



How-to-guide

Develop a Pollinator Plan for your school





Why is pollination important?

To make a seed, plants have to move pollen from one flower to another flower of the same type. This movement of pollen is called **pollination**. Without it, there would be no seeds, and without seeds, there would be no plants. This matters to us because plants provide a large part of our diet, as well as other resources we depend upon. It matters not only to humans – wild plants also provide food and shelter to most of our wildlife (birds, mammals, and insects). We also shouldn't forget that it is those wild plants that make our island a colourful and attractive place to live.

Pollinators are important to farmers who grow pollinator-dependent crops, to gardeners who want to grow their own fruits and vegetables, and for the health of our whole environment.



WHO are our pollinators?

In Ireland, some plants are pollinated by the wind, but most are pollinated by insects, including bees, hoverflies, butterflies, moths, beetles, wasps and ants. Most insect pollination is carried out by bees. We have one type (species) of managed honeybee and 98 different wild bees. This includes 21 bumblebee species and 77 solitary bee species. If we want to protect pollination, we need healthy honeybees, but we also need to have lots of wild bees as well as other insects.

Bees are our most important pollinators because, unlike other insects, they feed their young only on pollen. Adult bees spend their entire lives visiting flowers trying to collect as much pollen as possible. They need to be able to visit lots of different flowers so that they can bring different kinds of pollen back to the nest so their young can have a healthy diet. The way we look after our landscape has changed over the last 50 years, and unfortunately it is now difficult for bees and other insects to survive. **One third of our 99 bee species are threatened with extinction from the island of Ireland.** If we want them to provide the free pollination service we depend on, we must all take steps to help our bees.

WHAT do our pollinators need to survive?

Just like us, pollinators need food and a safe place to live. The main reason they are in trouble is **hunger** – our landscape, from farms to parks, schools and gardens - no longer provides enough food. Often this is because we cut, mow and spray so that the landscape looks neat and tidy to us. We've been doing this for so long that we think this is how the landscape should look, but unfortunately it means we are squeezing nature out. This means we will lose the important services nature provides, such as pollination.



To have a healthy balanced diet, bees need to be able to feed on pollen and nectar from a range of different flowers from MARCH through to OCTOBER. Wild bees come out of hibernation in spring and go back into hibernation again in the autumn. Wild bees don't make honey so they have no way of storing food. This means they are never more than a few days away from starvation – so it's very important that there is a continual supply of flowers to feed on.





The best sources of food for pollinators are native plants (trees, shrubs, wildflowers) but there are also ornamental flowers that can be planted in gardens, schools or parks to provide pollen and nectar. Pollinators also need plenty of safe nesting areas - long grass, bare earth, crevices in dry stone walls or wood - that are free from chemical sprays (pesticides).

All-Ireland Pollinator Plan 2015-2020

The All-Ireland Pollinator Plan is a shared plan of action to help our pollinating insects. It is about recognising that there is a problem and coming together to try to solve it. The Plan is supported by more than 80 organisations who have agreed to deliver 81 actions to try to make the island more pollinator friendly again.

Everyone – from farmers to councils, local communities, businesses, schools, gardens and transport authorities – have a role to play in the Pollinator Plan.

You can visit our website to find lots of resources on pollinators and how you can help: www.pollinators.ie



Afraid of bees? The good news is that wild bees are not aggressive and have no interest in humans. They are solely focused on finding enough pollen and nectar to feed themselves and their young.

Inviting wild pollinators to your schoolyard

Schools can help by teaching about pollination. Most importantly, they can also help by making sure the school grounds are a safe place that provide pollinators with food to eat. This step-by-step guide explains actions you can take to make your school pollinator friendly. This means your school can become a pit stop where bees can stop and find food as they move around our landscape carrying out their important pollinator work.



Creating a Pollinator Plan for your school is a wonderful project because you will see results really quickly.

Doubling the number of wildflowers you allow to grow on your school grounds could result in up to 16 times the number of pollinators visiting!

Small changes = huge impacts

Pupils from St. Colman's Community College, Midleton, Co. Cork.

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.



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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.



Habitat map produced by students at St. Mary's & St. Gerard's, Enniskerry, Co. Wicklow.



Walk around the school grounds and look for areas that are **already** pollinator-friendly. These might be areas of longer grass with wildflowers; flower beds; areas where plants like dandelions and clover are allowed to grow; native trees; wild corners; native flowering hedgerows; the wild base of hedgerows; or bare ground for nesting solitary bees. Mark all of these areas on your map. You could put up signs to identify these areas and to help protect them in future years. You can print special Pollinator Plan 'Managed for Wildlife' signs from the 'Resources' section of our website, www.pollinators.ie.



*Wild area with
Bramble and Ivy*



Creating even small areas that are pollinator friendly will help.



Bombus muscorum

It is very important that schools have large areas of short grass for playing and for sports. However, very tightly mown grass provides no food for pollinators. There may be areas on the margins of playing fields where the grass could be mown less frequently in order to allow wildflowers to grow and provide food for bees.

Walk around the school grounds and see if there are areas that could be mown less frequently. You will have to liaise with ground staff to make this happen. For example, narrow strips of longer grass that allow clover to grow will attract pollinators. Your school caretaker may like to be involved in choosing suitable areas for this. It is very useful to put up a sign to explain to everyone why the grass is being allowed to grow longer. In second level schools, erecting signage is something that Woodwork or Art departments might like to help with.



Identifying even small areas where you can let the grass grow longer will allow Dandelions and clover to flower, which offer important pollen-rich food for bees



Mowing 'less frequently' means that the grass is cut approximately every 6 weeks (instead of every week or fortnightly). This should be timed to allow dandelions to bloom (which provides food in spring) and clover to grow (which provides food in summer).

If your school has large grounds, there might be a place where you could create a small meadow. This is mown just once a year (in September) and the cuttings are removed. Paths can be mown through the meadow so that it can still be used for walking. These kinds of meadows provide both *food* and *shelter* for pollinators.



Leaving narrow strips for wildflowers is a great way of balancing the need for short grass for sports and room for wildlife.

These strips can form boundaries around your school's playing fields.





Project: In autumn, you can collect pollinator-friendly wildflower seed from the local area and grow it up in pots over winter to add to your meadow in spring. See our how-to-guide on wildflower seed collection for detailed instructions on how to do this.



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Check if any native tree species are growing within your school grounds. Trees are very important sources of food for pollinators in spring. The best native trees for pollinators include: Willow, Hawthorn, Blackthorn, Wild Cherry, and Crab Apple.

If you are planning to plant any new trees, why not choose a variety that is pollinator friendly?

If your school has a hedgerow, these are vital for pollinators! Rural schools may have native Hawthorn and Blackthorn hedgerows around their boundaries. If these are managed so that they are allowed to flower, they will provide lots of food for bees and other insects. Cut every three years, or one-third of your hedge each year to make sure there are always spring flowers available.

Spring is when hunger gaps are most likely to occur



Our Native tree swatch will help you identify trees around your school



Whitethorn or Hawthorn flowers in spring

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.



Walk around the school and see if there are any flower beds. If there are, check if the plants used are good sources of pollen and nectar. If not, you could investigate whether pollinator-friendly plants could be included in these in the future.



Our Pollinator-friendly Planting Code lists the best plants to choose from. To download a copy, see the 'Resources' section of our website, www.pollinators.ie



Rudbeckia is a lovely pollinator-friendly flower to plant



Bombus lapidarius & *Eristalis intricarius*



Bumblebee on Lavender



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.



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If your school plants bulbs, try to encourage them to include Crocus, which is a great source of food for pollinators in spring.

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



Project: Collect seed or take cuttings from pollinator-friendly plants you have at home and grow up to plant in the school.



Even if your school doesn't have a lot of outdoor space, pollinator-friendly plants can be grown in window boxes and planters.

How do you know if a plant is pollinator friendly?

- Single instead of double-flowered varieties: double-flowered varieties provide almost no nectar and pollen for pollinators
- Perennials over annuals: perennial plants are generally better sources of pollen and nectar
- Do you see pollinators visiting it? When choosing plants to buy at a garden centre, you will quickly realise what flowers pollinators visit most. Also keep an eye out for the Royal Horticultural Society's 'Perfect for Pollinators' logo, which is now used by many suppliers of garden plants



It is very easy to provide nesting sites for wild bees. Walk around the school grounds to check for areas where you could provide safe nesting sites for bumblebees (long grass), mining solitary bees (bare soil) and cavity nesting solitary bees (bee nest boxes).

To learn more about wild bee nesting see our *Junior All-Ireland Pollinator Plan* and our *How-to-guide 'Creating wild pollinator nesting habitat'*. These are freely downloadable from our 'Resources' section on www.pollinators.ie.



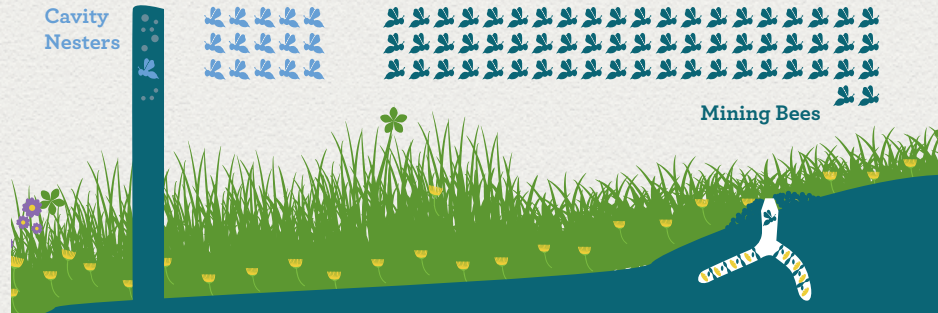
15 + 62 = 77 Solitary Bees



Cavity Nesters



Mining Bees



It is easy to provide nesting areas for our 62 species of mining solitary bees as they just need exposed soil on a south-facing bank. You can use a spade to scrape away vegetation to create these areas. Our 15 cavity-nesting solitary bees use holes in wood or stone walls.



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'.

Speak to your School Caretaker to see how much pesticide is being used and try to reduce this. Most schools probably don't use insecticide, but might use herbicide to kill weeds. If herbicide is being used, try to make sure it is only for health and safety reasons (e.g. to stop paths becoming slippery) and not to tidy up 'weeds', which are actually wildflowers that provide really important insect food!



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

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Make sure to put up signage around the school to show what you are doing. Artwork for the All-Ireland Pollinator Plan 'Managed for Wildlife' signs can be downloaded freely from our website or you can make your own.



Your school's Art Department might like to design some unique signs for your pollinator project

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Consider associated projects to raise awareness of pollinators, their importance and the actions that are being taken to help. This could be anything from writing projects on pollinators to art, poetry competitions, or the Young Scientist competition, etc. You could also run a blog on your school website about your Pollinator Plan and each action you take.



This pollinator mural was created at Lough Neagh Discovery Centre, Oxford Island, Northern Ireland.



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Ask a staff member or parent to help you add all your actions to the Pollinator Plan mapping system (Actions for Pollinators). This system tracks what people are doing right across the island and is a great way for you to get recognition for your efforts. <https://pollinators.biodiversityireland.ie/>

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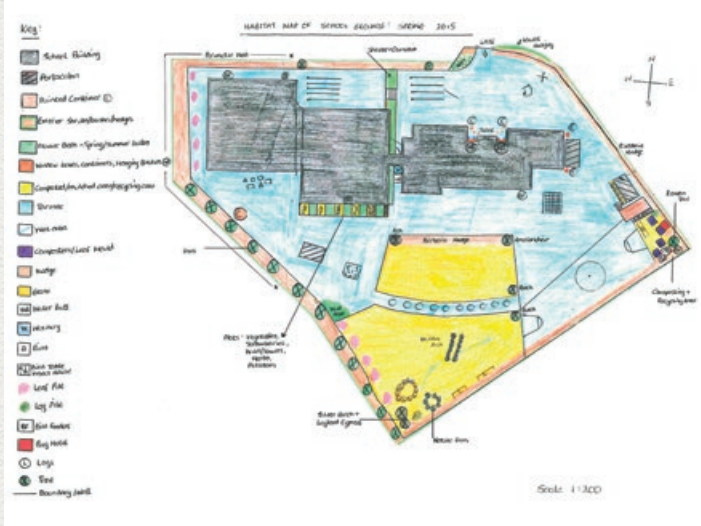
If you are able to identify your visiting bumblebees, butterflies or other insects, why not submit your records to the National Biodiversity Data Centre. See <http://records.biodiversityireland.ie/> Or to CEDaR in Northern Ireland: <https://www.nmni.com/CEDaR>



To help develop your identification skills, download our free online resources or consider buying copies of our bumblebee or butterfly identification swatches for your school library (from <http://www.biodiversityireland.ie/shop/>).

The pollinator-friendly garden created at Cambridge House Grammar School, Co. Antrim

Update your school map showing all your pollinator-friendly areas. Take photographs and store them with your map to identify the actions you have taken. It is very useful to take before and after pictures and to update these annually so that you can see progress.



St Mary's & St. Gerard's, Enniskerry, Co. Wicklow



The Eco Club at St Joseph's, Co. Antrim, transformed an unused area into a bee bank and feeding station.



Killyhommon Primary School, Co. Fermanagh, changed a mown grass bank into a border packed with pollinator-friendly plants.



St. Annin's NS, Rosscahill, Co. Galway.

Perhaps you would like to submit your School Pollinator Plan to our website so that others can see what you have done and learn from your experience. Email your plan to: pollinators@biodiversityireland.ie



Bawnmore NS, Claregalway, Co. Galway.



Note To Teachers

Links to Curriculum: Developing a School Pollinator Plan will help students develop skills through observing and exploring the richness of the immediate environs of the school. This involves the children in recording, questioning, and experimenting with the features of their natural environment. It also helps to teach environmental awareness, living sustainably; what it means to be an active citizen, with rights and responsibilities in local and wider contexts; and responsible consumption and production.

The Pollinator Team will develop the following Key Skills: Staying Well; Being Creative; Communicating, Working with others; Managing information and thinking.

A School Pollinator Plan can be used to teach students how to conduct a habitat study; research and investigate the adaptation, competition and interdependence of organisms within specific habitats and communities. Through learning about pollination and the importance of pollinators, students can also learn to evaluate how humans can successfully conserve ecological biodiversity and contribute to global food production; and appreciate the benefits that people obtain from ecosystems.

Eco-Schools/Green Flag: Developing a school pollinator plan will go a long way towards helping your school apply for this internationally recognised Award.

Healthy walking route: Providing more flowers for pollinators will also make your school a more attractive place for everyone. You could create a 'Pollinator/Nature walking route' that passes all your different actions you've taken in your school grounds. Create a map and measure your route so everyone knows the distance they walked.

Stimulating Research: Developing a School Pollinator Plan may initiate new areas of research by students, for instance in Bumblebee or Plant Monitoring.

Students or staff could take part in the **All-Ireland Bumblebee Monitoring Scheme** and upload results to the National Biodiversity Data Centre. This is a citizen science scheme where volunteers walk a fixed route once a month from March-October and count the bumblebees they see.

Plant monitoring: If you have identified places where you let the grass grow and just cut once a year, you could monitor the wild plants in these areas. Over time, more and more flowers should begin to grow and provide food for bees. By monitoring, you can check if this is happening. Go out one day in April and one day in May (and June if you're in a primary school) – and make a list of the plants you see. Don't worry about grasses – just the ones with colourful flowers that pollinators will like. You could count the total number of flowers, but the most useful thing to do would be to make a list of the different plant species that you see. Keep this data and add to it each year. This could comprise part of Science and Biology habitat studies, where year-on-year Percentage Frequency or Percentage Cover surveys could yield valuable data on progress.

**For more information on monitoring schemes and species identification, see www.biodiversityireland.ie
To submit species sightings, see <http://records.biodiversityireland.ie/>**

To access Pollinator teaching notes, links to curriculum, sample datasets, tips and helpful charts for surveying visiting pollinators before and after your actions, and other useful teaching resources, see the 'Schools' section of our website: www.pollinators.ie

There are also excellent resources for schools at <http://www.polli-nation.co.uk/activity/northern-ireland>

Frequently Asked Questions

More flowers = more bees

Q: Will it be costly to take actions to help bees?

No! In fact, many actions will save time and money.

Q: Will we get complaints that the school grounds look less tidy?

You might, but tidy grounds = less pollinators. We have to stop tidying nature out of our lives. It is important that we change the way we think about our landscape and no better place to begin than in a school! Use signage to explain what you are doing - i.e. that you are helping pollinators and are not just being lazy by letting grass grow longer or allowing Dandelions to flower in spring.

Q: Is it dangerous to encourage wild bees within the school grounds?

No, wild bees are not aggressive. They are solely focused on finding nectar and pollen and have no interest in humans. If left alone, you won't even know they are there. If you are putting up bee nest boxes, it would be sensible to keep these away from the busiest areas so you don't disturb the bees.

Q: What about allergic reactions?

This is a very serious issue. Wild bees will not deliberately attack humans. However, it is possible that someone might occasionally get stung. This will only happen if a bee accidentally flies into you or if you put your hand down accidentally on a resting bee. For most people a sting is not something to be concerned about. It will hurt for a few minutes, just like a nettle sting would. However, a very small number of people are allergic to bees. If these people get stung it is a very serious issue and they have to get medical attention immediately. They will know themselves what to do and should have informed school staff about their allergy. We need to respect that people who are allergic to stings will be more afraid of bees than the rest of us.

Q: Why do wasps chase humans?

Wasps are related to bees, but they are very different. Wasps are predators and feed their young on other little insects. In return, the young wasps in the nest exude a sugary solution from their bodies which the adults feed on! Wasps are much more aggressive than bees (wasps are predators, while bees feed on flowers which they don't have to chase!). For most of the year wasps don't bother humans. However, when the last batch of larvae grow up into adults, there are no more young left in the nest, so no sugary solution for them to feed on. Unfortunately, this happens in late August-early September – just when you are back at school. These wasps will chase after you if they think you have a sugary drink or snack. It is annoying, but it is only because they are starving!

Q: Should we consider having a honeybee hive in our school?

Keeping a healthy hive of honeybees is very hard work. They take a lot of looking after and this requires specialised equipment. You also need to have experience in handling them. If you definitely want to do this, it should be done in collaboration with a local beekeeper who agrees to look after the school hive for you. It would also need to be very carefully placed as honeybees are much more aggressive than wild bees, particularly if disturbed in their hive.

Q: How long will it take to see the impact of our actions?

The good news is that pollinators will respond very quickly to any actions you take to help them. If you provide flowers, they will come! Remember: they need food from spring right through to autumn. They also need food every year, not just next year or the year after. We want your school to become permanently pollinator-friendly so that bees will be around to pollinate for future generations. For that to happen we have to help them now.



SUMMARY - CREATE A POLLINATOR PLAN FOR YOUR SCHOOL:

- 1 Form a 'Pollinator Team' including some teachers, students and your school caretaker. This may be your Eco-schools/Green Flag Committee or a TY class interested in doing a nature project.
- 2 Map your school grounds, identifying all the existing wild corners, flower beds, mowed areas, playing fields, and hedgerows.
- 3 Draw up your School Pollinator Plan, with a new school map showing your 'Pollinator sites' – e.g. areas where you want to reduce mowing, locations where you want to provide nesting sites, and areas where you want to create a wildflower meadow or plant pollinator-friendly bulbs.
- 4 Get busy! And don't forget to put up signs at places you are protecting for pollinators.
- 5 Tell everyone about your work - Log your actions on our mapping system, Actions for Pollinators
- 6 Sit back and enjoy the new buzz around your school!

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.biodiversityireland.ie

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www.pollinators.ie