All-Ireland Pollinator Plan
How Schools can help

www.pollinators.ie





National Biodiversity Data Centre
A Heritage Council Programme

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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

Economy & Wealth

Health & Wellbeing

Wildlife & Landscape

WHY IS POLLINATION IMPORTANT?

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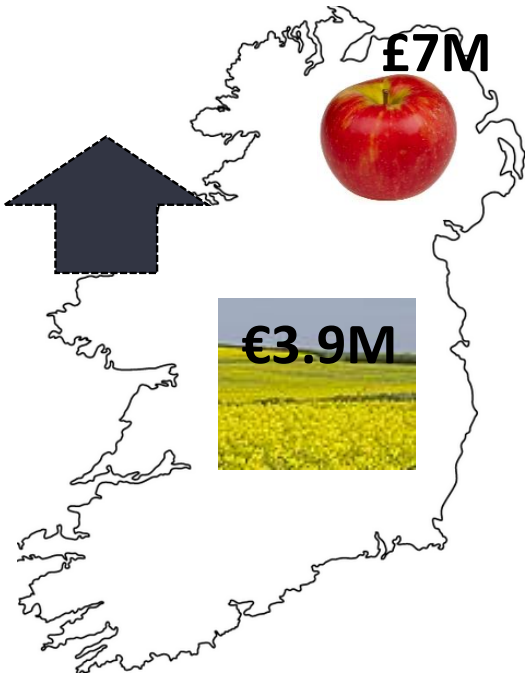
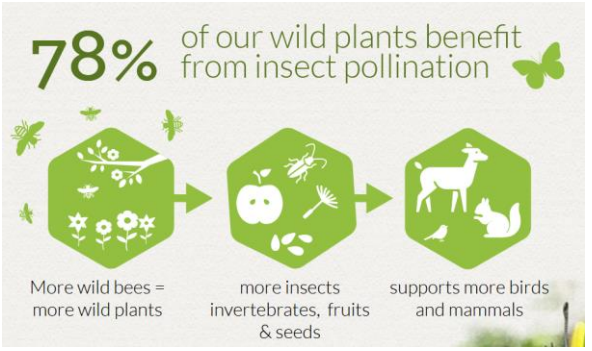
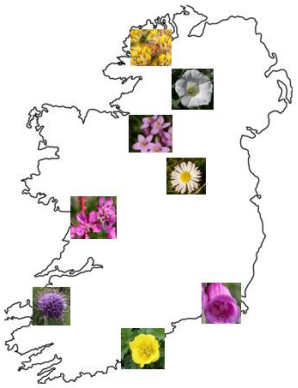
Economy & Wealth

Health & Wellbeing

Wildlife & Landscape

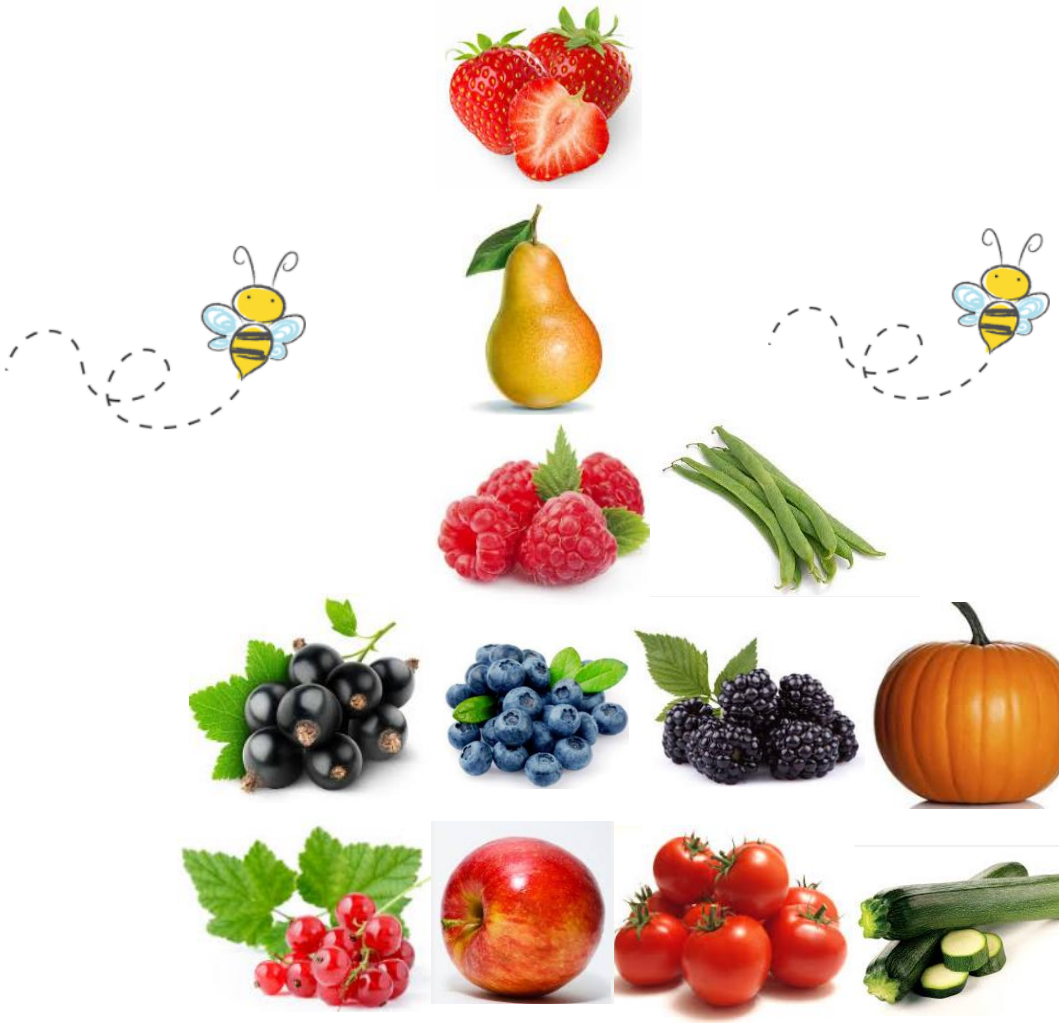






The free service provided by bees is worth up to **€59**million/annum

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?

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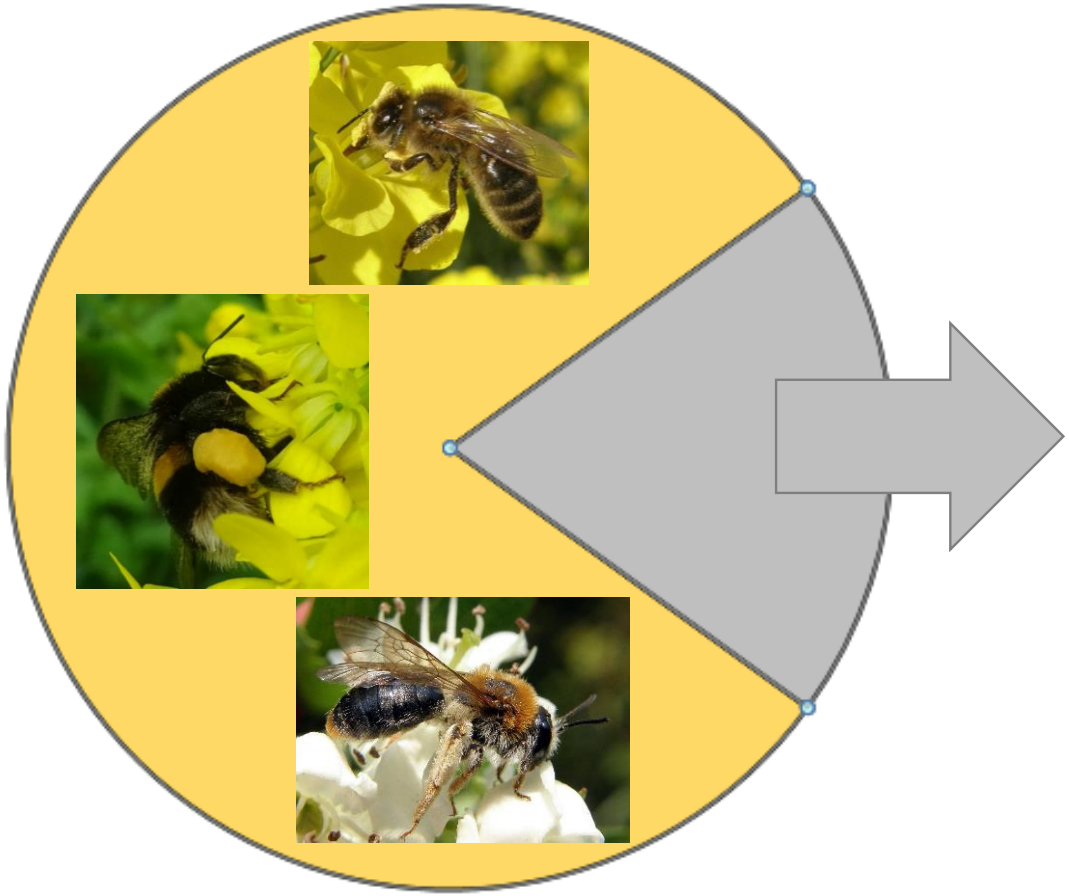


Most pollination of crops and wild plants is carried out by bees

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

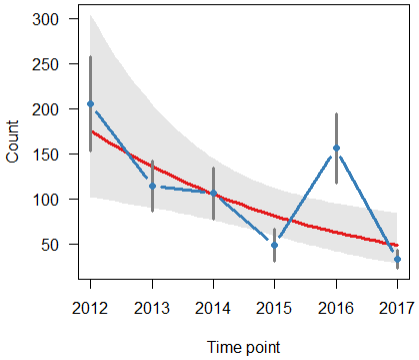
Bumblebees

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?

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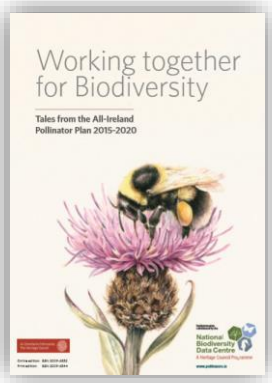
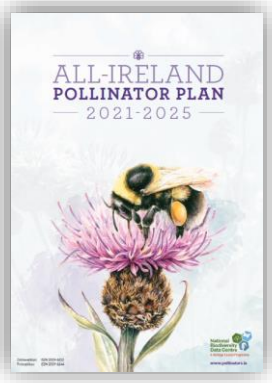
1. Decide if it's important
2. Critically assess the problem and how serious it is
3. Identify the causes
4. Collectively agree a positive framework to address the problem
5. Identify **evidence-based actions** to help
6. Communicate these properly
7. Develop a partnership driven approach where possible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





Be very clear on what you are asking people to do

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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

Nesting: 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

Female workers emerge and take over nest duties

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

Queen remains in the nest laying eggs

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

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


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Documenting Ireland's Wildlife

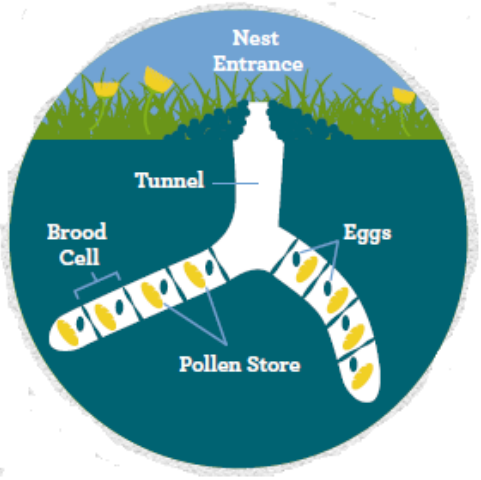
Nest site

Mate

Female prepares a nest

Female lays eggs and leaves a food supply of pollen

Food source



Males and females die

The larvae overwinter

Females and males emerge in spring

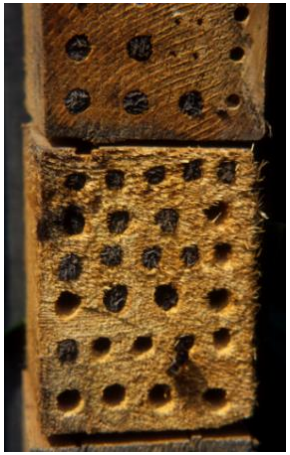
WHERE DO SOLITARY BEES NEST?

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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Documenting Ireland's Wildlife

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

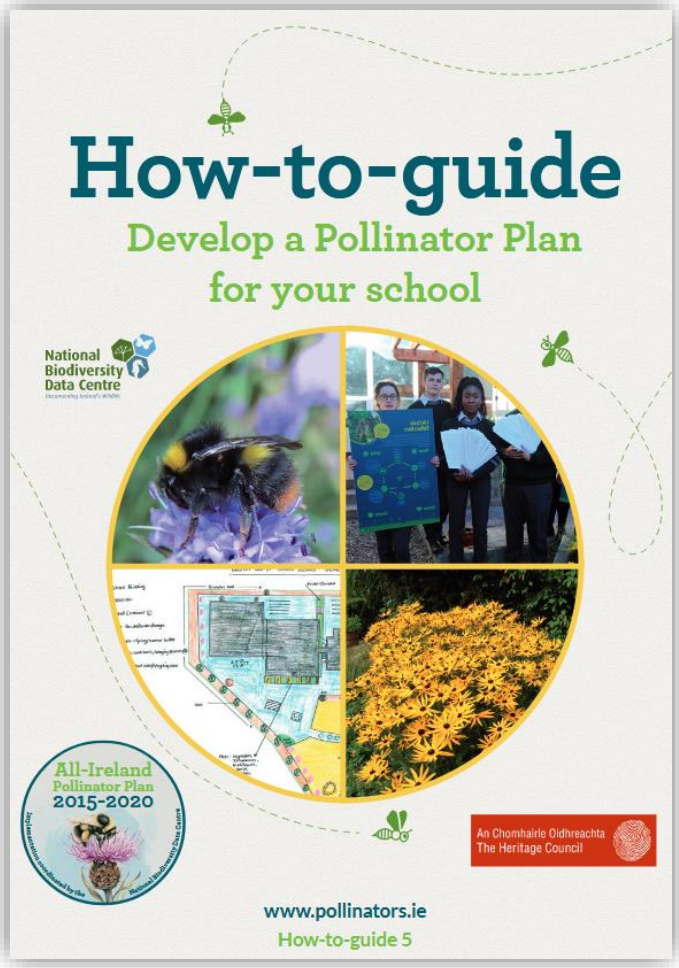
Use existing networks/partnerships to encourage implementation and roll out

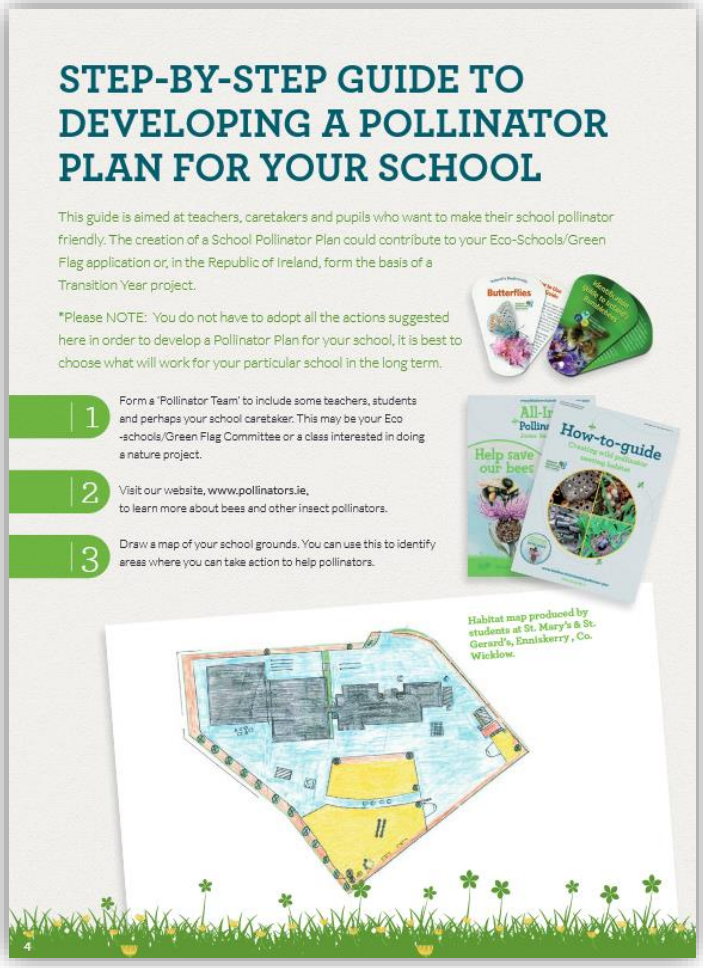
How Schools can help and what resources are available

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





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

4

Identify areas that are **already** pollinator friendly

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

6

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.

https://www.biodiversityireland.ie/shop

Pollinator-friendly flower beds




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!

9

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

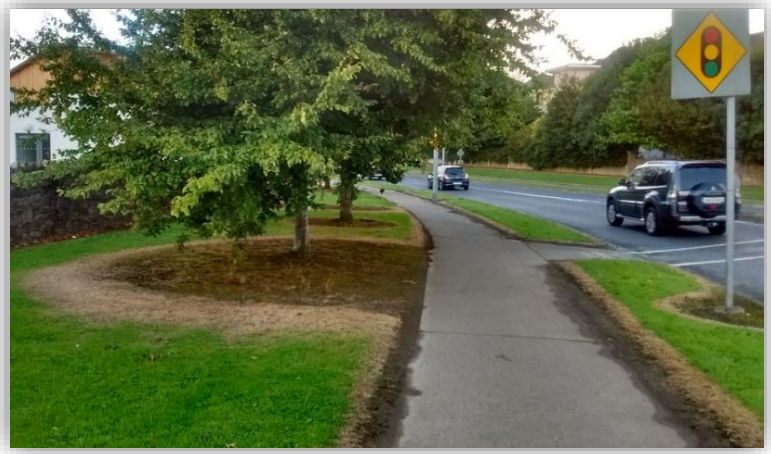
Cavity nesting solitary bees (15 species)

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.

11

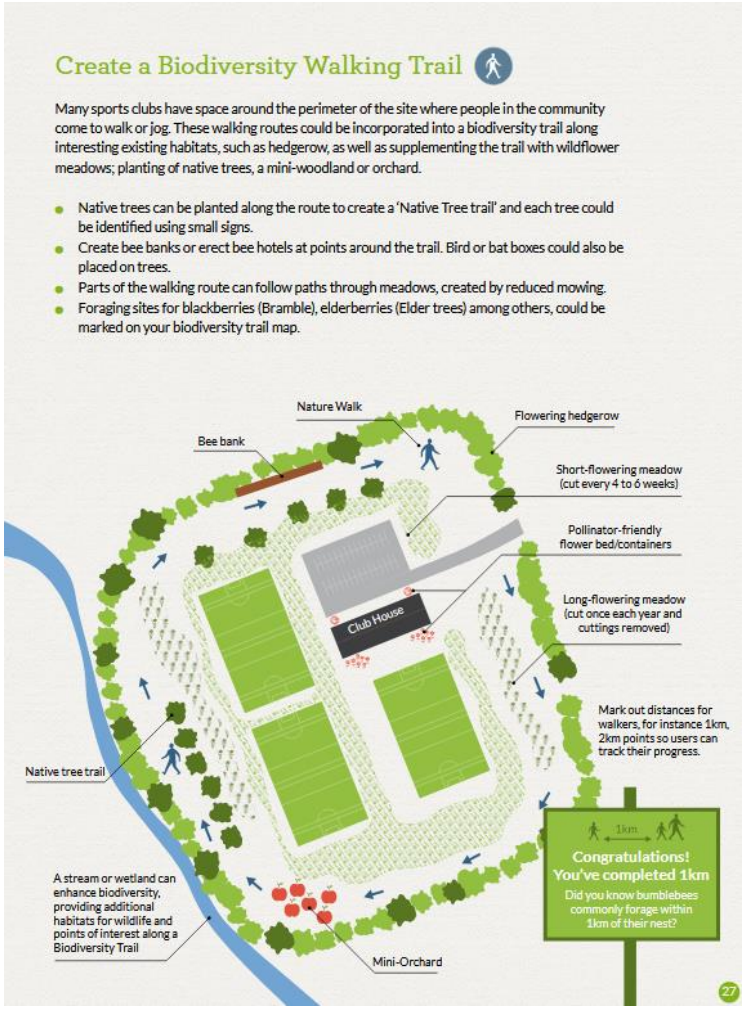
Put up signs

https://pollinators.ie/resources

12

Raise awareness

Create a Biodiversity Walking Trail around the school



✓Links to health & wellbeing

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

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

‘Actions for Pollinators’

Provides recognition and also facilitates local coordination

pollinators.biodiversityireland.ie

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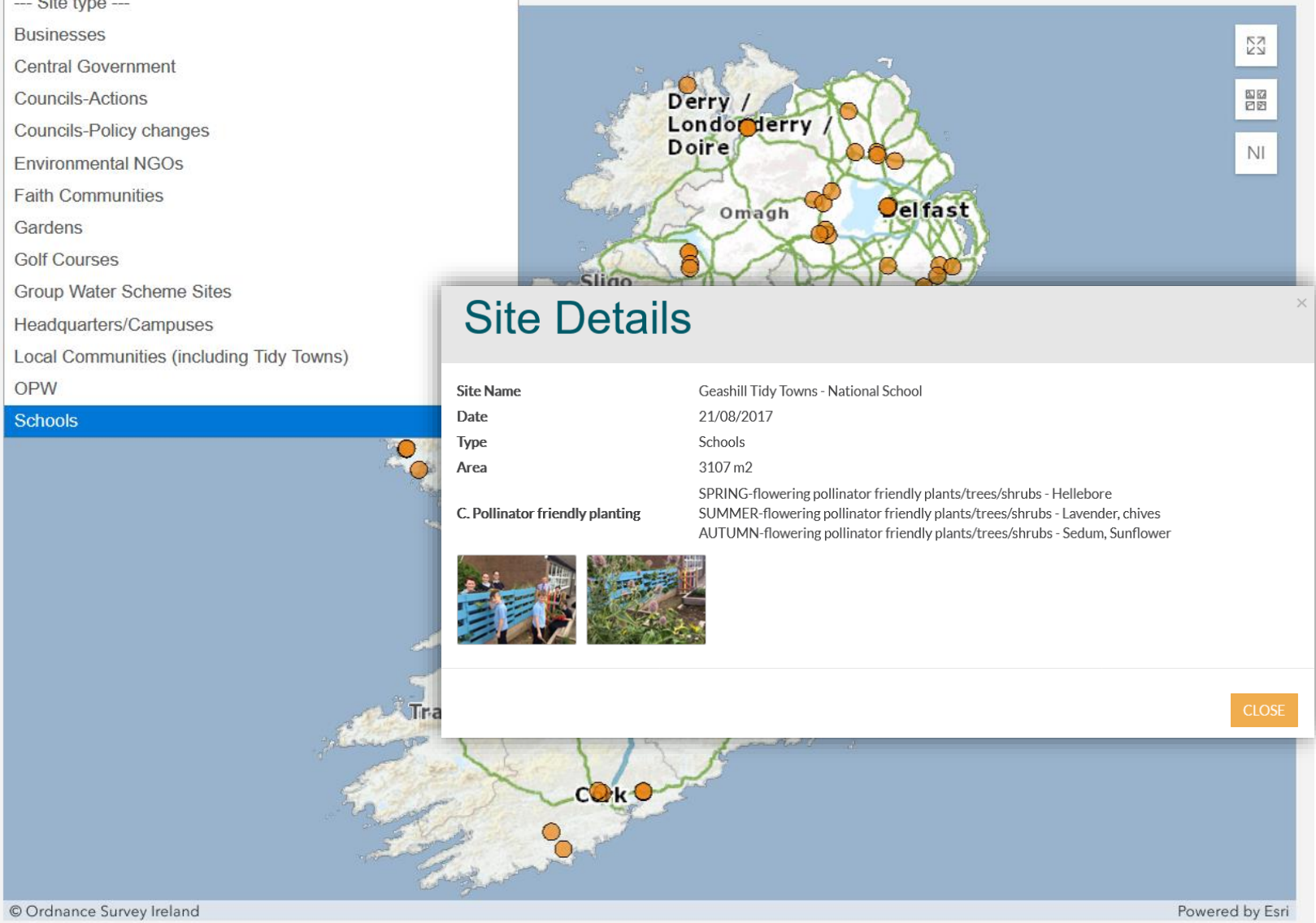
Schools

--- 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

--- Attribute name ---

SHOW ALL



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

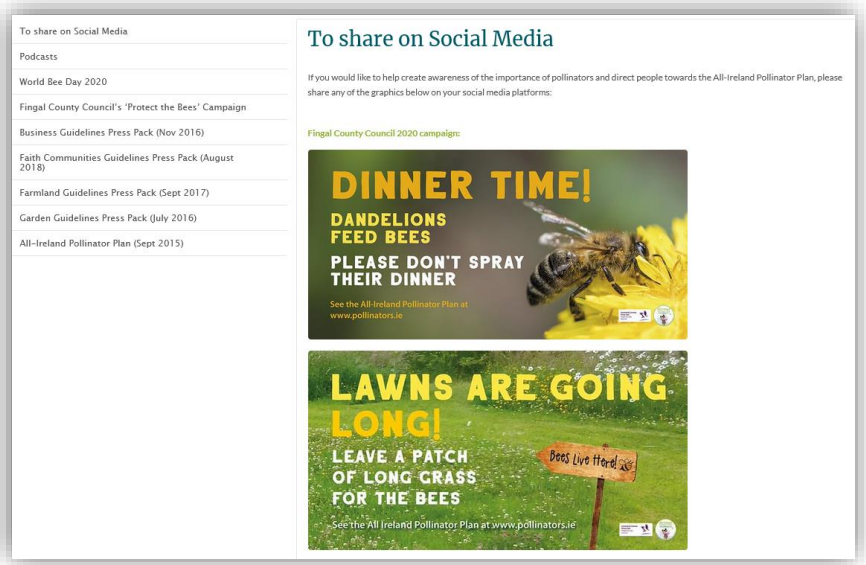
Lesson Plans:

LIST OF LESSON PLANS

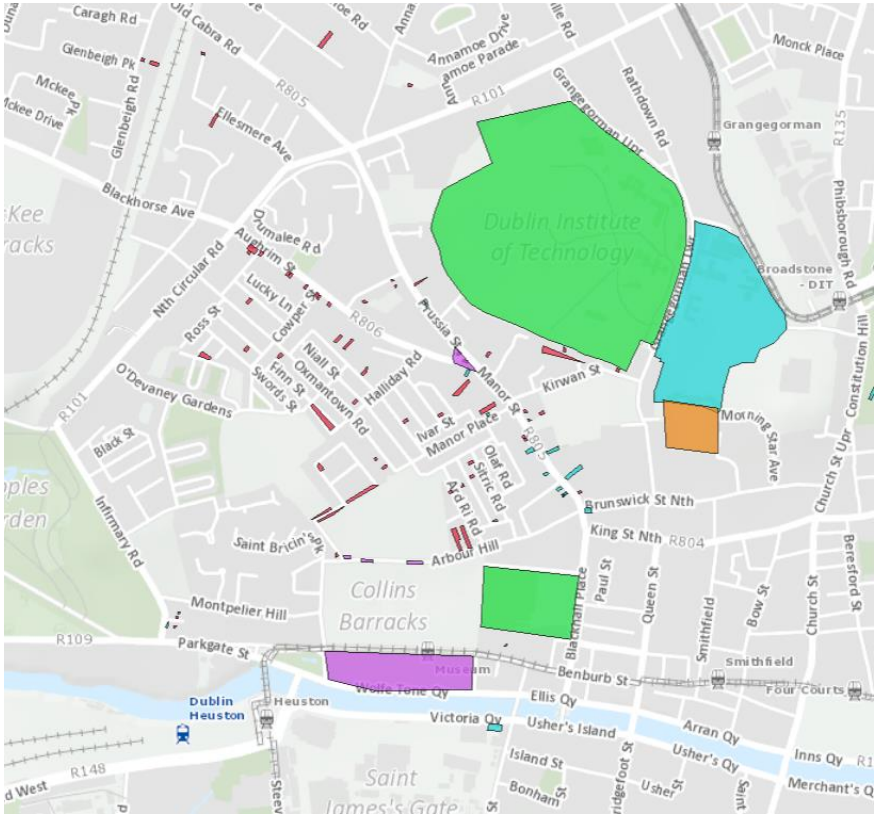
Lesson Plan 1 What is pollination

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



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

At home, make your own garden pollinator friendly

Pledge your Garden for pollinators

https://pollinators.ie/gardens

3. LEARN MORE ABOUT WILD BEES

https://pollinators.ie/videos

https://www.biodiversityireland.ie/shop

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

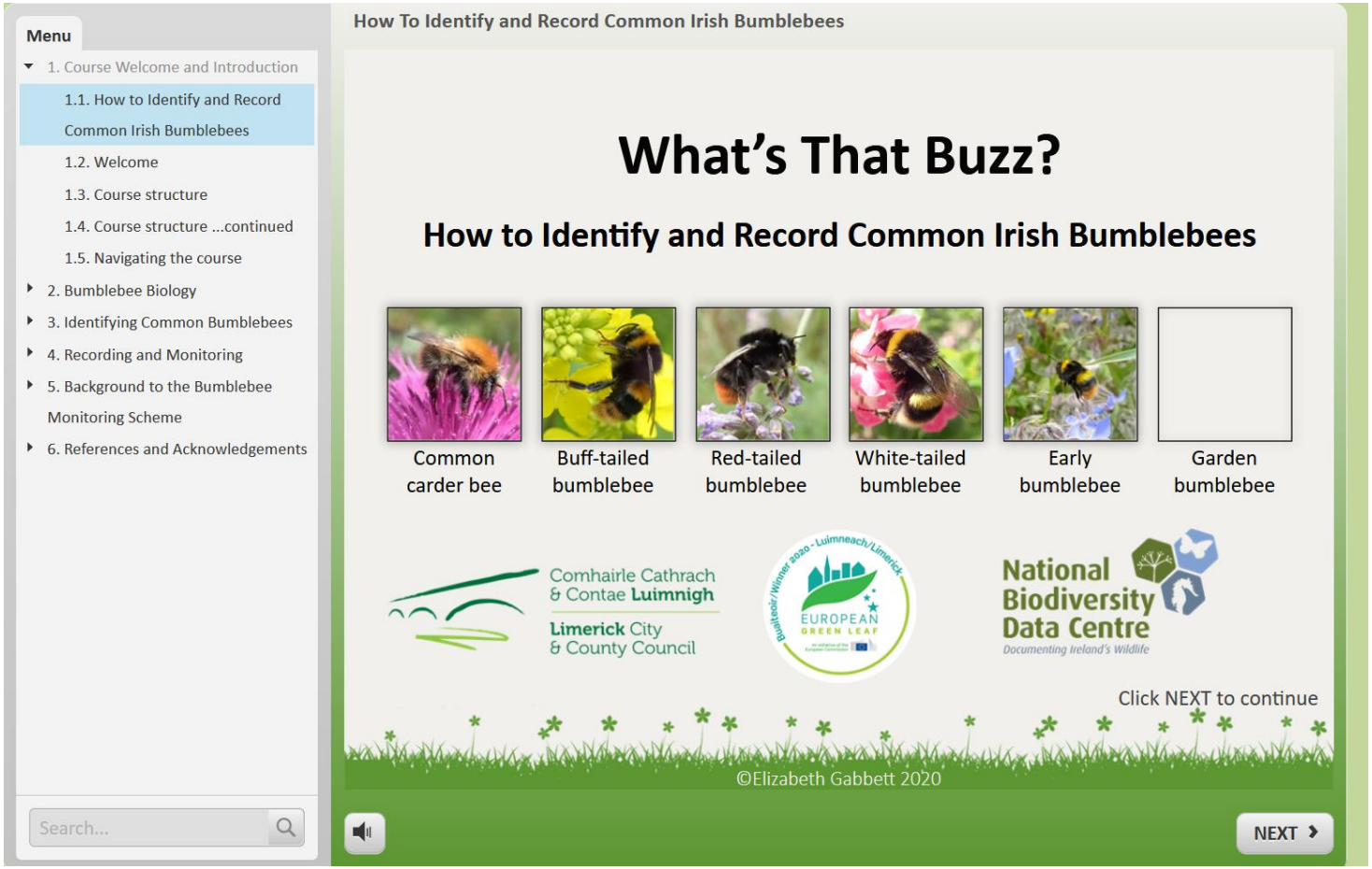
Click on the photo links below to access full species accounts for each of the 99 species of bee and 180 species of hoverfly that occur in Ireland

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



4. USE OUR DATA

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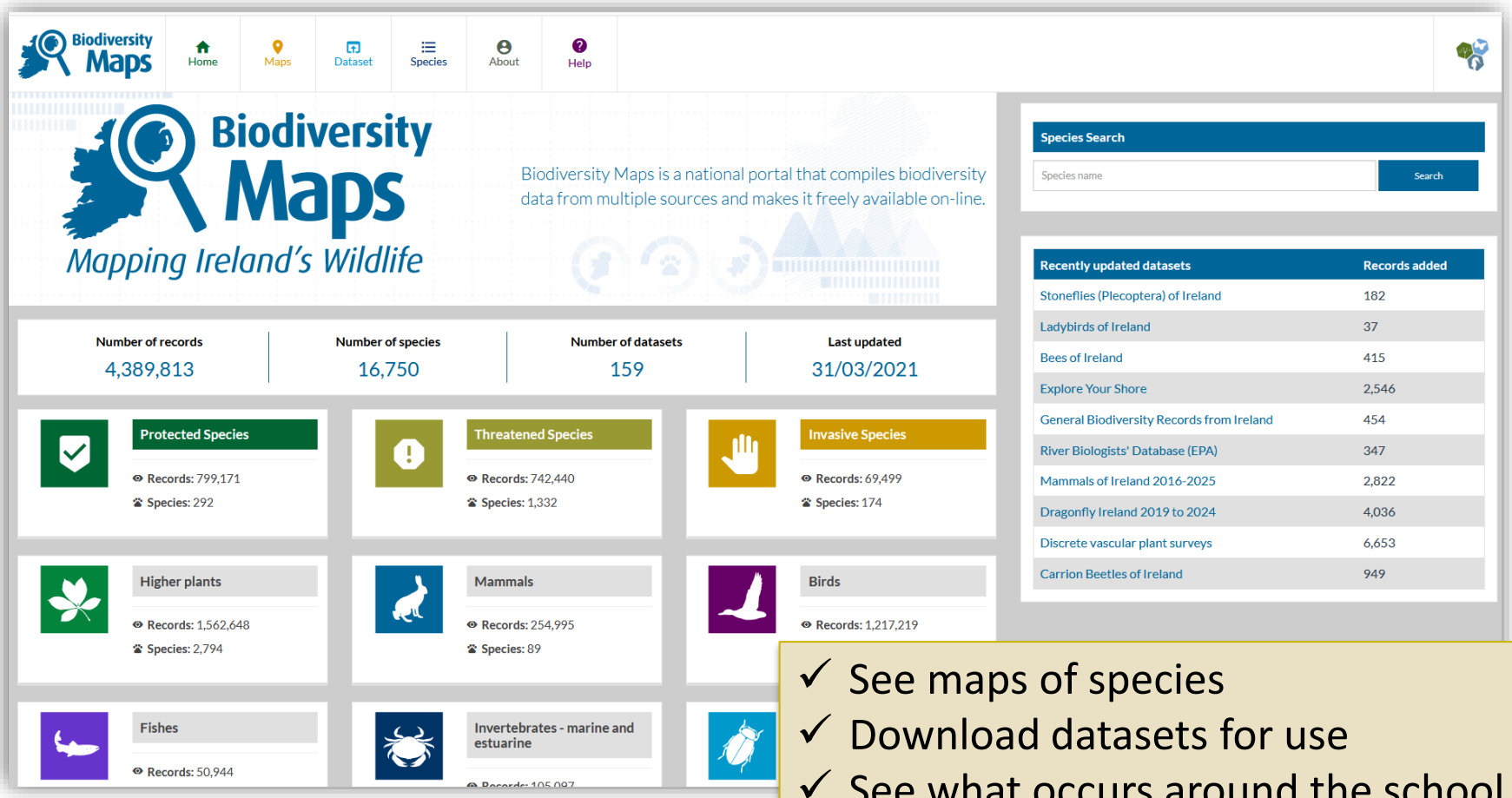
https://maps.biodiversityireland.ie



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

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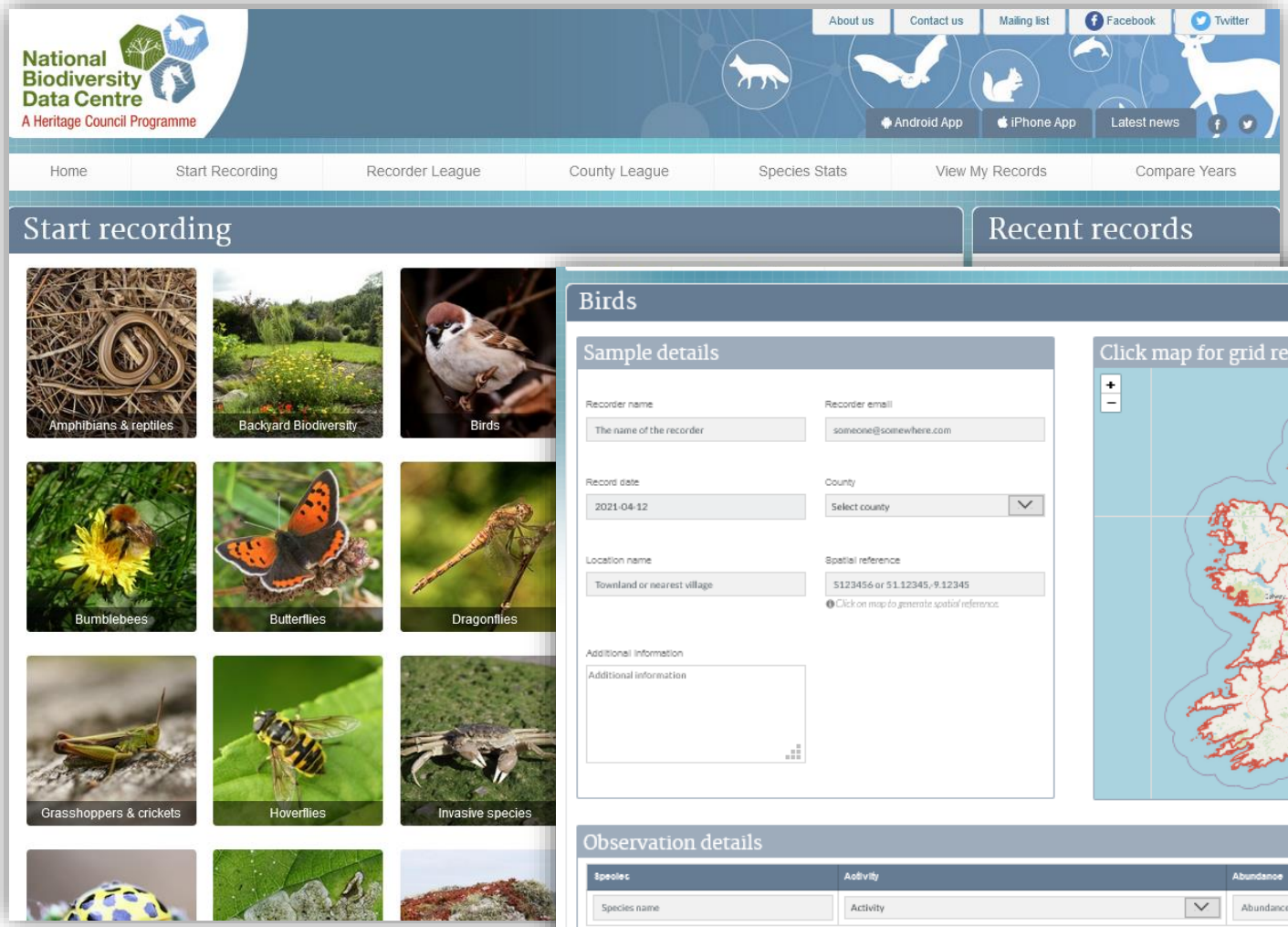
Watch this animation on how to use **Biodiversity Maps** to discover what occurs near you:
https://www.youtube.com/watch?v=zlMOzqivreo&t=17s

When you spot something – submit a new record!

https://records.biodiversityireland.ie



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

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www.pollinators.ie

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THANK YOU

National Biodiversity Data Centre
A Heritage Council Programme

An Chomhairle Oidhreachta
The Heritage Council

National Parks & Wildlife Service

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

Origin Green IRELAND

An initiative by BORD BIA IRISH FOOD BOARD