

# Dromore West Biodiversity Action Plan, County Sligo



Summer 2022

Collated in consultation with Dromore West Enhancement Group  
residents and volunteers,  
by Woodrow Sustainable Solutions Ltd.

This work was funded by Sligo LEADER Partnership

**Front page photo:** Waterfalls in Dromore West

### **Acknowledgements**

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The workshops, and training materials and recordings of sessions are available to the public at <http://woodrow.ie/resources>

## Contents

Introduction.....	1
Dromore West.....	1
Proposed Actions .....	5
Community Biodiversity Action Plan .....	11
Habitats & Wildlife in the Community .....	13
Designated Sites.....	18
European Sites.....	18
National Sites .....	18
Habitats in Your Area .....	21
Species Recorded in your Community .....	29
Invasive species in Dromore West .....	29
Enhancing Habitats in The Community.....	33
1. Food.....	34
2. Shelter.....	37
3. Security .....	40
Adding new features .....	43
1. Bee Habitat Creation .....	43
2. Pollinator Friendly Planting .....	45
<i>Appendix 1 - Wildlife recorded within the LBAP survey area .....</i>	<i>46</i>
<i>Appendix 2 - Bat &amp; Bird Boxes, Bug Hotels and SuDS planters.....</i>	<i>52</i>
<i>Appendix 3 - Recommended species for planting .....</i>	<i>54</i>
<i>Appendix 4 - Hedgerow maintenance tips.....</i>	<i>59</i>
<i>Appendix 5 - Management regimes to encourage biodiversity .....</i>	<i>60</i>
<i>Appendix 6 - Invasive species identification, monitoring &amp; control .....</i>	<i>61</i>
<i>Appendix 7 - Helpful contacts, organisations and websites .....</i>	<i>62</i>
<i>Appendix 8 - Helpful reading material .....</i>	<i>64</i>
<i>Appendix 9 - Definitions and explanations.....</i>	<i>65</i>

List of Tables:

Table 1: Focal points for further Actions in Dromore West .....	2
Table 2: All Biodiversity Actions included in this plan. ....	5
Table 3: Detailed Suggested Actions for locations within Dromore West .....	11
Table 4: Habitats recorded in the Dromore West area .....	21

List of Figures:

Figure 1: Aerial map of Dromore West.....	1
Figure 2: Focal points for further Actions in Dromore West. (Locations A- J) .....	3
Figure 3: Further enhancement suggestions for within Dromore West. (Locations K-W).....	4
Figure 4: Protected conservation areas around Dromore West.....	17
Figure 5: Habitat Map of Dromore West.....	22
Figure 6: Locations of Invasive Alien Species (IAS) plants in Dromore West .....	32
Figure 7: Flow through rainwater planter design. (Source: Dublin City Council) .....	36
Figure 8: Pollinator-friendly Pesticide Code. (Source: Pollinators.ie).....	41
Figure 9: Bumblebees of Ireland Poster (Source: pollinators.ie) .....	43
Figure 10: Let plants and lawns flower to provide food for pollinators. (Source: pollinators.ie)43	

## Introduction

'Biodiversity' means all of the living things in an area: plants, trees, birds, mammals, insects, spiders, the fish in our waters, even things we can't see, such as the bacteria in the soil.

A Local Biodiversity Action Plan (LBAP for short) is a document which acts as a guide in the management of your local area in the conservation, enhancement and enjoyment of local biodiversity. Conservation and enhancement of biodiversity in your local area has a wide-ranging number of benefits for local communities:

- Increased quality of life – pleasant places to walk or sit down and take a break and/or listen to beautiful birdsong.
- There is increasing evidence of the value for children of spending time in nature, and of the health benefits for all of us of spending more time enjoying the natural world.
- Pollination of flowers and crops by insects such as bees.
- Pest control e.g.: Bats eating biting midges; Ladybirds eating greenflies.
- An increased number of plants especially trees in an area will lead to cleaner air in the local environment.
- Insects, invertebrates, (e.g., worms, slugs and snails) and fungi help breakdown dead and decaying material e.g., make compost and improve soil condition and fertility.
- A healthy local environment increases the health and well-being of the local community.
- It is impossible to quantify the aesthetic value of a beautiful view across an area of natural beauty.

In late 2021, and early 2022, community volunteers enhanced their knowledge of biodiversity in their area by participating in a programme funded by Sligo LEADER Partnership. They attended workshops, training courses, explored their area and were supported by ecologists from Woodrow. Their ideas and actions are collated into this Local Biodiversity Action Plan. This plan aims to guide the work of Dromore West Village Enhancement to raise awareness, and enhance appropriately, the wildlife and habitats of Dromore West.

This plan does not intent to detail every possibly action but focuses on the main hopes of the community for biodiversity. Further detailed resources and information sheets have been provided separately and are also available at [www.woodrow.ie/resources](http://www.woodrow.ie/resources).

## Dromore West

Dromore West, is a popular seaside village situated in the south-west of Sligo, situated between the Ox Mountains and the Atlantic Coast. The village lies close to the border with county Mayo, and is situated on the Dunneill River, which is categorised as a proposed Natural Heritage Area (pNHA) by the National Parks and Wildlife Service (NPWS) [Site Code: 001664]. Notable areas around the village are noted in Figure 1 below.

Recently a walkway has been developed by the local community and Sligo Co. Co. which runs from Dromore West village to the coast road (on the Wild Atlantic Way) following the Dunneill River with the western side of the limestone gorge here. This area has abundant flora and fauna, and there are cascades of water over areas of limestone rock, which creates niche habitat for plants and animals.

The main road through the village centre is the N59, which is a national secondary road commencing in Sligo, travelling through Mayo and into Co. Galway. The village has an interesting history with local artefacts including ring forts, a Napoleonic signal tower (Built between 1804 and 1806), an old mill (built c. 1870), the historic Kilmacshalgan church (built c. 1820) and graveyard, and Dromore House, (built c.1786). There are now two main churches in the area including 'Our Lady of Perpetual Succour' R. C. church and 'Saint Mary's' C.o.I. Church. The old school in Leharrow has now been replaced by a modern one, Dromore West Central National School, which is situated on the Easkey Road close to the village.

The main thoroughfare consists of residential properties and commercial premises, there are a number of older derelict buildings along this stretch, which could potentially provide roosting sites for bats and other nocturnal species e.g., Owls. The vast majority of fields within the LBAP survey area are comprised of improved agricultural grassland. In areas which are wetter, rush pasture dominates. One site, to the west of the LBAP survey area was found to support degraded peatland. Here, a number of deep drainage channels run alongside the roads in this area.

Dromore West supports a number of dense hedgerow habitats and mature treelines (the latter were notable particularly in the southern extents of the LBAP survey area).

Probably the most important area for biodiversity is the Dunneill River which supports wet grassland, and both dry and wet woodland habitats along its banks (particularly within the pNHA boundary).



Figure 1: Aerial map of Dromore West

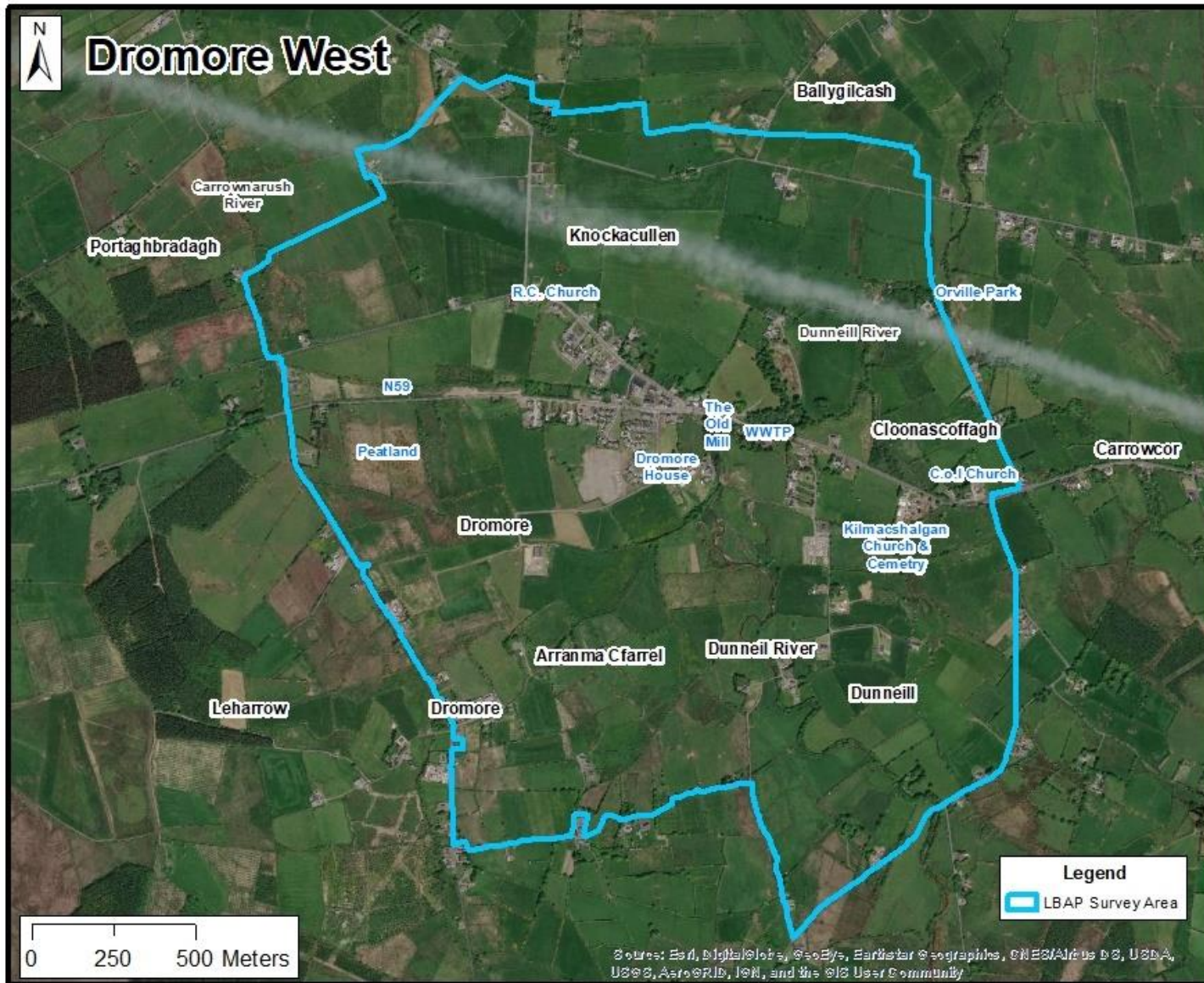


Table 1 highlights suggested locations as potential areas for biodiversity action or collaboration opportunities within the vicinity of Dromore West. These areas are shown in figure 2 and figure 3.

*Table 1: Focal points for further Actions in Dromore West*

- A - Local Schools
- B - Approach roads to Dromore West and Road Verges in General
- C - (Seek to collaborate with landowners here) Kilmacshalgan Church and Grounds
- D - The Dunneill River walk
- E - The Carrownarush River
- F – (Seek to collaborate with landowners here) The Old Mill and Hand Ball Alley
- G - Orville Park
- H - Millennium Rock
- I - (Seek to collaborate with landowners here) Local church grounds such as the R.o.I and C.o.I Church grounds
- J - Further enhancement of the Dromore West village for pollinators e.g., Appropriate flower bed / planter planting in the village
- K – Nonspecific location, bird boxes can be put at any suitable locations within Dromore West
- L – Along fence line leading into Dromore West from the southeast
- M – Green grassy area along roadside of N59 directly before junction with the L6705
- N – Steeply sloping back directly after junction with L6705
- O – Nonspecific location, refers to the general area of the main N59 road through the town
- P – Open, paved area in front of the post office
- Q – Disused site adjacent to post office
- R – Path leading to the well beside the Community Centre
- S – The Community Centre
- T – Grassy/ Bare Soil areas around the Community Centre
- U – Housing Estates in Dromore West
- V – Roadside area along edge of disused field
- W – Gravel and grassy areas at the entrance to De Valera Park.



Figure 2: Focal points for further Actions in Dromore West. (Locations A- J)

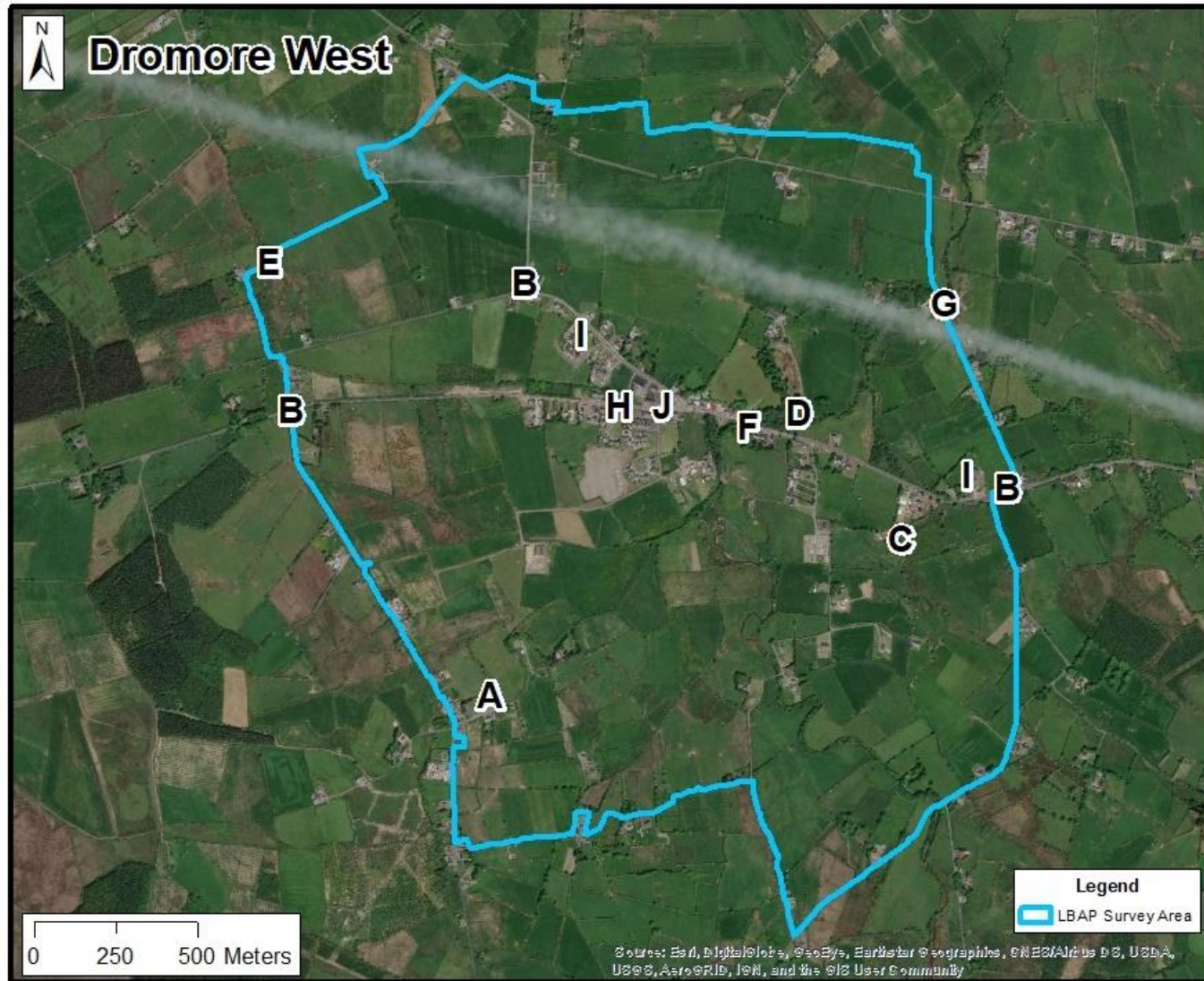


Figure 3: Further enhancement suggestions for within Dromore West. (Locations K-W)





## Proposed Actions

All the overarching actions proposed in this plan are listed below into this summary table. This table (Table 2) is designed to be used on its own by the group to record and note achievements. By omitting target dates for completion of the actions, the community can define the timelines. Table 3 below gives more detailed suggestions for certain locations within the village itself. The proposed locations for the actions are shown in figure 2 and figure 3

*Table 2: All Biodiversity Actions included in this plan.*

No.	Proposed Action	Reason	Possible Methods	Proposed Location(s) for Action
1	<p><b>Promote All-Ireland Pollinator Plan</b></p> <p>Support education and training centred on the All-Ireland Pollinator plan. See: <a href="https://pollinators.ie/">https://pollinators.ie/</a> For more information.</p>	<p>To assist in the conservation of native pollinators which helps to support the local economy and increases biodiversity.</p> <p>To raise awareness about the plight of native pollinators and the benefits of conserving them.</p> <p>To provide education and training to local groups e.g., Schools, youth groups, C.E. schemes, Tidy Towns etc.</p> <p>To enhance and create habitats that are beneficial to native pollinators.</p>	<p>Seek volunteer time.</p> <p>Involve the community in data collection: Citizen Science for local community / local school involvement.</p> <p>Seek assistance from the National Biodiversity Data Centre (free information available on the National Pollinator Plan).</p> <p>Use and follow guidance documents from the National Pollinator Plan e.g., suitable planting; seed collecting; suitable mowing or hedgerow/scrub flailing regimes etc.</p> <p>Arrange an event e.g., Pollinator talk, or Biodiversity walk etc.</p>	<p>A - Local Schools</p> <p>B - Approach roads to Dromore West and Road Verges in General</p> <p>G - Orville Park</p> <p>H - Millennium Rock</p> <p>I - (If permission is granted) local church grounds such as the R.o.I and C.o.I Church grounds</p> <p>L-Q, T, V, W – Within the village</p>

2	<p><b>Encourage Biodiversity</b></p> <p>Aim to maintain, enhance and create appropriate areas with suitable native species to encourage biodiversity.</p> <p>Encourage local use of National Biodiversity Data Centre (NBDC) application. Further information available at: <a href="https://maps.biodiversityireland.ie/">https://maps.biodiversityireland.ie/</a></p>	<p>To conserve and enhance habitats that will support a rich flora and fauna in the local community.</p> <p>To support the national records centre in the efforts to record and conserve species.</p> <p>To provide the Dromore West community with further information regarding species in their area.</p>	<p>Use All-Ireland Pollinator Plan guidance for various different habitats and seed collection, management of wildflower areas etc.</p> <p>Take ecological advice where necessary.</p> <p>Ensure suitable species, methods and times of year are in place depending on the habitat.</p>	<p>Across Dromore west and particularly within defunct hedgerows, borders and beds.</p> <p>Where there is potential for biodiversity enhancement on private lands, seek to collaborate with and support landowner in encouraging biodiversity.</p>
3	<p><b>Create Nature Trail</b></p> <p>Seek permission from landowners around the village to Create 'Nature Trail' with specific interest points, which encompasses the old mill &amp; falls and the Dunneill River pNHA.</p>	<p>To highlight 'Key areas of biodiversity'.</p> <p>To raise environmental awareness.</p> <p>To provide an interesting, educational amenity for locals and visitors.</p> <p>To help conserve the habitats and species.</p>	<p>Seek, apply for and secure necessary funding.</p> <p>Arrange a volunteer ecologist or commission an ecologist.</p> <p>Conduct a survey of birds, plants, mammals and bats etc. (coincide this with other actions).</p> <p>Create informative finger posts along the trail (e.g., similar to those found in Hazelwood).</p> <p>Seek local volunteers to assist in this action for the planning, maintenance / upkeep as necessary.</p>	<p>A - Local Schools</p> <p>D - Along the Dunneill River pNHA</p> <p>F - The Old Mill (seek permission from landowner to include this point along the trail)</p> <p>N – New meadow area along roadside</p> <p>R – At Community Centre (focus on urban actions here, including sensory garden and mural)</p>

4	<p><b>Create Biodiversity Access Points</b></p> <p>Improve access, facilities and signage in 'Key biodiversity areas.'</p>	<p>To allow safe access without impacting the biodiversity site.</p> <p>To assist in raising environmental education and awareness in these areas.</p>	<p>Seek, apply for and secure necessary funding.</p> <p>Seek local volunteers to assist in this action for the planning, maintenance / upkeep as necessary.</p> <p>Gather suitable information and take advice and assistance from organisations involved in creating educational signage.</p> <p>Create traditional biodiversity signage in keeping with the local aesthetics.</p>	<p>D - At one location on the Dunneill River pNHA</p> <p>F - The Old Mill (seek permission from landowner to include this point along the trail)</p> <p>G - Orville Park</p> <p>H - Create a central sign in village e.g., at Millennium Rock.</p>
5	<p><b>Invasive Species Training</b></p> <p>Provide education and training to local volunteers on the appropriate eradication and control of invasive species in Dromore West, under licence as necessary.</p>	<p>To educate and train specific people (requires licensing) to undertake invasive species management in the local area.</p> <p>To engage the local community in identifying invasive weeds.</p> <p>To ensure that the appropriately trained people are in place to undertake invasive species management in Dromore West.</p>	<p>Gain invasive species advice and implement appropriate recommendations in Dromore West, using trained and licenced people.</p>	<p>Secure location for training e.g.</p> <p>A - Local Schools (for example: a weekend training event)</p>



6	<p><b>Promote Safe &amp; Appropriate use of Chemicals</b></p> <p>Raise environmental awareness in the community in relation to the use of chemicals such as pesticides, fertilisers and herbicides.</p>	<p>To encourage environmental awareness.</p> <p>To reduce chemical pollution, assist in improving the health of local ecosystems by ensuring good water quality, conserving fish stocks and pollinators etc.</p> <p>To encourage the proper and appropriate use of such chemicals by informed persons.</p>	<p>Approach local interested people / businesses / Tidy towns / C.E. Schemes / Site managers (schools / churches) etc.</p> <p>Gain valuable insight from other Case Studies in Sligo e.g. Drumcliff / Rathcormac.</p>	<p>Across Dromore West</p>
7	<p><b>River Survey</b></p> <p>Conduct a river survey to identify plant species / habitats and existing breeding/resting areas for riparian fauna.</p>	<p>To identify 'Key biodiversity areas' for particular riparian species.</p> <p>To link in with the information on general biodiversity that has been gathered as part of the LBAP and that is available in the future e.g., from local recorders with permission.</p> <p>To identify suitable locations for conservation measures e.g., nest box installation or protection of otter holts, where identified.</p>	<p>Find a volunteer ecological surveyor and/or botanist and/or ornithologist (or access funding if none available in order to commission a riparian species survey).</p> <p>Get permission where required to undertake a survey.</p> <p>Ensure all health and safety aspects are appropriately planned out prior to any works along watercourses.</p> <p>Engage with schools / youth groups / C.E. Scheme regarding the creation of nest boxes.</p> <p>Arrange a community river walk event with a local ecologist.</p>	<p>Seek permission from landowners where necessary:</p> <p>D - Along the Dunneill River pNHA</p> <p>E - The Carrownarush River</p> <p>F - The Old Mill</p>

8	<p><b>Carry out a Bat Survey</b></p> <p>Conduct a bat survey of old buildings in the area (with permission from the landowners where required).</p>	<p>To identify bat species, present in Dromore West and update baseline information.</p> <p>To identify hot spots for bat activity and potentially local bat roost locations.</p> <p>To assist in bat protections and conservation in Dromore West and to provide bat records to Bat Conservation Ireland and Sligo Co. Co.</p> <p>To identify areas where it may be worthwhile installing bat boxes.</p> <p>If installing bat boxes, these can be registered with the Bat Conservation Ireland Bat Box Monitoring Scheme, and each given a catalogue number.</p> <p>To raise education and awareness by running a bat walk and getting local schools or youth groups involved.</p>	<p>Find a volunteer bat surveyor (or access funding if none available in order to commission a survey).</p> <p>Get permission where required to undertake a survey.</p> <p>Ensure all health and safety aspects are appropriately planned out prior to any bat building inspections or night work.</p> <p>Engage with schools / youth groups / C.E. Scheme regarding the creation of bat boxes.</p> <p>Arrange a community bat walk with a local bat ecologist.</p>	<p>Survey to be conducted from public roads and at other locations if permission from landowners is granted (and ensuring appropriate safety measures are in place):</p> <p>A - Local Schools</p> <p>C - Kilmacshalgan Church and adjacent farm buildings</p> <p>D - Along the Dunneill River</p> <p>F - The Old Mill I - C.o.I. Church</p>
9	<p><b>Manage Graveyard for Biodiversity</b></p>	<p>To increase biodiversity within the graveyard and</p>	<p>Consult with landowner to see if they would be interested in introducing an</p>	<p>C - Kilmacshalgan Church and graveyard.</p>

	<p>Seek permission to support landowner in management of the vegetation within Kilmacshalgan Graveyard to encourage biodiversity. Ensure cognisance with other necessary considerations (e.g., Heritage considerations).</p>	<p>allow the native seedbed to recover.</p>	<p>initial appropriate sheep grazing regime at the site.</p> <p>If landowner is happy to proceed with biodiversity management, arrange a suitably experienced person to conduct this management (given the nature of the site as an important heritage site).</p> <p>Continue management by very careful strimming by experienced and trained personnel twice a year and removing arising's (management similar to a hay meadow).</p> <p>Ensure safety is paramount at this location given the instability of walls and the church here.</p> <p>Conduct work with advice from Sligo Co. Co. and appropriate heritage organisations.</p> <p>Monitor the progress of this work by arranging a volunteer to conduct a simple survey with advice from Sligo Co. Co.</p>	
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Table 3: Detailed Suggested Actions for locations within Dromore West

Community Biodiversity Action Plan		
Location Code	Project	Notes
K	Swift Box	Swifts are a red-listed migratory bird that has been recorded in the vicinity of Dromore West. Boxes should be placed in groups as swifts are colonial nesters. Boxes should be at least 4 metres above ground level and placed such that they do not receive full sun in summer. There must be a clear flyway in front. A call system may also be needed to attract the birds initially, which would require a lure licence from the NPWS.
L	Pollinator Friendly Planting	Low growing pollinator-friendly hedge (hebe, box, hawthorn etc.) to create a colourful entrance to the village from the southeast.
M	Pollinator Friendly Planting/ Connectivity/ Mowing	Seek to collaborate with local landowners to support the addition of a native flowering hedgerow along field edge here to enhance habitat connectivity and create an attractive flowering feature for people and wildlife. The grassy area along the roadside could be managed in accordance with the pollinator plan through reduced mowing. For instance, the areas of grass further away from the road could be mowed twice a year, while areas closer to the roadside could be mown every six weeks (provided road visibility of the junction is not obstructed).
N	Pollinator Friendly Planting	Trial planting bulbs such as Alliums, snowdrop and crocus or perennials like aubretia, wallflower and sedum along the steep bank here.
O	Pollinator Friendly Planting/ Connectivity	Look at possibility of planting street trees along the road through the centre of the village. Examples of suitable street trees are Rowan, Lime and Pillar crab
P	Pollinator Friendly Planting	Drought-tolerant herb planters could be installed here for low maintenance. Examples: thyme, chives, oregano, mint (Mint will spread and must be contained in a pot)

<b>Q</b>	Pollinator Friendly Planting/ Connectivity	Seek to collaborate with local landowners to support the addition of a native flowering hedgerow along the edge of the disused field/sites to enhance habitat and providing screening
<b>R</b>	Bee bank	Keep area of sloped bare soil for mining bees
<b>S</b>	Mural	Biodiversity Themed Mural at community centre, could draw inspiration from the importance of the river for biodiversity
<b>T</b>	Pollinator Friendly Planting	Pollinator friendly bulb planting along the grassy bank. Planting flowering climbing plants like sweet pea (Could use 'everlasting' perennial version) along the car park facing edge of the evergreen hedge to provide colour and food for pollinators.
<b>U</b>	Mowing	Reduced Mowing in Housing Estates – Consult with resident’s associations about implementing a reduced mowing regime. Ideally mow grassy areas that are frequently used every 6 weeks and leave some less used areas as long meadow patches that are mown twice a year.
<b>V</b>	Pollinator Friendly Planting/ Connectivity	Seek to collaborate with local landowners to support the addition of a native flowering hedgerow along the edge of the disused field/sites to enhance habitat and providing screening. Beware of invasive species (e.g., Winter Heliotrope) in the vicinity when planting to avoid spreading invasives within the village.
<b>W</b>	Pollinator Friendly Planting	Add pollinator friendly bulbs to this area around the signpost and add some suitable street trees to the gravelled section if possible.



## Habitats & Wildlife in the Community

Some communities may have habitats and species that are so unique and rare that they are designated as being of International Importance. For these areas, specific conservation objectives are outlined. But wildlife does not follow boundaries and by taking simple actions in our back garden, or front lawns we can enrich the wildlife of our community.

### **Notable biodiversity features in the wider area**

The village itself lies c. 1.7 km south of the coastline and the North Atlantic Ocean. Along this stretch, the coastline comprises of rocky cliffs and pebble beaches, with many of the grasslands here being improved for agricultural grazing.

The most important area for biodiversity within the Dromore West LBAP survey area is the Dunneill River (part of which is designated as a pNHA). This area supports wet grassland, and both dry and wet woodland habitats along its banks (particularly within the pNHA boundary). This pNHA river runs through steep limestone cliffs which support an interesting flora and fauna assemblage. Further information on this pNHA is provided below.

The Carrownarush River exists on the western boundary of the LBAP survey area. Much of this river has now been modified and is channelised alongside the L2702 Road. However, the deep ditches here continue to provide suitable habitat for amphibians, foraging mammals (e.g., bats and otter) and offer niche habitats for aquatic plants. Further north the river runs along field boundaries within improved agricultural fields, rush pasture with scrub and unmown / rough grassland.



***Plates 1 & 2 – The Dunneill River pNHA. – St Mary's C.O.I Church could provide suitable features for roosting bats and nesting birds.***

## Biodiversity in Dromore West village

An overview of notable biodiversity in and around Dromore West is provided below. The locations of key areas for biodiversity are illustrated in Figures 2 & 3 above.

Dromore West has a population of approximately 227 people (Census 2016). It is a picturesque village which is situated between the Ox Mountains and the North Atlantic Ocean, in south-west Co. Sligo. The main thoroughfare comprises of man-made infrastructure, some of which dates back centuries, and there are a number of areas within the village which offer features for wildlife. These include old or derelict buildings such as the Old Mill, or Dromore House which can be used by roosting bats or nesting birds, and the Dunneill River which runs through the eastern extents of the village, and into a small rocky bay outside of the LBAP survey area. This river is known to support a good population of native fish including brown trout *Salmo trutta* and European eel *Anguilla Anguilla*<sup>1</sup>.

The rocky, limestone habitat here means that macrophyte species are generally comprised of riparian bryophytes, and less emergent herbaceous plants, although some are present on the muddier banks of the river near the Old Mill.

Within the village and surrounding area, the gardens around houses and commercial premises provide some habitats for birds and pollinators. Mature trees are also notable within Dromore West, indicating older estates, such as that around Dromore House, and old field boundary lines. These areas support unique habitats and flora, which in turn provide resting sites and foraging areas for numerous fauna e.g., rookeries.

There is one remaining peatland area to the west of the village, close to the Carrownarush River – but this area, and the farmland around it has now been highly modified for agriculture. The peatland, and associated ditches are likely to support waders such as snipe.



Plates 3 & 4 - Old derelict buildings can provide roosting locations for bats and nesting sites for birds. – The steep limestone sides of the gorge in which the Dunneill River flows support bryophytes.

There are significant opportunities to increase the biodiversity potential of the village by including suitable planting (particularly pollinator friendly planting) and using sensitive management techniques in green and ornamental areas within the town. Such sites include the amenity grassland surrounding the old mill and ball alley, flower beds and borders, in Orville Park and along grassy road verges. The grassland in Orville Park was cut at the time of the survey, however it appeared to support some diversity of species, including plants that are typical of damper habitats.

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<sup>1</sup> Further information is available at: Central and Regional Fisheries Boards (2009) [http://www.wdfish.ie/wp-content/uploads/2011/01/WRBD\\_rivers\\_report\\_2008-2009.pdf](http://www.wdfish.ie/wp-content/uploads/2011/01/WRBD_rivers_report_2008-2009.pdf) and Ireland's Wildlife (2017) <https://www.irelandswildlife.com/european-eel-anguilla-anguilla/>





*Plate 5 & 6 - The old hand ball alley and Orville Park are two areas which could be enhanced further by pollinator friendly planting.*

Some areas within Dromore West could be enhanced by planting native flowering species, reducing fertilisation, avoiding the use of herbicides/pesticides, and by undertaking a suitable mowing regime along grassy verges or within parkland, all of which would encourage biodiversity within the village centre.

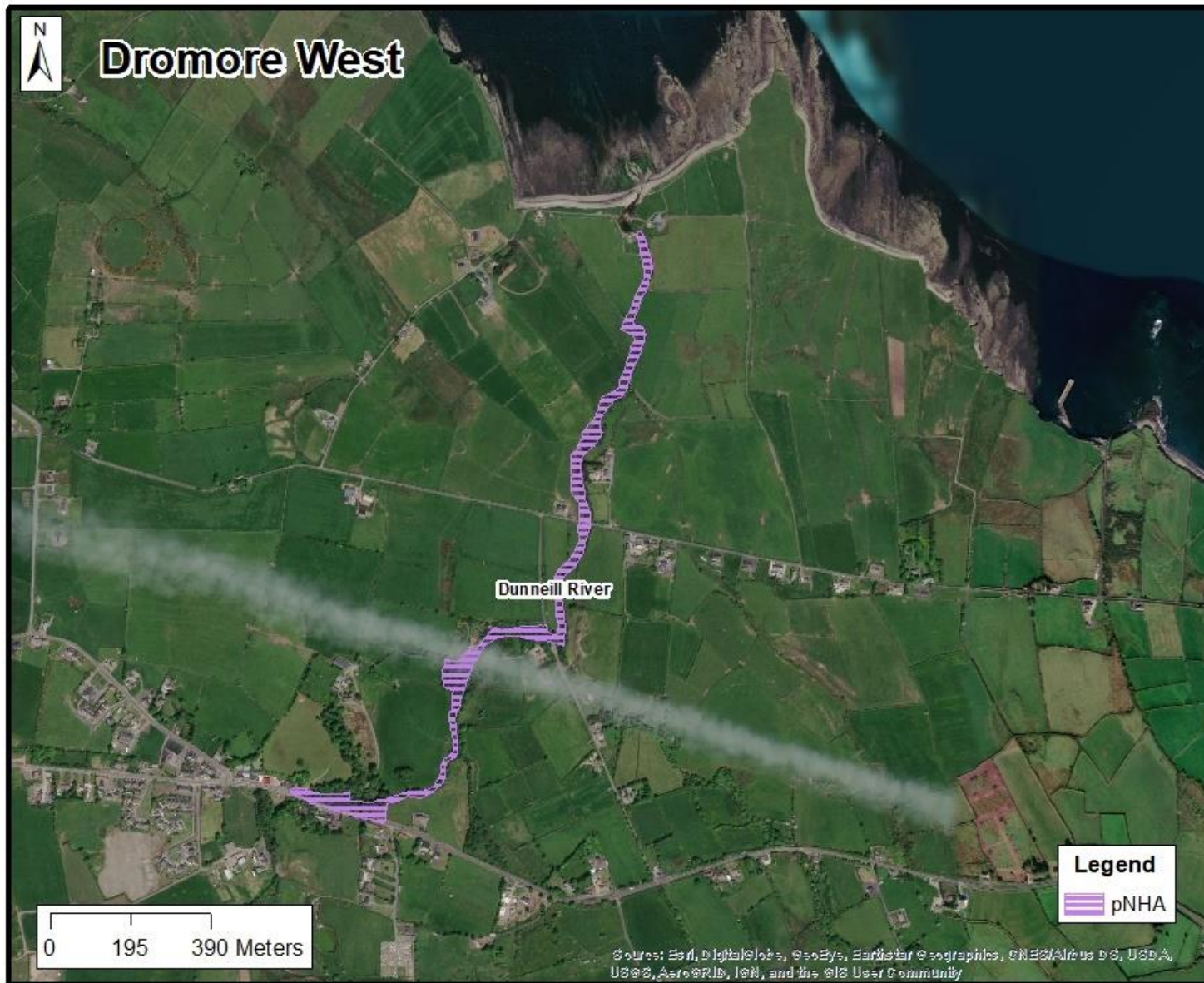
There are a number of old and derelict buildings within the village and on the outskirts of this e.g., the old mill, Kilmacshalgan church and St Mary's C.o.I Church which all offer suitable features in which bats might be found roosting. In addition, mature old trees such as those found within Dunneill River pNHA could also support roosting bats. The stone bridges over the river have recently been renovated and were not considered to be suitable for roosting bats. A large rookery exists at the Old Mill and within the broadleaved woodland here, and amongst the mature trees on the opposite side of the Dunneill River to the north-east of the village, along the river walk. More than 50 corvid nests were noted here, and it appears that this rookery has been present for a significant amount of time. Rooks forage on a number of insects that can be harmful to crops, such as wireworms (the larvae of the click-beetle, which bore holes into tubers) and leatherjackets, but they also feed on some farm produce such as potatoes or cereals. They are creatures of habitat and tend to return to their sturdy nests year on year, sometimes overwintering in them with other birds from their rookery. In the late winter activity levels in the rookery may increase as the birds begin to prepare for the breeding season. The rook *Corvus frugilegus* often forages in the company of other corvids such as jackdaws *Corvus monedula*.

Many of the field boundaries in Dromore West support dense hedgerow habitats, dominated by hawthorn *Crataegus mongyna*, bramble *Rubus fruticosus* agg., blackthorn *Prunus spinosa*, some with gorse *Ulex europaeus*, and mature treelines (the latter were notable particularly in the southern extents of the LBAP survey area) supporting ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus*. Although these are all managed field boundaries, within agricultural fields, they continue to offer important areas for wildlife and connectivity to other habitats.

As briefly mentioned above, there are a number of areas of special wildlife significance in the village centre, and within a short distance of Dromore West village, which greatly add to the biodiversity of the general area. The locations of protected areas in relation to Dromore West LBAP survey area are illustrated in Figure 4 below.



Figure 4: Protected conservation areas around Dromore West





## Designated Sites

### European Sites

European sites are areas that are considered important for biodiversity conservation, and which have been designated under the European Habitats Directive and Birds Directive. Special Areas of Conservation (SACs) are designated under the Habitats Directive for the protection of important habitats and species, whereas Special Protection Areas (SPAs) are designated under the Birds Directive for the protection of birds.

Dromore West village does not lie within close proximity to any Natura 2000 Sites (European Sites), with the closest being a small area of bog in the centre of Dunneill Wind Farm, which forms part of the wider Ox Mountains Bog Special Area of Conservation (SAC) [Site Code: 002006] c.4km to the south of the village. At this particular location, this site comprises a mosaic of EU Annex I habitats including active blanket bog, European dry heaths and northern Atlantic wet heaths with *Erica tetralix*<sup>2</sup> and is largely surrounded by conifer plantation woodlands.

The closest Special Protection Area (SPA) is the Aughris Head SPA [Site Code: 004133], which protects a nationally important breeding population of Kittiwake *Rissa tridactyla*. This SPA lies c. 7km north-east of the village and is also an important location for other sea birds including Guillemot *Uria aalge*, Razorbill *Alca torda* and Fulmar *Fulmarus glacialis*.

### National Sites

National sites are areas that are considered nationally important for biodiversity. These are called Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs). There is one pNHA within the area of Dromore West:

- **Dunneill River pNHA [Site Code: 001664].**

This pNHA site is situated along the northern extents of the Dunneill River and covers a relatively small area c. 2km in length. It begins at the Old Mill in the centre of the village and runs along the river to Donaghintraire at the mouth of the Dunneill River. The river has cut into a limestone gorge which is now generally wooded, by a mostly narrow fringe of woodland dominated by ash *Fraxinus excelsior*, sessile oak *Quercus petraea*, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*. In the past, maidenhair fern *Adiantum capillus-veneris* a plant that is largely confined to the Burren and Aran Islands occurred here. This was not re-found in the 2018 survey, and a dedicated survey for this species would be worthwhile.

There is an area of wet woodland (which was not considered likely to be habitat of EU Annex I quality due to its small size, fractured nature and low canopy density) occurs alongside the river walk in the north-east of the LBAP survey area.

The area surrounding the Old Mill contains gravels and rock substrate that could provide important niche habitat for aquatic invertebrates and fish.

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<sup>2</sup> NPWS (2016) Ox Mountains Bog SAC (002006) Conservation objectives supporting document – Upland habitats [Version 1]. Available online at: [https://www.npws.ie/sites/default/files/publications/pdf/Ox%20Mountains%20Bogs%20SAC%20\(002006\)%20Conservation%20objectives%20supporting%20document%20-%20Upland%20habitats%20\[Version%201\].pdf](https://www.npws.ie/sites/default/files/publications/pdf/Ox%20Mountains%20Bogs%20SAC%20(002006)%20Conservation%20objectives%20supporting%20document%20-%20Upland%20habitats%20[Version%201].pdf)

Plants such as ferns, liverworts and mosses are abundant throughout the pNHA and it would be beneficial to conduct a dedicated botanical and bryophyte survey here – particularly as a rare (undefined) moss was found at this site by An Foras Forbartha (a state organisation that was dissolved in 1987) in the past.



*Plates 7 & 8 – Ferns such as Scaly male fern *Dryopteris affinis*, mosses and liverworts along the banks of the Dunneill River pNHA.*



*Plate 9 – Mosses and ferns (such as this Maidenhair Spleenwort *Asplenium trichomanes*) are found on the limestone walls of the Old Mill at the start of the Dunneill River pNHA.*





Plate 10 – The rock and gravel substrates of the river at the Old Mill provide niche habitats for aquatic invertebrates and fish.

The river supports an important bird population, including species which are particularly associated with this type of rock watercourse e.g. dipper *Cinclus cinclus* and grey wagtail *Motacilla cinerea* (which were both recorded here during the surveys in 2018).

Dipper feed on aquatic invertebrates such as the larvae of caddis and mayflies and are therefore very sensitive to changes in water quality, while grey wagtail generally catch insects on the ground or in flight – and the river is an excellent place for them to forage on such insects. Both species frequently breed along rivers and streams in Ireland and can be found nesting underneath bridges.

Due to the steepness of this gorge, much of the river banks are un-grazed and given their rocky substrate – can offer suitable niches for a wide range of interesting flora and fauna, particularly for bryophytes (NPWS, 2009<sup>3</sup>).

Proposed Natural Heritage Areas (pNHA) were published on a non-statutory basis in 1995. They have not since been statutorily proposed or designated. These sites are of significance for wildlife and habitats. A process is underway by NPWS to resurvey, and formally designate, some pNHAs as NHAs<sup>4</sup>.

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<sup>3</sup> (NPWS, 2009) Dunneill River pNHA – Site Synopsis. .

<sup>4</sup> Further information is available regarding NHA's and pNHA's here: <https://www.npws.ie/protected-sites/nha>

## Habitats in Your Area

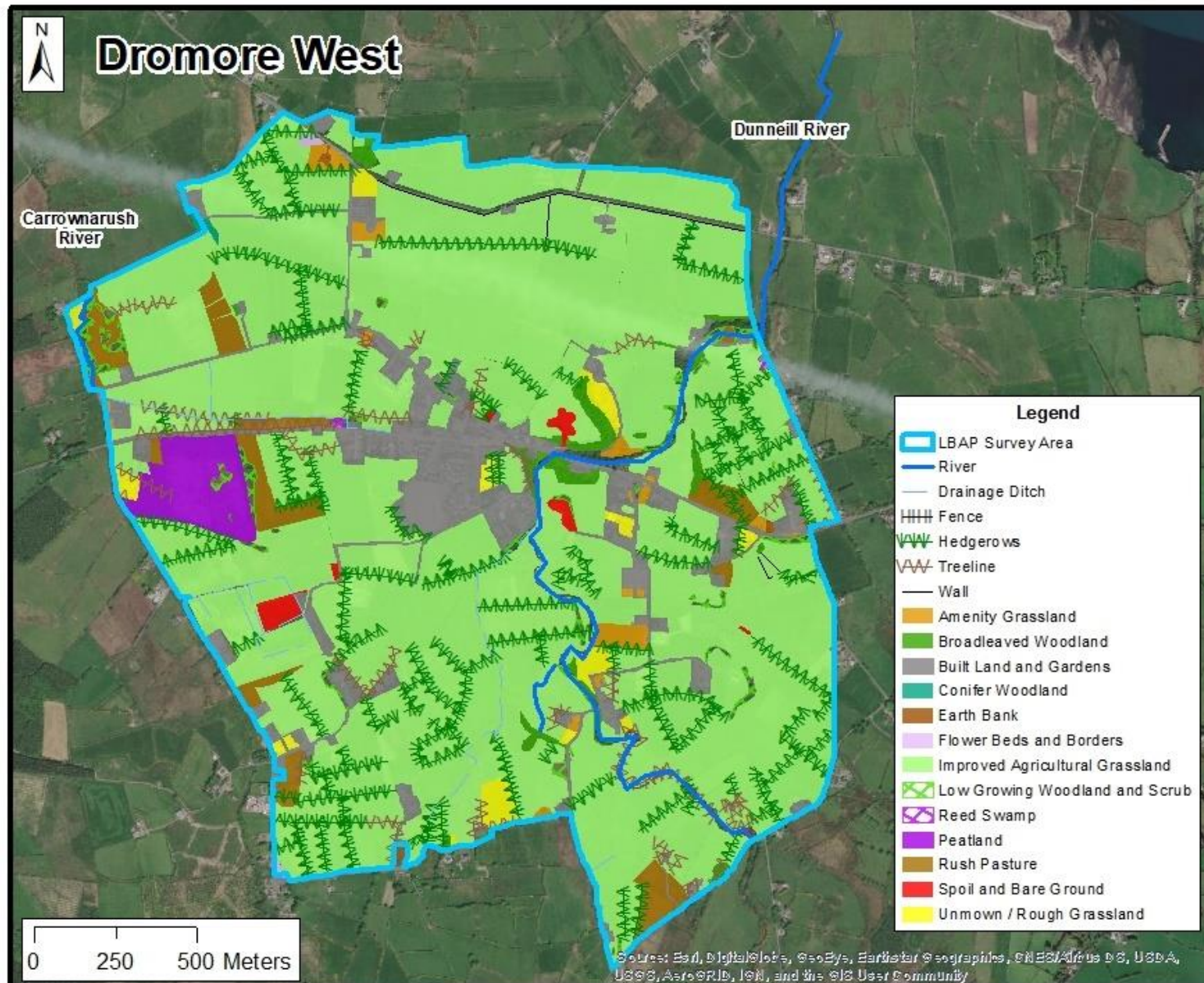
Dromore West has a variety of habitats in the vicinity of the village. The value of these habitats to biodiversity varies from low in the case of intensity managed agricultural grassland to high value stone walls and other semi-natural areas. The habitats recorded in the Dromore West area are listed in Table 4 and illustrated in Figure 5 below.

**Table 4: Habitats recorded in the Dromore West area**

<b>Code and Habitat Description (Fossitt, 2000)</b>	<b>Corresponding Habitat in Figure 5</b>	<b>Biodiversity Value<sup>5</sup></b>
BL1 Stone walls & other stonework	Stone walls	High
BL2 Earth banks	Earth bank	Medium
BL3 Buildings & artificial surfaces	Built lands and gardens	Medium
GA1 Improved agricultural grassland	Improved agricultural grassland	Low
GA2 Amenity grassland	Amenity grassland	Low to Medium
GS2 Dry meadows and grassy verges	Unmown / Rough grassland	Medium
GS4 Wet grassland	Rush pasture	High
ED2 Spoil and bare ground	Spoil and bare ground	Medium
FS2 Tall-herb swamp	Reed swamp	High
FW4 Drainage Ditches	Drainage ditch	Medium
PB4 Cutover Bog	Peatland	High
WD1 (Mixed) broadleaved woodland / WN6 Wet willow-alder-ash woodland	Broadleaved woodland (mixed / wet)	High
WD4 Conifer plantation	Conifer woodland	Medium
WL1 Hedgerows	Hedgerow	High
WL2 Treelines	Treeline	High
WS1 Scrub	Low growing woodland / Scrub	High
WS3 Ornamental/non-native shrub	Flower beds and borders	Medium

<sup>5</sup> It should be noted that different habitats may have varying biodiversity value which is dependent upon fluctuating environmental factors such as seasonality, growth stages, the substrates that they exist upon, the species that they support and the features present e.g. a hole in a tree can support fauna such as squirrel, bats and birds at different times of year. As such, this value is subjective and can change over time.

Figure 5: Habitat Map of Dromore West





## Habitats providing biodiversity in and around Dromore West

Several of the most common habitats and dominant species found within Dromore West are discussed further below. Habitats within Dromore West are illustrated on Figure 5 and listed in Table 4 above.

### **Unmown / Rough grassland**

Rough grassland was not commonly recorded throughout the LBAP survey area. Generally, this habitat was found within scattered fields where management had ceased for some time and a denser, grassland sward had formed due to a lack of mowing or grazing. The grassland around the old Kilmacshalgan Church and Cemetery, and adjacent fields are a good example of this. Here the plant assemblage was dominated by grasses with scrub encroachment by bramble *Rubus fruticosus agg.* and ivy *Hedera hibernica*. This habitat was dominated by grasses including cock's-foot grass *Dactylis glomerata*, false oat-grass *Arrhenatherum elatius* and red fescue *Festuca rubra*, other herbaceous plants were relatively uncommon but included flowering plants such as common hogweed *Heracleum sphondylium* and ragwort *Senecio jacobaea*. Both of these plants offer food sources for invertebrates such as click-beetles and moths e.g. the cinnabar moth *Tyria jacobaeae*. The dead, hollow stems of these plants also provide nest sites for species such as solitary wasps and bees.



Plates 11 & 12 – The rough grassland at Kilmacshalgan Church would benefit from grazing. The rough grassland field adjacent to this church which appears to have been cut or grazed in the past.

### **Wetlands and Watercourses - Rush pasture, Drainage Ditches and River**

Patches of rush dominated pastures are commonly noted within adjacent agricultural fields along the floodplain areas of the Dunneill River and the Carrownarush River (both likely to support fish and otter, and potentially amphibians within the slower flowing Carrownarush River), however, much of the Carrownarush River has now been channelised to direct the flow along the L2702 Road. These habitats were dominated by rush (generally soft rush *Juncus effusus*). Other herbaceous plants occasionally noted included yellow iris *Iris pseudacorus*, and supported mosses. These grasslands were generally grazed, fertilised and managed for agriculture, but retained some of their wetland plants given the soil moisture content.



Plates 13 & 14 – Rush dominated pastures are commonly noted along the floodplain areas of the Dunneill River and the Carrownarush River. Much of the Carrownarush River has been channelised.

### **Peatland and Reed swamp**

One large area of peatland habitat was identified within the local Biodiversity Action Plan survey area. This occurs west of the village and appears to be drying out having been cutover in parts, and drained. The full extent of this habitat is difficult to establish having been abandoned for some time, but this habitat now grades into rush pasture, and is dominated by purple moor-grass *Molinia caerulea*. The area is grazed by sheep. Common reed *Phragmites australis* was noted in some of the ditches here forming reed swamp habitat in some locations. A small area that was previously classified as species-rich fen and flush (PF1) during the RSK survey in 2009 (within a field across the road from Orville Park) has since been drained and cut. This habitat currently corresponds more closely with wet grassland / marshy grassland (rush pasture) today.



Plates 15 & 16 – The peatland along the N59 (west of Dromore West village). An old stone shed at the site may provide suitable nesting habitat for birds or possible features inside which bats can roost.

### **Linear Habitats - Hedgerows, Treelines, Old Stone Walls and Earth banks**

Hedgerows are a prominent feature within Dromore West village, and they are present throughout agricultural fields in the surrounding area, as can be seen on Figure 5. They are an important stronghold for our wildlife. Here, they are principally composed of hawthorn *Crataegus monogyna*, bramble *Rubus fruticosus agg.*, both plants are valuable food sources for a wide variety of mammals, birds and invertebrates. Their pollen- and nectar-rich flowers, borne in May (and often persisting into winter on bramble), provide food for bees and other pollinating species; while their berries, that ripen in early autumn and persist for much of the winter, are favoured by a range of birds such as song thrush and redwing. Hawthorn is also the food plant of many moth species, for example the emperor moth and the lesser yellow underwing. The hedges in Dromore West also include other woody shrubs or tree species such as European gorse *Ulex europaeus* and ash *Fraxinus excelsior*.



Plates 17 & 18 – A dense hedgerow on a rocky embankment near the Dunneill River. And a mature treeline on an earthen embankment in the south-west of the LBAP survey area.

Hedgerows also provide shelter for a wide range of small mammals, nesting birds and invertebrates, and provide an invaluable network of ‘wildlife corridors’ along which bats can feed, and wildlife can travel from one feeding area to another without having to cross areas of open land.

There were certain locations where it might be worthwhile encouraging landowners to plant up native hedgerows to offer more cover for local wildlife e.g. some gappy or species poor hedgerows were noted within fields alongside the Dunneill River Walk.

Mature treelines are notable in Dromore West (along with mature woodland) and include ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus*, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*.

Hedges and treelines in this town are usually associated with old stone walls or an earthen embankment. These provide important, and often relatively undisturbed habitat for plants including bryophytes, as well as lichens, and potentially nesting birds or small mammals. Solitary wasps and beetles can also be found burrowing into earth banks – these areas are very important for maintaining species diversity.



### **Broadleaved Woodland and Conifer Woodland**

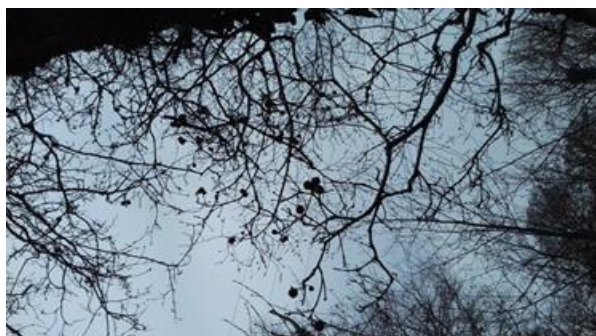
Broadleaved woodlands included mature old mixed woodland including pedunculate oak *Quercus robur*, sycamore *Acer pseudoplatanus*, beech *Fagus sylvatica*, ash *Fraxinus excelsior* and occasional conifers such as scots pine *Pinus sylvestris*, European larch *Larix decidua* and Leyland cypress *Cupressus x leylandii*. These were generally part of old plantations around buildings such as the Old Mill or part of the old Dromore House Estate. Herbaceous ground flora noted within some of these woodlands, particularly within the Dunneill River pNHA, was rich and included wood-sorrel *Oxalis acetosella*, primrose *Primula vulgaris*, lords-and-ladies *Arum maculatum*, wild carrot *Daucus carota*, lesser celandine *Ficaria verna*, common hogweed *Heracleum sphondylium*, herb Robert *Geranium robertianum*, honeysuckle *Lonicera periclymenum*, scaly male fern *Dryopteris affinis* and hay-scented Buckler-fern *Dryopteris aemula*. In open areas of woodland bush vetch *Vicia sepium* was recorded.

Understory shrubs included hawthorn *Crataegus monogyna*, elder *Sambucus nigra* and blackthorn *Prunus spinosa*. Liverworts and mosses were noted growing on walls and rocks within the woodland habitats.

Within the wetter areas the canopy was dominated by typical riparian tree species such as Alder *Alnus glutinosa* and willow *Salix sp.* along with trees such as ash and sycamore (as mentioned above). The wetter substrates, associated with the floodplain of the river and possibly also ground water fed in places, supported species such as yellow iris *Iris pseudacorus*, Opposite-leaved Golden-saxifrage *Chrysosplenium oppositifolium*, nettle *urtica dioica* and again, lesser celandine, with abundant bryophytes.

The diversity in some of these woodlands gives a good indication that those locations have supported woodland habitats for some time. Within the drier woodland, galls (clusters of hard woody marbles on the tree branches, turning from green to brown) were noted on some of the pedunculate oaks. These galls are formed by the tree's own tissues when Cynipid wasp species lay their eggs here. The larvae then form inside these galls<sup>6</sup>.

There were small patches of conifer plantation / conifer trees in the north-west of the LBAP area, however the larger areas of conifer plantation lie outside of the LBAP survey area e.g. west of the Carrownarush River. These habitats are generally less diverse than broadleaved woodland but can also support bryophytes, birds and mammals such as red squirrel.



Plates 19 & 20 – Broadleaved woodland along the Dunneill River within the pNHA. And oak galls visible on pedunculate oak *Quercus robur*.

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<sup>6</sup> Further information on oak galls is available in Michael Viney's Irish Times article here: <https://www.irishtimes.com/news/environment/another-life-the-squidgy-little-grubs-that-make-oaks-their-winter-havens-1.1579700>

### ***Low Growing Woodland / Scrub***

Given that Dromore West is a largely agricultural area, much of this habitat has been cleared from fields to provide grazing for livestock. However, patches of scrub are present within the rush pasture in the north-west of the survey area, scattered throughout the peatland habitat and along unmanaged areas of the Dunneill River. Scrub can also be found in smaller patches throughout fields, and along boundaries and road verges, many of these areas are too small to map.

Scrub provides an important habitat for foraging wildlife, often dominated by bramble – which as explained above can provide food for birds, mammals etc. throughout spring, summer and well into winter time. In addition, these areas provide invaluable cover, protection from disturbance and suitable areas for nesting sites, or burrow holes. Scrub habitats are of ecological value. During the walkover survey for the LBAP it was noted that extensive strips of scrub were being removed along the Dunneill River either side of the walkway. Where scrub management is required, this should avoid the nesting bird season. Further details on this are provided within the appendices of this report (hedgerow maintenance tips in Appendix 4 can also be applied to scrub habitats). However, it is acknowledged that in areas where herbaceous species might thrive, encroaching scrub can shade out such plants and some scrub management is to be encouraged in appropriate areas to some degree e.g. within rough grasslands and within dense woodlands where there is little or no grazing – where required, scrub should be removed in patches, retaining some cover and connectivity for wildlife.



*Plates 21 & 22 – An area of scrub within the woodland along the Dunneill River (note this provides important cover and foraging habitat for birds, mammals and other fauna). A bird's nest within scrub.*

### **Improved Grasslands – For Amenity and Agricultural uses**

The vast majority of the fields around Dromore West are managed for agriculture, generally sheep and cattle grazing, with some fields occasionally used by horses. Such areas require little chemical input, although slurry tends to be spread seasonally to increase nutrient levels and encourage growth of grasses. Rushes are generally controlled by topping in spring or early summer. Most of the fields in the Dromore West area have undergone some degree of agricultural improvement, and are therefore classified as improved grassland, some of these still support patches of rushes *Juncus* spp in wetter locations.

The amenity grassland within St Mary's C.o.I Church grounds, although improved and managed, was noted to be herb-rich and supported plants such as daisy *Bellis perennis*, white clover *Trifolium repens*, dandelion *Taraxacum* sp. creeping thistle *Cirsium arvense*. Together these species all indicate improvement of the grass sward, however they also flower and provide important pollinator friendly plants. Grasses here included cocksfoot *Dactylis glomerata*, perennial rye-grass *Lolium perenne* and Yorkshire fog *Holcus lanatus*. The grassland was however dominated by mosses, and supported some fungi, which may indicate less improvement and also some shading from the local mature trees which surround the site.

Here the amenity grounds and grave yard, along with the mature trees (sycamore and elm *Ulmus* sp.), supported birds such as blue tit *Cyanistes caeruleus*, great tit *Parus major*, wren *Troglodytes troglodytes* and black birds *Turdus merula*.

### **Built Land and Gardens**

Most of the houses in Dromore West have gardens, which also contribute to the biodiversity of the village area: pollen and nectar is provided by flowers, vegetables and fruit trees, while berry-bearing shrubs and bird feeders provide supplementary food for birds, and mature and semi-mature trees provide nesting/roosting and foraging habitat for birds, bats and invertebrates. In addition, there are a number of derelict properties dotted around Dromore West. Some of these, offer suitable nesting/roosting habitat for nocturnal species such as owls and/or bats. The Old Mill supports a large rookery, while Kilmacshalgan church provides a smaller area for nesting corvids. Both of these buildings also offer suitable features for bats to hibernate within during winter, and may support roosting bats in crevices during the summer time. A number of old buildings such as St Mary's C.o.I Church could support roosting bats and nesting birds. Swallow *Hirundo rustica* were recorded nesting within an open shed near Kilmacshalgan Church – and many other similar buildings in the area are likely to provide nesting locations for this species within the countryside.



## Species Recorded in your Community

The National Biodiversity Data Centre (NBDC) [www.biodiversityireland.ie](http://www.biodiversityireland.ie) lists details of species recorded in your area by volunteers. These include rare and protected species, invasive species and details submitted via volunteers taking part in citizen science projects.

A detailed list of the various species records available for Dromore West can be found in Appendix 1

## Invasive species in Dromore West

Invasive species are generally defined as those that do not naturally occur in Ireland and which, as a result of their vigour, persistence and competitive advantage, have become established in Ireland to the detriment of our native species. Well-known examples of invasive species in Ireland include the grey squirrel, which was introduced from North America and outcompetes our native red squirrel for food and territory (it also carries, and has built up a tolerance to squirrel pox, a disease which can have devastating effects on the native red squirrel population<sup>7</sup>). Another invasive animal is the New Zealand flatworm, which was accidentally brought into the country on imported plants, and predates the common earthworm to the detriment of our soil ecosystems.

Irish legislation<sup>8</sup> makes it illegal to 'introduce, breed, release, or disperse / cause the spread of, the most invasive species. Other, less invasive, species are not directly covered by this legislation, but it is still recommended that they are controlled where possible and are not allowed to spread.

During walkover surveys in 2018, one Scheduled invasive plant species, Japanese knotweed *Fallopia japonica*, was recorded in six locations around the LBAP survey area. This information was further updated during a walkover of the area in 2022. The results can be seen on Figure 6 below.

The presence of Japanese Knotweed is of concern given that the propagation, and/or dispersal of this plant is illegal under Irish law. This species is extremely persistent, propagates vegetatively from minute fragments, and spreads very rapidly. It is notoriously difficult to eradicate, and fragments of rhizome may remain viable for over twenty years.

Other non-scheduled invasive species which are known to be present within the area include Montbretia *Crocsmia x crocosmiiflora*, cherry laurel *Prunus laurocerasus* and winter heliotrope *Petasites fragrans*. These species are listed as 'Amber' by Invasive Species Ireland and are considered to pose a threat to native biodiversity.

Another species which is likely to occur in the LBAP area, but was not recorded during the survey in 2018 is Snowberry (*Symphoricarpos albus*). This plant has often been planted in hedgerows in the past, is relatively easy to eradicate. It was originally introduced into Ireland to provide food and cover for pheasants on large estates. Snowberry is not listed under Irish invasive species legislation but was Amber-listed following an Invasive Species Risk Assessment undertaken by Invasive Species Ireland<sup>9</sup>. It is advisable that it is not propagated

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<sup>7</sup> <https://invasivespeciesireland.com/wp-content/uploads/wp-post-to-pdf-enhanced-cache/1/squirrel-pox-virus.pdf>

<sup>8</sup> Statutory Instrument No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011, Articles 49 and 50.

<sup>9</sup> <https://invasivespeciesireland.com/wp-content/uploads/wp-post-to-pdf-enhanced-cache/1/amber-list-recorded-species.pdf> (Invasive Species Ireland, Accessed May 2018).

or encouraged to spread, as it forms dense thickets that exclude our more desirable native species.

Montbretia, like snowberry, is listed on Invasive Species Ireland's Amber List of invasive species. It is an attractive hybrid plant bred in France from South African species, and is commonly grown in gardens. It readily reproduces by means of corms and rhizomes (and occasionally by seed), spreading rapidly to form dense clumps that can completely dominate an area, eventually excluding existing native plants.

Other invasive plant species that are common garden plants, particularly within old estates and are likely to be encountered around Dromore West include the Rhododendron *Rhododendron ponticum* and Cherry Laurel *Prunus laurocerasus*. The latter has been planted as part of an ornamental hedgerow on private land near the Dunneill River (near Cloonascoffagh).



Plates 23 -26 - Invasive species which occur in the Dromore West area:

Top – Japanese knotweed, Montbretia. Bottom – Cherry laurel, Winter heliotrope

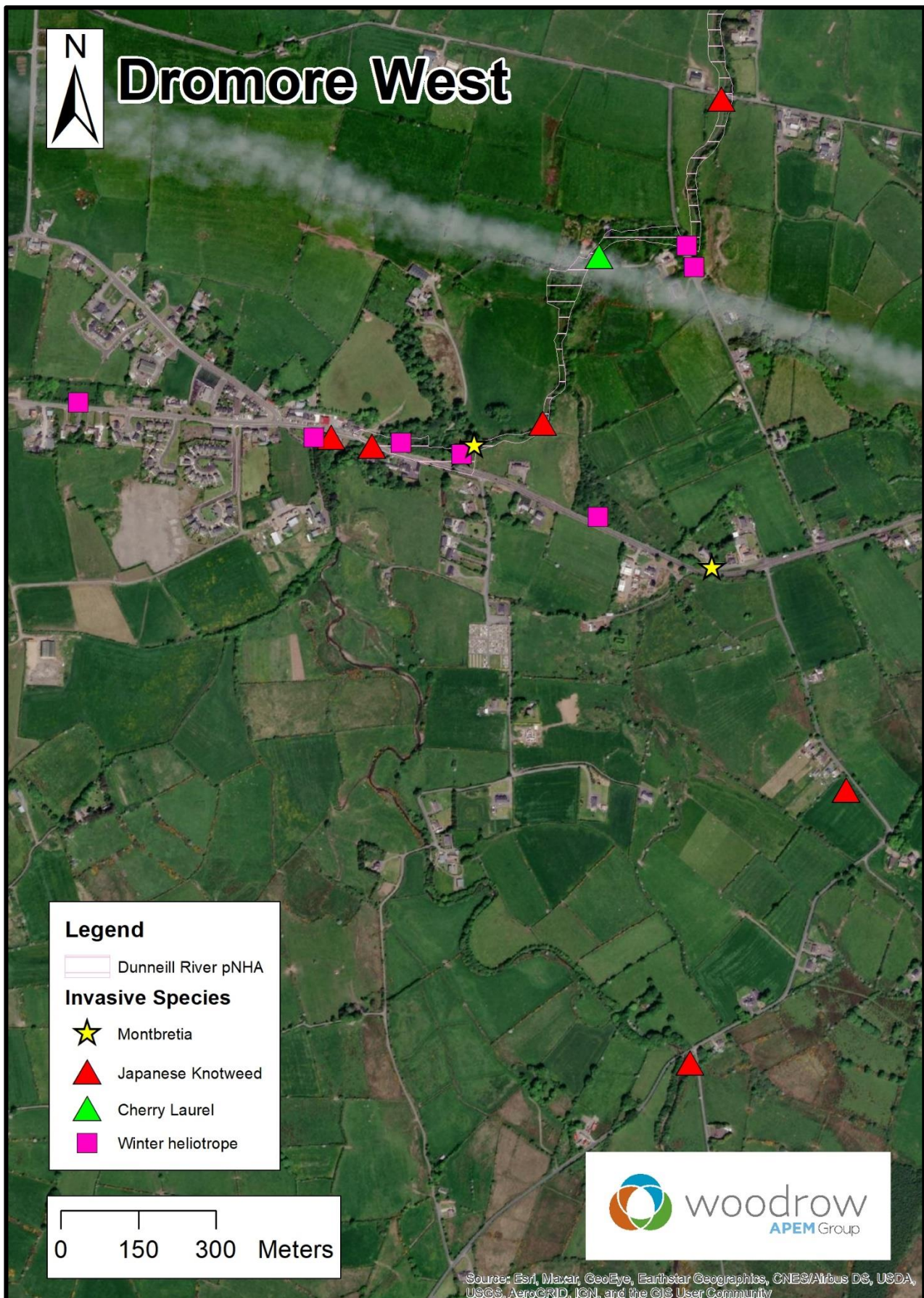
Cherry laurel forms dense evergreen thickets that are toxic to livestock (its leaves contain cyanolipids that are capable of releasing cyanide). It is widely planted as a hedging species and is readily available in garden centres but is detrimental to biodiversity as it excludes native plant species and provides poor habitat for birds and invertebrates. It is listed as a High Impact Invasive Species, scoring highly in the Invasive Species Risk Assessment undertaken by Invasive Species Ireland.

Rhododendron grows in a similar fashion to cherry laurel, and like Japanese Knotweed, is listed under Irish invasive species legislation and thus it is illegal to plant it or cause it to spread. This species grows rapidly in the Irish climate, can tolerate shading and waterlogging, produces vast quantities of wind-dispersed seed, and effectively and rapidly regenerates from cut stems. Its foliage is toxic to mammals and unpalatable to most invertebrates. Its dense evergreen growth excludes light from the ground layer and excludes native species; dense rhododendron forms a monoculture where nothing else is able to thrive.

Further information and links to advice on control of these invasive plant species is available online (see Appendix 6 for sources of information). All of the invasive species recorded in Dromore West during the 2018 and 2022 surveys can be seen on Figure 6.



Figure 6: Locations of Invasive Alien Species (IAS) plants in Dromore West





## Biosecurity and Invasive Awareness Campaigns

There are a variety of national awareness campaigns running to raise awareness of the threats posed by invasive species. Below are brief descriptions of some of the main campaigns running at present:

**CLEAN, DRY, CHECK** - Check, clean and thoroughly dry equipment and clothing that comes in contact with the water before using again. If everything cannot be dry for at least 48 hours before re-entering the water, then disinfect it.

This helps prevent the spread of diseases (like the crayfish plague) and invasive species (like the zebra mussel) between waterbodies.

**BE PET WISE** – use native bird seed and wild flower mixes.

**BE PLANT WISE** - In order to stop the spread of non-native plants out of gardens and into wild areas, please follow these 3 simple steps:

1. Know what you grow: choosing the right plants for your garden/pond etc. and knowing what invasive species to avoid is important.
2. Stop the spread: Don't allow plants from your garden/ community area to spread beyond where it was intended to be.
3. Compost with care: Dispose of your unwanted plants, roots, weeds and seeds responsibly making sure nothing gets into the wild.

[Report sightings of Invasives Species in Ireland](#) to the National Biodiversity Data Centre (NBDC)<sup>10</sup> or erect a local sign to advise the community of health risks or danger or spreading the species.

## Enhancing Habitats in The Community

The best way to encourage biodiversity is to provide suitable habitats for native species. In towns and built-up areas, the natural habitats or vegetation will often have been removed. Maybe trees have been cut down, hedgerows cleared or a pond drained. Beginning to restore pieces of these natural habitats, even on a small scale, is a great way to improve biodiversity in the area.

This plan outlines how actions can be carried out, both by protecting existing valuable areas for biodiversity and by enhancing other areas that are currently not very biodiverse. Enhancing or improving habitats that might already be present can often be more successful or cost-effective than trying to introduce something totally new. In order to do this effectively, it is useful to set out a management plan outlining how these actions will be achieved.

To promote more species and biodiversity in our villages and gardens, we need to ensure there is food, shelter, and security for other species to thrive alongside us.

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<sup>10</sup> [NBDC Invasives Recording Sheet - https://records.biodiversityireland.ie/record/invasives#7/53.455/-8.016](https://records.biodiversityireland.ie/record/invasives#7/53.455/-8.016)

## 1. Food

Providing a variety of pollinator friendly plants that bloom from Spring through to Autumn is important for providing food for our pollinators and colourful flowers throughout the seasons!

Many pollinator-friendly trees and shrubs like blackthorn, hawthorn, bird cherry, crab apple, elder, honeysuckle and rowan along with fruit trees and fruit bushes are also provide great food sources for animals in the Autumn.

Allowing a few areas to grow naturally and see what emerges is the easiest and cheapest way to provide food, shelter and colour in an area. Plants that emerge could include dandelions or primroses in spring, perhaps followed by red and white clover, oxeye daisies and buttercups. If the soil is damp, meadowsweet or ragged robin may grow in the area. These are all beautiful native flowers and may be waiting to grow if they are just given the chance! They will also attract pollinating insects which will help support insect-eating bird populations in the area.

Examples of Actions to Promote Food:

### a. **Don't Mow, Let It Grow**

Delaying the first grass cut of the year **until April** with allow dandelions to bloom, providing pollinators with a very important food source in spring as they emerge from hibernation.

### b. **Short flowering meadow**

Cutting sections of grass on a 6-week rotation to allow flowers like clover, birds-foot trefoil and selfheal to bloom. Allowing some of these plants to go to seed also provides seeds for seed eating birds like finches.

### c. **Creating strips of long grass/ meadow patches**

Allow some areas of grasses to grow long into a long flowering meadow. To do this, wait to cut do the first cut until April, then let the meadow strip/patch to grow long throughout the summer and then cut again in early September. If the grasses start to fall over under its own weight, do an earlier cut (e.g., in July and September). Remember to remove the cuttings to reduce the soil fertility over time.

### d. **Pollinator Friendly Planting**

Other pollinator friendly plants are listed in the 'Pollinator Friendly Planting' table below.

Perennial planting and bulbs are most cost-effective and generally lower maintenance than beds of annuals. However, annuals can also add splashes of colour and promote biodiversity in the village. For instance, annuals such as single-headed sunflowers, cosmos, annual poppy, scabious and cornflowers will provide food for pollinators and seed eating birds during the year.

Pollinator plants for hanging baskets include Ageratum, Alyssum 'Sweet White', Heliotrope 'Dwarf Marine', Verbena 'Blue Lagoon' & 'Desert Jewels Mixed'.

Green manures can be used to improve the soil in areas that struggle to support plant growth. These plants provide colour and food for pollinators. They can then be dug back into the soil to act as enrichment for the soil. Buckwheat and Phacelia are an excellent green manure.

e. **Edible Landscaping:** Integrating perennial food sources into planting in community areas is not only a great way to attract wildlife with pollinators and birds, it also is a great way to connect people with the food systems that supports them. In such areas, adding some signage or creating a 'food trail' through the village can be an effective way to promote awareness and generate interest in nature. Plants in these areas can be fruit shrubs and trees as describes above, herbs such as rosemary, sage, thyme, chives, oregano and perennial vegetables like globe artichokes, sea kale, asparagus; perennial Alliums, such as Welsh onion and wild garlic; leafy greens, such as sorrel, wild rocket and Daubenton's kale. Annuals such as nasturtiums, peas, beans and courgettes all provide colour, interest and most importantly food!

- **Fruiting trees and shrubs**

Plant trees and shrubs that provide flowers in spring for pollinators and fruit later in the year for other animals and humans. For instance, planting a row of soft fruit bushes such as raspberry, gooseberry, loganberry can provide screening for an unattractive wall, divide a space or provide visual interest. Fruit and nut trees such as apple, plum, pear, cherry and hazel could be added as focal points in open spaces. Hazel also works as a hedging plant. These fruiting plants can be integrated across the landscape of the village to provide 'edible landscaping' which provides food and interest for people and other species!

#### **Management Notes:**

For instance, where reduced mowing is being implemented, create a schedule of when mowing will take place, e.g. No Mow May areas, mown every six weeks, mown once a year in late August/ early September. Paths can also be mown through meadow areas to make these areas accessible for people to walk through.

Ensure that there is somewhere you can take the cuttings to, as removing the mown grass from the area is important for promoting wildflower species. Where you don't have the mowing equipment available to carry out the work within the community, reach out to local farmers to check their willingness to cut and take the grass away for their animals.

Where this type of maintenance work is managed by a third-party, starting a conversation with that individual/ company on the benefits of biodiversity-friendly alternatives to conventional management is a great first step. For instance, [pollinators.ie](https://pollinators.ie/) has a simple 5 action plan that housing estate management can take to enhance biodiversity<sup>11</sup>.

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<sup>11</sup> [Pollinator friendly guide for housing estate management \(Source: https://pollinators.ie/\)](https://pollinators.ie/)

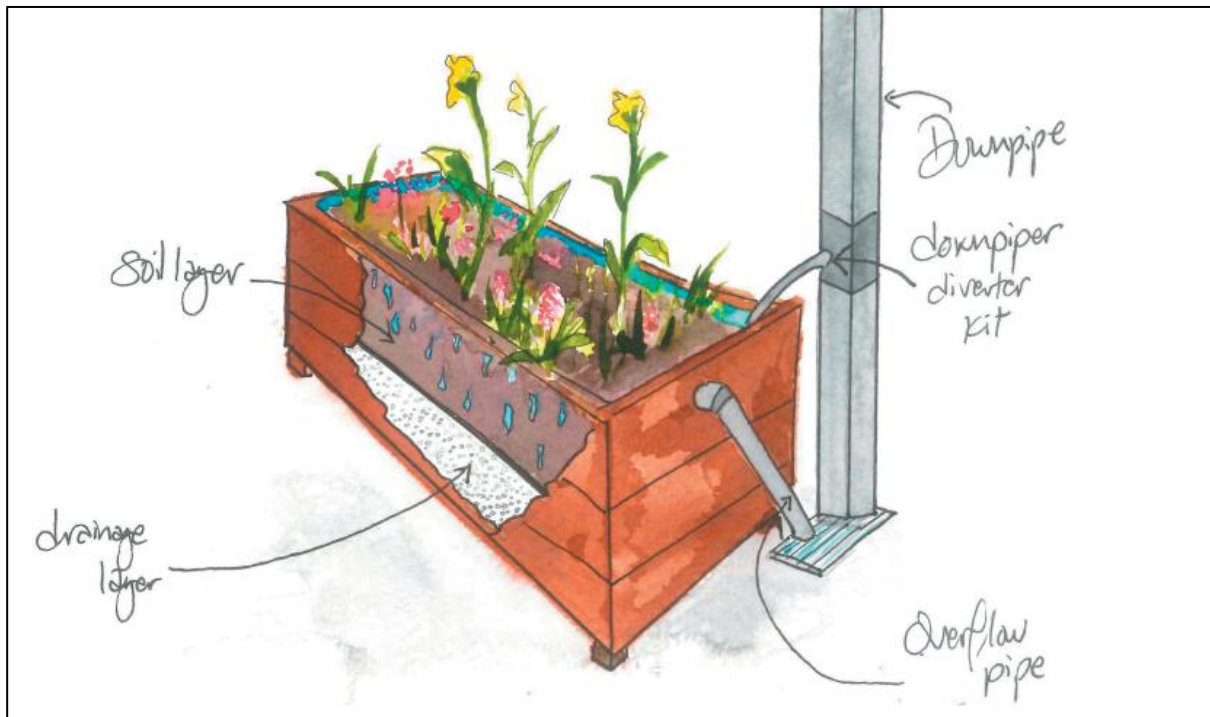
**f. Rain Gardens/ Rain Water harvesting:**

Our water is a precious resource and treated tap water requires a lot of energy to produce. Capturing rainwater for gardening is a more sustainable way to water plants within the village. Additionally, urban areas have more impermeable surfaces that decrease groundwater recharge and increase surface water runoff. Introducing elements of rainwater capture and storage can contribute to Sustainable urban Drainage Systems (SuDS). Slowing or preventing the influx of water into drains also reduces flooding risks.

There are many options for capturing urban rainwater. Two examples are rainwater barrels and rainwater planters. Planters are sealed flower boxes that use rainwater runoff from a roof via a downpipe diverter and can be various shapes and sizes. These boxes slow and clean the flow of water into drainage systems as it filters through the soil and vegetation. Any overflow water is directed into an overflow pipe which flows into a drain. Rainwater barrels are simply large containers which store rainwater coming from a roof downpipe for later use. They can be various sizes and are easy to install. For either example, landowner permission must be granted to install the planter or barrels.

At a larger scale, rain gardens could be created. Rain gardens are relatively shallow depressions in the ground which capture rainfall and help water slowly soak into the ground or the drainage system. Additional guidance on designing rainwater planters or rain gardens is found in Appendix 2.

*Figure 7: Flow through rainwater planter design. (Source: Dublin City Council)*





## 2. Shelter

Everyone wants a safe place to call home, including other species!

Providing nesting and resting spaces for other species is a great way to promote biodiversity in Dromore West.

### a. Invertebrates:

Leaving areas of dead wood, leaf piles, hollow-stemmed plants, bare earth banks, dry stone walls or unmown areas provide shelter for a variety of invertebrates such as ladybirds and bees in the village.

### b. Birds

Existing habitats such as trees and hedges are important nesting spots for birds, particularly native, flowering hedgerows that provide shelter for nests and berries/ nuts for food.

Providing nest boxes in the village can provide homes for different birds. Depending on the size of the entrance hole, the nest boxes will attract different species. Locate your nest boxes as high as possible (2.5m from the ground) on a tall tree where possible. Place the boxes in a sheltered spot, facing north-east to offer shelter from wind, rain and direct sunlight.

Providing cover with creeping plants like ivy and honeysuckle can also promote birds, which will nest behind the cover of the plants. This can be useful in areas when trees would not be suitable.

There is no need to remove moss from trees or grassy areas. Moss doesn't cause harm and is useful to birds as a nest-building material. Mosses are also beautiful little plants when you look closely.

### c. Swifts

Swifts can be seen flying above Dromore West in the summer. These long-lived birds live almost entirely in the air, landing only to raise their young in the summer. Swifts traditionally nested in cracks and crevices in buildings and as abandoned or vacant buildings are renovated; swifts lose access to these nesting sites. Swifts are very loyal to their nest sites and will return to the same nest site, even after it has been closed up. The swift population has declined by close to 50% in the last 30 year, mostly due to the loss of nesting sites!

Such threats are also facing the swifts in Sligo. As such, providing permanent nesting spots in Dromore West is a vital act in protecting the existing Sligo swift population and ensuring it can recover into the future.

Incorporating swift boxes into buildings and protecting existing nesting sites are the best way of providing permanent nesting spots for swifts in Dromore West. Swift Conservation Ireland provides a variety of guidance on creating nesting habitats for swifts including external and built-in nest boxes.<sup>12</sup> Built-in nest boxes are specially created concrete boxes that can be included in new buildings or as part of renovation works.

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<sup>12</sup> <https://www.swiftconservation.ie/nest-box-advice/>

Integration of swift boxes into existing buildings is the most likely option to result in success. Where that isn't possible, external nest boxes offer a great alternative home. When establishing new nest box sites, playing swift attraction calls on a speaker is needed to alert swifts to a new nesting site.



Plate 27: Two swifts at nest box site – Copyright © Martin Leak. Source: Swift Conservation Ireland



Plate 28: External Swift boxes at Tralee, Co. Kerry – Copyright © Anthony Dawson. Source: Swift Conservation Ireland



Plate 29: Built-in Swift boxes at Westport Town Hall. Source: Swift Conservation Ireland

#### d. Bats

Bats are natural controls for spiders and night-flying insects such as midges. A single Common Pipistrelle Bat eats about 3,000 midges and other small flies in a single night!

##### *Food:*

Planting night-flowering plants will attract nocturnal pollinators which in turn support bats. Examples of night-flowering plants are provided in the 'Pollinator Friendly Planting' section. Hedgerows and rivers support many insects that provide food for bats as they fly along them.

##### *Lighting:*

Avoiding lighting in areas where bats are commuting will encourage bats and allow them to move across the landscape more easily. This is particularly relevant in food-rich habitats such as along the river.

##### *Commuting:*

Bats need connected habitats, particularly linear features like hedgerows to navigate across the landscape. In towns, this could mean planting a row of hedging along an open field or including a treeline in an open green area.

##### *Housing:*

Bats can roost in cracks and crevices in trees. Protecting old trees in villages not only adds character to the area but also provides habitats for many species including birds and bats! When considering cutting back or felling mature trees with cracks or crevices, be aware of the potential of these sites to act as bat roosts. Bats are legally protected in Ireland, and it is an offense to disturb or interfere with them or their roosts without a license from the NPWS.

Erecting bat boxes in the village can also promote bat species in the area. Locate your boxes as high up as possible on trees (4m + ideally) or in the eaves of houses. Ideally, place multiple boxes in the area, in sheltered areas facing in south, south-east or south-west to provide warmth.<sup>13</sup>



Plate 30: Two types of bat boxes. One the left is a woodcrete bat box and on the right is a wooden bat box. © Copyright Kenneth Allen. Source: Geograph.ie

<sup>13</sup> <https://www.bats.org.uk/our-work/buildings-planning-and-development/bat-boxes/putting-up-your-box>

### 3. Security

#### a. Avoid pesticide use

Use of pesticides negatively impact on the species diversity of your area. This can be directly by harming the pollinators and other important species we rely on. Indirectly, this can also harm the species diversity of an area by killing off food sources which other species rely on such as slugs and snails (food for birds) and nettles (important food plant for many caterpillars).

Pesticides can also impact on human health. Several weedkillers which used to be widely used are now no longer available for safety reasons, and glyphosate, the most widely used weedkiller at present, is considered a likely carcinogen<sup>14</sup>.

Areas targeted as south facing solitary bee nesting habitat should be protected from spraying. These areas can be created and managed as described in the 'Bee Habitat Creation' section below.

When pesticide use is deemed unavoidable, use best practice to avoid damaging surrounding habitats. Avoid spraying the base of hedgerows which can support various plant species and also be the site of bumblebee nests.

Use spot treatment of problem areas. Spray in dry, low wind conditions to avoid spray drift. Spraying after sunset avoids direct contact of the spray with pollinating insects.

However, please bear in mind that there are nocturnal pollinators, and to avoid spraying plants that are pollinated by these species.

Where this type of maintenance work is managed by a third-party, starting a conversation with that individual/ company on the benefits of biodiversity-friendly alternatives for wildlife and human health is a great first step.

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<sup>14</sup> <https://www.iarc.who.int/featured-news/media-centre-iarc-news-glyphosate/>



Figure 8: Pollinator-friendly Pesticide Code. (Source: Pollinators.ie)

# Pollinator-friendly Pesticide Code



## Best Practice in the Use of Pesticides

In addition to the Honeybee who lives in hives, we also have 21 different types of Bumblebee and 77 different types of Solitary Bees in Ireland. Bumblebees and Solitary Bees live entirely in the wild. We need healthy populations of all these bees to carry out pollination if we want to have wildflowers in the landscape; be able to grow our own fruits and vegetables; or buy affordable, locally grown apples or strawberries in our shops. Bees and other pollinators can only survive in a landscape that provides them with food, shelter and safety throughout the year. Already, one-third of our 98 wild bee species are threatened with extinction from Ireland.

Insecticides pose the greatest direct hazard to insect pollinators. However, herbicides are having a much greater negative impact on pollinators because they are so widely used.

Even if Herbicides, Fungicides and Plant Growth Regulators have little or no toxicity to pollinators, many of the plants we spray as 'weeds' are actually vital sources of food for pollinators, especially in early spring. Pollinators need a range of flowers to feed on from spring through to autumn. The overuse of these chemicals is making it very difficult for them to find enough food to survive in our landscape.



### DO

- ✓ Check the label and select pesticides that are less harmful to pollinators
- ✓ Always read, understand, and follow the product label instructions fully
- ✓ Treat only the target area
- ✓ Spot-treat rather than use blanket sprays
- ✓ Follow the buffer zone instructions on the product label
- ✓ Leave areas of pollinator-friendly habitat free from all pesticides. These include areas of clover or wildflowers, the base of hedgerows, and any natural areas.
- ✓ Minimize spray drift to non-target areas by:
  - Using equipment that reduces drift
  - Checking the weather forecast before application and being mindful of changing conditions.
  - Ensuring you spray when the wind is blowing away from pollinator-friendly habitat.



### Don't

- ✗ Do not apply pesticides to bees or other pollinating insects
- ✗ Do not spray flower-rich areas (including weeds) when flowers are in bloom and providing food for bees. Plants we might consider weeds (e.g. Dandelions, Vetches, Clovers, Dead-Nettles, Knapweed) are important food sources, as they provide high quality pollen and nectar for bees.
- ✗ Do not apply pesticides to areas that have been identified as important nesting areas for pollinators.
- ✗ Do not apply pesticides to standing water.

\* Pesticides should always be used sparingly and only when absolutely necessary, such as in treatment of invasive species, e.g. Japanese Knotweed.

### **b. Sensitive hedge cutting**

Cut hedgerows on a 3-year rotation to encourage flowering. Cut the hedges in an 'A' shape with a wide base and a narrower taller top, rather than in a low box shape. Avoid cutting all hedges in an area in the same year, so that there is always some that will bloom and fruit in the area every year or cut one third of the hedge annually.

Where hedgerows are managed by a third-party, starting a conversation with that individual/ organisation on the benefits of biodiversity-friendly alternatives to conventional management is a great first step.

### **c. Be Plant Wise<sup>15</sup>**

Non-native plants and animals can escape from our gardens and ponds to spread into the natural environment. These species can cause lots of harm to our native species through competition and carrying diseases which native species are not adapted to deal with.

There are 3 simple steps which can tackle the spread of plant species in particular:

#### 1. Know what you grow

Make sure that you check some information on the species you want to add to your area. For instance, some species like rhododendron, cherry laurel and Himalayan balsam can spread very easily and overwhelm areas. Invasives.ie has a list of identification guides for invasive species which can be consulted when putting in new plants.

#### 2. Stop the spread

Some plants spread easily from fragments, cuttings or seeds. It's important to prevent such plants from spreading beyond the area they are meant to be in.

#### 3. Compost with care

Dispose of your unwanted plants, roots, weeds and seeds responsibly making sure nothing gets into the wild. This is important as your garden waste may contain seeds and fragments that regrow outside of where they were intended, potentially damaging nearby natural habitats.

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<sup>15</sup> <https://invasives.ie/what-can-i-do/management/>

## Adding new features

### 1. Bee Habitat Creation<sup>16</sup>

#### Bumblebees

Leave areas of long grass in undisturbed areas for bumblebees to nest in.



Figure 9: Bumblebees of Ireland Poster (Source: pollinators.ie)



Figure 10: Let plants and lawns flower to provide food for pollinators. (Source: pollinators.ie)

<sup>16</sup> <https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Nesting-2018-WEB.pdf>



## Mining Bee Habitat

### Important Note:

80% of solitary bees nest in bare ground, so creating areas of bare soil is an easy and effective way to promote pollinators!

### Create earth banks/exposed bare ground

- Pick an open, well drained, sunny location, preferably facing south. The soil should be gently packed. Choose a variety of locations for your bare soil-from vertical banks to flat ground- in order to attract different types of solitary bees.
- Carefully remove the vegetation from the chosen area with a spade. Aim for a minimum area of bare soil of 10x10cm. Remove all debris that could block a bee from reaching the soil.
- Clear back the vegetation from your chosen site annually in late autumn to avoid disturbing the bees.

## Cavity Nesting Bees

These bees will nest in dead stems, holes in tree trunks, stone walls and other sites.

1. Leave some plants with suitable dead stems in place  
Leave patches of plants like bramble in place for some species of cavity nesting bees.
2. Leave upright logs and tree trunks in sunny, well-drained locations for bees that nest in the tunnels created in these structures by beetles
3. Drill holes for cavity nesting solitary bees in pieces of untreated timber.  
Using a drill, create holes in the wooden structure; they should be at minimum 10cm in depth and 4-8mm in diameter. The holes should be as high up as possible, ideally 1.5-2m high. The entrance holes should ideally face east or southeast, so they get the morning sun.

Note:

Create holes of different diameters to attract different types of bees. Make sure not to drill through the structure. Try to drill with the grain to avoid cracks.

Holes should be as smooth inside as possible to attract nesting solitary bees. Use a countersinking drill bit or sandpaper to ensure the holes are splinter-free.

With regards to bee boxes the All-Ireland Pollinator Plan guidance is:

*'Bee boxes can be useful but are only targeting a very small proportion of our solitary bees. If you put up a bee box it should be the size of a **Blue Tit bird box** – any bigger and it will attract predators and be more likely to harbour disease. These should be placed about 1.5-2m off the ground in a sheltered south or south-east facing location. They should also be near flowers since solitary bees can't fly far for food.'*

In summary, many small bee boxes dispersed over wide areas are more useful to cavity nesting bees than one large insect hotel. **Small and mighty is the name of the pollinator game!**



## 2. Pollinator Friendly Planting <sup>17</sup>

Plant Type	Spring (March- May)	Summer (June- August)	Autumn (Sept-Oct)
<b>Shrubs and Trees</b>	Hazel (Feb-Apr) Willow (Mar-May) Blackthorn (Mar-May) Hawthorn (Apr-Jun) Broom (Apr-Jun) Wild Cherry (Apr-May)	Bramble (May-Sept) Wild Privet (May-Jul) Crab apple (May-Jun) Elder (May-Jun) Whitebeam (May-Jun) Rowan (May-Jun) Wild Rose (Jun-Jul) Honeysuckle (Jun-Oct) Guelder Rose (Jun-Jul)	Raspberry (Jun-Aug) Ivy (Sept-Nov) Gorse (Jan-Dec)
<b>Fruits, Vegetables and Herbs</b>	Apples Blueberries Cherry plum Currants Rosemary Borage	Blackberries Courgettes Field/runner beans Pumpkins, Raspberries Strawberries, Tomatoes, Lavender	Letting a small portion of Brassica plants (e.g., Cabbage, Kale, Brussel sprouts) flower can help provide food for pollinators in your garden
<b>Bulbs</b>	Common snowdrop ( <i>Galanthus nivalis</i> ), Armenian grape hyacinth ( <i>Muscari armeniacum</i> ), Common star of Bethlehem ( <i>Ornithogalum umbellatum</i> ), Crocus species (Crocus, spring-flowering),	Allium species ornamental and edibles (when allowed to flower) (Allium)	Colchicum species (Autumn crocus), Crocus species (Crocus, autumn-flowering),
<b>Night-flowering plants<sup>18,19</sup></b>  <b>(F: Foodplant for moth caterpillars)</b>	Night Scented Stock Oak <sup>f</sup> Hazel <sup>f</sup> Holly <sup>f</sup> Aubretia, Candytuft, Phacelia	Hebe, Honeysuckle, Sweet rocket, Jasmine, Globe artichoke, Purpletop vervain (Verbena), Echinacea, Red Valerian, Honesty	Ivy <sup>f</sup> Stinging Nettle <sup>f</sup>

<sup>17</sup> <https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Planting-Code-2018-WEB.pdf>  
[https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Gardens\\_actions-to-help-pollinators-2018-WEB.pdf](https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Gardens_actions-to-help-pollinators-2018-WEB.pdf)

<sup>18</sup> <https://butterfly-conservation.org/sites/default/files/moth-foodplant.pdf>

<sup>19</sup> <https://www.wildlifetrusts.org/actions/how-attract-moths-and-bats-your-garden>

## Appendix 1 - Wildlife recorded within the LBAP survey area

*Dromore West Species List: Please note this is not a full and complete list of species in the LBAP area and can be added to in future. Some of the records lie outside of the LBAP survey area – but exist within Dromore West.*

*Many thanks to the recorders who provided records which assisted in compiling the below species lists.*

**Source: National Biodiversity Data Centre (NBDC) - 2km grid squares G43G, G43H, G43L and G43M**

<b>Common Name</b>	<b>Latin Name</b>
<b>Bird</b>	
Barn Owl	<i>Tyto alba</i>
Black Guillemot	<i>Cephus grylle</i>
Common Pheasant	<i>Phasianus colchicus</i>
Northern Fulmar	<i>Fulmarus glacialis</i>
<b>Flowering Plant</b>	
Ash	<i>Fraxinus excelsior</i>
Beech	<i>Fagus sylvatica</i>
Brown Sedge	<i>Carex disticha</i>
Carnation Sedge	<i>Carex panicea</i>
Cocksfoot	<i>Dactylis glomerata</i>
Common Bent	<i>Agrostis capillaris</i>
Common Bird's-foot-trefoil	<i>Lotus corniculatus</i>
Common Dog-violet	<i>Viola riviniana</i>
Common Sedge	<i>Carex nigra</i>
Common Spotted-orchid	<i>Dactylorhiza fuchsii</i>
Compact Rush	<i>Juncus conglomeratus</i>
Creeping Bent	<i>Agrostis stolonifera</i>
Crested Dog's-tail	<i>Cynosurus cristatus</i>
Crested Hair-grass	<i>Koeleria macrantha</i>
Downy Oat-grass	<i>Helictotrichon pubescens</i>
Elder	<i>Sambucus nigra</i>
Field Wood-rush	<i>Luzula campestris</i>
Glaucous Sedge	<i>Carex flacca</i>
Hawthorn	<i>Crataegus monogyna</i>
Heath Bedstraw	<i>Galium saxatile</i>
Heath Spotted-orchid	<i>Dactylorhiza maculata</i>
Japanese knotweed	<i>Fallopia japonica</i>
Marsh Thistle	<i>Cirsium palustre</i>
Marsh Willowherb	<i>Epilobium palustre</i>

Marsh-bedstraw	<i>Galium palustre</i>
Meadow Buttercup	<i>Ranunculus acris</i>
Meadow Vetchling	<i>Lathyrus pratensis</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Montbretia	<i>Crocsmia x crocosmiiflora</i>
Purple Moor-grass	<i>Molinia caerulea</i>
Purple-loosestrife	<i>Lythrum salicaria</i>
Red Clover	<i>Trifolium pratense</i>
Red Fescue	<i>Festuca rubra</i>
Ribwort Plantain	<i>Plantago lanceolata</i>
Sharp-flowered Rush	<i>Juncus acutiflorus</i>
Sheep's-fescue	<i>Festuca ovina</i>
Silverweed	<i>Potentilla anserina</i>
Soft-rush	<i>Juncus effusus</i>
Sweet Vernal-grass	<i>Anthoxanthum odoratum</i>
Sycamore	<i>Acer pseudoplatanus</i>
Tormentil	<i>Potentilla erecta</i>
Velvet Bent	<i>Agrostis canina</i>
Water Mint	<i>Mentha aquatica</i>
White Clover	<i>Trifolium repens</i>
Yorkshire-fog	<i>Holcus lanatus</i>
<b>Harvestman (Opiliones)</b>	
Harvestman species	<i>Leiobunum blackwalli</i>
Harvestman species	<i>Leiobunum rotundum</i>
Harvestman species	<i>Nemastoma bimaculatum</i>
Harvestman species	<i>Oligolophus tridens</i>
Harvestman species	<i>Paroligolophus agrestis</i>
<b>Horsetail</b>	
Field Horsetail	<i>Equisetum arvense</i>
Marsh Horsetail	<i>Equisetum palustre</i>
<b>Insect - beetle (Coleoptera)</b>	
7-spot Ladybird	<i>Coccinella septempunctata</i>
<b>Insect - butterfly</b>	
Green-veined White	<i>Pieris napi</i>
Large White	<i>Pieris brassicae</i>
Meadow Brown	<i>Maniola jurtina</i>
Ringlet	<i>Aphantopus hyperantus</i>
Small Tortoiseshell	<i>Aglais urticae</i>
Speckled Wood	<i>Pararge aegeria</i>
<b>Insect - dragonfly (Odonata)</b>	
Common Darter	<i>Sympetrum striolatum</i>

Common Hawker	<i>Aeshna juncea</i>
<b>Insect - earwig (Dermaptera)</b>	
Common Earwig	<i>Forficula auricularia</i>
<b>Insect - hymenopteran</b>	
White-tailed Bumblebee	<i>Bombus lucorum agg.</i>
Common Carder Bee	<i>Bombus (Thoracombus) pascuorum</i>
<b>Insect - mayfly (Ephemeroptera)</b>	
Large dark olive	<i>Baetis rhodani</i>
Blue-winged olive	<i>Serratella ignita</i>
<b>Insect - moth</b>	
Dark-triangle Button	<i>Acleris laterana</i>
Common Nettle-tap	<i>Anthophila fabriciana</i>
Lilac leafminer	<i>Caloptilia syringella</i>
Pale Straw Pearl	<i>Udea lutealis</i>
<b>Mollusc</b>	
River Limpet	<i>Ancylus fluviatilis</i>
Wandering Snail	<i>Radix balthica</i>
<b>Terrestrial mammal</b>	
American Mink	<i>Mustela vison</i>
Daubenton's Bat	<i>Myotis daubentonii</i>
European Otter	<i>Lutra lutra</i>
Irish Hare	<i>Lepus timidus subsp. hibernicus</i>
Irish Stoat	<i>Mustela erminea subsp. hibernica</i>
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>
West European Hedgehog	<i>Erinaceus europaeus</i>
<b>Source: NBDC – 10KM Grid Square G43 for Bat Species</b>	
<b>Bats</b>	
Common Pipistrelle Bat	<i>Pipistrellus pipistrellus</i>
Daubenton's Bat	<i>Myotis daubentonii</i>
Leisler's Bat	<i>Nyctalus leisleri</i>
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>
<b>Source: National Parks and Wildlife Service (NPWS)</b>	
<b>Mammal</b>	
Common Frog	<i>Rana temporaria</i>
Irish Hare	<i>Lepus timidus subsp. hibernicus</i>
Otter	<i>Lutra lutra</i>
Pine Marten	<i>Martes martes</i>
Badger	<i>Meles meles</i>
Striped Dolphin	<i>Stenella coeruleoalba</i>



<b>Plant</b>	
Heath Cudweed	<i>Gnaphalium sylvaticum</i>
Bog Orchid	<i>Hammarbya paludosa</i>
Yellow Saxifrage	<i>Saxifraga aizoides</i>
Shepherd's-needle	<i>Scandix pecten-veneris</i>
<b>Amphibian</b>	
Smooth Newt	<i>Lissotriton vulgaris</i>
<b>Mollusc</b>	
Geyer's Whorl Snail	<i>Vertigo geyeri</i>
<b>Source: RSK 2009 Surveys</b>	
<b>Plant</b>	
Creeping Bent	<i>Agrostis stolonifera</i>
Common Sedge	<i>Carex nigra</i>
Sharp-flowered Rush	<i>Juncus acutiflorus</i>
Yellow Iris	<i>Iris pseudacorus</i>
Quaking-grass	<i>Briza media</i>
Marsh Marigold	<i>Caltha palustris</i>
Bottle Sedge	<i>Carex rostrata</i>
Yellow-sedge	<i>Carex viridula</i>
Marsh Horsetail	<i>Equisetum palustre</i>
Grass-of-Parnassus	<i>Parnassia palustris</i>
Enchanter's-nightshade	<i>Circaea lutetiana</i>
Herb-Robert	<i>Geranium robertianum</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Soft-rush	<i>Juncus effusus</i>
Yellow Iris	<i>Iris pseudacorus</i>
Water Mint	<i>Mentha aquatica</i>
<b>Giant Knotweed</b>	<b><i>Fallopia sachalinensis</i></b>
Alder	<i>Alnus glutinosa</i>
Sycamore	<i>Acer pseudoplatanus</i>
Ash	<i>Fraxinus excelsior</i>
<b>Source: Woodrow 2018 Surveys</b>	
<b>Birds</b>	
Rook	<i>Corvus frugilegus</i>
Dipper	<i>Cinclus cinclus</i>
Yellow wagtail	<i>Motacilla flava</i>
Robin	<i>Erithacus rubecula</i>
Wren	<i>Troglodytes troglodytes</i>
Blackbird	<i>Turdus merula</i>

Collared Dove	<i>Streptopelia decaocto</i>
Meadow Pipit	<i>Anthus pratensis</i>
Great Tit	<i>Parus major</i>
Starling	<i>Sturnus vulgaris</i>
Chaffinch	<i>Fringilla coelebs</i>
<b>Plants</b>	
Lesser Celandine	<i>Ficaria verna</i>
Coltsfoot	<i>Tussilago farfara</i>
Broad-leaved Dock	<i>Rumex obtusifolius</i>
Yorkshire Fog	<i>Holcus lanatus</i>
Water-cress	<i>Nasturtium officinale</i>
Creeping Buttercup	<i>Ranunculus Repens</i>
Marsh Marigold	<i>Caltha palustris</i>
Wild Angelica	<i>Angelica sylvestris</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Holly	<i>Ilex aquifolium</i>
Sycamore	<i>Acer pseudoplatanus</i>
Beech	<i>Fagus sylvatica</i>
Ash	<i>Fraxinus excelsior</i>
Hart's-tongue fern	<i>Asplenium scolopendrium</i>
Wood-sorrel	<i>Oxalis acetosella</i>
Primrose	<i>Primula vulgaris</i>
Wild Carrot	<i>Daucus carota</i>
Hogweed	<i>Heracleum sphondylium</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Scaly Male Fern	<i>Dryopteris affinis</i>
Liverworts	<i>Marchantiophyta</i>
Hay-scented Buckler-fern	<i>Dryopteris aemula</i>
Hawthorn	<i>Crataegus monogyna</i>
Elder	<i>Sambucus nigra</i>
Scot's pine	<i>Pinus sylvestris</i>
Japanese larch	<i>Larix kaempferi</i>
Herb Robert	<i>Geranium robertianum</i>
Bush vetch	<i>Vicia sepium</i>
Opposite-leaved Golden-saxifrage	<i>Chrysosplenium oppositifolium</i>
Sessile oak	<i>Quercus petraea</i>
Pedunculate oak	<i>Quercus robur</i>
Soft rush	<i>Juncus effusus</i>
Yellow Iris	<i>Iris pseudacorus</i>
Gorse	<i>Ulex europaeus</i>
Cherry Laurel	<i>Prunus laurocerasus</i>

Beech	<i>Fagus sylvatica</i>
Bramble aggregate	<i>Rubus fruticosus agg.</i>
Alder	<i>Alnus glutinosa</i>
Nettle	<i>Urtica dioica</i>
Spanish Bluebell	<i>Hyacinthoides hispanica</i>
Wych Elm	<i>Ulmus glabra</i>
Irish Ivy	<i>Hedera hibernica</i>
Cocksfoot	<i>Dactylis glomerata</i>
False Oat-grass	<i>Arrhenatherum elatius</i>
Cleavers	<i>Galium aparine</i>
Germander Speedwell	<i>Veronica chamaedrys</i>
Ragwort	<i>Senecio jacobaea</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Hedge Bindweed	<i>Calystegia sepium</i>
Dandelion	<i>Taraxacum officinale agg.</i>
Dog's mercury	<i>Mercurialis perennis</i>
Purple Moor-grass	<i>Molinia caerulea</i>
Creeping Bent	<i>Agrostis stolonifera</i>
<i>*Species in Red are Considered to be Invasive Species in Ireland</i>	
<b>Source: Species List - Trevor Hunter 2018, Countryside Bird Survey (CBS) for BirdWatch Ireland at Grid Reference G4030 (CBS Square lies c. 4 km SW of Dromore West Village)</b>	
<b>Birds</b>	
Blackbird	<i>Turdus merula</i>
Blackcap	<i>Sylvia atricapilla</i>
Chaffinch	<i>Fringilla coelebs</i>
Coal Tit	<i>Parus ater</i>
Cuckoo	<i>Cuculus canorus</i>
Dunnock	<i>Prunella modularis</i>
Grey Heron	<i>Ardea cinerea</i>
Hooded Crow	<i>Corvus cornix</i>
Jackdaw	<i>Corvus monedula</i>
Lesser Redpoll	<i>Carduelis flammea cabaret</i>
Linnet	<i>Linaria cannabina</i>
Meadow Pipit	<i>Anthus pratensis</i>
Pheasant	<i>Phasianus colchicus</i>
Raven	<i>Corvus corax</i>
Reed Bunting	<i>Emberiza schoeniclus</i>
Robin	<i>Erithacus rubecula</i>
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>
Siskin	<i>Carduelis spinus</i>
Skylark	<i>Alauda arvensis</i>

Song Thrush	<i>Turdus philomelos</i>
Sparrowhawk	<i>Accipiter nisus</i>
Swallow	<i>Hirundo rustica</i>
Willow Warbler	<i>Phylloscopus trochilus</i>
Woodpigeon	<i>Columba palumbus</i>
Wren	<i>Troglodytes troglodytes</i>

## Appendix 2 - Bat & Bird Boxes, Bug Hotels and SuDS planters

### Requirements for bird nesting boxes (Adapted from the RSPB)

Species	Nest box type and hole diameter	Position of nest boxes
Blackbird	A box with 10cm high open front. Dimensions: 28 x 23 x 17 cm	Fix the box 1.5m to 5.5 metres high.
Blue tit	Entrance hole size diameter should be 2.5cm.	Boxes for tits, sparrows or starlings should be fixed 2m to 4m up a tree or a wall.
Great tit	Entrance hole size diameter should be 2.8cm.	
Starling	Entrance hole size diameter should be 4.5 cm.	
Pied wagtail	A small box with 10cm high open front	Should be fixed up to 5m above ground.
Robin	A small box with 10 cm high open front.	Open-fronted boxes for robins and wrens need to be low down, below 2m, well hidden in vegetation.
Wren	A box with a 14 cm high front panel	

**Note:** It is best to erect nest boxes in the Autumn. Nailing them to trees may damage the trees so it is suggested you erect them with a nylon bolt or wire. Ideally your nest box would be positioned between south east and south west if there is plenty of shade. Make sure that the birds have a clear flight path without any clutter directly in front of the entrance. Tilt the box forward slightly so that any driving rain will hit the roof.



**Potential Nests for Birds of Interest in Dromore West include:**

**Swift *Apus apus***

Further information is available at:

<http://www.swiftconservation.ie/>

[https://shop.birdwatchireland.ie/birdwatchireland/product\\_info.php?products\\_id=408&osCsid=no82c9fp9dpi2tul0naj0js8j5](https://shop.birdwatchireland.ie/birdwatchireland/product_info.php?products_id=408&osCsid=no82c9fp9dpi2tul0naj0js8j5)

**Dipper *Cinclus cinclus* and Grey Wagtail *Motacilla cinerea***

Further information is available at:

<https://www.birdwatchireland.ie/Publications/eWings/eWingsIssue23August2011/DippersintheDrivingSeat/tabid/1195/Default.aspx>

[https://shop.birdwatchireland.ie/birdwatchireland/product\\_info.php?products\\_id=812](https://shop.birdwatchireland.ie/birdwatchireland/product_info.php?products_id=812)

***Building a bug hotel***

Advice on building 'bug hotels' to provide habitat for a range of invertebrate species is available at:

<https://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/build-a-bug-hotel/>

[https://www.buglife.org.uk/sites/default/files/Gardening%20for%20bugs%20-%20children1\\_1.pdf](https://www.buglife.org.uk/sites/default/files/Gardening%20for%20bugs%20-%20children1_1.pdf)

***Bat boxes***

Advice on choosing, building and erecting bat boxes provided in the Bat Conservation Ireland Information Leaflet no. 3 – Bat Boxes at [https://www.batconservationireland.org/wp-content/uploads/2013/09/Leaflet\\_3\\_batboxes.pdf](https://www.batconservationireland.org/wp-content/uploads/2013/09/Leaflet_3_batboxes.pdf)

***More information available at:***

[https://www.batconservationireland.org/wp-content/uploads/2015/05/BCIrelandGuidelines\\_BatBoxes.pdf](https://www.batconservationireland.org/wp-content/uploads/2015/05/BCIrelandGuidelines_BatBoxes.pdf)

***Bird Watch Ireland*** - [https://www.birdwatchireland.ie/Portals/0/pdfs/GBS\\_Nestboxes.pdf](https://www.birdwatchireland.ie/Portals/0/pdfs/GBS_Nestboxes.pdf)

**Sustainable Urban Drainage Systems (SuDS) resources:**

***Rainwater Planter Creation Guide:*** <https://www.dublincity.ie/sites/default/files/2021-04/a-how-to-guide-to-rainwater-planters-english.pdf>

***Rain gardens: A Practical Guide:***

[https://www.urbandesignlondon.com/documents/85/UDL\\_Rain\\_Gardens\\_for\\_web\\_0vwx1Ls.pdf](https://www.urbandesignlondon.com/documents/85/UDL_Rain_Gardens_for_web_0vwx1Ls.pdf)

## Appendix 3 - Recommended species for planting

### Planting for pollinators

The following is an extract from guidelines available from [www.pollinators.ie](http://www.pollinators.ie):

#### **Pollinator friendly planting code - professional planting recommendations.**

Experts agree that inadequate nutrition is a major cause of pollinator declines. We want pollinators to be there when we need them, but our landscape doesn't provide the abundance and diversity of flowering plants that they need to survive throughout their life cycle. To have a healthy balanced diet, bees need to be able to feed on pollen and nectar from a range of different flowers from early spring to autumn.

It is important to prioritise increasing native plants (trees, shrubs, wildflowers) across the landscape to provide food for pollinators.

#### **Good native hedgerow species for pollinators:**

Hazel (Feb-Apr) Willow (Mar-May) Blackthorn (Mar-May) Hawthorn (Apr-Jun) Broom (Apr-Jun) Wild Cherry (Apr-May) Bramble (May-Sept) Wild Privet (May-Jul) Crab apple (May-Jun) Elder (May-Jun) Whitebeam (May-Jun) Rowan (May-Jun) Wild Rose (Jun-Jul) Honeysuckle (Jun-Oct) Guelder Rose (Jun-Jul) Raspberry (Jun-Aug) Ivy (Sept-Nov) Gorse (Jan-Dec)

The following are **not** recommended for hedgerows: Horse Chestnut, Beech, Laburnum, Lilac, Lime.

The following can be **considered invasive** and should not be planted: Fuchsia, Cherry Laurel, Rhododendron, Sycamore, Snowberry.

#### **Deliberately planting horticultural or ornamental plants - Important:**

In towns and villages non-native horticultural or ornamental plants can be an important additional food source for pollinators. It is important to choose species that are good sources of nectar and pollen. However, you should **not** plant these in natural or semi-natural habitats. They should also not be planted in farmland (outside of farm gardens).

- Perennial plants are generally better sources of pollen and nectar than annuals. They are also cost effective as they grow and flourish over the following years. In contrast to seasonally replaced annual bedding, perennial plants can look less attractive to the public when they have finished flowering. This can be minimised by carefully selecting perennials and mixing them with ornamental grasses.
- Traditional annual bedding plants like Geraniums, Begonias, Busy Lizzy, Petunias, Polyanthus or *Salvia splendens* have virtually **no pollen and nectar** and are of little value to pollinators. If you are using annuals you should try to select scented, single-flowered varieties. The block planting of these can be an excellent source of food for pollinators.
- The All-Ireland Pollinator Guide have lists of pollinator friendly trees, shrubs, climbers, perennials, annuals and bulbs. Please note that these are not exhaustive lists. The best guide is to observe what the bees themselves are feeding on in parks/gardens and to increase the amount of these plants.

### Street trees

Roadside margins can be difficult locations in which to establish trees. Those suggested are pollinator friendly, resistant to pruning and should not cause any structural damage or create health and safety issues.

Species	Flowering
Juneberry Tree <i>Amelanchier x grandiflora</i> 'Robin Hill'	Small white flower April. Good autumn colour
Upright Hawthorn <i>Crataegus monogyna</i> 'Stricta'	White flowers May
Pillar crab <i>Malus tschonoskii</i>	Scented white flowers May. Can set fruit
Callery pear <i>Pyrus calleryana</i> 'Chanticleer'	White flowers April-May. Can set fruit.
Rowan <i>Sorbus aucuparia</i> varieties	White flowers May-June
Lime <i>Tilia cordata</i> 'Greenspire'; <i>Tilia x europaea</i> 'Euchlora'	Pale yellow flowers June-July

Lime (*Tilia*) species have fragrant flowers and produce a lot of nectar, however care is needed in the selection of cultivars as many can grow to large tree size proportions that will exceed allotted roadside space. Some are also very attractive to aphids and can lead to honeydew drip onto cars below (e.g., *Tilia x europaea*, *T. platyphyllos*). Those suggested above are smaller and don't attract aphids, therefore producing no dripping.

A detailed list of bulbs, flowers and climbers suitable for any season is available to view online at: <http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-friendly-planting-code-temporary-draft.pdf>

All-Ireland Pollinator Plan advice on planting for pollinators:

<http://www.biodiversityireland.ie/projects/irish-pollinator-initiative/all-ireland-pollinator-plan/gardens/>

<http://www.biodiversityireland.ie/projects/irish-pollinator-initiative/all-ireland-pollinator-plan/local-communities/>

Royal Horticultural Society advice on planting for pollinators and other insects:

<https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/plants-for-pollinators>

<https://www.rhs.org.uk/science/pdf/conservation-and-biodiversity/wildlife/plants-used-plants-4-bugs.pdf>



## Hedgerows

Plant native species and locally-sourced plants whenever possible!

The best time for planting is during the dormant season, between November to March. The best native species to plant for wildlife include:

Hawthorn	Oak
Blackthorn	Birch
Dog rose	Ash
Hazel	Rowan
Elder	Alder
Willow	Crab apple
Guelder rose	Scots pine
Holly	Oak

Guidance on planting native hedgerows:

[https://www.heritagecouncil.ie/content/files/conserving\\_hedgerows\\_2mb.pdf](https://www.heritagecouncil.ie/content/files/conserving_hedgerows_2mb.pdf)

<https://www.bordbia.ie/consumer/gardening/organicgardening/Worksheets/Planting%20a%20native%20hedgerow%20or%20woodland.pdf>



## Wildflower Meadows

These can be created in several ways

### Changing the management of an existing area, to gradually increase the number of wild plant species by natural means

This is achieved by cutting annually, after existing plants have flowered and set seed, in late summer. The cut material is then removed. This process gradually reduces soil fertility, creating conditions where wildflowers can successfully compete with more vigorous grasses.

**Pros:** This results in hay-meadow type vegetation that is very characteristic of the local environment, with species that occur naturally in the area and are genetically suited to the local conditions.

**Cons:** This can take many years to achieve. The process can be sped up by planting yellow rattle (*Rhinanthis minor*), a hemi-parasitic plant species which obtains nutrients from the roots of grasses, thus reducing their vigour.

### Buying and planting wildflower seed

#### **Natural regeneration of the native seedbank is the most cost-effective method and sustainable method of creating a wildflower meadow.**

Imported seeds should be avoided as they may contain invasive species and may also carry diseases that can negatively affect local biodiversity. Seeds available from supermarkets and garden centres are generally imported, unless they state otherwise. There are Irish companies who grow/harvest appropriate native wildflowers seeds and can offer advice on suitable seeds. Two types of seed mix are available – annual mixes that last for one year only, and perennial mixes that are less “showy” and may be slower to produce results but will last longer. The two can be mixed for optimum results.

**Pros** – rapid results, good variety of plants, provide lots of flowers for pollinators.

**Cons** – can be expensive, and some site preparation is usually needed, to prevent existing grasses from outcompeting the wildflowers. Very fertile ground is not suitable.

### Collecting local wildflower seed

It is possible to collect and dry the seeds of the following species for planting in wildflower areas. For best results, grow seeds in a seed tray and plant as individual plugs. Do not collect seeds from more than 20% of the plants in any one population. For more information on how to do this, see the National Pollinator Plan’s How-to-guide “Collecting and Using Pollinator-friendly Wildflower Seed” available to download (free of charge) at

[http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-How-to-Guide-2\\_ALT\\_FINAL.pdf](http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-How-to-Guide-2_ALT_FINAL.pdf)

### Seeds that can be collected, dried and planted to establish a wildflower area:

Knapweed ( <i>Centaurea nigra</i> )	Self-heal ( <i>Prunella vulgaris</i> )
Devil’s-bit scabious ( <i>Succisa pratensis</i> )	Red bartsia ( <i>Odontites vernus</i> )
Field scabious ( <i>Knautia arvensis</i> )	Woundwort ( <i>Stachys</i> spp.)
Birds-foot trefoil ( <i>Lotus corniculatus</i> )	Yellow rattle ( <i>Rhinanthus minor</i> )
Meadow pea ( <i>Lathyrus pratensis</i> )	Ox-eye daisy ( <i>Leucanthemum vulgare</i> )
Other vetches ( <i>Vicia</i> spp.)	Harebell ( <i>Campanula rotundifolia</i> )

### Garden plants to attract pollinators

In general –

- Try to grow a range of plants for year-round flowering

- Avoid double-flowered varieties – these often have little pollen or nectar
- Never use pesticides on flowering plants

Some examples of pollinator-friendly garden plants:

Lavender	Scabious
Dahlia	Marigold
Wallflower	Alyssum
Borage	Nasturtium
Foxglove	Aster
Aubretia	Shasta daisy
Cosmos	Musk mallow
Herbs- marjoram, thyme, sage, rosemary	Purple loosestrife
Spring bulbs - crocus, snowdrop, grape hyacinth, alliums	Fruits and vegetables – strawberries, peas, beans, courgettes
Flowering trees and shrubs – e.g. willow, hawthorn, rowan, cotoneaster	Fruit trees/ bushes – apple, cherry, currants, plum, raspberry

All-Ireland Pollinator Plan advice on planting for pollinators:

<http://www.biodiversityireland.ie/projects/irish-pollinator-initiative/all-ireland-pollinator-plan/gardens/>

<http://www.biodiversityireland.ie/projects/irish-pollinator-initiative/all-ireland-pollinator-plan/local-communities/>

Royal Horticultural Society advice on planting for pollinators and other insects:

<https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/plants-for-pollinators>

<https://www.rhs.org.uk/science/pdf/conservation-and-biodiversity/wildlife/plants-used-plants-4-bugs.pdf>

### Plant to attract birds

The following plants provide seeds and berries for a wide variety of birds, for example, blackbirds, through and finches. They also attract insects which in turn provide food for other birds such as robin and wren and some provide cover for nesting and roosting birds.

Holly	Teasel
Ivy	Sunflower
Hawthorn	Guelder rose
Honeysuckle	Dog rose
Rowan	Crab apple

Gardening for birds:

<https://www.birdwatchireland.ie/LinkClick.aspx?fileticket=3ti29N9Nfvs=&tabid=386>

<https://www.gardenersworld.com/plants/top-10-plants-for-birds/>

Wildlife gardening:

<http://www.ipcc.ie/advice/wildlife-gardening-tips/>

## Appendix 4 - Hedgerow maintenance tips

Good hedgerow maintenance tips include, but are not limited to:

- Hedges should be cut during the beginning of September to the end of February, outside of the main nesting bird season [Section 46 Wildlife Act 2000].
- Hedges should be cut to an A-shaped profile, with a bushy top for maximum protection from wind. This will encourage the development of a dense hedge. Square cut hedges will put out a twiggy, lateral growth, encroaching on roads and paths so that summer cutting is requested for reasons of safety and convenience.
- Gaps in hedgerows that cannot be closed by laying should be planted with hawthorn quicks, blackthorn or other suitable native species at not more than 30 cm (1ft) spacing in prepared ground. The young plants should be cut back to half their height after planting to promote growth.
- Do not apply herbicides, pesticides or fertilisers within 1.5m of a hedgerow, as this leads to nutrient enrichment that can adversely affect biodiversity.
- The preferable method of hedge maintenance is by hand tools. Where this is not practical, particular care should be given to ensure the correct use of machinery. Remember the importance of sharp tools and regular maintenance of equipment.
- The crushing of hedgerows by heavy machinery must not be permitted.
- Finger bar cutters with a pair of reciprocating blades are very suitable for trimming young growth.
- A flail cutter should only be used on soft growth of thorny species, and never on heavy woody growth: the resulting ragged ends are unsightly and invite disease. Smooth wood species such as willow, hazel and cherry are not well suited to flail cutting.
- Fencing wire must not be attached to hedgerow trees and shrubs.
- Where practicable, hedge trimmings should be piled in a non-intrusive manner to provide habitat. If hedge trimmings are to be removed or burned, this must be done immediately after cutting.

For more information see attached guidance from the Heritage Council '*Conserving Hedgerows*' (Source of the above information) -

[https://www.heritagecouncil.ie/content/files/conserving\\_hedgerows\\_2mb.pdf](https://www.heritagecouncil.ie/content/files/conserving_hedgerows_2mb.pdf)

## Appendix 5 - Management regimes to encourage biodiversity

### Further information for managing habitat for pollinators available at:

- Local Communities: Actions to help pollinators - National Biodiversity Data Series No. 4 (2009)
  - [http://pollinators.ie/app/uploads/2018/04/Local-Communities\\_actions-to-help-pollinators-2018-WEB.pdf](http://pollinators.ie/app/uploads/2018/04/Local-Communities_actions-to-help-pollinators-2018-WEB.pdf)

### Further information regarding management of coastal dunes:

- Delaney, A., Devaney, F.M, Martin, J.M. and Barron, S.J. (2013). Monitoring survey of Annex I sand dune habitats in Ireland. Irish Wildlife Manuals, No. 75. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.
  - <https://www.npws.ie/sites/default/files/publications/pdf/IWM75.pdf>
- Ryle, T., Murray, A., Connolly, K. and Swann, M. (2009) Coastal Monitoring Project 2004-2006. A report submitted to the National Parks and Wildlife Service, Dublin
  - [https://www.npws.ie/sites/default/files/publications/pdf/Ryle\\_et\\_al\\_2009\\_Coastal\\_Monitoring\\_Project.pdf](https://www.npws.ie/sites/default/files/publications/pdf/Ryle_et_al_2009_Coastal_Monitoring_Project.pdf)
- Scottish Natural Heritage (2000) A Guide to Managing Coastal Erosion in Beach/Dune Systems.
  - <https://www.nature.scot/sites/default/files/2017-07/Publication%202000%20-%20Beach%20Dunes%20-%20a%20guide%20to%20managing%20coastal%20erosion%20in%20beach%20dune%20systems.pdf>
- Devoy, R. (2016) *Fanore Beach and Dune Management Report: Current Problems and Planning for the Future*.
  - [http://www.burrengeopark.ie/wp-content/uploads/2016/05/Fanore-Beach-and-Dune-Management-Report\\_2016.pdf](http://www.burrengeopark.ie/wp-content/uploads/2016/05/Fanore-Beach-and-Dune-Management-Report_2016.pdf)

### Further information for managing hedgerows:

- Hickie *et. al.* (2004) Irish Hedgerows: Networks for Nature.
  - <https://www.birdwatchireland.ie/LinkClick.aspx?fileticket=LzA4YLD7KQ4%3D&tabid=1439>
- Heritage Council (2016) Conserving Hedgerows.
  - [https://www.heritagecouncil.ie/content/files/conserving\\_hedgerows\\_2mb.pdf](https://www.heritagecouncil.ie/content/files/conserving_hedgerows_2mb.pdf)

### Further information for managing woodlands:

- Cross, J.R. & Collins, K.D. (2017) Management Guidelines for Ireland's Native Woodlands.
  - <https://www.agriculture.gov.ie/media/migration/forestry/publications/ManagementGuidelinesIrelandNativeWoodlands270917.pdf>



## *Appendix 6 - Invasive species identification, monitoring & control*

### **Further information regarding invasive species:**

**Invasive Species Ireland – [www.invasivespeciesireland.com/](http://www.invasivespeciesireland.com/)**

- Japanese knotweed -  
<https://invasivespeciesireland.com/species-accounts/established/terrestrial/japanese-knotweed>
- Montbretia -  
<https://www.agriculture.gov.ie/media/migration/farmingschemesandpayments/glastraining/MontbretiaFinalDraft230616.pdf>
- Rhododendron  
<https://www.woodlandsofireland.com/sites/default/files/No.%203%20-%20Rhododendron%20Control.pdf>  
<https://invasivespeciesireland.com/species-accounts/established/terrestrial/rhododendron>
- Rhododendron and cherry laurel -  
<https://invasivespeciesireland.com/wp-content/uploads/wp-post-to-pdf-enhanced-cache/1/rhododendron.pdf>  
<http://www.forestryfocus.ie/growing-forests-3/threats-to-forests/invasive-species/>
- Giant Hogweed -  
<http://invasivespeciesireland.com/species-accounts/established/terrestrial/giant-hogweed>

## Appendix 7 - Helpful contacts, organisations and websites

<b>SLIGO LINKS Env Section Sligo County Council</b>	
Heritage Office Sligo County Council	<a href="http://www.facebook.com/sligoheritageoffice">www.facebook.com/sligoheritageoffice</a> <a href="http://www.sligococo.ie/planning/Heritage">www.sligococo.ie/planning/Heritage</a>
Sligo Field Club	<a href="http://www.SligoFieldClub.com">www.SligoFieldClub.com</a>
Sligo BirdWatch Ireland Group	<a href="http://www.facebook.com/birdwatch.sligo">www.facebook.com/birdwatch.sligo</a>
Sligo IT (CERIS and Environmental Science Course)	<a href="http://www.itsligo.ie">www.itsligo.ie</a>
Water & Communities Officer	<a href="http://www.watersandcommunities.ie">www.watersandcommunities.ie</a>

**Bat Conservation Ireland** – charity dedicated to conserving Ireland’s bats

[www.batconservationireland.org](http://www.batconservationireland.org)

**BirdWatch Ireland** – NGO committed to conservation of Ireland’s

birds. [www.birdwatchireland.ie](http://www.birdwatchireland.ie)

Information on building bird feeders and nest boxes.

<http://www.birdwatchireland.ie/Default.aspx?tabid=264>

**Butterfly Ireland** - Butterfly information and distribution maps in Ireland.

[www.butterflyireland.com](http://www.butterflyireland.com)

**Buglife** – UK Charity to encourage invertebrates. [www.buglife.org.uk/](http://www.buglife.org.uk/)

**Coillte** – 20% lands managed for biodiversity.

<http://www.coillte.ie/our-forests/public-goods/biodiversity/>

**Crann** – NGO dedicated to planting trees & protecting Ireland’s woodlands. [www.crann.ie](http://www.crann.ie)

**Floralocale** – Practical tips on habitats & wildflower choices.

[www.floralocale.org/content.asp?did=23800](http://www.floralocale.org/content.asp?did=23800)

**Green Schools Ireland** – [www.greenschoolsireland.org](http://www.greenschoolsireland.org)

**Heritage Council** – Independent, body advancing both built and natural heritage in Ireland.

Co-ordinates the vitally important network of Heritage Officers across Ireland.

[www.heritagecouncil.ie](http://www.heritagecouncil.ie)

**Inland Fisheries Ireland** - <https://www.fisheriesireland.ie/>

**Invasive Species Ireland** – Info. on invasive species [www.invasivespeciesireland.com/](http://www.invasivespeciesireland.com/)

**Irish Peatland Conservation Council** NGO promoting peatland conservation.

<http://www.ipcc.ie/>

**Irish Wildflowers** –Over 800 wildflowers with names in Irish, English & Latin.

<http://www.irishwildflowers.ie>

**Irish Wildlife Trust** – a charity committed to conserving of Ireland’s rich natural heritage.

[www.iwt.ie](http://www.iwt.ie)

**Local Authority Prevention Network.** <http://localprevention.ie/tidy-categories/schools/>

**National Biodiversity Data Centre** - National Biodiversity Data Centre - documenting

Ireland’s wildlife. Citizen Science Projects [www.biodiversityireland.ie/](http://www.biodiversityireland.ie/)

**National Parks and Wildlife Services** - Information on important sites and species, wildlife legislation and biodiversity plans. It includes an interactive mapping with information.  
<http://www.npws.ie/>

**National Parks** – Information on National Parks. <http://www.npws.ie/nationalparks/>

**Moths Ireland** – Moth information and studies in Ireland. [www.mothsireland.com](http://www.mothsireland.com)

**RSPB** – Information on building and siting nest boxes.

[RSPB Nest Box Guide](#) [RSPB Feeding Birds Guide](#)

**Tree Council of Ireland** –A voluntary group concerned with trees in Ireland  
<http://www.treecouncil.ie/>

## Appendix 8 - Helpful reading material

Aalen, F.H.A.; Whelan, K. & Stout, M. (eds.) (1997). *Atlas of the Irish Rural Landscape*. Cork University Press, Cork.

Bord na Móna (2010). *Biodiversity Action Plan 2010-2015* (Available online at: [www.bordnamona.ie](http://www.bordnamona.ie) ).

Cotton, D. (online) Don Cotton's Wildlife of Sligo and Leitrim (Available online at: [http://staffweb.itsligo.ie/staff/dcotton/Don Cottons Wildlife of Sligo and Leitrim.html](http://staffweb.itsligo.ie/staff/dcotton/Don_Cottons_Wildlife_of_Sligo_and_Leitrim.html))

Cross, J.R. & Collins, K.D. 2017. Management Guidelines for Ireland's Native Woodlands. Jointly published by the National Parks & Wildlife Service (Department of Arts, Heritage, Regional, Rural & Gaeltacht Affairs) and the Forest Service. Forest Service, Department of Agriculture, Food & the Marine, Kildare Street, Dublin 2, Ireland. (Available at: <https://www.agriculture.gov.ie/media/migration/forestry/publications/ManagementGuidelinesIrelandNativeWoodlands270917.pdf> )

Department of Arts, Heritage & the Gaeltacht (2011). *Actions for Biodiversity 2011-2016. Ireland's National Biodiversity Plan* (Available online at: [www.ahg.gov.ie](http://www.ahg.gov.ie) )

Doogue, D. & Krieger, C. (2010). *The wildflowers of Ireland*. Gill & Macmillan, Dublin.

Fairley, J. (2001). *A basket of weasels*. Published privately by the author, Belfast.

Fogarty, P. (2017) *Whittled Away: Ireland's Vanishing Nature*. Published by Collins Press.

Foulkes, N. (2008) *County Sligo Hedgerow Survey Report*. Carried out on behalf of: Sligo County Council, The Heritage Council and the County Sligo Heritage Forum. (Available at: <http://www.hedgelaying.ie/images/1254462634.pdf>)

Fossitt, J. A. (2000). *A Guide to Habitats in Ireland*. The Heritage Council, Kilkenny (Available online at: <https://www.npws.ie/sites/default/files/publications/pdf/A%20Guide%20to%20Habitats%20in%20Ireland%20-%20Fossitt.pdf> )

Hayden, T. & Harrington, R. (2000). *Exploring Irish mammals*. Dúchas, the Heritage Service, Dublin 2.

Lysaght, L., and Marnell, F., (2016) *Atlas of Mammals in Ireland, 2010-2015*. National Biodiversity Data Centre, Waterford.

Mabey, R. (1989). *Food for free*. HarperCollins Publishers.

Mabey, R. (1996). *Flora Britannica*. Sinclair-Stevenson, London.

MacCoitir, N. (2003). *Irish trees, myths, legends & folklore*. The Collins Press, Cork.

Mitchell, F. & Ryan, M. (1997). *Reading the Irish Landscape*. Town House, Dublin.

Mullarney, K.; Svensson, L; Zetterström, D.; & Grant, P. (1999). *Collins Bird Guide*. HarperCollins Publishers.

National Biodiversity Data Centre (2015) *All-Ireland Pollinator Plan 2015-2020*. National Biodiversity Data Centre. (Available online at: [www.biodiversityireland.ie/pollinator-plan](http://www.biodiversityireland.ie/pollinator-plan) )

Parnell, J. & Curtis, T. (2012). *Webb's An Irish Flora*. Cork University Press, Cork.

Praeger, R. L. (1937). *The way that I went*. (Published by the Collins Press, Cork in 1997).

**Roche, N., Aughney, T., Marnell, F., and Lundy, M., (2014) *Irish bats in the 21st Century. Department of Arts, Heritage and Gaeltacht, Bat Conservation Ireland***



## Appendix 9 - Definitions and explanations

### 1. **Biodiversity** = the diversity of life

*The diversity of all the organisms that occur on Earth – all forms of flora and fauna, including from micro (e.g. bacteria) to macro (e.g. a whale) organisms*

*Biodiversity includes the diversity of:*

- *Individuals within a species (genetic diversity) i.e. individual bumble bees, of the same species.*
- *Species within an ecosystem or habitat (species diversity) i.e. a bumble bee and the flower that they land on to feed.*
- *Ecosystems or habitats (habitat diversity) i.e. a bee hive, inside a tree, within a wildflower meadow.*

### 2. **Ecology** = the branch of Biology that deals with the relationships between living things (organisms) i.e. interactions with one another, and their physical surroundings

### 3. **What is the importance of Biodiversity and Ecology**

1. *Humans are an integral part of the Biodiversity of Earth and our actions can have impacts which are adverse, inconsequential or positive.*
2. *Ecology deals with the inter-relations between organisms and the places in which they live. This can refer to human beings' dealings and interactions with both the habitats and species around them.*
3. *All living things rely on ecosystems in some way – for example, many of our crops would not provide viable fruit if pollinators did not exist (this is an example of a direct ecosystem service that humans benefit from).*

*So, Biodiversity and Ecology affects our lives every day without us even realising it!*

### 4. **Species** = a type of living organism

- *Members of the same species can interbreed*
- *All species have common names and scientific names (in Latin) e.g. Homo sapiens*

### 5. **Habitat** = simply means the home environment of an organism or a number of organisms

- *Organisms include all living creatures such as bacteria, fungi, plants and animals.*
- *Some species are only found in one type of habitat e.g. a whale only found in the sea*
- *Some species are found in a few habitats e.g. Nettles are found in grasslands, ditches and woodlands etc.*

### 6. **Ecosystem** = a community of organisms all interacting with each other

*Ecosystems are complex – they involve various different species / species groups e.g. a woodland ecosystem can include: the birds nesting in the trees; the lichens living on the trees; the tree leaves rotting on the ground and the fungi living on them; the insects living in the trees (and the bats and birds living in the holes created by this!) ... And so on.*

### 7. **Ecosystem Services** = all benefits humans receive from ecosystems

