

Landscape Maintenance from a Biodiversity Perspective

National Biodiversity Data Centre
Documenting Ireland's Wildlife

Dr Úna FitzPatrick
ufitzpatrick@biodiversityireland.ie

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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

- Biodiversity is worth €**2.6 billion/annum** in 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

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

Bees are our most important insect pollinators

Ireland has **99** bee species

Honeybee

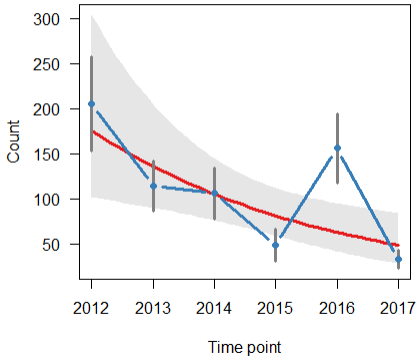
Bumblebees

Solitary bees

WILD POLLINATORS

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

Bumblebee Monitoring Scheme



Abundance of common bumblebees has declined by **14%** 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

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- ✓ More wild bees means more plants
- ✓ More plants means more insects and invertebrates & more fruits and seeds
- ✓ Means more birds and mammals

BUMBLEBEES – 21 DIFFERENT TYPES IN IRELAND

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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

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

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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

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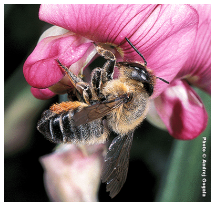
SOLITARY BEES - LIFECYCLE





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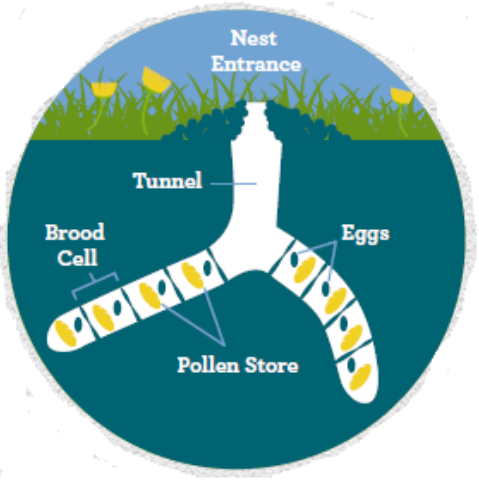
Nest site

Mate

Female prepares a nest

Food source

Female lays eggs and leaves a food supply of pollen



Males and females die

The larvae overwinter

Females and males emerge in spring

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





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WHY ARE POLLINATORS DECLINING?

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1. Not enough food in the landscape (HUNGER)
2. Not enough safe places to nest (HOMELESSNESS)
3. Inadvertent introduction of pests and diseases (SICKNESS)
4. Levels of pesticide use (POISONING)

CLIMATE CHANGE








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?

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- ✓ Identifies **81 actions** to make Ireland pollinator-friendly.
- ✓ Supported by **95** organisations.
- ✓ Steering group oversees the implementation which is coordinated by the National Biodiversity Data Centre

1. 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 actions

APPROACH TO IMPLEMENTATION

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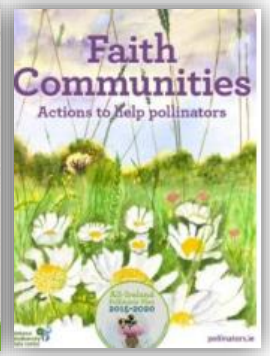
Be very clear on what you are asking people to do

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., **transport corridor**, local area, a school, campus, farm, park, allotment, business property, church grounds, historic property, golf course, garden …*

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

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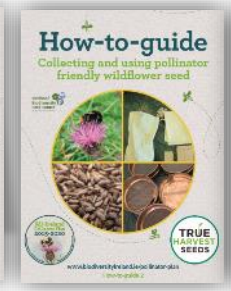
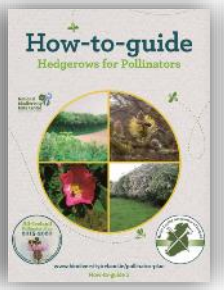
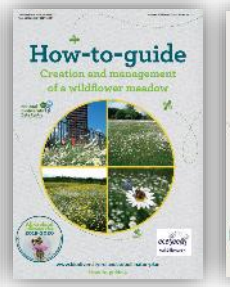
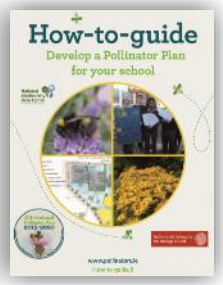
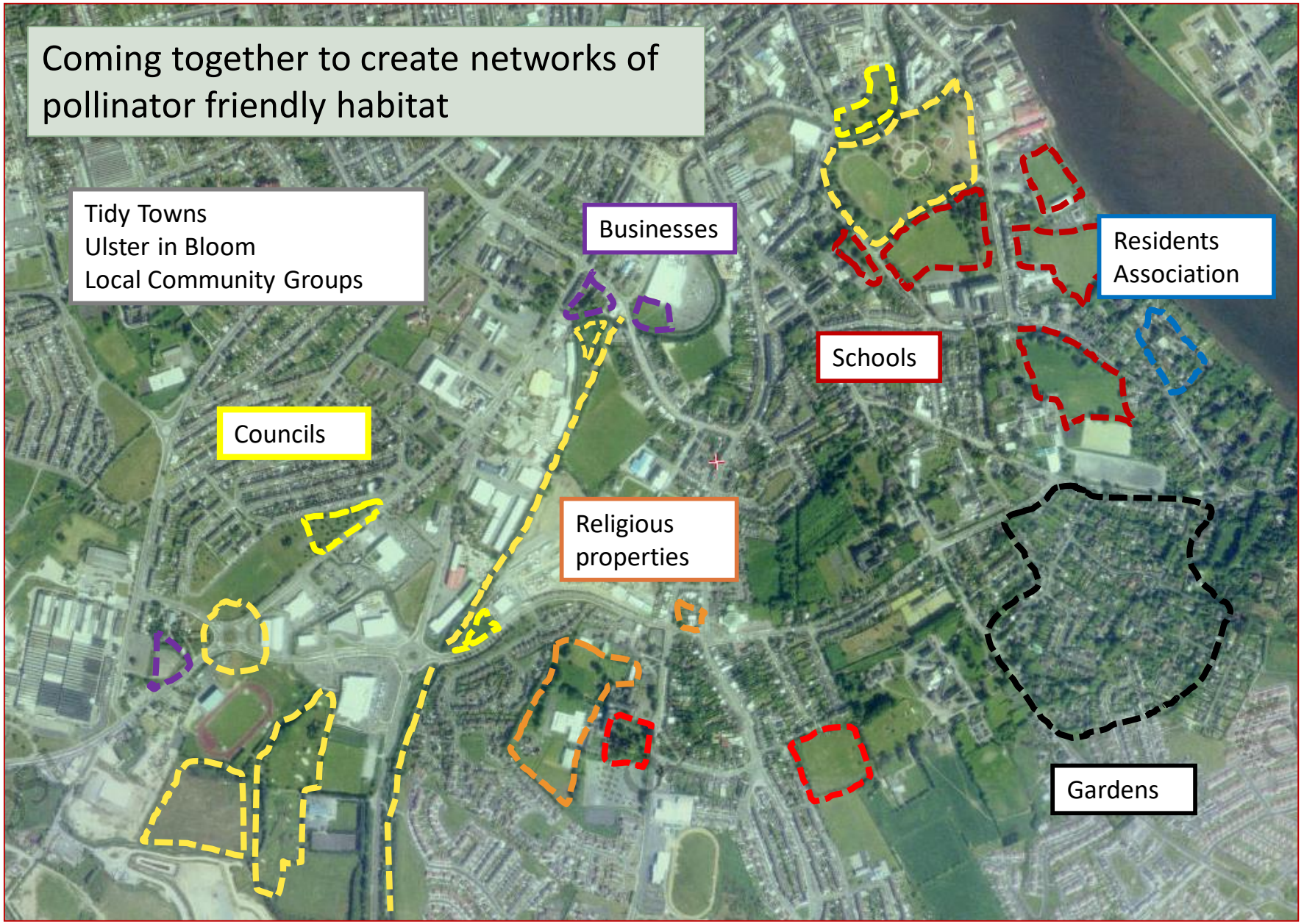






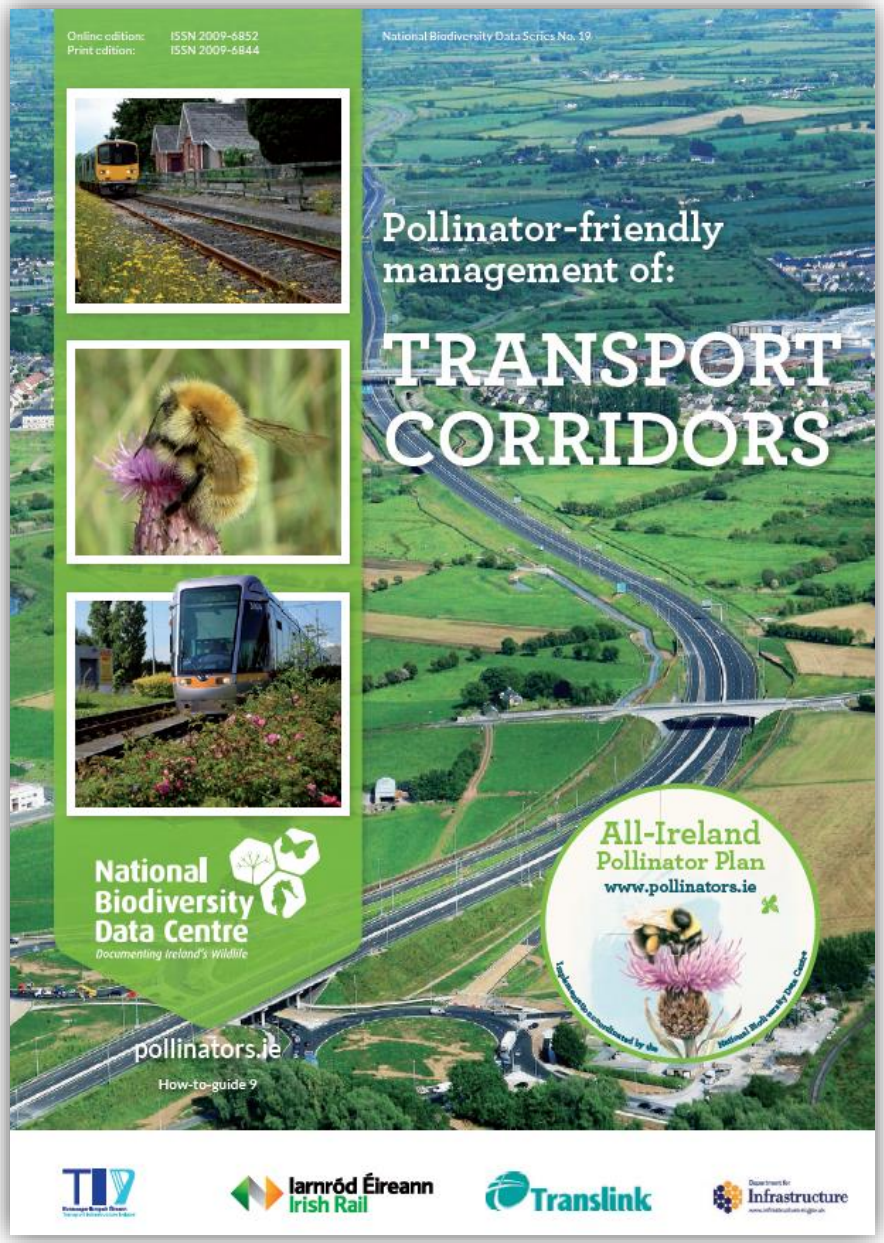




example map using Waterford City

By providing more food, shelter and safety in our towns and villages, along our transport corridors and in farmland we can create an Ireland where pollinators can survive and thrive

example map

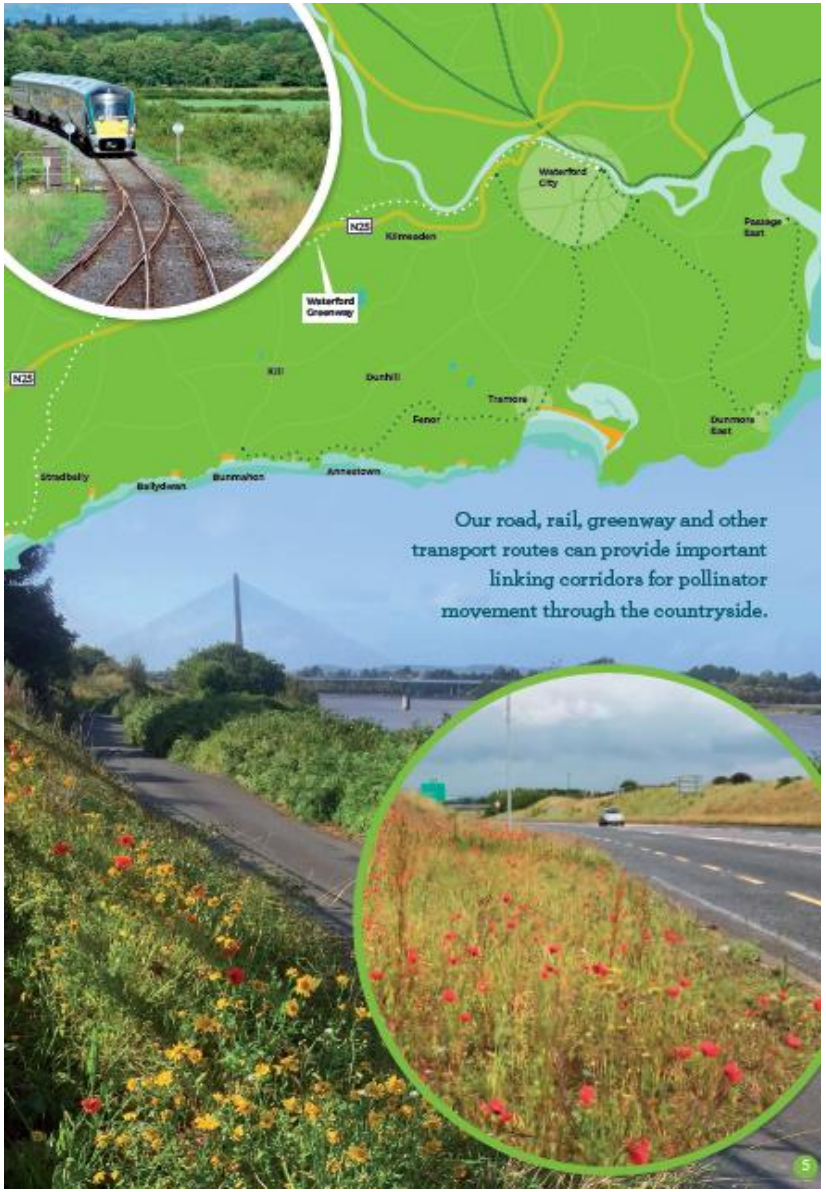


September 2019

We were delighted to collaborate with TII on the publication of the latest evidence-based guidelines for Transport Corridors

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Particular thanks to Eimear Fox and Vincent O'Malley



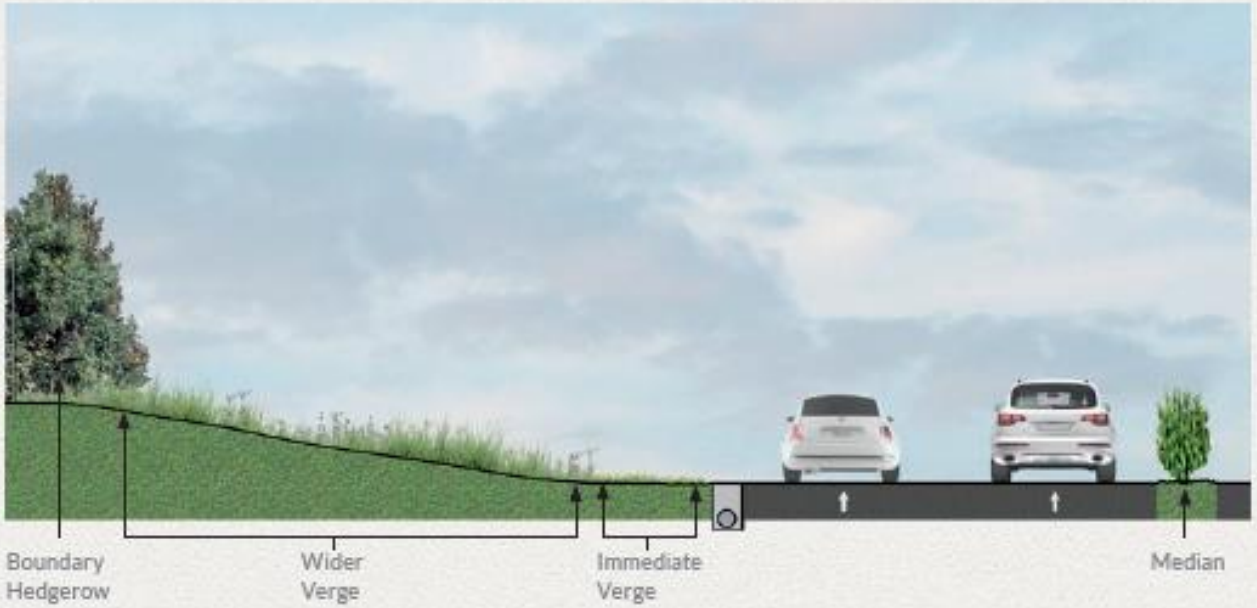
A Identify and protect existing areas that are good for pollinators

Most transport routes will already have some areas that are very good for pollinators. The **most important action** you can take is to recognise and protect these areas.

Verges often act as refuges for biodiversity in an otherwise inhospitable landscape

Silvermine railway lines, which have been left to nature.

B Reduce the frequency of mowing of grassy areas



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

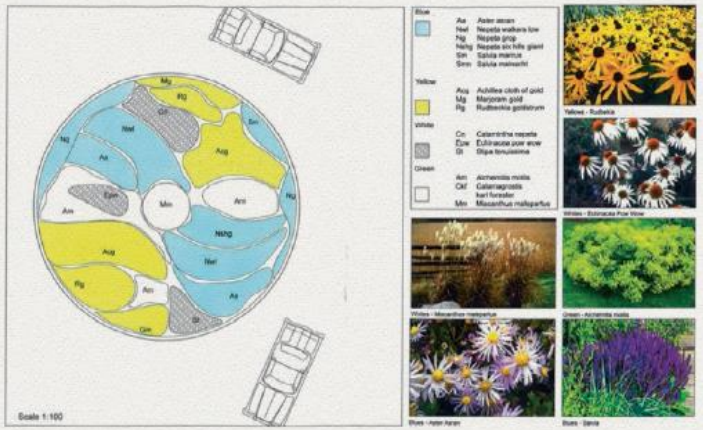
If you want grassy areas to become more flower-rich on their own you have to **take the cuttings away** – this gradually lowers soil fertility and gives wildflowers in the soil a chance to grow

Cut less frequently - food

Liam Scott

C Pollinator-friendly planting

Flowering native thorn in roadside boundary hedges are a great source of pollen and link with the flowering thorn in surrounding field hedges to create connected flight corridors and a food network for our pollinators.



Pollinator-friendly planting in Dungarvan, Co. Waterford

Pollinator-friendly planting at Plunkett Station, Waterford.

D Provide wild pollinator nesting habitat: hedgerows, earth banks and bee hotels

E Reduce the use of pesticides

CONTROLLING INVASIVE SPECIES:

For some invasive species, such as Japanese Knotweed, pesticide use is recommended. Please note: the control of invasive species takes precedence over reducing pesticide use.

For more details on managing invasive plant species on road networks refer to TII documents:

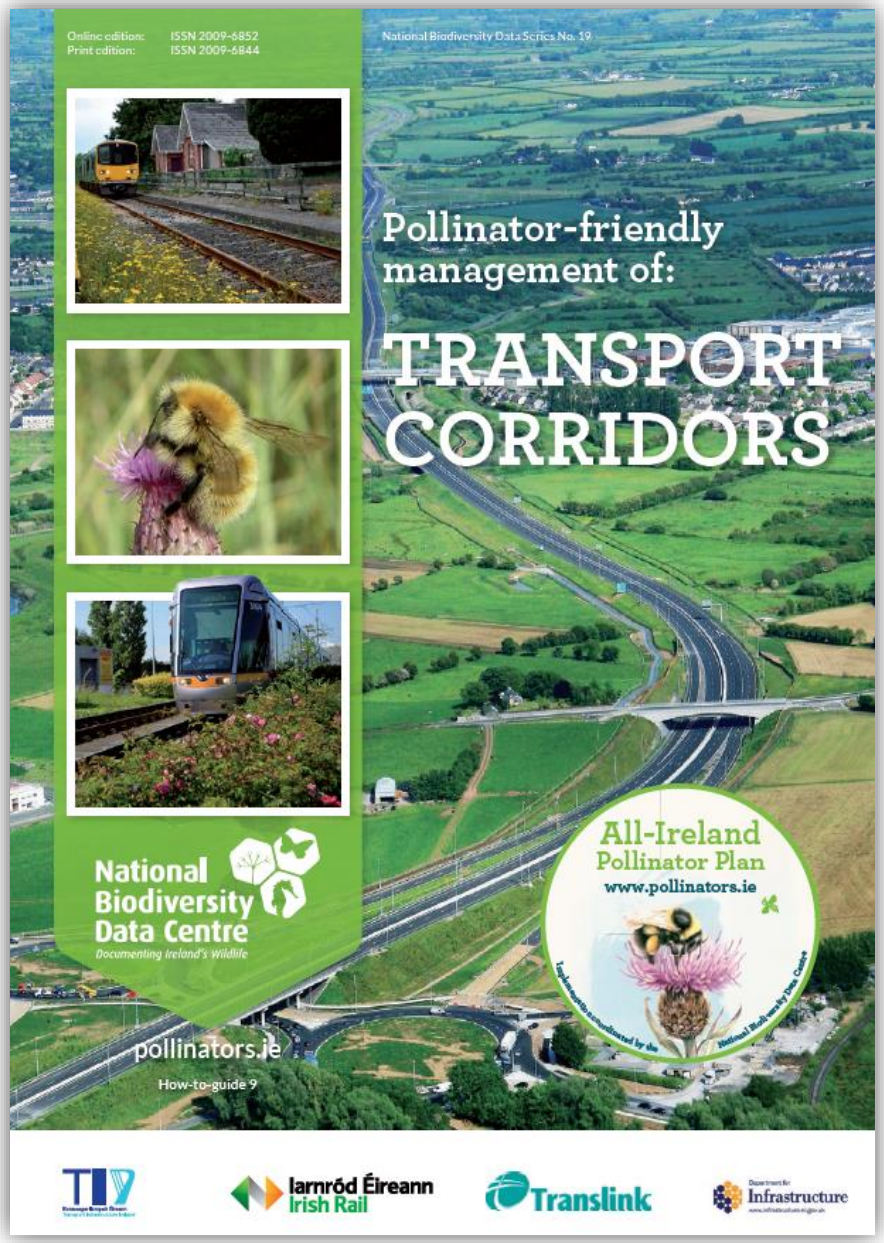
NOXIOUS WEEDS:

While native plants such as ragwort and native thistles are highly attractive to pollinators they can dominate roadside verges and infest surrounding farmland and sensitive habitats if not controlled. Under Irish law, roadside managers are required to remove and control noxious weeds. When carrying out programmes of eradication for noxious weeds, roadside managers should ensure that they recognise the difference between noxious weeds and other native species that do not cause such problems.

F Promote the aims of the All-Ireland Pollinator Plan in new infrastructure plans and make staff aware of management actions for pollinators

N18 Green Bridge Gort, Co Galway - as part of the project's environmental mitigation a green bridge was proposed as part of the planning permission to function as a safe biodiversity crossing.

https://pollinators.biodiversityireland.ie



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21 different evidence-based actions so that there are options for different locations and different situations

CALL TO ACTION

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Dr Úna FitzPatrick
Project co-ordinator
ufitzpatrick@biodiversityireland.ie

Thank You

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

An Chomhairle Oidhreachta
The Heritage Council

Origin Green IRELAND
An initiative by Bord Bia Irish Food Board