YOUGHAL BIODIVERSITY ACTION PLAN

2022-2027

Youghal Tidy Towns

The Community Foundation for Ireland

Wildwork
HELPING PEOPLE HELP NATURE HELP PEOPLE

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Contents

List of Figures

List of Tables

Summary

This Biodiversity Action Plan (BAP) was commissioned by Youghal Tidy Towns in 2020. The BAP was carried out under funding from the Community Foundation for Ireland (CFI) Environment and Nature- Biodiversity Grants 2019. This grant scheme aims '*to enhance biodiversity in communities throughout the country by combining the expertise of qualified ecologists with the skills, experience and enthusiasm of local community groups*.'

The focus of the Biodiversity Action Plan funding sought was to be on specific sites in Youghal:

- Foxhole
- Keane Park (The Quarry)
- The College Gardens
- Claycastle Beach and Dunes

and for these:

- To identify measures to enhance biodiversity and natural capital in the four sites,
- To provide recommendations for habitat and biodiversity management.

Additionally, the funding was intended to increase community awareness and educate about habitats and biodiversity in a local context, and to encourage the wider community to enhance biodiversity in other parts of our Youghal Tidy Towns operational area.

Youghal Tidy Towns committee engaged Wild Work to work with them to produce this BAP.

Suggestions for other named areas were also made in agreement with landowners.

Youghal, a sea-port, borough, and market-town, and a parish, in the barony of Imokilly, county of Cork, and province of Munster, 29 miles (E.) from Cork...

The place derived its name, signifying "a wooded place" from its situation at the base of a range of hills, which at the period of its erection, was a dense forest....

The town is much frequented during summer for sea-bathing, for which it is well adapted, having a fine, smooth, and level strand extending nearly three miles along the western shore of the bay...

From Lewis's Topographical Dictionary 1837.

1 Introduction

Youghal is situated on the south-east coast of county Cork immediately adjacent to the county's border with County Waterford.

The town has a long history, with a church relating to a cleric of the 6th-7th century cleric, St. Coran, thought to have been situated in Seafield townland (Hughes, 2008), (Wain, 1965). This is commemorated in the modern-day names of Kilcoran Park and Kilcoran Road in the town.

Records point to Danish settlement in the 9th century and the influx of Anglo-Normans in the 12th century with charters dating from the early 13th century (Condon, 1945).

The operational area of Youghal Tidy Towns coincides with much of the County Council development boundary area but extends outside of this also to include parts of Ballyvergan Marsh and the R634 approach road to the west of the town, amongst other areas.

Youghal Tidy Towns has been running since 1988 and in addition to other projects has developed a suite of biodiversity related projects and activities which are outlined in detail on its website: http://youghaltidytowns.ie/

Figure 1 Youghal Biodiversity Action Plan Area.

1.1 Biodiversity and Biodiversity Plans

The term biodiversity began to be used widely in the 1980s. It is a shorthand way of saying **bio**logical **diversity**. The Convention on Biological Diversity includes the places living things inhabit in its definition of biodiversity '*the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems*' (United Nations, 1992). Based on that, a simpler way to describe 'biodiversity' might be 'living things and the places they naturally live', or just 'nature'.

The convention has three main objectives which are to make sure that:

- Biodiversity is protected,
- The benefits of Biodiversity are shared equally,
- Biodiversity is kept safe for future generations.

In 1992 Ireland was one of 168 countries that became signatories to the convention. Ireland ratified the convention in 1996. Article 6 of the convention states that each contracting party shall '*Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes…*'.

Ireland published its first National Biodiversity Action Plan in 2002. Action 10 of this plan was:

'*Each Local Authority to prepare a Local Biodiversity Plan in consultation with relevant stakeholders'*.

Cork County Council published its first Biodiversity Action Plan in 2009.

In general Biodiversity Action Plans look at what species and habitats are in an area and what issues there might be for species and habitats in that area. A good plan will then identify what actions are needed to address any issues, who is going to carry out the actions and in what timeframe as well as what resources are needed to carry out the plan, and who can help.

A local Biodiversity Action plan such as this one might choose to look at what can be done to enhance the local area to benefit biodiversity, but actions will still need to be identified as well as the who, when and how.

Not everything a group might like to do may be achievable at once, so it is a good idea to prioritise actions based on resources available.

A good local Biodiversity Action Plan also makes sure that we don't harm nature when we want to help nature. Making a plan means we have to think about nature in our area, how we would like to help nature in our area and helps us keep track of the actions we take to help nature.

Ideally making a local Biodiversity Action Plan means we learn more about nature in our area, value nature in our area more and conserve and enhance nature in our area more.

Biodiversity Action Plans such as this should be reviewed every 5 years, as that provides an opportunity to look at what has been achieved and to look at what still needs to be worked on, and how future actions might be resourced.

1.2 Why is Biodiversity important

It could be said that biodiversity has a value in and of itself, outside of its importance to humans. But it is very important to humans. It is possible to figure out the economic value of ecosystems and biodiversity to humans but some wonder if this is a good idea from a conservation point of view (Schröter, et al., 2014).

The concept of Ecosystem Services, places a value on '*the direct and indirect contributions of ecosystems to human wellbeing*' (The Economics of Ecosystems and Biodiversity (TEEB), 2020). This idea has been around since at least the 1970s, becoming more popular since the United Nations led Millennium Assessment (MA) which began in 2001.

Ecosystem Services

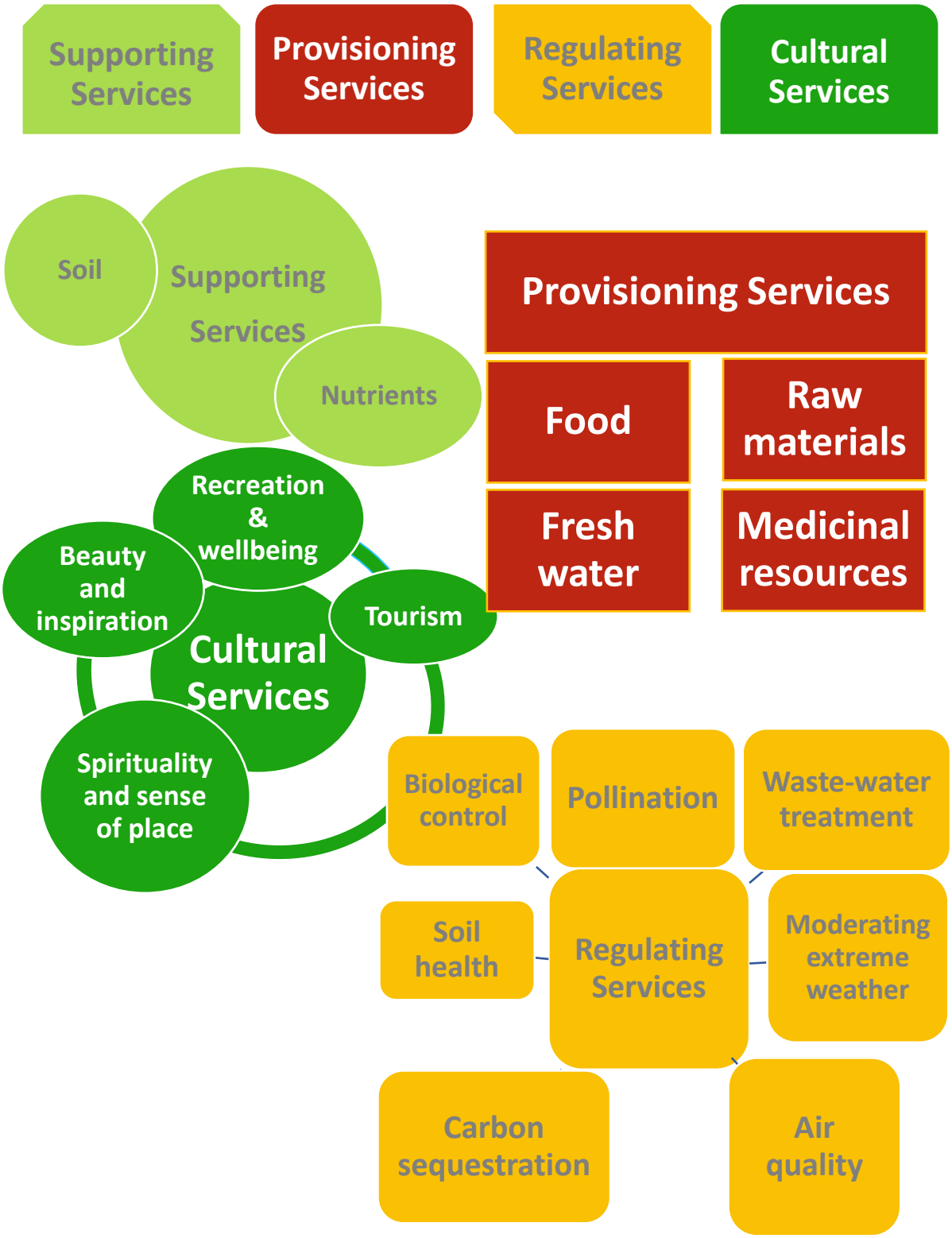
"the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfil human life" (Daily, 1997)

Ecosystem Services can be organised into 4 broad categories:

Supporting services	These are services, such as nutrient cycling and soil formation, which are needed for the production of all other services.
Provisioning services	Products obtained from ecosystems, such as food or timber.
Regulating services	The benefits obtained from the regulation of ecosystems, including services such as purification of water, flood control, regulation of the climate etc.
Cultural services	The benefits people obtain from ecosystems through spiritual enrichment, reflection, recreation, and aesthetic experiences.

Source: (Science Communication Unit, University of the West of England, 2015) See also infographic overleaf.

EXAMPLES OF ECOSYSTEM SERVICES



1.3 Threats to Biodiversity

Every 6 years, EU member states must produce a report on how they have put in place measures to protect habitats and species listed in the EU Habitats Directive and how these habitats and species are doing. This means threats and pressures on these habitats and species need to be looked at.

Fig. 2 below shows the percentage of Habitats Directive habitats that are affected by the top 10 combined Medium and High importance threats from the 2019 report for Ireland (NPWS, 2019a). More details on the Habitas Directive are in the section on 'Biodiversity and the Law' later in this Biodiversity Action Plan.

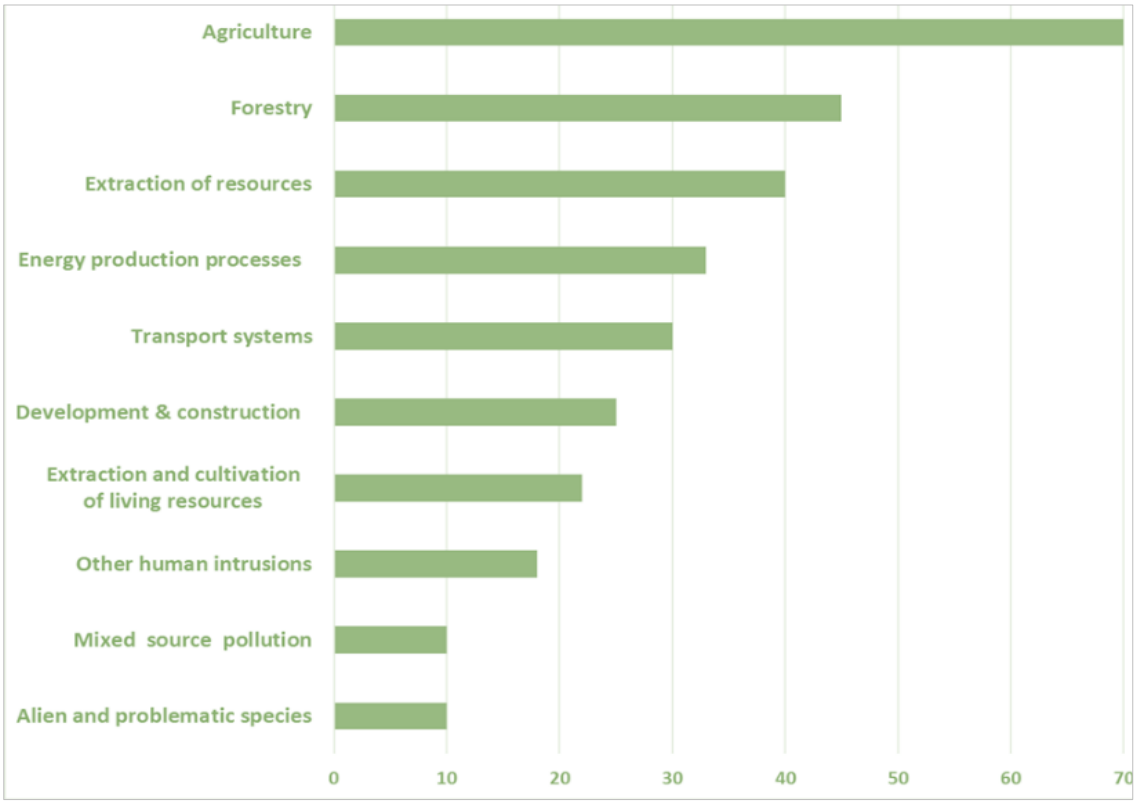


Figure 2 Top 10 High and Medium Impact Threats to Habitats Directive Habitats adapted from (NPWS, 2019a).

In Fig. 2 above agriculture and forestry appear to be the greatest threat to Habitats Directive habitats and species. However, agriculture covers about 65% of land use in Ireland and commercial forestry about 10.5% while about 2% of Ireland is under built land.

Agriculture and Forestry then might be expected to have bigger impact because they cover so much more of our land area.

Habitats and species are listed in the Habitats Directive because they are threatened at a European level, and the Directive aims to restore these to favourable condition or maintain them at favourable condition. There is legislation to protect some sites where these habitats and species are found.

There are many species, habitats and sites that do not have this kind of protection.

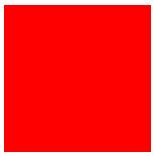
Overall, for the 2019 assessment in Ireland, 85% of Habitats Directive habitats are categorised as being in 'Unfavourable' condition.

For species 30% were assessed as 'Unfavourable'. For 13% of species the assessment was recorded as 'unknown'.

On our planet the top five factors damaging biodiversity over the past 50 years have been:

- changes in land and sea use
- direct exploitation of living things
- climate change
- pollution
- invasion of alien species (Díaz, et al., 2019)

Birdwatch Ireland has produced a list of 'Birds of Conservation Concern in Ireland 4: 2020–2026' (Gilbert, et al., 2021). This assessed the conservation status of 211 Irish bird species recorded in Ireland. Birds of Conservation Concern Ireland 4 (BOCCI 4) ranks bird species as Red, Amber, or Green.



Red listed species are those of highest conservation priority, being globally threatened, declining rapidly in abundance or range, or having undergone historic declines from which they have not recently recovered.

Amber listed species have an unfavourable status in Europe, have moderately declined in abundance or range, a very small population size, a localised distribution, or occur in internationally important numbers.

Green listed species do not meet any of these criteria and therefore require little direct conservation action.

In the BOCCI report:

- 54 bird species were RED listed
- 79 were AMBER listed
- 78 were GREEN listed.

There has been an increase of 17 species 'red' listed since an assessment from 2013.

'Birds of Conservation Concern in Ireland 4: 2020–2026' mentions issues such as drainage, afforestation on peat bogs, and changes in farmland management as threats to populations of Irish species.

Another way of looking at threats to Irish Biodiversity is to look at Red Lists. This is a method devised by the International Union for the Conservation of Nature (IUCN) to assess the conservation status of species. This was originally intended to look at species at a global

level, but they adapted it to be used also at a regional level. A number of assessments for different groups have been done in Ireland. Some of these are presented in Table 1 below.

Group	CR	EN	VU	NT	LC	DD	NE	RE
Vascular Plants	**20**	**25**	**61**	**98**	**887**	**n/a**	**105**	**15**
Bees	**6**	**10**	**14**	**12**	**38**	**16**	**3**	**3**
Butterflies	**0**	**3**	**3**	**5**	**21**	**0**	**0**	**1**
Macro-moths	**7**	**9**	**27**	**20**	**420**	**4**	**78**	**14**
Freshwater Fish	**1**	**0**	**5**	**1**	**7**	**1**	**1**	**0**
Amphibians & Reptiles	**0**	**1**	**0**	**0**	**4**	**0**	**5**	**0**

Table 1 Irish Red List Assessments for selected groups.

CR Critically Endangered:	**In a particularly and extremely critical state.**
EN Endangered:	**Very high risk of extinction in the wild.**
VU Vulnerable:	**At high risk of unnatural (human-caused) extinction without further human intervention.**
NT Near Threatened:	Close to being at high risk of extinction in the near future.
LC Least Concern:	Unlikely to become extinct in the near future.
DD:	Data Deficient
NE:	Not Evaluated
RE:	Regionally Extinct

More Red Lists for Ireland can be found on the website of the National Parks and Wildlife Service (NPWS) https://www.npws.ie/.

1.4 Biodiversity and the Law

EU Directives

Two very important and powerful pieces of legislation that are designed to protect wildlife, have already been mentioned. These are:

- Council Directive 79/409/EEC (and as amended) 'on the conservation of wild birds' (commonly known as **'The Birds Directive'**).
- Council Directive 92/43/EEC (and as amended) 'on the conservation of natural habitats and of wild fauna and flora' (commonly known as '**The Habitats Directive'**).

The main instruments transposing these EU directives into Irish law is the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), and S.I. No. 293/2010 - European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010, but they are also incorporated under the Planning and Development Act 2000 (and as amended).

Other important EU directives concerned with environmental protection, including wildlife, are:

- Council Directive 85/337/EEC (and as amended) 'on the assessment of the effects of certain public and private projects on the environment' (commonly known as the **'Environmental Impact Assessment Directive'**).
- Council Directive 2001/42/EC 'on the assessment of the effects of certain plans and programmes on the environment' commonly known as the '**Strategic Environmental Assessment Directive**'.
- Directive 2000/60/EC 'establishing a framework for Community action in the field of water policy', commonly known and the '**Water Framework Directive'.**

National Legislation

National legislation protecting wildlife includes:

- Wildlife Acts, 1976
- Wildlife (Amendment) Act, 2000 and as amended

- Flora (Protection) Order, 2015 (S.I. No. 356 of 2015)
- Heritage Act 2018 (no. 15 of 2018), Part 3

Protected Areas

Arising from the legislation discussed above, certain sites around the country have been given legal protection.

- **Special Protection Areas** (SPAs) arise from the Birds Directive and are designated to protect all migratory birds and 194 species and sub-species of bird that are particularly threatened.
- **Special Areas of Conservation** (SACs) arise from the Habitats Directive are designated to protect:
    - Natural Habitat Types of Community Interest – listed under Annex I of the Directive.
    - Animal and Plant Species of Community Interest– listed under Annex II of the Directive.

  SPAs and SACs across Europe form the Natura 2000 ecological network.

- **Natural Heritage Areas** (NHAs) have been designated under the Wildlife Acts to protect habitats and / or species in them.
- **Statutory Nature Reserves**, under the Wildlife Acts.
- **Wildfowl Sanctuaries**, under the Wildlife Acts.

There is much crossover between designations; many Natural Heritage Areas are also Statutory Nature Reserves and/or SACs and/or SPAs. Many Wildfowl Sanctuaries are also SPAs.

There are 148 Natural Heritage Areas that have been given legal protection under the Wildlife Acts.

However, there are 630 sites that were proposed as Natural Heritage Areas in 1995 that have never been given statutory legal protection. Some of these **proposed Natural Heritage Areas (pNHAs)** are inside areas that do have protection under other legislation e.g. SPAs or SACs, however very many of them have no current legal protection.

2 How this Plan was made

Desktop study

For background on biodiversity in and around the Youghal Tidy Towns area, a number of sources were consulted.

Species records from the National Biodiversity Data Centre (NBDC) were looked at for the 1-kilometre and 2-kilometre Irish Grid squares that intersected with the boundary provided by Youghal Tidy Towns. This boundary is referred to as 'the BAP area' in this Biodiversity Action Plan. The grid squares consulted for records are in Appendix II.

Most of the data held by the NBDC is free to anyone to look at. Information can be downloaded from the Maps section of the NBDC website https://maps.biodiversityireland.ie/ There are tutorials on how to use it in the Help section.

The Botanical Society of Britain and Ireland (BSBI) Vice County Recorders (VCR) for East Cork were contacted.

Details of protected sites close to the two sites were found on the Protected Sites page of the National Parks and Wildlife Service (NPWS) website, https://www.npws.ie/

Recent and historical maps for the area available from the online Ordnance Survey Ireland (OSI) GeoHive service, https://www.osi.ie/ were reviewed.

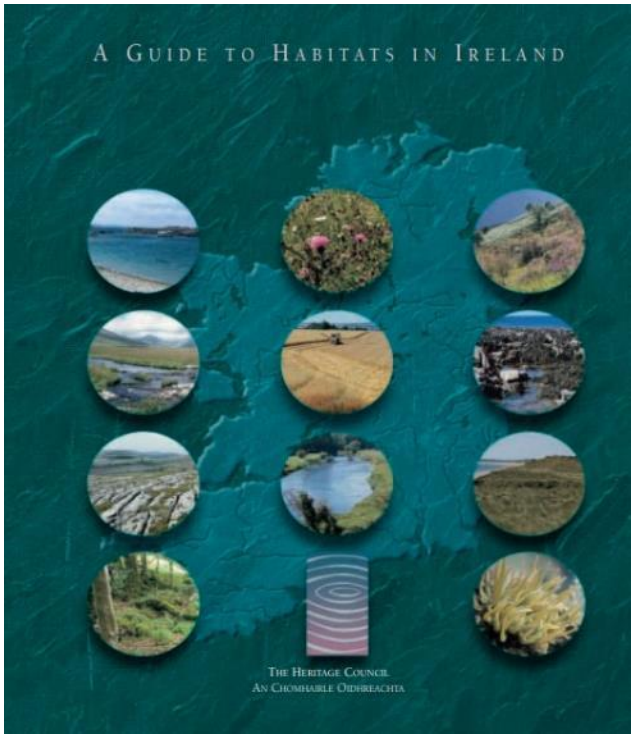
The Geological Survey of Ireland (GSI) website https://www.gsi.ie/ was used for geological information.

Unpublished information such as surveys commissioned in connection with planning applications etc. were also consulted. Where data from these is used in this Biodiversity Action Plan it is referred to in the text.

Mapping and other fieldwork

Habitats and species in the Youghal area were recorded during visits throughout 2020 and 2021 are classified using the Fossitt Guide. Other classification systems may be referred to under particular habitats in this report and are referenced where this is the case.

Habitats are where living organisms live. A habitat is made up of living and non-living components. Living components include plants, animals, fungi and bacteria. Non-living components include soil, moisture, temperature, pH, bedrock and many others.



So that there is a common understanding of different habitat types to be found in Ireland a book called 'A Guide to Habitats in Ireland' (Fossitt, 2000) was commissioned by the Heritage Council of Ireland and was released in 2000.

A number of experts from different fields contributed to the book, however the text was compiled by Julie A. Fossitt. 'A Guide to Habitats in Ireland' is often referred to as 'The Fossitt Guide', 'The Fossit Classification' or simply 'Fossitt'.

This plan is arranged in four main sections: an introduction, an outline of how the plan was developed, information on biodiversity in Youghal, and a section on actions to help biodiversity in Youghal. There is also a Resource section towards the end of the plan. As much as possible common names of species are used in plan. The scientific names of those species can be found in Appendix IV.

3 Biodiversity in Youghal

3.1 Protected Nature Conservation Sites

Youghal has two protected sites of international importance 'on its doorstep'. These are:

- Blackwater Estuary SPA,
- Blackwater River (Cork /Waterford) SAC.

Blackwater Estuary Special Protection Area (SPA)

Blackwater Estuary Special Protection Area (SPA) extends north to Ballynaclash in Waterford from a line running across the estuary at Youghal from the south end of the Slob Bank to Ferry point in Waterford.

The SPA also covers part of the Tourig River estuary to the west of Youghal Harbour and Kinsalebeg to the east. The entire area of the SPA overlaps with the Blackwater River (Cork /Waterford) SAC and is located in counties Cork and Waterford.

Figure 3 Blackwater Estuary SPA at Youghal

Table 2 below shows the birds the SPA was designated for. It also shows the most recent assessment of their status within the SPA (NPWS, 2012a).

Also included is their assessment in 'Birds of Conservation Concern in Ireland 4: 2020–2026' (Gilbert, et al., 2021) which was mentioned earlier.

Common Name	NPWS 2012 Assessment	BoCCI Assessment
Golden Plover	Intermediate (Unfavourable)	RED
Lapwing	Intermediate (Unfavourable)	RED
Dunlin	Highly Unfavourable	RED
Curlew	Unfavourable	RED
Redshank	Favourable	RED
Black-tailed Godwit	Favourable	RED
Bar-tailed Godwit	Highly Unfavourable	RED
Wigeon	Highly Unfavourable	AMBER

Table 2 Status of Special Conservation Interest Birds in Blackwater Estuary SPA and in Ireland.

Estuarine mud of the SPA and SAC with Curlew (l) and Redshank (r).

In Table 2, for the NPWS 2012 (NPWS, 2012a) Assessment of Special Conservation Interest birds in the SPA, the terms used are explained below.

- **Favourable** means the population is stable/increasing.
- **Intermediate (unfavourable)** means the population declined in the range 1% – 24.9% from the baseline reference value.
- **Unfavourable** means the population declined in the range 25% – 49.9% from the baseline reference value.
- **Highly Unfavourable** means the population declined more than 50.0% from the baseline reference value.

The baseline reference value was for records made during winter months from 1995/1996 to 1999/2000.

In addition to the bird species for which the SPA is designated, habitats in the SPA they depend on are also protected. As these habitats are also listed in the SAC they are discussed in that section, which follows.

Blackwater River (Cork /Waterford) Special Area of Conservation (SAC)

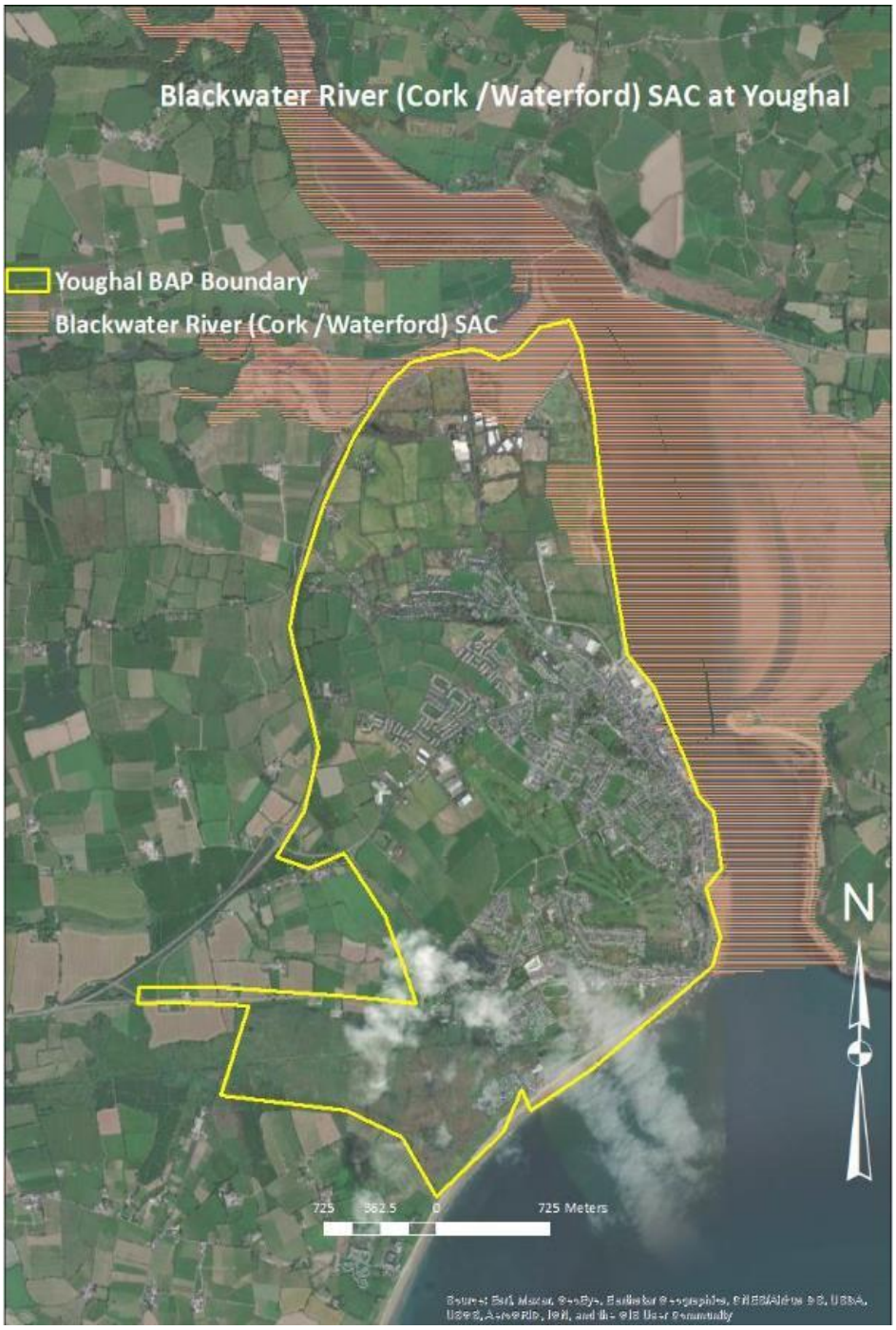


Figure 4 Blackwater River (Cork /Waterford) SAC at Youghal.

Blackwater River (Cork /Waterford) Special Area of Conservation (SAC) extends north from the mouth of Youghal harbour and covers the entire length of the Blackwater and its tributaries and therefore covers parts of Kerry, Cork, Limerick, Tipperary, and Waterford.

The SAC has many habitats and species in it that qualify it for designation as a SAC.

Not all of these occur in that portion of the SAC around Youghal.

Those that occur within 2kms of Youghal are listed below.

HABITAT	COUNTY	2019 HABITATS DIRECTIVE ASSESMENT FOR IRELAND
Old oak woodland	Waterford	Bad
Estuaries	Cork / Waterford	Inadequate
Tidal mudflats and sandflats	Cork / Waterford	Inadequate
Vegetated shingle	Waterford (Ferrybank)	Inadequate
Atlantic salt meadows[1]	Cork / Waterford	Inadequate
Mediterranean salt meadows	Waterford (Kinsalebeg)	Inadequate
Salicornia mud	Cork / Waterford	Favourable

Table 3 SAC 002170 Qualifying Interest Habitats within 2kms of Youghal Development Boundary.

1. In maps included in (NPWS, 2012b) this is mapped as '*Potential* Atlantic salt meadows in the area north of Foxhole.

There are also many habitats within the SAC that are not habitats for which it was designated. Some of the fields and the tidal lagoon that can be seen from the Slob Bank are also in the SAC.

As well as habitats, some plant and animal species are covered by the Habitats Directive.

The SAC was set up to protect some of those; they are Qualifying Interests for the SAC.

Those recorded, or likely to occur close to Youghal are listed in Table 4, with their 2019 Habitats Directive status for Ireland (NPWS, 2019a).

SPECIES	OCCURRENCE NEAR YOUGHAL	2019 HABITATS DIRECTIVE ASSESMENT FOR IRELAND
Twaite Shad	Likely at least at certain times of year due to life-cycle.	Bad
Sea Lamprey	Likely at least at certain times of year due to life-cycle.	Bad
Salmon	Likely at least at certain times of year due to life-cycle.	Inadequate
Brook Lamprey	Likely at least at certain times of year due to life-cycle.	Favourable
Otter	Regular.	Favourable

Table 4 SAC Qualifying Interest species within 2kms of Youghal development boundary.

Ballyvergan Marsh pNHA

As mentioned previously, ***proposed*** Natural Heritage Areas (pNHAs) do not have statutory legal protection, however most Local Authorities offer some protection, usually through Development Plans.

Ballyvergan Marsh was included in a 1986 Report on Areas of Scientific Interest in County Cork conducted on behalf of An Foras Forbartha (Goodwillie, 1986) and was described there as being '*the largest freshwater coastal marsh in Cork*' and as being of '*regional importance'*.

Figure 5 Ballyvergan Marsh pNHA

A 2009 site synopsis by the NPWS (NPWS, 2009) again mentioned the importance of Ballyvergan Marsh for both breeding and migrating species of bird. It was noted that Ballyvergan had the highest number of breeding Sedge Warblers in Ireland in the 1990s, although there were declines by 2012 (Bracken & Smiddy, 2012).

Hen Harrier, Male

The Hen Harrier is protected under national and international legislation and is Amber listed on the most recent BoCCI listing for Ireland (Gilbert, et al., 2021). It is still regularly recorded around Ballyvergan, possibly drawn by the high number of prey species here.

Water Rail

Also recorded here is the elusive Water Rail, pictured left, a bird species that had been on the Amber list of Birdwatch Irelands Birds of Conservation Concern in Ireland (BOCCI) list but is listed as Green for the 2020-2026 assessment.

The rare plant species Wild Clary is also present within the pNHA – see the section on vascular plants below for more detail on that species.

Ken Bond, a leading Irish expert on insects, was contacted by email for advice on one of the moth species recorded at Ballyvergan and he highlighted the importance of Ballyvergan Marsh for Lepidoptera (Butterflies and Moths), due to the number of rare species he recorded there (K. Bond 2020 pers. comm. 3, April).

Ballyvergan Marsh

Perhaps the largest habitat by area within the pNHA is Reed and Large Sedge Swamp FS1, particularly in the BAP area. However other habitats occur here including:

Fossitt Habitat Name	***Fossitt Habitat Code***
Lowland depositing rivers	FW2
Other Artificial Lakes and Ponds	FL8
Wet Willow-Alder-Ash Woodland	WN6
Marram Dunes	CD2
Fixed Dunes	CD3

'Other Artificial Lakes and Ponds' refers to a pond created around the year 2000, adjacent to the R633 'Bog Road' in Ballyvergan East Townland. A bird hide was created next to it at the same time. Ballyvergan Marsh currently has an active Biodiversity Action Plan of its own (Wild Work, 2017).

3.2 Plants and Animals of Youghal

This section of the Biodiversity Action Plan is to give a taste of the variety of species that can be encountered Youghal. There are many more species and species groups recorded in Youghal than could be meaningfully explored here. There is more information on other groups that is publicly available from the National Biodiversity Data Centre (NBDC).

The data in this section comes from several sources. For much of the information relating to animals the data is from records held by the NBDC. This was downloaded from the maps.biodiversity.ie section of their website. Where other data sources are used, they are referred to in the text.

3.2.1 Vascular Plants

Vascular plants have evolved structures for carrying water, minerals, and other substances through the plant. Most of the vascular plant species records in this BAP come from the Botanical Society of Britain and Ireland (BSBI) courtesy of its Vice County Recorders for East Cork. Seven species of Conservation concern due to their rarity or threatened status (Wyse Jackson, et al., 2016) were recorded in Youghal.

Common Name	Status
Fiddle Dock	Vulnerable
Borrer's Saltmarsh-grass	Near Threatened
Corn Marigold	Near Threatened
Green Field-speedwell	Near Threatened
Pale Flax	Near Threatened
Slender Thistle	Near Threatened
Wild Clary	Rare

Table 5 Rare and vulnerable species recorded in and around Youghal in 2019.

Fiddle Dock is both rare and vulnerable (Wyse Jackson, et al., 2016). It was described as being 'Abundant in the town of Youghal' in 1896 (Colgan & Scully, 1898) and was still so in the 1920s (Philips, 1924) but after that records are not known until it was found again in Youghal in 2019 during a BSBI recording event.

Green Field-speedwell, a 'weed' of acidic soils has been in decline across Ireland and the U.K. because of changes in agricultural practices.

Borrer's Saltmarsh-grass is historically quite rare in Ireland (Colgan & Scully, 1898). It is a coastal species with quite specific ecological requirements. It is protected under the Flora Protection Order 2015.

Pale Flax has declined at inland sites but not as much at coastal sites.

Slender Thistle appears to have declined at inland sites in Ireland, and notably along the coast of Cork.

For Wild Clary, in the most recent Vascular Plant Red List assessment for Ireland it was assessed as Least Concern - its population size and distribution remain stable. Nonetheless it is noted on the assessment that it is a '*rare species in Ireland found in vulnerable habitats and, as such, regular monitoring of sites is merited*' (Wyse Jackson, et al., 2016).

Wild Clary

Records for several non-native plant species, problematic due to their potential for invasiveness, were found since 2000.

Common Name	Invasive Impact Level
New Zealand Pigmyweed	High
Japanese Knotweed	High
Sycamore	Medium
Three-cornered Garlic	Medium
Water fern	Medium
Butterfly Bush	Medium
Traveller's-joy	Medium
Himalayan Honeysuckle	Medium
Japanese Honeysuckle	Medium
Common Broomrape	Medium
Lesser Knotweed	Low

Table 6 Problematic plant species recorded in and around Youghal since 2000.

The species in Table 6 above have been assessed for their impact as invasive species (Kelly, et al., 2013).

Winter Heliotrope was not assessed in that document. It has been recorded in the BAP area. This species has been identified as a problematic species by the National Roads Authority (NRA, 2010). Botanists in the south of Ireland consider this species to very problematic in certain locations - see for example Wildflowers of Cork City and County (O'Mahony, 2009). It was found in as many 2kms squares examined for this Biodiversity Action Plan as Japanese Knotweed was.

While this species is considered a pest due to the problems it causes for many other Irish species, it does act as food source for bees coming out of hibernation early in the year.

Winter Heliotrope

Common Broomrape is considered native in some parts of the U.K., but not in Ireland. It is assessed as a medium impact, non-native species on the NBDC website.

It is known in the Youghal area since at least the late 19th century (Phillips, 1893), and might be considered as established here.

It parasitises members of the pea family, like Kidney Vetch in the picture right. It also parasitises members of the Daisy family, such as Dandelions, Cats-ear, and others. It is probably not a major threat to native flora and does not need management in the Youghal area at this time.

Common Broomrape, centre, not fully open.

New Zealand Pigmyweed was recorded in a small man-made water feature in the Millennium Garden of Time. New Zealand Pigmyweed has been known to occur in saline situations (Smith & Buckley, 2020) so there is the potential for this species to be transferred to locations of high value conservation sites around Youghal and further afield. It is a High Impact invasive alien plant species.

3.2.2 Mammals

Records for the following mammals have been sourced through the National Biodiversity Data Centre website. Terrestrial mammals and marine mammals are listed separately. Species may be protected by more than 1 piece of legislation but only the highest level is listed in the Tables 7 and 9 below. The Otter is listed as Near Threatened in the most recent Red List of Irish Mammals (Marnell, et al., 2009).

Common Name	Protected Under
Brown Long-eared Bat	Habitats Directive Annex IV
Pipistrelle Bat	Habitats Directive Annex IV
Otter	Habitats Directive Annex II/IV
Badger	Wildlife Acts
Hedgehog	Wildlife Acts
Irish Hare	Habitats Directive Annex V
Pygmy Shrew*	Wildlife Acts

Table 7 Protected terrestrial mammals recorded in and around Youghal.

*The record for Pygmy Shrew dates from 1982, all other records in Table 5 are since 2000.

The Red Fox has been recorded in and around Youghal, but it is not protected in the same way species in Table 5 are.

The following invasive mammals have been recorded in the BAP area since 2010.

Common Name	Invasive Impact Level
Feral ferret	High
American Mink	High
European Rabbit	Medium

Table 8 Invasive terrestrial mammal species recorded in and around Youghal since 2000.

All whales and dolphins are protected under the Habitats Directive and under the Wildlife Acts

Harbour Porpoise

Common Name	Legislation Protected under
Bottle-nosed Dolphin	Habitats Directive Annex II / IV
Common Dolphin	Habitats Directive Annex IV
Striped Dolphin	Habitats Directive Annex IV
Common Porpoise	Habitats Directive Annex II / IV
Long-finned Pilot Whale	Habitats Directive Annex IV
Minke Whale*	Habitats Directive Annex IV

Table 9 Protected Marine Mammals recorded in and around Youghal since 2000

*The Irish Whale and Dolphin Group (IWDG) website, iwdg.ie shows a Minke Whale record from in the sea off the mouth of Youghal Bay 2019. The most recent sighting closer to Youghal in data downloaded from the NBDC was from 1984

3.2.3 Birds

In the data downloaded from the NBDC website, there are records for 140 different bird species in and around Youghal since 2000. Of those, the species in Table 10 are Red Listed in the most recent 'Birds of Conservation Concern in Ireland 4: 2020–2026' (Gilbert, et al., 2021) mentioned in section 1.3. A further 36 are Amber listed.

Birds in Ireland are protected by Irish legislation, and many also by European Legislation (Nelson, et al., 2019).

Meadow Pipit
Swift
Dunlin
Curlew Sandpiper
Purple Sandpiper
Yellowhammer
Kestrel
Snipe
Oystercatcher
Black-tailed Godwit
Grey Wagtail
Curlew
Golden Plover
Grey Plover
Slavonian Grebe
Woodcock
Shoveler
Redshank
Redwing
Lapwing

Table 10 Red Listed BoCCI 4 species recorded in and around Youghal since 2000.

Section 3.1 on Blackwater Estuary Special Protection Area (SPA) and Ballyvergan Marsh pNHA have more details on bird species. In addition to species discussed there, the species in Table 11 appear in NBDC records consulted since 2000 and are protected under Annex I of the Birds Directive.

Kingfisher
Short-eared Owl
Kentish Plover
Hen Harrier
Whooper Swan
Little Egret
Merlin
Peregrine Falcon
Great Northern Diver
Red-throated Diver
Red-billed Chough

Table 11 Bird species Annex I of the Birds Directive.

3.2.4 Reptiles

There is only one native terrestrial reptile species in Ireland, the Viviparous, or Common, Lizard. It has not been recorded recently in the BAP area, but has been in Pilmore, not too far away. There are places in Youghal that would provide suitable habitat for this species.

Viviparous Lizard

3.2.5 Amphibians

In the BAP area, records for only one of Ireland's three native amphibians was found in research for this Biodiversity Action Plan.

Common Frog

The Common Frog is protected under the Habitats Directive and under the Irish Wildlife Acts. In the most recent assessment for the Habitats Directive (NPWS, 2019b) the species is described as 'a widespread and very abundant species throughout the country, occurring in a broad range of habitats from uplands to urban gardens'.

It was assessed as 'Least Concern' in the most recent Irish Red List of Amphibians, Reptiles & Freshwater Fish (King, et al., 2011).

The other two Irish amphibians are the Natterjack Toad and the Smooth Newt. The Natterjack Toad has a very restricted distribution in Ireland and is found, as a native, only in county Kerry, although there is a translocated population in Wexford.

The Smooth Newt, also called the Common Newt, is described as 'widespread in Ireland, but locally distributed and under-recorded' in the recent Irish Red List Assessment. Youghal certainly has some of the freshwater habitat it prefers.

3.2.6 Invertebrates

Human beings are in a group of animals known as vertebrates – animals that have a backbone. Less than 5% of all animal species on the planet are vertebrates.

Most species of animal, over 95%, are invertebrates – they don't have a backbone.

Invertebrates include butterflies and bees, snails and squid, earthworms, jellyfish, sea anemones and corals.

Insects

The insect class contains the highest number of animal species for any class on earth. They are hugely important as a food source, as pollinators and in nutrient cycling. They have long been used as indicators of the health of ecosystems. Along with other invertebrate groups they are used to assess the health of freshwater systems all over the world, including Ireland, and are increasingly being used to assess the health of other ecosystems.

Insects are also under threat at a global scale, both in terms of abundance and in terms of species diversity (Sánchez-Bayoa & Wyckhuysb, 2019).

There are records for many groups in the insect class in data sourced from the National Biodiversity Data Centre for the Youghal area. These include Caddisflies (*Trichoptera*), True Flies (*Diptera*), Beetles (*Coleoptera*), Grasshoppers and Crickets (*Orthoptera*) and True Bugs (*Hemiptera*). Some of those recorded groups, such as bees and butterflies, are explored in depth below as there are national monitoring or survey programmes for and/or Red Lists for them.

The adult Marmalade Hoverfly, a true fly pictured right, pollinates plants while its larvae eat aphids -greenfly (Speight, 2014). Hoverflies are also important pollinators (NBDC, 2015).

This handsome creature (left) the Common Green Grasshopper, was recorded in the BAP area.

Bees

The survival of up to 30% of Bumble Bee and Cuckoo Bee species is threatened across central and western Europe (Kosior, et al., 2007). This figure is also true for Irish bee species assessed for a 2006 Red List of Irish Bees (Fitzpatrick, et al., 2006).

Of 11 bee species recorded in and around the BAP area since 2010, 5 are evaluated as Threatened in the Red List of Irish Bees.

Buffish Mining Bee

Common Name	*2006 Red List Assessment*
Buffish Mining Bee	*Vulnerable*
Northern Colletes	*Vulnerable*
Gipsy Cuckoo Bee	*Near Threatened*
Large Red-tailed Bumble Bee	*Near Threatened*
Moss Carder Bee	*Near Threatened*

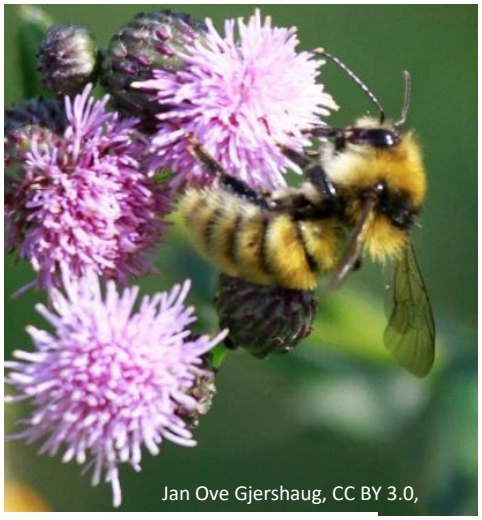
Table 12 Vulnerable and Near Threatened Bee species recorded in Youghal area since 2000.

Common Name
Great Yellow Bumble Bee
Shrill Carder Bee

Table 13 Endangered Bee species recorded in and around Youghal.

Two now endangered species of Bee had been recorded in Youghal in the 1970s - see table 13 above. Most post-2000 records for these species are from the west coast of Ireland, however there is a 2004 record from New Ross for the Shrill Carder Bee.

The Great Yellow Bumble Bee is a species associated with unimproved grassland and coastal dunes, while the Shrill Carder Bee is associated with species rich grassland – these are habitats that are in decline in and/or impacted by human activity in Ireland (Fitzpatrick, et al., 2006).



Great Yellow Bumble Bee

Bees are important pollinators and there is currently an All-Ireland Pollinator Plan aimed at reversing declines in bee populations on the island of Ireland (NBDC, 2015).

Butterflies

Currently there are 32 species of butterfly that are resident on the island and three - the Red Admiral, the Painted Lady, and the Clouded Yellow that regularly migrate to it (Regan, et al., 2010). Two of our current species- the Comma and the Essex Skipper only became established here after 2005. None of the butterfly species recorded in Youghal since 2000 is currently assessed as threatened. There is a current monitoring scheme for Butterflies through the National Biodiversity Data Centre.

Common Name
Clouded Yellow
Small Tortoiseshell
Orange-tip
Ringlet
Peacock
Cryptic Wood White
Meadow Brown
Speckled Wood
Large White
Green-veined White
Small White
Common Blue
Red Admiral
Painted Lady

Table 14 Butterfly species recorded in and around Youghal since 2000.

The Wall Brown butterfly was recorded in the BAP area in 1994. This is an endangered species. It had suffered a 50% decline on the island of Ireland between 1995 and 2009 (Regan, et al., 2010).


Wall Brown

Habitats for this species include '*unimproved dry calcareous grassland, coastal dunes, machair, vegetated sea-cliffs*' (Regan, et al., 2010). There have been records from cliff-tops between Power Head and Knockadoon in the last 5 years so it might be found in Youghal again.

Dragonflies and damselflies

There are records for 9 species of dragonfly and 5 species of damselfly in the BAP area since 2000. Two of these were rare migrant dragonflies – the Red Veined Darter and the Lesser Emperor. According to the NBDC all of these are recorded in grid squares containing portions of Ballyvergan Marsh.

Common Name
Common Darter
Common Hawker
Emperor Dragonfly
Four-spotted Chaser
Hairy Dragonfly
Lesser Emperor
Migrant Hawker
Red-veined Darter
Ruddy Darter

Table 15 Dragonflies recorded in and around Youghal.

Common Name
Azure Damselfly
Beautiful Demoiselle
Blue-tailed Damselfly
Common Blue Damselfly
Large Red Damselfly

Table 16 Damselflies recorded in and around Youghal.

A Red List of Irish Dragonflies and Damselflies, known collectively as Odonata, was compiled in 2011 (Nelson, et al., 2011). The assessment was done on 24 species '*considered permanently resident for at least 10 years*.' This means that over half of all Irish Odonata species have been recorded in and around Youghal.

Sharp Photography, CC BY-SA 4.0,

Hairy Dragonfly

One of the Irish species - the Hairy Dragonfly - does not seem to be as common in Cork as it is in other parts of Ireland, and the records from Ballyvergan Marsh are the only ones for East Cork since 2000. None of the Odonata species recorded in and around Youghal was assessed as threatened at an Irish level.

Damselflies are generally slenderer and more delicate than Dragonflies. When resting, Damselflies fold their wings up against their bodies while Dragonflies hold their wings out at right angles to their bodies.

Dragonfly Ireland 2019-2024 is a survey being run on the island of Ireland by the National Biodiversity Data Centre and the Centre for Environmental Data and Recording (Northern Ireland). It is funded by the Environmental Protection Agency.

Moths

Moths are in the same order, Lepidoptera, as butterflies. There are differences between moths and butterflies but sometimes it can be difficult to figure out which is which. In general though, most Irish moths have feathery antennae on their heads, while butterflies have club shaped ones, and most Irish moths hold their wings out flat when at rest, while butterflies hold theirs folded above them.

In Ireland over 1,500 species of moth have been recorded (Allen, et al., 2016) ; there are only 32 species of butterfly.

Many moths are quite small – they usually have a wingspan under 20mm - and are difficult to identify for most of us. These smaller moths are often referred to as micro-moths.

About 578 species in Ireland are referred to as macro-moths, and in general have a wingspan over 20mm. A Red List for Irish macro-moths was produced in 2016 (Allen, et al., 2016). In that 43 of the Irish species assessed were listed as threatened and 20 as near threatened. None of the macro-moths recorded in and around Youghal since 1990 was assessed as threatened.

Since 1990 148 species of moth have been recorded in and around Youghal.

According to the NBDC the majority of these are recorded in grid squares containing portions of Ballyvergan Marsh.

Elephant Halkmoth

Garden Tiger Moth

Moths are often considered dull looking in comparison to butterflies but some of the macro-moths such as the Elephant Hawkmoth, the Garden Tiger, and the Deaths-Head are quite impressive looking and colourful. All three of these have been recorded in the BAP area. Pictures of them are included in that order clockwise from top left.

Deaths-Head Moth

Buff Tip Moth

Another interesting macro-moth species recorded here is the Buff Tip, pictured left. It has evolved so that from certain angles the adults look like a piece of twig.

There is no Red List for the micro-moths in Ireland yet, however some rare species have been recorded in and around Youghal. These species don't have common names so a few of the species are listed here using their scientific names:

- *Celypha aurofasciana*,
- *Phtheochroa inopiana*,
- *Phalonidia manniana*,
- *Oidaematophorus lithodactyla*,
- *Ptocheuusa paupella*.

The first three species were trapped around Ballyvergan, the last two around Foxhole.

Although these species are rarely recorded, the first three species were all recorded from the same trap on the same date in 1990, while the last two species were recorded from the same trap on the same date in 1995.

This certainly gives an indication that Youghal is an important location for moths.

Recent research indicates that moths, like bees and hoverflies, play a key part in wild plant pollination (Walton, et al., 2020).

3.2.7 Invasive Alien Species

The International Union for the Conservation of Nature defines an invasive alien species as '***a species introduced outside its natural past or present distribution;***

if this species becomes problematic, it is termed an invasive alien species **(IAS).**'

There are records for several invasive alien species in data obtained from the NBDC.

In Fig. 1 at the beginning of this plan 'Alien and Problematic Species' were listed as one of the many threats to Habitats Directive habitats in Ireland, in a report to the European Union (NPWS, 2019a). 'Alien and Problematic Species' were also indicated to have an impact on Habitats Directive species in the same report.

In Youghal, Traveller's Joy appears to be a particular problem in some areas.

It is particularly an issue on steep slopes below Larchfield Rise overlooking the R634, which is very close to the Quarry Gardens. This species can completely blanket other vegetation, blocking out light and ultimately killing it. It can be difficult to remove and requires regular management to control.

There are also infestations along hedgerows and walls from the Rincrew Roundabout, and around Ashe Street.

Traveller's Joy

Many of us will have heard that our native ladybird species are great at controlling pests such as aphids (greenfly). The Harlequin Ladybird, pictured right has been used specifically for controlling aphids in horticultural and other settings for some time (Orlova-Bienkowskaja, 2013). It 'jumped the fence' however and is now a major pest, devastating native ladybird populations across the globe as well as other insects, crops, and it also has impacts on human health and property. It was first recorded in Ireland in 2007.

Harlequin Ladybird

Common Name	Invasive Impact Level
Greylag Goose*	High
Harlequin Ladybird *	High
Feral Ferret*	High
American Mink*	High
European Rabbit	Medium
New Zealand Pigmyweed*	High
Japanese Knotweed*	High
Sycamore	Medium
Butterfly Bush	Medium
Water Fern*	Medium
Three-cornered Garlic*	Medium
Traveller's-joy	Medium
Himalayan Honeysuckle	Medium
Japanese Honeysuckle	Medium
Common Broomrape	Medium

Table 17 Medium and High Impact Invasive species recorded in the Youghal area since 2000.

Species marked with an asterisk* in Table 10 are subject to control under the European Communities (Birds and Natural Habitats) Regulations 2011.See also section 3.2.1 Vascular Plants.

3.3 Habitats of Biodiversity Interest in Youghal

3.3.1 Rivers and Streams

There are two running freshwater bodies within the BAP area. One runs into Ballyvergan pNHA and joins the sea at the junction of Redbarn and Summerfield townlands. It has a saline influence for at least some of its length here. This saline influence has increased in recent years due to the loss of a sluice gate at Summerfield.

For Water Framework Directive monitoring this is included in a group of waterbodies named ‘East Ballyvergan_010’, which is part of the Womanagh sub-catchment of the Lee, Cork Harbour and Youghal Bay Catchment.

In the most recent publicly accessible report on the Womanagh sub-catchment (EPA, 2019a), the East Ballyvergan waterbody group is assessed as 'under review' due to a lack of data.

A recommended action in the report is that a 'Determination of Water Quality' be made by Cork County Council for the East Ballyvergan waterbody group.

Pressures noted for this group of waterbodies in the 2019 report are:

- Urban run-off
- Agriculture

Part of the 2017 Biodiversity Action Plan for Ballyvergan Marsh was to establish the extent of saltwater in the marsh due to the loss of the sluice gate. U.C.C., working with Youghal Tidy Towns and Wild Work arranged for a student to carry out this work, which included invertebrate sampling. A link to this report 'An investigation into aquatic invertebrates, saline influence and other factors associated with management of Ballyvergan Marsh, Youghal, Co. Cork' (Dineen, 2020) is included in the references section.

Another running water body travels through the BAP area further north. This stream rises near the junction of Ballinvarrig Upper, Ballinvarrig Lower and Kilnatoora Townlands. It borders Muckridge Demesne and Copperalley and enters a tidal lagoon alongside the Slob Bank.

This is part of the Tourig sub-catchment of the Blackwater (Munster) catchment for Water Framework Directive monitoring.

On maps for this it is named as Muckridge_010. In the most recent publicly accessible report this waterbody is assessed as 'not at risk' of not achieving good water quality, and there are no pressures noted for it (EPA, 2019b).

'Muckridge' stream at Muckridge Demesne

Figure 6 Streams in the BAP area.

At Youghal, the Tourig and Blackwater rivers would be classified as 'Tidal Waters (CW2) in 'A Guide to Habitats in Ireland'. For Water Framework Directive (WFD) monitoring they are monitored as a 'transitional water body'- Lower Blackwater Munster Estuary / Youghal Harbour. The most recent WFD monitoring report (EPA, 2018) had this waterbody assessed as 'at risk' of not achieving good water status under the Directive.

It does say that the water treatment plant that opened in 2018 is expected to address some of the issues. However, it also says that recent Nitrogen levels in the estuary were a concern. The ecological status of water in the estuary was 'moderate' as of 2015. Agriculture was listed as the significant pressure on water quality here.

3.3.2 Wetlands

Old Clay pit at Muckridge.

In addition to the rivers there are several other waterbodies in and connected to the BAP area. Some of these are within areas of conservation dealt with earlier in this document -these include Ballyvergan Marsh and coastal wetlands associated with the SAC and SPA.

At the Quarry Gardens - see below - there is a wet woodland and an open water area.

There is a large water-filled pit adjacent to the old Brick Works at Foxhole at the north end of Youghal.

At Claycastle Pitch and Putt Club is a small wetland area.

In Ballyvergan West townland at the south end of Youghal there are plots of land associated with merging/ leaving roads for the N25. In addition to wooded areas and grassland areas, there are wetland features in two of these plots. One had quite a large fringe of Greater Pond Sedge, an important species for Dragonfly and other insects.

Ballyvergan West wetland

Wetlands are threatened in Ireland and globally. Threats include destruction through infilling, drainage, pollution, and disturbance of water supply. Across Europe two thirds of wetlands have been lost over the last 100 years (European Commission, 2007).

3.3.3 Grassland

Looking at aerial maps of the BAP area, the greatest land cover by area is grassland, of different types.

Much of this is improved agricultural grassland that is of limited benefit to biodiversity.

Some of these agricultural grassland areas are zoned for other uses under current development plans. These include uses such as residential, institutional, civic, educational, business, and industry.

Some areas of grassland that are under agricultural use currently, but are not intensively managed, would be of value to wildlife.

Less intensively managed agricultural grassland.

There are examples of this type of grassland habitat west of the Slob Bank. Some of those fields are within the Blackwater River (Cork / Waterford) Special Area of Conservation (SAC).

Considerable areas are also amenity grassland associated with sporting institutions. These are intensely managed and again, of limited benefit to biodiversity.

There are areas of grass that are green space within housing estates. How these are used currently may vary between location.

If there are many young families in a particular estate, these greens may be partly used as play areas, in other estates they may be managed as lawns.

Amenity grassland in Youghal.

If a smaller area within each of these was managed to benefit wildlife the overall impact for wildlife in the BAP area could be great. They could also be used as educational features for those living in and around the housing estates.

Some schools in the area have large, grassed areas that are not used for sports amenity and these have potential to be managed to benefit wildlife. Grassed areas in the grounds of religious and cultural institutions, as well as commercial interests, also have the potential to be managed to benefit biodiversity.

In 2020 an area of grassland in the grounds of Lidl was left to grow longer through the summer allowing a range of plants to flower and benefit insects and other wildlife. See photograph right.

Closer to home, for those fortunate enough to have a garden, perhaps part of it could be managed in a nature friendly way too.

Pollinator friendly grassland.

There are considerable areas of grassland bordering roads in the BAP area and in other open spaces. An area adjacent Breton Road, in a section marked for mixed use in the most recent Youghal Town Council Development Plan (Youghal Town Council, 2009a) has been managed recently so that a track is mown through an area of longer grass meaning the community can engage more closely with the grassland and other habitats here.

Two grassland management styles near the Breton Road.

3.3.4 Woodlands

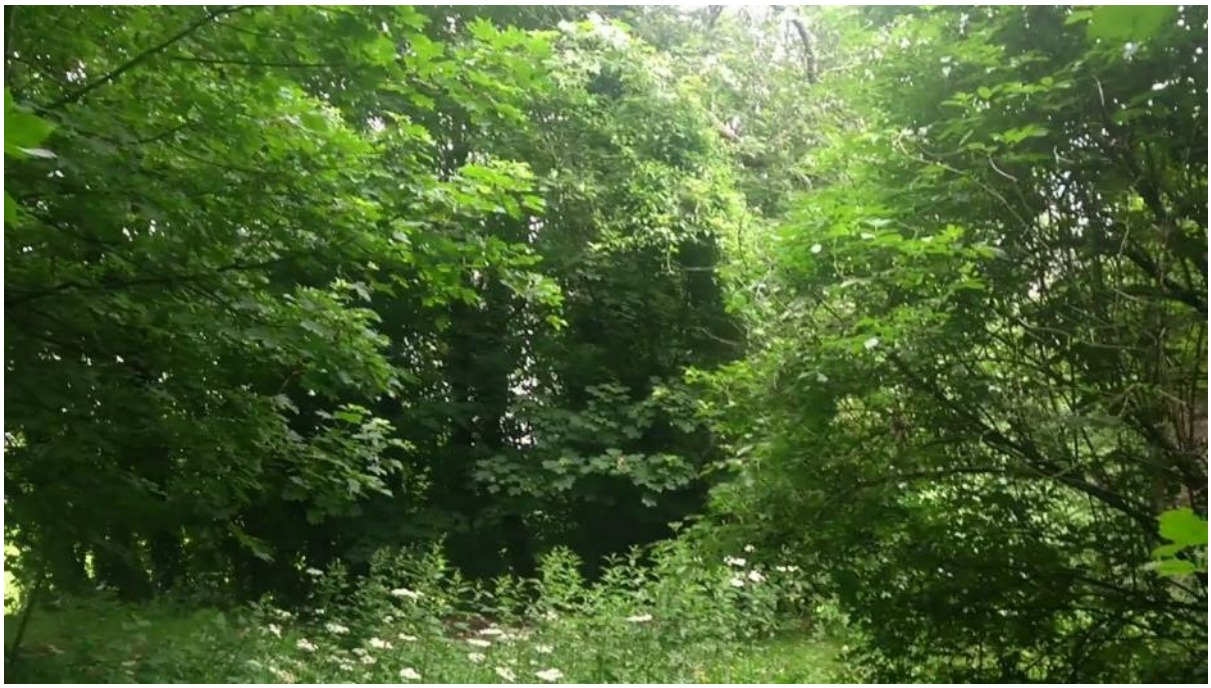
Although the Irish name for Youghal, Eochaill, is thought to be come from the Irish for Yew, Eo, within the BAP area there is relatively little closed canopy broadleaved woodland habitat.

Maps from the 19th and early 20th century indicate this may have been the case for some time. One of the largest wooded areas is within the BAP area currently, is at the old Brick Works area in Muckridge townland.

Brick Works

At Muckridge there is also an extensive area of scrub, mainly of willow species, that could develop into woodland over time if left undisturbed.

There is an area of closed canopy woodland at the Quarry Gardens.



Quarry Gardens

Close to the town centre, there are wooded areas in and around College Gardens and some woodland has developed on the site of the old brewery on Lower Cork Hill.

Woodland has also developed on plots of land in Ballyvergan West townland at the south end of Youghal associated with merging / leaving roads for the N25. Individual tree and groups of trees are to be found on Youghal Golf course and scattered through the BAP area.

Bordering the N25 along the western boundary of Knockattigan townland there is some closed canopy woodland.

3.3.5 Hedgerows, Treelines and Scrub

While there is very little closed canopy woodland in the Tidy Towns area of Youghal, there is a considerable amount of linear woodland such as hedgerows and treeline.

Hedgerows and treelines are considered as types of woodland, 'Linear Woodland' in the Fossitt classification.

Hedgerows can have elements of woodland, scrub, and grassland habitats. Depending on how they are managed they can act as a corridor for plant and animal species to disperse through the landscape. They also provide shelter and food for pollinating insects, birds, mammals, and other animal groups, as well as a habitat for plants.

Ireland has one of the lowest levels of woodland cover in Europe with about 11% of land under woodlands (CSO, 2016). Most of that is non-native conifer plantation with only about 2% semi-natural woodland (Perrin, et al., 2008). It is estimated that hedgerows cover more area than all our broadleaved woodland and hold 15% of our broadleaved trees (Hickie, 2004).

In Ireland hedgerows have been widely used to mark field boundaries and protect livestock for at least the last 300 years and to mark townland and other significant boundaries for over 1000 years. They are an important element of our landscape, visually and culturally (Foulkes, et al., 2013).

Treelines can develop from hedgerow over time, particularly if traditional hedgerow management in not continued. Treelines can also be planted for landscaping purposes.

There is a lot of research into the carbon sequestration capability of hedgerows (Black, et al., 2014), so any reduction in their extent could add to problems associated with climate change.

Most of the hedgerow in the BAP area is situated in fields of agricultural grassland west of the town centre.

A good amount of this is zoned for residential development in both the most recent Youghal Town Council Development Plan (Youghal Town Council, 2009a) and Cork County Council Local Area Plan for Youghal (Cork County Council, 2017). Other sections of it are zoned for Industry and Business in the County Council Local Area Plan.

For the remaining agricultural fields and their hedgerows and treelines the objective of the most recent county Development Plan is that '*the existing pattern of land uses will remain largely unchanged*'.

The current Cork County Council Development Plan (Cork County Council, 2014) has a number of objectives relating to the protection of hedgerows in general, and in the planning process.

As mentioned previously these boundaries have been in place for likely hundreds of years and in addition to losing biodiversity, when we do not look after them, we are also losing part of our history and culture.

There are some examples in Youghal of where hedgerows and treelines have been preserved in the urban and suburban environment. At the G.A.A. grounds at Copperalley, along sections of Golf Links Road, along parts of Chickley's Road and in some of the housing estates off of it, between Prospect Farm and Carleton Estate, on parts of Spa Hill, and also a section at the entrance to Cnoc Aoibheann, as well as along the R634 from Rincrew Roundabout.

In the fields just west of the Slob Bank there are hedgerows bounding fields and ditches. One hedgerow runs parallel to the entrance to the waterworks along a track that appears on maps since the fields were developed on impounded land.

This hedgerow in the photograph above is a very good example of an intact hedgerow in Youghal, which contains a high number of native plant species.

At the north end of the Slob Bank the path is bounded by a strip of linear woodland containing native shrubs and trees. It is not clear if this was planted or developed naturally over time.

There are examples of relatively recent treeline planting in Youghal. There has been some along the R364 adjacent to Youghal Mudlands – mainly of non-native species - as well as some as landscaping in recently built housing estates. This is good as it means there will be trees in Youghal for future generations of people and wildlife.

Scrub is also a woodland type in Fossitt and can consist of low growing trees or shrubs – including Brambles and Common Gorse. For scrub, the height of the canopy is usually less than 5 meters in height and, overall, the area is wider than 4 meters and most of the area should not be dominated by non-native species.

Scrub is very valuable for wildlife, in particular invertebrates (Day, et al., 2003).

Scrub is a 'transitional' or 'successional' habitat. For example, if an area of grassland in Ireland was not managed through grazing or mowing it would probably develop into scrub and eventually then into woodland.

In exposed areas scrub can survive over time, however it usually needs management, or it will progress to woodland in most cases.

On the slopes around the steps between Kilcoran Road and Knockaverry Estate is an area of gorse, bramble, bracken and willow scrub. There is gorse scrub symbolised on maps from the early 20th century in this position. It is similar to the habitat that can be seen across the bay on slopes in Monatray in Waterford.

Scrub has developed in areas around Youghal that had been set aside for development in recent years, such as that currently around the Foxhole and Muckridge area.

There is scrub on sloping ground along roads at the west end of suburban Youghal and scattered through the BAP area.

Scrub in and around Youghal.

3.3.6 Old Stone Walls

Old stone walls can be an important habitat type in both urban and rural situations. Ferns and other plants, including mosses, as well as lichens can find a home here. Insects, including bees, and other invertebrates will live here. Under certain conditions, birds and small mammals may make a home in them

There are a perhaps three types of 'old stone wall' to be found in the BAP area.

One of these is loose, un-mortared limestone faced earth banks.

Another type is old mortared walls that also function as boundaries, but in Youghal are also often found as stand-alone remnants of old buildings and walls. This latter type, old mortared walls, appears to be the most common in the BAP area.

A third type, perhaps a combination of both types described above but differing because of their location are impounding and other seawalls and remnants of coastal constructions such as part of the old bridge infrastructure at Foxhole.

There are examples of the first two types to be found along a stretch of road running opposite Youghal Rugby Football Club and Pobalscoil na Trionóide. The boundary walls of the newly built school sensitively echo the same stone wall style. There are old mortared walls along sections of the Quarry Road and here again some newly built boundary walls echo the older walls.

Our Lady of Lourdes Church

The rear boundary wall of Our Lady of Lourdes church along Kilcoran Road is a nice example of limestone-faced earth bank type, which gives this suburban area a rural feel. Two species of plant that like this type of dry habitat, Doves-foot Cranes-bill, and Common Storks-bill were found growing here. There is a large old mortared wall separating the church from the adjacent tennis courts.

Along the R634 from Rincrew Roundabout there are considerable lengths of old, low, mortared wall. On Cork Hill there are sections of old walls and gateways associated with the old Military Barracks, where Youghal Community Hospital is now located. There are boundary and retaining walls low and high lining the road almost continuously from Our Lady of Lourdes Church at Upper Strand Road to the Walter Raleigh Hotel at O'Brien Place. In the cemetery are the remains of parts of the 13th century North Abbey building.

Then of course there are the old Towns Walls at Raheen Road - a hugely important part of the heritage of Youghal.

In some instances, it may be felt necessary to maintain a very clean façade, however there are many walls in Youghal that can manage the dual heritage/biodiversity role.

To carry both roles into the future, they will require maintenance.

Old Towns Walls

3.3.7 Buildings and gardens

Buildings and artificial surfaces (BL3) is a habitat type in 'A Guide to Habitats in Ireland' (Fossitt, 2000). While artificial surfaces such as roads, paved carparks and AstroTurf pitches may not be of much biodiversity value, some buildings can be. In urban areas there is certainly no lack of this type of habitat.

Many of us might think of old buildings such as churches as being somewhere that bats might feel at home, but they will happily use modern buildings too.

Some bird species will use old buildings. Peregrine Falcon have been spotted on Shandon Cathedral in Cork city; however, they have also been spotted using the County Hall – a much more modern building.

The House Martin, its relative the Swallow, and the similar looking Swift, all summer bird visitors to Ireland, will build nests on buildings.

The magnificent looking Barn Owl gets its common name from a type of building that it likes to use. This species did not show up in the data downloaded from the NBDC. The NBDC does hold records for the species within 10 kilometres of the BAP area, but the most recent of these is from over 30 years ago.

Most houses in Youghal have a garden and these can be a great place for attracting and watching wildlife.

Even a window-box managed in the right way can be a micro nature reserve.

3.3.8 Coastland

For residents and visitors to Youghal coastal habitats are perhaps the most striking.

Youghal Beach

The beach at Youghal has long been an attraction.

'The town is much frequented during summer for sea-bathing, for which it is well adapted, having a fine, smooth and level strand extending nearly three miles along the western shore of the bay…' (Lewis, 1837)

The sandy beaches, sand dunes and cliffs make wonderful scenery, but are also valuable for wildlife.

Those areas of the beach that are covered by the sea at high tide contain many invertebrates that are a food source for birds at low tide.

Where the beaches are not covered by tides, plants such as Sea Rocket, Sea Holly, Sea Sandwort and others grow.

The dunes in the BAP area are within Ballyvergan Marsh pNHA. The dunes are of two types; Marram Dunes, and Fixed Dunes. These provide a valuable habitat for plants and animals, particurly birds.

The cliffs and exposed coastal rock at the Lighthouse are also important for plants, invertebrates, and birds.

Coastal constructions such as the impounding wall at the Slob Bank and the old Bridge Pier provide similar habitat.

3.4 Sites of Local Biodiversity Interest

Figure 7 Locations of Sites of Local Biodiversity Interest.

3.4.1 Muckridge Brickworks Area

At the far north of Youghal in Foxhole and Muckridge townlands, and west of the R634, is an area of land containing a variety of habitat types. It also contains a site of cultural and architectural interest in the remnants of the Youghal Brickworks that operated on part of the site from the late 19th century to 1929, although bricks had been produced here since at least the early 19th century.

One of the features of potential ecological value here is closely associated with the operation of the brickworks – the now flooded claypits.

Mapping on the Heritage Council website, heritagemaps.ie, indicate that a standing stone may also have been located on this site.

Old Brickworks chimney with grassland, woodland, and scrub.

There is woodland here, grassland, recolonising bare ground, and the water body previously mentioned, in addition to other habitats such as scrub and hedgerow.

Before the development of the N25 here between 2000 and 2005, much of this area was in agricultural use. A lot of what was agricultural grassland has been levelled and is now a mixture of scrub and recolonising are ground.

Immediately east of the Brickworks one field was left as grassland. There is some indication that it has been grazed by horses but other than this there appears to be no management. The grassland here is more species rich than intensively managed, improved agricultural grassland. Pollinator friendly native plants such as Common Knapweed, Greater Birds-foot trefoil, Meadow Vetchling, Buttercups and others were found growing here.

There was a mix of grass species. Tussocky grasses such as False Oat-grass and Cocks-foot were found, but did not dominate. Based on the species this grassland could be classified as 'Dry meadows and grassy verges, GS2' in the Fossitt classification, a rare habitat now in Ireland.

However, it is not managed as this type of habitat needs to be, and bramble and willow scrub are beginning to encroach. It is likely that, in the absence of management, ranker grasses and scrub will increase, and this grassland habitat will eventually succeed to scrub and eventually woodland.

There is no woodland seen here on historic 19th and 20th century maps. There is treeline and woodland indicated in the grounds of the adjacent Muckridge House. On photographs from the early 20th century the area around the clay bit is not shown as wooded, whereas today it is.

The woodland south of the brickworks is approximately 2.5 hectares in area and has a mix of woodland types.

Grassland and woodland at the brickworks.

It is one of only two relatively large, closed canopy woodlands in the BAP area.

The woodlands on steep banks between the brickworks and Muckridge Demesne are quite different from those on flatter areas.

While those on the banks had a high proportion of non-native trees in the canopy, such as Sycamore and Beech, the ground flora had species found in woods that are classified as semi-natural woodland 'Oak-ash-hazel woodland, WN2' in 'A Guide to Habitats in Ireland'. These included Sanicle, Barren Strawberry, Wood Speedwell, Ivy, and a variety of ferns. However, due to the non-native canopy, it would be classified as '(Mixed) broadleaved woodland, WD1'.

Some woodland on flatter areas the woodland has species found in 'Wet pedunculate oak-ash woodland, WN4'. This included typical plant species for this woodland type such as Enchanters Nightshade, Herb Robert, Ragged Robin, Wood Dock, and Remote Sedge. Again, though this section of woodland would probably best be classified as '(Mixed) broadleaved woodland, WD1'. One Common Spotted-orchid was recorded here.


Common Spotted-orchid.

On the edges of the flooded clay pits the woodland is closer to 'Wet willow-alder-ash woodland, WN6' with plant species here including Woody Nightshade, Wild Angelica, Remote Sedge, Hard Rush and Great Horsetail.

The depth of the flooded clay pit was not possible to gauge due to safety concerns, but it appeared quite deep and steep sided. From examination of reports in connection with planning applications in the area, clay can be over 10 metres deep. Apart from a band of willow at the edges there was very little emergent vegetation. No floating vegetation was seen, and the water was not very clear. Examination of historic aerial photography suggests that the water here may experience algal blooms from time to time.

North of the brickworks, an extensive area of willow and gorse scrub has developed almost to the edge of the estuary.

Some examples of the habitat types 'Wet willow-alder-ash woodland, WN6', and 'Dry meadows and grassy verges, GS2' are protected by the Habitats Directive. At Muckridge these habitats are not of the Habitats Directive type.

In the most recent local area plan for Youghal this area is noted as a Special Policy Area (Cork County Council, 2017) for planning objectives.

Business, including '*a service station'*, and tourism related use is suggested here. The presence of features of architectural, archaeological, and ecological significance in and adjacent to the site is referred to.

This area is bounded on the north by a section of the Tourig estuary, which is also part of the Blackwater River (Cork /Waterford) SAC. The section here has potential Habitats Directive habitat type 1330 Atlantic salt meadows (NPWS, 2012b).

On development plan maps an area designated as 'Open Space' north of the Special Policy Area includes sections of the SAC and SPA.

3.4.2 Foxhole Area

East of the R634 in Foxhole is an area of saltmarsh, surrounded by old seawalls. This had been part of the Tourig/Blackwater estuary in the early 19th century but was reclaimed and used as fields for agriculture. In the 1990s the damaged seawalls allowed water to return. It is now pretty much a saltmarsh habitat and is used as a high tide roost by wading birds (Smiddy, 2001).

This area is included as part of Blackwater Estuary SPA and Blackwater River (Cork /Waterford) SAC, described in section 3.1.

Foxhole at high tide.

3.4.3 The Slob Bank and Youghal Mudlands

On mid-19th century maps a large area of estuarine mud, part of the Tourig/Blackwater estuary is shown to the north-west of Youghal town.

The course of the northern most stream (Muckridge) discussed above in section 3.3.1 can be seen meandering across the mud on these older maps. A '*wooden bridge'*, quite a bit south from the modern-day concrete bridge, is seen connecting Youghal with Waterford.

On later maps there are fields indicated where some of this estuarine mud had been located, separated from the Blackwater Estuary by an impoundment wall.

The course of Muckridge stream had been straightened and ran through the fields. A line of trees is shown along one side of this canalised section in early 20th century maps and a hedgerow is still there today.

The fields located on this impounded area today are grazed, however the fields do not appear intensively managed, which is better for biodiversity.

There are several drainage features situated here which have a tidal influence so salt tolerant plants, such as Distant Sedge, Long-bracted Sedge, and others can be found on their edges. Some of these fields, and parts of the main drainage channels are within the Blackwater River (Cork /Waterford) SAC.

A landfill/civic recycling amenity site is located at the north end of the impounded area and a waste-water treatment facility is located near its centre. The waste-water treatment facility was opened in 2018.

In the past, Birdwatch Ireland have noted that the fields here have a high level of usage by birds.

The public walkway along the impounding seawall provides an opportunity to observe the scenery and birdlife in the fields and in the estuary. There is a strip of grassland and scrub between the landward side of seawall and the main drainage channel.

There is typical coastal vegetation on the seaward side of the seawall and along the track on top of it.

Redshank (l) and Teal (r) in saltmarsh by the landfill.

There are also sections of salt-marsh habitat in this area, especially near the north end of the Slob Bank, near Youghal Landfill site.

The pier for the old Youghal bridge at the north end of the Slob Bank and the wall lining the north side of what was the approach road to the pier have a very diverse range of plants

A small section of wall near the old pier supporting a host of vascular plants, including Musk Stork's-bill and White Stonecrop, as well as mosses and lichens.

growing on them, but the walls are in poor condition in some places.

From the pier a continuous linear strip of native trees and scrub runs south along the west side of Slob Bank walk for about 450 metres. This is a valuable habitat for the many native tree and shrub species in it such as Hawthorn, Blackthorn, Elder and Bramble. It also supplies cover for birds such as Dunnock, Song Thrush, Wren, Chaffinch, Goldfinch and Bullfinch, all recorded along it.

At the base of this habitat, Winter Heliotrope grows, often in continuous strips of considerable length.

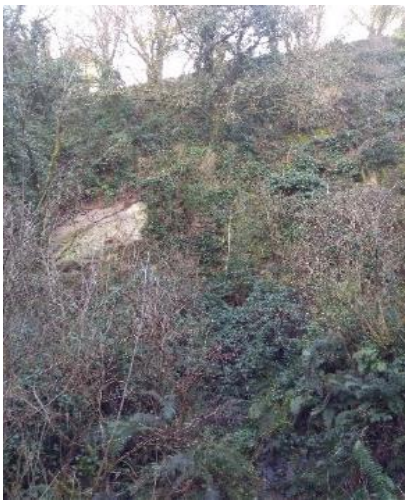
The Breton Road runs through reclaimed land in Youghal Mudlands. It has drainage features at its sides with wetland plant species, as well as some closed canopy wooded areas, and grassland. These form a corridor for wildlife. Spring flowers on the many willows provide an early food source for emerging bees and other insects.

3.4.4 Keane Park (The Quarry Gardens)

Lewis (Lewis, 1837) mentions that 'at the north end of the town is a quarry of good clay-slate'. It can be seen on older historical maps, including the first Ordnance Survey map from the mid-19th century. On later historical maps a pit can be seen in the quarry base, and rough vegetation is indicated surrounding it, so it was likely quarried out at this point.

The pit on older maps is in the same area that a small area of open water bounded by wooded wetland is situated today.

Wet woodland along the Breton Road.

Wet woodland and the Quarry face at Keane Park.

Historical maps indicate the area of the quarry was greater overall until at least the 1930s.

Photographs from the Horgan Collection online at Cork County Council Local Studies Digital Library show that a much larger area of water occupied the quarry floor in the early 20th century and water levels in the quarry may have varied seasonally, much as today.

Historical aerial photography indicates the quarry area was re-developed in the mid-1990s. From then there appears to have been an increase in the proportion of tree cover to open wetland on the quarry floor. There is a high cover of Fool's-water-cress in the wetland which could indicate high nutrient levels, and also high cover of Marsh Marigold. There is also Reedmace fringing the more open areas.

There are trees growing from the old quarry face, where there is a mix of woodland, exposed rock, scrub, and small clumps of grass and other herbaceous plants. At the base of the cliff a strip of closed canopy woodland has formed.

There is an old stone entrance and boundary wall here. These can be seen in historical photos.

There are sizeable areas of grassland here which are managed as amenity grassland, even in winter-wet areas that receive water seeping down through the quarry face. At the east end of the park, grassland has developed over an area where rock is very close to the surface. Mouse-ear Hawkweed, typical of this kind of dry, rocky, grassland habitat grows here with

Common Knapweed and other native plant species. These are both valuable for pollinating insects if allowed to flower. The garden escapee Wood Forget-me-not also grows here.

A small grove of heritage apple trees has been planted in the south-west of the gardens.

A large patch of Lesser Knotweed is located over a wall at the south-east corner of the Quarry. Although not listed as an invasive species in Ireland, it can run rampant. There is also Winter Heliotrope in grassland areas, the woodlands, and bordering the wetland area. A small stand of Japanese Knotweed was noted here in spring 2021.

3.4.5 Millennium Garden of Time

This small park contains areas of amenity grassland and is bounded by linear planting of native and non-native trees and non-native hedge and shrubs. There is also a good deal of native bramble here.


Pollinator friendly planting and grassland in the park.

This park is bounded by Breton Road on one side, which has closed canopy woodland, treelines, and other habitats.

There was quite a bit of bird activity in the park at the time of visit in Spring including Wren, Dunnock, Robin, House Sparrow, and Rook. These are all quite common species.

There are small water features here, which contain the invasive species New Zealand Pigmyweed. This may have been introduced with other plants in the water features.

A small mound in the south-west corner is designated as a wildflower garden. Tracks though this mound and through the woodland on the east side indicate that children are keen to explore. The park is next to a playground.

There are two walled strips with semi-mature trees, on the Mill Road side of the park, see photograph left. There is quite a lot of moss here.

3.4.6 College Gardens

The College gardens have a high cover of amenity grassland and ornamental non-native landscape planting, as might be expected in such a location.

At the time of fieldwork, at the crest of sloping ground, grass had been allowed to grow longer than in other areas. This resulted in an abundance of flower for insects in places, as can be seen in the image below.

Pollinator Friendly Lawn at the College Gardens.

At the south-west end of the gardens is a small area of woodland. The canopy is primarily of the non-native Sycamore but with at least one native Ash. The shrub layer had native Hawthorn, Elder and Holly. The ground layer had quite a diverse flora for such a small area of woodland, including Bluebell, Wood Avens, Enchanter's Nightshade, and a range of ferns.

Also here are the native Common Hogweed and Greater Salad-Burnet. However, there is an extensive carpet of the similar looking, introduced, Ground Elder.

Traveller's Joy was also found in the wood here.

There is a line of large old veteran Beech trees along the west boundary wall.

Trailing Bellflower and Snapdragon had managed to jump onto the walls at the south end of the garden. These two garden escapees are a good resource for wildlife.

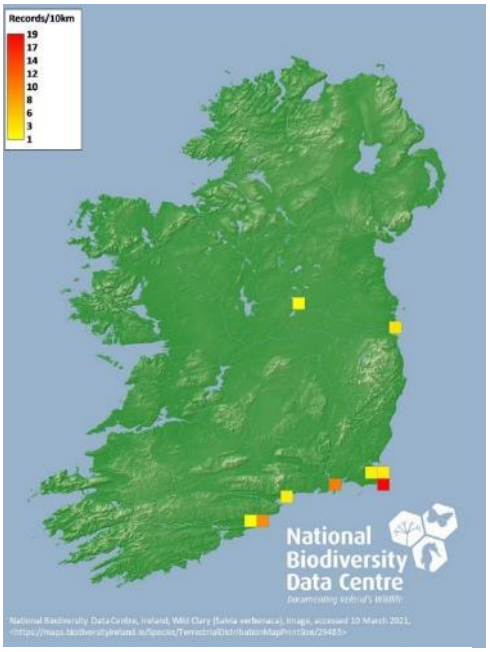
3.4.7 Claycastle/Summerfield Area

At Claycastle, and the adjacent Summerfield are located coastal sections of Ballyvergan Marsh pNHA. Here too are located access points to the beaches, sand dunes and to Ballyvergan Marsh itself.

Habitats in the Claycastle area include Marram Dunes, Fixed Dunes, Scrub, and Sand Shores.

A large, surfaced car park provides parking for the many visitors to the beach, although green areas are often parked on too.

The rare plant species Wild Clary has been recorded in this area. It grows on sandy areas within Ballyvergan Marsh pNHA including Claycastle Hill, but there is also a significant population in grassy areas here that are outside of the pNHA.



Wild Clary Records Map for Ireland

Traveller's Joy and Winter Heliotrope were noted on Claycastle Hill. Winter Heliotrope is also now growing in the fixed dune area further west.

In the fixed dunes, plant species such as Pyramidal Orchid, Bulbous Buttercup and Ladies Bedstraw can be found, while Sea Holly, Sea Rocket and Sea Sandwort can be found in the sand on the seaward side of the dunes.

A clear view out over Ballyvergan Marsh is to be had from the west end of the car park.

The Cork to Youghal railway service ceased operation in the late 1980s. Part of the line, from Cork to Midleton re-opened in 2009. That section between Midleton and Youghal developed over time into an almost continuous narrow green artery of woodland and scrub through the east Cork countryside.

In the BAP operational area, the old railway line runs through Ballyvergan Marsh terminating at the east end of the Front Strand.

The old railway between Midleton and Youghal is currently being developed as a Greenway. This is likely to bring great rewards to Youghal in terms of economic development and physical wellbeing. This will also mean the loss of woodland, scrub and other habitats that have developed along the line over the last thirty years or so.

Within the railway yard on the Front Strand, areas of 'Dry calcareous and neutral grassland, (GS1)' were identified in the Ecology Report for the Midleton to Youghal Greenway (Atkins, 2018). It was noted in the report as being of High Local Importance and this grassland type is noted as having a restricted distribution in Ireland (Fossitt, 2000).

A 400-metre boardwalk runs along the beach side of Claycastle Hill to a car park in Summerfield. This is currently being extended to run as far south as Redbarn.

3.5 Habitats Recorded in BAP Area

Habitats listed in Table 18 below are classified according to 'A Guide to Habitats in Ireland' (Fossitt, 2000)

Fossitt Habitat Name	Fossitt Code	Fossitt Habitat Name	Fossitt Code
Other artificial lakes and ponds	FL8	Exposed siliceous rock	ER1
Depositing / lowland rivers	FW2	Spoil and bare ground	ED2
Drainage ditches	FW4	Recolonising bare ground	ED3
Reed and large sedge swamps	FS1	Horticultural land	BC2
Improved agricultural grassland	GA1	Flower beds and borders	BC4
Amenity grassland (improved)	GA2	Stone walls and other stonework	BL1
Dry calcareous and neutral grassland	GS1	Earth banks	BL2
Dry meadows and grassy verges	GS2	Buildings and artificial surfaces	BL3
Wet grassland	GS4	Rocky sea cliffs	CS1
Dense Bracken	HD1	Sedimentary sea cliffs	CS3
Wet willow-alder-ash woodland	WN6	Lagoons and saline lakes	CW1
(Mixed) broadleaved woodland	WD1	Tidal Rivers	CW2
Scattered trees and parkland	WD5	Lower salt marsh	CM1
Scrub	WS1	Upper salt marsh	CM2
Immature woodland	WS2	Marram dunes	CD1
Ornamental/non-native shrub	WS3	Fixed dunes	CD3
Hedgerows	WL1	Sea walls, piers and jetties	CC1
Treelines	WL2	Open marine water	MW1
		Estuaries	MW4

Table 18 Habitat Recorded in the BAP Area

4. Actions

Actions are grouped under headings 'Habitats of Biodiversity Interest in Youghal, and 'Places of Local Biodiversity Interest' that will be familiar from Section 3 above. There are also sections on 'General', 'Survey and Monitoring' and 'Training'. Actions for each heading are presented in Table form at the end of each heading section. Directions to some key resources available in Section 5 are indicated.

No actions listed in this plan should be undertaken without prior agreement being sought from the landowner(s).

4.1 General

4.1.2 Management Structure

To effectively manage the implementation of this Biodiversity Action Plan, a structure to manage and communicate the plan needs to be put in place. Youghal Tidy Towns is probably best placed to lead this initially, but linkages with other groups in the community should be made.

Action	Management Structure	Year
MS-1	Establish a management structure to oversee the implementation of this plan.	1

4.1.3 Pesticides

Youghal Tidy Towns are keen supporters of the All-Ireland Pollinator Plan which advocates avoiding the use of pesticides. Pesticides have been implicated in the decline of insect groups such as bees (NBDC, 2019), and others.

Youghal is a heritage town and in certain areas it is appropriate to maintain a very ordered appearance, nonetheless alternative methods of control such as mulching or mechanical removal could be investigated. See for example (Washington State Department of Enterprise Services, n.d.) and (Seattle Public Utilities, 2012).

In 2018 Dublin City Council developed a policy to eliminate herbicide use (Environment Strategic Policy Committee , 2018).

There are also suggestions on alternatives to pesticides in the website of the All-Ireland Pollinator Plan, https://pollinators.ie/

To control some invasive alien species pesticides may have to be used as an option of last resort, but this should always be done using Sustainable Use protocols.

There are reports and advice on minimising pesticide use available from the All-Ireland Pollinator Plan website and links to more information on minimising pesticide use can be found in the Resources section below.

Action	Pesticides	Year
PS-1	Work with Cork County Council and other groups to eliminate the inappropriate use of pesticides.	1-5
PS-2	Work with Cork County Council and others to develop a Pesticide Policy for Youghal with reference to the Sustainable Use Directive (Directive 2009/128/EC) and the All-Ireland Pollinator Plan.	1
PS-3	Share information on sources on reducing and eliminating pesticide use across the community.	1-5

4.1.4 Pollinator Friendly Planting

In continuing support of the All-Ireland Pollinator Plan, Youghal Tidy Towns are working to include pollinator friendly plants in planting schemes. Youghal Tidy Towns could share their experience of this, through events, workshops, and social media.

Planting pollinator friendly perennials in areas that are currently sprayed repeatedly with herbicides to manage 'weedy' plants can have biodiversity, financial, and human health benefits.

There are great resources on this topic available on the website for the All-Ireland Pollinator Plan, pollinators.ie. See the Resources section for where to find more information.

Action	Pollinator Friendly Planting	Year
PF-1	Continue and expand the use of pollinator friendly planting across Youghal by Youghal Tidy Towns and other stakeholders.	1-5
PF-2	Work with Cork County Council and others to explore the use of pollinator friendly planting across the community on public and private land.	1-5
PF-3	Promote the use of Pollinator Friendly Planting in homes, schools and elsewhere.	1-5

4.1.5 Invasive Species

A number of problematic, non-native species have been recorded in and around the BAP area. These are listed in the sections on Invasive Species (3.2.7) and in Vascular Plants (3.2.1).

A particular concern in Youghal is Traveller's Joy as mentioned in section 3.2.7 above.

The problems caused by each invasive alien species and how to manage it are particular to each one. A very important piece of information that is needed to deal with these species is their location – where they are. To do that it is important to know what they look like.

There are handy guides on how to identify them on the Invasive Species page of the National Biodiversity Data Centre website. You can even report your sightings on the website, and they will be sent to your local authority. You can find more details in the Resources section below, along with links to other identification sources and some suggested treatment options. A suggested 'Top 5' invasive alien species to start to get to know is in Table 18 below.

Harlequin Ladybird	*Harmonia axyridis*
Japanese Knotweed	*Fallopia japonica*
Winter Heliotrope	*Petasites fragrans*
Three-cornered Garlic	*Allium triquetrum*
Traveller's-joy	*Clematis vitalba*

Table 19 Suggested Top 5 invasive alien species to learn to identify.

Action	Invasive Species	Year
IS-1	Develop a community-based invasive species education, mapping, and reporting scheme.	1-2
IS-2	Liaise with relevant stakeholders to develop a management strategy for Traveller's Joy and other invasive alien species in Youghal.	1

Invasive species actions for specific sites of local biodiversity interest are made under those sites.

4.2 Rivers and Streams

Everyone in the community can help to maintain the quality of rivers and streams. Not littering is one thing we can all do, but also thinking about the types of chemicals that we may be putting into water through our daily activities such as bathing, laundering, or washing the car. There are links to information on simple things you can do in the resources section.

Where rivers run through farmland, farmers have a role to play in protecting water quality, a lot of which is covered by law.

Managing run-off, maintaining buffer strips, and controlling animal access are all important in this. Farmers must follow a lot of regulations to help maintain water quality.

Most, if not all, farmers are very much aware of this, but there are links to some guidance around this for farmers, and others in Youghal, in the Resources section.

The Local Authority Water Programme is a great way for communities to get involved in monitoring and protecting rivers and streams.

Action	Rivers and Streams	Year
RS-1	Liaise with LAWPR to explore developing a citizen science project for monitoring water quality in the BAP area. Contact information for LAWPR officers can be found in the Resources Section.	1

4.3 Wetlands

Youghal has a variety of wetlands, natural and artificial, freshwater, and saline, large and small. Some wetland areas are possibly overlooked and undervalued as habitats, such as drainage ditches in fields and other places, for example along the Breton Road.

Ballyvergan Marsh wetland has its own Action Plan. One of the actions was to assess the level of saline intrusion on the marsh due to damage to the sluice gate at Summerfield. This was carried out through cooperation between Youghal Tidy Towns, Wild Work, and U.C.C. The report found the degree if saline influence in Ballyvergan Marsh is now quite extensive (Dineen, 2020). The report recommends that the sluice gate be re-instated.

Action	Wetlands	Year
WL-1	Continue to implement the Action Plan for Ballyvergan Marsh.	1
WL-2	Work with e.g. schools and other groups to monitor wetland features along the Breton Road for use by wildlife.	1-5

Actions for wetland areas in sites of Local Biodiversity Interest are discussed under those sites.

4.4 Grasslands

Changing the way areas of amenity grassland, such as green areas in housing estates, is managed is an easy win for biodiversity. Already in Youghal some businesses and historical sites are using biodiversity friendly mowing regimes.

The All-Ireland Pollinator Plan recommends 2 main management methods for grasslands.

1. **Long flowering meadow**:

Here an area of grass can be left to flower through the year and not cut until September. The cuttings are removed. Removing the cuttings reduces nutrients so year by year there should be an increase in the ratio of flowers to grasses in areas managed in this way.

2. **<u>Short flowering (4- 6-week) meadows</u>**:

Here an area of grass is not cut until mid-April, and cuttings are removed. The delay to mid-April allows Dandelions to flower for pollinators in early spring, and to be cut before they set seed. Grass is then cut ideally on a 6-week rotation and clippings removed. This means a cut at the end of May and not cutting again until mid-July which allows Clovers, Self-heal and other pollinator resources to flower.

One or both these methods could be used while other areas of amenity grass in estates (or gardens, sports clubs, schools etc.) can still be maintained as lawn or play areas.

Pic: https://pollinators.ie/resources/

For grasslands in residential areas this might involve co-ordination between residents' associations and local authorities, or residents' associations and landscape contractors.

An entire area of grassland can be managed using these techniques, or just a small area; whichever works for the area in question and those using the space.

There is information on where you can learn more about managing grasslands for biodiversity in the Resources section.

Action	Grasslands	Year
GL-1	Work with Cork County Council to introduce pollinator friendly mowing methods in grassland areas managed by them.	1
GL-2	Promote the use of pollinator friendly mowing methods and initiatives such as 'Pledge Your Garden for Pollinators' across the community.	1-5

Grassland actions for specific sites of local biodiversity interest are made under those sites.

4.5 Woodlands

As mentioned in section 3 on Biodiversity in Youghal, there is very little closed canopy woodland within the BAP area.

Current land-use zonings mean that there is also very little opportunity to increase woodland cover in Youghal unless this is done on private land.

Therefore, what little woodland cover there is in Youghal should be protected.

There are relatively large green areas in some housing estates, and in the grounds of businesses, schools and other institutions.

It was recommended in section 4.4 on actions for grassland that these areas could be managed to increase flowering times in them.

In the long term, and if there is enough room, perhaps an area within each of these larger grassed areas could be planted with a small grove of native tree species

An example of how this might look can be seen in the grounds of Lidl.

Planted woodland with pollinator friendly grassland.

There are native trees and shrubs growing in and around Youghal. Oak, Ash, Alder, Willows, Hawthorn, Blackthorn, Birch, Holly, Hazel and others are to be found. Their seeds can be found here too. If these seeds are harvested and grown on, native trees could be ready to plant in areas where there are no trees now.

Blackthorn and Hawthorn are relatively small trees (some people think of these shrubs) and might be suitable to plant in some gardens.

Shrubs like native Wild Privet and Gorse can be used with other native species in hedges.

Local schools, clubs and other organisations might think about harvesting seeds and cuttings from native trees and growing them for use in their own grounds and the wider community.

If trees and shrubs are on private land you will have to get permission. Remember not to harvest too much from any one place because the fruit are valuable for wildlife in Autumn and Winter.

Of course, it is a good idea to check that you are not planting a lot of trees in an area where there is already a valuable habitat, for example semi-natural grassland.

There are details in the Resources section on where to access information on growing native trees and shrubs, and examples of how community tree nursery schemes have been developed elsewhere.

Action	Woodlands	Year
WD-1	Work with stakeholders across the community to encourage the preservation of woodland.	1-5
WD-2	Consider developing a community-based native tree nursery scheme.	1-2
WD-4	Promote the planting of more native trees in suitable green areas of housing estates, schools, businesses, and other institutions.	1-5

Woodland actions for specific sites of local biodiversity interest are made under those sites.

4.6 Hedgerows, Treelines and Scrub

Maintaining hedgerow and treeline, as well as creating new native hedgerows, is a great way to help nature. Planning to make sure these are preserved and maintained is a long-term project, and that takes a good deal of co-ordination.

The current Cork County Council Development Plan (Cork County Council, 2014) has a number of objectives relating to the protection of hedgerows in general and in the planning process.

Keeping and managing hedgerows, treelines and other boundary features in agricultural settings are increasingly a condition for payments under various government agricultural payments schemes.

There are lengths of relic field boundaries in Youghal bounding publicly accessible areas. Restoring one of these through planting of native trees and shrubs would help develop skills to maintain such features into the future.

There are details on where to find more information on planting and managing hedgerows and treelines in the Resources section below.

Action	Hedgerows, Treelines and Scrub	Year
HTS-1	Promote the planting of hedges with native tree and shrub species in suitable areas in schools, sports fields, amenity areas and elsewhere.	1-5
HTS -2	Identify a length of old linear woodland in Youghal to restore and maintain.	1
HTS -3	Plan to replace mature trees in old treelines and hedgerows when they are lost, with native trees species.	1-5
HTS -4	Consider planting native treeline along the north side of the R634 approach to Youghal.	2-3
HTS -5	Promote the retention of some scrub in areas that are zoned for development.	1-5

Hedgerow and treeline actions for specific sites of local biodiversity interest are made under those sites.

4.7 Old Stone Walls

Old stone walls and other stonework in and around Youghal are important from an historic and a nature point of view.

Many of the plant species that grow on walls do not cause any structural issues and are good for biodiversity. Some plants can cause structural issues and may need to be managed but if this is not done in the right way the wall and biodiversity can suffer.

Some old stone walls that are valuable for biodiversity and heritage, but that may need maintenance were noted during fieldwork. There may be more in Youghal. A community-based survey of walls of biodiversity importance might be a good activity for schools or other groups and provide a way to organise management.

Because relatively few species of plant can grow on walls and because they stand out against the stone, they can be a good educational resource for starting to learn how to identify plants. There is a link to an example of a simple identification guide for use by primary schools in the Resources section.

There is a link to sources of information on the care of old walls for nature in the resources section.

Action	Old Stone Walls	Year
OW-1	Develop a database of walls of biodiversity value in Youghal.	1-5
OW-2	Promote the use of available guidance on the management of walls for biodiversity	1-5
OW-3	Promote the use of old stone walls as an educational resource in schools.	1-5

Old stone wall actions for specific sites of local biodiversity interest are made under those sites.

4.8 Buildings and Gardens

While some bird species will nest on buildings, not all buildings are suitable. Part of the reason that Swift numbers are thought to be falling is due to changes in the way we maintain our old buildings and the way we design new buildings. Birdwatch Ireland has produced a guide on how to help Swifts, which includes using Swift bricks and boxes. They also have useful designs for Bird and Bat boxes.

Action	Building and Gardens	Year
BG-1	Work with stakeholders in the community to identify locations for Swift boxes.	2-5
BG-2	Promote information on swift and bat boxes.	1-5
BG-2	Promote information on managing gardens for wildlife.	1-5

4.9 Coastland

Youghal has an active Clean Coasts group which removes litter from coastal habitats in the BAP area.

Action	Coastland	Year
CL-1	Continue to manage litter on beaches and other coastal habitats. See also FH-1.	1-5

Coastland actions for specific sites of local biodiversity interest are made under those sites

4.10 Sites of Local Biodiversity Interest

4.10.1 Muckridge Brickworks Area

In section 3.3.8 it was mentioned that this area is zoned as a Special Policy Area for planning objectives in the most recent local area plan for Youghal (Cork County Council, 2017).

Factors influencing why this is a Special Policy Area are:

- it is close to both Blackwater Estuary SPA and Blackwater River (Cork /Waterford) SAC,
- it contains a protected structure and a recorded monument in the form of Youghal Brickworks
- it contains a protected structure and a recorded monument in the form of a standing stone.

The current Local Area Plan (Cork County Council, 2017) suggests '*business uses including a service station and tourist related non-high street uses*'. It says any development should protect and enhance the protected structures and protect the nature conservation values of the area.

The land here is private property.

Due to the factors above, it is not appropriate to propose actions or recommendations under this Biodiversity Action plan, however suggestions are made for if and when it is developed. If some management could be agreed in the interim that would be of benefit too.

- The woodland areas to the south of the brickworks would be considered of high local importance in the BAP area, as there is so little closed canopy woodland otherwise. The variety of woodlands and the fact that the field layer in all three types are of a semi-natural type add to this assessment. They should be retained in any development and managed appropriately in the future.
- The semi-natural grassland areas east of the brickworks could be managed as hay meadows until such time as any development occurs. In the event the brickworks

are developed as a tourist site, if this grassland was retained and managed in a traditional hay meadow fashion it could add to the historic and cultural interpretive value of the brickworks area overall.

- Currently the clay pit appears to be of limited value for biodiversity, due to the steep sides and, possibly, water quality. If the sides could be graded somehow in the future and appropriate vegetation added it may increase the biodiversity value of this feature.
- The retention and management of some areas of scrub could add to the overall biodiversity and act as a screen between future developments and the SPA and SAC.

4.10.2 Foxhole Area

The saltmarsh habitat, retaining seawalls and grassy and scrubby habitats growing on them here are all included in the SAC and SPA.

Information signage on birds and other species here is located at the side of the road nearby, but not at a location that gives a good view of the saltmarsh. Viewing from the road overlooking the saltmarsh is somewhat dangerous. Viewing from the seawalls around the marsh would disturb the birds.

At a business park on the south side of the saltmarsh there is a grassy area at the edge of one of the car parks there that could provide a suitable location to view birds, based on discussion with the NPWS, as it is situated away from the main usage areas.

Action	Foxhole Area	Year
FH-1	Explore the possibility of re-locating the existing information board by the roadside to a grassy area overlooking the Foxhole section of the SPA. Consider adapting the signage to highlight the importance of the SPA. NPWS would need to approve the exact location nearer the time, pending approval from the landowner.	2
FH-2	Include the edges of the Foxhole section of the SPA in Clean Coasts/Tidy Towns litter management. To ensure wintering birds are not disturbed avoid litter picking during the wintering bird period, September to March, entirely.	1

4.10.3 The Slob Bank and Youghal Mudlands

Much of this area is zoned as 'Open Space' in both the most recent Local Area Plan for Youghal (Cork County Council, 2017) and Town Council Plan (Youghal Town Council, 2009a).

The plot that includes the landfill and civic amenity site is zoned for industry. It contains some salt marsh habitat that is a valuable feature in itself and is also used by wading birds.

The lands bordering the landward side of the Slob Bank are in multiple ownership so any actions there would be dependent on agreement with the landowners.

The grassland vegetation growing on the Slob Bank track, and the landward slopes of the walk bear some similarity to vegetation on dune systems. It does contain a high proportion of 'rank' grasses on slopes and is relatively species poor but may be useful for some bird species.

The intermittent scrub along here provides a valuable shelter for birds such as Stonechat, Dunnock, and others. However, scrub could be monitored and if necessary managed so that it does not significantly reduce the area of grassland habitat.

There are links to advice on managing hedgerows, grasslands, scrub, and old stone walls as well as guidance on identification and management of invasive species in the Resources section.

Action	The Slob Bank and Youghal Mudlands	Year
SB-1	Explore the possibility of erecting interpretive signage highlighting the importance of habitats and species surrounding the Slob Bank on the Slob Bank.	2
SB-3	Work with the council and other stakeholders to develop a regime to manage grasslands bordering the Breton Road using pollinator friendly techniques.	1-2
SB-4	With relevant stakeholders (e.g. owners, NPWS), identify a small area of grassland on slopes at the south end of the Slob Bank Walk, outside of the SAC, to manage using a once a year cut-and-lift approach and monitor to see if this increases plant diversity. This would have to take	1

	account of life cycles of resident and visiting bird species.	
SB-5	Develop a strategy to monitor scrub in grassland areas of the Slob Bank.	1
SB-6	Develop a strategy to monitor/control Winter Heliotrope at the north end of the Slob Bank. Manage any that threatens the flora on the old pier and old pier approach walls.	1
SB-7	Work with stakeholders to ensure Winter Heliotrope management is included in any development work on the Slob Bank to prevent its spread elsewhere.	1-5
SB-8	Consider developing a wetland wildlife monitoring program for wetlands along the Breton Road. This could be undertaken by schools or other groups. See also WL-2.	2
SB-8	Work with stakeholders to preserve/restore locally important features on the Slob Walk: -the linear scrub running south from the old pier on the landward side -saltmarsh habitat outside of protected areas -old stone wall sections and the flora they support leading to, and on the old pier. Ensure all vegetation trimming and scrub management is done outside of the nesting period.	1-5

4.10.4 Keane Park (The Quarry Gardens)

There is a great variety of habitat type in a small space in this urban park: wet woodland, dry woodland, open wetland, grassland, scrub, and bare rock, not to mention old stone wall features.

There are threats to some of these habitats in the form of invasive species. Some habitats could do with monitoring to see if they may need management to maintain them, while others might benefit from a change in management.

The grassland is maintained as amenity grassland throughout, and this may be of value to some users, particularly on level areas by the car park for people who may not be so steady

on their feet, however some grassland areas could be managed differently to benefit biodiversity. Leaving the section of grassland on the rocky slope to the west of stone arch to flower longer would certainly be a good idea too, as there are some nice species here.

When the area where water flows into the wetland from the cliffs dries, this could be left to grow longer in the summer too for even more diversity.

The willows in the wetland are fairly long-established but, trees here should be monitored and perhaps managed so that the open areas aren't completely overshadowed. Any new saplings in open water areas should be removed.

The water in the Quarry isn't especially deep, particularly in the wet woodland areas. It might be worth monitoring water levels to see if they are reducing over time.

The Winter Heliotrope here needs to be monitored too. Recently published information from the E.P.A. (Lucy, et al., 2021) indicate it would be very problematic to control here but may need to be if it invades the other habitats.

Japanese Knotweed here will need to be controlled. It seems recently established so prompt action is advised.

See the Resource section for where to find information on grassland management, invasive species, and others.

Action	Keane Park (The Quarry Gardens)	Year
QG-1	Work with stakeholders to alter the frequency of mowing of grassland in some areas of the park as per the All-Ireland Pollinator Plan. See also section 4.4 above.	1
QG-2	Develop a strategy to monitor /remove any additional willow saplings from the open wetland.	1-5
QG-3	Develop a strategy to monitor water levels in the wetland.	1-5
QG-4	Develop a strategy to monitor of Fool's Watercress and Marsh Marigold in the wetland and manage if cover is increasing to the detriment of other species.	1
QG-5	Develop a strategy to monitor the park for any signs of Traveller's Joy. This could be a serious issue if it were to be established, particularly on	1

	the cliffs.	
QG-6	Develop a strategy to monitor and manage other Invasive Alien Plant species in the park: Winter Heliotrope, Lesser Knotweed, Japanese Knotweed.	1
QG-7	Use available guidance on management of old stone walls when maintaining them.	1-5

4.10.5 Millennium Garden of Time

Grassed areas could be managed in a pollinator friendly manner as suggested in the All-Ireland Pollinator Plan. See also section 4.4 above.

The proximity to the playground could be an opportunity for nature education features in here.

Action	Millennium Garden of Time	Year
MG-1	Work with stakeholders to adapt the mowing of grassland in some areas of the park as per the All-Ireland Pollinator Plan. See section 4.4 above.	1
MG-2	Consider planting some Spring, Autumn and Winter flowering bulbs in the two walled strips with semi-mature trees outside the fence on the Mill Road side of the park. Refer to the Pollinator Friendly Planting Code on pollinators.ie	2
MG-4	Develop a strategy to monitor and where necessary manage the park for invasive species. See also action IS-1 and IS-2.	1
MG-5	Retain and manage some of the Bramble in the park as it is a good resource for birds and insects alike.	1-5
MG-6	Explore the possibility of erecting a child-friendly notice board about the common birds that can be seen in the park.	2-5

4.10.6 College Gardens

Although the Sycamore in the woodland at the south-west end is not native and not especially old, it is the main tree species here. Removing it from the woodland here at this stage would probably be counter-productive from a biodiversity point of view, as the woodland is so small.

The non-native Ground Elder is a problematic plant. Its aggressive rhizomes help it spread and it can completely dominate vegetation. Apart from this species there is a woodland ground flora with a high native component.

There is Traveller's Joy in the woodland, but it was not extensive at the time of visit. It should be controlled. This is likely to be an ongoing issue as there is Traveller's Joy in gardens and on walls all along Ashe Street, as it is in Youghal generally.

At the time of visit in 2020 there were some areas of bare earth lining the walls just north of the sally gate on the west boundary wall. The aspect of these banks - facing south-east - is ideal for some species of solitary bee. There were signs of use. Maybe some of these could be managed as bare soil going forward. Signage explaining the reason for it could be put up.

The large old Beeches along the north wall would be good candidates for the installation of appropriate Bird or Bat boxes.

The Resource section has information on managing invasive species, minimising herbicide use, and managing habitats for pollinators.

Action	College Gardens	Year
CG-1	Develop a strategy to monitor and control plan Invasive Alien Plant Species e.g. Travellers' Joy, Ground Elder.	1
CG-2	Continue to manage grassland on slopes as currently.	1-5
CG-3	Consider managing some banks as described above as habitat for solitary bees.	1-5
CG-4	Consider installing of appropriate Bird or Bat boxes on older trees in the gardens.	1-5

4.10.7 Claycastle/Summerfield Area

There are many changes for this area happening now. The Midleton to Youghal Greenway will finish at the old railway, while the new boardwalk will allow people to walk from Claycastle to Redbarn.

These changes will likely alter to the numbers of people using the area, and the ways they will move around it.

The potential for increased footfall via the Greenway in this area could prove a threat to the dune systems through erosion. On the other hand, the boardwalk could draw people to use that instead which may reduce the likelihood of erosion.

Monitoring of the habitats and species should be a priority once this new infrastructure is in place. Increased footfall in dune systems is known to cause erosion, however a certain level of footfall may be helpful for some plant species.

Claycastle Hill is a popular destination for walkers today and has been for a long time. Footfall keeps the sward here short, put it is also mown almost to the edges. It is a good idea to have a wide area so that footfall isn't concentrated in too narrow an area as this could cause erosion.

The 2009 site synopsis for Ballyergan Marsh pNHA by the NPWS (NPWS, 2009) said that on Claycastle Hill 'the rare Red Data Book species Wild Clary (*Salvia verbenaca*) has been recorded growing here in abundance'. This didn't seem to be the case on two recent site visits. There seems to be less here now than in other locations in the Claycastle/Summerfield area.

Action	Claycastle/Summerfield	Year
CS-1	Work with stakeholders such as the County Council and others to develop a monitoring plan for the dune systems in and around the pNHA.	1-2
CS-2	Liaise with the BSBI/NPWS regarding monitoring of Wild Clary.	1
CS-3	Develop a Management Plan for Wild Clary at Claycastle	
CS-4	Work with stakeholders to develop a strategy to monitor and if necessary, control Traveller's Joy and Winter Heliotrope on Claycastle	1-2

CS-5	Work with stakeholders to extend the strip of grass on Claycastle Hill that is not mown short, by a meter each side on the wider sections.	1
CS-6	Work with stakeholders to manage grasslands in the railway station environs using methods suggested by the All-Ireland Pollinator Plan. See section 4.4.	2
CS-7	Consider installing signage at the west end of the Summerfield car park outlining the importance of the pNHA and the need to protect the dunes.	1-5
CS-8	Consider installing a 'tower viewer' or similar viewing device at the west end of the Summerfield car park to view the marsh for those who don't have binoculars.	1-5

4.11 Survey and Monitoring

One big step to helping species in Youghal is to get to know which ones are here. Hopefully Section 3.2 (Animals and Plants in Youghal) is a step in that direction.

Recording species in Youghal and sending that information to the NBDC helps to build up a picture of how well, or badly, species are doing.

There are many Citizen Science survey and monitoring schemes, programmes and activities organised by various bodies in Ireland that apply to habitats and species in Youghal. Some that are running at the time of writing are listed below. These may change over time but the organisations running those listed are likely to run further relevant schemes.

Most of these can be done as an individual, but some could be done on a household basis, or as a school, a group, an organisation, or a business. They could even be shared between schools, groups, organisations, and businesses as a project. This would build relationships, knowledge and a valuing of nature in Youghal across the community. It could also be fun.

Later in the life of this Biodiversity Action plan the knowledge gathered could be shared, perhaps culminating in a community-wide Bioblitz.

For some groups of organisms, such as bats and moths, specialist knowledge, equipment and/or licenses may be required to survey. This may require commissioning specific surveys

and may require a funding source. For others, such as birds, surveys could be done on a seasonal basis and run via social media in a 'Spot the Bird of the Month' fashion with i.d. tips etc. and links to NBDC recording. This could be useful for annual migrants

The timing of surveys and monitoring should be considered in relation to actions around habitat management. Monitoring of e.g. Bumblebees and Butterflies is worthwhile in itself but could be used to track the success of other actions e.g. managing grassland in a more pollinator friendly manner, although one cold, wet summer could affect this in a 5-year period! If practical, it might be worth doing survey work in year 1 and starting management actions in year 2. Surveys can be inexpensive (or free!) and, depending on the group, do not require special knowledge.

Survey	Survey Group
Backyard Biodiversity	National Biodiversity Data Centre
Garden Wildflower Hunt	Botanical Society of Britain and Ireland
Coastwatch	Coastwatch.org
Flower-Insect Timed Count (FIT Count)	National Biodiversity Data Centre
Hop to It Frog Survey	Irish Peatland Conservation Council
New Year Plant Hunt	Botanical Society of Britain and Ireland
Spring Flowering Plants Project	National Biodiversity Data Centre
Irish Hedgehog Survey	National Biodiversity Data Centre
Irish Garden Bird Survey	Birdwatch Ireland
Ladybird Atlas 2025	National Biodiversity Data Centre
Bumblebee Monitoring Scheme	National Biodiversity Data Centre
Dragonfly Ireland 2019-2024	National Biodiversity Data Centre
Butterfly Monitoring Scheme	National Biodiversity Data Centre
Explore Your Shore	National Biodiversity Data Centre / EPA

Table 20 Examples of Citizen Science Survey and Monitoring.

Action	Survey and Monitoring	Year
SM-1	Develop a community-based invasive species education, mapping, and reporting scheme. See also IS-1	1-2
SM-2	Liaise with LAWPR to explore developing a citizen science project for monitoring water quality in the BAP area. See also RS-1	1
SM-3	Promote the following NBDC Citizen Science Monitoring Programmes: Bumble Bee Monitoring Scheme Butterfly Monitoring Scheme Dragonfly / Damselfly Monitoring Scheme* *currently this is scheduled to end in 2024	1-5
SM-4	Explore the methods of obtaining more bat records for Youghal. This could be through commissioning, local amateur recorders, or from surveys connected with development etc.	1-5
SM-5	Consider liaising with an academic institution or others to examine the moth population of the area*.	1-5
SM-6	Explore the possibility of organising a Youghal Bioblitz.	1-5

*Over 100 moth species were recorded between 1990 and 2000, but less than 40 in the 20 years since. This is largely due to less recording effort but is very much an important area to look at in the context of Ballyvergan Marsh, but also the Foxhole area (Ken Bond pers. comm.).

4.12 Training

There are a lot of training resources available online that can be accessed for free, but make sure they are from reliable organisations.

There may be amateur expertise in the community that might be volunteered. For some training funding may have to be accessed.

Consider running joint training events with neighbouring Tidy Towns groups, or other groups – it may reduce cost and foster co-operation in other areas.

Areas for training that could help with actions in the BAP include:

- Bumblebee Monitoring
- Butterfly Monitoring
- Dragonfly / Damselfly Monitoring
- Water Quality Monitoring
- Invasive Species Identification
- Wildlife Friendly Grassland Management
- Wildlife Friendly Hedgerow Management
- Wildlife Friendly Scrub Management
- Bird Identification (Common species)
- Use of National Biodiversity Data Centre Mapping Tool

Action	Training	Year
TR-1	Develop a training list to help meet the actions in this plan.	1-2

5. Resources

Gardening / pesticide reduction

Greener Gardening Your Guide to Chemical-Free Affordable Gardening. EPA

https://www.epa.ie/pubs/reports/waste/wpp/Greener%20Gardening%20(web).pdf

Gardening for Biodiversity. Juanita Brown

https://laois.ie/gardening-for-biodiversity/

Fresh Air, Fresh Savings, Greener Gardening Your Guide to Chemical-Free Affordable Gardening. mywaste.ie

https://www.mywaste.ie/wp-content/uploads/2020/04/SRWMO-Greener-Gardening-Booklet-Onscreen-Use-AW.pdf

Pesticide Action Network U.K.

https://www.pan-uk.org/

[Pesticide Action Network have good resources including advice for local authorities and the amenity sector.]

Pesticide Free Towns

https://www.pesticide-free-towns.info/

All-Ireland Pollinator Plan

Lots of resources here on actions to help pollinators including managing grassy areas and hedgerows.

https://pollinators.ie/

Dragonfly Survey

Dragonfly Ireland 2019 – 2024

https://www.biodiversityireland.ie/projects/monitoring-scheme-initiatives/dragonfly-ireland-2019-2024/

Rivers and Streams

Useful Tips to Conserve Water at Home. Green Schools Ireland

https://greenschoolsireland.org/water/

10 Ways to Keep Our Lakes and Rivers Clean. PeopleService Inc.

https://www.peopleservice.com/wp-content/uploads/2018/08/23250_10Ways_Flier.pdf

12 Things You Can Do to Clean Up Your Rivers and Streams. Chesapeake Bay Foundation

https://www.cbf.org/join-us/more-things-you-can-do/12-things-you-can-do-to-clean.html

Water Pollution: Keeping Our Rivers Clean. Monaghan County Council

https://monaghan.ie/environment/water-pollution/

Farming near rivers. Practical measures to protect watercourses. IRD Duhallow

https://www.duhallowlife.com/ird-duhallow-life-raptor-life/sustainable-farming-brochure

Watercourse Management. Farming for Nature.

https://www.farmingfornature.ie/resources/best-practice-guides/watercourse-management/

Household, Farming and Business Water Protection. Leaflets. Monaghan County Council.

https://monaghan.ie/environment/leaflets-and-guidelines/

Out wintering of livestock and Protection of waterways. Monaghan County Council.

https://monaghan.ie/environment/wp-content/uploads/sites/11/2016/11/OutwinteringPracticesandRiparianZones.pdf

Local Authorities Waters Program, catchments.ie

Local Authorities Waters Program. Contacts.

http://watersandcommunities.ie/community-water-officers/

catchments.ie

https://www.catchments.ie/learn/

Grasslands

See also All-Ireland Pollinator Plan above

Habitat Creation and Management for Pollinators. Centre for Ecology and Hydrology.

https://www.ceh.ac.uk/sites/default/files/CEH_HabitatManagementAndCreationForPollinators_LowRes-ForHomePrint.pdf

Biodiversity, well-being, educational, and financial benefits of nature friendly amenity grass management and links to other resources. Forest Research (U.K.)

https://www.forestresearch.gov.uk/tools-and-resources/urban-regeneration-and-greenspace-partnership/greenspace-in-practice/benefits-of-greenspace/grassland-habitats/

Trees for the Future: Growing

Growing Trees. The Conservation Volunteers.

https://treegrowing.tcv.org.uk/grow

Propagation. The Conservation Volunteers.

https://www.conservationhandbooks.com/tree-planting-aftercare/propagation/

Our Trees: A guide to growing Ireland's native trees in celebration of a new Millennium. Woodlands of Ireland

http://www.woodlandsofireland.com/publications/our-trees

How to Collect and Grow Local Tree Seeds Leaf Tree Nursery Project with Kerry Earth Education Project & Learning About Forests Ireland

https://leafireland.org/wp-content/uploads/2020/04/LEAF-Tree-Nursery-Project-low-res.pdf

[There are loads of great tree related resources for schools at the leafireland.org resources section: https://leafireland.org/resources/]

Germination, sowing and after care information for Wild Privet. Tree Seed online Ltd.

https://www.treeseedonline.com/store/p129/Wild_Privet_%28ligustrum_vulgare%29.html#:~:text=Germinated%20seeds%20can%20be%20planted,them%20in%20a%20permanent%20position.

[Some examples of Community Tree Nurseries]:

Community tree nurseries are flourishing in Faughan Valley. Derry Journal.

https://www.derryjournal.com/retro/community-tree-nurseries-are-flourishing-faughan-valley-684251

School Tree Nurseries. earthrestorationservice

https://www.earthrestorationservice.org/nursery

Trees for the Future: Managing

The Challenge of Mature Tree Replacement: Contemporary approaches to amenity tree replacement in mature urban landscapes. Treenet

https://treenet.org/resources/the-challenge-of-mature-tree-replacement-contemporary-approaches-to-amenity-tree-replacement-in-mature-urban-landscapes/

Hedgerows and Treelines

Irish Hedge Laying Association

https://hedgelaying.ie/

Planting a Native Hedgerow or Woodland: Bórd Bia

https://www.bordbia.ie/globalassets/lifestyle/resources/organic-gardening-english/planting-a-native-hedgerow-or-woodland.pdf

[The Bórd Bia website has a page with loads of other useful tips on organic gardening, wildflower meadows etc. in English and as Gaeilge with links to primary school curriculum – but useful for everyone:

https://www.bordbia.ie/primary-school/organic-gardening-for-primary-schools/worksheets/

Hedgerow Planting- Answers to 18 Common Questions: Natural England

http://hedgelink.org.uk/cms/cms_content/files/75_ne_hedgerow_planting.pdf

Wildlife Hedgerow: The Conservation Volunteers
https://treegrowing.tcv.org.uk/grow/planting/hedge

Hedgerows for Pollinators: All Ireland Pollinator Plan

https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Hedgerows-2018-WEB.pdf

Other useful things to consider when planting a native hedgerow: Irish Times

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Tips from A Tidy Towns Group on Hedgerows: Newbridge Tidy Towns

http://www.newbridgetidytowns.com/tidy-towns-competition/wildlife-habitats-natural-amenities/protect-local-hedgerows/

Tips on Managing older Hedgerows: RSPB

http://ww2.rspb.org.uk/images/englishhedgerows1_tcm9-133255.pdf

(see the section on 'Trees for the Future: Managing' above for things to consider regarding mature treelines)

Scrub

The Scrub Management Handbook: Guidance on the management of scrub on nature conservation sites (IN124). Natural England

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Old Stone Walls

Dry Stone Walling Association of Ireland.

https://www.dswai.ie/

Dry Stone Wall Building. Teagasc.

https://www.teagasc.ie/rural-economy/rural-development/diversification/dry-stone-wall-building/

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http://www.heritageinschools.ie/content/resources/old%20stone%20walls/Old%20Stone%20Walls%20-%20Plants.pdf

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Garden ponds and boggy areas: havens for wildlife. Natural England. Access at:

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Permanent ponds. Farm Wildlife

https://farmwildlife.info/how-to-do-it-5/wet-features/permanent-ponds/

Manage Your Pond. Freshwater Habitats Trust

https://freshwaterhabitats.org.uk/projects/flagship/pond-management-info/

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Ivy on Walls. Historic England.

https://research.historicengland.org.uk/Report.aspx?i=15604

(this includes recommendation on when and when not to remove ivy, how to remove ivy, and how to manage ivy).

Invasive Species

National Biodiversity Data Centre Invasive Species Page

https://www.biodiversityireland.ie/projects/invasive-species/

The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads. National Roads Authority.

https://www.tii.ie/tii-library/environment/construction-guidelines/Management-of-Noxious-Weeds-and-Non-Native-Invasive-Plant-Species-on-National-Road-Schemes.pdf

Managing Invasive Non-Native Plants. The Environment Agency.

(Contains information on **New Zealand Pigmyweed** but they call it Australian swamp stonecrop)

https://www.midsussex.gov.uk/media/1725/managing-invasive-non-native-plants.pdf

Invasive Species Identification Links

New Zealand Pigmyweed Identification

http://invasivespeciesireland.com/wp-content/uploads/2020/08/NIEA-ID-Guide-Crassula-helmsii-New-Zealand-Pigmyweed.pdf

https://freshwaterhabitats.org.uk/projects/other-projects/controlling-crassula-helmsii/

Japanese Knotweed Identification

http://www.wildflowersofireland.net/plant_detail.php?id_flower=146&wildflower=Knotweed,%20Japanese

http://www.irishwildflowers.ie/pages/93a.html

Three-cornered garlic Identification

http://www.wildflowersofireland.net/plant_detail.php?id_flower=283

Traveller's Joy Identification

https://www.irishwildflowers.ie/pages/172a.html

Winter Heliotrope Identification

https://www.irishwildflowers.ie/pages/200a.html

http://www.wildflowersofireland.net/plant_detail.php?id_flower=139&Wildflower=Heliotrope,%20Winter

Lesser Knotweed Identification

http://www.irishwildflowers.ie/pages/557a.html

http://www.wildflowersofireland.net/plant_detail.php?id_flower=423&wildflower=Knotweed,%20Lesser

Himalayan Honeysuckle Identification

https://www.irishwildflowers.ie/pages/296a.html

http://www.wildflowersofireland.net/plant_detail.php?id_flower=572

Water fern Identification

https://www.irishwildflowers.ie/pages-ferns/f-31a.html

Ground Elder Identification

http://www.wildflowersofireland.net/plant_detail.php?id_flower=111&wildflower=Ground-elder

http://www.irishwildflowers.ie/pages/212a.html

Eat Invasive Plants

https://www.selfsufficientish.com/main/2013/07/himalayan-balsam-impatiens-glandulifera-food-for-free-dave-hamilton/

http://www.carllegge.com/2014/02/three-cornered-leek-recipes/

https://www.finedininglovers.com/article/4-recipes-fall-love-japanese-knotweed

Harlequin Ladybird Identification

http://invasivespeciesireland.com/wp-content/uploads/2020/07/NIEA-ID-Guide-Harmonia-axyridis-Harlequin-ladybird.pdf

https://www.biodiversityireland.ie/projects/additional-survey-schemes/ladybird-atlas-2025/

American Mink Identification

https://www.biodiversityireland.ie/wordpress/wp-content/uploads/American-Mink.pdf

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Appendices

Appendix I: Further information related to the actions

Biodiversity Action Plans usually consider the needs of flora and fauna in isolation and as something separate to human needs.

Wild Work's motto of helping people, help nature, help people is about recognising that people want to help nature and that people can benefit in doing so. If we help nature, we can also help ourselves and our communities particularly in terms health and well-being.

For example, developing and managing woodlands as spaces for people to exercise and play, but while also prioritising the need to manage the woodland for the benefit of the species of flora and fauna that live there. Actions included in this plan take this concept into consideration.

General principles

The following general principles should be followed in the implementation of any actions included in this Biodiversity Action Plan:

1. Always preserve features of high conservation value.
2. Prioritise native species whenever planting/sowing.
3. Try to fully understand the habitats and flora and fauna species already associated with the given location.
4. Consult with qualified ecologist to learn how to implement best practice.
5. Work with, rather than against nature, to make biodiversity enhancement more efficient.
6. Work to minimise using herbicides, insecticides, fungicides and any other pesticides or chemicals where possible.
7. Follow Sustainable Use Directive guidelines if applying any pesticides.
8. Wild can be beautiful. Always strive to make places aesthetically pleasing, so that others will be inspired to copy your good example.
9. Try to understand the big picture and be aware that some actions considered to be beneficial may not always be of benefit to biodiversity and nature in every setting.

For example, planting trees is usually a good idea, but not if we are trying to protect a rare grassland and its associated fauna.

10. Remember that people can benefit from biodiversity, as much as biodiversity can benefit from people; Help people, to help nature, to help people.

Appendix II: NBDC Grid Squares

Data downloaded for this BAP from NBDC website was for the following Grid Squares

2km grid squares X07S X07T, X07X, X07Y and X07Z

1km grid squares X1076, X1077, X1078 and X1079

This data was downloaded in January 2020.

Appendix III: Photography Credits

By Imran Shah from Islamabad, Pakistan - Hen Harrier (Circus cyaneus), CC BY-SA 2.0, https://commons.wikimedia.org/w/index.php?curid=74675395

By Imran Shah from Islamabad, Pakistan - Water Rail (Rallus aquaticus), CC BY-SA 2.0, https://commons.wikimedia.org/w/index.php?curid=75877696

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https://commons.wikimedia.org/w/index.php?curid=82838238

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https://commons.wikimedia.org/w/index.php?curid=63708296

All other photographs are by Wild Work.

Appendix IV: Scientific Names of Species

Vascular Plants	
Common Name	*Scientific Name*
Sycamore	*Acer pseudoplatanus*
Ground Elder	*Aegopodium podagraria*
Three-cornered Garlic	*Allium triquetrum*
Alder	*Alnus glutinosa*
Pyramidal Orchid	*Anacamptis pyramidalis*
Wild Angelica	*Angelica sylvestris*
Kidney Vetch	*Anthyllis vulneraria*
Snapdragon	*Antirrhinum majus*
Fool's-water-cress	*Apium nodiflorum*
False Oat-grass	*Arrhenatherum elatius*
Daisy family	*Asteraceae*
Water fern	*Azolla filiculoides*
Butterfly Bush	*Buddleja davidii*
Sea Rocket	*Cakile maritima*
Marsh Marigold	*Caltha palustris*
Trailing Bellflower	*Campanula poscharskyana*
Slender Thistle	*Carduus tenuiflorus*
Distant Sedge	*Carex distans*
Long-bracted Sedge	*Carex extensa*
Remote Sedge	*Carex remota*
Greater Pond-sedge	*Carex riparia*
Common Knapweed	*Centaure nigra*
Enchanters Nightshade	*Circaea lutetiana*
Traveller's-joy	*Clematis vitalba*
Hazel	*Corylus avellana*
New Zealand Pigmyweed	*Crassula helmsii*
Hawthorn	*Crataegus monogyna*
Cocks-foot	*Dactylis glomerata*
Common Spotted-orchid	*Dactylorhiza maculata*
Great Horsetail	*Equisetum telmateia*

Common Storks-bill	*Erodium cicutarium*
Musk Stork's-bill	*Erodium moschatum*
Sea Holly	*Eryngium maritimum*
Beech	*Fagus sylvatica*
Japanese Knotweed	*Fallopia japonica*
Ash	*Fraxinus excelsior*
Ladies Bedstraw	*Galium verum*
Doves-foot Cranes-bill	*Geranium molle*
Herb Robert	*Gernium robertianum*
Wood Avens	*Geum urbanum*
Corn Marigold	*Glebionis segetum*
Ivy	*Hedera hibernica*
Common Hogweed	*Heracleum sphondylium*
Sea Sandwort	*Honckenya peploides*
Bluebell	*Hyacinthoides non-scripta*
Cat's-ear	*Hypochaeris radicata*
Holly	*Ilex aquifolium*
Hard Rush	*Juncus inflexus*
Meadow Vetchling	*Lathyrus pratensis*
Himalayan Honeysuckle	*Leycesteria formosa*
Japanese Honeysuckle	*Lonicera japonica*
Wild Privet	*Ligustrum vulgare*
Pale Flax	*Linum bienne*
Greater Birds-foot-trefoil	*Lotus pedunculatus*
Wood Forget-me-not	*Myosotis sylvatica*
Common Broomrape	*Orobanche minor*
Lesser Knotweed	*Persicaria campanulata*
Winter Heliotrope	*Petasites fragrans*
Greater Salad-Burnet	*Pimpinella major*
Barren Strawberry	*Potentilla sterilis*
Blackthorn	*Prunus spinosa*
Borrer's Saltmarsh-grass	*Puccinellia fasciculata*
Oak	*Quecrus spp.*
Bulbous Buttercup	*Ranunculus bulbosus*
Buttercups	*Ranunculus subg. ranunculus*
Brambles	*Rubus fruticosus agg.*
Fiddle Dock	*Rumex pulcher*
Wood Dock	*Rumex sanguineus*
Willow	*Salix spp.*
Wild Clary	*Salvia verbenaca*
Elder	*Sambucus nigra*
Sanicle	*Sanicula europaea*
White Stonecrop	*Sedum album*
Ragged Robin	*Silene flos-cucli*
Woody Nightshade	*Solanum dulcamara*
Dandelions	*Taraxacum aggregate*

Yew	*Taxus baccata*
Reedmace	*Typha latifolia*
Common Gorse	*Ulex europaeus*
Green Field-speedwell	*Veronica agrestis*
Wood Speedwell	*Veronica montana*

Birds	
Common Name	**Scientific Name**
Kingfisher	*Alcedo atthis*
Greylag Goose	*Anser anser*
Meadow Pipit	*Anthus pratensis*
Swift	*Apus apus*
Short-eared Owl	*Asio flammeus*
Dunlin	*Calidris alpina*
Curlew Sandpiper	*Calidris ferruginea*
Purple Sandpiper	*Calidris maritima*
Kentish Plover	*Charadrius alexandrinus*
Hen Harrier	*Circus cyaneus*
Hen Harrier	*Circus cyaneus*
Whooper Swan	*Cygnus cygnus*
Little Egret	*Egretta garzetta*
Yellowhammer	*Emberiza citrinella*
Merlin	*Falco columbarius*
Peregrine Falcon	*Falco peregrinus*
Kestrel	*Falco tinnunculus*
Snipe	*Gallinago gallinago*
Great Northern Diver	*Gavia immer*
Red-throated Diver	*Gavia stellata*
Oystercatcher	*Haematopus ostralegus*
Black-tailed Godwit	*Limosa limosa*
Grey Wagtail	*Motacilla cinerea*
Curlew	*Numenius arquatus*
Golden Plover	*Pluvialis apricaria*
Grey Plover	*Pluvialis squatarola*
Slavonian Grebe	*Podiceps auritus*
Red-billed Chough	*Pyrrhocorax pyrrhocorax*
Water Rail	*Rallus aquaticus*
Woodcock	*Scolopax rusticola*
Shoveler	*Spatula clypeata*
Redshank	*Tringa totanus*
Redwing	*Turdus iliacus*
Lapwing	*Vanellus vanellus*

Fish	
Common Name	***Scientific Name***
Twaite Shad	*Alosa fallax*
Brook Lamprey	*Lampetra planeri*
Sea Lamprey	*Petromyzon marinus*
Atlantic Salmon	*Salmo salar*

Terrestrial Mammals	
Common Name	**Scientific Name**
Hedgehog	*Erinaceus europaeus*
Irish Hare	*Lepus timidus subsp. hibernicus*
Otter	*Lutra lutra*
Badger	*Meles meles*
Feral ferret	*Mustela furo*
American Mink	*Mustela vison*
European Rabbit	*Oryctolagus cuniculus*
Pipistrelle Bat	*Pipistrellus pipistrellus s.l.*
Brown Long-eared Bat	*Plecotus auritus*
Pygmy Shrew	*Sorex minutus*

Marine Mammals	
Common Name	**Scientific Name**
Minke Whale	*Balaenoptera acutorostrata*
Common Dolphin	*Delphinus delphis*
Long-finned Pilot Whale	*Globicephala melas*
Common Porpoise	*Phocoena phocoena*
Striped Dolphin	*Stenella coeruleoalba*
Bottle-nosed Dolphin	*Tursiops truncatus*

Reptiles	
Common Name	**Scientific Name**
Viviparous Lizard	*Zootoca vivipara*

Amphibians	
Common Name	**Scientific Name**
Natterjack Toad	*Epidalea calamita*
Smooth Newt	*Lissotriton vulgaris*
Common Frog	*Rana temporaria*

Grasshoppers	
Common Name	**Scientific Name**
Green Grasshopper	Omocestus viridulus

Hoverflies	
Common Name	**Scientific Name**
Marmalade Hoverfly	*Episyrphus balteatus*

Bees	
Common Name	**Scientific Name**
Buffish Mining Bee	*Andrena (Melandrena) nigroaenea*
Northern Colletes	*Bombus (Colletes) floralis*
Large Red-tailed Bumble Bee	*Bombus (Melanobombus) lapidarius*
Gipsy Cuckoo Bee	*Bombus (Psithyrus) bohemicus*
Great Yellow Bumble Bee	*Bombus (Subterraneobombus) distinguendus*
Moss Carder Bee	*Bombus (Thoracombus) muscorum*
Shrill Carder Bee	*Bombus (Thoracombus) sylvarum*

Ladybirds	
Common Name	**Scientific Name**
Harlequin Ladybird	*Harmonia axyridis*

Butterflies	
Common Name	**Scientific Name**
Small Tortoiseshell	*Aglais urticae*
Orange-tip	*Anthocharis cardamines*
Ringlet	*Aphantopus hyperantus*
Clouded Yellow	*Colias croceus*
Peacock	*Inachis io*
Wall Brown	Lasiommata megera
Cryptic Wood White	*Leptidea juvernica*
Meadow Brown	*Maniola jurtina*
Speckled Wood	*Pararge aegeria*
Large White	*Pieris brassicae*
Green-veined White	*Pieris napi*
Small White	*Pieris rapae*
Comma	*Polygonia c-album*
Common Blue	*Polyommatus icarus*
Essex Skipper	*Thymelicus lineola*

Red Admiral	*Vanessa atalanta*
Painted Lady	*Vanessa cardui*

Moths	
Common Name	**Scientific Name**
Deaths-Head Hawkmoth	*Acherontia atropos*
Garden Tiger	*Arctia caja*
Elephant Hawkmoth	Deilephila elpenor
Buff Tip	*Phalera bucephala*
n/a	*Celypha aurofasciana*
n/a	*Ptocheuusa paupella*
n/a	*Celypha aurofasciana*
n/a	*Oidaematophorus lithodactyla*
n/a	*Phalonidia manniana*
n/a	*Phtheochroa inopiana*
n/a	*Phtheochroa inopiana*

Dragonflies	
Common Name	**Scientific Name**
Common Hawker	*Aeshna juncea*
Migrant Hawker	*Aeshna mixta*
Emperor Dragonfly	*Anax imperator*
Lesser Emperor	*Anax parthenope*
Hairy Dragonfly	*Brachytron pratense*
Four-spotted Chaser	*Libellula quadrimaculata*
Red-veined Darter	*Sympetrum fonscolombii*
Ruddy Darter	*Sympetrum sanguineum*
Common Darter	*Sympetrum striolatum*

Damselflies	
Common Name	**Scientific Name**
Beautiful Demoiselle	*Calopteryx virgo*
Azure Damselfly	*Coenagrion puella*
Common Blue Damselfly	*Enallagma cyathigerum*
Blue-tailed Damselfly	*Ischnura elegans*
Large Red Damselfly	*Pyrrhosoma nymphula*