for honeybees, bumblebees or solitary bees

# Deliberate planting



## Trees/shrubs

Horse chestnut (4-6)  
Lime (6-7)  
Sycamore (4-6)  
Firethorn (5-6)  
Berberis (4-5)

## Fruit trees/bushes

Apple (4-5)  
Plum (4-5)  
Currant (4-5)  
Cherry (4-5)  
Raspberry (6-8)

## Herb bed

Borage (4-10)  
Rosemary (4-6)  
Thyme (5-8)  
Lavender (6-8)  
Sage (6-8)  
Basil (7-9)  
Oregano (6-8)

## Planted beds – perennial is best

Aster (7-10)  
Allium (6-8)  
Comfrey (3-6)  
Crocus (2-3)  
Bellflower (6-9)  
Calamint (5-9)  
Catmint (5-9)  
Coneflower (7-10)  
Delphinium (6-7)  
Gaillardia (6-9)  
Globe thistle (7-8)  
Heathers (8-9)  
Phacelia (4-12)  
Poppy (5-10)  
Pulmonaria (3-5)  
Rock rose (5-7)  
Salvia (6-9)  
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Viper's bugloss (6-7)

## EXAMPLES

“

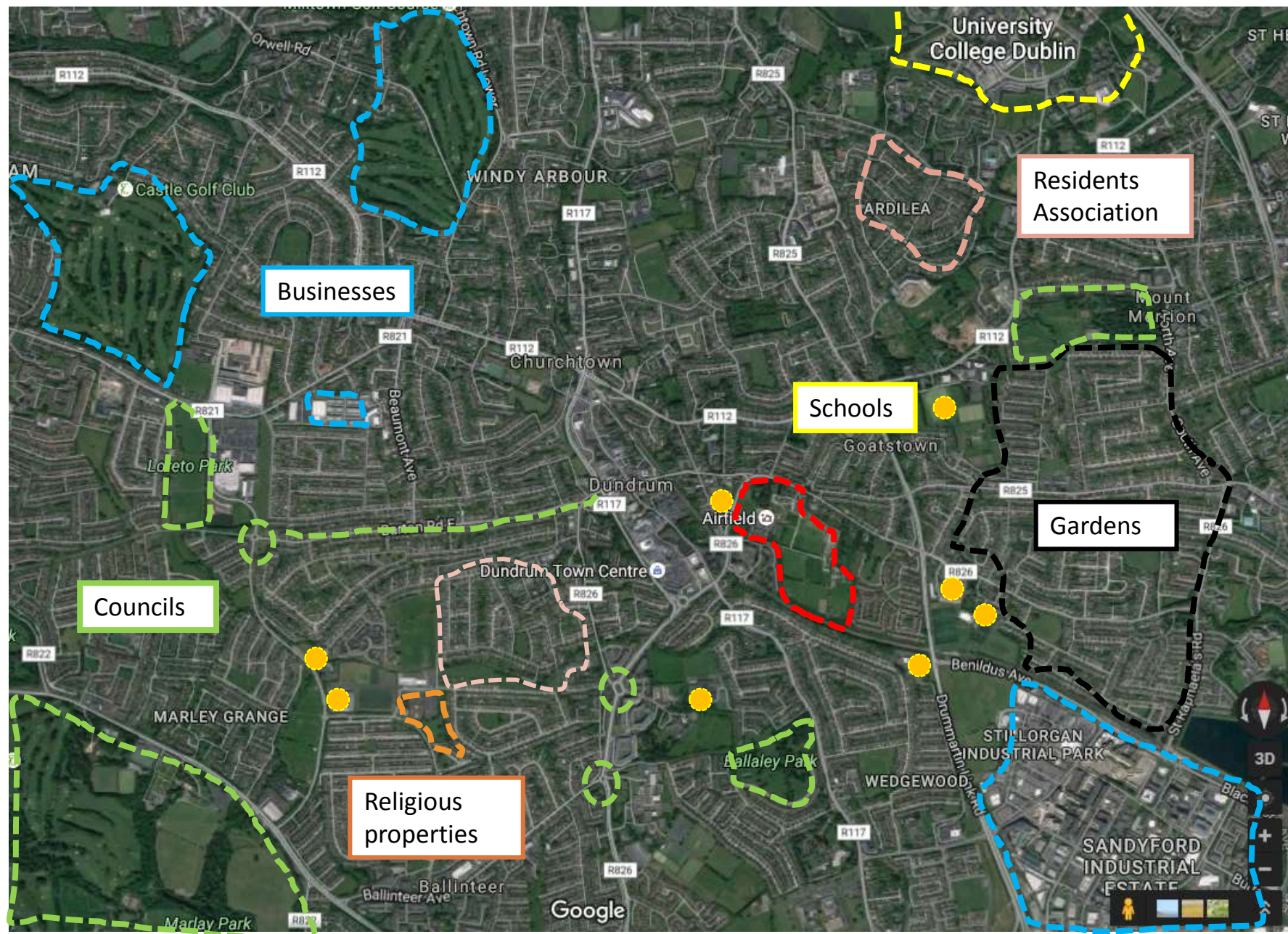
With over 175,000 acres to transition out of one use into a multitude of new uses, Bord na Móna will be managing the biggest land transformation in modern Irish history. Bord na Móna is moving towards a sustainable future using Ireland's range of natural resources like solar, biomass, and wind power.

Dr. Catherine Farrell, Senior Ecologist with Bord na Móna.

“







Example – we are developing a publicly available mapping system that will track and recognise the actions being taken





FARMLAND

This is an aerial photograph of a rural area. A large, dark green field in the upper left is labeled 'FARMLAND'. To the right, a road labeled 'R414' runs vertically. Further right, a cluster of buildings and smaller green fields are labeled 'Gardens'. In the lower left, a dashed black circle encloses an area labeled 'Lullymore Heritage and Discovery Park'. The park area includes a parking lot, some buildings, and a small pond. The overall landscape is a mix of green fields, roads, and some built-up areas.

Gardens

Lullymore Heritage  
and Discovery Park

The Pollinator Plan is producing a series of guidelines with actions on how you can help provide **food, shelter and safety** for pollinators:



Launching  
Feb 2017

In preparation:

- ✓ **Farmers (2017)**
- ✓ **Transport Authorities (2017)**

- ✓ **Actions are all evidenced based**
- ✓ **Relevant sectors feed into the development**
- ✓ **Communication is tailored to each sector**





**Action 3:**  
**Create a short flowering '6-week meadow'**  
 Identify areas of grass that could be cut on a 6-weekly rotation to allow Clovers and Bird's-foot-trefoil to flower. This will provide food for pollinators where shortly mown grass does not. Such areas could be beside areas of shortly mown grass, a path or a meadow.



**Action 4:**  
**Let the Dandelions bloom!**  
 Identify areas that will be mown under existing regimes, but aim to carry out the first grass cut of the year in April after the first flush of Dandelions, but before they set seed. Dandelions are a vital food source for bees in spring.



### Pollinator friendly planting

Traditionally, a lot of deliberate planting in public spaces has been with annuals such as Begonia, Primula or Busy Lizzie. Unfortunately these are not good sources of pollen or nectar (as they have been bred to be very 'showy') and do not provide food for bees and other insects. There are many other plants that can look similarly attractive but will also support our pollinators.

Areas where these actions might apply in a local community are: community gardens, roundabouts, road verges, parks or squares, housing estates, areas surrounding sports pitches, schools, car parks, shopping centres etc.

**Action 5:**  
**Clover lawn**  
 Identify small areas where grass could be entirely replaced with a permanent clover mix. Red and white clovers will provide colour, and are a very important food source for bees.

**Action 6:**  
**Flowering trees and shrubs**  
 Incorporate a mix of pollinator friendly trees and shrubs into the local community that will flower throughout the season (list in appendix). An orchard can be a wonderful addition for pollinators and the community.



**Action 7:**  
**Perennial flowers for pollinators**  
 Incorporate pollinator friendly perennial plants into the local community to provide food for pollinators from spring through to autumn (list in appendix).



**Action 8:**  
**Annual flowers for pollinators**  
 Work with local authorities to ensure a component of annual planting in parks is with pollinator friendly annual plants - single rather than double flowered varieties (list in appendix).



**Action 9:**  
**Pollinator friendly urban planters**  
 Identify some urban planters or hanging baskets where the standard annual bedding mix could be replaced by perennial pollinator friendly plants (list in appendix).



**Action 10:**  
**Pollinator friendly roundabouts**  
 Work with local authorities to identify some roundabouts that could be planted in a pollinator friendly way e.g., bulbs (Crocus, Alliums) or pollinator friendly perennial plants in centre.

**Action 11:**  
**Plant a native wildflower meadow**  
 Identify areas where it may be possible to create a native wildflower meadow using commercially purchased seed. This would be more flower-rich than the meadow in Action 2 but it is also more costly and requires careful planning and management. Please be aware that **most sites will be unsuited to the immediate wildflower meadow** due to high mowing (and therefore).

#### Info Box:

All the flowers in the appendix are of the Island Waterways Association (IWA) and are registered at an arboretum. Many of the plants are also available from seed suppliers and cuttings and root divisions.



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

[www.biodiversityireland.ie/pollinator-plan](http://www.biodiversityireland.ie/pollinator-plan)

A separate **How-to-guide series** provides additional information on more complex actions – developed in partnership with relevant organisations



# TRACKING CHANGE & MEASURING SUCCESS

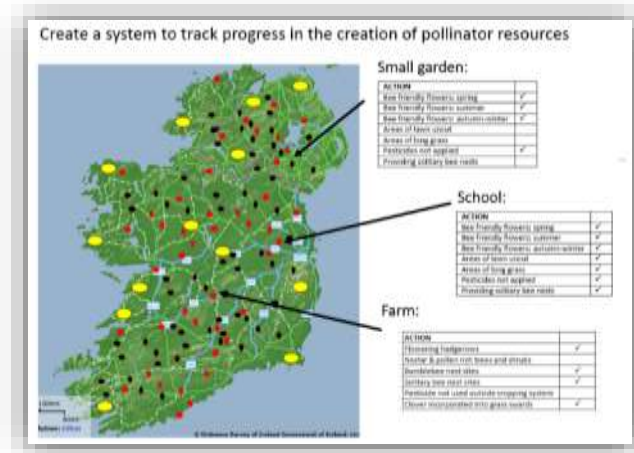
The publication of the All-Ireland Pollinator Plan isn't a box-ticking exercise  
– measuring success is a crucial part of the Plan

## 1. Track implementation of the 81 actions in the Plan



Those who have responsibility for actions have to report their progress once a year. These annual reviews will be publicly available.

## 2. Track creation of pollinator habitat/resources



Publicly available online mapping system


## 3. Track changes in pollinators within the landscape








[www.biodiversityireland.ie/pollinator-plan](http://www.biodiversityireland.ie/pollinator-plan)

All-Ireland Pollinator Plan 

Junior All-Ireland Pollinator Plan (English) 

Junior All-Ireland Pollinator Plan (Irish) 


+ Guideline documents


+ How-to-guides

+ Signage templates

+ Presentations for use

+ Tracking progress

All-Ireland Pollinator Plan – Year 1 review (2016) 

Year 1 review (2016) – summary infographic 

+ Other



## YEAR 1 REVIEW (2016)

An Chomhairle Oidhreachta  
The Heritage Council



Funding project officer position based  
in National Biodiversity Data Centre:

Dr Erin Jo Tiedeken (April 2016-)



An initiative by

**Bord Bia**  
Irish Food Board



Funding design of resources



*An Roinn  
Ealaíon, Oidhreachta agus Gaeltachta  
Department of  
Arts, Heritage and the Gaeltacht*

Funded print run of resources at  
end 2016

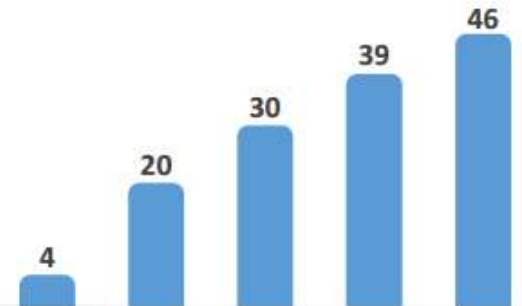
# YEAR 1 REVIEW (2016)

## Year 1 Pollinator Plan media engagement

### Major Pollinator Plan resources released



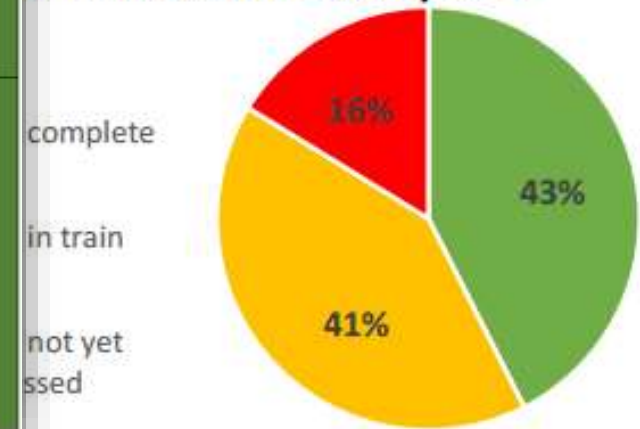
- ✓ Junior Pollinator Plan, English and Irish Language version



Press releases, etc.  
Radio interviews  
Newspaper articles  
Presentations

ACTION	PROGRESS MEASURE	RESPONSIBILITY	PROGRESS BY NOVEMBER 2016
A17. Adoption of pollinator friendly management within the Bord na Mona network of sites  *Note this is semi-state land	<ul style="list-style-type: none"> <li>Identification of potential pollinator friendly habitats on cutaway bogs</li> <li>Identification of corridors to link pollinator friendly areas</li> <li>Incorporate pollinator actions within the next BnM Biodiversity Action Plan</li> </ul>	Bord na Mona	<p>BnM baseline ecological survey continues to identify pollinator friendly habitats on cutaway bogs.</p> <p>Pollinator friendly actions (such as maintaining and enhancing species-rich pioneer grassland habitats) will be adapted into BnM cutaway bog rehabilitation plans.</p> <p>Pollinator friendly actions have been incorporated into BnM Biodiversity Action Plan 2016-2021.</p> <p>Awareness of All-Ireland Pollinator Plan promoted at various BnM Ecology events.</p>
A18. Adoption of pollinator friendly management within BirdWatch Ireland reserves where appropriate	<ul style="list-style-type: none"> <li>Undertake monitoring through the Bumblebee Monitoring Scheme at key reserves</li> <li>Maintain habitats for nesting bees</li> <li>Incorporate pollinators into reserve management plans (where appropriate and when reviewed)</li> <li>Support pollinator policy and advocacy work where appropriate through developing and strengthening integrated biodiversity policies and actions</li> </ul>	BirdWatch Ireland	<p>Pollinators are being included in new management plans.</p> <p>Monitoring, through the Bumblebee Monitoring Scheme, is being carried out at our East Coast Nature Reserve, Co Wicklow and at our Annagh &amp; Termoncarragh Meadows reserves, Co Mayo – although due to time constraints / weather conditions very few monthly transects were completed in Co Mayo.</p> <p>At our Termoncarragh Meadows reserve, Co Mayo earthen walls boundaries to individual meadows are maintained and sections of 'tussock' grass are left overwinter.</p>

### Progress of the Pollinator Plan's actions at the end of year 1



\*Some actions not yet progressed are funding dependent



## Site Details

Site Name	County Hall
Date	13/01/2017
Type	Councils-Actions
Recorder Name	Wexford Lennon
Area	0.01 km2
A. Protect existing pollinator habitats	
B. Reduce mowing	
C. Pollinator friendly planting	Native wildflower meadow (m2) - 1000
D. Create wild pollinator nesting habitat	
E. Reduce pesticide use	
F. Raising awareness of pollinators	Signage used - 3
G. Monitoring progress	
H. Other	

LAUNCHING SPRING 2017

Show All

Full screen

Switch to NI basemap

County Hall

Date: 13/01/2017  
Site Name: County Hall  
Type: Councils-Actions  
[View Detail](#)  
[Zoom to](#)

County Hall

Date: 13/01/2017  
Site Name: County Hall  
Type: Councils-Actions  
[View Detail](#)  
[Zoom to](#)

Full screen

WEXFORD

Ordnance Survey Ireland

## Tidy Towns Local Authority Pollinator Award

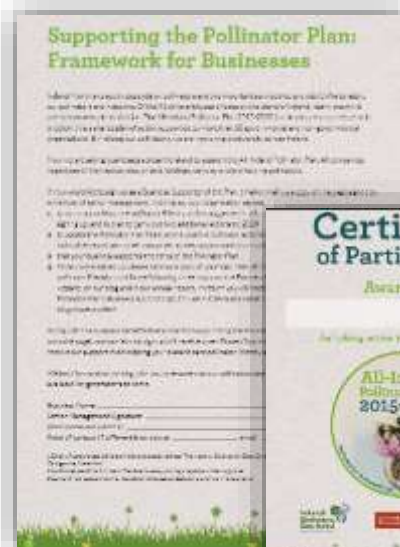


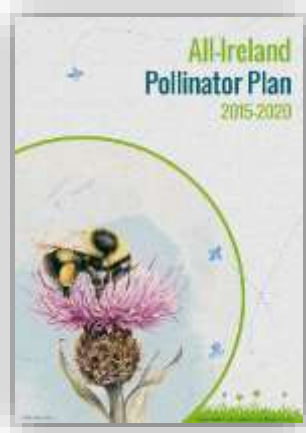
- ✓ Total number of applications received in first year: **59**
- ✓ At least one application was received from every ROI county
- ✓ Year 1 national winners:  
**Monaghan and Birr Tidy Towns**



An initiative by

**Bord Bia**  
Irish Food Board





# How can you help?

BORD NA MÓNA



**BUSINESS  
IN THE  
COMMUNITY  
IRELAND**

## MAKING IRELAND POLLINATOR FRIENDLY

*Provide food and shelter across all types of land so  
that our pollinators can survive and thrive*

**Farmland**

**Public land**

**Private land**

**Raising awareness of  
pollinators and how to  
protect them**

**Managed pollinators –  
supporting beekeepers**

**Expanding our  
knowledge on  
pollinators**

**Collecting evidence to  
track change and  
measure success**





# CALL TO ACTION

[www.biodiversityireland.ie/pollinator-plan](http://www.biodiversityireland.ie/pollinator-plan)



## Thank You

[ufitzpatrick@biodiversityireland.ie](mailto:ufitzpatrick@biodiversityireland.ie)