

# Ruan Community Biodiversity Action Plan 2023-2027



Produced by  
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Funded by



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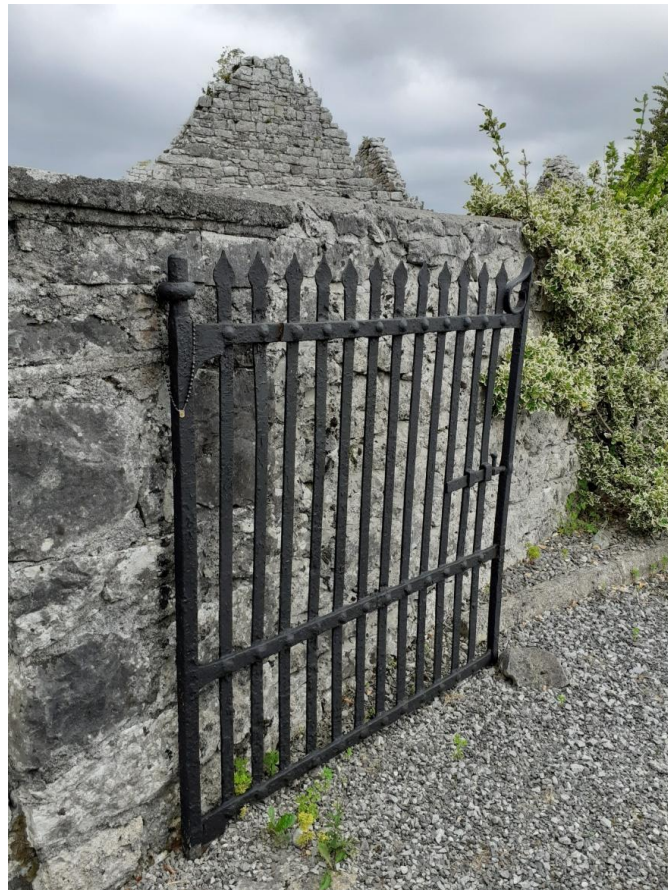
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All photographs by Áine Ní Fhlatharta

## Acknowledgements

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This funding provided us with the opportunity to commission an ecologist to carry out baseline surveys to identify, assess, record and map the existing biodiversity. This data was used to develop the action plan that will guide us on how to protect the existing biodiversity and halt any further damage and losses. Ruan Tidy Village would also like to thank Áine Ní Fhlatharta (Community Ecologist & Biodiversity Advisor) for all her work.



Mise an spéir, an t-aer is an tEarrach,

mise an t-iasc is an t-uisce,

mise an chré faoi mo chosa.

Michael Hartnett

## **Introduction**

### **Ruan/An Ruán (The Alder and Reddish Land)**

Ruan is a village is located approximately 6km north of Ennis town and lies on the edge of the Burren. It was the first stop on the old west Clare Railway which was operational until 1961 and in the mid 1800s Ruan and Dysart national schools had over 650 children between them. The area has a rich historical and archaeological heritage, such as Ruan Church (fifteenth-century); O'Loghlen Mausoleum; Ruan Ric Barracks site and Remembrance Plaque; Dromore Castle (early sixteenth century); Ballyteige East Ring Fort; Port House (eighteenth century); Kelly Family Mausoleum; Ballyharahan Castle (sixteenth century); and Ballygriffey Castle.

### **Ruan Tidy Village and the Community Employment Scheme Participants**

The majority of the improvement and enhancement work that take place in Ruan village is undertaken by the CE scheme participants and Ruan Tidy Villages, which is made up of a team of dedicated and hard working local volunteers. Both groups carry out work during the year to enhance the appearance of the village and their on-going work, strong spirit and community pride is reflected throughout the village.

In more recent times there has been a positive move away from the traditional expectations of Tidy Towns to a more nature based focus that encourages the protection of the natural environment, the natural features and the built heritage of a village. There is an emphasis on valuing the existing biodiversity, to view it with a different mindset and appreciation.

### **Ruan Tidy Village Positive Actions**

Over the years, Ruan Tidy Village has gone from strength to strength in raising awareness and actively protecting the existing biodiversity of the village. They have tried different ways to enhance the village while benefitting wildlife and they are a strong advocate of the All Ireland Pollinator Plan.

**Don't Mow, Let it Grow:** The CE scheme participants are leaving grassy verges uncut to allow the indigenous wild flowers to grow, flower and set seed while providing much needed resources for many different pollinator species and wildlife.

**Pollinator Friendly Planting Scheme:** A number of ornamental beds around the village have been planted with nectar and pollen rich plants, such as Calamint (*Calamintha nepeta*) and

English Lavender (*Lavandula angustifolia*) – providing much needed forage for pollinator species.

**Tuar Mór Community Garden:** The community garden is another link in the network of floral resources available for pollinator species with a variety of nectar and pollen rich perennials and herbs planted and tended to by the CE scheme participants.

**Raising Awareness and Training:** In 2021 the Tidy Village participated in online Biodiversity training through Leader. The primary school children participated in biodiversity workshops in June 2022 and the CE scheme participants did a Grassland Management for Meadows and Pollinators workshop in August 2022.

**Eliminating Pesticide Use:** Efforts have been made to eliminate the use of weed killer in outdoor public spaces. The CE scheme participants have been trialing alternative options such as natural recipes, the use of suitable hand tools and minimum weeding.

## **Action Plans**

### **Community Biodiversity Action Plans**

Local Biodiversity Action Plan's general aim is to contribute to the conservation of nature at a local level. It is a very important first step when developing a biodiversity action plan to become familiar with the area's existing nature, e.g. the native, non native, invasive, rare species, the habitats, ecosystems, the built heritage and any environmental issues that may need to be addressed. This baseline information is the foundation that a practical and useful biodiversity action plan is built on. It is recommended to review and update a Community Biodiversity Action Plan every five years – and include achievements, ongoing issues, changes and any additional information.

### **Aim of the Community Biodiversity Action Plan**

The overall aim of this CBAP is to encourage the protection of the existing biodiversity and the abundant natural heritage of Ruan village by recording and identifying the different habitats, the flora and fauna species that exist in the village and its outskirts.

Another important aim is to strengthen and maximise the full potential of the existing, diverse nature and to continue raising awareness and inspiring the local community, young and old to play an active role in delivering the plans objectives and actions.



## **Biodiversity - The Web of Life**

Biological diversity (biodiversity) - is the term given to the variety of life on Earth and the natural patterns it forms. The biodiversity we see today is the result of billions of years of evolution, shaped by natural processes and, increasingly, by the influence of humans. It forms the web of life of which we are an integral part and upon which we so fully depend.

This diversity is often understood in terms of the wide variety of plants, animals and microorganisms. So far, about 1.75 million species have been identified, mostly small creatures such as insects. Scientists reckon that there are actually about 13 million species, though estimates range from three to 100 million.

Biodiversity also includes genetic differences within each species - for example, between varieties of wild plants and species of mammals. Chromosomes, genes, and DNA-the building blocks of life-determine the uniqueness of each individual and each species.

Another vital aspect of biodiversity is the variety of ecosystems such as those that occur in deserts, forests, wetlands, mountains, lakes, rivers, and agricultural landscapes. In each ecosystem, living creatures, including humans, form a community, interacting with one another and with the air, water, and soil around them (CBD, 2022).

## **Main Global Threats to Biodiversity**

The Earth's biodiversity has decreased significantly over the last few decades. Between 1970 and 2016, the population of vertebrate species fell by 68% on average worldwide. Latin America and the Caribbean have seen the biggest drop in biodiversity at 94%. This region's drastic decline has been mainly driven by declining reptile, amphibian, and fish populations. The five major threats identified by World Wide Fund for Nature (WWFN) are changes in land and sea use; species overexploitation; invasive species; pollution and climate change.

## **Ireland's Biodiversity**

Approximately 31,000 species are known to occur in Ireland, but we only know the conservation status of approximately 10% and one in every fifth of these species are threatened with extinction.

Ireland has 28 species of land mammal, over 400 species of birds, more than 4,000 plant species and over 12,000 species of insects. Conserving these species in their natural habitats and protecting their habitats is vital for their survival.

### **Negatives**

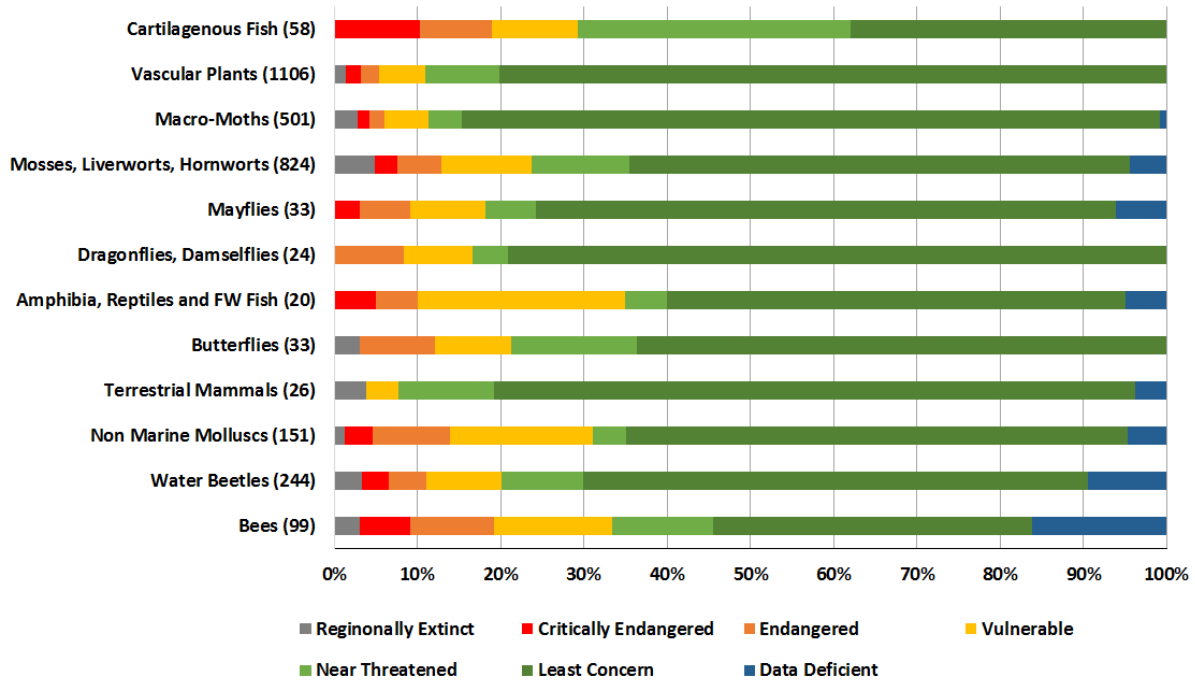
- One in every third species of bee is threatened with extinction.
- The conservation status of one third of our habitats afforded legal protection under the EU Habitats Directive declined between 2007 and 2013
- 37 species of bird are of high conservation concern including curlew, hen harrier, twite and yellowhammer the once common corncrake is now only found in the western extremities of Donegal and Mayo and the corn bunting became extinct here circa 2000.
- The Atlantic salmon, European eel and angel shark have suffered catastrophic population declines, and the freshwater pearl mussel, Ireland's longest living animal, is facing extinction
- Ireland's native white-clawed crayfish is threatened with the recent arrival of the crayfish plague.
- Everyone who have worked or walked in the countryside over the last 30 or 40 years will attest to a huge reduction in the biomass of insect life. Our fields have fallen silent; now hedgerows and patches of scrub are under attack like never before

### **Positives**

- The development of Agri-environment schemes targeting the conservation of the Hen Harrier, Curlew and Freshwater Pearl Mussel
- European Innovations Partnership, evidence-based projects to test and demonstrate how farming can be of benefit to biodiversity while protecting unique and fragile habitats such as Machair Grassland
- The development of the All-Ireland Pollinator Plan which provides positive solution-based approaches to the decline of our pollinator species
- The growth in Citizen-science in Ireland led by the NBDC, the general public have actively engaged in collecting high quality data on Ireland's biodiversity
- The increase in community led initiatives that are working to protect biodiversity at a local level



**Table 1:** The state of Ireland’s Biodiversity from the National Biodiversity Data Centre (NBDC, 2022)



### Ireland’s Wildlife Legislation

This biodiversity action plan’s main objectives and actions will be led by the following legislation that protects nature and wildlife in Ireland:

- Irish Wildlife Act, 1976 and Wildlife (Amendment) Act, 2000
- Restrictions on Cutting Hedgerows and Burning- Section 40 of the Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000 and the Heritage Act 2018
- Flora (Protection) Order 2015
- The Planning and Development Act, 2000
- EU Habitats Directive 1992 (Annex V)
- The Bern Convention 1979 (Appendix III)

European and national legislation exists to conserve habitats and species by the designation of conservation areas and the National Parks & Wildlife Service (NPWS) is responsible for the designation of conservation sites in Ireland (see Appendix 5).

## **The Biodiversity of Ruan**

### **Desktop Study**

A desktop study was carried out in order to access any existing information on any areas of interest and relevant conservation information. This information was obtained from the National Biodiversity Data Centre and the National Parks & Wildlife Services and included information on any protected sites in the area, local conservation data, conservation objectives, site synopsis reports and flora and fauna online records.

### **Flora and Fauna**

The National Biodiversity Data Centre (NBDC) online records for Ruan and the surrounding area include sightings of the Marsh Fritillary (*Euphydryas aurinia*), this is the only protected invertebrate species in Ireland. This species is protected under the Habitats Directive (92/43/EEC), Annex II; The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II and the Wildlife (N.I.) Order of 1985. It is categorised in Ireland as Vulnerable under the International Union for Conservation of Nature (IUCN) Conservation Status.

Other NBDC records for Ruan include Silver-washed Fritillary (*Argynnis paphia*); Pearl-bordered Fritillary (*Boloria euphrosyne*); Dark Green Fritillary (*Argynnis aglaja*); Purple Hairstreak (*Neozephyrus quercus*); Holly Blue (*Celastrina argiolus*); Dingy Skipper (*Erynnis tages*); Brown Hairstreak (*Thecla betulae*); Scarce Emerald Damselfly (*Lestes dryas*); Large Red Tailed Bumble Bee (*Bombus (Melanobombus) lapidarius*); Smooth Newt (*Lissotriton vulgaris*); Common Swift (*Apus apus*); and White-tailed Eagle (*Haliaeetus albicilla*); Norway Spruce (*Picea abies*); Larch (*Larix spp.*); and Beech (*Fagus sylvatica*).

### **Invasive Species**

The NBDC have a number of records of invasive species in the Ruan area including American Mink (*Mustela vison*); Fallow Deer (*Dama dama*); Greater White-toothed Shrew (*Crocidura russula*); Feral Goat (*Capra hircus*); Bank Vole (*Myodes glareolus*); and Traveller's-joy (*Clematis vitalba*) (see table 3).

During surveying the following invasive species were recorded Snowberry (*Symphoricarpos albus*) a non-native species with a low risk of impact; Cotoneaster (*Cotoneaster horizontalis*); and Butterfly-bush (*Buddleja davidii*) both with a medium risk of impact (see Appendix 1).

### **Dromore Woods and Loughs - Special Area of Conservation (SAC) and Nature Reserve**

Situated in central Clare, 9 km north-west of Ennis, the Dromore Woods and Loughs site lies on the southern edge of the Clare limestone. The topography is a continuation of the Burren type landscape although at a lower elevation, with most of the land lying between 15 and 35 m. The site includes several lakes which are mostly linked by the River Fergus.

Dromore wood was originally part of a private estate of the Crowe Family and was acquired by the state in the 1940's as a commercial forest. During the 1980's the National Parks and Wildlife Service (NPWS) took over the management of Dromore woods to regenerate and conserve the native species and in 1985 it became a Statutory Nature Reserve.

The reserve is approximately one thousand acres and comprises of rivers, lakes, turloughs and callows (meadows that flood during winter), limestone pavement, fen peat, reed and rush beds and vast areas of species-rich woodland. The five lakes of Dromore are populated with regionally and locally important numbers of waterfowl such as Little Grebe (*Tachybaptus ruficollis*); Whooper Swan (*Cygnus Cygnus*); Wigeon (*Anas Penelope*); Gadwall (*Anas strepera*); Teal (*Anas crecca*); Tufted Duck (*Aythya fuligula*); Coot (*Fulica atra*); Lapwing (*Vanellus vanellus*); and Curlew (*Numenius arquata*). Other species recorded over the years include Kestrel (*Falco tinnunculus*); Sparrowhawk (*Accipiter nisus*); and Hen Harrier (*Circus cyaneus*).

According to the Birds of Conservation Concern in Ireland, seven of these species are Amber listed and four species are Red listed - the Amber Conservation Status include Whooper Swan; Coot; Little Grebe; Hen Harrier; Tufted Duck; Teal; Gadwall and the Red Conservation Status include Wigeon; Curlew; Kestrel; and Lapwing (Bird Watch Ireland, 2023).

The woodland is a stronghold for the Pine Marten (*Martes martes*) and other mammal species recorded in the woods and the surrounding area include badger (*Meles meles*); Eurasian Red Squirrel (*Sciurus vulgaris*); fox (*Vulpes vulpes*); Irish Stoat (*Mustela erminea subsp. hibernica*); Otter (*Lutra lutra*); West European Hedgehog (*Erinaceus europaeus*); Eurasian Pygmy Shrew (*Sorex minutus*); and Irish Hare (*Lepus timidus subsp. hibernicus*).

The site has a nursery roost with a population (more than 400 individuals) of Lesser Horseshoe Bat (*Rhinolophus hipposideros*). This nursery colony is one of the biggest in the country and it is of international importance. Lesser Horseshoe Bat is a rare and threatened species that is listed on Annex II of the E.U. Habitats Directive. Other Bat species recorded in the woods and surrounding area include Brown Long-eared Bat (*Plecotus auritus*), Daubenton's Bat (*Myotis daubentonii*), Natterer's Bat (*Myotis nattereri*), Pipistrelle (*Pipistrellus pipistrellus sensu lato*), Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Whiskered Bat (*Myotis mystacinus*).

### East Burren Complex Special Area of Conservation (SAC)

Ruan is situated on the edge of the Burren, although it isn't part of the East Burren Complex SAC it's in close proximity to the Burren, this is obvious by the presence of certain plant species such as the Bee Orchid (*Ophrys apifera*) which was recorded in July 2022 in the semi natural grassy verges after the mowing regime was reduced (North Toormore road and the South Toormore road).

### Old Farm Buildings, Ballymacrogan Special Area of Conservation (SAC)

This site consists of a farmyard which contains a series of stone sheds and the Lesser Horseshoe Bat breeds in two of the buildings. Approximately 80 individual bats were counted on emergence in June 2000 and numbers have exceeded 100 in the past.

**Table 2:** A breakdown of the existing qualifying interests near Ruan village based on desktop research of the National Parks and Wildlife Service conservation documents.

Special Area of Conservation (SAC)	Special Protection Area (SPA)
Qualifying interests These sites are Special Area of Conservation (SAC) and form part of the Natura 2000 network. Selected for the following habitats and/or species listed on Annex I/II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes).	Qualifying interests These sites are Special Protection Area (SPA) and form part of the Natura 2000 network. Selected for the following habitats and/or species listed on Annex I/II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes).
<b>Dromore Woods and Loughs</b> <b>Site Code: 000032</b>	<b>Ballycullinan Lake</b> <b>Site Code: 000016</b>
[3150] Natural Eutrophic Lakes	Calcareous fens with Great fen-sedge ( <i>Cladium mariscus</i> ) and species of the Caricion davallianae [7210]
[6430] Hydrophilous Tall Herb Communities	
[8240] Limestone Pavement*	

Lesser Horseshoe Bat ( <i>Rhinolophus hipposideros</i> ) [1303]	
Otter ( <i>Lutra lutra</i> ) [1355]	
<b>East Burren Complex Site Code: 001926</b>	
Turloughs [3180]	
Calaminarian grasslands of the <i>Violetalia calaminariae</i> [6130]	
Alpine and Boreal heaths [4060]	
Alkaline fens [7230]	
Limestone pavements [8240]	
Lowland hay meadows ( <i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i> ) [6510]	
Semi-natural dry grasslands and scrubland facies on calcareous substrates ( <i>Festuco-Brometalia</i> ) (*important orchid sites) [6210]	
Otter ( <i>Lutra lutra</i> ) [1355]	
Lesser Horseshoe Bat ( <i>Rhinolophus hipposideros</i> ) [1303]	
Marsh Fritillary ( <i>Euphydryas aurinia</i> ) [1065]	
<b>Old Farm Buildings, Ballymacrogan SAC Site Code: 002245</b>	
Lesser Horseshoe Bat ( <i>Rhinolophus hipposideros</i> ) [1303]	

**Table 3:** Data records on invasive species submitted to the National Biodiversity Data Centre - data source National Biodiversity Data Centre (2023).

Invasive Species (Fauna & Flora Species)	Level of Invasiveness
American Mink ( <i>Mustela vison</i> )	High Impact
Fallow Deer ( <i>Dama dama</i> )	High Impact
Greater White-toothed Shrew ( <i>Crocidura russula</i> )	Medium Impact
Feral Goat ( <i>Capra hircus</i> )	Medium Impact
Bank Vole ( <i>Myodes glareolus</i> )	Medium Impact
Traveller's-joy ( <i>Clematis vitalba</i> )	Medium Impact

## Habitats

### Habitat Types

Ruan village and the surrounding area consists of the following habitat types: Buildings and artificial surfaces (BL3); Stone walls (BL1); Dry meadows and grassy verges (GS4); Wet grassland (GA2); Amenity grassland (Improved) (GS2); Improved agricultural grassland (GA1); Flower beds and borders (BC4); Scattered trees and parkland (WD5); Tree-line (WL2); Hedgerow (WL1); Immature woodland (WS2); Semi-natural woodland (WN); Rich Fen and Flush (PF1); Scrub (WS1). They were classified and coded using the Heritage Council's *A Guide to Habitats in Ireland* (Fossitt, 2000) (see table 4) and based on the habitat types habitat maps were created (see figure 1 and appendix 4).

**Table 4:** Existing habitats recorded in Ruan village and the surrounding area, classified and coded using the Heritage Council's 'A Guide to Habitats in Ireland' (Fossitt, 2000).

HABITAT CODE	HABITAT CATEGORY	HABITAT DESCRIPTION
BL1	Built Land	Stone Walls
BL3	Built Land	Buildings and artificial surfaces
BC4	Cultivated Land	Flower beds and borders
GA1	Improved Grassland	Improved agricultural grassland
GA2	Improved Grassland	Amenity grassland (Improved)
GS2	Semi-natural Grassland	Dry meadows and grassy verges
GS4	Semi-natural Grassland	Wet grassland
WD5	Highly Modified/Non Native Woodland	Scattered trees and parkland
WL2	Linear Woodland and Scrub	Tree-line
WS1	Linear Woodland and Scrub	Scrub
WL1	Linear Woodland and Scrub	Hedgerow
WN	Semi-natural Woodland	Semi-natural Woodland
WS2	Scrub/transitional woodland	Immature woodland
PF1	Fens and Flushes	Rich Fen and Flush

## Thematic Habitat Map



Figure 1: Overall thematic map of Ruan village and surrounding area, classified and coded using the Guide to Habitats in Ireland (Fossitt, 2000), Ruan Co. Clare.

This map has also been supplied as a separate large format PDF file: Ruan-Habitat-Map-Large.pdf



## Features of Interest

**Table 5:** Features of Interest – breakdown and description of the conservation features and attributes of the mature tree-line on the South Toormore/Ennis Road, Ruan.

Conservation Features	Score	Mature Tree-line (South Toormore/Ennis Road)
<b>Size</b>	1000m	The tree-line is approximately 1km of road-side mature deciduous trees, a mixture of native and non native trees.
<b>Diversity</b>	High	There is a rich diversity of mature deciduous tree species and hedgerow tree species including Sessile Oak, Lime, Horse Chestnut, Beech, Cherry and Sycamore.
<b>Naturalness</b>	High	High – The majority of the trees are fully grown and are over 100 years old. They are growing behind a natural dry stone wall and the combination of both together is a beautiful natural feature on this road.
<b>Rarity</b>	Yes	These days we are losing more and more of our roadside mature trees, they are being cut down due to the fear of trees falling and due to road and housing development.
<b>Fragility</b>	Yes	Due to the fact that they are road side mature trees, there is a constant threat that they may be removed due to their location, this threat increases their fragility. Beech species are shallow rooted and this tree-line include a number of Beech trees.
<b>Typicalness</b>	Yes	They are typical of wooded remnants of Ireland's landed estates and historic houses c.1700-1914 (Dromore House).
<b>Recorded history</b>	Yes	Trees can be seen on historic 6 & 25 inch OSI maps
<b>Intrinsic value</b>	High	The trees are valued by the local community for their beauty, historical and heritage connection. They're an important part of Ruan's wider landscape and farming community. They are high value for biodiversity – supporting lichens, fungi, ferns, plants, birds, invertebrates and mammals. They provide carbon storage and flood mitigation, shade, dead wood habitats and enrich the soil Note: Oak trees support 2,300 species – 326 of which are entirely dependent on oak for their survival.
<b>Identification/confirmation of important features</b>	Yes	Old stone walls, hedgerows, Mausoleum, Port House, Portlecka Castle, Forts and Mounds, Springs and Wells.
<b>Land of conservation or strategic importance in its vicinity</b>	Yes	In close proximity to Dromore Woods and Lough (SAC), East Burren Complex (SAC), Ballymacrogan (SAC) and Ballycullinan Lake (SPA).

**Table 6:** Features of Interest – breakdown and description of the conservation features and attributes of the semi natural grassland habitats located throughout Ruan village.

<b>Conservation Features</b>	<b>Score</b>	<b>Semi Natural Grassland Habitats</b>
<b>Size</b>	1 hectare	Overall size is hard to determine but approximately 1 hectare
<b>Diversity</b>	High	There is a rich diversity of flora and grass species in a number of different semi natural grassland verges and small privately owned fields around the village – in some sections the bee orchid and other indigenous species were identified.
<b>Naturalness</b>	High	The majority of the grasslands are old grasslands that have not been altered or reseeded, they have been maintained as amenity or lawn grassland regularly mowed but mowing has been reduced in recent times. These grasslands are a good example of what happens when you introduce a minimum management and lift approach, indigenous flora species increase, they attract the invertebrate species and in time biodiversity thrives.
<b>Rarity</b>	Yes	Semi Natural Grassland in Ireland is disappearing rapidly, it is a precious habitat. In the time between the Irish Semi-natural Grassland Survey (2007-2012) and the Grassland Monitoring Survey (2015-2017), approximately six years, the loss of priority grasslands has accelerated with: 31% loss of Calcareous grassland; 7% loss of Molinia meadows; and 28% loss of Hay meadows Long (2021).
<b>Fragility</b>	Yes	They are sensitive to pesticide spraying, abandonment, encroachment and trampling. Lack of management or over management will prevent the indigenous flora and grasses to thrive.
<b>Typicalness</b>	Yes	of traditional semi natural grasslands and hay meadows
<b>Recorded history</b>	Yes	Part of the local agricultural heritage/hay meadows.
<b>Intrinsic value</b>	High	Biodiversity – they can be high value for biodiversity supporting many indigenous floral species, if they are managed differently and allowed to grow, flower and seed. The flowers will support the pollinator invertebrate species and long grass will also support small mammals and amphibians. People will enjoy the variety of native flora species and the presence of butterflies, bumblebees and hoverflies.
<b>Identification/confirmation of important features</b>	Yes	Confirmation that these grasslands have indigenous and rare flora species present in the seed bank. They will continue to thrive if grass cutting is reduced.

<b>Land of conservation or strategic importance in its vicinity</b>	Yes	In close proximity to Dromore Woods and Lough (SAC), East Burren Complex (SAC), Ballymacrogan (SAC) and Ballycullinan Lake (SPA).
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**Table 7:** Features of Interest in Ruan village - breakdown and description of the conservation features and attributes of the built heritage located throughout Ruan village.

<b>Conservation Features</b>	<b>Score</b>	<b>Built Heritage Historical buildings, dry stone walls, graveyard, churchyard, bridges and ancient monuments.</b>
<b>Size</b>		Hard to determine - they are spread out in the village and landscape of Ruan.
<b>Diversity</b>	High	The area has a rich historical and archaeological heritage e.g. Ruan Church (fifteenth-century); O'Loughlen Mausoleum; Ruan Ric Barracks site and Remembrance Plaque ; Dromore Castle (early sixteenth century); Ballyteige East Ring Fort; Port House (eighteenth century); Kelly Family Mausoleum; Ballyharahan Castle (sixteenth century); and Ballygriffey Castle. Old stonewalls, bridges and other stonework. The entire built heritage supports a high diversity of native biodiversity such as flora, Bryophytes (Mosses, Liverworts, and Hornworts), Ferns, Lichens, Fungi and Fauna (bats, birds and pollinator invertebrate).
<b>Naturalness</b>	High	The built heritage is natural features in Ruan village and the wider landscape. They display the materials used, craftsmanship and resourcefulness of our ancestors.
<b>Rarity</b>	Yes	Due to their historical and archaeological features.
<b>Fragility</b>	Yes	The built heritage is fragile due to its age, possibility of being damaged through neglect, development, farming practices or removed. Certain built heritage should be restored by specialist contractors e.g. Stone Masons and Ecologists.
<b>Typicalness</b>	Yes	Some features are typical of ancient farming from the Early Christian Period (500-1200 AD) and eighteenth and nineteenth centuries enclosure farming (earth banks, stone walls and hedgerows).
<b>Recorded history</b>	Yes	Built heritage and features of interest can be seen on historic 6 & 25 inch OSI maps
<b>Intrinsic value</b>	High	The built heritage is valued by the local community for its beauty, historical and heritage connection. Biodiversity – they are high value for biodiversity supporting lichens, fungi, ferns, plants, birds, invertebrates and

		mammals. Bats depend on old buildings like churches for roosting, nursery or maternity roost and hibernation roosts (hibernacula). Barn Owls depend on old farm buildings/barns in the landscape to nest and shelter, they may also use old churches, castles, derelict cottages, chapels, chimneys, bridges and walls.
<b>Identification/confirmation of important features</b>	Yes	Mausoleums, Port House, Portlecka Castle, Forts and Mounds, Springs and Wells, old stone walls, bridges, old graveyard and churchyard.
<b>Land of conservation or strategic importance in its vicinity</b>	Yes	In close proximity to Dromore Woods and Lough (SAC), East Burren Complex (SAC) Ballymacrogan (SAC) and Ballycullinan Lake (SPA).

### **Biodiversity Actions, Objectives and Targets**

Six overarching actions, objectives and targets were developed for the plan in consultation with Ruan Tidy Village (see table 8). They are based on the data gathered during monitoring, mapping, workshops and the desktop research. A number of the targets involve the different stakeholders in the village e.g. school, GAA, CE scheme participants, Church, Local Businesses and Land Owners. There is a 1-5 year timeframe for the implementation of these targets.

Overall the action plan's aim is to conserve and enhance the rich biodiversity of the area for both current and future generations; Raise awareness of the variety and importance of the local biodiversity; Encourage local ownership and stewardship of the local biodiversity; and encourage practical ways for the local community to raise awareness, support, increase, protect and restore the existing biodiversity.

### **Seeking Permission**

Actions shouldn't be undertaken without prior agreement from land owners and it may be necessary to seek approval from Governmental bodies such as:

National Monuments Conservation Unit

National Parks and Wildlife Service (NPWS)

Office of Public Works (OPW) and Clare County Council

## **Follow Best Practice – place nature at the heart of all decision making**

- Know what already exists – by identifying, recording, assessing and mapping the existing biodiversity.
- Prioritise the conservation of the existing biodiversity and heritage features of the area.
- When restoring or developing new habitats prioritise using indigenous native species – locally saved wild plant seed, native provenance trees and shrubs.
- Avoid purchasing pollinator friendly plants from conventional garden centres – research has shown that neonicotinoids are routinely used on the production of many of these plants and they are systemic throughout the plant and ingested by bees through the nectar and pollen.
- Seek the advice of a suitable ecologist before altering habitats and landscapes, regardless of their size.
- Eliminate the use of Plant Protective Products (herbicides, insecticides and fungicides), reduce unnecessary weeding or use a tool like a hoe to remove specific weeds.
- Identify and record the existing Invasive Alien Species present in the area and develop a IAS Protocol (developed by a suitably trained ecologist).
- Embrace the wild nature of your area and remember less is more – less mowing, less/zero pesticides and less interference means more biodiversity.
- Do your research first and consult a specialist/ecologist – do not rush actions, ensure the action is the right choice for nature, e.g. are you altering an existing habitat to introduce a new one? Is the action introducing non native species into a habitat? E.g. introducing imported wild flower seed into an existing grassland habitat before assessing grassland type and identifying grassland's existing indigenous wild flowers.

## Objectives Descriptions

**Table 8:** A detailed description of the Community Biodiversity Action Plan’s objectives.

OBJECTIVES
<p><b>Objective 1: To conserve, protect and enhance the existing natural and built environment of the area</b></p> <p>Protecting what already exists is the most important first step for biodiversity – identifying existing features, habitats and native, non native and invasive species. The overall aim is to protect habitats and native species from further decline and damage.</p> <p>Allow habitats time to regenerate themselves and only, if necessary and dependent on the habitat type restore habitats by sowing or planting indigenous species e.g. native seeds (collected locally) or native provenance trees and shrubs and using recommended best practice. Habitat creation should only be considered if it’s deemed necessary by a suitably trained ecologist or professional advisor and using recommended best practice.</p>
<p><b>Objective 2: Enhance and increase the biodiversity in Ruan village with key actions and changes.</b></p> <p>This can be achieved by working with the existing natural features in the village including the built heritage and the existing green spaces. Using a minimum management approach to habitats such as grasslands and native hedgerows will benefit pollinators and wildlife the most.</p> <p>Making simple changes to how we manage areas can make all the difference to nature – reduce mowing; eliminate pesticides; encourage wild zones; assess an area before any actions are implemented; allow hedgerows and grassy verges to flower. Creating a biodiversity network within the village and its outskirts is the key to supporting nature.</p>
<p><b>Objective 3: Raise awareness and appreciation of the local biodiversity within the community.</b></p> <p>Raise awareness with members of the general public, gardeners, farmers, Ruan National School, Ruan Scouts, Ruan GAA, local businesses and the church.</p> <p>They can make a significant contribution to the local biodiversity by encouraging everyone to manage their areas for wildlife and to protect existing wild habitats and indigenous flora and fauna. Encourage the local community stakeholders to get involved in raising awareness and in biodiversity projects. It doesn't matter what the area size is every little bit can makes a difference.</p>
<p><b>Objective 4: Identifying and Managing Invasive Species</b></p> <p>It’s recommended that a thorough assessment of the invasive species in the village are recorded and mapped and an Invasive Alien Species (IAS) protocol developed. Submit any recording to the Biodiversity Data Centre. The following are categorised as high impact invasive species.</p> <p><b>Himalayan Balsam (<i>Impatiens glandulifera</i>):</b> Green and serrated, opposite leaves in whorls of 3-5, may also have reddish mid-rib. Brownish/green hollow stems which change to a deep red colour closer to the flowering head. Pink trumpet shaped flower with wide petals. The plant has very shallow roots, making it very easy to pull out of the ground. Ripe seeds explode when touched, which sets of a reaction amongst other seeds to also explode and can be spread up to 7 metres from the parent plant. Plant grows up to 3 metres (approx 10ft).  <a href="https://invasives.ie/app/uploads/2022/01/Himalayan-Balsam_PRINT.pdf">https://invasives.ie/app/uploads/2022/01/Himalayan-Balsam_PRINT.pdf</a></p> <p><b>Japanese Knotweed (<i>Fallopia japonica</i>):</b> Is an herbaceous perennial, with bamboo like stems that can grow up to 2 – 3m in height and has an extensive system of rhizomes. Its preferred habitats include urban areas, waste ground, roadside margins and river banks. Along rivers it can cause significant</p>

bank erosion, resulting in its easy spread downstream. It has the ability to grow through tarmac, floors and walls, and plants can regenerate themselves from tiny fragments of stem or rhizome. Dispersal is typically by deliberate or inadvertent human activity, and by material being washed downstream during flooding. Typically Japanese Knotweed does not produce seed but can hybridise with other species of Fallopia. <https://invasives.ie/app/uploads/2022/01/Japanese-Knotweedv1.1.pdf>

**Cherry Laurel (*Prunus laurocerasus*):** Evergreen shrub, up to 10m tall, leaves oblong-ovate 5-15cm, flower white, with purple-black fruit. Commonly used plant as shrubbery, escaped from cultivation and has since spread widely. Spreads by layering and suckering. Fruit may be eaten and dispersed by birds. Found in woodland, forest and other wooded land; Mires, bogs & fen; grasslands and constructed, industrial or other artificial habitats.

<https://www.invasivespeciesireland.com/wp-content/uploads/wp-post-to-pdf-enhanced-cache/1/rhododendron.pdf>

**Rhododendron (*Rhododendron ponticum*):** A large evergreen shrub with leathery leaves, attractive purple to pink flowers and solid stems forming into a trunk when mature. Relatively easy to identify, but can be confused with cherry laurel or horticultural varieties of rhododendron. However, horticultural varieties of rhododendron are relatively rarely found in the wild. Spreads by suckers and seed, which are small and carried long distances by wind.

#### **Objective 5: Use citizen science and community funded projects to record the local biodiversity and to measure the impact of the biodiversity actions and projects**

Citizen science is a beneficial tool to record species locally and the data collected can help to measure whether biodiversity actions are having a positive impact on the local biodiversity.

Some examples are the Irish Butterfly Monitoring Scheme; Bumblebee Monitoring Scheme; Dragonflies & Damselflies Survey; Farmers' Wildlife Calendar; Irish Hedgehog Survey; All Ireland Daubenton's Bat Waterways Survey; and Car-based Bat Monitoring;

The National Biodiversity Data Centre provides online training, resources and support to help the general public become a citizen science and they are mostly free.

Other organisations such as the Bat Conservation Ireland and the Vincent Trust recruit citizen scientist volunteers to carry out bat and other mammal surveys for them once a year.

Funding to train citizen scientists can be sourced from the Community Environment Action Fund and Clare County Council.

#### **Objective 6: To introduce a minimum management regime of the habitats in the village and on the outskirts.**

It is important to give habitats a chance to support wild life – cutting, spraying, burning, dredging and polluting are some the main issues that habitats are subjected to. This degradation of habitats has a detrimental effect on the wild flora and fauna species that co exist and depend on them.

Minimum management is vital for the regeneration of key habitats like hedgerows and grassland providing them with a chance to recover over time with minimum interference.



## Actions, Objectives and Target Tables

ACTION 1		TIME FRAME (2023-2027)				
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
<b>Target</b>	<b>Objective 1</b> To conserve, protect and enhance the existing natural and built environment of the area					
<b>1.1</b>	<b>Habitat Map</b> Develop a user friendly habitat map of the village highlighting key areas existing features and habitats.					
<b>1.2</b>	<b>Raising Awareness</b> Highlight the existing biodiversity with the CE scheme participants and other local stakeholders (GAA, national school, local businesses and land owners). Work with them to protect the habitats, flora and fauna and features of interest.					
<b>1.3</b>	<b>Built Heritage</b> Manage the grounds of St Mary's church for biodiversity by protecting the existing biodiversity e.g. the old stone walls, old graves and buildings, the mosses, lichens, ferns and plants and the semi natural grassland habitats.					
<b>1.4</b>	<b>Pesticides</b> Pesticides (insecticides, herbicides and fungicides). Aim to eliminate the use of pesticides and do not use in biodiversity sensitive areas. Continue to trial alternatives with the CE scheme participants e.g. use hoe tools combined with none toxic recipes.					
<b>1.5</b>	<b>Fauna surveys</b> Bat survey – carry out Bat survey near the heritage buildings, bridges, woodlands and waterways. Bird survey – Owls, Swallows, Swifts, Wetland and Wintering birds.					
<b>1.6</b>	<b>Mature Tree-line</b> Continue to protect the mature trees on the south Toormore/Ennis road. Species recorded during surveying include Lime, Oak, Beech and Horse Chestnut.					
<b>1.7</b>	<b>An Riasc</b> Carry out wetland bird surveys and flora surveys of the Flush/ Marsh habitat.					

	<p>Encourage the National School to learn about the <i>An Riasc</i> wetland habitat.</p> <p>Encourage the school to do nature walks with an expert/conservation ranger to learn more about the specific bird, flora species and its ecosystem.</p>					
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**Table 10:** A breakdown of Action 2 – the overall objective, targets and timeline.

ACTION 2		TIMELINE (2023-2027)				
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
<b>Target</b>	<b>Objective 2</b> Enhance and increase the biodiversity of Ruan village with key actions and changes.					
<b>2.1</b>	<b>Native Indigenous Flora</b> <b>A.</b> Manage all semi natural grassy verges/strips by cutting and lifting the cut grass twice a year – this supports the wild indigenous flower species to complete their lifecycle (one cut in early March and a late cut in Sep/Oct). <b>B.</b> Identify and record the indigenous species present in the grassland/verges e.g. is Yellow Rattle or other rare orchid species present? <b>C.</b> Only enhance the grassland with locally saved indigenous flora seed e.g. locally saved Yellow Rattle seeds grown into plugs and planted in early spring. <b>D.</b> Enhance existing flower beds with pollinator friendly flowers, herbs and bulbs, early, mid and late flowering species. Try to source from organic producers due to systemic poisoning of pollinator from pesticides/neonicotinoids residue in plants. Alternatively source as cutting/seeds and division from local gardens.					
<b>2.2</b>	<b>Green Spaces</b> Prioritise chemical free and pollinator friendly management practices throughout the village’s green spaces e.g. Moinin, Tuar Mór Community Garden, Tuar Mór Estate and Hazel Grove Estate.					
<b>2.3</b>	<b>CE Scheme Participants</b> Work with the team to protect the habitats and provide them with further biodiversity training.					
<b>2.4</b>	<b>St Mary’s Church Grounds Key Actions</b> Follow a minimum grassland management plan in key sections of the church yard while being respectful of the graves. Swallows - monitor the swallows nesting under the stairs at the front entrance of the church (2022). Survey the church and grounds for Bat species.					
<b>2.5</b>	<b>Hazel Grove &amp; Tuar Mór Estate Key Actions</b> <b>A.</b> Reduce grass cutting regimes in key areas in the					

	<p>estates without impacting recreational areas for children and in agreement with the residents association.</p> <p><b>B.</b> Encourage the planting of a heritage community orchard (apples &amp; pears) near the Tuar Mór community garden.</p> <p><b>C.</b> Increase the planting of perennial pollinator friendly plants in the estates and encourage the private gardens to adopt the same approach. Helping to create nature networks and wild life corridors throughout the village.</p> <p><b>D.</b> Encourage residents to reduce mowing and eliminate the use of pesticides.</p>					
<p><b>2.6</b></p>	<p><b>Training/Workshops</b> Suggested workshops for the community and CE scheme participants.</p> <ul style="list-style-type: none"> <li>• Managing Grassland for Biodiversity;</li> <li>• Identifying Invasive Species;</li> <li>• Wild flower Identification and Seed Saving;</li> <li>• Native Hedgerow Planting &amp; Maintenance;</li> <li>• Hedge-laying and Native Tree Identification.</li> </ul>					
<p><b>2.7</b></p>	<p><b>Moinin Park Key Actions</b> Replace any old bird nests with new ones – source through a local Man’s Shed or order online through Bird Watch Ireland. Continue to avoid using weed killer around the base of the mature trees – mulch with grass clippings or plant pollinator friendly bulbs &amp; flowers at the base instead e.g. crocuses, snowdrops, native blue bells, foxgloves and primroses (ensure they are native wild species). Manage sections of the grassland as a meadow and allow wild areas to develop under the wooded section of the park.</p> <ul style="list-style-type: none"> <li>• Erect Bat boxes in key locations</li> <li>• Erect Barn Owl boxes in key locations</li> </ul>					
<p><b>2.8</b></p>	<p><b>Hedgerows</b> Allow key hedgerows to grow and flower – hedgerows are important habitats for wildlife and they are a vital food source and nesting habitat for birds and pollinator species. Manage Internal field hedgerows for wildlife and key roadside hedgerows. Check out hedgerow resources and best practice. <a href="https://www.farmingfornature.ie/your-farm/resources/best-practice-guides/hedgerow-management">https://www.farmingfornature.ie/your-farm/resources/best-practice-guides/hedgerow-management</a></p>					

**Table 11:** A breakdown of Action 3 – the overall objective, targets and timeline.

ACTION 3		TIMELINE (2023-2027)				
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
<b>Target</b>	<b>Objective 3</b> Raise awareness and appreciation of the local biodiversity within the community.					
<b>3.1</b>	<b>National Parks &amp; Wildlife Service</b> <b>A.</b> Invite the local National Parks & Wildlife Service conservation ranger and Dromore Woods Head Guide to the school to give a talk to the children on the local habitats, flora and fauna. <b>B.</b> Heritage week August (2023 – 2027). Organise biodiversity talks and walks. <a href="https://www.heritageweek.ie/">https://www.heritageweek.ie/</a> <b>C.</b> Biodiversity Week May (2023 – 2027). Celebrate by inviting biodiversity experts from the Heritage in Schools Scheme to deliver workshops in the national school. <a href="https://biodiversityweek.ie/">https://biodiversityweek.ie/</a>					
<b>3.2</b>	<b>All-Ireland Pollinator Plan (2021-2025)</b> Continue to implement actions for pollinators from the All-Ireland Pollinator Plan (2021-2025) Choose suitable actions for key areas in the village that won't compromise the existing habitats and species, e.g. restoration of hedgerows, erecting suitable solitary bee boxes, developing or identifying suitable southeast facing embankments for ground nesting solitary bees.					
<b>3.3</b>	<b>Land Owners and Farmers</b> <b>A.</b> Encourage land owners and farmers to manage their farmland in a pollinator-friendly way. <b>B.</b> Encourage land owners to manage hedgerows for biodiversity. <b>C.</b> Install Swift ( <i>Apus apus</i> ) boxes in suitable locations in the village. <a href="https://www.swiftconservation.ie/">https://www.swiftconservation.ie/</a> Nest Box & Nest Site Advice <a href="https://www.swiftconservation.ie/nest-box-advice/">https://www.swiftconservation.ie/nest-box-advice/</a> The Swift is on the Red list of birds of conservation concern in Ireland because its population has declined by over 40% in the last 15 years. They breed in the same nest site every year and this is their home. The breeding birds arrive in late April to early May and they start to leave from mid-August but some birds are still here in early September.					

	<p>The months they spend here are extremely important to the future of the species because they are coming here to breed and so ‘here’ should be considered their home. Swifts are faithful to their nest sites. Once they have found a place to nest, they will return to it every year for the rest of their lives. Nest box projects, especially built-in nest boxes, can provide safe long-term homes for new breeding pairs of swifts.</p>					
<p><b>3.4</b></p>	<p><b>Local Community Stakeholders</b>  Encourage local community stakeholders to adopt the pollinator plan. To view suitable actions/resources go to <a href="https://pollinators.ie/resources/">https://pollinators.ie/resources/</a>  <b>A.</b> Encourage the local GAA to use the GAA Green Club Toolkit <a href="https://pollinators.ie/wp-content/uploads/2022/12/Sports-Clubs-Pollinator-Guidelines-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Sports-Clubs-Pollinator-Guidelines-2022-WEB.pdf</a>  Enhance sections of the GAA grounds for biodiversity and manage the grounds in a pollinator-friendly way by prioritising chemical free and pollinator friendly management practices.  <b>B.</b> Encourage the national school to participate in the Junior Biodiversity Action Plan focusing on raising awareness within the school and with parents. Work with a Heritage in Schools specialist to implement key actions in the school grounds.  <b>C.</b> Encourage St Mary’s Church to implement actions from the All-Ireland Pollinator Plan (2021-2025). <a href="https://pollinators.ie/resources/">https://pollinators.ie/resources/</a></p>					
<p><b>3.5</b></p>	<p><b>Build Local Capacity &amp; Useful Resources</b>  Aim to increase local interest in the action plan and utilise local skills to help with practical actions e.g. local Men’s Sheds.  <a href="https://menssheds.ie/sheds/ennis-mens-shed/">https://menssheds.ie/sheds/ennis-mens-shed/</a>  <a href="https://menssheds.ie/sheds/ennis-west-mens-shed/">https://menssheds.ie/sheds/ennis-west-mens-shed/</a>  Build up practical resources, expertise contacts and equipment to help manage and record biodiversity e.g. Bat Detectors; Species Identification keys; Seeds.</p>					

**Table 12:** A breakdown of Action 4 – the overall objective, targets and timeline.

ACTION 4		TIMELINE (2023-2027)				
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
<b>Target</b>	<b>Objective 4</b> Identifying and Managing Invasive Species and Ash Dieback Disease.					
<b>4.1</b>	<b>Invasive Species Assessment</b> Carry out a thorough assessment of the invasive species in the village - record and map their location. Identify and record the following invasive species Japanese Knotweed ( <i>Fallopia japonica</i> ) Cherry Laurel ( <i>Prunus laurocerasus</i> ) Rhododendron ( <i>Rhododendron ponticum</i> ) Himalayan Balsam ( <i>Impatiens glandulifera</i> )					
<b>4.2</b>	<b>Invasive Alien Species Protocol</b> Develop an Invasive Alien Species (IAS) protocol and a five year management plan.					
<b>4.3</b>	<b>Clare Biodiversity Officer</b> Engage with Clare County Council’s Biodiversity Officer regarding monitoring and recording any local invasive species. Engage with the local hedge cutting contractors and check if they are trained on invasive species to prevent their spread.					
<b>4.4</b>	<b>Invasive Species Specialist</b> Organise an Invasive species specialist or check if Clare County Council’s Biodiversity officer will give a talk to the community on invasive species.					
<b>4.5</b>	<b>Plant Aware</b> Encourage local gardeners to be <i>Plant Aware</i> and to always prioritise growing native species like the Common Bluebell ( <i>Hyacinthoides non-scripta</i> ) instead of the Spanish Bluebell ( <i>Hyacinthoides hispanica</i> ) – the Spanish bluebell is more vigorous than our native bluebell and out competes for resources and hybridizes with the native species. <a href="https://invasives.ie/biosecurity/be-plant-wise/">https://invasives.ie/biosecurity/be-plant-wise/</a>					
<b>4.6</b>	<b>Ash Die-back Disease</b> Ash dieback is a highly destructive fungal disease affecting Ash trees. It causes leaf loss and canopy					



	<p>decline and in some cases causes the trees to die. The disease was first officially recorded in Ireland in 2012.</p> <p><b>Specific actions</b> Get the Ash trees at the GAA sports ground boundary assessed by an Ash Dieback expert to confirm that they have the disease before taking any further action.</p> <p><b>General Actions</b> Learn to spot symptoms of Ash Dieback disease and survey Ash trees on a regular basis. Consult a qualified, insured tree professional to get some specific advice on the health and risks associated with your Ash trees. Develop a management plan and do not assume all trees need to be felled, some can be left as standing dead wood if there is a low safely risk associated with them. If trees need to be felled replace them with another suitable native species and leave felled branches as deadwood habitat.</p>					
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**Table 13:** A breakdown of Action 5 – the overall objective, targets and timeline.

ACTION 5		TIMELINE (2023-2027)				
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
<b>Target</b>	<b>Objective 5</b> Use citizen science and community funded projects to record the local biodiversity and to measure the impact of the biodiversity actions.					
<b>5.1.</b>	<b>National Biodiversity Data Centre</b> <b>A.</b> Check if the NBDC still delivers free face to face fauna and flora identification workshops for potential local citizen scientist, in late spring and summertime. <b>B.</b> Visit the NBDC Biodiversity Learning Platform to view a selection of free online courses. <a href="https://learn.biodiversityireland.ie/">https://learn.biodiversityireland.ie/</a>					
<b>5.2</b>	<b>Burrenbeo</b> Apply to become a community Heritage Keeper – Burrenbeo will work with communities and local schools to enable them to work together to explore the built, natural, and cultural heritage of their local place and plan actions to enhance their place - then apply to them for funding to complete the actions. <a href="https://burrenbeo.com/hk/">https://burrenbeo.com/hk/</a>					
<b>5.3</b>	<b>Bat Rehabilitation Ireland</b> Invite BRT to give a talk and a bat walk to record species locally and to learn about protecting and caring for the local bat population. <a href="https://www.facebook.com/Bat-Rehabilitation-Ireland-112126603812172/">https://www.facebook.com/Bat-Rehabilitation-Ireland-112126603812172/</a> <b>A.</b> Evaluate if the village lighting is having a negative impact on the local bat population. This can impact their roost, foraging, drinking and commuting behaviour. <b>B.</b> When carrying out any works on old buildings consult a bat ecologist and read <i>Bats in Heritage Structures</i> to ensure any bat roosts or maternity site are not being disturbed or damaged. <a href="https://www.batconservationireland.org/wp-content/uploads/2022/11/BatsHeritageStructures_Final.pdf">https://www.batconservationireland.org/wp-content/uploads/2022/11/BatsHeritageStructures_Final.pdf</a>					
<b>5.4</b>	<b>The Barn Owl Project</b> Get involved in The Barn Owl Project and encourage					

	<p>local land owners and the community to report any sightings of Barn Owls in the area. Barn Owl nesting boxes can be installed in accessible old sheds/barns or large trees. <a href="https://www.thebarnowlproject.ie/">https://www.thebarnowlproject.ie/</a></p> <p>The best location for a barn owl box is a large building that the Owl can enter at 3 metres or more above the ground. The advantages of an owl box in a building are:</p> <ul style="list-style-type: none"> <li>• Is easier to erect</li> <li>• Costs less, or is quicker and cheaper to make</li> <li>• Lasts much longer</li> <li>• Provides them with extra shelter</li> </ul> <p>If you have a building with no high-up entrance hole, can a small owl-hole be made? Mounting an owl box on the outside of a building is not recommended unless there is no alternative. Buildings that are in human or agricultural use can be very suitable; Barn Owls can get used to almost any kind of activity as long as they can stay out of sight.</p> <p>Tree nest boxes are an option if no building is available.</p> <p>Invite The Barn Owl Project team to come to the local school and community to give a talk on barn owls.</p>					
5.5	<p><b>Local Authority Waters Programme (LAWPRO)</b> Get involved in the Local Authority Waters Programme (LAWPRO) by getting in contact with the Western region Catchment Team. Request information on the Community Water Development Fund 2023. The Fund is open to all community and voluntary groups and grants range from €500 to €25,000. <a href="https://lawaters.ie/about-lawpro/">https://lawaters.ie/about-lawpro/</a></p>					
5.6	<p><b>Other Funding</b> Clare County Council - Community Environment Action Fund and Community Foundations of Ireland (Autumn 2023) – a grant to implement this plan’s actions.</p>					

**Table 14:** A breakdown of Action 6 – the overall objective, targets and timeline.

ACTIONS		TIMELINE (2023-2027)				
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
<b>Target</b>	<b>Objective 6</b> To introduce a minimum management regime of the habitats in the village and on the outskirts.					
<b>6.1</b>	<b>Moinin Amenity Park</b> Maintain and manage the park to provide suitable foraging habitat for pollinators, birds, bats, small mammal species and other invertebrate species.					
<b>6.2</b>	<b>Grassland Management</b> Continue to reduce the mowing regime around the village and assess the grassland habitats for native flora and rare species. The Bee Orchid ( <i>Ophrys apifera</i> ) was recorded in a number of grassy verges in July 2022 - they appeared after the mowing regime was reduced.					
<b>6.3</b>	<b>Meadows</b> Ask permission from the landowners of the three small grassland/meadows in the village about introducing a minimum management regime. Meadow 1: Adjacent to the old post office Meadow 2: Across from the XL shop Meadow 3: Leaving the village on the right hand side, at the start of the Corrofin road Over time this will encourage these valuable habitats to become species rich meadows. This will increase the ecological connectivity between all of the nature-rich areas in the village.					
<b>6.4</b>	<b>Hedgerows</b> Reduce the cutting of key hedgerows on the entrance roads into Ruan – choose roads that have no blind spots or dangerous bends. Presently the majority are over managed and in poor condition. Consider a 3-5 year rotation to allow flowers and berries to grow in alternate sections all the time. Hedgerow cutting is usually undertaken with a flail, but a circular saw is a less damaging alternative which results in a cleaner cut and encourages better re-growth. For further information and advice go to					

	<a href="https://www.farmingfornature.ie/your-farm/resources/best-practice-guides/hedgerow-management/">https://www.farmingfornature.ie/your-farm/resources/best-practice-guides/hedgerow-management/</a>					
<b>6.5</b>	<p><b>Dry Stone Walls</b></p> <p>Stone walls support cavity-dwelling animals such as insects, snails and small mammals and a diverse range of species e.g. lichens, ferns, mosses, plants and ivy and avoid the use of pesticides. Try not to remove these species from the walls.</p> <p>Consult a stone mason, dry stone wall expert about repair works. Avoid repair works in late autumn/winter when species are hibernating.</p>					

### Additional Information to Support the Implementation of the Actions

This table outlines some key information to help support the implementations of the objectives and actions. It outlines the linkages with other important initiatives; if it is a once off action or a continuous action; if it needs to be carried out at a certain time of year or any time of the year; and who should deliver the action e.g., experts, community volunteers or CE scheme participants.

**Table 15:** Outlines the key information to help support the implementations of the objectives and actions of the plan.

Action no.	Specific Time/ Season	Volunteers / CE Scheme	Expertise Required	Continuous	Once Off	Links with the All Ireland Pollinator Plan 2021-2025	Links with Citizen Science
1.1	√		√		√	√	√
1.2		√		√		√	√
1.3	√	√		√		√	√
1.4		√		√		√	
1.5	√		√	√			√
1.6			√		√		√
1.7	√		√	√		√	√
2.1	√	√		√		√	√
2.2	√	√		√		√	√
2.3		√		√		√	√
2.4		√		√		√	√
2.5	√	√	√	√		√	√

2.6	√	√	√		√	√	√
3.1	√		√	√		√	√
3.2	√	√	√	√		√	√
3.3	√		√	√		√	√
3.4	√	√	√	√		√	√
4.1	√		√		√		√
4.2			√		√		√
4.3	√	√			√		
4.4			√		√		√
4.5		√		√		√	√
4.6	√	√	√	√			√
5.1	√		√	√	√	√	√
5.2	√		√		√	√	√
5.3	√		√	√			√
5.4	√	√	√	√			√
5.5	√	√			√	√	√
5.6	√	√		√		√	√
6.1	√	√		√		√	√
6.2	√	√	√	√		√	√
6.3	√	√		√		√	√
6.4	√	√		√		√	√
6.5	√	√	√	√		√	√

## Beneficial Actions for Pollinators

### Flowering Trees

Flowering trees are highly beneficial for pollinator species and provide food and shelter.

Increase the number of native flowering trees - they can be standalone trees or growing within an existing hedgerow. It is recommended to initially survey the existing tree species, their abundance, and location and identify suitable areas where trees can be planted. The beneficial native flowering trees species for pollinators are: Blackthorn (*Prunus spinosa*); Bird Cherry (*Prunus padus*); Crab Apple (*Malus sylvestris*); Elder (*Sambucus nigra*); Goat Willow (*Salix*

*caprea*); Guelder Rose (*Viburnum opulus*); Holly (*Ilex aquifolium*); Hawthorn (*Crataegus monogyna*); Rowan (*Sorbus aucuparia*); Whitebeam (*Sorbus hibernica*); Wild Cherry (*Prunus avium*); Spindle (*Euonymus europaeus*).

### **Mature Flowering Hedgerows**

Mature flowering hedgerows are considered one of the most beneficial habitats for pollinators. If necessary, it is recommended to only cut once every five years on a rotational system as this system ensures there are always abundant hedgerows in flower. Leave a 2m margin or understory untilled or fenced from grazing. The quality of the hedgerow for pollinators is based on the range of different native plant species within the hedgerow and margin, the higher the range of flowering plant species the more beneficial it is for pollinator species.

### **Field Boundary Features**

Field boundary features include buffer strips, untilled strips, road margins, road frontage, drains, and overgrown and unmanaged hedgerows, and these habitats can naturally contain flowering plants if they are left uncut. It is important that these areas are uncut for the duration of the plants full lifecycle as it is vital that they are allowed to flower and fully develop their seed. Examples of some of the beneficial native plants that can naturally exist in grassland, field margins and grassy verges of a farm are: Bugle (*Ajuga reptans*); Common Bird's-foot-trefoil (*Lotus corniculatus*); Common Knapweed (*Centaurea nigra*); Dandelion (*Taraxacum vulgaria*); Devil's-Bit Scabious, (*Succisa pratensis*); Hogweed (*Heracleum sphondylium*); Meadow Vetchling (*Lathyrus pratensis*); Oxeye Daisy (*Leucanthemum vulgare*); Red Clover (*Trifolium pratense*); Red Dead-nettle (*Lamium purpureum*); Self-heal (*Prunella vulgaris*); Tufted Vetch (*Vicia cracca*); Vetches (*Vicia spp.*); White Clover (*Trifolium repens*); and Wild Teasel (*Dipsacus fullonum*).

Cut grassy field boundary features and grassy areas on a yearly basis to prevent the grass from becoming rank and lift the cut grass to reduce fertility – wildflowers prefer soil with low fertility.

### **Unmanaged Areas**

Unmanaged areas include areas around gates, field margins, lanes and roads. They can provide a diverse range of excellent benefits to pollinators but only if they are unmanaged to allow grasses and wildflowers to grow naturally. Allow beneficial plants to grow in uncultivated field margins and prioritize the regeneration of natural grassland plant species and grassy margins.



## **Grassland Habitats**

It is recommended to restore grassland habitats in different ways and to introduce a management regime, such as cutting on a yearly basis. Magnificent Meadows (2021) found that indigenous wildflowers are unable to survive under silage management and traditional methods are more suitable for maintaining plant diversity.

A yearly cut will prevent the grass from becoming rank and swamping wildflowers which can hinder their survival. Remove the cut grass to reduce fertility – wildflowers prefer soil with low fertility. A management regime will also prevent the grassland from becoming invaded with species, such as Bracken (*Pteridium aquilinum*); Bramble (*Rubus fruticosus*) and Docks (*Rumex obtusifolius*).

## **Wildflower Seed**

Most wildflower seed is imported from other countries and is not native. Never sow these seed in the wild, on natural or semi-natural habitats or to regenerate grassland habitats and meadows. A sustainable option is to save your own seed from the local indigenous wild native plants in hedgerow margins, field margins and grassland habitats. Only harvest a small amount per plant to ensure there is enough seed left over for the plant to regenerate naturally in the wild.

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## Appendices

### Survey and Monitoring Results

**Appendix 1:** Canopy and Shrub Layer species identified and recorded during the flora transect surveys in key locations around Ruan village (Ruan, Ennis, Co. Clare, 2022).

TREE SPECIES		
Common Name	Botanical Name	Native * Non Native** Invasive***
Hawthorn	<i>(Crataegus monogyna)</i>	*
Blackthorn	<i>(Prunus spinosa)</i>	*
Willow	<i>(Salix spp.)</i>	*
Sycamore	<i>(Acer pseudoplatanus)</i>	**
Cherry	<i>(Prunus avium)</i>	*
Maple	<i>(Acer campestre)</i>	**
Lime	<i>(Tilia x europaea)</i>	**
Beech	<i>(Fagus sylvatica)</i>	**
Whitebeam	<i>Sorbus spp.</i>	* Many imported non native specimens have been planted in towns and parks
Rowan	<i>(Sorbus aucuparia)</i>	*
Birch	<i>(Betula pendula)</i>	*
Sessile Oak	<i>(Quercus petraea)</i>	*
Ash	<i>(Fraxinus excelsior)</i>	*
Horse Chestnut	<i>(Aesculus hippocastanum)</i>	**
Alder	<i>(Alnus glutinosa)</i>	*
Hazel	<i>(Corylus avellana)</i>	*
SHRUB & CLIMBER SPECIES		
Common Name	Botanical Name	
Dog rose	<i>(Rosa canina)</i>	*
Honeysuckle	<i>(Lonicera periclymenum)</i>	*
Ivy	<i>(Hedera helix)</i>	*

Bramble	( <i>Rubus fruticosus</i> )	*
Elder	( <i>Sambucus nigra</i> )	*
Holly	( <i>Ilex aquifolium</i> )	*
Gorse	( <i>Ulex europaeus</i> )	*
FERN SPECIES		
Common Name	Botanical Name	*
Bracken	( <i>Pteridium aquilinum</i> )	*
Hart's-Tongue	( <i>Fern (Phyllitis scolopendrium)</i> )	*
Lady Fern	( <i>Athyrium filix-femina</i> )	*
Maidenhair spleenwort	( <i>Asplenium trichomanes</i> )	*
Male-fern	( <i>Dryopteris filix-mas</i> )	*
INVASIVE SPECIES		
Common Name	Botanical Name	
Snowberry	( <i>Symphoricarpos albus</i> )	***
Cotoneaster	( <i>Cotoneaster horizontalis</i> )	***
Butterfly-bush	( <i>Buddleja davidii</i> )	***

**Appendix 2:** The grassland and field layer flora species identified and recorded during the flora transect surveys. Habitats surveyed include semi natural grassy verges throughout Ruan villages. Toormore West rd, Toormore North rd, Toormore East rd, Toormore South rd and in the church grounds (Ruan, Ennis, Co. Clare, 2022).

GRASSLAND PLANT SPECIES	
Common Name	Botanical Name
Herb-Robert	( <i>Geranium robertianum</i> )
Creeping Buttercup	( <i>Ranunculus repens</i> )
Lesser Celandine	( <i>Ranunculus ficaria</i> )
Sticky Mouse Ear	( <i>Cerastium glomeratum</i> )
Bugle	( <i>Ajuga reptans</i> )
Daisy	( <i>Bellis perennis</i> )
Broadleaved Dock	( <i>Rumex obtusifolius</i> )
Blue Bell	( <i>Hyacinthoides non-scripta</i> )

Cleaver	( <i>Galium aparine</i> )
Dandelion	( <i>Taraxacum vulgaria</i> )
Ribwort Plantain	( <i>Plantago lanceolata</i> )
Mouse's Ear	( <i>Cerastium fontanum</i> )
Birds foot Trefoil	( <i>Lotus corniculatus</i> )
Smooth Hawk-bit	( <i>Leontodon hispidus</i> )
Cat's Ear	( <i>Hypochaeris radicata</i> )
Yarrow	( <i>Achillea millefolium</i> )
Sow thistle	( <i>Sonchus oleraceus</i> )
White Clover	( <i>Trifolium repens</i> )
Red Clover	( <i>Trifolium pratense</i> )
Pignut	( <i>Conopodium majus</i> )
Oxeye Daisy	( <i>Leucanthemum vulgare</i> )
Bee Orchid	( <i>Ophrys apifera</i> )
Self- heal	( <i>Prunella vulgaris</i> )
Dog Violet	( <i>Viola riviniana</i> )
Lesser Stitchwort	( <i>Stellaria graminea</i> )
Greater Stitchwort	( <i>Stellaria holostea</i> )
Dead Nettle	( <i>Lamium sp.</i> )
Common Knapweed	( <i>Centaurea nigra</i> )
Field Forget Me Not	( <i>Myosotis arvensis</i> )
Meadowsweet	( <i>Filipendula ulmaria</i> )
Germander Speedwell	( <i>Veronica chamaedrys</i> )
Meadow Buttercup	( <i>Ranunculus acris</i> )
Eyebright	( <i>Euphrasia officinalis agg.</i> )
Cuckoo Flower	( <i>Cardamine pratensis</i> )
Greater Plantain	( <i>Plantago major</i> )
Enchanter's Nightshade	( <i>Circaea lutetiana</i> )
Common Vetch	( <i>Vicia sativa</i> )
Lords & Ladies	( <i>Arum maculatum</i> )
Creeping Thistle	( <i>Cirsium arvense</i> )
Primrose	( <i>Primula vulgaris</i> )

Thyme Leaved Speedwell	<i>(Veronica serpyllifolia)</i>
Perforate St John's-Wort	<i>(Hypericum perforatum)</i>
Tufted Vetch	<i>(Vicia cracca)</i>
Foxglove	<i>(Digitalis purpurea)</i>
Devils Bit Scabious	<i>(Succisa pratensis)</i>
Cow Parsley	<i>(Anthriscus sylvestris)</i>
Wild Angelica	<i>(Angelica sylvestris)</i>
Wild Strawberry	<i>(Fragaria vesca)</i>
Common Hogweed	<i>(Heracleum sphondylium)</i>
Wood Sorrel	<i>(Oxalis acetosella)</i>
Common Nettle	<i>(Urtica dioica)</i>
Upright hedge-parsley	<i>(Torilis japonica)</i>
Daffodil	<i>(Narcissus sp.)</i>
<b>GRASSES</b>	
<b>Common Name</b>	<b>Botanical Name</b>
Yorkshire fog	<i>(Holcus lanatus)</i>
Sweet Vernal Grass	<i>(Anthoxanthum odoratum)</i>
False Oat-Grass	<i>(Arrhenatherum elatius)</i>
Cocks Foot	<i>(Dactylus glomerata)</i>
Perennial Rye-grass	<i>(Lolium perenne)</i>
Yellow Oat Grass	<i>(Trisetum flavescens)</i>
Smooth Meadow Grass	<i>(Poa pratensis)</i>

**Appendix 3:** The pollinator species identified and recorded during transects and Flower to Insect Timed Count surveys (FIT). Habitats surveyed include the beds at the entrance to Tuar Mór Estate, Tuar Mór Community Garden, Toormore West rd, Toormore North rd and the church grounds (Ruan, Ennis, Co. Clare, 2022).

<b>POLLINATOR SPECIES</b>	
<b>Common Name</b>	<b>Latin Name</b>
Bumblebee Species	<i>(Hymenoptera)</i>
Buff tailed Bumblebee	<i>(Bombus terrestris)</i>

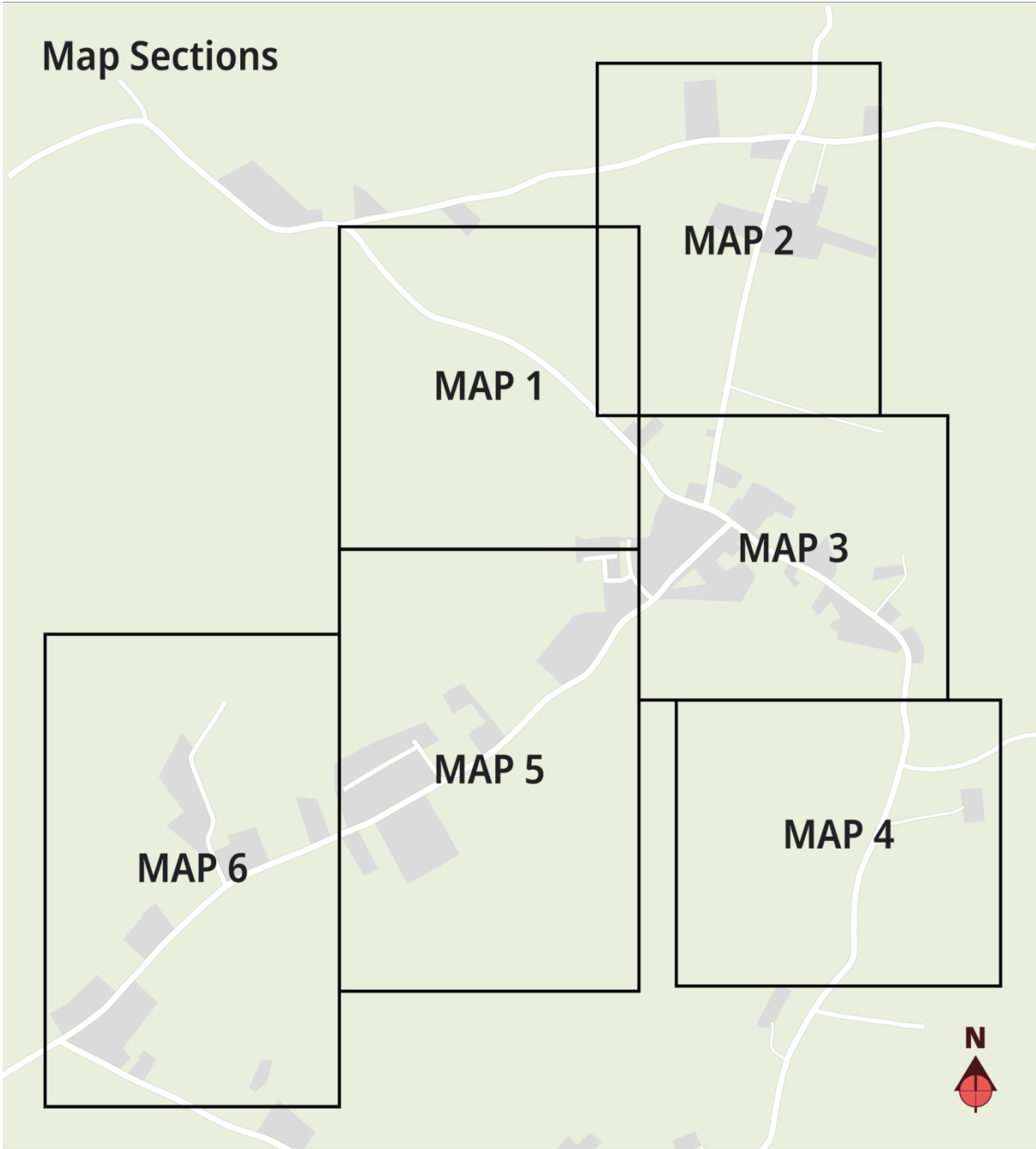
White tailed Bumblebee	<i>(Bombus lucorum agg.)</i>
Garden Bumblebee	<i>(Bombus hortorum)</i>
Early Bumblebee	<i>(Bombus pratorum)</i>
Red tailed Bumblebee	<i>(Bombus lapidarius)</i>
Carder Bumblebee	<i>(Bombus pascuorum)</i>
Solitary bee spp.	<i>(Hymenoptera)</i>
Honey Bee	<i>(Apis mellifera)</i>
Wasp spp.	<i>(Vespula vulgaris)</i>
<b>Butterfly Species</b>	<b><i>(Lepidoptera)</i></b>
Small tortoiseshell	<i>(Aglais urticae)</i>
Red Admiral	<i>(Vanessa atalanta)</i>
Common blue	<i>(Polyommatus icarus)</i>
Large white	<i>(Pieris brassicae)</i>
Meadow brown	<i>(Maniola jurtina)</i>
Speckled Wood	<i>(Pararge aegeria)</i>
Peacock	<i>(Aglais io)</i>
Painted lady	<i>(Vanessa cardui)</i>
<b>Hoverfly Species</b>	<b><i>(Syrphidae)</i></b>
Marmalade hoverfly	<i>(Episyrphus balteatus)</i>
Drone fly	<i>(Eristalis tenax)</i>

## Appendix 4: Thematic Habitat Maps



This map has also been supplied as a separate large format PDF file: Ruan-Habitat-Map-Large.pdf





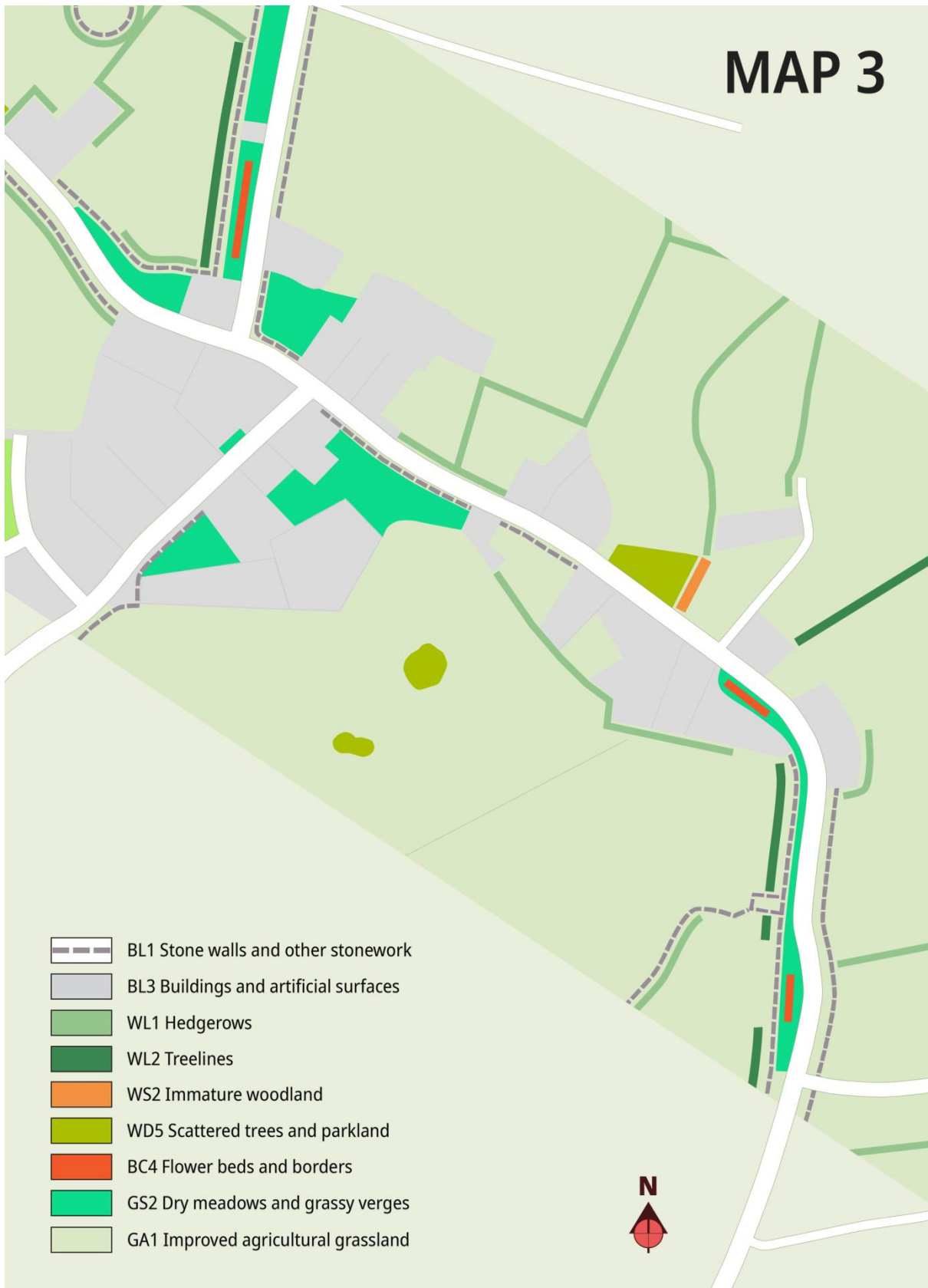
# MAP 1










# MAP 2



# MAP 3



# MAP 4

-  BL1 Stone walls and other stonework
-  BL3 Buildings and artificial surfaces
-  WL1 Hedgerows
-  WL2 Treelines
-  BC4 Flower beds and borders
-  GS2 Dry meadows and grassy verges
-  GA1 Improved agricultural grassland



# MAP 5





# MAP 6

- BL1 Stone walls and other stonework
- BL3 Buildings and artificial surfaces
- WN Semi-natural Woodland
- WL1 Hedgerows
- WL2 Treelines
- WS1 Scrub
- BC4 Flower beds and borders
- GS4 Wet grassland
- GA1 Improved agricultural grassland
- PF1 Rich fen and flush



## **Appendix 5: Legally Protecting Ireland's Biodiversity**

**Irish Wildlife Act (Irish Statute Book, 1976)** is the principal national legislation providing for the protection of wildlife and the control of certain activities that may adversely affect wildlife.

**Special Areas of Conservation (SAC)** are prime wildlife conservation areas in the country and considered to be important on a European level. They are selected and designated under the EU Habitats Directive; the Directive lists certain habitats and species that must be protected within SACs.

Irish habitats include raised bogs, blanket bogs, turloughs, sand dunes, machair (flat sandy plains on the north and west coasts), heaths, lakes, rivers, woodlands, estuaries and sea inlets. The 25 Irish species which must be afforded protection include Salmon, Otter, Freshwater Pearl Mussel, Bottlenose Dolphin and Killarney Fern.

**Special Protection Areas (SPA)** Ireland is required under the terms of the EU Birds Directive (2009/147/EC) to designate Special Protection Areas (SPAs) for the protection of:

- Listed rare and vulnerable species
- Regularly occurring migratory species
- Wetlands especially those of international importance

Ireland's SPA Network now encompasses over 597,000 hectares of marine and terrestrial habitats. Significant proportions of the bio-geographic populations of waterbirds overwinter here (e.g. Light-bellied Brent Goose, Black-tailed Godwit, Whooper Swan, Greenland White-fronted Goose and Ringed Plover).

**Natural Heritage Areas (NHA)** This is an area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection. To date, 75 raised bogs have been given legal protection, covering some 23,000 hectares; 73 blanket bogs, covering 37,000ha and 630 proposed NHAs (pNHAs) were published on a non-statutory basis in 1995, but have not since been statutorily proposed or designated, such as a roosting site for rare bats.

**Nature Reserves** is an area of importance to wildlife and is protected under Ministerial order. Most are owned by the State but some are owned by organisations or private landowners.



**National Parks of Ireland** In 1969, the International Union for the Conservation of Nature (IUCN) recommended that all governments agree to reserve the term 'National Park' to areas sharing the following characteristics and Ireland has six National Parks including Glenveagh National Park; Connemara National Park; Wild Nephin National Park; Wicklow National Park; Burren National Park; and Killarney National Park.

## **Appendix 6: Glossary of Terms**

**Citizen Science:** Organised research in which members of the public—who may or may not be trained in science - gather or analyse data. Citizen science monitoring is used in a variety of ways and for different purposes. For the action plans the focus is on the use of observations made by citizens in biodiversity monitoring programmes that cover a broad range of information on species, habitats and ecosystems.

**Biodiversity:** An accepted shortening of the phrase 'biological diversity' commonly used to describe species richness. The biological variation found in a defined spatial area: can refer to variation at the level of genome, phenotype, species, community or ecosystem.

**Climate Change:** Long-term changes in the climatic variables experienced in a defined spatial area (which could vary from local weather to global climate). Recent usage refers to recent and future climate change, which is expected to impose stresses on human standard of living and is considered to be the greatest environmental challenge facing the world.

**Ecology:** The scientific study of the distribution, abundance and dynamics of organisms, their interactions with other organisms and with their physical environment.

**Ecosystem:** All organisms and the abiotic environment found in a defined spatial area, generally assumed to be the collective description of a community and its physical environment.

**Ecosystem Services:** Ecosystems have measurable emergent properties, such as productivity, diversity, stability. A subset of these properties can be considered 'useful' in some way to human standard of living called 'ecosystem services'. The phrase is commonly used to help quantify the economic benefits of conserving biodiversity.

**Invasive Species:** An invasive species is an organism that is not indigenous, or native, to a particular area. Invasive species can cause great economic and environmental harm to the new

area. To be invasive, a species must adapt to the new area easily, reproduce quickly, harm the native plants and animals of the region or property and the economy.

**Pollinator:**, butterflies, moths, flies, beetles, wasps and bees are pollinators (Birds and bats are pollinators in other countries but not in Ireland). They visit flowers to drink nectar, collect pollen or feed off it and transport pollen grains from the male part of the flower (stamen) to the female part of the same or another flower (stigma). The movement of pollen must occur for the plant to become fertilised and produce fruits, seeds, and young plants.

### Appendix 7: Resources and Project Links & Useful Contacts

Resources and Project Links
Toolkit <a href="https://pollinators.ie/wp-content/uploads/2022/12/Sports-Clubs-Pollinator-Guidelines-2022-WEB.pdf">https://pollinators.ie/wp-content/uploads/2022/12/Sports-Clubs-Pollinator-Guidelines-2022-WEB.pdf</a>
<a href="https://pollinators.ie/resources/">https://pollinators.ie/resources/</a>
<a href="https://menssheds.ie/sheds/ennis-mens-shed/">https://menssheds.ie/sheds/ennis-mens-shed/</a> <a href="https://menssheds.ie/sheds/ennis-west-mens-shed/">https://menssheds.ie/sheds/ennis-west-mens-shed/</a>
<a href="https://learn.biodiversityireland.ie/">https://learn.biodiversityireland.ie/</a>
<a href="https://burrenbeo.com/hk/">https://burrenbeo.com/hk/</a>
<a href="https://www.facebook.com/Bat-Rehabilitation-Ireland-112126603812172/">https://www.facebook.com/Bat-Rehabilitation-Ireland-112126603812172/</a>
<a href="https://lawaters.ie/about-lawpro/">https://lawaters.ie/about-lawpro/</a>
<a href="https://www.thebarnowlproject.ie/">https://www.thebarnowlproject.ie/</a>
<a href="https://www.farmingfornature.ie/your-farm/resources/best-practice-guides/hedgerow-management/">https://www.farmingfornature.ie/your-farm/resources/best-practice-guides/hedgerow-management/</a>
<a href="https://biodiversityireland.ie/projects/citizen-science/">https://biodiversityireland.ie/projects/citizen-science/</a>
<a href="https://pollinators.ie/top-ten-ways-to-help-pollinators/">https://pollinators.ie/top-ten-ways-to-help-pollinators/</a>

Name of Organisation/Theme	Website
<b>Flora</b>	
Plant life	<a href="https://www.plantlife.org.uk/uk">https://www.plantlife.org.uk/uk</a>
Magnificent Meadows	<a href="http://magnificentmeadows.org.uk/">http://magnificentmeadows.org.uk/</a>

Don't Mow Let It Grow	<a href="https://dontmowletitgrow.com/">https://dontmowletitgrow.com/</a>
Wild flowers of Ireland (Zoe Devlin)	<a href="http://www.wildflowersofireland.net/index.php">http://www.wildflowersofireland.net/index.php</a>
Botanical Society of Britain and Ireland	<a href="https://bsbi.org/">https://bsbi.org/</a>
Tree Council of Ireland	<a href="https://www.treecouncil.ie/">https://www.treecouncil.ie/</a>
Hedgerows	<a href="https://www.teagasc.ie/environment/biodiversity--countryside/farmland-habitats/hedgerows/">https://www.teagasc.ie/environment/biodiversity--countryside/farmland-habitats/hedgerows/</a>
National Parks and Wild life Services	<a href="https://www.npws.ie/research-projects/grasslands">https://www.npws.ie/research-projects/grasslands</a>
Invasive Species	<a href="https://invasives.ie/">https://invasives.ie/</a>
<b>Fauna</b>	
Bees, Wasps & Ants Recording Society	<a href="https://www.bwars.com/">https://www.bwars.com/</a>
Bug life	<a href="https://www.buglife.org.uk/">https://www.buglife.org.uk/</a>
Butterflies	<a href="https://www.ukbutterflies.co.uk/">https://www.ukbutterflies.co.uk/</a>
All-Ireland Pollinator Plan	<a href="https://pollinators.ie/">https://pollinators.ie/</a>
The Barn Owl Project	<a href="https://www.thebarnowlproject.ie/">https://www.thebarnowlproject.ie/</a>
Swift Conservation	<a href="https://www.swiftconservation.ie/">https://www.swiftconservation.ie/</a>
Bat-Rehabilitation-Ireland	<a href="https://www.facebook.com/Bat-Rehabilitation-Ireland-112126603812172/">https://www.facebook.com/Bat-Rehabilitation-Ireland-112126603812172/</a>
Bat Conservation Ireland	<a href="https://www.batconservationireland.org/">https://www.batconservationireland.org/</a>
Raptors	<a href="http://irsg.ie/irsg.html#!/">http://irsg.ie/irsg.html#!/</a>
Bird Watch Ireland	<a href="https://birdwatchireland.ie/">https://birdwatchireland.ie/</a>
Irish Wildlife Trust	<a href="https://iwt.ie/">https://iwt.ie/</a>
Moths Ireland	<a href="https://www.mothsireland.com/">https://www.mothsireland.com/</a>
Butterflies	<a href="https://butterfly-conservation.org/">https://butterfly-conservation.org/</a>
Bumblebees	<a href="https://www.bumblebeeconservation.org/">https://www.bumblebeeconservation.org/</a>
<b>Habitats &amp; Ecosystems</b>	
Farming for Nature	<a href="https://www.farmingfornature.ie/">https://www.farmingfornature.ie/</a>
Burrenbeo	<a href="https://burrenbeo.com/">https://burrenbeo.com/</a>
Water Catchments	<a href="https://www.catchments.ie/">https://www.catchments.ie/</a>
Local Authority Waters Programme	<a href="https://lawaters.ie/">https://lawaters.ie/</a>
Irish Wildlife Trust	<a href="https://iwt.ie/">https://iwt.ie/</a>
National Parks and Wild life Services	<a href="https://www.npws.ie">https://www.npws.ie</a>
Vincent Wildlife Trust Ireland	<a href="https://www.vincentwildlife.ie/">https://www.vincentwildlife.ie/</a>

Ireland's Wildlife Rehabilitators Association	<a href="https://www.iwra.ie/">https://www.iwra.ie/</a>
Irish Whale & Dolphin Group	<a href="https://iwdg.ie/contact/">https://iwdg.ie/contact/</a>
Irish Peatland Conservation Council	<a href="http://www.ipcc.ie/">http://www.ipcc.ie/</a>
Earth Watch	<a href="https://earthwatch.org.uk/">https://earthwatch.org.uk/</a>
Native Woodland Trust	<a href="https://www.nativewoodlandtrust.ie/">https://www.nativewoodlandtrust.ie/</a>
Friends of the Irish Environment	<a href="https://www.friendsoftheirishenvironment.org/">https://www.friendsoftheirishenvironment.org/</a>
Leave no Trace Ireland	<a href="https://www.leavenotraceireland.org/">https://www.leavenotraceireland.org/</a>
<b>Citizen Science &amp; Scientific Data</b>	
National Biodiversity Data Centre	<a href="https://biodiversityireland.ie/">https://biodiversityireland.ie/</a> <a href="https://biodiversityireland.ie/monitoring/">https://biodiversityireland.ie/monitoring/</a> <a href="https://biodiversityireland.ie/projects/citizen-science/">https://biodiversityireland.ie/projects/citizen-science/</a>
All-Ireland Pollinator Plan	<a href="https://pollinators.ie/">https://pollinators.ie/</a> <a href="https://pollinators.ie/record-pollinators/">https://pollinators.ie/record-pollinators/</a>
Irish Wildlife Trust	<a href="https://iwt.ie/what-we-do/citizen-science/">https://iwt.ie/what-we-do/citizen-science/</a>
Citizen Science & Best Practice Guide	<a href="https://www.ceh.ac.uk/citizen-science">https://www.ceh.ac.uk/citizen-science</a> <a href="https://www.ceh.ac.uk/citizen-science-best-practice-guide">https://www.ceh.ac.uk/citizen-science-best-practice-guide</a>
<b>Organic Plants, Trees, Seeds &amp; Tools</b>	
Fruit Hill Farm	<a href="https://www.fruithillfarm.com/">https://www.fruithillfarm.com/</a>
Caherhurley Organic Nursery	<a href="https://www.caherhurleynursery.com/">https://www.caherhurleynursery.com/</a>
True Harvest Seeds (Indigenous Irish grown wild flower seed)	<a href="https://trueharvestseeds.org/">https://trueharvestseeds.org/</a>
Irish Seed Savers Association (Heritage agricultural seed & heritage apple trees)	<a href="https://www.seedsavers.ie/">https://www.seedsavers.ie/</a>
Wild Oaks Tree Nursery (Native tree nursery)	<a href="https://wildoaks.ie/">https://wildoaks.ie/</a>
<b>Calendar of Key Events</b>	
International Day for Biological Diversity	May
Biodiversity Week	May
Heritage Week	August
National Tree Week	March

**Appendix 8:** Photographic documentation of the biodiversity around Ruan village - plant species, invertebrate species, habitats and the built heritage. Photos by Áine Ní Fhlatharta.



Fig 1 & 2: Self heal (*Prunella vulgaris*) and Cuckoo Flower (*Cardamine pratensis*) growing in the grassland habitats, Ruan village and outskirts.



Fig 3 & 4: Bee Orchid (*Ophrys apifera*) and Thyme Leaved Speedwell (*Veronica serpyllifolia*) growing in the grassland.



Fig 5: Oak tree and dry stone wall – Ennis Rd, Ruan.



Fig 6: Mature treeline - Ennis Rd, Ruan.





Fig 7: Ruan’s beautiful landscape – Ennis Rd, Ruan.



Fig 8: Dry stone wall features – Ruan village.



Fig 9: Built Heritage features - Kelly Family Mausoleum.



Fig 10: Dry Stone wall features – Ruan village.



Fig 11: Tuar Mór Community Garden, Tuar Mór Estate, Ruan.



Fig 12: Butterfly-bush (*Buddleja davidii*). Medium Invasive spp.



Fig 13 & 14: Some flowering grassy verges after a reduction in the mowing regime, School road, Ruan 2022.





Fig 15 & 16: A naturally wild meadow field in Ruan village - rich in native flora diversity and highly beneficial for pollinator species, Aug 2022.



Fig 17-19: Carder Bumblebee (*Bombus pascuorum*); White tailed Bumblebee (*Bombus lucorum agg.*) and a Hoverfly spp.



Fig 20-22: Bee project by the children of Ruan National School; Red tailed Bumblebee (*Bombus lapidarius*); and Common Knapweed (*Centaurea nigra*) recorded around Ruan village, July 2022.





Figure 23-25: Built heritage of Ruan village – in the grounds of St Mary’s Church, rich in history and biodiversity.