TAUGHMACONNELL COMMUNITY BIODIVERSITY ACTION PLAN 2019-2023

ACTIONS FOR BIODIVERSITY IN TAUGHMACONNELL

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ACKNOWLEDGEMENTS

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ON POLLINATION

In plants the transfer of pollen between flowers of the same species by wind or animals leads to fertilisation which is necessary for the production of seeds and fruit by the plant. Pollination is essential for the production of fruit and viable seeds. For us, this means we have a range of fruit and vegetables to eat. For wildlife, this provides fruit and seeds for animals to eat and the persistence of wildflowers in the landscape.

1. INTRODUCTION

Ecologists Seán Meehan, Deborah D'Arcy and Billy Flynn were commissioned by Roscommon LEADER to work communities in County Roscommon to provide biodiversity training and facilitate the development of local biodiversity plans. The principal aim of this LEADER initiative is to increase the awareness of the importance of biodiversity in communities and empower individuals and groups to make positive contributions for the benefit of both wildlife and people.

It is encouraging and commendable to see that all the communities to date have taken biodiversity into account when designing past and current projects thereby reflecting their awareness and concern for wildlife and habitats. The aim of this project is to further build on these achievements and to strive for greater community participation to ensure that as many people as possible are made aware of the value of biodiversity in their localities and have an opportunity to contribute to its conservation and enhancement.

This biodiversity plan was drawn up following a series of workshops in the community which provided training in biodiversity awareness and allowed collaboration to identify projects to conserve and enhance biodiversity in Taughmaconnell.

An emphasis was placed on incorporating the objectives of the All-Ireland Pollinator Plan 2015 - 2020 into the biodiversity projects. This national plan proposes actions that will increase habitat and food sources for a range of pollinating insects and provides a useful foundation from which other biodiversity related projects can evolve.

WHAT IS BIODIVERSITY?

Biodiversity refers to the variety of life on Earth. It includes all living things (organisms) that make up the natural world (including humans). Biodiversity also refers to the places where animals and plants live (habitats) and the complex interactions between living things and their environment which we call ecosystems.

WHY IS BIODIVERSITY IMPORTANT?

Humans are a component of biodiversity and we are dependent on biodiversity to provide a range of ecosystem services. Human activities such as agriculture, forestry and fishing depend on services provided by biodiversity. We rely on biodiversity for the provision of clean air and water, food and medicines, natural landscapes, flood control, noise pollution control and much more A healthy environment is important for human health and well-being. Biodiversity provides us with natural amenities to enjoy, parks and green spaces, wildlife and landscapes to admire and thus improves our quality of life. The attractiveness of our country as a tourist destination, a place to live and do business depends to a large extent on the rich biodiversity of the county. Our country's natural heritage contributes to the attractiveness of landscapes, villages and urban centres.

WHAT'S THE LOCAL BIODIVERSITY ACTION PLAN FOR?

The purpose of a Local Biodiversity Action Plan (LBAP) is to set out appropriate locally based actions for the conservation, management and/or enhancement of habitats for the benefit of native species. This local biodiversity action plan:

- Makes recommendations for the conservation of biodiversity through appropriate actions for the protection, management or appreciation of an area of high ecological value.
- Identifies actions to improve or enhance local areas so as to increase their value as habitats for species.
- Encourages actions to raise awareness of the importance of biodiversity and its conservation.

2. KEY ACTIONS FOR BIODIVERSITY

2.1 HABITAT CREATION AND MANAGEMENT

Habitat creation is one way to increase the diversity of habitats and enhance an area for biodiversity. Examples of small-scale habitat creation that may be appropriate and practical for community groups, schools and residents to undertake include managing an area as meadow grassland or wildflower lawn, planting hedgerows, treelines or groves of trees, or creating a pond.

Habitat creation should only be attempted in an area that is currently of low biodiversity value such as amenity grassland. Introducing a habitat uncommon in an area such as a pond may be of more benefit than planting additional trees in an area that already has good tree cover. Creating a small complex of habitats such as a small woodland or grove of trees along with some meadow grassland around the edges to create a collection of semi-natural habitats will be of more benefit to biodiversity as it will provide resources for a greater number of species.

HEDGEROW AND TREE PLANTING

Planting native hedgerows, trees and woodlands provide food, shelter and niche habitats for a range of plant and animal life and is one of the easiest ways of increasing the biodiversity value of an area. Native trees and shrubs are best for wildlife. These species colonised Ireland naturally and are adapted to the environmental conditions here and other plant and animal life have adapted to co-exist with them.

Hedgerows are wildlife corridors

MEADOW GRASSLANDS AND WILDFLOWER LAWNS

The traditional hay meadows once widespread in Ireland are now very scarce due to changes in farming practices. Meadows are a haven for wildlife in summer, being rich in wildflowers and the insects, birds and bats that depend on them. Managing little-used grassland areas as a meadow is one way to increase the resources available to wildlife. Not only does this allow the growth of wildflowers which provide essential pollen for our pollinating insects, long grass hosts a variety of other insects and invertebrates and produces seed, all important food sources for birds. Bat species will forage over a meadow grassland rich in insect life. Long grass also provides cover and nesting habitat for small mammals.

Meadow grassland can be established in parkland areas or along grass verges. In general, areas of meadow grassland or long grassy verges should be cut once a year in autumn and the cuttings removed. Removing the cuttings is important to prevent the build-up of nutrients in the soil. Wildflowers flourish in a nutrient poor soil where they can compete successfully with the more competitive grasses. Gradually over the years the number and diversity of wildflowers within the meadow will increase. It may take several years before you see an increase. However, avoid using commercially available wildflower mixes to enhance your meadow. These mixes often contain species that are not native to Ireland and are really only suitable for gardening and not for creating natural habitats such as meadows. In addition, some species in these mixes are plants of disturbed ground or arable fields and are unlikely to thrive in a meadow grassland.

To increase the species diversity of a meadow, collect seed from a grassland that is already more species rich such as from field margins, river banks or roadside verges or collect green hay from these areas and spread on your meadow. Planting the seeds in pots and introducing them as plug plants may help their survival and is a fun project to do with schoolchildren. Yellow rattle (*Rhinanthus minor)* is a wildflower that can occur naturally in older wildflower meadows. This plant parasites the roots of grasses and can keep grasses down/back, giving wildflowers a chance to grow. Yellow rattle seed can be added to a wildflower meadow to help promote greater wildflower diversity.

Low intensity grazing with livestock in the autumn months after the hay has been cut is ideal. Livestock will help to create small areas of bare ground to help with seed germination. However, in

some areas such as along roadsides or in unfenced areas, grazing may not be practical. Where grazing is not possible, it would be helpful to scarify the soil with a rake or to use the area as a football field or play area after collecting the hay to mimic the actions of hooves and create areas of bare ground to promote seed germination. Reducing the frequency of cutting for lawns and other amenity or roadside grassland is another way to provide increased resources for wildlife, particularly pollinating insects. Where long meadow grassland is not a practical option, encouraging a wildflower lawn may be suitable. Cut the grass only every 6 weeks or so using the highest setting on the lawnmower and remove the cuttings. This reduced cutting regime allows low growing wildflowers such as dandelions, clover, self-heal, and bird's-foot trefoil to flower providing important nectar supplies for bees.

POLLINATOR FRIENDLY PLANTING

While native plants are best for wildlife and should be the only species planted in wild areas, there are a wide range of both native and non-native garden plants which provide food for pollinating insects which can be used in gardens and formal plantings. However, some garden plants are not suitable for pollinators. Planting a range of pollinator friendly plants which flower at different times throughout year will provide an important source of pollen and nectar for pollinating insects throughout the spring, summer and autumn.

COMPOSTING

Compost your garden and food waste in a designated composting area. Composting reduces the amount of waste going to landfill and provides a source of nutrient rich compost for gardening. This reduces the need to purchase garden compost, which is often sourced from peat bogs and contributes to the loss of these treasured habitats.

Avoid tipping garden waste into waysides or wild areas. Grass cuttings disposed of in waysides and other wild places smothers wildflowers. Garden plants which are disposed of outside garden areas can take root and spread. Some garden plants can become very invasive and spread to wild areas, outcompeting our native plants and leading to damage of our natural habitats.

Many plant varieties provide food for pollinators

BEE NESTING HABITAT

Honeybees live in hives and are looked after by beekeepers. Our wild bees do not enjoy such protection and must find a suitable place to nest. Bumblebee colonies make their nest on the ground often in long grass or other vegetation. Cut such long grassy verges between September and March so as to avoid disturbing bumblebee nests.

Solitary mining bees make their nest in tiny burrows in south/east facing banks of bare soil, sand, or peat. Keep vegetation sparse on any earth banks or stony banks to provide nest sites for solitary bees. Scrape back to bare soil annually between October and February to create bare ground for solitary bees to burrow into.

Cavity nesting bees make their nests in south/east facing stonewalls, masonry, cavities in wood or dead plant stems. Visit such areas on a sunny evening from May-September. If bees are seen, protect these areas from disturbance and, in particular, ensure that there is no herbicides or pesticides used near these areas. Additional nest sites can be provided by drilling holes in fence posts (10 cm deep and 4-8 mm in diameter).

HERBICIDES AND PESTICIDES

Avoid the use of herbicides and pesticides as they cause harm directly and indirectly to wildlife. For example, using slug killer might result in fewer thrushes, hedgehogs and other slug-eating wildlife. Using herbicides to control "weeds" along grassy verges and around trees kills wildflowers that other wildlife depends on for food and seeds.

KEY ACTIONS FOR BIODIVERSITY (CONTINUED)

2.2 PROTECTING BIODIVERSITY

Conserving and protecting biodiversity is sometimes as simple as getting the time right. Scheduling management actions to avoid or minimise disturbance to wildlife is crucially important.

Without management, hedgerows can become 'gappy' reducing their value to wildlife and their stock-proofing function. Under the Wildlife Act 1976 as amended, it is an offence to cut hedges between 1st March and 31st August in order to protect nesting birds unless there are clear traffic health and safety reasons to do so.

Hedgerows should be cut about every 3 years in rotation. This means that not all the hedgerows are cut in any one year but some are left uncut to provide resources for wildlife. Hedgerows can be cut between October and March but cutting hedgerows later in the autumn, November or December, is less disruptive to pollinating insects. Hedgerows should be cut to an 'A' shape which allows sunlight to reach the bottom of the hedge promoting a full and dense growth. The top of the hedge should be left uncut to leave some fruit and seeds through the autumn and winter months for birds to feed on.

Similarly, delaying the annual garden clean up normally carried out in autumn until early spring provides some additional shelter for wildlife. Dead plant stems and fallen leaves provide places for invertebrates and other small wildlife to shelter and hibernate during the winter months.

2.2 RAISING AWARENESS

Raising awareness of biodiversity and encouraging or facilitating people to engage with and appreciate wildlife is an important tool in biodiversity conservation.

Providing opportunities for people to experience and understand more about wildlife in their local area can instil respect, remind them of how they value nature and lead to effective conservation. Where appropriate, interpretative signage highlighting the biodiversity present in an area or promoting a particular biodiversity project can be useful to draw peoples' attention. Even more effective, however, is increasing the amount of time people spend outdoors connecting with nature. Furthermore, the health benefit of spending time with nature is widely recognised with known benefits for both physical and mental wellbeing.

Raising awareness of biodiversity can be facilitated by organising wildlife-themed walks, bat walks, wildflower walks and bird watching; or competitions, such as best wildlife-friendly estate, best garden for wildlife or a wildlife photography competition. Better still is providing opportunities for people to volunteer on a project, such as invasive plant species removal, tree planting or encouraging people to get involved in citizen science projects. It is often the social benefits of such events that will attract people to get involved.

2.4 CITIZEN SCIENCE

Citizen science engages the public to participate in recording wildlife. Keeping records of wildlife species and submitting these records to the National Biodiversity Data Centre (www.biodiversityireland.ie) or other dedicated recording schemes is a great way to get people involved in biodiversity conservation, improve skills in wildlife identification and foster a personal appreciation of nature. All records are valuable even of common species seen every day. Such data are very important and are used in research, policy formation and contribute greatly to our knowledge of biodiversity and its conservation. The National Biodiversity Data Centre runs annual one-day wildlife identification training courses. See the Appendix for wildlife recording schemes.

3. BIODIVERSITY IN & AROUND TAUGHMACONNELL

Taughmaconnell (Teach Mhic Conaill), is a small rural village in Co. Roscommon located between Athlone and Ballinasloe. The important focal points are Saint Ronan's Well, the National School, the Church and graveyard and the community hall.

3.1 DESIGNATED SITES

The River Suck Callows Special Protection Area (SPA) is located approximately 4 km to the west of Taughmaconell. This protected site is a linear, sinuous site comprising a section of the River Suck from Castlecoote, Co. Roscommon to its confluence with the River Shannon close to Shannonbridge, a distance of approximately 70 km along the course of the river. The site is an SPA) of special conservation interest for Whooper Swan, Greenland White-fronted Goose, Wigeon, Golden Plover and Lapwing, all of which occur at the site in numbers of national importance.

Castlesampson Esker Special Area of Conservation (SAC) is located about 2 km north of Taughmaconnell. This site is designated for turloughs and orchid-rich calcareous grassland. Raised bog is also found within the site. The main turlough basin extends southwards into two arms that are separated by higher ground of glacial sediments. It includes areas dominated by Black Bog-rush and by Purple Moor-grass, areas of wet grassland that hold a typical suite of turlough species and areas of marsh and fen. The Castlesampson Esker site is of high conservation for the proximity and juxtaposition of esker, raised bog and turlough. The esker itself is of high importance for its almost intact structure (something which is very rare in Irish eskers), its relatively undisturbed state and for the presence of good quality, species-rich dry calcareous grassland, a habitat that is listed with priority status on Annex I of the E.U. Habitats Directive. It is also notable for the good variety of rare and protected plant species that it supports (DAHG, 2013).

There is another SAC located about 3.5 km northwest of Taughmaconnell also designated for orchid-rich calcareous grassland which has developed on shallow soils amongst outcropping limestone. The calcareous grassland vegetation at this site is species-rich and there are at least seven species of orchids found within the site.

BIODIVERSITY IN & AROUND TAUGHMACONNELL (CONT)

3.2 HABITATS IN TAUGHMACONNELL

TREELINES AND HEDGEROWS

Treelines and hedgerows border the agricultural land and some farmyards in and around Taughmaconnell. Impressive treelines border the graveyard. Hedgerows and treelines are valued as linear woodland habitats which provide resources for insects, birds, bats and other small mammals. They serve as ecological corridors through which species can move and are very important to maintain connectivity between fragmented habitats. A dense hedgerow provides suitable nesting habitat and if there are also occasional tall trees this further increases the structural diversity of the habitat and provides song posts for birds.

RIVERS

Dundonnell Stream arises in Taughmaconnell joins Killeglan Stream which is a tributary of the River Suck. These rivers and streams provide ecological and hydrological connectivity to the River Suck SPA.

GRASSLANDS

Grassland around Taughmaconnell are primarily improved or semi-improved agricultural grassland. There are small pockets of less improved semi-natural grassland on steeply sloped field margins or within lower low-lying areas. Unimproved or semi-improved grasslands are an important habitat for the variety of wildflowers, insects and other wildlife species that they support. Future ground at Taughmaconnell Burial Ground supports a meadow grassland.

STONEWALLS AND BUILDINGS

Stonewalls are a particular feature in Taughmaconnell where they line the roads within the village area. The community have put a lot of effort into conserving and restoring the stone walls in Taughmaconnell, a credit to the Taughmaconnell Heritage Society. In addition to their aesthetic, historic and cultural value, stone walls provide dry crevices to host a range of invertebrates. Mosses, ferns and wildflowers enhance the aesthetic appeal and character of stone walls and provide additional niche habitats for tiny invertebrates. There is a lovely example of this at the Old Church and Graveyard, where mosses and ferns adorn the walls of the old church.

Older buildings, particularly those built of stone, often provide nest sites for bird species and roosting opportunities for bats. Birds and bat may nest and roost in houses, farm buildings and other structures and it is important to be aware of this when planning renovation works to buildings.

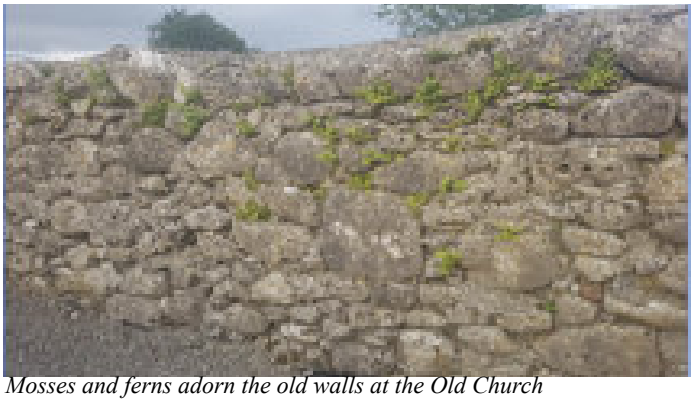
ROADSIDE VERGES AND BANKS

Roadside verges and banks provide refuges for a variety of wildlife and are particularly important refuges for wildflowers and associated insects as they are not subject to the effects of fertilisation, pesticide and herbicides associated with intensive agriculture. Within Taughmaconnell village, paths and stone walls border the roads but on the approach roads grass verges have a good complement of wildflowers with knapweed, yarrow and wild carrot featuring.

WOODLANDS AND SCRUB

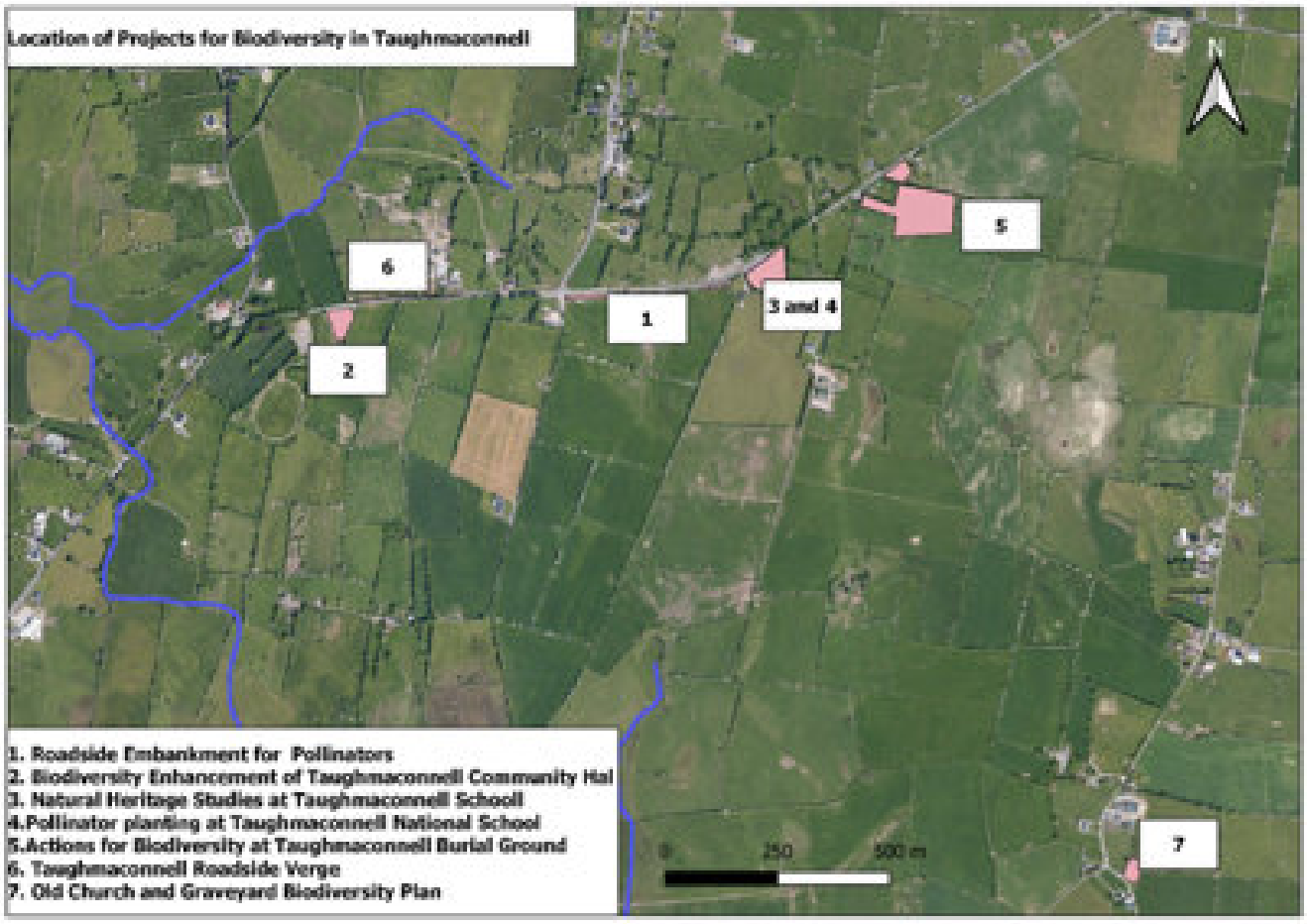
There is a copse of trees opposite the National School providing a refuge for wildlife and small wooded areas are associated with older farmsteads and residential properties in the area.

Meadow grassland at the burial ground



Mosses and ferns adorn the old walls at the Old Church

Fig. 1 Location of Biodiversity Projects in Taughmaconnell



4. BIODIVERSITY PROJECTS

This section outlines a number of projects that were proposed and discussed with Taughmaconnell Community through the course of a series of workshops. A map showing the locations of the projects is provided in Figure 1.

The biodiversity projects outlined not only provide opportunities for the conservation and enhancement of areas for biodiversity but also afford opportunities for people, in particular young people, to experience nature, to learn more about biodiversity and to get involved in active conservation and recording of biodiversity in their local area.

Table 1 provides a schedule for projects which was drawn up in consultation with the community and includes actions to conserve, raise awareness of and celebrate biodiversity in Taughmaconnell.

SCHEDULE OF PROJECTS AND KEY MILESTONES

NO.	PROJECT	PARTNERS	MILESTONES	YEAR
1	Roadside Embankment for Pollinators	Taughmaconnell Community Council	Incorporate more pollinator friendly plants to shubbery that will provide a nectar/pollen source through the season from spring to autumn.	Year 1
			Erect signage to highlight the project for pollinators	Year 1
2	Biodiversity Enhancement of Community Hall Car Park	Taughmaconnell Community Council	Install some planters to the front of the Community Hall. Plant up with pollinator friendly plants. Erect signage to raise awareness of this simple action for pollinators amongst the community	Year 1
			Consider planting a native hedgerow around the boundary of the car park working with the neighbouring property.	Year 2
3	Natural Heritage Studies at Taughmaconnell School	Mary Farrell	Carry out a local wildlife study with the schoolchildren. Produce a wildlife interpretation poster or your results.	Year 1-2
4	Pollinator planting at Taughmaconnell National School	Taughmaconnell National School	Rejuvenate planters and beds at the entrance to school with pollinator friendly planting. Involve the children in the selection of the plants. Erect signage to highlight the actions to parents and visitors.	Year 2
5	Burial ground	Graveyard Committee	Continue with the actions for wildlife and pollinators already ongoing at the graveyard. Replace broken bird and bat boxes and monitor. Raise awareness of the grassland management of the meadow area on the future ground and encourage local residents to do similar in their gardens.	Year 2
6	Taughmaconnell Roadside verge	Taughmaconnell Community Council	Consult and collaboration with the adjacent residents. Sowing native wildflower seed into the disturbed ground along the roadside to enhance the area visually. Discourage herbicide use.	Years 1, 2 & 3

NO.	PROJECT	PARTNERS	MILESTONES	YEAR
7	Old Graveyard Biodiversity Plan	Taughmaconnell Heritage Group	Draw up a biodiversity management plan for the Old Graveyard which will ensure protection for the mosses and ferns and other wildflowers growing on the old stone walls. Consider altering the management of the grassland to a 6-week lawn to promote the growth of wildflowers	Year 2 & 3
8	Biodiversity Community events	Taughmaconnell Heritage Group	Run a series of biodiversity community events to raise awareness and provide opportunities for increased community animation and participation. Run a wildlife gardening course. Run a family bat talk and walk around the graveyard.	Year 2 & 3

PROJECT 1

ROADSIDE EMBANKMENT FOR POLLINATORS

It is planned to rejuvenate the existing shrubbery planting on the roadside embankments within the village. These large embankment planting schemes provide an excellent opportunity to provide an impressive display of pollinator friendly planting. The existing plants on the embankment will be reviewed with regard to their condition and their value for pollinators. Additional pollinator friendly perennial plants will be sourced and planted. A range of plants with different flowering times in spring, summer and autumn will be planted to ensure a food source for pollinating insects throughout the season. Signage will be erected to raise awareness for this action for pollinators.

Extensive areas of roadside embankment will be enhanced with pollinator friendly perennial plants

PROJECT 2

BIODIVERSITY ENHANCEMENT OF TAUGHMACONNELL COMMUNITY HALL

It is planned to install several large planters to the front of Taughmaconnell Community Hall and plant them up with pollinator-friendly perennial plants. Signage will be erected to raise awareness of this simple action for pollinators that all householders could do in their own gardens.

Working with neighbouring property owners, native hedgerow planting will be considered for the boundary of the carpark to enhance the area both visually and for wildlife.

PROJECT 3

NATURAL HERITAGE STUDIES AT TAUGHMACONNELL SCHOOL

Mary Farrell will work with Taughmaconnell National School to conduct local wildlife surveys with the schoolchildren studying the flora and fauna to be found in the local area. Desktop research and field surveys will introduce the children to the wonderful world of nature and cross-curricular topics will be explored through nature studies. The project will culminate in the production of a wildlife interpretation board for the local area.

PROJECT 4

POLLINATOR PLANTING AT TAUGHMACONNELL NATIONAL SCHOOL

It is planned to rejuvenate the planters at the school entrance with pollinator-friendly planting at the school entrance to provide a nectar source throughout spring, summer and autumn. The schoolchildren will be able to practice identifying the bees and butterflies visiting the flowers and record their finding on the NBDC. Fruit crops will be grown where possible to demonstrate the importance of pollination in the production of our food crops.

PROJECT 5

ACTIONS FOR BIODIVERSITY AT TAUGHMACONNELL BURIAL GROUND

The graveyard committee have already adopted a number of actions for pollinators and other wildlife at the graveyard. Meadow grassland is maintained on the "future ground". Bird and bat boxes have been installed in the tall treelines around the graveyard. Some of these have fallen into disrepair and could be replaced. The bird boxes and bat boxes could be monitored by the schoolchildren.

The entrance to the burial ground at Taughmaconnell

It would be useful to highlight these actions undertaken at the graveyard to the community through the parish newsletter or community Facebook page. A simple sign explaining the meadow management might encourage local residents to do the same in their gardens.

There may be an opportunity to enhance the stone wall planters at the graveyard carpark with pollinator friendly planting and/or shrubs that benefit other wildlife.

PROJECT 6

TAUGHMACONNELL ROADSIDE VERGE

Disturbed ground along the roadside in Taughmaconnell

Disturbed ground along the road supports a number of native wildflower species typical of disturbed ground and often perceived as weeds. These areas are at risk of herbicide treatment. Working in collaboration with the local residents, consideration could be given to sowing in native seeds to complement the species already growing there. A colourful annual mix would provide an instant show for the purpose of improving the look of the area and encouraging the appreciation of native wildflowers.

PROJECT 7

BIODIVERSITY MANAGEMENT PLAN FOR OLD CHURCH & GRAVEYARD

In collaboration with the Taughmaconnell Heritage Society the community will draw up a biodiversity management plan for the Old Church and graveyard to ensure the protection of the stone wall habitat and to manage the grassland for biodiversity. Consideration will be given to the grassland management regime. More wildflowers could be encouraged to grow within the grassland by removing the cuttings to reduce the nutrient status of the soil. The grassy verges outside the graveyard have a nice complement of wildflowers. A reduced cutting regime mindful of flowering times would ensure these have a chance to flower and set seed.

The Old Graveyard at Taughmaconnell

PROJECT 7

TAUGHMACONNELL COMMUNITY BIODIVERSITY EVENTS

Taughmaconnell Community Council plan to run a number of community events to raise awareness and encourage greater participation in community activities. A wildlife gardening course will be provided to encourage residents to make spaces for wildlife in their gardens. A bat talk and walk will be run as a fun community event for families.

5. PROJECT RESOURCES

The next section provides key cards for Projects 1-7 which outlines the objectives of the project, the key tasks and provides links to appropriate resources for undertaking the project. Some key resources are also provided in the Appendix.

AN EMBANKMENT PLANTED FOR POLLINATORS

Objectives: To enhance the existing planting scheme on the roadside embankments at Taughmaconnell for pollinators. To raise public awareness of the value of pollinators.

Actions

- Review the existing planting and remove plants in poor condition which are not thriving.
- Use a peat free compost to improve the condition of the soil.
- Plant a variety of pollinator friendly perennial plants which will flower through spring, summer and autumn to provide continuous forage for pollinating insects.
- Avoid the use of herbicides or pesticides. Research alternative methods of pest control to protect new plants from snails and slugs.
- Erect signage to raise awareness of the action for pollinators.
- Train in bumblebee and butterfly identification. Contact the NBDC for details of the next round of training or self-train using the ID guides in resources below.

Evaluation and citizen science

- Monitor the health of the plants, upkeep and the interest of the community.
- Record the bee and butterfly wildlife you observe and "submit your sightings" on the NBDC website http://www.biodiversityireland.ie
- Log your actions for pollinators https://pollinators.ie/record-your-actions/
- Sign up for the bumblebee monitoring scheme and /or butterfly monitoring scheme. http://www.biodiversityireland.ie/record-biodiversity/surveys/partners-surveys/

  http://www.biodiversityireland.ie/record-biodiversity/bumblebee-monitoring-scheme/

Resources

- https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Local-Communities_actions-to-help-pollinators-2018-WEB.pdf
- How can you help pollinators in your garden? https://pollinators.ie/gardens/
- How to guide for pollinator actions: https://pollinators.ie/resources/
- Pollinator friendly plant lists: https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Planting-Code-2018-WEB.pdf
- Bumblebee Identification guides: https://pollinators.ie/record-pollinators/id-guides/
- Butterfly identification: http://www.biodiversityireland.ie/record-biodiversity/butterfly-monitoring-scheme/about/how-to-identify-butterflies/

BIODIVERSITY ENHANCEMENT OF COMMUNITY HALL CAR PARK

Objectives: To enhance the area around Taughmaconnell Community Hall to provide resources for biodiversity and to improve the look of the surroundings. To raise public awareness of the actions for biodiversity.

Actions

• Install some large planters to the front and side of the hall preferably where they will be in full sun and in full view.
• Use a peat-free compost.
• Plant a variety of pollinator friendly perennial plants which will flower through spring, summer and autumn to provide continuous forage for pollinating insects.
• Erect signage to raise awareness of the action for pollinators
• Erect signage to highlight the use of peat-free compost.
• Plant a native hedgerow around the wall of the carpark. Try to include a number of native tree species. Hawthorn, guelder rose, elderberry and willow will provide flowers throughout the season.

Evaluation and citizen science

• Monitor the health of the plants, upkeep and the interest of the community.
• Record the bee and butterfly wildlife you observe and "submit your sightings" on the NBDC website http://www.biodiversityireland.ie
• Log your actions for pollinators https://pollinators.ie/record-your-actions/

Resources

• https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Local-Communities_actions-to-help-pollinators-2018-WEB.pdf
• How can you help pollinators in your garden? https://pollinators.ie/gardens/
• How to guide for pollinator actions: https://pollinators.ie/resources/
• Pollinator friendly plant lists: https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Planting-Code-2018-WEB.pdf
• Bumblebee Identification guides: https://pollinators.ie/record-pollinators/id-guides/
• Butterfly identification: http://www.biodiversityireland.ie/record-biodiversity/butterfly-monitoring-scheme/about/how-to-identify-butterflies/
• https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Hedgerows-2018-WEB.pdf

NATURAL HERITAGE STUDIES WITH TAUGHMACONNELL SCHOOL

Objective: To engage schoolchildren in experiential wildlife studies and create a local wildlife interpretation board.

Partners: Mary Farrell and Taughmaconnell National School

Key tasks:

• Plan the project to ensure that the studies incorporate some desktop research, field trips and practice in wildlife observation and identification skills: trees, wildflowers, bird watching, identification of butterflies, bees, etc.
• Consider joining Birdwatch Ireland and the Irish Wildlife Trust and receive kids wildlife magazines with additional resources
• Set up a bird feeder and practice bird identification
• Incorporate the biodiversity theme into other cross-curricular topics such as geography, maths, art and SPHE.
• Carry out seasonal field trips in autumn (good for fungi and mosses), winter (good for bird watching especially migrant birds), spring (frog spawn and spring flowers), summer (wildflowers, bees and butterflies).
• Record all the wildlife that you observe.
• Plan the interpretation board.

Evaluation and citizen science

• Keep records of all wildlife sightings and submit to the NBDC

Resources

• How to develop a pollinator plan for your school: How to develop a school pollinator plan: https://pollinators.ie/wordpress/wp-content/uploads/2018/05/How-to-guide-Schools-2018-WEB.pdf
• Junior pollinator plan: https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Junior-Pollinator-Plan-Irish-2018-WEB-1.pdf
• Birdwatch Ireland resources for kids: https://birdwatchireland.ie/our-work/fun-learning/
• https://birdwatchireland.ie/publications-list/bird-detectives/
• Irish Wildlife Trust https://iwt.ie/; https://iwt.ie/get-involved/badger-club/
• Advice for planning interpretation boards: http://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/2_Develop_Your_Business/Bored-of-Boards-(lowres).pdf

PLANTING FOR POLLINATORS AT TAUGHMACONNELL SCHOOL

Objective: To rejuvenate the garden at Taughmaconnell National School to provide resources for pollinators

Partners: Taughmaconnell Community Council, Taughmaconnell School

Actions
• Engage the local community to help with the planting
• Use a peat-free compost to improve the condition of the soil.
• Avoid the use of herbicides or pesticides. Research alternative methods of pest control to protect new plants from snails and slugs.
• Plant a variety of pollinator friendly perennial plants in the stone planters which will provide food through spring, summer and autumn for pollinating insects. Supplement with wildlife friendly shrubbery or greenery if required.
• Continue to plant with a variety of fruit, vegetables and herbs in the raised beds at the school
• Highlight the importance of pollinators in the production of our food crops
• Erect signage to raise awareness of the action for pollinators

Evaluation and citizen science
• Monitor the health of the plants, upkeep and the interest of the community.
• Record the bees and butterflies visiting the flowers and "submit your sightings" on the NBDC website: http://www.biodiversityireland.ie
• Log your actions for pollinators: https://pollinators.ie/record-your-actions/

Resources
• How can you help pollinators in your garden? https://pollinators.ie/gardens/
• How to guide for pollinator actions: https://pollinators.ie/resources/
• Pollinator friendly plant lists: https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Planting-Code-2018-WEB.pdf
• Bumblebee Identification guides: https://pollinators.ie/record-pollinators/id-guides/
• Butterfly identification: http://www.biodiversityireland.ie/record-biodiversity/butterfly-monitoring-scheme/about/how-to-identify-butterflies/

TAUGHMACONNELL ROADSIDE VERGE

Objective: To visually enhance disturbed and gravelly ground along the roadside and to discourage herbicide use.

Partners: Taughmaconnell Community Council

Key tasks:
• Consult and collaborate with local residents
• Review the area of disturbed ground along the roadside. Prepare the soil. As the soil is subsoil you don't need to remove the topsoil.
• Weed out some more aggressive plants such as nettles and thistles if necessary.
• Rake the soil to scarify.
• Choose a suitable native wildflower seed mix for the soil and light levels. An annual mix will provide instant visual impact but will have to be re-sown every year.
• Erect signage to raise awareness of your actions for pollinators
• Erect signage to promote 'No Herbicide Use' in the area

Evaluation and citizen science
• Log your actions for pollinators: https://pollinators.ie/record-your-actions/
• Monitor the perspectives of the community
• Monitor herbicide use in the area

Resources
• How to guide for pollinator actions: https://pollinators.ie/resources/
• https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Wildflower-Meadows-2018-WEB.pdf
• Seed sources: EcoSeeds https://www.ecoseeds.co.uk Design by Nature: http://www.wildflowers.ie Irish Seed Savers: http://www.irishseedsavers.ie/
• Signage templates available: https://pollinators.ie/resources/

TAUGHMACONNELL BURIAL GROUND

Objectives: To raise awareness of the actions for wildlife taken at the graveyard and to further enhance the area for pollinators and other wildlife.

Partners: Taughmaconnell Community Council. Graveyard committee

Actions
• Maintain the existing hay meadow to the rear of the graveyard
• Cut the hay annually. Cutting in early September will allow later flowering species to set seed. However, if the vegetation growth is strong and falling over, cut sooner in July or August and again in September. Allow the hay to dry out for a week, turning once. Collect the hay.
• Consider scarifying the soil to break up dead vegetation and to create small areas of bare ground to promote seed germination. This can be done by raking the soil. Consider holding a community event on the grassland area in autumn after the hay is cut such as a family play day or football game so as to create some disturbance to the soil.
• Consider collecting wildflower seed locally from roadside verges and scatter on the grassland after scarification or sow in trays and grow-on as small plug plants, which can be added to the meadow in spring and autumn.
• Erect signage to highlight the grassland management to encourage local residents to do the same in their gardens.

Replace broken bird and bat boxes and monitor their use
• Install new bird boxes in a variety of styles to attract different birds.
• Install new bat boxes.
• Monitor the use of the bird boxes with school children.

Enhance the planting around the car park area
• Review the planting around the margins of the burial ground carpark. Plant a range of shrubs and perennial plants of benefit to pollinators and other wildlife.
• Erect signage to highlight your actions for biodiversity

Evaluation and citizen science
• Log your actions for pollinators: https://pollinators.ie/record-your-actions/

Resources
• Local communities: Actions to help pollinators: https://pollinators.ie/resources/local-communities/
• https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Seeds-2018-WEB.pdf
• https://pollinators.ie/resources/
• https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Wildflower-Meadows-2018-WEB.pdf
• Pollinator friendly plant lists: http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-friendly-planting-code-temporary-draft.pdf
• Signage to raise awareness of your actions for pollinators (signage templates available: https://pollinators.ie/resources/)
• Wildlife gardening: https://www.wildlifetrusts.org/actions

OLD CHURCH AND GRAVEYARD BIODIVERSITY PLAN

Objective: To draw up a biodiversity management plan for the Old Church and graveyard. To protect the flora and fauna of the old stone walls. To increase the wildflower diversity of the grassland

Partners: Taughmaconnell Heritage Group

Key tasks:
• Draw up a bespoke biodiversity management plan for the old graveyard.
• Avoid the use of herbicides or pesticides.
• Implement a policy of no removal of ferns and mosses from old stone walls.
• Consider the grassland management regime. Are the cuttings removed? Implement a reduced cutting regime to every 6 weeks or so to allow low-growing wildflowers to bloom.
• Allow dandelions to bloom in the spring. Consider scarifying the soil in some areas and sowing or planting bird's foot trefoil, yarrow, self-heal and red and white clover.
• Treasure the wildflowers growing along the roadside outside the graveyard. Reduce the verge management and allow the wildflowers to bloom through the summer. Cut in the autumn and remove all the cuttings.

Evaluation and citizen science
• Log your actions for pollinators: https://pollinators.ie/record-your-actions/
• Monitor the number and diversity of wildflowers in the grassland

Resources
• Collect and sow wildflower seed: https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Seeds-2018-WEB.pdf
• https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Wildflower-Meadows-2018-WEB.pdf
• How to guide for pollinator actions: https://pollinators.ie/resources/

APPENDIX A

1.1 GUIDELINES FOR PLANTING A NATIVE HEDGEROW

WHICH SPECIES?

• The best guide is to look at hedgerows growing locally and plant the same native species.

• Plant native species which are adapted to Irish conditions and benefit wildlife more.

• Locally grown plants, tolerant of local conditions, are likely to thrive.

• Plants grown from locally collected seed conserves local provenance.

• Thorny species such as hawthorn or blackthorn are essential for a stock proof hedgerow.

• A variety of species provides a varied food supply throughout the year for more wildlife. Include another hedgerow species or climber approximately every metre for stock proof hedgerows.

• If stock proofing is not a consideration plant 4 or 5 different species for a species-rich hedgerow.

• Include a tree species at irregular intervals, provided it will be allowed to grow up and is NOT topped when routinely trimming the hedgerow.

• Avoid non-native trees that cast dense shade, such as sycamore, beech and chestnut.

• If native varieties are not available, do not use ornamental garden varieties as they crowd out the desired plants and are not so good for biodiversity.

HEDGEROW SPECIES

These species survive routine trimming as a hedgerow while individual stems can be allowed to grow up and mature into trees.

• Hawthorn (*Crataegus monogyna*): Predominant hedgerow species. Hardy, fast-growing and tolerates most soils except very wet.

• Blackthorn (*Prunus spinosa*) suits most soils except very wet. Suits exposed and coastal sites. Spreads by suckers, good for gapping up.

• Holly (*Ilex aquifolium*): slow growing evergreen. Tolerates exposed sites and shade. Suitable under trees. Male and female plants required for berries.

• Spindle (*Euonymus europaeus*): prefers alkaline, but tolerates a wide range of soils. Open, infertile site better for fruit production.

• Guelder rose (*Viburnum opulus*): prefers alkaline, fertile, clay soils and neutral wet soils. Acid soils unsuitable. Competitive in new hedgerows.

• Hazel (*Corylus avellana*): prefers heavier, fertile soils. Tolerates some shade. Understory species.

CLIMBERS

Climbers colonise hedgerows, but can be planted.

• Dog rose (*Rosa canina*): tolerates wide range of soils. Provides rose hips.

• Honeysuckle (*Lonicera pericyclamen*): prefers neutral to light acid soils. Notable scented flowers.

TREES

These trees are suitable in hedgerows, provided they are allowed to grow up and mature and are not topped when trimming the hedgerow.

• Alder (*Alnus glutinosa*): useful for very wet sites and river banks. Adapted to most soils. Ideal nurse species as shelters new hedgerows and fixes nitrogen.

• Crab apple (*Malus sylvestris*): thrives in all fertile and heavy soils.

• Downy birch (*Betula pubescens*): suits poorly drained peat.

• Silver birch (*Betula pendula*): needs good drainage and sunny site.

• Willows (*Salix* spp.): useful for wet sites and stabilising river banks. Tolerate flooding. Fast growing.

• Wild cherry (*Prunus avium*): prefers fertile soils. Wet soils unsuitable. Shallow rooting. Tolerates some shade. Susceptible to bacterial canker.

• Rowan (*Sorbus aucuparia*): grows in poor thin acid soils. Suits exposed sites. More fruit in open infertile sites.

• Wych elm (*Ulmus glabra*): Suitable for sandy, loamy and clay soils but prefers well drained soil. Suits acid, neutral and basic soils.

• Pedunculate oak (*Quercus robur):* prefers clay soils and damp lowlands. Poorly drained infertile soils unsuitable.

• Ash* (*Fraxinus excelsior*): prefers well drained neutral to alkaline soils. Tolerates exposed or coastal areas. Shallow rooting system doesn't suit tillage fields. Casts shade.

***Note:** Due to the spread of ash dieback disease (*Chalara fraxinea)* planting large numbers of ash trees is not recommended and planting ash is not grant aided.

APPENDIX A

1.1 GUIDELINES FOR PLANTING A NATIVE HEDGEROW (CONTINUED)

HEDGEROW PLANTING

WHEN?

Hedgerow planting should be done during the tree planting season between November and February. To make planting easier, cover the ground with black polythene at least 6 months before hand to supress existing vegetation.

SPACING

• It is recommended to plant 7plants/metre in a double staggered row. This means a spacing of 300mm (1') between plants in each row and at least 300mm (1') between the two rows. Of the 7 plants in every metre, at least 6 should be hawthorn for a stock proof hedgerow.

• The other plant in every metre should come from the list above which tolerate routine trimming.

• If stock proofing is not a consideration then a more species rich hedge can be planted choosing up to four species from the list above.

PLANTING

• Prepare the ground and ensure that plant roots do not dry out. This can be done by keeping them in their bag in a cool place until planting or dig them into a temporary trench. During planting, avoid exposing the plants to air.

• Dig a trench and plant to the same depth as previously planted in the nursery.

• Hawthorn, blackthorn and dog-rose should be cut back to 100mm (4") from ground level to promote shoots at this level. Leave a few hawthorns un-pruned, placing tree shelters on them to identify and protect as single stemmed mature trees.

• Identify a few other species for retention as single stemmed trees. Trees such as pedunculate oak, ash and rowan are also suitable.

• Retain approximately ten single stemmed small trees per 300 m; too many make hedge cutting difficult and cast shade on the hedgerow.

ON-GOING MANAGEMENT

• Water in dry weather

• Control competing vegetation to prevent smothering and allow lower branches develop, giving a dense base.

• Manual weeding

• Mulching immediately after planting helps weed control. Mulch such as wood chippings, paper or cardboard must extend 150mm outside the plants.

• Fence off livestock using temporary fencing. Consider livestock reach and future access for machine trimming, when positioning the fence. Rabbit proof fencing may be needed to protect from rabbits or hares.

• Replace plants which fail to grow.

• For the first few years after planting, cut hawthorn back to 75mm (not other species) above previous level of cut, gradually shaping into a triangular profile.

BIBLIOGRAPHY:

Teagasc (2009). Countryside Management Series 4 New Farm Hedgerows.

Tree Council of Ireland. www.treecouncil.ie

APPENDIX B

The following table provides a list of some pollinator friendly plants. The list is not exhaustive and your local nursery can advise on other pollinator friendly 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).

SOME POLLINATOR FRIENDLY PLANTS

	SPRING	SUMMER	AUTUMN/ WINTER
TREES AND SHRUBS	Apple (*Malus sp.*)	Rock Rose	Hebe
	Field maple (*Acer campestre*)	Horse chestnut (*Aesculus*)	Ivy
	Willow (*Salix* sp.)	Deutzia	Honeysuckle (*Lonicera sp.*)
	Crab apple (*Malus sylvestris*)	Firethorn (*Pyracanth a* sp.)	Tree ivy
	Wild Cherry (*Prunus avium*)*	Laburnum	Barberry (*Mahonia*)
	Rowan (*Sorbus acuparia*)*	Viburnum	Musk willow *(Salix aegyptiaca*)
	Broom (*Cystisus sp.*)	Foxglove tree *(Paulownia tomentosa)*	Sweet box (*Sarcococca confusa*)
	Forsythia	Blackcurrant (*Ribes nigrum*)	Sweet box(*Sarcococca hookeriana*)
	Viburnum sp.	Redcurrant (*Ribes rubrum*)	
	Bird cherry (*Prunus padus*)*		
	Hawthorn (*Crataegus monogyna*)*		
	Juneberry Tree *Amelanchier x*		

SOME POLLINATOR FRIENDLY PLANTS

PLANTS AND HERBS

SPRING	SUMMER	AUTUMN/ WINTER
Hellebores (*Helleborus sp.*)	Columbine (*Aquilegia*)	Heathers
Rosemary (*Rosemarinus officinalis*)	Yarrow (*Achillea*)	Lavender (*Lavandula*)
Castor Oil plant *(Fatsia japonicai)*	Bistort (*Persicaria bistorta*)	Asters
Bugle* (*Ajuga reptans*)	Angelica (*Angelica*)	Catmint (*Nepeta*)
Aubrieta	Bell flowers (*Campanula*)	Raspberry (*Rubus*)
Wallflower (*Erysimum*)	Chives (*Allium*)	Eupatorium
Cranesbills (*Geranium*)	Comfrey (*Symphytum*)	Scabious (*Knautia, Scabiosa*)
Blueberry (*Vaccinium*)	Foxglove (*Digitalis*)	Snapdragon (*Antihirrhums)*
Skimmia (*Skimmia japonica*)	Hebe	Sunflowers (*Helianthus*)
Pasque flower (*Pulsatilla vulgaris*)	Lupin (*Lupinus*)	Ivy (*Hedera helix*)
Spurges (Euphorbia sp.)	Monkshood (*Aconitum*)	Chrysanthemums
Lungwort (*Pulmonaria sp).*	Sage (*Salvia*)	Borage (*Borago*)
Perennial candytuft *(Iberis sempervirens*)	Thyme (*Thymes*)	Majoram (*Origanum*)
Elephant ear (*Bergenia* sp.)	Coneflower (*Echinacea purpurea*)	Knapweed (*Centaurea*)
Leopard's bane *(Doronicum × excelsum*	Bell Heather (*Erica cinerea)**	Larkspur (*Delphinium*)
Green alkanet (*Pentaglottis*	Red Turtlehead (*Chelone obliqua*)	Dahlia species & hybrids (Dahlia)
	Bugbane (*Actaea simplex*)	Salvia species (Sage - autumn-flowering)
	Bee Balm (*Monarda*)	*Aconitum carmichaelii* (Carmichael's monk's
	Oxeye sunflowers *(Heliopsis sp.)*	*Helianthus × laetiflorus* (Perennial sunflower)
	Black-eyed Susan (*Rudbeckia*)	*Leucanthemella serotina* (Autumn ox-eye)
	Wallich Mil Parsley (*Selinum wallichranum*)	Majoram (*Origanum*)

SOME POLLINATOR FRIENDLY PLANTS

BULBS

SPRING	SUMMER	AUTUMN/ WINTER
Winter aconite (*Aconitum*)	Onion (Allium species ornamental and edibles)	Colchicum species (Autumn crocus)
Bluebell*(*Hyancinthoides non-scripta*)		Russian Sage
Crocus		Winter aconite *(Eranthis hyemalis)*
Grape hyacinth (*Muscari armeniacum)*		Snowdrop (*Galanthus sp.)*
Single flowered dahlia		

APPENDIX C

CONSTRUCTING BIRD BOXES AND SELECTING THEIR LOCATION

1.

Use a plank of wood about 150 mm wide and 15 mm thick. Cut out pieces to the dimensions opposite. The bottom of the entrance hole must be 125 mm from the floor. The inside wall below the entrance hole should be rough to help the young birds to clamber up when it's time for them to leave.

2.

When assembling the box use screws or galvanised nails.

3.

Attach the lid with a brass or a plastic hinge that will not rust, or hinge it with a strip of leather or rubber (an old piece of bicycle inner tube will do). Fasten it down with a good catch. Do not nail down the lid, since you will need to clean out the box in the autumn

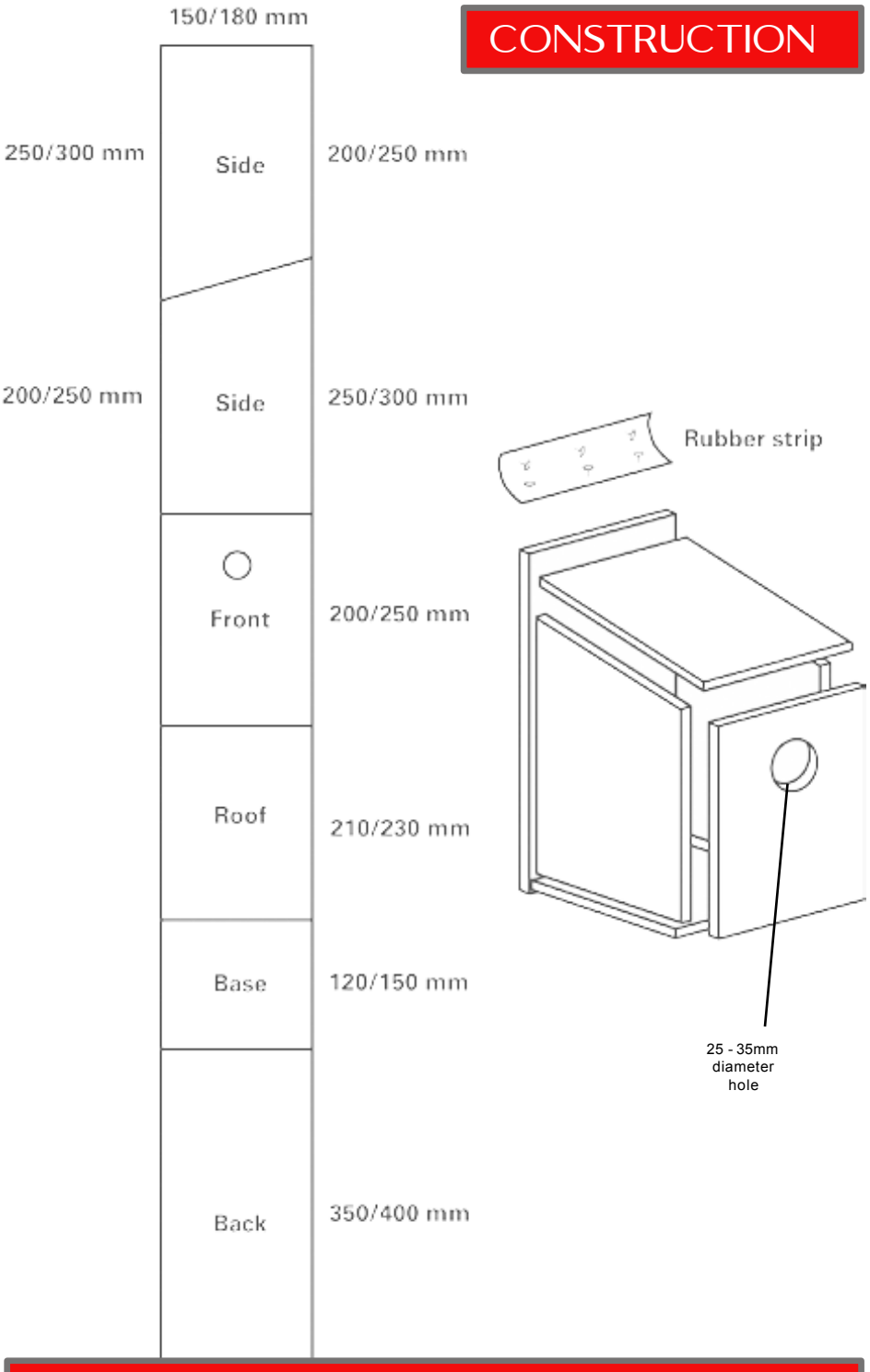
4.

By altering the size of the hole you can make a box to suit different species.

- Blue tit and coal tits~25 mm
- Tree sparrow~28 mm
- House sparrow~32 mm

5.

It is best to use hardwood and leave the wood untreated. Softwood boxes can be treated with selected water-based preservatives, which are known to be safe for animals, such as Sadolin.



MAKE THE SAME BOX WITH THE UPPER HALF TAKEN AWAY ALTOGETHER FOR ROBIN, PIED WAGTAIL AND WREN.

LOCATION SELCTION

Put your nest box up before the start of the breeding season in February. If you put the box up in winter and put a small handful of wood shavings inside, birds may roost in it for warmth.

Don't use straw as this will become damp and mouldy over the winter. The box should be located at least 2 m from the ground (preferably 3-5 m) so cats, other predators and curious people (especially children) don't disturb the nesting birds.

Choose a location that is situated away from bird tables and feeders as nesting birds are territorial and may feel threatened by other birds

feeding nearby. Unless there are trees or buildings which shade the box during the day, face the box between north and south-east, thus avoiding strong sunlight and the wettest winds. Make sure that the birds have a clear flight path to the nest box without any obstructing vegetation directly in front of the entrance. Tilt the box forward slightly so that any driving rain will hit the roof and bounce clear.

Use a wire strap to attach the box to a tree to avoid damaging the tree and check annually to ensure the wire is not cutting into the tree trunk.

Open-fronted boxes for robins and wrens need to be situated low down, below 2 m, well hidden in vegetation such as dense bramble thickets.

NEST BOX CARE

If birds take up residence in your nest box, avoid going near the box or disturbing the nest as this may result in the parent birds abandoning their young. Observe and admire the activity from afar, preferably from inside looking through a window.

The box can be opened from the end of October and cleaned out. Empty out old nest material and any unhatched eggs and clean the inside of the box with boiling water to kill off any parasites that may be still in the box.

Adapted from www.rspb.org and www.birdwatchireland.ie

APPENDIX D

CONSTRUCTING BAT BOXES AND SELECTING THEIR LOCATION

Bats are social animals and often congregate in large numbers. Providing bat boxes offer bats additional roosting areas, or can often help to replace lost or degraded roosting sites such as demolition of old buildings.

BAT BOX CONSTRUCTION

There are many designs for bat boxes. Check the resources page for alternatives. Bat boxes should be draught free and preferably painted black with a non-toxic paint to allow for maximum absorption of heat during the day that keep the bats warm. The bat box described below is for summer occupancy since it lacks the required insulating properties to make it suitable for a hibernation site.

MATERIALS AND CONSTRUCTION

• The only critical measurement is the width of the crevices: between 15-20mm.

• This kit requires approximately 1.6m of rough wood and 25 screws (8 x 1 ½ inches) to assemble

• Pre-drill the holes to prevent the wood splitting.

• Box should be made from untreated rough sawn timbers.

• Timber should be about 20 mm thick.

• The box should be rainproof and draught-free.

• Crevices can be between 15-20 mm wide

• Fixings may be by use of brackets, durable bands or wires

LOCATING YOUR BAT BOX

Bat boxes are best positioned as high as possible but at least 4 or 5 m from the ground in a sheltered and wind free position, exposed to the sun for part of the day (6-8 hours). They can be fitted to walls, other flat surfaces and trees. A clear flight line to the entrance is important. Ideally put up 2-3 boxes in a group with varying aspects ranging from south east to south west, e.g. around a tree trunk, as bats may move between roosts to remain comfortable.

Bats are nocturnal and adapted to low light conditions. Artificial light sources should not be directed onto bat boxes or flight paths as most bat species find artificial lighting very disturbing. Don't position bat boxes in areas that are illuminated at night.

Bat boxes are more likely to succeed in areas where bats are frequently found in buildings and where there is a good mixture of habitat such as trees nearby. Bat boxes may be more successful if located close to a linear feature such as a line of trees or hedgerow. Some bat species use these features for navigation between their roosting sites and feeding grounds thus avoiding flying in open and exposed areas. Ensure the bats approach to the box is not impeded, for example by branches – clear away underneath the box so the bats can land easily before crawling up into the box.

If fixing the box to a tree, use headless or domed nails not fully hammered home to allow the tree to push the box off without splitting, or strap the box to the tree. Iron nails can be used on trees with no commercial value. Copper nails can be used on conifers, but aluminium alloy nails are less likely to damage saws and chipping machinery.

On buildings, place the boxes as high as possible to reduce the likelihood of the bats falling prey to cats or being disturbed by humans. As with trees, the aspect of the box on the building should capture sun for part of the day.

MONITORING BAT BOXES

Making and erecting bat boxes is a great conservation action but what is more beneficial is to establish whether they are being used, at what time of year and by which species. There are nine species of bat found in Ireland.

HOW LONG BEFORE BATS USE THE BOX?

Sometimes it may take several years for the bats to find the box. Be patient!

It is highly unlikely bats will shift their roost from a well-used site to a newly positioned box and there may be plenty of other suitable roosting sites in the area. However, at other times bats will use the box within a few months, and if you are extremely lucky, maybe even within a few weeks!

HOW WILL I KNOW IF THE BOX HAS BEEN SUCCESSFUL?

To check if the box is being used, look out for droppings, urine staining, listen for 'chattering' and watch the box for an hour either side of sunset to observe any bats leaving to feed.

Remember disturbance of a bat roost is an offence under the Wildlife Acts 1976 and 2000). Therefore, a bat box should not be opened or interfered with unless the person is licensed to do so.

APPENDIX E

BIODIVERSITY RECORDING

Submitting records of species that you have observed and submitting them to the National Biodiversity Data Centre (NBDC) or another dedicated recording scheme is a great and practical means to become involved in biodiversity conservation. You are also improving your wildlife identification skills and getting 'back in touch with nature'. Such data is very important and is used in research, policy formation and contributes greatly to our knowledge of biodiversity and its conservation.

The NBDC collate records of all species recorded, in addition to running targeted recording schemes such as the butterfly and bumblebee recording schemes. Anyone can get involved and they are keen to recruit new recorders. Visit www.nbdc.ie for details.

HOW TO STORE AND SUBMIT RECORDS

The information recorded needs to be as accurate as possible. To take an accurate record you need to:

• Correctly identify the species (or get help in doing so)

• Record when (the date) and where you saw it. For the location, you need a grid reference. You can submit records to the NBDC centre through their online records submission form. This has a "find a grid reference feature" to easily find an accurate location for your record.

• You can also submit records for any wildlife species using their Biodiversity Smartphone App.

The number of conservation organisations running citizen science recording projects in Ireland is continually increasing:

• Birdwatch Ireland run the Garden Bird Survey and other more specialised recording schemes such as the Countryside Bird Survey, Irish Wetlands Bird surveys (iWeBS). They also coordinate 'species action projects' such as the Swift Nest Box project and Barn Owl Project which you may be able to get involved with. Visit www.birdwatchireland.ie

• The Irish Wildlife Trust also run targeted recording schemes such as for smooth newt and common lizard. Visit www.iwt.ie

• For botanical recording contact the Botanical Society of Britain and Ireland (BSBI). The BSBI run several outings a year and are very encouraging to new and emerging botanists and members. Visit http://www.bsbi.org.uk/ireland.html

• Submit wildlife sightings and sightings of road kill to www.biology.ie

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