

Newtownforbes - An Lios Breac Biodiversity & Conservation Plan 2021-25



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Cover Photos: Whooper Swans on the swollen River Camlin in March 2020
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I am grateful to the Newtownforbes Tidy Towns Committee and the Bog Walk Group for the invitation to work with them over the past year and for helpful comments they made on the draft version of this plan. I also wish to thank all of the members of the community who attended the launch talk of this plan on the 21st April and for helpful discussion of biodiversity management.

I wish to thank Donal Lyons from the University of Limerick for preparing the biodiversity site maps presented in this plan and John FitzGerald for photography on the Lowertown-Ballykenny Bog Walk.

I am grateful to Dr Sue Moles for providing information in relation to designated sites and their importance in the Newtownforbes Area.

1. Executive Summary

The Newtownforbes - An Lois Breac Biodiversity and Conservation Action 2021-2025 Plan is supported by the Community Foundation for Ireland and is an initiative of Newtownforbes Tidy Towns Committee and the Bog Walk Group.

This biodiversity and conservation plan documents the species and habitat richness of the village and its surrounding countryside bog walk across 9 areas.

143 plants, 21 birds and 31 animals were identified by the biodiversity survey carried out during three visits from November 2019 to July 2020. Additional information was obtained from the Bog Walk Group in March 2020 and April 2021. Nine birds recorded in the survey are of conservation concern including House Martin, House Sparrow, Swallow, Starling, Herring Gull, Whooper Swan and Skylark. Badger, Pine Marten, Hare and Frog are protected species recorded in the Bog Walk habitats.

Habitat maps are presented for 8 of the study areas targeted by the Newtownforbes Tidy Towns Committee and Bog Walk Group. No map was drawn for the village main street.

13 habitats were identified during the survey including wet grassland, unimproved agricultural grassland, hedgerow, cutover bog, raised bog, marsh, amenity grassland, artificial surface, stone walls,

flower beds and borders, scrub, birch woodland and grass verges. The two bog habitats are of European Conservation Importance.

101 biodiversity enhancement actions are proposed in this plan. The main thrust of the recommendations is for the community to create habitat. For example planting trees in groups to create woodland as opposed to planting trees in lines. Leaving grass to grow, flower and set seed under planted trees to create wild flower meadow.

The biodiversity actions can be achieved if Newtownforbes package them in themes and seek funding for a suite of actions across a different range of biodiversity areas in the village. Tree planting to create woodland habitat is an example and has been recommended for a number of sites studied. A project to plant trees and woodland groves or hedges in all town estates, the school grounds, the playground, Lamagh Graveyard and the Clonguish GAA grounds could be designed with the aim of planting one tree for every citizen in the town or to reduce the carbon footprint of the community. Such a project on a large scale would be attractive to sponsors and/or grant awarding agencies.

Similarly a pollinator project might see the community enhancing biodiversity through less mowing, planting bulbs and sowing wildflower seeds targetting roadside verges,

Clonguish GAA grounds, school grounds, community garden, playground, village entrances, Parish House of St Mary's Church, Lamagh Graveyard and St Paul's Graveyard.

To achieve these actions wider community engagement will be essential. Groups to be consulted are school management board, teachers and students, town businesses, members of different religious congregations and local land owners.

Three invasive plant species were recorded in Newtownforbes as part of this study in 13 different locations. These were *Rhododendron ponticum*, Japanese Knotweed and Cherry Laurel. These must be removed following best practice methods.

At least three car wrecks dumped along the bog walk need to be removed in liaison with the Local Authority.

It is essential that the use of sprays to kill weeds and wildlife is stopped and that the community use peat free compost for window boxes, baskets and planters to protect and enhance biodiversity.

Funding for the actions in this plan may be sought from a variety of sources provided there is matched funding within the community.

Species data recorded on this survey will be lodged with the National Biodiversity Data Centre.

2. Introduction

This Newtownforbes - An Lios Breac Biodiversity and Conservation Plan has been created as an initiative of Newtownforbes Tidy Towns and Bog Walk Group. The project is funded by The Community Foundation for Ireland. This funding allowed the Newtownforbes Tidy Towns and Bog Walk Group to employ Dr Catherine O'Connell as an ecologist to develop the Biodiversity and Conservation Plan, devise actions to maintain and enhance local biodiversity and to help the community to gain a better understanding of the biodiversity hot-spots in their locality.

Newtownforbes Tidy Towns Committee and Bog Walk Group

Newtownforbes Tidy Towns Committee was established in 1995. Their main objectives are to:

1. To create active community involvement and coordinated planning for the area
2. To create a sense of community and pride in our local village
3. To ensure Newtownforbes is a safe, clean and healthy place to live for all residents
4. To promote energy conservation and efficient waste management practices and
5. To promote biodiversity and safeguard the habitats of local species e.g. swifts, owls, bats and native plants.

The Bog Walk Group is a subcommittee of the Tidy Towns established to oversee an ambitious project which aims to develop a walking route from Newtownforbes to the Camlin River and to eventually link up with Cloondara which is on the Shannon Waterway.

The top achievements of the Newtownforbes Tidy Towns and the Bog Walk Group include:

- * Developing a community garden and children's playground
- * Providing a footpath from the town to the graveyard at Lamagh
- * Re-modelling the front entrance and facade to St Mary's Church
- * Providing signage to historical churches
- * Creating a Christmas crib and annual lighting ceremony in the village
- * Tree planting at the GAA playing fields
- * Establishment of the Bog Walk Group and buy in from local farmers for the development of the walk
- * Successful funding application and award from the Community Foundation for Ireland towards the development of the Newtownforbes - An Lios Breac Biodiversity and Conservation Plan 2019

- * Successful funding application in liaison with Longford County Council from the Outdoor Recreation Infrastructure Scheme for the development of the Bog Walk in 2020.
- * Successful Part 8 Planning Permission for the construction of the Bog Walk route in 2020.

Newtownforbes Tidy Towns Committee hold an annual raffle and fundraising event in the GAA club to raise funds for local projects. It participates in the County Fleadh in April. There is a strong Ceoltas Group of 140 young people as part of the Gael Scoil.

Contact Details

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Facebook:
<https://www.facebook.com/newtownforbes.tidytowns/>

3. Newtownforbes Village Location

Newtownforbes is a lovely rural village located in County Longford (co-ordinates: 53.7655°N 7.8356°W). It lies in the heart of Clonguish/Clongish (Cluain Géis) Parish meaning “the meadow of the swans”. It was historically called Lisbrack or Lios Breac which translates as the ‘speckled fort’. It gets its current name from the Forbes family, holders of the title Earl of Granard. Castleforbes is the family seat and the main entrance to the house is in the centre of the village. The N4 National primary route passes through the Main Street of the village, which is situated 6 km northwest of Longford Town (see Figure 1 and Plate 1). The Dublin to Sligo railway line passes through Newtownforbes east of the N4. The population of Newtownforbes is 778, as of

the 2016 Census. Further information at www.longford.ie.

The area has a rich historic built and archaeological heritage with many buildings

and structures of interest in the village and the surrounding landscape. These can be viewed at Archaeology.ie (note search for Newtown Forbes).



Plate 1: Main Street in Newtownforbes village, Co. Longford. Photo: © Google Street View

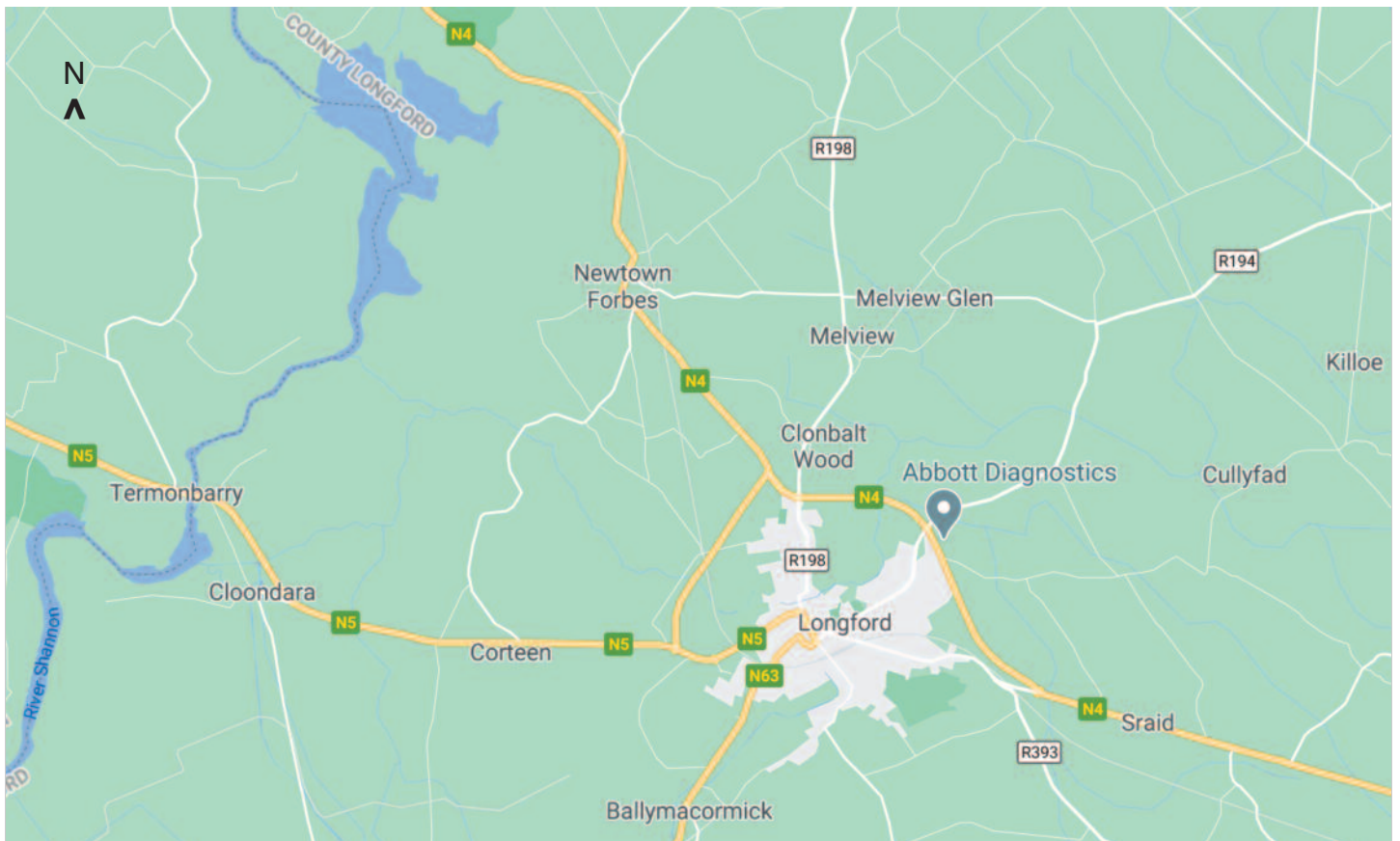


Figure 1: Location Map for Newtownforbes Village in Co. Longford. Source: © www.google.com

4. Methods

Introductory Meeting

Dr Catherine O'Connell met with Newtownforbes Tidy Towns representatives on the 9th November 2019 to begin the process of devising this plan. The meeting involved a tour of the Newtownforbes area where the local community was able to present the biodiversity highlights of the area, review works undertaken to date to improve biodiversity and discuss problem areas with the ecologist.

Study Sites

Following the first meeting a map was drawn up identifying nine areas of study. At these sites the ecologist determined the biodiversity present and made recommendations on its enhancement or maintenance. This map was forwarded to Newtownforbes Tidy Towns Committee and Bog Walk Group for verification and review. Additional aspects were added to the scope of the project including the full proposed route of the Bog Walk and a biodiversity overview of the whole village and its entrances from the N4. A wetland area within Castleforbes was removed from the brief due to access privacy.

Biodiversity Field Visits

Field visits were undertaken to document the habitats and species present in the study sites with a view to mapping the information and making recommendations on biodiversity enhancement and maintenance. These visits took place on the 5th and 22nd July 2020. These were in addition to



Plate 2: First meeting with members of the Newtownforbes Tidy Towns Committee and the Bog Walk Group. Photo: © C. O'Connell

the field visit on the 9th November 2019.

(www.osi.ie) and Archeology Ireland (www.archaeology.ie).

Biodiversity Recording Sheet

A field recording sheet for biodiversity was developed for the project and is presented in Appendix 1. The information collected at each study site was as follows: species of plant, animal and bird present, invasive species, habitat description and classification, photograph, biodiversity enhancement recommendations.

Desk Top Studies

A desk top study was undertaken to establish information in the public domain about Newtownforbes, its history, archaeology, habitats and biodiversity. Information was obtained from the websites of the National Biodiversity Data Website (biodiversityireland.ie), the National Parks and Wildlife Service (www.npws.ie), Ordnance Survey Ireland

Community Engagement

On all three site visits, members of the community who have shown a very strong interest in the project joined the ecologist (Plate 2).

Two Newsletters about the project were prepared and distributed to the community (see Appendix 2) via Facebook.

A bird and wildlife survey was distributed to school children in Scoil Mhuire National School (see Appendix 3).

The draft Biodiversity Plan was completed by December 2020 and circulated to the community and feedback received was included in the plan.

The Biodiversity Plan was launched at a virtual seminar delivered by Dr Catherine O'Connell on 21st April 2021.

5. Biodiversity in Newtownforbes

Desktop research of biodiversity information available about Newtownforbes and its surrounding countryside was undertaken. Very quickly, it was obvious that the area is extremely rich in natural habitat. The village is fortunate in its location adjacent to the Castleforbes Estate, the Camlin River, Lough Forbes and the Ballykenny and Fisherstown Raised bogs. Habitats associated with freshwater, peatland and woodland are plentiful in the area and many have been designated for conservation by the National Parks and Wildlife Service. The sites are so valuable that they have been designated as important for the whole of Europe and are part of the Natura Network of nature sites. They also have statutory protection under the Wildlife Act 1976 and Amendments in Ireland.

The following sites are designated in the area:

Ballykenny-Fisherstown Bog - Special Protection Area (SPA) (Site Code 004101). SPA's are designated as important sites for birds. This site was put forward for Greenland White-fronted Geese. However the last record of Greenland White-fronted Goose at this site was in 1990/91 (111 individuals)¹. Nevertheless the bog complex does provide habitat for rare other birds such as Merlin and Red Grouse. The lake and callow grasslands provide good habitat for a range of wintering

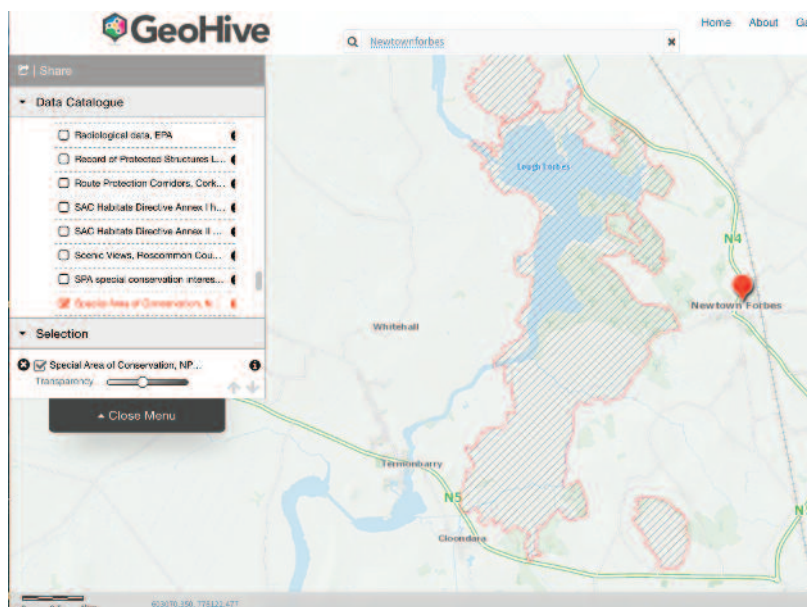


Figure 2: Location map for Ballykenny-Fisherstown Bog - Special Protection Area (SPA) (Site Code 004101). Photo: © www.osi.ie Geohive maps.

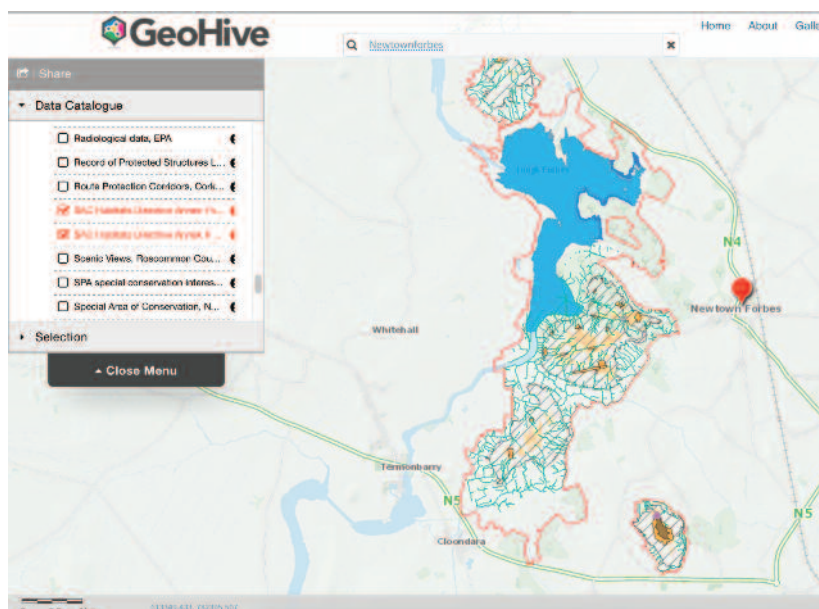


Figure 3: Location map for Lough Forbes Complex Special Area of Conservation (SAC) Site Code: 001818. Photo: © www.osi.ie Geohive maps.

waterfowl species: Cormorant (51), Whooper Swan (40), Wigeon (419), Teal (444), Tufted Duck (49) and Goldeneye (11) – are two year mean peaks for the period 1998/99 to 1999/2000 (see Figure 2).

The same area is designated as the Lough Forbes Complex Special Area of Conservation

(SAC) Site Code: 001818². This designation refers to the habitats present in the site and these include: [3150] Natural Eutrophic Lakes, [7110] Raised Bog (Active)*, [7120] Degraded Raised Bog, [7150] Rhynchosporion Vegetation and [91E0] Alluvial Forests*. The Ballykenny and Fisherstown bogs included in this SAC are the most northerly

¹ National Parks and Wildlife Service (20120 Site Synopsis Ballykenny-Fisherstown Bog SPA 004101

² National Parks and Wildlife Service Conservation Objectives Series Lough Forbes Complex SAC 001818. Department of Arts, Heritage and the Gaeltacht. 2016



Figure 4: Location map for Historic woodlands in the Newtownforbes Area from the National Parks and Wildlife Service Inventory 2010¹. Photo: © www.osi.ie Geohive maps.

bogs occurring on the River Shannon. Ballykenny Bog is unusual in that some of its margins are intact, a rare feature in the Irish midlands due to turf cutting over the centuries. At Ballykenny it is possible to see the natural transition from the open water in the river through marsh to raised bog habitat (see Figure 3).

The woodlands around Newtownforbes are regarded as ancient (meaning they have been around since the mid 1600's) and long-established and are included in the 2010¹ National Parks and Wildlife Service inventory of these woodlands (see Figure 4).

Further information on the species diversity present in Newtownforbes is available from the National Biodiversity Data Centre (NBDC). Species records can be found for areas of the country based on a

system of 1km square grids. The grid numbers for Newtownforbes are N0880, N0980, N1080, N0879, N0979, N1079, N0878, N0978, N1078, N1179. Data is uploaded by various recorders to the NBDC.

A scan through the NBDC data set indicates that Newtownforbes has been included in a number of species surveys including: the National Vegetation Database for flowering plants, Moths Ireland, Heritage Trees of Ireland, Amphibians and Reptiles of Ireland, Irish Vascular Plant Data - Robert Northridge, Atlas of Mammals in Ireland 2010-2015, Birds of Ireland, Online Atlas of Vascular Plants 2012-2020, Atlas of mammals in Ireland 2010-2015 and Butterflies of Ireland.

¹ National Parks and Wildlife Service Ancient and Long Established Woodland Inventory 2010

6. Newtownforbes - An Lios Breac Biodiversity Areas

The following areas are being targeted for biodiversity in this Biodiversity and Conservation Plan (see Figure 5).

1. Lismoy Old Graveyard
2. Lamagh New Graveyard
3. Children's Playground and Community Garden
4. St Mary's Catholic Church Grounds
5. St Paul's Church of Ireland Grounds
6. Village Main street including entrances/exits from the N4
7. Clonguish GAA club grounds and "biodiversity" area created by Newtownforbes Tidy Towns Committee
8. Scoil Mhuire National

- School Grounds and "garden" area
9. Lowertown-Ballykenny Bog Walk: area from fork in road to the walkway gate and on to the badger sett. This is a natural biodiversity hot spot in Newtownforbes and is mostly included within a special area of conservation.



Figure 5: Biodiversity Study Areas agreed to be included in the Newtownforbes - An Lios Breac Biodiversity & Conservation Plan. 1. Lismoy Old Graveyard; 2. Lamagh New Graveyard; 3. Children's Playground and Community Garden; 4. St Mary's Catholic Church Grounds; 5. St Paul's Church of Ireland Grounds; 6. Village main street and entrances; 7. Clonguish GAA Club grounds and "biodiversity" area; 8. Scoil Mhuire National School Grounds and "garden" area; 9. Lowertown-Ballykenny Bog Walk (existing and proposed in blue colour). Source: © www.google.com

7. What is Biodiversity?

Biodiversity is the variety of living things around us, from mammals and birds to plants and microbes, and the habitats they live in. It is a term used to mean wildlife, but more inclusive, as the latter is often thought to refer to animals only.

The biodiversity of a site or locality is the range of species found there. A green space in any housing estate includes the familiar biodiversity of the blackbird and the robin, ducks, butterflies and the trees and grass, as well as many hundreds of species of smaller, more elusive and less familiar species such as bats, hoverflies, molluscs and fungi.

Table 1: The Values of Biodiversity

Biodiversity Value	Notes
Biodiversity is good for people	Naturalistic landscapes offer an alternative experience to more formalised, green space, and can be used for both exercise and relaxation.
Biodiversity involves communities	Encouraging biodiversity offers opportunities for people to get involved in creating and looking after parts of their local neighbourhood or park or for recording species through citizen science initiatives.
Biodiversity is cost-effective	Because biodiversity schemes, such as planting woodland, require less intensive maintenance, resources, which are always limited, can be directed to other activities in the community.
Biodiversity creates a sense of place	Biodiversity helps to make an area reflect the character of its own locality, rather than looking and feeling the same as everywhere else.
Biodiversity is good for wildlife	Biodiversity is good for wildlife, whether rare and protected species or common, familiar plants and animals.
Biodiversity contributes to sustainability	Less intensive techniques and the reduction of chemicals, water and fertilisers are all aspects of managing for biodiversity. The best ecological systems require low levels of intervention and are therefore readily sustainable.
Biodiversity contributes to a green infrastructure	The network of habitats, parks and green spaces in a village helps to ameliorate the effects of climatic extremes, heavy rainfall and pollutants. Naturalistic green spaces are generally more effective in this respect thanks to their more complex vegetation structure.

Table 2: Settings for Biodiversity

Biodiversity Locations in Your Area
Parks and public gardens
Natural and semi-natural spaces (including wastelands and derelict open land)
Green corridors
Rivers, streams and wetlands
Roadside verges
Cemeteries, churchyards and other burial grounds
Civic spaces, including market squares and other hard-surfaced areas designed for pedestrians
Accessible countryside in urban fringe areas
Urban planting schemes
Amenity green spaces
Playgrounds for children and young people
Allotments, community gardens and city farms
Outdoor sport pitches
Running tracks
Walkways

The Value of Biodiversity
Biodiversity is a key component of vibrant, rich and attractive open spaces in villages and the surrounding countryside. The values of biodiversity are listed in Table 1. Biodiversity value is reflected in the way that habitats, parks and green spaces are managed. People want nature in their public spaces and want to get involved in its management. Success will be the result of leadership, teamwork and commitment. What to aim for is that the care of parks, habitats and open spaces is informed by ecological principles. The result of this approach is the creation of more self-sustaining, cost-effective landscapes that provide better wildlife habitat and more locally distinctive surroundings. Using the biodiversity approach can put small villages on the visitor map and help local communities to be proud of their village because of it.

Where can we find biodiversity?

When people think of places to encourage wildlife, it is often the wilder, more out-of-the-way parts of the village or the woodland and hedges at the edge of the village. Actually everywhere has the potential for biodiversity (see Table 2). In order to enhance the opportunities for biodiversity, groups must create and encourage more species-rich and structurally diverse vegetation. Common examples include reducing mowing to encourage wildflowers and the establishment of field and shrub layers under groups of planted trees.

Why Does Newtownforbes Need a Biodiversity Action Plan?

Global biodiversity is under threat. Action is required at local, national and global levels to protect our natural heritage. Habitat loss from exploitation of

resources, agricultural conversion and urbanization are the main factors contributing to the loss of biodiversity. The consequent fragmentation of habitat creates small isolated patches of land that cannot maintain populations of species into the future.

Ireland's National Biodiversity



Plan 2017-2021¹ highlights the role that Communities can play in enhancing and protecting the biodiversity in their locality. A key action area arising from the National Biodiversity Plan is the need to take steps to protect pollinators. The All Ireland Pollinator Plan 2021-2025² aims to help local communities to



enhance habitat for pollinators through planting native species that provide food and shelter

year round (see the Pollinator-friendly Planting Code³).

The basics of Biodiversity Management

Managing sites for biodiversity involves twelve general principles that may challenge traditional practices.

1. You don't know what you've got until it's gone

Make the most of what is already there. Very often the value of this may not be recognised. For example, regularly-mown amenity grassland may in places contain a good number of wildflowers but these never flower because of the frequent mowing. Always make sure you know what you already have before you try to change it.

2. Challenge the myths

It is important to seek expert advice to ensure that myths about wildlife do not infiltrate management decisions. For example, not all birds nest in trees; many nest on the ground. Many shrubs promoted as good for butterflies are suitable only for the adults, which drink nectar, and if the food plants of their larvae are not present as well, they will not serve their purpose.

3. Keep it appropriate

Most habitats, parks and green spaces have a local distinctiveness: the species and their habitats generally relate to their locality and are derived from the underlying substrates and geology, climate, hydrology and ecological characteristics. A green space in the South West will have different biodiversity from one in the North East, even if the layout and structure are broadly similar. To ensure that biodiversity has a long-term future, management objectives must be appropriate to the local ecology, as must the species that are planted.

4. Keep it clean

Wildness is often thought to mean leaving nature to look after itself. But it is important to make sure the site does not appear neglected. Litter picking is as important in a wildlife area as in a formal rose bed.

5. Keep it dynamic

Standard management practice aims to keep elements of the landscape in the same condition: shrubs are pruned to a regular shape, lawns are close mown to the same height, all self-sown plants are removed from flower beds. Change is therefore limited. Management for biodiversity, on the other hand, may actively encourage change so that more varied opportunities are present for wildlife. Some grassland might be allowed to change gradually into woodland or shrubs may be pruned less frequently. Many species have no permanent place in a green space managed to suppress all change, yet continuity of habitat is absolutely vital to many species.

6. Size matters

Although the quality of a park is not generally dependent on its size, in the context of increasing biodiversity it can often be crucial. Some species, mainly birds and mammals, have minimum area thresholds. So it is important to provide the largest area or mass of habitat wherever possible, as this enhances the chances for species that have large territories or that are vulnerable to disturbance. This provides the basic rationale to extending biodiversity beyond the bounds of the nature

1. <https://www.npws.ie/sites/default/files/publications/pdf/National%20Biodiversity%20Action%20Plan%20English.pdf>

2. <https://pollinators.ie/wp-content/uploads/2021/03/All-Ireland-Pollinator-Plan-2021-2025-WEB.pdf/>

3. <https://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-friendly-planting-code-temporary-draft.pdf>

garden and integrating it into the wider management of parks and green spaces.

7. Safety in numbers

A greater diversity of plants is likely to support a wider range of animals. For example, a wildflower meadow is usually thought to be better for wildlife than areas of unmown, tall grassland, because the greater variety of flowering plants supports more nectar-feeding insects than grasses alone. Similarly, a mixed planting of shrubs or a mixed hedge may help encourage more species of birds than a planting or hedge made up of a single species.

8. The sum is bigger than the parts

Combining different habitat types together creates a more complex and varied environment for wildlife, because of the larger number of opportunities for shelter and feeding. For example, the song thrush feeds both on invertebrates in open lawns and on berries from hedgerows or woodland edge. Thus, combining areas of short-mown grass with shrubs, hedges and woodland provides all sorts of foraging opportunities as well as nesting cover. Rich mosaics of different habitats can also be very attractive to people and are desirable if the size of the site and local circumstances permit.

9. More structure means more diversity

The key to providing enhanced habitats for biodiversity is generally increasing the structural diversity of the

habitats. For example, long grass meadows provide more opportunities than short swards. A woodland with ground flora, dead wood and a small tree layer provides significantly more habitat than one stripped of everything except its trees.

9. It's a matter of life and death

We are used to thinking of nature as the living things we can see all around us, whether they are plants or animals. However, biodiversity – the totality of living things – includes also those myriad species that are scarcely visible. Many organisms are involved in death and decay and in feeding upon and recycling the dead remains of other life into soil nutrients. Therefore, one of the ways of encouraging greater biodiversity is to encourage this natural recycling by, for example, leaving dead wood on the ground in woodland areas.

10. Life on the edge

Biodiversity hotspots often occur at the meeting point between two or more habitats. For example, where a shrubby woodland edge meets tall grass or meadow, plants and animals from both grassland and woodland habitats can thrive. Such boundaries and edges can be very useful where space is limited, particularly if allowed to merge rather than being maintained as two or more separate areas. They can be especially valuable in warm and sunny aspects where the greatest diversity of wildlife can be expected.

11. Remember the bigger picture

It is easy to focus on an individual site or a particular area or feature within that site, to the exclusion of the surrounding area. However, wildlife rarely takes notice of our site boundaries. We should not forget to look at how an individual site fits into a much wider network of spaces and how that connection can be strengthened. We should also consider the role of private gardens, which extend the habitat available for wildlife beyond the public open space.

12. Keep it sustainable

Throughout the 20th century, managers of parks and green spaces (as well as the countryside) often used specific techniques to remove biodiversity, which was seen to be a problem. This later rebounded through the food chain, or caused damage well away from the parks themselves. Adopting more sustainable approaches, for example reducing chemical inputs, water extraction and fertilisers, and avoiding the use of peat, can greatly enhance biodiversity.

Biodiversity Enhancement Actions

Appendix 4 presents a number of photo montages showing examples of some of the practical ways in which to enhance biodiversity in Newtownforbes. These ideas and others will be recommended in the biodiversity action tables presented in Chapter 8 of this plan.

8. Biodiversity Maps & Actions

8.1 Lismoy Old Graveyard

Location: 53.770412, -7.986237 (see Figure 6).

The Lismoy Old Graveyard is located off the L5017 1km north east of Newtownforbes town centre. It is situated in the countryside within a network of farmland fields with hedge boundaries of hawthorn and blackthorn. Some hedges were broken down and remained as tree lines of ash. The land use immediately surrounding the graveyard is for sheep grazing and silage production. The graveyard is surrounded by an old stone wall and has an access stile and gate from the L5017. In 2020 a book was published which documents a detailed survey of the memorials in this Cemetery.

This old graveyard has a

particular atmosphere. It is peaceful and feels remote offering the chance for visitors to rest and enjoy the ambiance of the graveyard and the sounds of the countryside all year round. A large tree beside the graveyard was alive with rooks and jackdaws in February while in the summer the recently cut silage in the fields which had been spread with manure were full of feeding gulls, rooks and jackdaws.

Habitat Types

The range of habitats in the Lismoy graveyard includes grassy wildflower areas, stone walls and scrubby wild areas (see Figure 7).

Dry Meadows with Wild Flowers and Grassy Verges:

The dominant habitat between the headstones is dry meadow with wild flowers (Plates 3-7) .

As this area is not regularly mowed many wild flowers and shrubs present complete their lifecycle of growth from seedling to flower to setting seed. This habitat had a high species count with 26 plants, 8 birds and 4 invertebrates including the meadow brown butterfly, cinnabar moth caterpillar, 7 spot ladybird and carder bee (see Plates 4-5). The insects were taking nectar on the wild flowers and carrying out the vital role of pollinating. The four corners of the graveyard were more wild and with the addition of brambles provided cover for wren and bluetit. The seed heads of the grasses and wild flowers provided food for goldfinch (Plate 3) and flocks of starling.

Headstones: The headstones within the graveyard are important for biodiversity



Figure 6: Lismoy Old Graveyard, Newtownforbes, Co. Longford. Source: © www.google.com

1 Mooney, D. & Mc Hugh D. (2020) Lismoy Historic Graveyard Newtownforbes, Co. Longford. Clongish Memorial & Burial Records 1747-2014.

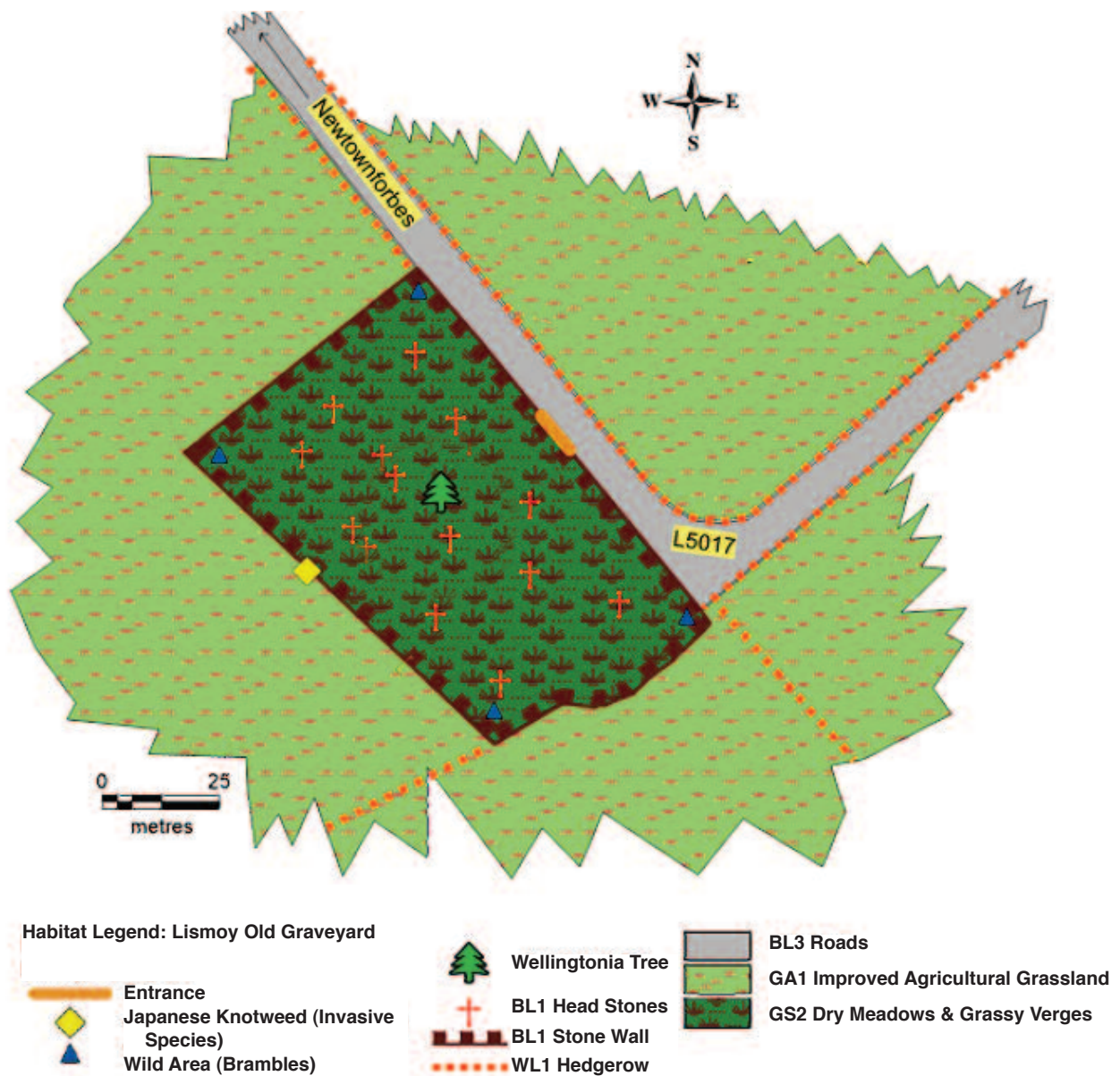


Figure 7: Lismoy Old Graveyard Habitat Map, Newtownforbes, Co. Longford. Photo: © D. Lyons

including molluscs, spiders, beetles and native plants such as ferns. They also provide perching roosts for songbirds. However the use of herbicides to clear back the vegetation and the overturning of other stones is concerning as is the removal and dumping of cut vegetation on the green areas at a number of points in the graveyard including adjacent to the entrance style (see Plate 8). This behaviour leaves this beautiful area as an unsightly mess. There was no information sign to assure passer's by that this activity was part of any research

programme.

Stonewalls: The limestone boundary walls represent an important resource for biodiversity, particularly for lichens, molluscs, spiders, lizards, beetles and native plants such as ferns and ivy. This range of species can be encouraged and enhanced by leaving the walls undisturbed without cleaning. Furthermore dumping of cut vegetation adjacent to the walls should be avoided (see Plate 8).

Invasive Species

The presence of one or more clumps of Japanese Knotweed

along the south western boundary wall was noted (Plate 9) and needs to be removed.

Actions

The Lismoy Graveyard should be seen as an oasis of nature, a place where flora and fauna should be encouraged by undertaking an annual maintenance regime that welcomes nature into the graveyard. Please note the way the graveyard is cared for shows respect for the resting place of the dead, but also for life and living things. Community engagement is vital in the successful

implementation of the management actions proposed to enhance biodiversity

presented in Table 3. Please also refer to the management of graveyards for guidance¹ and

to www.ecocongregationireland.com for an environmental check up to help get started.



Plate 3: The striking red crown, golden back, and bright yellow wings identify this goldfinch (*Carduelis carduelis*) perched on a headstone in Lismoy Old Graveyard. Its long fine beak allows it to reach inaccessible seeds from thistles which grow in the graveyard. Photo: © C. O'Connell



Plate 4: Carder Bee on bird's foot trefoil in the Lismoy Old Graveyard. Photo: © C. O'Connell



Plate 5: Cinnabar moth on ragweed in the Lismoy Old Graveyard. Photo: © C. O'Connell



Plate 6: View across the centre of Lismoy Old Graveyard towards the prominent evergreen tree. A mowed path through the graveyard is recommended to provide access to the headstones. Other areas should be allowed to flower and set seed. This serves to attract wildlife which enhances the ambience of this site (Action 8.1.7). Photo: © C. O'Connell



Plate 7: Grassland in the Lismoy Old Graveyard provides breeding habitat for meadow brown butterfly. Photo: © C. O'Connell



Plate 8: Dumping of cuttings of ragweed inside the walls of the Lismoy Graveyard is unsightly and creates a focal point for further litter. All mowings and cuttings should be brought to a managed composting area within the graveyard (Action 8.1.6). Photo: © C. O'Connell



Plate 9: Japanese Knotweed, an invasive species was recorded in the Lismoy Old Graveyard and needs to be removed following guidelines from the Local Authority and invasivespeciesireland.com (Action 8.1.8). Photo: © C. O'Connell

¹ Guidance for the Care, Conservation and Recording of Historic Graveyards by C. O'Brien, The Heritage Council, Kilkenny 2011, 2nd Edition

Table 3: Biodiversity Action Plan for the Lismoy Old Graveyard, Newtownforbes, Co. Longford.

Action Number	Action	Notes
8.1.1	Herbicide use in the graveyard should be avoided.	As the graveyard is small more environmentally-friendly plant control methods such as hoeing or digging should be used. Weeds can be controlled as necessary using a homemade weedkiller recipe as follows: 1 gallon vinegar mixed with 1 cup salt and 1 tablespoon washing up liquid. Apply on warm, sunny, dry days.
8.1.2	Fertiliser application should be avoided	Fertilisers encourage enhanced growth of aggressive weeds such as dock and nettle and are to be avoided.
8.1.3	Walls and Gravestones: unless vegetation is causing structural damage to the walls and headstones it is better to trim it back than to cut it down altogether. Leave moss and lichens on walls and gravestones	Pruning should be undertaken using hand tools.
8.1.4	Bat Survey: large trees and old crypts may be used by bats. Please undertake a bat survey before interfering with such features.	A felling licence may be required to cut down a mature tree. Contact www.batconservationireland.org for details of the Midlands Bat Group covering Longford
8.1.5	Grass: The undulating surface of the graveyard should be maintained as this feature is part of the character of this historic graveyard.	Strimmers can be used regularly to carefully maintain grassy areas and pathways that are not being managed as wildflower meadows.
8.1.6	Dispose of grass cuttings from regularly maintained areas and shrub prunings to a neat and unobtrusive composting area in the graveyard.	All brown and green waste should be picked up, chopped up and placed on a compost heap. Leaving grass cuttings in place smothers plants and decreases the species range of flowering plants. Ideally two enclosures for compost should be constructed to allow turning. Fresh or composted grass cuttings produced from the composting area can be used to suppress weeds e.g. around the base of single trees.
8.1.7	Pathway: Allow the grass to grow into a meadow and mow narrow trails through the meadow creating natural and visually attractive pathways.	There are a number of very interesting gravestones within Lismoy which could form the basis for a “dead interesting tour” of this historic cemetery.
8.1.8	Invasive Species: Japanese Knotweed on the south western wall of the graveyard must be treated and cleared.	Table 13 gives location details for Japanese Knotweed in the graveyard (see Plate 9). This species must be treated and removed by competent authorities. Please contact https://isomeriseparabolisation.com/ for assistance
8.1.9	Bird and Bat Boxes There are trees located within this graveyard that may be suitable sites for the installation of bird boxes and bat boxes.	This can be a community project involving school children and a local men’s shed.
8.1.10	Establish a Wildflower Meadow	Allow the grass to grow into a meadow in selected areas with wild flowers for bees and pollinators and mow a path through it to provide access to various parts of the graveyard. This management method will enhance the growth of wild flowers and will encourage pollinators and the nesting of wildlife within the graveyard. Once a year mow the entire meadow area and remove waste to the compost heap to help control vigorous grass growth. Scarify the ground with rakes to help wild flower seeds make contact with bare soil and germinate to increase the abundance of wild flowers in subsequent years.
8.1.11	Provide Seating for visitors to the graveyard.	The graveyard is not just a nature refuge. It is a place of burial and remembrance. People want to be able to use the site, visit graves, read memorial inscriptions and feel that the management and use is appropriate and respectful.
8.1.12	Create a bulb garden under the evergreen tree in the centre of the graveyard	The evergreen tree is a focal point in the graveyard. In the shade of its bows plant snowdrops, wood anemone, primrose, bluebell and native ferns.
8.1.13	Facilitate Community Engagement on the management plan for the graveyard	Form a discussion group regarding the management regime for the graveyard with the local community. Find out what is important to local people. Decide what can be changed now and what might take longer to achieve. Please visit www.ecocongregationireland.com and take the environmental check up to help get you started.
8.1.14	Erect Information Signage	Signage will be required to inform users and visitors to the graveyard of the objectives of the biodiversity management plan for the site.

8.2. Lamagh New Graveyard

Location: 53.764088, -7.824667 (see Figure 8).

The Lamagh Cemetery is located off the L1005, 1km east of Newtownforbes town centre. It is situated in countryside within a network of farmland fields with hedge boundaries of hawthorn and blackthorn. The land use immediately surrounding the graveyard is agricultural grassland. The graveyard is surrounded by a rendered stone wall and has gate entrances from a tarmac car park accessed from the L1005.

This modern in-use graveyard is set out in a grid like manner with access paths between the graves (see Plate 10). There are grassed plots still waiting to be put into use and to the back of the graveyard there is an ad-

ditional walled space for future use. Along the southern wall there is a feature crucifix.

Habitat Types

The range of habitats in this active graveyard is low and consists of grassy verges, remnant hedges and flower beds (see Figure 9).

Hedge: Along the western boundary of the graveyard there are remnant hawthorn hedges with ash outside the modern walls. These provide an important resource for biodiversity and can be a migration route for wildlife in the surrounding countryside.

Grassy Verges: at present the grassy verges within the graveyard are managed with regular mowing. The ground is flat which facilitates this work.

Flower Beds: the car park area is divided off from the road by a

series of four flower beds (see Plate 11) containing exotic shrubs. There are two more flower beds in the corners of the car park.

Actions

The Lamagh Graveyard has the potential to attract wildlife and at the same time care for the interests of the community who actively use this graveyard. People want to be able to visit graves, read memorial inscriptions, sit in contemplation and prayer and hold liturgical events here such as the annual graveyard mass. It is very important that they consider the management and use of the graveyard appropriate and respectful and this will require active community engagement before any of the actions in Table 4 are undertaken. Please also refer to the management of graveyards for guidance¹.



Plate 10: Looking over the wall along the L1005 into Lamagh New Graveyard. The Cemetery is set out in a grid-like manner. Areas of grassland not in use have the potential to be wild flower meadows (Action 8.2.8). Photo: © Google Street View



Plate 11: Exotic shrub beds dividing the car parking area from the graveyard. Pollinator friendly flowers could be planted between the shrubs to enhance biodiversity (Action 8.2.6). Photo: © Google Street View

¹ Guidance for the Care, Conservation and Recording of Historic Graveyards by C. O'Brien, The Heritage Council, Kilkenny 2011, 2nd Edition



Figure 8: Lamagh Graveyard, Newtownforbes, Co. Longford. Source: © www.google.com

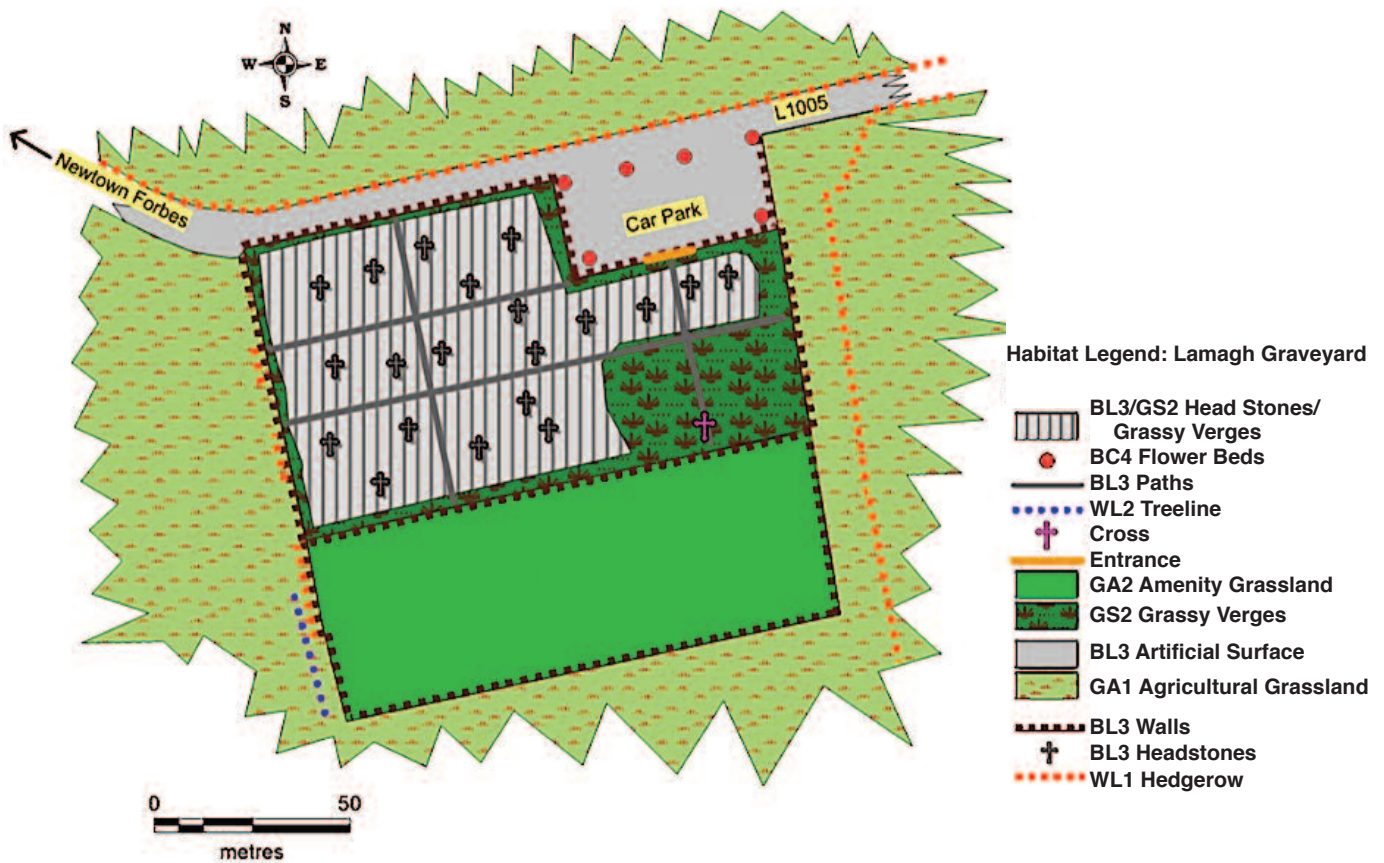


Figure 9: Lamagh Graveyard Habitat Map, Newtownforbes, Co. Longford. Photo: © D. Lyons

Table 4: Biodiversity Action Plan for the Lamagh Graveyard, Newtownforbes, Co. Longford.

Action Number	Action	Notes
8.2.1	Herbicide use in the graveyard should be avoided.	As the graveyard is small more environmentally-friendly plant control methods such as hoeing or digging should be used. Weeds can be controlled as necessary using a homemade weedkiller recipe as follows: 1 gallon vinegar mixed with 1 cup salt and 1 tablespoon washing up liquid. Apply on warm, sunny, dry days.
8.2.2	Fertiliser application should be avoided	Fertilisers encourage enhanced growth of aggressive weeds such as dock and nettle and are to be avoided.
8.2.3	Walls and Gravestones: unless vegetation is causing structural damage to the walls and headstones it is better to trim it back than to cut it down altogether.	Pruning should be undertaken using hand tools.
8.2.4	Avoid removal of moss and lichen from gravestones.	Mosses and lichens are just as important for biodiversity as wild flowers.
8.2.5	Dispose of grass cuttings from regularly maintained areas and shrub prunings to a neat and unobtrusive composting area in the graveyard.	All brown and green waste should be picked up, chopped up and placed on a compost heap. Leaving grass cuttings in place smothers plants and decreases the species range of flowering plants. Ideally two enclosures for compost should be constructed to allow turning. Fresh or composted grass cuttings produced from the composting area can be used to suppress weeds e.g. around the base of single trees or to improve the soil in the permanent flower beds.
8.2.6	Enhance wildlife value of existing Flower Beds	Depending on the availability of volunteers the permanent flower beds in the car park could be planted with pollinator friendly flowers between the structural elements of the permanent shrubs.
8.2.7	Hedgerow planting along western wall boundary	The hedgerow to the west of the graveyard should be replanted in areas where it has been removed with hawthorn and blackthorn as is typical of the Newtownforbes area. Permission may be required from the neighbouring landowner. This would complete a wildlife corridor and provide sanctuary for birds and other wildlife.
8.2.8	Establish a Wildflower Meadow	Specific areas of grassland within the graveyard should be set aside and allowed to grow into a meadow with wild flowers to encourage wildlife and pollinators. One such area might be around the cross along the south eastern boundary of the graveyard. Allow the grass to grow for the season. Once a year mow the entire meadow area and remove waste to the compost heap to help control vigorous grass growth. Scarify the ground with rakes to help wild flower seeds make contact with bare soil and germinate to increase the abundance of wild flowers in subsequent years.
8.2.9	Facilitate Community Engagement on the management plan for the graveyard	Form a discussion group regarding the management regime for the graveyard with the local community. Find out what is important to local people. Decide what can be changed now and what might take longer to achieve. Please visit www.ecocongregationireland.com and take the environmental check up to help get you started.
8.2.10	Erect Information Signage	Signage will be required to inform users and visitors to the graveyard of the objectives of the biodiversity management plan for the site.

8.3. Children's Playground and Community Garden

Location: 53.763269, -7.834178 (see Figure 10).

The children's playground and community garden are located on the corner of the N4 and the L1004 in Newtownforbes.

Access to these amenities is from the L1004 through gates. One gate leads into the playground. The other gate opens into a lane which leads directly into the community garden. The children's playground is separated from the lane and the community garden by a wooden post and rail fence. Both amenities are enclosed by boundaries including a hedge on the L1004 side, a low wall and railings on the N4 side, the back garden wall of houses and a lane to the south and on the western boundary by a mature line of *Leylandii* trees and a lane.

Habitat Types

The range of habitats present is low with tarmacked areas predominating in the community garden and amenity grassland dominating in the playground (see Figure 11). There is part of a hawthorn hedge with tall ash trees on the L1004 side of the playground to the east. Where the hedge is missing there is a wooden fence. In the community garden there is a central fountain sculpture feature with street lights which is surrounded by a series of picnic benches located on a tarmac surface. In the north eastern corner there is a raised tarmac "stage" to be used for community events. The outer perimeter of this area



Plate 12: The children's playground in Newtownforbes has plenty of attractions. Its biodiversity could be improved with screening of the wooden fence and railings on two of its boundaries with fragrant climbers such as rose, honeysuckle and bramble together with ivy (Actions 8.3.8 and 9). Sections of the amenity grassland should be allowed to grow into a wild flower meadow particularly along the hedge to the south east to enhance biodiversity (Action 8.3.7). An insect hotel and bird boxes could be added for biodiversity (Action 8.3.10 and 11). Photo: © C. O'Connell

is landscaped to create planting beds. At present there are some well spaced out ornamental shrubs planted here.

Hedge: Along the eastern boundary of the playground there is a hawthorn hedge with tall ash trees. Part of this has been removed in the past and in the ditch flowers have been planted.

Amenity Grassland:

dominates the playground and there are a number of structures - natural and man made located on the grassland including swings, sea-saw and earthen mound.

Flower Beds: the Tidy Towns Committee have landscaped the community garden creating borders with ornamental shrubs which are not thriving.

Actions

The children's playground and community garden are a focal point for the community in Newtownforbes. As such they are a high target area for promoting the interest the community is taking in



Plate 13: A centrally placed sculpture dominates the community garden. This object surrounded by flower beds. Soil quality is poor which makes these beds ideal for a wild flower meadow planted from a seed mix (Action 8.3.5) and for a butterfly friendly mixed border (Action 8.3.2). Pink and purple flowers are most attractive to pollinators. Photo: © C. O'Connell

biodiversity. With the right planning, features can be put in place that could form the focal point for community training in gardening for biodiversity.

There are a few simple steps that can be taken to greatly enhance these areas so that they provide a quality breathing space for both people and wildlife in the town. Please see suggested actions for biodiversity in Table 5.



Figure 10: Children's Playground and Community Garden, Newtownforbes, Co. Longford. Source: © www.google.com

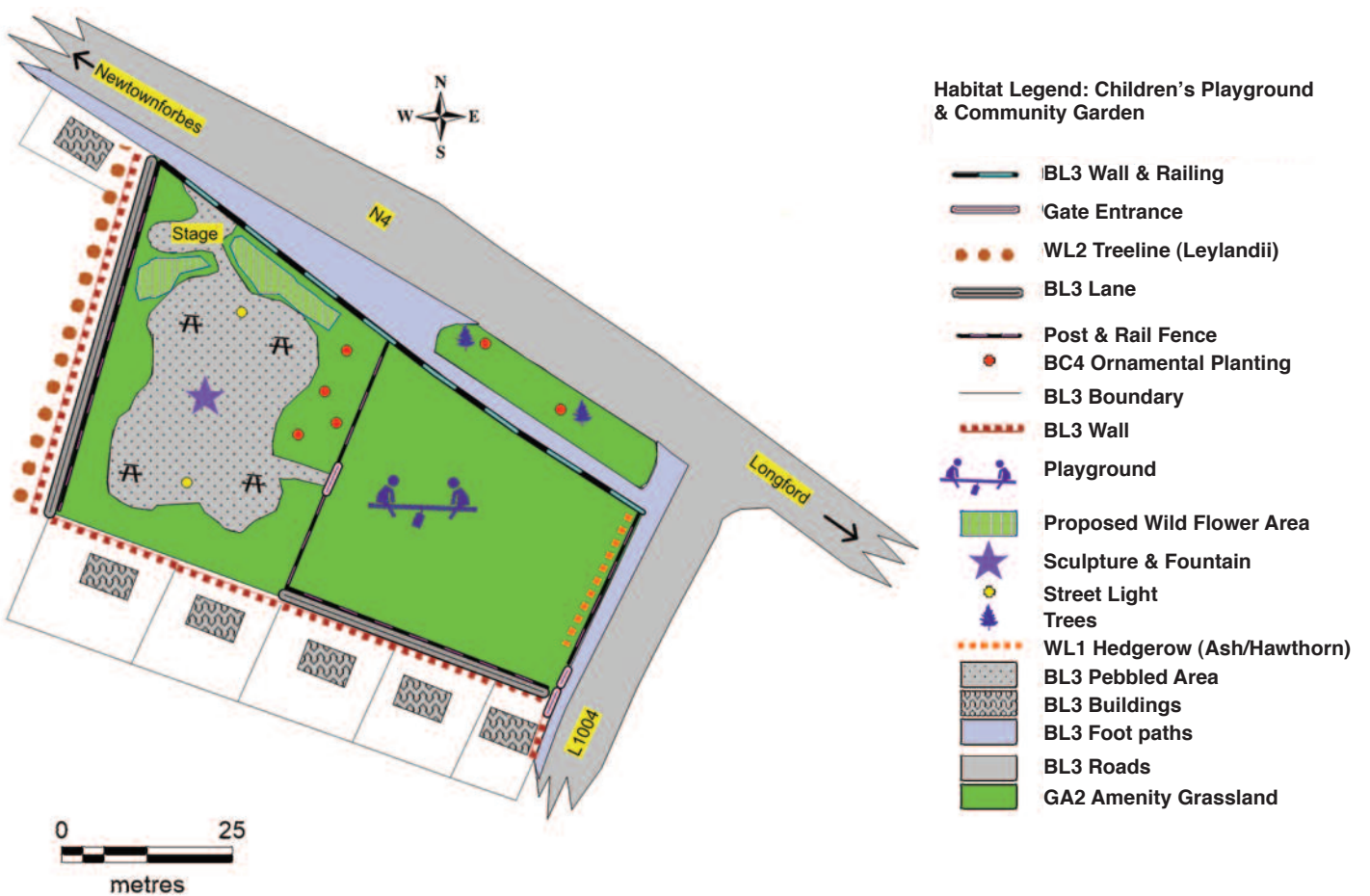


Figure 11: Children's Playground and Community Garden Habitat Map, Newtownforbes, Co. Longford. Photo: © D. Lyons

Table 4: Biodiversity Action Plan for the Children’s Playground and Community Garden, Newtownforbes, Co. Longford.

Action Number	Action	Notes
8.3.1	Herbicide and fertiliser use in the playground and community garden should be avoided	As the playground and community garden are used by children and adults every care should be taken to ensure health and safety of all users. Avoiding chemicals will also work with biodiversity. Weeds can be controlled as necessary using a homemade weedkiller recipe as follows: 1 gallon vinegar mixed with 1 cup salt and 1 tablespoon washing up liquid. Apply on warm, sunny, dry days.
8.3.2	Establish Butterfly garden borders	The exotic shrubs planted around the staging area on poor soil in the community garden should be relocated to the beds to the east, south and west of the garden. These need to be supplemented with new shrubs. The emphasis should be placed on attracting butterflies and pollinators. To this end, Buddleia, Lavender, Tutsan, Hebe, thyme and self seeding herbs such as Calendula, Aquilegia, Marjoram, Michaelmas daisies (<i>Aster</i>), Catmint (<i>Nepeta</i>), <i>Sedum</i> or iceberg plant, <i>Eupatorium</i> , Salvia and Echinops should be planted.
8.3.3	Plant fruit and vegetable containers around the sculpture feature	At least four very large containers should be planted with herbs, vegetables and fruits for community use. The lack of soil in this area means that plants need to be grown in containers that look after themselves - the bigger the better. Crab apple trees could be grown surrounded by lower growing plants such as rhubarb, potato, raspberry, blackcurrant, strawberry, leeks, onions, carrots, cabbage, parsnips and culinary herbs such as parsley, rosemary, thyme, sage and chives.
8.3.4	Set up a compost heap for grass cuttings and shrub prunings in the community garden	All brown and green waste should be picked up, chopped up and placed on a compost heap. Leaving grass cuttings in place smothers plants and decreases the species range of flowering plants. Ideally two enclosures for compost should be constructed to allow turning. Fresh or composted grass cuttings produced from the composting area can be used in containers present in the community garden.
8.3.5	Create a wildflower meadow in the community garden	In the north eastern corner of the community garden the soil is very poor and planted ornamental shrubs that are not doing well should be removed from here and relocated to beds to the west, east and south. The poor soil in the two beds around the “stage” is ideally suited for wild flowers. A meadow mix of seeds should be purchased and planted here. Retain any wild flowers such as clovers already growing in this area.
8.6.7	Replant Hedgerow along eastern boundary of playground	The hedgerow to the east of the playground needs to be re-established to provide screening, a habitat for wildlife and to filter street noise. Hawthorn and blackthorn hedges are typical of the Newtownforbes area.
8.3.7	Establish a Wildflower Meadow along the eastern boundary of the playground adjacent to the hedge	For a width of at least 2m inside the existing hedge along the boundary with the L1004, the grass should be allowed to grow to encourage wild flowers for wildlife and pollinators. Edge habitats where a hedge meets grassland can be very valuable for wildlife. Letting the grass grow here will promote biodiversity. Allow the grass to grow for the season. Once a year mow the entire area and remove waste to the compost heap to help control vigorous grass growth. Scarify the ground with rakes to help wild flower seeds make contact with bare soil and germinate to increase the abundance of wild flowers in subsequent years.
8.3.8	Scented screen planting of rail and post fencing in playground	The rail and post fencing on two sides of the children’s playground should be screened with scented, wildlife attracting climbers including ivy, honeysuckle, clematis, brambles (blackberries) and wild rose
8.3.9	Screen planting of low wall along the N4 boundary of playground and community garden	The low brick wall beneath the metal railings along the N4 boundary of the playground and community garden needs to be screened with planting of ivy to help attract wildlife and to green this breeze brick wall.
8.3.10	Make an Insect Hotel and Log Pile in the playground	Work with local school children or creche groups to build an insect hotel and a log pile in the playground. This will encourage mini-beasts and will be very enjoyable for children.
8.3.11	Erect bird and bat boxes	The mature trees in the hedge in the playground have potential for nest boxes for birds and bats. Constructing boxes can be a project for a local men’s shed.
8.3.12	Living Willow sculpture	A woven willow den would be a dramatic addition to the children’s playground and would encourage them to explore nature while at play.
8.3.13	Litter and Dog droppings Removal	Maintain both areas free of litter and dog faeces.

8.4. St Mary's Catholic Church Grounds

Location: 53.766413, -7.834234 (see Figure 12).

St Mary's Catholic Church occupies a prominent site at the central crossroads in Newtownforbes between the N4 and the L1005. The site is surrounded by a low wall. Ornamental hedges occur inside the walls on the south, east and part of the northern boundaries. The pedestrian entrance to the Church is off the N4 while the car park is accessed from the L1005. In front of the Church there are well-maintained flower beds and specimen trees (Plate 14). On the street, there is a seat and a visitor information sign.

To the rear of the Church is the Parochial House and garden. This area is screened off from the church car park by ornamental hedging (Plate 15).

Habitat Types

The range of habitats present is low with tarmacked areas being required for parking and access to the Church (see Figure 13).

Ornamental Hedges: On all sides of the parochial house, there are ornamental hedges of *Leylandii*, cotoneaster, privet, wytch elm, ivy and sycamore.

Amenity Grassland: is present in the garden of the parochial house which is broken by access paths. This grassland area is regularly mowed. There is a patch of nettles in the south

eastern corner of the garden.

Flower Beds: two well managed flower and shrub beds are located to the front of the church. There is a fine specimen tree of copper beech in the bed to the left hand side of the gate entrance and a stone cross is a feature of the bed to the right hand side.

Actions

St Mary's Church is a focal point in Newtownforbes for church services and community liturgical events. Biodiversity enhancement measures need to be tasteful and respectful of the function of this building. Please see recommendations in Table 6. Please visit www.ecocongregationireland.com and take the environmental check up to help get started.

Table 6: Biodiversity Action Plan for St Mary's Catholic Church, Newtownforbes, Co. Longford.

Action Number	Action	Notes
8.4.1	Herbicide and Fertiliser use in the Church Grounds should be avoided.	As the parochial house gardens and flower beds in the church grounds are small environmentally-friendly plant control methods such as hoeing or digging should be used. Weeds can be controlled using a homemade weedkiller recipe as follows: 1 gallon vinegar mixed with 1 cup salt and 1 tablespoon washing up liquid. Apply on warm, sunny, dry days.
8.4.2	Bird Feeders, nest box, and Bird bath installation in flower beds to front of church	The copper beech tree in the Church grounds would be an ideal location for hanging bird feeders or a nest box. A bird bath is another great way to attract birds to the flower bed.
8.4.3	Dispose of grass cuttings from regularly maintained areas and shrub prunings to a neat and unobtrusive composting area in the garden of the parochial house.	All brown and green waste should be picked up, chopped up and placed on a compost heap. Leaving grass cuttings in place smothers plants and decreases the species range of flowering plants. Ideally two enclosures for compost should be constructed to allow turning. Compost harvested from the heap can be used to enrich flower beds and can be spread under hedges to suppress weeds.
8.4.4	Enhance wildlife value of existing Flower Beds and install insect hotel to front of Church	Depending on the availability of volunteers the permanent flower beds to the front of the church could be planted with pollinator friendly flowers between the structural elements of the permanent shrubs. These would include Lavender, Tutsan, Hebe, thyme and self seeding herbs such as Calendula, Aquilegia, Marjoram, Michaelmas daisies (Aster), Sedum or iceberg plant, Eupatorium, Salvia, Echinops. Some thought should be given to planting bulbs for early spring interest such as Crocus, Anemone, Snowdrop and wild daffodil. An insect hotel on a pole can be installed in the bed to provide habitat for ladybirds, bees, lacewings and butterflies.
8.4.5	Establish a Wildflower Meadow in the garden of the Parochial House	A section of amenity grassland in the parochial house surrounded by paths should be converted to a wildflower meadow. Here the grass should be allowed to grow into a meadow with wild flowers to encourage wildlife and pollinators. Allow the grass to grow for the season. Once a year mow the entire meadow area and remove waste to the compost heap to help control vigorous grass growth. Scarify the ground with rakes to help wild flower seeds make contact with bare soil and germinate to increase the abundance of wild flowers in subsequent years. This area could also be enhanced by planting bulbs to attract wildlife in spring. Plant the "big 5" - snowdrop, crocus, daffodil, hyacinth and tulip to provide spring nectar.
8.4.6	Tree planting for birds in garden of Parochial House	The garden of the parochial house had little wildlife interest being surrounded by tall variegated <i>Leylandii</i> trees. A section of the garden should be planted with trees good for birds such as Hawthorn, Crab Apple and Rowan. These trees provide year round interest in terms of flowers, foliage and fruit and attract birds. The trees should be planted relatively close together to create a "woodland" effect. Bird feeders could also be erected.



Figure 12: St Mary's Church and Grounds location, Newtownforbes, Co. Longford. Source: © www.google.com

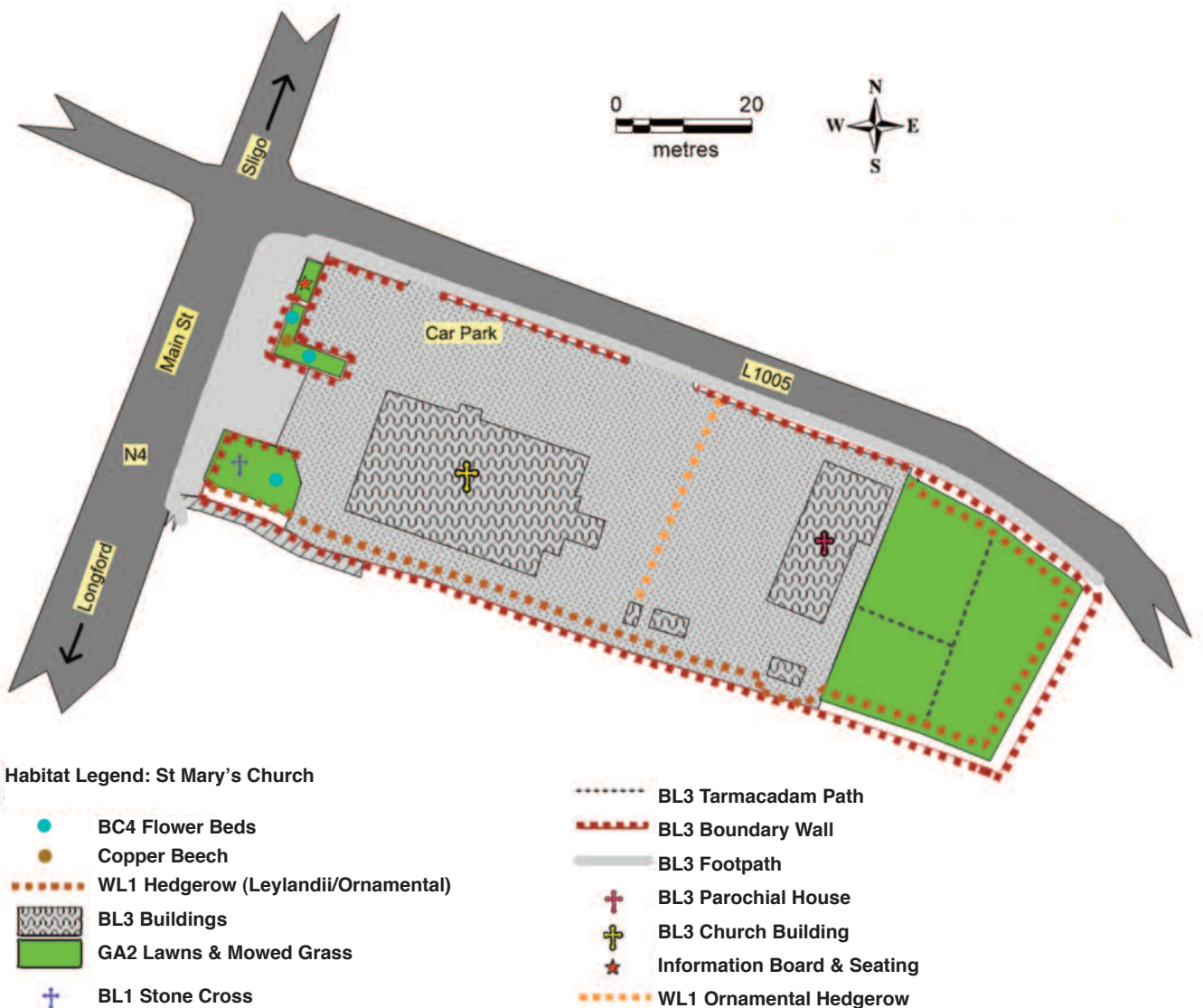


Figure 13: St Mary's Church and Grounds Habitat Map, Newtownforbes, Co. Longford. Photo: © D. Lyons



Plate 14: The facade of St Mary's Church in Newtownforbes. The local community maintain gardens and flowerbeds here together with planters placed on the hard surfaces. Actions are proposed in Table 6 to enhance the biodiversity value of these features of the Church grounds. Photo: © C. O'Connell



Plate 15: The garden to the rear of the Priest's house at present contains a lawn which is divided by paths and is surrounded by a hedge of Leylandii. Actions are proposed to enhance biodiversity in this garden by converting to portions of the garden to wildflower meadow (Action 8.4.5) and planting a grove of trees to attract birds such as Rowan, Crab Apple and Hawthorn (Action 8.4.6). Photo: © C. O'Connell

8.5. St Paul's Church of Ireland

Location: 53.765423, -7.836675 (see Figure 14).

St Paul's Church of Ireland occupies a prominent site on the main street (N4) at the southern end of Newtownforbes (Plate 16). The Church is set back from the N4 within gated grounds to the front and walls on its three other perimeters. The Church and graveyard to the front and sides are in active use by the community. A detailed analysis of the memorials in the graveyard has been completed by volunteer historians associated with a Church and Tidy Towns Project. This indicates that the graveyard has been in use since the 17th century¹. During the visit there was evidence of cleaning of perimeter walls by removing ivy and using chemical sprays (Plate 17).

Habitat Types

The main habitats present in St Paul's were stone walls and headstones, amenity grassland and specimen trees (Figure 15).

Stone Walls and Headstones: the stone walls surrounding three sides of the graveyard are in the process of being cleared of ivy. Species recorded on the walls included ferns such as Polypody and Hart's tongue fern. Lichens and mosses were associated with the gravestone.

Amenity Grassland: this occurred to the front of the church to the right of the path



Plate 16: The entrance to the grounds of St Paul's Church of Ireland showing the graves to the front and the yew tree to the right hand side of the Church building. Bird and bat boxes should be considered for location within the Yew tree (Action 8.5.6). Biodiversity could also be enhanced by establishing a wildflower meadow on a portion of the grassland habitat in the church grounds (Action 8.5.7). Photo: © C. O'Connell

and between gravestones, crypts and other memorials. As it is regularly mown it was species poor however clover, dandelion, daisy, buttercup and mouse ear were noted.

Specimen Trees: two fine yew trees were located on either side of the path. In the south western corner of the graveyard, there was an area of scrub associated with *Leylandii* and holly trees.

Actions

Clearly there is a management plan being undertaken in St Paul's Church. To discuss improvements that might be given consideration by the management group would be a priority. Table 7 lists a series of actions that should be discussed.

St Paul's Church and graveyard have a long history which is important to the heritage of Newtownforbes. The Church is celebrating its bicentenary in



Plate 17: A portion of the walls surrounding the grounds of St Paul's Church showing clear evidence of the use of sprays. Such action poisons wildlife and should be avoided (Action 8.5.1). Photo: © C. O'Connell

2020. The graveyard has a very pleasant ambiance and provides breathing space for the visitor and wildlife away from the busy N4 thoroughfare through Newtownforbes.

Biodiversity enhancement measures need to be tasteful and respectful of the historic importance and religious significance of St Paul's. See biodiversity actions in Table 7.

¹ The Roscommon Historic Graveyard Project, www.historicgraves.com/graveyard/newtown-forbes/ld-sprf. Edited by Doreen McHugh and Des Mooney



Figure 14: St Paul's Church and Grounds location, Newtownforbes, Co. Longford. Source: © www.google.com

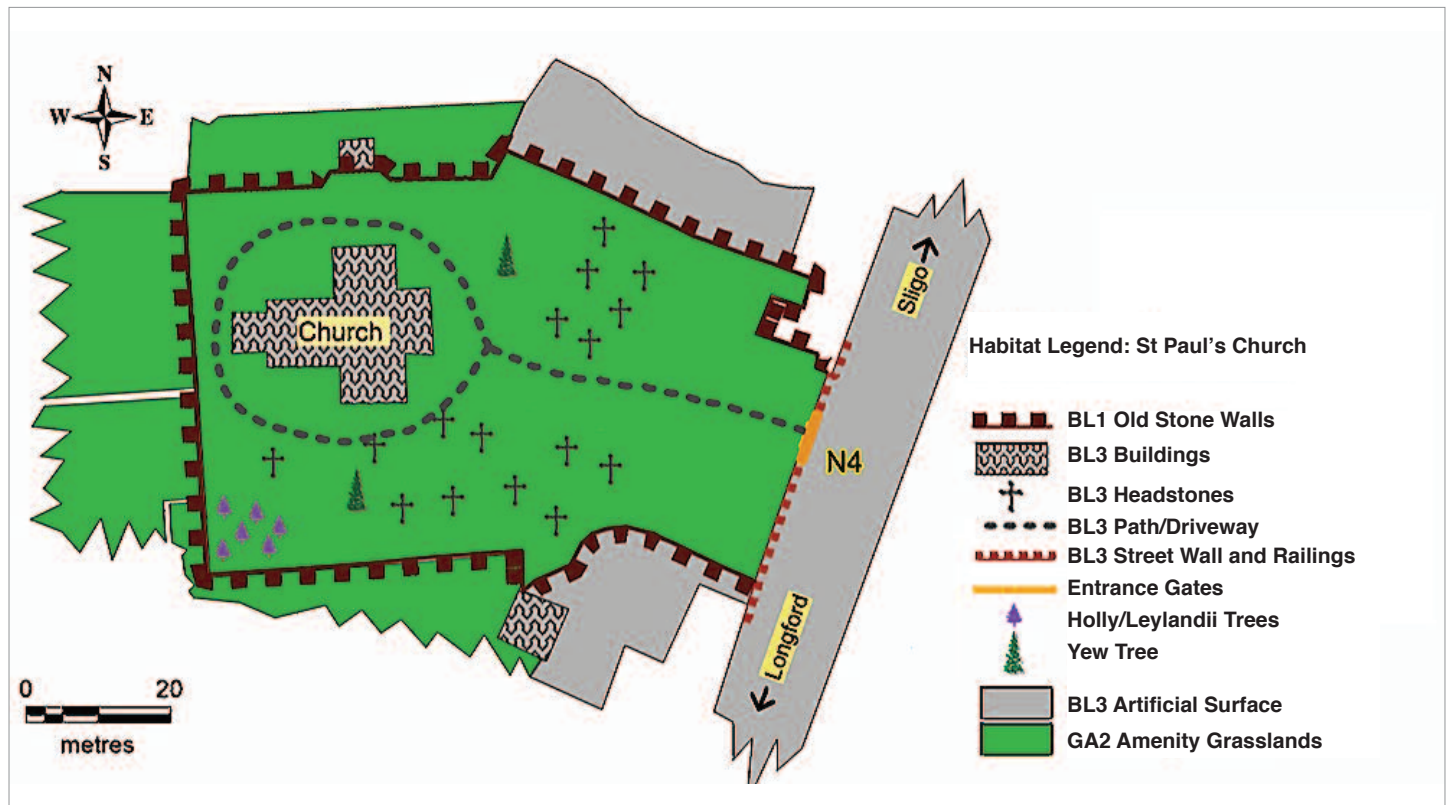


Figure 15: St Paul's Church and Grounds Habitat Map, Newtownforbes, Co. Longford. Photo: © D. Lyons

Table 7: Biodiversity Action Plan for the St Paul's Church and Graveyard, Newtownforbes, Co. Longford.

Action Number	Action	Notes
8.5.1	Herbicide and Fertiliser use in the Church Grounds should be avoided.	As the graveyard and church grounds are small, environmentally-friendly plant control methods such as hoeing or digging should be used. Weeds can be controlled as necessary using a homemade weedkiller recipe as follows: 1 gallon vinegar mixed with 1 cup salt and 1 tablespoon washing up liquid. Apply on warm, sunny, dry days.
8.5.2	Walls and Gravestones: unless vegetation is causing structural damage to the walls and headstones it is better to trim it back than to cut it down altogether. Leave moss and lichens on walls and gravestones	Pruning should be undertaken using hand tools.
8.5.3	Bat Survey: large trees and old crypts may be used by bats please undertake a bat survey before interfering with such features.	Members of the community report the presence of a large bat colony in the Church Tower/Spire. A survey should be undertaken to determine what species is present and whether or not old trees are also being used by the bats. A felling licence may be required to cut down a mature tree. Contact National Parks and Wildlife Service (Dr Sue Moles) and www.batconservationireland.org for details of the Midlands Bat Group covering Longford
8.5.4	Dispose of grass cuttings from regularly maintained areas and shrub prunings to a neat and unobtrusive composting area in the graveyard.	All brown and green waste should be picked up, chopped up and placed on a compost heap. Leaving grass cuttings in place smothers plants and decreases the species range of flowering plants. Ideally two enclosures for compost should be constructed to allow turning. Fresh or composted grass cuttings produced from the composting area can be used to keep down weeds e.g. around the base of single trees.
8.5.5	Maintain Churchyard Pathways	There are a number of very interesting gravestones within St Paul's which could form the basis for a "dead interesting tour" of this historic cemetery. Maintain the looped pathway surface to provide access.
8.5.6	Bird and Bat Boxes There are yew trees located within this graveyard that may be suitable sites for the installation of bird boxes and bat boxes.	This can be a community project involving school children and a local men's shed.
8.5.7	Establish a Wildflower Meadow	Allow the grass to grow into a meadow in the front section of the graveyard to the right of the entrance gate to encourage bees and pollinators and the nesting of wildlife within the graveyard. Once a year mow the entire meadow area and remove waste to the compost heap to help control vigorous grass growth. Scarify the ground with rakes to help wild flower seeds make contact with bare soil and germinate to increase the abundance of wild flowers in subsequent years. This work can be enhanced by planting spring flowering bulbs in the meadow which have a tendency of naturalise such as wild daffodil, snowdrop, bluebell, wood anemone, squill and crocus.
8.5.8	Maintain Seating for visitors to the graveyard.	The graveyard is not just a nature refuge. It is a place of burial and remembrance. People want to be able to use the site, visit graves, read memorial inscriptions and feel that the management and use is appropriate and respectful.
8.5.9	Create a bulb garden under the evergreen yew trees in the centre of the graveyard	The evergreen yew trees are a focal point in the graveyard. In the shade of its bows plant snowdrop, wood anemone, primrose, bluebell and native ferns.
8.5.10	Facilitate Community Engagement on the management plan for the graveyard	Form a discussion group regarding the management regime for the graveyard with the local community. Find out what is important to local people. Decide what can be changed now and what might take longer to achieve. Please visit www.ecocongregationireland.com and take the environmental check up to help get you started.
8.5.11	Erect Biodiversity Information Signage	Additional information signage will be required to inform users and visitors to the graveyard of the objectives of the biodiversity management plan for the site.

8.6. Newtownforbes Main Street, Village Entrances and Housing Estates

The main street of Newtownforbes is the N4 from Dublin to Sligo. It is an extremely busy road for a small village with continuous heavy traffic every. The centre of the village is the cross roads located at St Mary's Catholic Church. On the main street here there is an information sign and a seating area.

The entrances on either side of the village are extremely dangerous places as traffic on one side of the road is generally moving at speed although slowing down to enter the village.

New housing estates in Newtownforbes including Cluan Eala, Corry Park, Railway Court, Clonguish Court, Castle Park and Caisleán Breac have amenity grassland areas. Most of these are managed by mowing and have little biodiversity value. This needs to be remedied.

Newtownforbes Tidy Towns Committee have done a lot of work to enhance their village through the provision of planting beds filled with seasonal flowers and shrubs, containers, window boxes and hanging baskets (see Plates 18-21).

There are some actions that the Tidy Towns Committee can take to improve the biodiversity value of the flowering elements they are providing in the village. These are presented in Table 8.



Plate 18: Welcoming flower beds provided by Newtownforbes Tidy Towns Committee. Beds such as these should be planted with flowers in pink, blue and purple as these colours attract pollinators (Action 8.6.4). Where one or more flower beds exist, they should be linked together with a bee line of long grass and wild flowers that is not mowed (Action 8.6.3). Photo: © C. O'Connell



Plate 19: Planting for wildlife under the estate sign for Cluain Doire. Extending such planting to include the whole of the green roadside verge at the entrance to the estate greatly enhances the use of the area by pollinators as well as providing a beautiful experience for residents and passers by (Action 8.6.4). This can be done using wildlife seed or planting a variety of bulbs for year round colour. Photo: © C. O'Connell



Plate 20: Please ensure that tubs in the village are planted using peat-free compost. This is essential as the Bog Walk Group are working to promote protection of raised bogs and it is a contradiction for moss peat to be used in planters (Action 8.6.5). Use compost generated from compost heaps established in the GAA grounds (Action 8.7.2). Photo: © C. O'Connell



Plate 21: There is potential to create a water feature using a solar-powered water pump working from a reservoir of water at this old pump in the village main street. By planting a dwarf lily and other wetland flowers in the reservoir, biodiversity will be enhanced as will the attractiveness of this pump (Action 8.6.2). Photo: © C. O'Connell

Table 8: Biodiversity Action Plan for the Main Street, village entrances and housing estates in Newtownforbes, Co. Longford.

Action Number	Action	Notes
8.6.1	Plant trees in containers at the village cross roads	For impact four very large containers each planted with a mature tree should be placed at the four corners of the town cross road. Butterfly friendly plants such as perennial wallflower, calendula, cornflower, lavender, marjoram, cosmos and clover should be planted around the base of the tree. The larger the tubs the less watering and maintenance needed.
8.6.2	Install a Wildlife pond	A small pond should be established at the Clonguish Court Pump feature. This can be planted with a dwarf water lily and some oxygenating plants. Insects and birds will use areas of water to drink from or wash in.
8.6.3	Create beeline between flowering beds at the N4 village entrance Longford side	The permanent flower beds at the N4 Longford entrance to the village should be linked together by a bee line. This involves leaving a weaving strip of grassland between the beds to grow, flower and set seed. It should not be mowed until September and at that time the ground can be scarified to expose bare soil where seeds can make contact and germinate to produce more flowers in subsequent years.
8.6.4	Enhance wildlife value of existing Flower Beds, expand their size and install insect hotels	Depending on the availability of volunteers the permanent flower beds at the village entrances and along the main street should be improved for biodiversity and wildlife. Bearing in mind that insects have strong vision in the pink, blue and purple light colours, suggested plants for wildlife include Lavender, Tutsan, Hebe, thyme Calendula, Aquilegia, Marjoram, Michaelmas daisy (Aster), iceberg plant (Sedum), Eupatorium, Salvia and Echinops. Some thought should be given to planting bulbs for early spring interest such as Crocus, Anemone, Snowdrop and wild daffodil. An insect hotel can be installed in flower bed to provide habitat for ladybirds, solitary bees, lacewings and butterflies.
8.6.5	Go peat-free in all planters, window boxes and hanging baskets	All planting in tubs, containers, window boxes and hanging baskets should be peat free. Use compost generated from heaps established in the village, for example the GAA Club Grounds, the school garden, the graveyards or the Parochial House gardens.
8.6.6	Provide Window boxes and hanging baskets	As far as is practical window boxes and baskets should be installed on suitable ledges throughout the village to enhance biodiversity and to add visual interest.
8.6.7	Woodland habitat creation in housing estates at Cluan Eala, Corry Park, Railway Court, Clonguish Court, Castle Park and Caisleán Breac	There are a number of modern housing estates in Newtownforbes that have amenity grassland areas. Most of these are managed by mowing and have little biodiversity value. To enhance biodiversity woodland habitat should be created by planting stands of fruit and nut bearing trees to encourage wildlife. 7-10 trees should be planted together to form a mini-woodland and the vegetation beneath them should be let grow, flower and set seed to encourage pollinators. Such planting enhances estates visually and provides a more interesting area for citizens to enjoy. Bird nesting boxes, bird baths, bat roosting boxes, log piles and insect hotels can be included in these habitats.
8.6.8	Roadside verge management at village entrances	Ideally plants growing on roadside verges should be allowed to grow, flower and set seed to ensure their continued survival. It takes most flowers 6-8 weeks from flowering to successfully set seed. Cutting plants down in full flower deprives invertebrates of nectar and pollen and stops plants reproducing from seed. The timing of the cutting of verges is crucial to management. To have year round flowering in the village verges mowing needs to shift to autumn and winter. In a given calendar year the first cut should be undertaken before the end of February and the second cut after September when seeds have shed.
8.6.9	Invasive species removal	At the N4 Longford entrance to Newtownforbes there is a patch of Japanese Knotweed. Signs were present indicating treatment and removal of this invasive. Ensure this work is successfully completed and this species is eradicated.
8.6.10	Remove weeds on pavements in village using a homemade weedkiller	Weeds appearing on pavements and between paving stones can be kept under control using a homemade weedkiller recipe as follows: 1 gallon vinegar mixed with 1 cup salt and 1 tablespoon washing up liquid. Apply on warm, sunny, dry days.

8.7. Clonguish GAA club grounds and “biodiversity” area

Location: 53.761639, -7.832478 (see Figure 16) Clonguish GAA Club and Biodiversity Area is located south of the centre of Newtownforbes village along the N4 on its eastern side and the L1004 on its western side. Entrance to the club is from the L1004. A modern brick wall with gates leads from the L1004 to a large car park. To the north west of the club are the grounds of Scoil Mhuire and there is access to the school from the GAA Club car park. Along the eastern boundary with the N4, a hedge and grass embankment separate the playing fields from the main road. On the southern margin there is a “biodiversity” area. The GAA complex consists of a number of buildings, a biodiversity wet grassland habitat and three playing pitches (known as the Main Pitch, Pitch 2 and Pitch 3). There is an amenity walk on a path around the main pitch and pitch 2. On the western boundary of pitch 3 is a row of four houses and gardens which back onto the playing field. South of pitch 2 there is a wet grassland biodiversity area that is managed by the Tidy Towns Committee. On the southern boundary of the GAA complex there is agricultural grassland.

The existing management of this area includes grass mowing of the pitches and embankment with the N4 and disposal of that grass into the wet grassland biodiversity area

where it is being left to rot in a number of unsightly heaps. In addition the use of chemical sprays to control weeds along the amenity walkways and on the access route to pitch 3 was obvious. Clumps of half dead “weeds” remained and the health and safety of such methods should be brought into question when there is so much community use of this site. It was obvious that children were retrieving the ball from these sprayed margins of the pitches.

The GAA Club and Biodiversity area is a hub of activity in the village. The complex occupies a large space. The area is used year round for sport and as such is a destination for the local community and others. There is an opportunity for Newtownforbes Tidy Towns Committee to showcase their best practice management and biodiversity enhancement works at this site.

Habitat Types

The range of habitats in the Clonguish GAA Club and Biodiversity Area include amenity grassland, wet grassland and ash and hawthorn hedges and tree lines (see Figure 17). There are also significant areas of buildings and artificial surfaces.

Amenity Grassland: The dominant habitat in Clonguish GAA Club is amenity grassland. Three pitches are given over to sport and are managed effectively for this activity. This includes regular mowing and removal of grass clippings. Between the main pitch and pitch 2 and the N4 there is also

an amenity grassland embankment which is also mowed but in addition is sprayed at the path edges with weed killer. The species diversity of these open managed areas is low as there is a lack of habitat for wildlife and insects are being killed through the use of chemicals which is upsetting food chains that exist in nature (Plate 25).

Tree Line and Hedgerow: On the west and south margins of pitch 3, the Tidy Towns Committee have planted a tree Line consisting of birch and alder trees. Where mowing is not possible due to the tree trunks, a wildflower habitat has developed beneath the trees with willowherb. All other perimeters with the exception of the boundary with the school consists of hawthorn hedges with mature ash trees. The hedge along the N4 is managed by trimming (Plate 27). Species diversity in the uncut hedges was high with many berry producing trees and shrubs including guelder rose, blackthorn, hawthorn, alder and elderberry which were attracting birds such as blue tit and robin. The shelter provided by the hedges and trees and the flowering plants around them attract butterflies including meadow brown, green-veined white and large white.

Wet Grassland Biodiversity Area: The wet grassland habitat bordering the southern margin of Pitch 2 had a high species diversity. The absence of management in this area allowed for many and grasses to flower and set seed. This



Figure 16: Clonguish GAA Club and Biodiversity Area location, Newtownforbes, Co. Longford. Source: © www.google.com

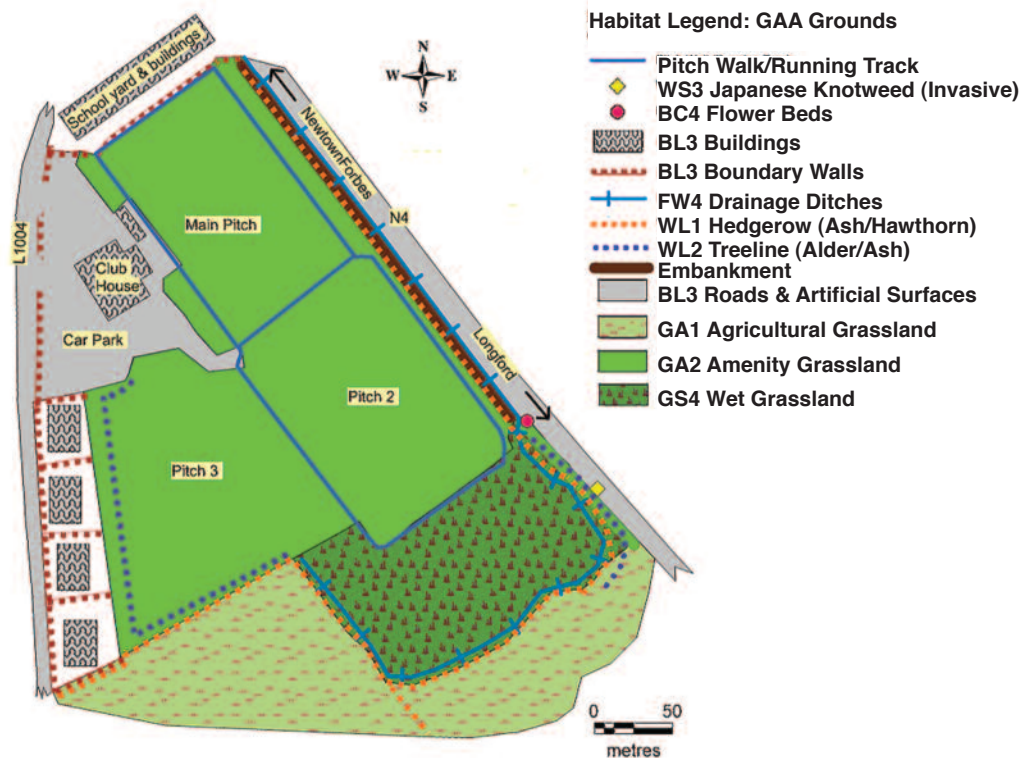


Figure 17: Clonguish GAA Club and Biodiversity Area Habitat Map, Newtownforbes, Co. Longford. Photo: © D. Lyons

natural habitat provides year round food and resources for wildlife including birds and pollinators. Flocks of starling were using the area. Plants in flower included flag iris, silverweed, red clover, ribwort plantain, colt's foot, dock, sweet vernal grass, fireweed, self heal, rose bay willowherb, marsh thistle, horsetail, buttercup and meadow sweet.

Buildings and Artificial Surfaces:

Buildings and artificial surfaces can provide useful resources for wildlife. For example on the Club House building a house martin nest was observed at the apex of the roof (Plate 22). Also pot holes filled with water in the car park were being used by rooks and jackdaws for bathing, an essential activity for feather maintenance. In addition pied wagtails were feeding on dead insects which they found on the tarmac surface.

Actions

The Clonguish GAA Club and Biodiversity Area represent an opportunity for the community to showcase their biodiversity credentials and to provide a wildlife experience for users of the facilities in addition to the obvious benefits of sport. Changes in the existing management of the pitches need to be discussed and solutions found to issues such as disposing of large volumes of cut grass.

Community engagement is vital in the successful implementation of the management actions proposed to enhance biodiversity presented in Table 9.



Plate 22: Nest of a house martin in the eave of the club house building. House martins are migratory birds that breed in Ireland in summer. They rely on a healthy population of insects to feed their young. The use of chemical sprays to kill weeds in the grounds of the GAA complex must stop to support such breeding birds and for human health and safety concerns (Action 8.7.1). Photo: © C. O'Connell



Plate 24: Dumping of grass cuttings in the biodiversity area set aside in the GAA complex must stop as it is unsightly and smelly and it kills wildlife. A properly managed composting system needs to be installed and the compost produced used around the village as appropriate (Action 8.7.2). Photo: © C. O'Connell



Plate 26: Gaps in the tree line on the western perimeter of pitch 3 should be filled in with planted trees. A second line of trees should be planted adjacent to the first to provide a corridor for wildlife (Action 8.7.6). Photo: © C. O'Connell



Plate 23: Part of the GAA club car park and brick wall along the L1004. Large tubs containing trees should be installed along the wall to create a wildlife corridor, Ivy can be planted to screen the wall and a wild flower seed mix can be planted at its base for wildlife (Action 8.7.8). Photo: © C. O'Connell



Plate 25: Wild flower death due to the use of chemical sprays in the GAA grounds. This practice must stop (Action 8.7.1). Photo: © C. O'Connell



Plate 27: Margin between pitch 2 and the N4 in the GAA grounds. Actions to enhance biodiversity in this area include the development of a wildflower meadow using seed and/or bulbs, cutting the hedge to an "A" shape which allows shrubs to flower and produce fruit for wildlife and allowing some of the trees in the hedge to grow to maturity similar to the existing tree present in the photograph (Actions 8.7.3, 8.7.4 and 8.7.7). Photo: © C. O'Connell

Table 9: Biodiversity Action Plan for the Clonguish GAA Club and Biodiversity Area, Newtownforbes, Co. Longford.

Action Number	Action	Notes
8.7.1	Herbicide use around the pitches.	The application of herbicides on vegetation close to amenity walks and sports grounds (see Plate 25) represents a health and safety issue and should be avoided. If necessary vegetation can be kept in check in these areas through mowing.
8.7.2	Dispose of grass cuttings from regularly maintained playing pitches to a neat and unobtrusive composting area in the sports grounds.	All brown and green waste should be picked up, chopped up and placed on a compost heap rather than being dumped in a habitat set aside for biodiversity (see Plate 24). A large composting system will be required based on the area of pitches to be maintained. This should be located conveniently to the pitches and labelled so that users understand the policy of composting. Compost produced can be used by the Tidy Towns in planters.
8.7.3	Create meadow habitat using bulbs on embankments between the main pitch/pitch 2 and the N4 and on the embankments on either side of the entrance to pitch 3	Create a meadow habitat on embankments through a process of leaving grass and wildflowers to grow and flower and by naturalizing bulbs planted. This can be an initiative undertaken with local school children. Choose a limited colour palette of bulbs for this project as it looks more natural. Do not cut the grass until autumn. This allows the bulbs to ripen in the ground and ensures they divide and flower in subsequent years. Species ideal for naturalizing include: wild daffodil (<i>Narcissus pseudonarcissus</i>), snowdrop (<i>Galanthus elwesii/nivalis</i>), bluebell (<i>Hyacinthoides non-scripta</i>), wood anemone (<i>Anemone nemorosa</i>), <i>Crocus</i> species, squill (<i>Scilla bifolia</i>). The bulbs are tossed gently onto the bank. Plant them where they land at a depth of 3-4 times the size of the bulb.
8.7.4	Change hedge management along the N4	Trim hedge along the N4 to an "A" shape, wide at the bottom and narrow at the top. Allow upper part of hedge to produce flowers and fruit for wildlife. Encourage some trees within the hedge to mature so as to set an attractive hedge and tree Line on the entrance to the village.
8.7.5	Wet Grassland Biodiversity Habitat path, seat and viewing area	Avoid disturbance to the wet grassland biodiversity area such as grass dumping. The existing walking route path around the pitches should be extended into this area to a viewing platform with seating. This would allow visitors to experience the range of birds, mammals and insects utilising the area. No further maintenance is needed here as the habitat is in balance.
8.7.6	Plant trees to create a woodland corridor around pitch 3	Gaps in the existing tree Line planted at the junction of the back of the houses to the west of pitch 3 need to be filled with new trees (Plate 26). A second row of trees should be planted around these same margins (west and southern margins) of this pitch to create a wildlife corridor. Species to plant rich in berries and fruit would be mountain ash, hawthorn, crab apple, wild cherry, guelder rose, alder, elderberry, spindle and blackthorn. The grassland between the trees should be allowed to grow, flower and set seed to provide food and nectar for insects and birds and a refuge for animals. This action will provide a visually appealing boundary as well as privacy, security and safety. It will also reduce wind making it easier to play sport.
8.7.7	Create naturally defined perimeters	Provide natural corridors along which insects or animals can pass by allowing a strip of grassland 1-2m wide to grow, flower and set seed along all tree lines and hedges. Once a year mow the entire grassland meadow area and remove waste to the compost heap. This helps to control vigorous grass growth. Scarify the ground with rakes to help wild flower seeds make contact with bare soil and germinate to increase the abundance of wild flowers in subsequent years. This action helps to promote biodiversity around the perimeters of species poor habitats such as amenity grassland.
8.7.8	Plant trees in containers in the car park, screen the walls and sow wild flowers	The car park needs to have space for cars, but the edges along the wall with the L1004 can have trees planted in very large tubs together with butterfly friendly plants such as perennial wallflower, ivy, calendula, cornflower, lavender, marjoram, cosmos, butterfly bush (<i>Buddleia</i>) and clover. The larger the tubs the less watering is needed. Another option is sow a wildflower seed mix into the grit at the wall to create a living corridor for wildlife (Plate 23).
8.7.9	Erect swift nest boxes on buildings	The presence of breeding of breeding house martins (Plate 22) on the GAA buildings is a sign for the community to consider erecting swift nest boxes on the buildings. Contact the local branch of Birdwatch Ireland (Westmeath covers Longford at https://m.facebook.com/westmeathbranchbirdwatchireland/) for assistance in this project.
8.7.10	Bird and Bat Boxes There are trees located within this GAA Club that may be suitable sites for the installation of bird boxes and bat boxes.	This can be a community project involving school children and a local men's shed.
8.7.11	Insect Hotels should be placed in meadow habitats and wildlife corridors	A large insect hotel can be constructed by school children using wooden palettes or an insect house can be purchased from garden centres or constructed in liaison with a men's shed. Such features are a great sign to the community that biodiversity enhancement is a priority.
8.7.12	Facilitate Community Engagement on the management plan for the pitches	Form a discussion group regarding the management of grass clippings from the GAA pitches and on enhancement of wildlife measures.
8.7.13	Erect Information Signage	Signage will be required to inform users of the GAA pitches and biodiversity area of the objectives of the management plan for the site.

8.8. Scoil Mhuire National School Grounds and Garden

Location: 53.762692, -7.833368 (see Figure 18).

Scoil Mhuire is located on the corner of the junction of the N4 with the L1004 south of the centre of Newtownforbes. Two other boundaries of the schools to the east and south are with the GAA Club (described in section 8.7). The school is rapidly expanding in size and is one of the largest in Longford. There are permanent built classrooms and temporary prefab style classrooms in the grounds.

Habitat Types

Green space within the school complex is minimal with the exception of some amenity grassland that is kept mowed and a small fenced off wildlife garden created by the school children.

The range of habitats in the school grounds is low. It consists of amenity grassland verges, a “wildlife” garden and artificial surfaces and buildings (Figure 19). While grass verges are mowed, there was evidence of spraying with weed killer at the junction of the mowed grass and paths. Spraying with weed killer was also evident around the wildlife garden which completely conflicts with the concept of a wildlife garden. In view of the conflicting goals, the school community and grounds maintenance team need to have a conversation around the importance of biodiversity in the school grounds.

Amenity Grassland: There are strips of mowed grass inside the school wall on the L1004 side of the school (Plate 28) and in the northwest corner of the school grounds. In this latter area there is an ornamental flower bed. Along the south eastern boundary with the GAA Club there is a narrow amenity grassland planted with 4 oak and birch trees. Two further amenity grassland patches occur around the prefab buildings in the school grounds. One of these has been allowed to grow, flower and set seed and is dominated by grasses and docks.

Wildlife Garden: this garden is planted with native and non native species. Insect loving *Buddleia*, *Hebe* and *Lonicera* are planted. There is a patch of rhubarb. There are bird nest boxes and feeders included in the garden. The garden is delimited by trellis and fencing and with the mature shrubs is somewhat closed off from the school grounds (Plate 29).

Actions

Scoil Mhuire presents a challenge in terms of enhancing biodiversity. A series of actions are proposed in Table 10 for areas which appear to be permanent and which should be discussed with the school management board. School grounds are very important for learning outside the classroom activities. They provide opportunities for pupil-led, hands-on learning particularly if management embrace the enhancement of biodiversity as a priority.

The walls of the built structures provide an opportunity for the creation of vertical wall gardens (Action 8.8.7) and the installation of wall mounted insect hotels (see ideas in Appendix 4). The extensive tarmacked grounds could be enhanced with a group of large planters on wheels to allow for their repositioning. Mature berry-bearing trees to attract birds should be planted in them (Action 8.8.9). Further guidance on Creating a Biodiversity Action Plan for the school grounds from: http://www.heritageinschools.ie/content/resourcespdfs/Biodiversity_Action_Plan_for_Schools.pdf.



Plate 28: A strip of mowed grass inside the school wall on the L1004 could be enhanced for biodiversity by planting it as a wildflower meadow (Action 8.8.3) and screening the wall with scented honeysuckle, climbing roses and ivy. Photo: © C. O'Connell



Plate 29: The use of chemical sprays to control plant growth must stop in the interests of biodiversity (Action 8.8.1). The boundary fencing around the wildlife garden should be removed to integrate it with the wildflower meadow suggested for amenity grasslands (Action 8.8.8). Photo: © C. O'Connell



Figure 18: Scoil Mhuire National School Grounds and Garden Location, Newtownforbes, Co. Longford. Source: © www.google.com

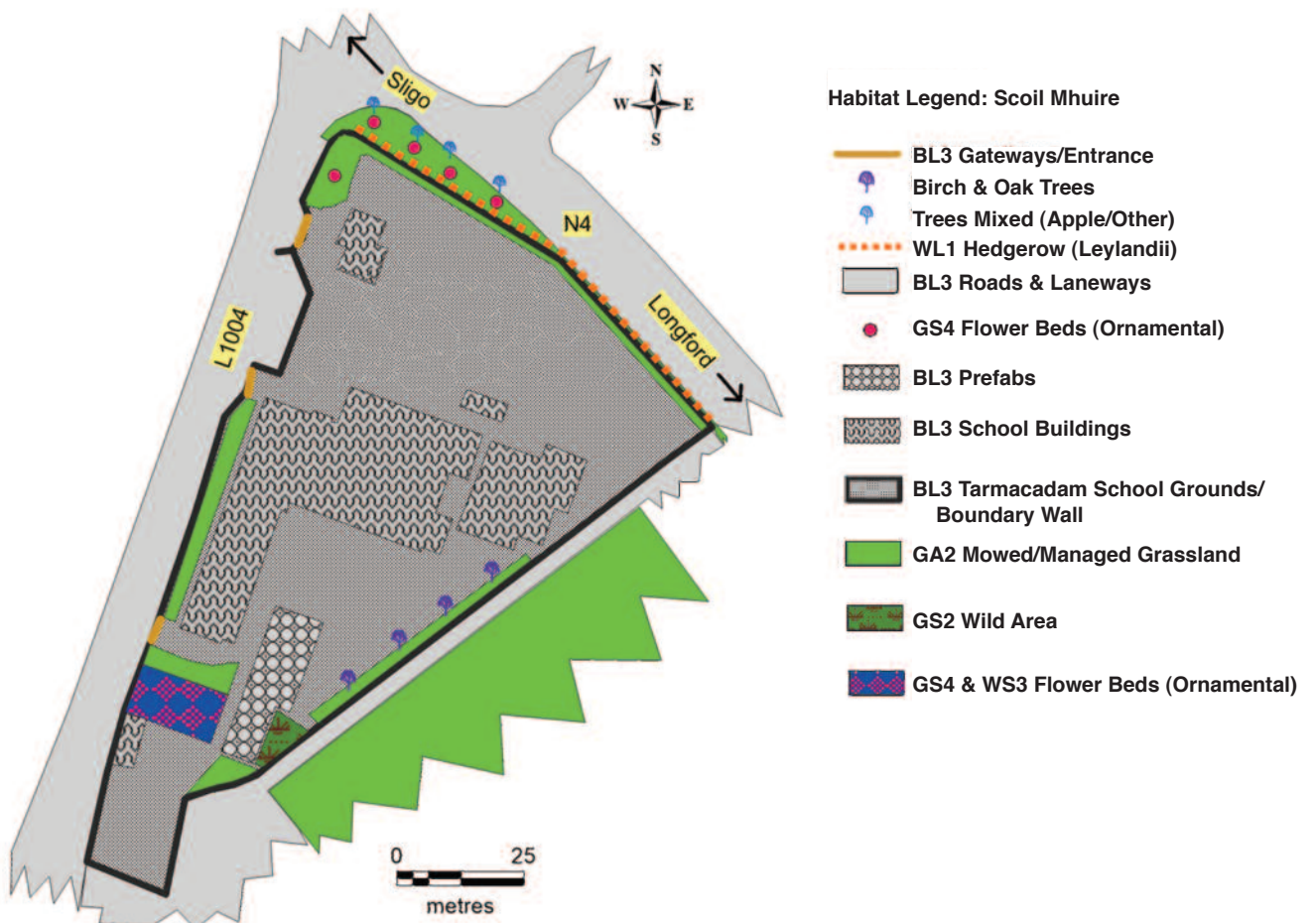


Figure 19: Scoil Mhuire National School Grounds and Garden Habitat Map, Newtownforbes, Co. Longford. Photo: © D. Lyons

Table 10: Biodiversity Action Plan for Scoil Mhuire National School Grounds and Garden, Newtownforbes, Co. Longford.

Action Number	Action	Notes
8.8.1	Herbicide use in the school grounds should be avoided.	The use of herbicides in the school grounds is unnecessary and should be stopped as it kills wildlife and presents a health risk to children.
8.8.2	Dispose of grass cuttings from regularly maintained grassed areas to the compost bins in the school garden.	Children should be encouraged to compost lawn clippings and other garden waste. It may be necessary to increase the number of composting cones or to create a heap in the garden. The compost produced can be used in the wildlife garden.
8.8.3	Create meadow habitat using bulbs on amenity grassland behind the wall of the school along the L1004	Create a meadow habitat at the front of the school by leaving grass and wildflowers to grow, flower and set seed and by naturalizing bulbs planted. Choose a limited colour palette of bulbs for this project as it looks more natural. Do not cut the grass until autumn. This allows the bulbs to ripen in the ground and ensures they divide and flower in subsequent years. Species ideal for naturalizing include: wild daffodil (<i>Narcissus pseudonarcissus</i>), snowdrop (<i>Galanthus elwesii/hivalis</i>), bluebell (<i>Hyacinthoides non-scripta</i>), wood anemone (<i>Anemone nemorosa</i>), <i>Crocus</i> species and squill (<i>Scilla bifolia</i>). The bulbs are tossed gently onto the bank. Plant them where they land at a depth of 3-4 times the size of the bulb. This habitat provides opportunities for children to study wildlife.
8.8.4	Plant trees to create a woodland corridor in the grassland strip between the school and the GAA grounds. Enhance with bird feeders, nest boxes, bird bath and log pile	Plant a double row of trees to create a wildlife corridor along the boundary with the GAA Club. Species to plant rich in berries and fruit would be mountain ash, hawthorn, crab apple, wild cherry, guelder rose, alder, elderberry, spindle and blackthorn. The grassland between the trees should be allowed to grow, flower and set seed to provide food and nectar for insects and birds and a refuge for animals. This action will provide a visually appealing boundary as well as privacy, security and safety. Wildlife can be drawn into the area through the provision of bird feeders, nest boxes, a bird bath and the construction of a log pile.
8.8.5	Create a wildflower meadow in the grassland area in the northern corner of the school grounds. Enhance with insect hotel	Create a wildflower meadow from this amenity grassland area by cutting the grass to a very short sward, scarifying the surface to create bare soil and sowing a wild flower seed mix. Wild Flower seeds are available from www.wildflowers.ie . Get the GF03 mix for attracting butterflies, bees and birds. €22 per 100 gram or €170 per kilo. (1 gram covers an area of 1.5m ²). An insect box or hotel could be constructed for this area. If necessary this area may need to be fenced off to prevent trampling.
8.8.6	Maintain Window Boxes and Hanging Baskets	These features should be retained around the school grounds to help attract wildlife and provide visual appeal. Please do not use moss peat in the planters as this destroys raised bog habitats.
8.8.7	Plant one or more Green Walls	Choose a south facing wall on the school buildings. Purchase suitable wall planters and install. Plant with herbs able to withstand drying out such as mediterranean species and succulents such as Lavender, Curry Plant, Rosemary, Thyme, House Leak and <i>Sedum</i> . Organise a watering regime for the living wall and you could extend the range of plants to include tomatoes and strawberries. Living wall planters can be purchased from www.thegardenshop.ie at €13 for three cell planters.
8.8.8	Maintain the School Garden as butterfly and vegetable allotment garden	The boundary between the garden and the school entrance along the L1004 should be removed so that this lovely feature is more accessible for class groups, visible and integrated. A bird bath should be added to the bird feeders and nest boxes already present. Butterfly friendly species such as perennial wallflower, Calendula, cornflower, lavender, marjoram, cosmos, butterfly bush (<i>Buddleia</i>) and clover should be planted. A small sand bed should be provided to allow butterflies take the sun and warm their metabolism. If space is needed remove and replant elsewhere shrubs that are not good for butterflies. Create allotment beds for vegetable growing. Practice crop rotation each year to control pests. A compost heap if not already present should be established here to enrich the soil for vegetable growing including potato, cabbage, strawberries, chives, onions, leeks, maize, beans and peas. Download this guide for further information: https://butterfly-conservation.org/sites/default/files/1.bc_gardening_leaflet_v3.pdf
8.8.9	Plant a moving woodland in the school grounds	Purchase very large planters mounted on coasters to create a moving woodland for the schools grounds. Plant the planters with mature berry bearing trees to attract wildlife and birds year round. The planters can be moved around the yard depending on school requirements.
8.8.10	Facilitate Community Engagement on the management plan for the school grounds	Form a discussion group regarding the management regime for the school grounds with the Board of Management. Review the actions in this plan and decide what can be changed now and what might take longer to achieve.
8.8.11	Erect Information Signage	Signage will be required to inform users and visitors to the school of the objectives of the biodiversity plan.

8.9. Lowertown-Ballykenny Bog Walk

Location: 53.45698, -7.51117 (see Figure 20).

The bog walk covers a distance of 6.3km across the beautiful natural countryside west of the village of Newtownforbes. Access to the walking route is from the N4 in the village turning west along the L505 and following the country road to a gateway entrance to a woodland walk. This route is at first on a gravel path used by local farmers to access callow lands adjacent to the Camlin River. The road ends and becomes a cross country track located between Ballykenny Bog and the callow wet meadows adjacent to the Camlin River. The route returns through wet meadows, forestry and farmland to a wooded laneway that leads back to the village and ends at the GAA Club Grounds.

A portion of the land included in the walk is designated as a special protection area for birds (Ballykenny-Fisherstown Bog SPA 004101¹) and as a special area of conservation for peatland habitats (Lough Forbes Complex SAC 001818²). These designations and the statutory instrument³ that established them provide guidance on measures that are permitted within the lands designated. Newtownforbes Tidy Towns Committee and the Bog Walk Group need to be familiar with these documents before decisions are made on how the area is to be managed.

Habitat Types

The Lowertown-Ballykenny Bog Walk is rich in the quality and range of natural habitats present and in the breadth and abundance of species recorded in the different habitats (see Figure 20). In addition there are a significant number of man-modified habitats present.

The habitats studied included: spruce conifer plantation, improved agricultural grassland, scrub/immature birch woodland, cutover bog, active raised bog, wet grassland/marsh, flower rich pathway, tree Line and hedgerow.

Immature Birch Woodland:

This habitat is developed on peat cutover bog areas and fringing conifer plantation. The canopy overhead provides 60% cover formed by birch trees up to 8m tall. There is a well developed moss layer covering the peat (see Plate 30) predominantly composed of *Thuidium tamariscinum* and *Pseudoscleropodium purum*.



Plate 30: Immature birch woodland habitat on peat is an attractive habitat on the bog walk. This habitat is threatened by the spread of *Rhododendron ponticum* which needs to be removed using best practice methods (Action 8.9.1). Photo: © C. O'Connell



Plate 31: Cutover raised bog habitat. Any drains in this habitat need to be blocked to encourage the resumption of peat accumulation, an important consideration in the National Climate Action Plan. Blocking drains also enhance biodiversity (Action 8.9.6). Photo: © C. O'Connell

Brambles and *Dryopteris dilatata* fern formed a herb/dwarf shrub layer. Invasive *Rhododendron ponticum* was noted in this woodland type (see Table 13).

Cutover Bog: The eastern margin of Ballykenny bog has significant areas of cutover bog (Plate 31). This is where the bog was drained and turf was cut in the past. The remaining bog area has a lowered water table and is interrupted by drains. The drying process allows for species associated with drier habitats to colonise the bog such as gorse (*Ulex europaeus*) and birch trees (*Betula pubescens*). The peat forming bog mosses (*Sphagnum* species) are reduced in abundance but still cover 40% of the cutover bog surface. They are more abundant where there are wet bog holes left behind by turf cutters. Other typical bog species present in this habitat included deer sedge (*Scirpus cespitosus*), moor grass (*Molinia caerulea*), ling heather (*Calluna vulgaris*), cross-leaved

¹ NPWS (2018) Conservation objectives for Ballykenny-Fisherstown Bog SPA [004101]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

² NPWS (2016) Conservation Objectives: Lough Forbes Complex SAC 001818. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

³ S.I. No. 452 of 2017. EUROPEAN UNION HABITATS (LOUGH FORBES COMPLEX SPECIAL AREA OF CONSERVATION 001818) REGULATIONS 2017. The Stationery Office, Dublin.



Plate 32: Camp fire located close to the cutover bog habitat on the bog walk route. Best practice requires that as soon as they are spotted all traces of such campfires should be removed and the scar left behind disguised (Action 8.9.3).

Photo: © C. O'Connell

heath (*Erica tetralix*) and bearded lichen (*Cladonia portentosa*). Funnel web spiders were notably abundant in this habitat. In cutover bog areas easily accessible from the walking route there was evidence of camp fires and beer drinking which would need to be controlled (Plate 32).

Raised Bog: active peat-forming raised bog is present on Ballykenny bog (Plate 33). This habitat is characterised by a high water table within 10-20cm of the bog surface and the abundance of *Sphagnum* mosses which are the main peat-forming plant.



Plate 33: Ballykenny Bog is a peat-forming natural raised bog, the most northerly raised bog along the river Shannon. This type of bog is rare in Europe and for that reason has been designated as a Special Area of Conservation.

Photo: © C. O'Connell

The open bog is quaking under foot. Ballykenny bog had a good cover of *Cladonia* lichens which formed mats over the top of large hummocks up to 50cm tall of *Sphagnum capillifolium* and the pleurocarpous mosses *Pleurozium schreberi* and *Hypnum jutlandicum*. *Polytrichum* moss was common on the bog towards the margins. The perimeter of the bog was colonised by birch trees and had a luxurious growth of moor grass (*Molinia caerulea*), ling heather (*Calluna vulgaris*) and blueberry (*Vaccinium myrtillus*). While the number of species recorded on the bog are low in comparison with other habitats, all of the species are specialist to surviving in the waterlogged, acidic conditions of the bog environment and in that regards they have a high biodiversity value. The presence of round-leaved sundew (*Drosera rotundifolia*) an insect eating plant is a great example of the specialist adaptations of plants to living in the boglands. Skylarks and meadow pipits were present on the open bog. These birds are ground nesting and are sensitive to disturbance by humans and dogs.

Wet Grassland and transition to marsh at river edge and aquatic vegetation in the river waters: some of the wet grassland habitat beside the Camlin river was managed as callow grassland and other wet grassland areas were not managed at all and were seen to be moving towards scrub woodland. Management of the callows enhances the number and variety of species of grass and wild flower with over 30 different flora recorded

including ragged robin, marsh thistle (*Cirsium palustre*), water mint, marsh cinquefoil, (*Mentha aquatica*), bog cotton, flag iris, heath bedstraw, *Senecio aquaticus*, Valeriana, meadowsweet (*Filipendula ulmaria*), Hen rattle (*Rhinanthus minor*), common rush, moor grass, jointed rush, tormentil, *Pedicularis palustris*, bog bean (*Menyanthes trifoliata*) *Ranunculus flammula*, *Myosotis scorpiodes*, *Persicaria amphibia* and *Potentilla palustris*. High species numbers of plants can correspond with equally high numbers of insects, birds and animals including frog, meadow brown, ringlet, red admiral, green-veined white butterfly, hoverfly, grasshopper, web spider, wasp, red damselfly, swift, pond snail and leaf hopper.

Management of the wet grasslands involves the farmer cutting the callow in late summer to make hay (Plate 34). A managed callow has a low sward, typically 20-25cm tall, the ground topography is flat and the flora is rich in species of grass and wildflower. In situations where the wet meadows are not being



Plate 34: Wet grassland habitat or callow managed as a hay meadow. The species richness of this area was very high as a result of this traditional management method (Action 8.9.8).

Photo: © J. FitzGerald



Plate 35: The Camlin River and the wet grassland and marsh habitat which is dominated by *Valeriana* in July. In winter this habitat is completely flooded and is a feeding ground for Whooper Swan. A bird hide opening into this area would be a valuable biodiversity education addition to the proposed walk and would reduce disturbance to the birds (Action 8.9.7). Photo: © J. FitzGerald

managed, they were changing to woodland habitat. In these callows the ground was uneven and difficult to traverse with large tussocks of moor grass (*Molinia caerulea*) up to 1m tall with invading birch, willow, bramble and bracken.

banks of the river which are inundated with water in the wetter winter months and provide rich feeding grounds for Whooper Swans. In the waters of the Camlin river *Nuphar lutea* was noted (see Plate 35).

Beside the river the wet grassland merged into marsh habitat. Large herbs of *Valeriana officinalis* and *Glyceria maxima* dominated the

Hedge and Unimproved Grassland: The land use in the transition zone between Newtownforbes and the bog area of the walk is dominated

by hedges of hawthorn and ash trees some of which are managed by cutting particularly on the L505, while the hedges on other roads of minor importance have been left to flower and produce fruit (Plates 36 and 37). These enclose fields of improved grassland used for grazing livestock and some fields contain ring forts of archaeological significance. The species recorded included hawthorn, bramble, holly, sycamore, ash, blackthorn and honeysuckle. A mixture of wild flowers and ferns grew at the base of hedges that were less intensely managed including meadow sweet, buttercup, herb robert, nettle, *Dryopteris* fern, nipplewort, *Asplenium scolopendrium* and enchanter's nightshade. Typical birds of hedgerows observed were woodland species and included robin, wood pigeon and blackbird.

Tree Line and flower rich path: Once the L505 road is left behind an access lane to the Camlin river can be followed. This lane contained a



Plate 36: The L505 road showing the current verge and hedge management practice. Actions 8.9.4 and 8.9.5 recommended a different approach to hedge and verge management to encourage pollinators and birds and to provide better habitat for wildlife. Photo: © C. O'Connell



Plate 37: The verges and hedges in this access lane which is part of the bog walk are alive with birds and pollinators. Trimming of hedges should take place on a three year rotational basis (Actions 8.9.4 and 8.9.5). Photo: © C. O'Connell



Plate 38: Flowery lane and tree lines giving access from the L505 to the Camlin River. A species rich flora was present here because of the variety of natural habitats found. Action 8.9.4 recommends trimming the flowery grassland early in spring and in late autumn only to allow the flowers to grow and set seed. Photo: © C. O'Connell

lovely and species rich habitat of tree line and flowery grassland with an abundance of wild flowers growing in sheltered conditions and attracting many insects and pollinators (Plate 38). Over 50 species were recorded here including clovers, vetches, buttercups, grasses, knapweed, docks, horsetails, herb robert, iris, plantains, sow thistle, thistles, willowherbs, rushes, hog weed, nettle and cinquefoils as well as

blackberry, raspberry, birch, ivy, yew, hawthorn, oak, bird cherry, sycamore, ash, rowan, elder, holly and gorse. In spring the drainage ditch at the edge of the lane are rich with frogspawn and sightings of pine martin have been observed here by members of the community who walk this route regularly.

Unfortunately this area had a high number of occurrences of invasive species including Japanese Knotweed, *Rhododendron* and cherry laurel (see Table 13 and Plate 39). A programme of eradication needs to be undertaken. In addition this area had three or more car wrecks dumped just off the access path which need to be cleared (Plate 40).

The flowery grassland is managed by the local landowner by mowing and fallen trees along the tree line are cut back and left to rot in the ditch. If possible the timing of mowing the flower rich path should be undertaken in late



Plate 39: Cherry laurel is one of the invasive species observed on the bog walk route. This species is aggressive in its growth, creating dense shaded conditions which prevents the natural ground flora of the woodlands to grow. Its needs to be removed as a priority following best practice methods (Action 8.9.1). Photo: © C. O'Connell

august once the flowers have set seed (Action 8.9.4 in Table 11). This will ensure the richness of this habitat for biodiversity is maintained.

Invasive Species

Eight incidents of invasive species were recorded in the bog walk area of Lowertown-Ballykenny Bog (see Table 13). Assistance from <https://invasivespeciesireland.com/> will be required to correctly eliminate these species from the local environment.

Actions

The Lowertown-Ballykenny Bog walk is a naturally rich and complex area adjacent to Newtownforbes. Part of the lands included in this site are designated under the European Union Habitats Directive and Birds Directive. Habitat creation is not the main emphasis of the biodiversity actions proposed in Table 11, rather it is the maintenance of pristine habitats free of the threats of drainage, invasive species, disturbance and dumping that need to be tackled. Such actions will maintain and in certain instances will enhance biodiversity.



Plate 40: Car wreck dumped along the access lane to the Camlin River and callows. Action 8.9.2 recommends the removal of such unsightly dumping in liaison with Longford County Council. Photo: © C. O'Connell

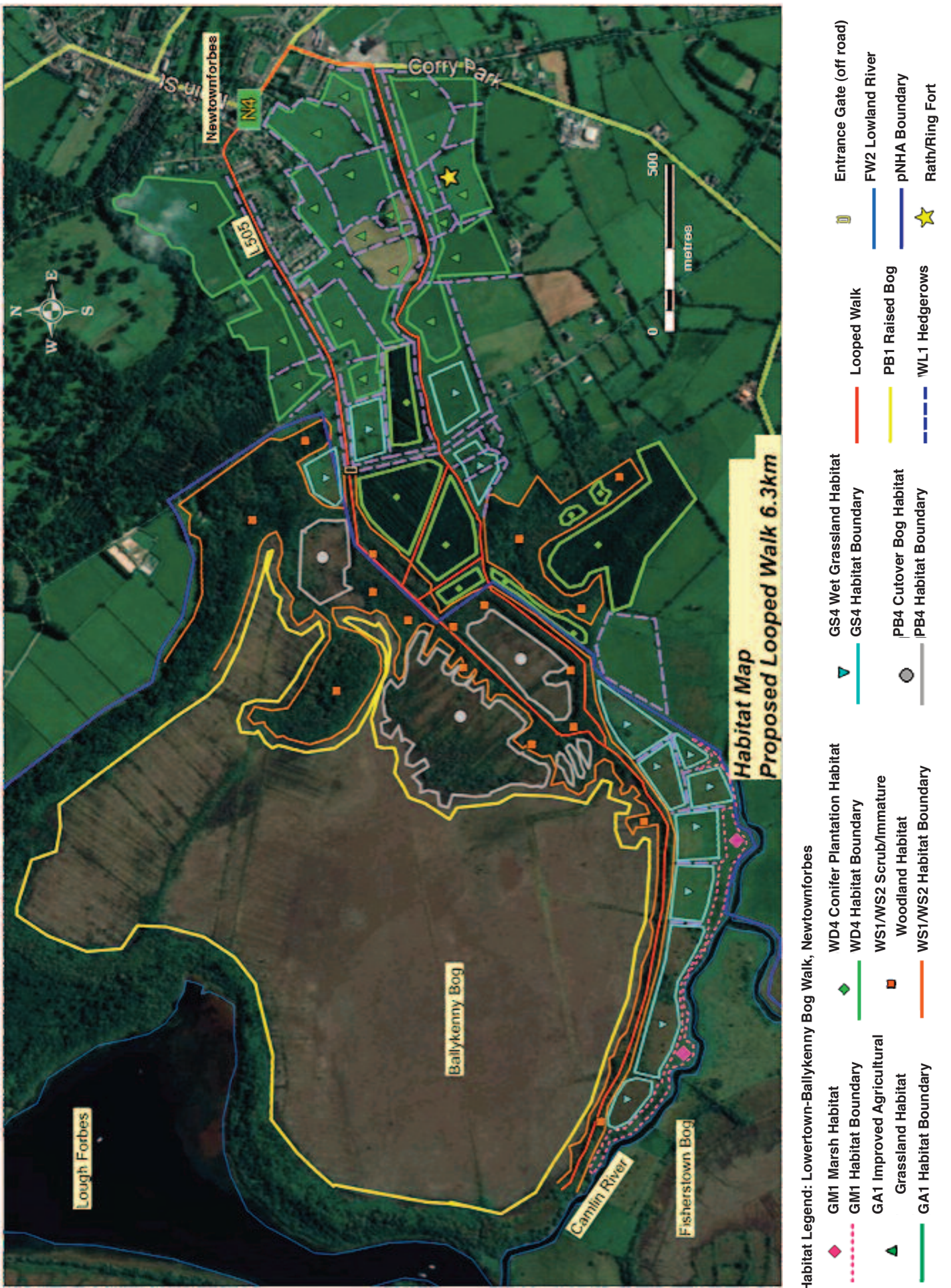


Figure 20: Lowerstown-Ballykenny Bog Walk Location and Habitat Map, Newtownforbes, Co. Longford.
Source: © www.google.com and D. Lyons

Table 11: Biodiversity Action Plan for the Lowertown-Ballykenny Bog Walk, Newtownforbes, Co. Longford.

Action Number	Action	Notes
8.9.1	Invasive species removal	There are eight incidents of invasive species in the bog walk area (see Table 13) including <i>Rhododendron</i> , Japanese Knotweed and Cherry Laurel. These species need to be treated and removed by competent authorities. Please contact https://invasivespeciesireland.com/ for assistance
8.9.2	Removal of dumped cars	There are a number (3) of incidents of dumped cars in the bog lane area. These should be removed to the main road in liaison with Longford County Council.
8.9.3	Camp fires and drink cans	There is evidence that the bog lane and accessible cutover bog area is being used for camp fires associated with beer drinking . Camp fires should be removed to discourage this activity. Vigilance is needed to curb anti-social behaviour and to eliminate a risk of fire to the peatland and other habitats.
8.9.4	Timing of cutting verges in flowery lane, the L505 and elsewhere on the walk route	The bog lane part the walk is rich in flowering species which provide much needed nectar for pollinating insects. Ideally, the plants growing here should be allowed to grow, flower and set seed to ensure their continued survival. It takes most flowers 6-8 weeks from flowering to successfully set seed. Cutting plants down in full flower deprives invertebrates of nectar and pollen and stops plants reproducing from seed. This activity encourages a dense growth of grasses. The timing of the cutting of verges is crucial to management. To have year round flowering in the verges mowing needs to shift to autumn and winter. In a given calendar year the first cut should be undertaken before the end of February and the second cut after September when seeds have shed.
8.9.5	Method and frequency of Hedge Management	Some of the hedges on the bog walk are being cut too frequently particularly along the L505 (see Plate 34 and compare with Plate 35) and are being shaped incorrectly. Teagasc advise that hedges should be trimmed to an ‘A’ or triangular profile from a wide base to allow light at the base, leaving the peak at least 1.5m (5 feet) from ground level, or the top of the hedge bank. Occasional thorn saplings should be encouraged to grow into individual trees. This will create the ideal conditions for birds to nest, providing cover from predators above and below the nest, and providing flowers in summer for bees and other pollinators, and berries in autumn for birds and small mammals. The hedgerow maintenance period runs from September 1 to the end of February. Hedges should be cut every two to three years in rotation around the walking route to maximize the wildlife benefits.
8.9.6	Bog Drain blocking	The drains cut in the cutover and high bog areas of Ballykenny should be targeted for restoration in liaison with the National Parks and Wildlife Service. Trained contractors only should be engaged to work raised bog restoration initiatives. Machine-based drain blocking should take place outside the ground bird nesting season from September 1 to the end of February.
8.9.7	Install bird hide overlooking the callows and Camlin River flood plain	A bird hide installed overlooking the Camlin River and its associated flood plain habitats would be an advantage to allow users to see over wintering Whooper Swans and other birds without undue disturbance.
8.9.8	Maintain existing management of the Camlin River callows	Two of the callows adjacent to the Camlin River are managed as hay meadows. Traditionally this involves the farmer removing one hay crop from the meadows in late summer. This practice should continue in order to maintain the high biodiversity value of these meadows occurring in the fertile river plain of the Camlin.
8.9.9	Walkway route and paths	The walking route crosses a mixture of surfaces not all of which are suitably safe for users. The country road and the bog lane are adequate. However once the bog lane runs out, the walker is expected to track cross country on a poorly defined track to a dead end. The return loop of the walk from the bog back to town crosses privately owned forestry and farm land before it reaches a small country road. This route needs to be agreed with landowners and the walking surface needs to be improved so that it is safe. Only local materials should be used to make the walking route and this needs discussion with the NPWS where it runs through designated land and private landowners.
8.9.10	Walk viewing tower as a destination	Walkers need a reward for their journey, a destination to aim for. This is lacking in the walk at present. A viewing tower is proposed where the walker can see the confluence of the Camlin river with the River Shannon and the unique walk experience of the habitat transition from open water through marsh and callow to raised bog and woodland.
8.9.11	Control of dogs	Walkers must be advised to keep dogs on leads at all times especially in the open country parts of the walk around the callows and Ballykenny Bog. Dogs disturb ground nesting birds and badgers which are resident in the area.
8.9.12	Erect walker orientation and information signage	Signage is needed to explain the biodiversity found on the Lowertown-Ballykenny Bog Walk and to mark the way of the walk. This includes arrows, “you are here maps” and biodiversity information.
8.9.13	Join Community Wetlands Forum	The Tidy Towns and Bog Walk Group should consider joining other communities who care about wetlands to gain support, build capacity and access funding for restoration projects (see www.communitywetlandsforum.ie)

9. Species Diversity

Flora, birds and fauna were identified and recorded for each of the biodiversity target sites studied in this plan. Species lists for the bog walk which covered an extensive area were recorded for each habitat identified. Table 12 presents a summary of the number of species recorded in each study area. Detailed species lists are presented in Appendix 5 plants, Appendix 6 birds and Appendix 7 animals. Table 12 shows that

the Lowertown-Ballykenny Bog Walk biodiversity area is a hot spot with the highest overall number of species recorded in the survey. This is due to the diversity of habitats occurring within this area. The greater the diversity of habitats that Newtownforbes Tidy Towns Committee can create the better it will be for wildlife.

Some birds in Newtownforbes are of Conservation Concern

in Ireland¹. The Swift and Meadow Pipit are both red-listed of high conservation concern due to habitat loss. Seven birds are Amber-listed of medium conservation concern including House Martin, House Sparrow, Swallow, Starling, Herring Gull, Whooper Swan and Skylark (Appendix 6). Badger, Pine Marten, Hare and Frog are protected species recorded on the Bog Walk (Appendix 7).

Plate 41: A selection of the species diversity discovered on the Lowertown-Ballykenny Bog Walk. Top Row from the left: ringlet butterfly, common white wave moth and grasshopper. Bottom row from the left: insect eating sundew, tiger hoverfly and whooper swans. Photos 1-5: © C. O'Connell & 6 © J. O'Brien



Table 12: Numbers of species recorded in each of the biodiversity study areas of Newtownforbes recorded on three visits in 2019 and 2020. Further details in Appendices 5-7.

Species Group	Lismoy Old Graveyard (includes wild flower meadow, scrub and stone walls)	Lamagh New Graveyard	Children's Playground and Community Garden (includes hedgerow and amenity grassland)	St Mary's Catholic Church	St Paul's Church of Ireland	Newtownforbes Main Street and village entrances (includes grassy verges and hedgerow habitats)	Clonguish GAA Club and Biodiversity area (includes amenity grassland, wet meadow, tree Line and hedgerow)	Scoil Mhuire	Lowertown-Ballykenny Bog Walk (includes bog, wet meadow, river, tree Line and woodland habitats)	Total Species
Plants	26	2	18	12	19	22	38	16	120	143
Birds	8	0	6	1	1	1	8	1	10	21
Animals	4	0	0	0	1	1	4	0	25	31
Total in each Habitat	38	2	24	13	21	24	50	17	155	195

¹ Gilbert, G. Stanbury, A. and Lewis, L. (2021) Birds of Conservation Concern in Ireland 2020-2026. Irish Birds 9: 523-544.














10. Invasive Species

Table 13 presents information on 13 locations of invasive species within the biodiversity study areas of Newtownforbes. The invasive plants found included *Rhododendron*, Japanese Knotweed and Cherry Laurel. Newtownforbes

Tidy Towns Committee and the Bog Walk Group need to liaise with competent authorities in the removal of these species from the habitats of the area. Please contact <https://invasivespeciesireland.com/> for assistance. In some instances

private individuals may have planted cherry laurel as a hedge. This practice should be discouraged and hawthorn, beech or Irish yew hedges should be planted instead.

Table 13: Invasive species recorded in biodiversity study areas of Newtownforbes in 2020.

Newtownforbes An Lois Breac Biodiversity & Conservation Plan 2021-2025	Invasive Species Records	Dr Catherine O'Connell, Ecologist					
Location	Species	Latitude	Longitude	Altitude	Date	Image by Catherine O'Connell	Notes
Longford N4 entrance to town	Japanese Knotweed	Latitude: 53° 45' 35.316" N	Longitude: 7° 49' 42.678" W	Altitude: 116.3 m (381.56 ft)	Date Stamp: 22 Jul 2020		Under treatment, signs up
GAA pitch 3 where native planting undertaken	Prunus laurocerasus English Laurel/ Cherry Laurel Labhras sílíní	Latitude: 53° 45' 37.572" N	Longitude: 7° 49' 59.658" W	Altitude: 51.3 m (168.31 ft)	Date Stamp: 22 Jul 2020		In garden hedge planted by private home owner
Hedge in St Mary's Roman Catholic Church grounds	Prunus laurocerasus English Laurel/ Cherry Laurel Labhras sílíní	Latitude: 53° 45' 59.268" N	Longitude: 7° 50' 5.442" W	Altitude: 56.3 m (184.71 ft)	Date Stamp: 22 Jul 2020		Hedge of church grounds
Old Lismoy Graveyard	Japanese Knotweed	Latitude: 53° 46' 13.086" N	Longitude: 7° 49' 35.478" W	Altitude: 58.1 m (190.62 ft)	Date Stamp: 22 Jul 2020		
Opposite Scoil Mhuire National School, adjacent to the playground on the L1004	Prunus laurocerasus English Laurel/ Cherry Laurel Labhras sílíní	Latitude: 53° 45' 46.92" N	Longitude: 7° 50' 1.068" W	Altitude: 56 m (183.73 ft)	Date Stamp: 22 Jul 2020		hedge of private home
Bog walk, lane area	Prunus laurocerasus English Laurel/ Cherry Laurel Labhras sílíní	Latitude: 53° 45' 41.094" N	Longitude: 7° 51' 15.618" W	Altitude: 29.1 m (95.47 ft)	Date Stamp: 5 Jul 2020		
Bog walk, lane area	Japanese Knotweed	Latitude: 53° 45' 41.142" N	Longitude: 7° 51' 15.816" W	Date Stamp: 5 Jul 2020	Date Stamp: 5 Jul 2020		
Bog walk, lane area	Rhododendron ponticum	Latitude: 53° 45' 38.562" N	Longitude: 7° 51' 21.492" W	Altitude: 32.1 m (105.31 ft)	Date Stamp: 5 Jul 2020		
Bog walk, birch woodland	Rhododendron ponticum	get data from john sheet or quadrat taken			Date Stamp: 5 Jul 2020		
Bog walk, birch woodland	Rhododendron ponticum	Latitude: 53° 45' 37.572" N	Longitude: 7° 51' 22.518" W	Altitude: 33.3 m (109.25 ft)	Date Stamp: 5 Jul 2020		
Bog walk, lane area	Prunus laurocerasus English Laurel/ Cherry Laurel Labhras sílíní	Latitude: 53° 45' 34.884" N	Longitude: 7° 51' 27.792" W	Altitude: 32 m (104.99 ft)	Date Stamp: 5 Jul 2020		
Bog walk, lane area	Japanese Knotweed	Latitude: 53° 45' 30.852" N	Longitude: 7° 51' 34.53" W	Altitude: 31.5 m (103.35 ft)	Date Stamp: 5 Jul 2020		
Bog walk, edge of Ballykenny bog SAC	Rhododendron ponticum	Latitude: 53° 45' 12.402" N	Longitude: 7° 52' 3.234" W	Altitude: 35.7 m (117.13 ft)	Date Stamp: 5 Jul 2020		

11. Funding Biodiversity Enhancement

The following groups provide funding for different aspects of biodiversity enhancement. Further information for each scheme can be found on the relevant organisation's web site.

Peatlands Community Engagement Fund Scheme. Annual programme focusing on peatlands administered by the Department of Heritage, Culture and the Gaeltacht.

Heritage Council Grants Schemes for buildings and management works.

Waterways and Communities Grant Schemes

Leader (lcr1.ie)

Community Foundation of Ireland

Community Grant Support Scheme of Longford County Council

Community Enhancement Programme of Longford County Council

Longford County Council Heritage Grant Scheme

Department of Agriculture, Food and the Marine have a number of funding streams available to local communities including Common Agricultural Policy (CAP) Post 2020: Pillar 2 Infrastructure, Environment and Development Support (The main schemes include GLAS, EIP-AGRI and TAMS).

Appendix 1 - Biodiversity Survey Sheet

Newtownforbes - An Lios Breac Biodiversity & Conservation Plan Survey Sheet

Location: Sample #

Map Ref: GPS: ± Altitude (M):

Recorders: Date:

Habitat Description:

Fossitt Classification: Name:

Land Use: Water Table Depth (cm)

Soil Type: Threats:

Invasive Species: ...Rhododendron ...Cherry Laurel ...Japanese Knotweed ...Winter Heliotrope

Details:

Biodiversity Recommendations

Animal, Insect and Bird Species List

Badger	Robin	Speckled Wood	Pond Skater	
Frog	Starling	Green-veined White	Hoglouse	
Fox	Rook	Black Darter	Bloodworm	
Shrew	Jackdaw	Holly Blue	Dragonfly nymph	
Earthworm	Merlin	Meadow Brown	Damselfly nymph	
Otter	Red Grouse	Red Admiral	Water Beetle	
	Skylark	Large White	Flatworm	
	Snipe	Ringlet	Water Scorpion	
	Mallard	Green-veined white		
	Duncock	Peacock		
	Wren			
	Swift			Total =

Newtownforbes Biodiversity Plan Plant Species List (Total =) **Sample #**

<i>Acer pseudoplatanus</i>	<i>Achillea millefolium</i>	<i>Agrostis stolonifera</i>	<i>Alopecurus pratensis</i>
<i>Andromeda polifolia</i>	<i>Anthoxanthum odoratum</i>	<i>Anthriscus sylvestris</i>	<i>Arabis hirsuta</i>
<i>Arctium minus</i>	<i>Asplenium ceterach</i>	<i>Asplenium scolopendrium</i>	<i>Asplenium trichomanes</i>
<i>Aulacomnium palustre</i>	<i>Bellis perennis</i>	<i>Betula pubescens</i>	<i>Buddleia davidii</i>
<i>Calliergonella</i>	<i>Calluna vulgaris</i>	<i>Calystegia sepium</i>	<i>Carex filipendula</i>
<i>Carex nigra</i>	<i>Carex panicea</i>	<i>Centaurea nigra</i>	<i>Cerastium fontanum</i>
<i>Cirsium arvense</i>	<i>Cirsium vulgare</i>	<i>Cladonia portentosa</i>	<i>Cladonia uncialis</i>
<i>Cotoneaster</i>	<i>Crataegus monogyna</i>	<i>Cynosurus cristatus</i>	<i>Dactylus glomerata</i>
<i>Dactyorchis maculata</i>	<i>Drosera rotundifolia</i>	<i>Dryopteris dilatata</i>	<i>Epilobium parviflorum</i>
<i>Equisetum arvense</i>	<i>Equisetum fluviatile</i>	<i>Erica tetralix</i>	<i>Eriophorum vaginatum</i>
<i>Fagus sylvatica</i>	<i>Festuca rubra</i>	<i>Ficaria verna ssp verna</i>	<i>Filipendula ulmaria</i>
<i>Fraxinus excelsior</i>	<i>Galium aparine</i>	<i>Galium saxatile</i>	<i>Geranium robertianum</i>
<i>Glyceria fluitans</i>	<i>Hedera helix</i>	<i>Heracleum spondylium</i>	<i>Holcus lanatus</i>
<i>Hypericum pulchrum</i>	<i>Hypnum jutlandicum</i>	<i>Hypochaeris radicata</i>	<i>Ilex aquifolium</i>
<i>Iris pseudacorus</i>	<i>Jacobaea vulgaris</i>	<i>Juncus articulatus</i>	<i>Juncus effusus</i>
<i>Lamium purpureum</i>	<i>Lathyrus pratensis</i>	<i>Lolium perenne</i>	<i>Lonicera periclymenum</i>
<i>Luzula multiflora</i>	<i>Lychnis flos-floculi</i>	<i>Mentha aquatica</i>	<i>Menyanthes trifoliata</i>
<i>Molinia caerulea</i>	<i>Myosotis scorpioides</i>	<i>Narthecium ossifragum</i>	<i>Nuphar lutea</i>
<i>Odontoschisma sphagni</i>	<i>Pedicularis palustris</i>	<i>Persicaria amphibia</i>	<i>Petasites hybridus</i>
<i>Phragmites australis</i>	<i>Plantago lanceolata</i>	<i>Plantago major</i>	<i>Pleurozium schreberi</i>
<i>Polypodium vulgare</i>	<i>Polytrichum alpestre</i>	<i>Potentilla anserina</i>	<i>Potentilla erecta</i>
<i>Potentilla palustris</i>	<i>Prunella vulgaris</i>	<i>Prunus laurocerasus</i>	<i>Pseudoscleropodium purum</i>
<i>Pteridium aquilinum</i>	<i>Quercus petraea</i>	<i>Ranunculus acris</i>	<i>Ranunculus flammula</i>
<i>Ranunculus repens</i>	<i>Reynoutria japonica</i>	<i>Rhinanthus minor</i>	<i>Rhododendron ponticum</i>
<i>Rosa arvensis</i>	<i>Rubus fruticosus agg</i>	<i>Rubus idaeus</i>	<i>Rumex acetosa</i>
<i>Sambucus nigra</i>	<i>Salix</i>	<i>Scirpus cespitosus</i>	<i>Senecio aquaticus</i>
<i>Senecio vulgaris</i>	<i>Sonchus asper</i>	<i>Sphagnum capillifolium</i>	<i>Sphagnum cuspidatum</i>
<i>Sphagnum magellanicum</i>	<i>Sphagnum palustre</i>	<i>Stellaria graminea</i>	<i>Succisa pratensis</i>
<i>Taraxacum officinale</i>	<i>Thuidium tamariscinum</i>	<i>Trifolium pratense (red)</i>	<i>Trifolium repens (white)</i>
<i>Ulex europaeus</i>	<i>Umbilicus rupestris</i>	<i>Urtica dioica</i>	<i>Vaccinium myrtillus</i>
<i>Vaccinium oxycoccus</i>	<i>Valeriana officinalis</i>	<i>Verbascum thapsus</i>	<i>Vicia cracca (tufted)</i>
<i>Vicia sepium (bush)</i>	<i>Xanthoria parietina</i>	<i>Zygogonium ericetorum</i>	

Appendix 2 - Newsletters

Newtownforbes - An Lios Breac Biodiversity & Conservation Plan

Newsletter #1 November 2019



*Beautiful
woodland
habitat*

A wildlife haven

I am delighted to be working in your beautiful village to help you develop a Biodiversity and Conservation Plan over the next year. Members of the Tidy Towns Group kindly took me on a whistle stop tour of the village and the wildlife hot spots on the 9th November 2019. The village environment is impressively rich in both natural and man-made habitats such as woodland, meadow, bogland, river, hedge, graveyard and stone bridges. In a matter of just a few hours we found over 50 different plants and had some wildlife experiences including seeing a badger set on the bog walk, listening to starlings chattering in a tree at the old graveyard and admiring ferns clinging to the beautiful stone bridges over the railway line. What a fantastic project, I am excited to be involved. Thank you very much and best wishes from **Catherine O'Connell, Project Ecologist**



If you want to be surrounded by biodiversity - walk into the woods. Natural woodlands contain a great variety of plant and animal life and are a very valuable part of the biodiversity of Newtownforbes.

Woodland



Sphagnum or bog moss is the bog builder. As the plant grows it lays down 1mm of peat each year. Newtownforbes has the most northerly examples of raised bogs associated with the Shannon Waterway.

Bogland



Witches' Broom in a birch tree in Newtownforbes. A fungus invading the tree causes a dense mass of shoots to grow from a single point which looks like a broom. Luckily it does not affect the vigour of the tree.

Witches' Broom

This project is supported by the Community Foundation for Ireland and Newtownforbes Tidy Town

Newtownforbes - An Lios Breac Biodiversity & Conservation Plan

Newsletter #2 July 2020



What a difference the seasons make. After a very slow start due to the tragedy of Corona Virus, I am so happy to be back again to your village of Newtownforbes and delighted to be reporting a three fold increase in the total number of plants I have found - from just 50 in November to 150 in July! What a BioBlitz! With so much going on it is easy to be Wild About Newtownforbes.

In this issue I'd like to briefly introduce the Project explaining what a Biodiversity Plan is and what I am doing in your village. I would also like to give some tips to help you begin to enhance biodiversity starting in your own garden and working outwards to the shared environment of the village. Thanks to all those who joined me on the bog walk and on my village surveys.

Best wishes from **Catherine O'Connell, Project Ecologist**



For biodiversity it is hard to beat trees. All praise to the Tidy Towns group who have planted a wonderful border of trees in the grounds of the GAA pitch. Walk about this space and see how many different Irish trees and birds you can spot.

Tree Planting Success



The Lismoy old graveyard has such a peaceful atmosphere with an abundance of life among the beautiful headstones. Wild flowers and grasses provide habitat for birds and bugs from soldier beetles and ladybirds to goldfinch and wren.

Wild and Peaceful



The wild flowers along the woodland walk are great for bees and butterflies. This is something to copy across the village. Target areas for wild flowers would be the children's playground, the community garden and the town entrances.

Leave them to Grow!

This project is supported by the Community Foundation for Ireland and Newtownforbes Tidy Town

What is Biodiversity?

Biodiversity is the variety of living things around us, from mammals and birds to plants and microbes, and the habitats they live in.

The Value of Biodiversity

Biodiversity is a key part of vibrant, rich and attractive open spaces in villages and the surrounding countryside.

Biodiversity value is reflected in the way that habitats, parks and green spaces are managed.

Managing for Biodiversity involves changes to traditional practices such as allowing some grassland in roadsides to grow, flower and set seed before cutting, pruning hedges less frequently and letting some areas change naturally to woodland.

Newtownforbes - An Lois Breac Biodiversity Plan

Finding out what wildlife is present in Newtownforbes is the first task in making a

biodiversity plan. To do this I am looking at a selection of sites around the village as well as the woodland and bog walk beside the Camlin River. Once I have everything surveyed I will be making recommendations on how you can maintain and enhance this biodiversity over a period of 3-5 years. I hope to organise a community Biodiversity walk in autumn as part of the project and I expect to complete your Biodiversity Plan by the end of the year.

Biodiversity Enhancement Best Practice

- ✔ Use homemade compost in your plant containers and garden
- ✔ Plant fruit bearing trees in groups to provide bird food such as Rowan, Alder, Guelder Rose, Elderberry, Blackthorn and Hawthorn
- ✔ Plant Buddleia - the butterfly bush to encourage butterflies
- ✔ Plant hawthorn and blackthorn hedges to provide shelter, protection and a home for wildlife
- ✔ Delay cutting grass until after plants have flowered and set seed. This takes 6-8 weeks in summer
- ✔ Plant blue flowers for pollinators such as Lavender, Marjoram, Knapweed, Thistle, Catmint, Geranium, Bugle and Toadflax
- ✔ Create biodiversity hot spots at the meeting point between two or more habitats. For example, where a woodland edge or hedge meets tall grass or meadow you get more wildlife
- ✘ Don't use moss peat compost in your garden as the production of this product threatens peatlands. Ask for peat-free compost in the garden centre
- ✘ Don't replace hedges with cement walls or wooden fencing as these have no wildlife value
- ✘ Don't use herbicide sprays to control weeds. These kill wildlife and can pollute streams
- ✘ Don't replace native hedges with cherry laurel hedges as this shrub is invasive and replaces native plants in the wild
- ✘ Don't trim hedges between March and September the bird breeding season
- ✘ Don't dispose of grass-cuttings and hedge-trimmings at the base of hedges, in ditches or in wildlife areas, as they suppress the natural flora. Compost them instead



From open water through wet meadow to bog and woodland - a slice of Irish nature in Newtownforbes

This project is supported by the Community Foundation for Ireland and Newtownforbes Tidy Town

Appendix 3 - Wildlife Surveys

Your Name:

Email Address:

Newtownforbes Garden Birds Watch

Tick all the birds that you see

Location of Observations:

Date:

<input type="checkbox"/> Bullfinch	<input type="checkbox"/> Swift	<input type="checkbox"/> Swallow	<input type="checkbox"/> House Martin	<input type="checkbox"/> Woodpigeon
<input type="checkbox"/> Blue Tit	<input type="checkbox"/> Long-tailed Tit	<input type="checkbox"/> Chaffinch	<input type="checkbox"/> Goldcrest	<input type="checkbox"/> Hooded Crow
<input type="checkbox"/> Great Tit	<input type="checkbox"/> Coal Tit	<input type="checkbox"/> Yellowhammer	<input type="checkbox"/> Siskin	<input type="checkbox"/> Blackbird
<input type="checkbox"/> Starling	<input type="checkbox"/> Goldfinch	<input type="checkbox"/> Greenfinch	<input type="checkbox"/> Robin	<input type="checkbox"/> Jackdaw
<input type="checkbox"/> Collared Dove	<input type="checkbox"/> Song Thrush	<input type="checkbox"/> Wren	<input type="checkbox"/> Magpie	<input type="checkbox"/> House Sparrow
				<input type="checkbox"/> Dunnock

Newtownforbes Bugs and Beasties Search






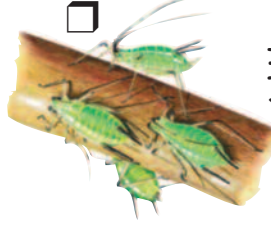





























Your Name:

Email Address:

Tick all the bugs and beasties that you spot

Location of Observations:

Date:

 <input type="checkbox"/> Black Garden Ant	 <input type="checkbox"/> Shieldbug	 <input type="checkbox"/> Garden Spider	 <input type="checkbox"/> Red Admiral	 <input type="checkbox"/> Small Tortoiseshell
 <input type="checkbox"/> Aphid Greenfly	 <input type="checkbox"/> Froghopper	 <input type="checkbox"/> Harvestman Spider	 <input type="checkbox"/> Orange-tip	 <input type="checkbox"/> Cinnabar Moth
 <input type="checkbox"/> Cricket	 <input type="checkbox"/> Ground Beetle	 <input type="checkbox"/> Single-spot Ladybird	 <input type="checkbox"/> Large White	 <input type="checkbox"/> Dragonfly
 <input type="checkbox"/> Field Slug	 <input type="checkbox"/> Earwig	 <input type="checkbox"/> Common Frog	 <input type="checkbox"/> Damselfly	 <input type="checkbox"/> Wasp
 <input type="checkbox"/> Large Black Slug	 <input type="checkbox"/> Garden Snail	 <input type="checkbox"/> House Fly	 <input type="checkbox"/> Blue Bottle	 <input type="checkbox"/> Hoverfly
 <input type="checkbox"/> Earthworm	 <input type="checkbox"/> Banded Snail	 <input type="checkbox"/> Seven-spot Ladybird	 <input type="checkbox"/> White-tailed Bumblebee	 <input type="checkbox"/> Honey Bee
 <input type="checkbox"/> Centipede	 <input type="checkbox"/> Woodlouse	 <input type="checkbox"/> Red-tailed Bumblebee	 <input type="checkbox"/> Bumblebee	 <input type="checkbox"/> Wasp

Appendix 4 - Biodiversity Enhancement Actions



Bat Box



Bird (Tit) Box



Insect Hotel



Bee friendly Sunflowers



Pollinator-friendly planting with perennials



Mowed Amenity Grassland, Wildflower Meadow & Woodland



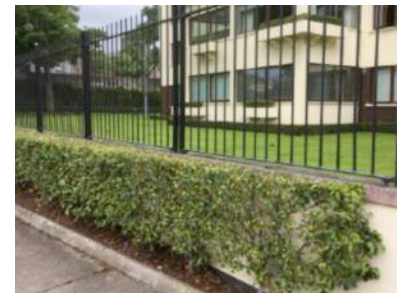
Tree Planting - Double Row



Meadow and Grass Path



Pollinator-friendly planting with perennials



Hedge screen planting



Mature roadside tree planting



Screen planting with fruit trees



Amenity grassland, wildflower birder and hegerow, a combination that enhances biodiversity



Playground seating inspired by wildlife



Wildflower Meadow created with annuals



Wildflower Roadside Verge



Bird Feeder



Insect Hotel



Stone Walls



Bird Bath and Water



Green Wall



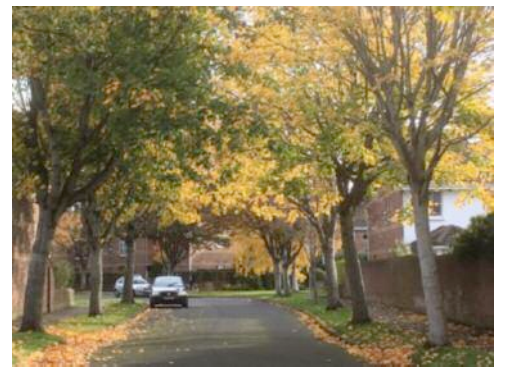
Insect hotel in a tree stump



Insect Hotel



Green Wall using Wonderwall system



Roadside tree planting system



Large Tree Planter



Pollinator-friendly wildflowers



Parkland with trees



Jumbo Tree Planter



Public Park pollinator-friendly wildflower area
(Image: A. O'Connell)



Tree Grove with long grass
(bags protect from grazing)



Wildlife Pond (Image: www.gardenersworld.com)



Large Scale Composting unit with bays constructed from recycled plastic lumbar (Image N. Madigan)



Looking into a single bay of the composting unit showing cut grass composting (Image N. Madigan)



The plastic panels in the composting unit are easily removed to allow infilling with compostable material and to facilitate turning of the heap to increase the rate of decomposition. Each unit is covered with plastic sheeting to prevent waterlogging and to retain heat. (Image N. Madigan)

Area/Species Latin Name	Species Common Name	Species Irish Name	Flowers and seed vessels Curry Lane	Treeline	Birch Woodland	Cut-over Bog	Ballykenmy Bog	Managed Callow Weir Grass land	Unmanaged grassland NPWS	Unmanaged grassland Private	Bingfort Lane (David McCann)	Conifer Plantation	Scoil Mhuire	Children's Playground	Community Garden	Main Street Newtownforbes	Cloughish biodiversity area	Lienoy Old Graveyard	St Paul's Church	St Mary's Catholic Church	Lamagh Graveyard
<i>Taxus baccata</i>	Dandelion	Caiaiseabhán	x	x									x	x				x	x		
<i>Thalictrum officinale</i>	Yew	Lár			x																
<i>Thuidium tanetaceum</i>	Common Jamaick-weed	Cib Cheangtheall				x															
<i>Trochoporum caespitosum</i>	Deer Stachy	Cib Cheangtheall	x																		
<i>Trifolium pratense</i>	Red Clover	Seimiar d'ieseg	x																		
<i>Trifolium repens</i>	White Clover	Seimiar d'ian						x													
<i>Tussilago farfara</i>	Cot's-foot	Sponc																			
<i>Ulex europaeus</i>	Grise	Aléann gallda																			
<i>Ulmus glabra</i>	Wych Elm	Leamhán a'éibhe			x																
<i>Urtica dioica</i>	Common Nettle	Neanfóg																			
<i>Vaccinium myrtillus</i>	Blueberry	Fíochán Gorm	x				x														
<i>Vaccinium oxycoccos</i>	Cranberry	Mhóg																			
<i>Valeriana officinalis</i>	Valerian	Cearthann Corraigh					x														
<i>Vitium opulus</i>	Cider Rose	Cíer Chon						x													
<i>Vicia cracca</i>	Tufted Vetch	Peasair na luch																			
<i>Vicia sepium</i>	Bush Vetch	Peasair fhán	x																		
<i>Zygocarpum ericetorum</i>	Wetland Algae	Algaí bhogaigh																			
Total species 145			44	22	10	24	19	33	19	20	17	1	16	14	5	22	38	26	12		2

Appendix 5 - Species of Bird Recorded

Newtownforbes - An Lios Breac Biodiversity and Conservation Plan 2021-2025																						
Records from 2020 and 2021 recorded by Dr Catherine O'Connell, John O'Brien & Newtownforbes Tidy Towns Committee																						
Grid Reference	Area/Species Latin Name	Species Common Name	Species Irish Name	Conservation Status (see note 1)	Flowerly Lane and verges	Trailline	Birch Woodland	Cutever Bog	Ballyhenry Bog	Managed Callew Wet Grassland	Unmanaged grassland NPWS	Unmanaged grassland Private	Ringfort Lane (David McCann)	Scoll Mhuire	Children's Playground	Community Garden	Main Street Newtownforbes	Orangeish CIA & biodiversity area	Liamoy Old Graveyard	St Paul's Church	St Mary's Catholic Church	Lamagh Graveyard
					5.7.20	5.7.20	5.7.20	5.7.20	5.7.20	5.7.20	5.7.20	5.7.20	22.7.20	22.7.20	22.7.20	22.7.20	22.7.20	22.7.20	22.7.20	22.7.20	22.7.20	22.7.20
Carduelis carduelis	Goldfinch	Lasair chéille	Green																			
Columba palumbus	Woodpigeon	Cóin caille	Green																			
Corvus frugilegus	Rook	Rúcach	Green																			
Corvus monedula	Jackdaw	Cág	Green																			
Delichon urbicum	House Martin	Gabhán Binné	Amber																			
Eritacus rubecula	Robin	Spideog	Green																			
Hirundo nistrix	Swallow	Fáineog	Amber																			
Motacilla alba	Pied Wagtail	Glacóg árdéide	Green																			
Parus caeruleus	Blue Tit	Meánán Gorm	Green																			
Passer domesticus	House Sparrow	Gaeibhán bhíne	Amber																			
Pica pica	Magpie	Snaig breac	Green																			
Sturnus vulgaris	Starling	Druil	Amber																			
Troglodytes troglodytes	Wren	Dreolín	Green																			
Turdus merula	Black Bird	Lon dúbh	Green																			
Larus argentatus	Herring Gull	Faoileán scáidh	Amber																			
Cygnus cygnus *	Whooper Swan	Eala Ghibrach	Amber																			
Anthus pratensis	Meadow Pipit	Riabóg Mhóra	Red																			
Apus apus	Swift	Gabhán gaoithe	Red																			
Prunella modularis	Dummock	Domóg	Green																			
Alauda arvensis	Skylark	Fuiséog	Amber																			
Turdus pilaris **	Fieldfare	Sacán	Green																			
Total Bird Species 21					1	1	2	0	5	2	0	1	3	1	5	1	1	8	8	1	1	0

* Recorded 8.4.21
 ** Recorded 22.3.20
 1 Gilbert, G., Stanbury, A. and Lewis, L. (2021), Birds of Conservation Concern in Ireland 2020-2025. Irish Birds 9: 523-544

Appendix 6 - Species of Animal Recorded

Newtownforbes - An Lios Breac Biodiversity and Conservation Plan 2021-2025
Animals Recorded

Records from 2020-2021 recorded by Dr Catherine O'Connell and John O'Brien

Grid Reference	N53.760216, E-7.829230	N53.761639, E-7.832478	N53.770412, E-7.986237	N53.765423, E-7.836675	N53.761651, E-7.852766	N53.761702, E-7.852551	N53.760494, E-7.856156	N53.755696, E-7.853623	N53.754351, E-7.869278	N53.752975, E-7.870297	N53.753695, E-7.864943	N53.753152, E-7.872668	N53.752011, E-7.852288	N53.760983, E-7.835737		
Area/Species Latin Name	Species Common Name	Species Irish Name	Village entrance Longford N4	Clonguish GAA club & Biodiversity area	Lismoy Old Graveyard	St Paul's Church	Flowerly Lane and verges - Curry Lane	Treeline	Birch Woodland	Cutover Bog	Ballykenny Bog	Managed Callow Wet Grassland	Unmanaged wet grassland Private	Unmanaged wet grassland NPWS	Conifer Plantation	Ringfort Lane (David McCann)
<i>Tyria jacobaeae</i>	Cinnabar moth caterpillar	Bolb			x											
<i>Oryctolagus cuniculus</i>	Rabbit	Cóilín		x												
<i>Rhagoxycha fulva</i>	Common Red Soldier Beetle	Mollán	x													
<i>Martes martes</i> **	Pine Marten	Cat Craimh					x									
<i>Rana temporaria</i>	Frog	Loscann					x									
<i>Rana temporaria</i> *	Frog Spawn/Tadpoles	Loscann					x									
<i>Manduca lurida</i>	Meadow Brown Butterfly	Dornóg Fhíor		x												
<i>Meles meles</i>	Badger	Broc														
<i>Pieris napi</i>	Green-veined White Butterfly	Bánóg Uaine		x												
<i>Lepus timidus hibernicus</i> **	Hare	Giortaí Eireannach					x									
<i>Coccyzus septempunctata</i>	Seven-spot Ladybird	Bóin Dé Sheachbhallach														
<i>Comu aspersum</i>	Garden Snail	Selidhe Garral				x										
<i>Aphantopus hyperantus</i>	Ringlet	Fáinneog														
<i>Bombus pascuorum</i>	Carder Bee	Beach			x											
<i>Cepaea hortensis</i>	White-lipped Banded Snail	Selidhe					x									
<i>Cabeira pusaria</i>	Common White Wave Moth	Leamhan					x									
<i>Aglais io</i>	Peacock Butterfly Larva	Péacóg					x									
<i>Musca domestica</i>	Housefly	Cuilleog Thi					x									
<i>Scathophaga stercoraria</i>	Yellow Dung Fly	Cuill					x									
<i>Microlepidoptera</i> Group	White Micromoth	Leamhan					x									
<i>Pyrrhosoma nymphula</i>	Large Red Damselfly	Béchuil														
<i>Vanessa atalanta</i>	Red Admiral	Aimíreal Dearg														
<i>Helophillus peniculus</i>	Tiger Hoverfly	Cuill														
<i>Funnel Spider</i> species	Funnel Spider	Damhán Alla								x						
<i>Acrididae</i> Group	Grasshopper	Dreollín Teaspáigh														
<i>Cicadellidae</i> Group	Leaf Hopper	Dreancald Duilleog														
<i>Lymnaea stagnalis</i>	Pond Snail	Selidhe Lochán														
<i>Pararge aegeria</i>	Speckled Wood Butterfly	Breachfhéileacán Coile					x									
<i>Solenopsis</i> species	Red Ant	Seangán Dearg														
<i>Chiasmia clathrata</i>	Latticed Heath Moth	Leamhan														
<i>Vespa vulgaris</i>	Wasp	Folche														
<i>Pieris brassicae</i>	Large White Butterfly	Bárcóg Mhór														
Total Animal Species 31			1	4	4	1	10	0	1	1	2	5	9	1	1	0

* Recorded 22.3.20 & 13.4.21 ** Recorded 13.4.21