Wildwork
HELPING PEOPLE HELP NATURE HELP PEOPLE

Wild Work Public Lands South Cork Site (Great Island, Cobh)

Biodiversity Action Plan

2022-2027

SECAD PARTNERSHIP

An Roinn Forbartha Tuaithe agus Pobail
Department of Rural and Community Development

Comhairle Contae Chorcaí
Cork County Council

Department of Rural and Community Development
An Roinn Forbartha Tuaithe agus Pobail

LCDC
Coistí um Fhorbairt Pobail Áitiúil Chontae Chorcaí
Cork County Local Community Development Committees

The European Agricultural Fund for Rural Development:
Europe investing in rural areas

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1. Introduction

In 2022 Wild Work rolled out an innovative new biodiversity training programme combining outdoor classrooms, online learning and virtual reality experiences to help people, help nature, help people. The Wild Work Biodiversity Training Project was coordinated by three Local Development Companies – SECAD Partnership in Cork who first designed and piloted Wild Work in 2017, West Limerick Resources and Cavan County Local Development as part of a LEADER funded (EU Co-financed Rural Development Programme) Inter-territorial Co-operation project. As part of the suite of biodiversity training a unique training course was undertaken within the four geographic areas (South Cork, West Cork, West Limerick & Cavan). The Wild Work Biodiversity on Public lands training course was aimed at the managers of public lands, local authorities, community groups and other key stakeholders. The purpose of the course was to bring these groups together to see how they can share learning regarding land management, and to learn about each other's capacity. In each area a suitable publicly owned site such as a local park or public green space was identified that could be developed from a biodiversity perspective.

Once a suitable location was identified in all four areas, a bespoke biodiversity themed training programme was designed which to teach participants about the following:

- Biodiversity in the context of the site
- What potential actions could be taken and why
- Resources needed to help biodiversity on the site
- How to undertake the actions

The Biodiversity on Public Lands was a four-module course that had a blended learning approach, two of the modules were held on site and the other two were hosted online. During the in-person sessions the participants had an opportunity to explore the habitats and species present on site with an ecologist and discuss potential actions to be undertaken to improve the area for biodiversity. The online sessions explored online tools and resources to allow the participants to better understand the biodiversity on their site and beyond and to equip them with the relevant knowledge to undertake actions. There was also an opportunity to explore funding opportunities and engage with guest speakers from local organisations working to protect and improve biodiversity.

The course outline was as follows;

Module 1 - 5th July 11am-1pm - On site The Great Island

Module 2 – 2nd August 11am-1pm - Online

Module 3 – 23rd August 11am-1pm - Online

Module 4 - 6th September 11am- 1pm - On site The Great Island

By bringing managers of public lands, key stakeholders and active community members together as part of this course meaningful connections were made in the locality and real discussions were facilitated around supporting and improving biodiversity across the sites.

To further supplement the learning as part of the course the participants were given access to an online toolkit, accessible through https://wildwork.veri.ie. The online toolkit was created and designed by a team of ecologists and contains over 25 educational items covering topics such as Citizen Science Schemes in Ireland to how to successfully Plant a Native Tree.

A Biodiversity Action Plan for each site was developed and forms part of a toolkit on the approach needed to develop public land sites for biodiversity. The biodiversity actions from these plans will have broad applicability to other public land sites in the four territories and beyond.

For more information regarding Wild Work please visit: https://wildwork.ie/

1.1. About The Great Island

Great Island (Irish: An tOileán Mór) is an island in Cork Harbour, at the mouth of the River Lee and close to the city of Cork, Ireland. The largest town on the island is Cobh (called

Queenstown from 1849 to 1922). The island's economic and social history has historically been linked to the naval, ship-building, and shipping activities in the town's environs. Cobh (Irish: An Cóbh), known from 1849 until 1920 as Queenstown, is a seaport town. With a population of around 13,000 inhabitants, Cobh is on the south side of Great Island in Cork Harbour and home to Ireland's only dedicated cruise terminal. Tourism in the area draws on the maritime and emigration legacy of the town. Facing the town are Spike and Haulbowline islands. On a high point in the town stands St Colman's, the cathedral church of the diocese of Cloyne. It is one of the tallest buildings in Ireland, standing at 91.4 metres (300 ft).

The ancient name of the island was Ard-Neimheadh, the "High (or important) island of Neimheadh". According to the 11th-century work Lebor Gabála Érenn, Neimheadh was the leader of a group who invaded the area in prehistoric times. Archaeological evidence of prehistoric and early medieval settlement on Great Island is recorded on the Record of Monuments and Places of the National Monuments Service. This includes records of ringfort, fulacht fiadh, holy well, and bee bole structures.

The largest settlement on Great Island, Cobh, had significant development during the 19th and early 20th centuries, stimulated by additional expansion in shipping and naval activity in the area. The island is connected by road bridge to Fota Island to the north – which, in turn, connects via a causeway to the mainland. This road bridge, Belvelly Bridge, was built in 1803 at one of the narrowest points in the channels around Great Island. More than 200 years old, it is the only road bridge to the island. A railway bridge and rail line also runs out through Fota Island to Great Island. Railway stations on Great Island include Carrigaloe station and Rushbrooke station, and the terminus at Cobh. A ferry service also connects the island (from a point near Carrigaloe) to the mainland (at a point near Passage West).

In the 19th century Topographical Dictionary of Ireland (published by Samuel Lewis in 1837), Great Island is described as "very fertile" with its "light productive soil" supporting agricultural uses with "two-thirds [of the island] under tillage, and the remainder in pasture or included in demesnes". describes the island's location, environment, and climate as factors "inducing many genteel families to settle here".

As of the 21st century, land use on Great Island remains primarily agricultural and residential in nature. The island has a population of between 12,000 and 14,000. While some of this population work on the island, as of the early 21st century, an increasing percentage of the island's residents commute to Cork city for work, traveling by car, Cork Commuter Rail, and bus services to the city. Residential developments are concentrated mainly around Cobh, with other populated townlands and settlements on the island including Ballymore, Ballynoe, and Belvelly. In the early 21st century, a different marine industry has arisen. Tourism and related services have become a significant part of the local economy, including cruise ships attracted by the Port of Cork berthing facilities on the island. This is the only dedicated cruising ship berth in the Republic of Ireland.

Several proposed conservation sites and green areas are located on and around the island. These include Cuskinny Marsh Nature Reserve (which is managed by BirdWatch Ireland), Marlogue Wood (operated by Coillte), and the Great Island Channel Special Area of Conservation (overseen by the National Parks and Wildlife Service). The latter, the Great Island Special Area of Conservation, proposes conservation controls (including aquaculture limits) to protect the animal and bird habitats of the area's salt marshes (**Wikipedia, 2022**).

1.2. Site Location

The site is located on the Northern side of The Great Island with the town of Cobh itself located on the southern side of the island. The site consists of a 125m long roadside verge that is 4-5 meters wide, the verge was disturbed and reshaped into a mound during road works which were undertaken in February/March of 2022. The road verge is bound to the south by the Ballydaniel beg road and to the North by an area of wetland that backs onto the Great Channel SAC & Cork Harbour SPA. The road verge is separated from the wetland by a drainage ditch which runs behind the mound, there is also an old stone wall and a section of mature hedgerow which contains blackthorn and willow. Throughout the road verge there are regularly maintained drains leading into the drainage ditch to help with water flow in the area as the area is prone to flooding when the tide is high, and conditions are poor. At the eastern end of the road verge there is space for parking, interpretive signage regarding the bird species present and access onto the shoreline.

1.3. Biodiversity and Biodiversity Action Plans (BAPs)

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*'.

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, in what timeframe as well as what resources are needed to carry out the plan and who can help.

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, what still needs to be worked on and how future actions might be resourced.

1.4. 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 also very important to humans. It is possible to figure out the economic value of ecosystems and biodiversity to us, 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

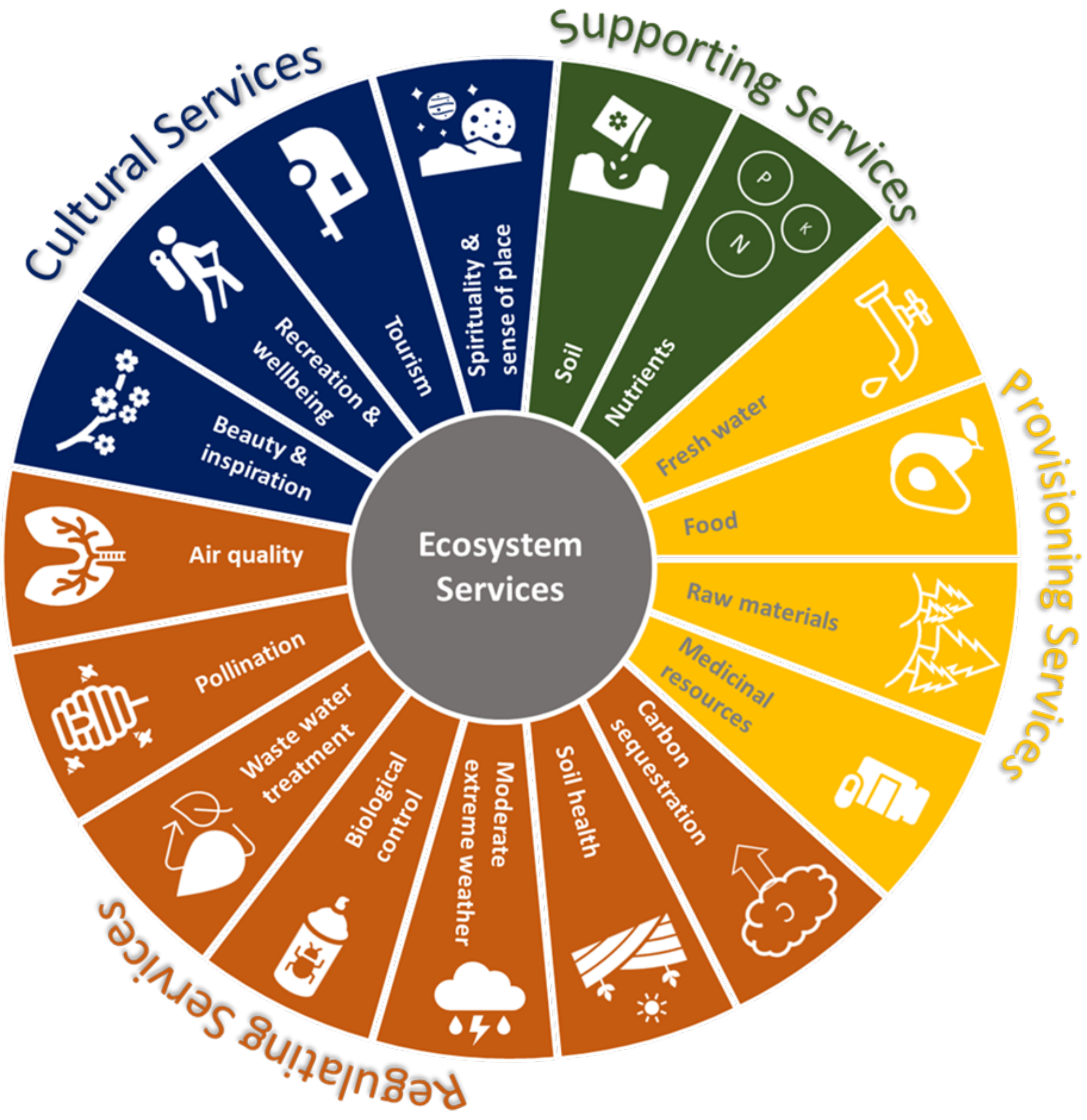
"...the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfil human life" (Daily, 1997)

Ecosystem Services can be organised into 4 broad categories:

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

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.

EXAMPLES OF ECOSYSTEM SERVICES



1.5. 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. Figure 2 below shows the percentage of Habitats Directive habitats that are affected by the top 10 combined Medium and High importance threats taken from the 2019 report for Ireland. For more information on the Habitats Directive see Biodiversity and the Law.

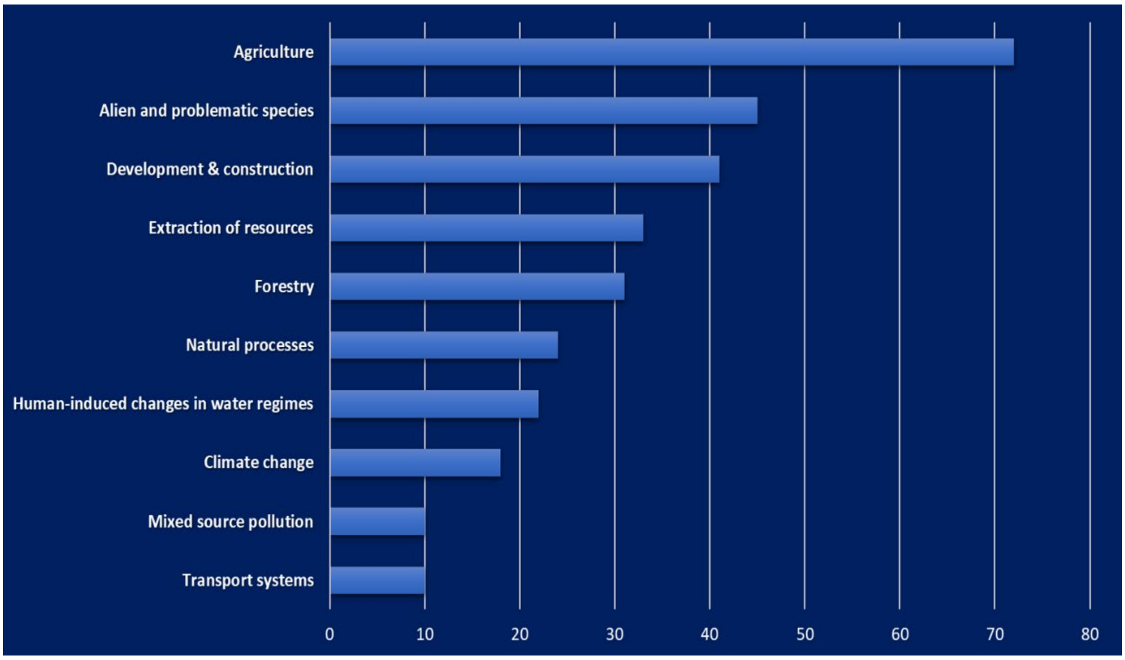


Figure 1 % of Habitats Directive Habitats affected by High and Medium Impact Threats. Adapted from (NPWS, 2019a).

In Figure 2. above agriculture and forestry appear to be the greatest threats to Habitats Directive habitats and species. However, agriculture covers approximately 65% of land use in Ireland and commercial forestry approximately 10.5%, while approximately 2% of Ireland is under built land. Agriculture and forestry then might be expected to have a 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 a favourable conditions or maintain them at favourable condition. There is legislation to protect some of the sites where these habitats and species are found. Many species, habitats and sites that do not have this kind of protection. See Section Biodiversity and the Law below.

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 organisms
- Climate change
- Pollution
- Invasion of alien species (Díaz, et al., 2019).

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' and for 13% of species, the assessment was recorded as 'Unknown'.

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 Birds of Conservation Concern in Ireland 4: 2020–2026 report:

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

Table 1 Irish Red List Assessments for selected groups with numbers of species in each category.

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

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)[1]

1.6. Biodiversity and the Law

EU Directives

Two very important and powerful pieces of legislation that are designed to protect wildlife, and as such biodiversity, 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 as amended), 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 as the **'Water Framework Directive'.**

[1] https://www.npws.ie/

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, in order 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 so many Natural Heritage Areas are also Statutory Nature Reserves and/or SACs and/or SPAs. Many Wildfowl Sanctuaries are also SPAs.

At the time of writing 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)** coincide entirely or partly with 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

2.1. Desktop Study

For background on biodiversity in and around The Great Island, 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 site boundary. The grid squares consulted for records are in Appendix II NBDC Grid Square.

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[2] . There are tutorials on how to use it in the Help section.

Recent and historical maps for the area available from the online Ordnance Survey Ireland (OSI) GeoHive[3] service were reviewed.

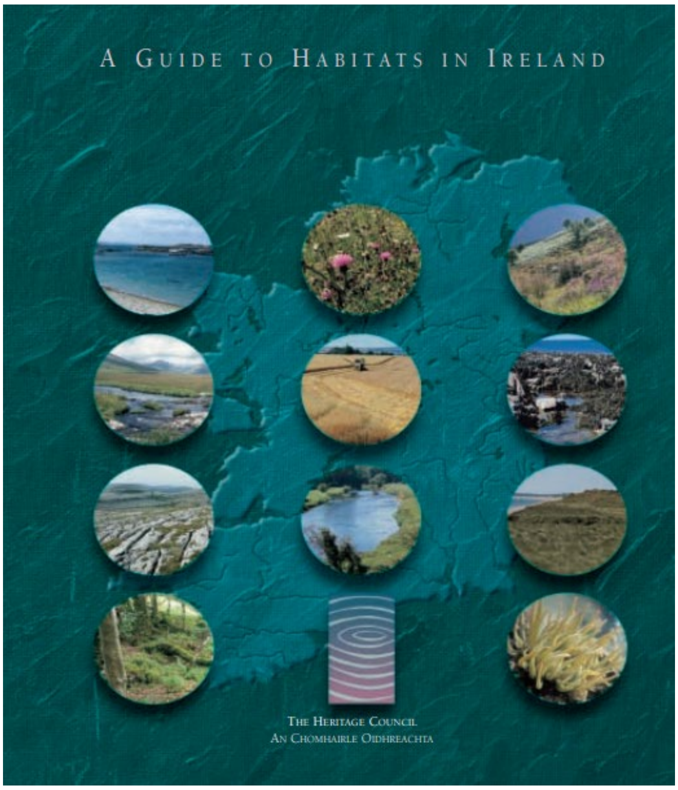
Unpublished information such as surveys commissioned in connection with planning applications etc., were also consulted. Where data from these is used in this Biodiversity Action Plan it is referred to in the text.

[2] https://maps.biodiversityireland.ie/
[3] https://www.geohive.ie/

2.2. Habitat Mapping and other fieldwork

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' 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. Fossit. 'A Guide to Habitats in Ireland' is often referred to as 'The Fossit Guide' or simply 'Fossit'.

The names of many species are included throughout this BAP. Where this is the case, their scientific names are included also and will appear italicised after the common name eg. The European Otter (*Lutra lutra*).

3. Biodiversity on The Great Island

3.1. Nature Conservation Sites on The Great Island

Two protected areas bound the site, these are the **Great Island Channel Special Area of Conservation** (SAC) and the **Cork Harbour Special Protected Area** (SPA). The following text has been taken from the National Parks and Wildlife Services (NPWS) site synopsis documents which are linked below. These documents are available for all protected sites across the country and are freely accessible on the NPWS[4] website.

3.2. Cork Harbour SPA

SITE CODE: 004030

Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay, Ringabella Creek and the Rostellan and Poulnabibe inlets.

Cork Harbour is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. In addition, it supports nationally important wintering populations of 22 species, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Little Egret, Golden Plover, Bar-tailed Godwit, Ruff, Mediterranean Gull and Common Tern. The site provides both feeding and roosting sites for the various bird

[4] https://www.npws.ie/protected-sites

species that use it. Cork Harbour is also a Ramsar Convention site and part of Cork Harbour SPA is a Wildfowl Sanctuary **(NPWS Site Synopsis, 2015[5])**

3.3. Plants, Animals and Habitats within Cork Harbour SPA

Owing to the sheltered conditions, the intertidal flats are often muddy in character. These muds support a range of macro-invertebrates, *notably Macoma balthica, Scrobicularia plana, Hydrobia ulvae, Nepthys hombergi, Nereis diversicolor* and *Corophium volutator.* Green algae species occur on the flats, especially Ulva spp. Cordgrass (*Spartina spp.)* has colonised the intertidal flats in places, especially where good shelter exists, such as at Rossleague and Belvelly in the North Channel. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Some shallow bay water is included in the site. Rostellan Lake is a small brackish lake that is used by swans throughout the winter. The site also includes some marginal wet grassland areas used by feeding and roosting birds.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Mallard, Pintail, Shoveler, Redbreasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Greenshank, Blackheaded Gull, Common Gull, Lesser Black-backed Gull and Common Tern. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Cork Harbour is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl. Of particular note is that the site supports internationally important populations of Black-tailed Godwit (1,896) and Redshank (2,149) - all figures given are five year mean peaks for the period 1995/96 to 1999/2000. Nationally important populations of the following 19 species occur: Little Grebe (57), Great Crested Grebe (253),

[5] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004030.pdf

Cormorant (521), Grey Heron (80), Shelduck (2,009), Wigeon (1,791), Teal (1,065), Mallard (513), Pintail (57), Shoveler (103), Red-breasted Merganser (121), Oystercatcher (1,809), Golden Plover (3,342), Grey Plover (95), Lapwing (7,569), Dunlin (9,621), Bartailed Godwit (233), Curlew (2,237) and Greenshank (46). The Shelduck population is the largest in the country (over 10% of national total). Other species using the site include Mute Swan (38), Whooper Swan (5), Pochard (72), Gadwall (6), Tufted Duck (64), Goldeneye (21), Coot (53), Ringed Plover (73), Knot (26) and Turnstone (113). Cork Harbour is an important site for gulls in winter and autumn, especially Black-headed Gull (3,640), Common Gull (1,562) and Lesser Black-backed Gull (783), all of which occur in numbers of national importance. Little Egret and Mediterranean Gull, two species which have recently colonised Ireland, also occur at this site.

A range of passage waders occurs regularly in autumn, including such species as Ruff (5-10), Spotted Redshank (1-5) and Green Sandpiper (1-5). Numbers vary between years and usually a few of each of these species over-winter.

Cork Harbour has a nationally important breeding colony of Common Tern (102 pairs in 1995). The birds have nested in Cork Harbour since about 1970, and since 1983 on various artificial structures, notably derelict steel barges and the roof of a Martello Tower. The birds are monitored annually and the chicks are ringed **(NPWS Site Synopsis, 2015)**.

3.4. The Great Island Channel SAC

Site Code: 001058

The Great Island Channel stretches from Little Island to Midleton, with its southern boundary being formed by Great Island. It is an integral part of Cork Harbour which contains several other sites of conservation interest. Geologically, Cork Harbour consists of two large areas of open water in a limestone basin, separated from each other and the open sea by ridges of Old Red Sandstone. Within this system, Great Island Channel forms the eastern stretch of the river basin and, compared to the rest of Cork Harbour, is relatively undisturbed. Within the site is the estuary of the Owennacurra and Dungourney Rivers. These rivers, which flow through Midleton, provide the main source of freshwater to the North Channel.

The site is of major importance for the two habitats listed on Annex I of the E.U. Habitats Directive, as well as for its important numbers of wintering waders and wildfowl. It also supports a good invertebrate fauna **(**[**NPWS Site Synopsis, 2013**]**)**.

3.5. Plants, Animals and Habitats within The Great Island Channel SAC

The site is a Special Area of Conservation (SAC) selected for the following habitats listed on Annex I / II of the E.U. Habitats Directive, Tidal Mudflats and Sandflats and Atlantic Salt Meadows.

The main habitats of conservation interest in Great Island Channel SAC are the sheltered tidal sand and mudflats and the Atlantic salt meadows. Owing to the sheltered conditions, the intertidal flats are composed mainly of soft muds.

The saltmarshes are scattered through the site and are all of the estuarine type on mud substrate. Species present include Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima),* Greater Sea-spurrey (*Spergularia media),* Lax-flowered Sea-lavender (*Limonium humile*), Sea Arrowgrass (*Triglochin maritimum*), Sea Mayweed (*Matricaria maritima*) and Red Fescue (*Festuca rubra*).

The site is extremely important for wintering waterfowl and is considered to contain three of the top five areas within Cork Harbour, namely North Channel, Harper's Island and Belvelly-Marino Point. Shelduck is the most frequent duck species with 800-1,000 birds centred on the Fota/Marino Point area. There are also large flocks of Teal and Wigeon, especially at the eastern end. Waders occur in the greatest density north of Rosslare, with Dunlin, Godwit, Curlew and Golden Plover the commonest species. A population of about 80 Grey Plover is a notable feature of the area. All the mudflats support feeding birds; the main roost sites are at Weir Island and Brown Island, and to the north of Fota at Killacloyne and Harper's Island. Ahanesk supports a roost also but is subject to disturbance. The numbers of Grey Plover and Shelduck, as given above, are of national importance.

The site is an integral part of Cork Harbour which is a wetland of international importance for the birds it supports. Overall, Cork Harbour regularly holds over 20,000 waterfowl and contains internationally important numbers of Black-tailed Godwit (1,181) and Redshank (1,896), along with nationally important numbers of nineteen other species. Furthermore, it contains large Dunlin (12,019) and Lapwing (12,528) flocks. All counts are average peaks, 1994/95 – 1996/97. Much of the site falls within Cork Harbour Special Protection Area, an important bird area designated under the E.U. Birds Directive **(NPWS Site Synopsis, 2013).**

3.6. Places of Local Biodiversity Interest on The Great Island

Cuskinny Marsh Nature Reserve

Cuskinny Marsh Nature Reserve, near Cobh, County Cork, Ireland is managed by Birdwatch Ireland (BWI). The land is owned by the Bird and Ronan families and comprises about 12 ha of land located along the lower reaches of the Ballyleary Stream on the Great Island in Cork Harbour. All the lands on the reserve are private property and therefore the wildlife should be viewed only from the road that borders the west and south side of the reserve.

This coastal reserve is roughly rectangular in shape (save for an attenuated north-westerly strip), while its longer axis is orientated in a NW-SE direction. The reserve (which consists of Cuskinny Lake and its marshy, plant-fringed margins) is bounded to the north, west and south by roadways and to the east by an earth-and-stone bank and a backing strip of deciduous woodland. The range of habitats include roadways, coastal rocks and walls, hedge banks, woodland, damp meadows, marshy ground, freshwater streams, and brackish lagoon.

As far as we are aware regular recording of the bird life of BWI Cuskinny Marsh Nature Reserve did not take place until the early 1970s with no records from before that date currently available. It was in January 1990 that an official Birdwatch Ireland Nature reserve was established on the site and since then some management work has been carried out in an attempt to improve the habitat for birds. In the summer of 1992 the area of the reserve was greatly increased, incorporating most of the uncultivated land surrounding the lake. You can read more about the birdlife in this report from 2017: **A Guide to the Wetland & Sea birds of Cuskinny Marsh Nature Reserve (2017)**[6]

In 2018, with support from Cork County Council Environment Directorate through the Local Agenda 21 Partnership Fund a repeat a botanical survey of the reserve was carried out, the first one carried out by botanist Tony O'Mahony in 1993. This time Tom Gittings, Ecologist, carried out the survey and you can download the report of the survey here: 2018 BWI Cuskinny Marsh Nature Reserve Botanical report.[7] **(Cuskinny Nature Reserve, 2022).**

Marlogue Wood

Marlogue wood is located on the south-east of Great Island and bounds the Ballynacorra River and Cork harbour. It is a hidden gem with an old world feel that has much to offer including a variety of mature trees and tracks suitable for walking. The area originally carried old oak stands that were felled during World War I. Interestingly, old Ordnance survey maps refer to the wood as Walterstown Wood. This dates back to when the area was part of the Smith-Barry estate. Members of this family would have been also linked to Barryscourt Castle in Carrigtoohill and to Fota House. Indeed, John Smith-Barry enlarged Fota House in the 1820's and used it as his main residence. The site is currently managed by Coillte and is open to the public to explore via walking trails **(Coillte, 2022)**.

4. Ecological Appraisal of Site on The Great Island and Habitat Map

As part of this BAP a walkover survey was undertaken to conduct an ecological appraisal of the site and to classify the habitats present. This survey was undertaken on the 5th of July 2022, following the first training session with the group.

[6] http://cuskinnynaturereserve.com/wp-content/uploads/2020/04/A-Guide-to-the-Wetland-Sea-birds-of-Cuskinny.pdf
[7] http://cuskinnynaturereserve.com/wp-content/uploads/2020/03/2018-BWI-Cuskinny-Marsh-botanical-survey.pdf

Figure 2. Site Overview with roadside verge on the left displaying high level of regrowth following recent disturbance

This site is typical of what can be found on many minor roads across Ireland with tree lines (Fossit Code: WL2) bounding the road and managed grassy verges present (Fossit Code: GS2). On the drive to the site the road is flanked on either side by sporadic treelines and hedgerows in front of which there are sections of flower rich grassy verges which had an abundance of Great Willowherb (*Epilobium hirsutum*), Meadowsweet (*Filipendula ulmaria*), Thistle species and a variety of grass species, Perennial Rye-grass (*Lolium perenne*), Downy Oat-grass (*Avenula pubescens*), Yellow Oat-grass (*Trisetum flavescens*) and Fescue species to name a few. There are a few domestic dwellings scattered along the road and Montbretia (*Crocosmia x crocosmiiflora*) appears to be spreading from the dwellings along the road verge where it is now the dominant species in parts.

Figure 3. Road verge opposite the site is dominated by Meadowsweet and Willowherb

Figure 4. The drainage ditch behind the earth bank on the road verge with some vegetation present. The old stone wall that bounds the site us also visible on the right.

The road verge itself has been recently disturbed and most of it reshaped into a mound during recent roadworks in the area. The flowering species present here are reflected in the surrounding road verges but due to the recent disturbance the majority of the verge is dominated by a single species. This species is Spear Leaved Orache (*Atriplex prostrata*) which is a salt tolerant species that is common in coastal areas across the country. The plant is known to be a rapid coloniser of recently disturbed ground and it appears the plant is spreading from the eastern end of the road verge. During the time of the survey over 80% of the road verge was dominated by this species with only the western end of the road verge reflecting the species diversity present along the road verges in the area. As this is a common species on recently disturbed ground it is thought that over the coming years the road verge will return to a more natural state as the viable seed bank begins to express itself.

Figure 5. Spear Leaved Orache (*Atriplex prostrata*) which was growing in abundance due to recent groundworks on site.

Evidence of this seed bank within the soil was observed during the site visit with pockets of Common Couch (*Elytrigia repens*), Common Bent (*Agrostis capillaris*) and Yellow Oat-grass (*Trisetum flavescens*) present. There were pockets of Meadow sweet (*Filipendula ulmaria*), Meadow Buttercup (*Ranunculus acris*), Scentless Mayweed (Tripleurospermum inodorum), Spear Thistle (*Cirsium vulgare*), Marsh Woundwort (*Stachys palustris*), Germander Speedwell (*Veronica chamaedrys*), Cleavers (*Galium aparine*), Ribwort Plantain (*Plantago lanceolata*), Dock (*Rumex sp*.) and Scarlet Pimpernel (*Anagallis arvensis*). The wall behind the road verge is predominantly covered with Atlantic Ivy (*Hedera Hibernica*).

Figure 6. Marsh Woundwort (Stachys palustris) growing on site

Invertebrates observed along the verge during this survey included the workers of the Common Carder bumblebee (*Bombus pascorum*) and the White-Tailed bumblebee (*Bombus lucorum agg.*) which were observed feeding on the open thistle flowers. Two butterfly species were observed flying over the road verge on numerous occasions, these were the Speckled Wood (*Pararge aegeria*) and Ringlet (*Aphantopus hyperantus*). A single Green Shieldbug

(*Palomena prasine*) and 11 Spot Ladybird (*Coccinella undecimpunctata*) were also observed. One of the participants also noted a pair of Yellowhammers (*Emberiza citronella*) singing from the overhead telephone lines during our site walkover. This was great to find on site as the Yellowhammer is a threatened species and is currently on the Red List of Birds of Conservation Concern.

Figure 7. White-Tailed bumblebee (Bombus lucorum agg.) observed on site

There were 5 distinct habitats observed on site during the site visit and they are detailed in the table below and a habitat map of the site can be found on the following page. The road verge itself which will subject to the actions detailed in this BAP is classified as a combination of an Earth Bank (BL2) and Recolonising Bare Ground (ED3) due to the recent works carried out along the verge.

Figure 8. Evidence of recent works along the verge – gravel spoil heap on site

Habitats listed in Table 2 below are classified according to 'A Guide to Habitats in Ireland' (Fossitt, 2000).

Fossit Habitat Name	Fossit Code
Drainage Ditches	FW4
Hedgerow	WL1
Stone Walls and Other Stonework	BL1
Earth Bank	BL2
Recolonising Bare Ground	ED3

Table 2. *Habitats recorded in the BAP area*

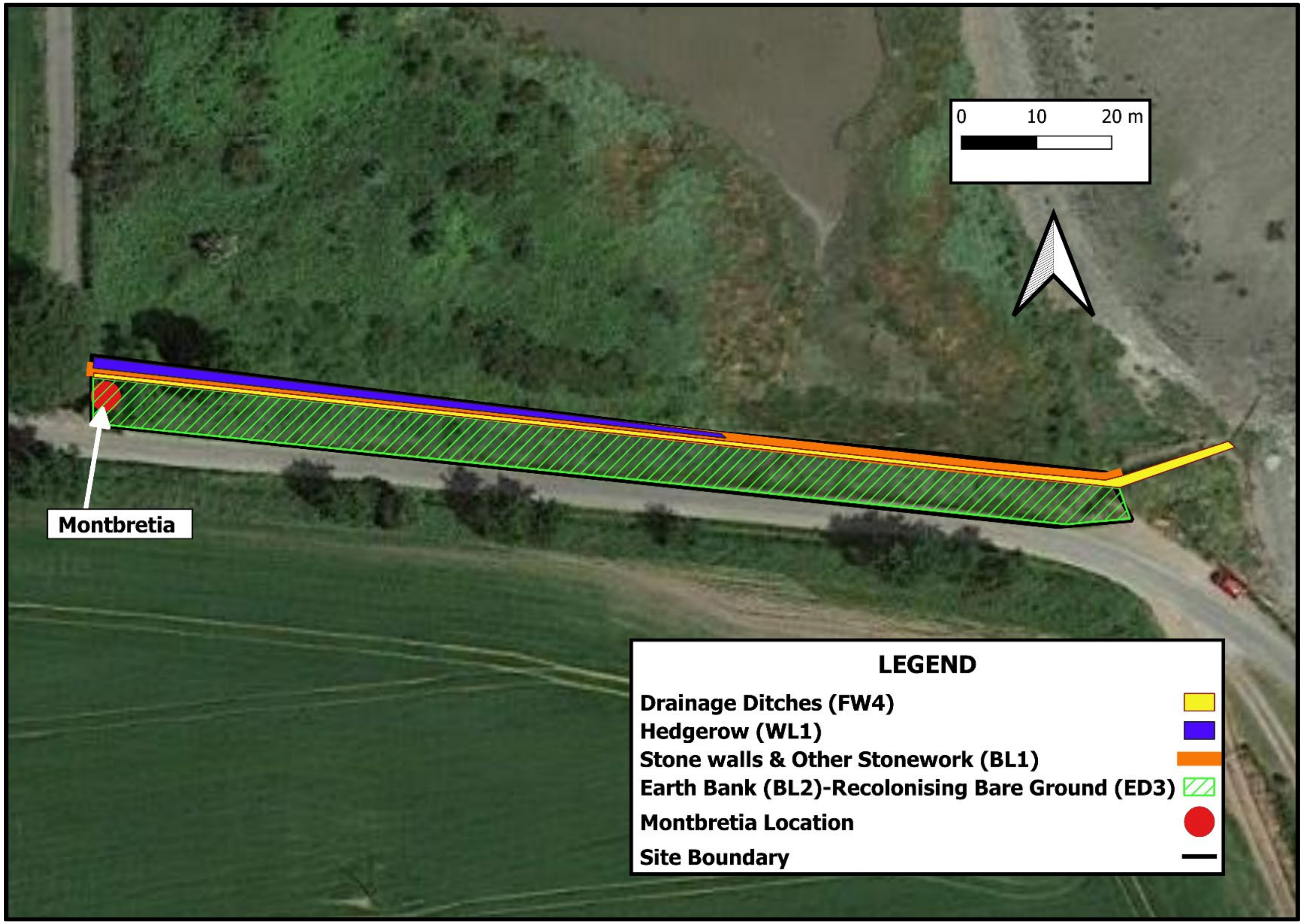


Figure 9: *Habitat Map of site*

From the **National Biodiversity Data Centres species list** for the 2km square that encompasses the site there are records for 83 species of Bird, 69 species of flowering plants, 9 species of butterfly, 2 species of bumblebee, 27 species of moth and 4 species of terrestrial mammal. The majority of these records are from the 2000s but some are older having been recorded during the late 1990s.

Most notable is the number of Protected/Threatened Bird species present in the area which may come as no surprise due to the proximity of the large SAC and SPA to the site. Species of note include an array of birds of prey, the Peregrine Falcon (*Falco peregrinus*), Common Buzzard (*Buteo buteo*), Common Kestrel (*Falco tinnunculus*), Merlin (*Falco columbarius*) and the Hen Harrier (*Circus cyaneus*). There are three species of owl in Ireland and all three have been recorded on the site. These species are the Barn Owl (*Tyto alba*), Long-eared Owl (*Asio otus*) and the Short-eared Owl (*Asio flammeus*) which is the only owl species that can be seen hunting during the day.

Numerous waders and waterfowl are recorded in the area including the Eurasian Curlew (*Numenius arquata),* Great Crested Grebe (*Podiceps cristatus*), Bar-tailed Godwit (*Limosa lapponica*), Cattle Egret (*Bubulcus ibis*), Common Redshank (*Tringa totanus*), Eurasian Wigeon (*Anas penelope*), Great Northern Diver (*Gavia immer*) and the Red-breasted Merganser (*Mergus serrator*) to name a few.

There is a single record for Yellowhammer (*Emberiza citrinella*) in the area from 2019 so it was great to see a pair of them during our first session on the site. This observation confirms that they are still frequenting the area. Unfortunately, we didn't get a photograph before they flew off but if they are observed again and photographed this would be a valuable record for the area.

The Green Shore Crab (*Carcinus maenas*) was recorded in 2021 as part of a new suite of Citizen Science schemes created by the National Biodiversity Data Centre to improve records of marine species across Ireland. It is promising to see some engagement with the Explore Your Shore citizen science schemes in the area.

Amongst the records for moths on the site there was a record for a remarkable day flying moth known as the Humming-bird Hawk-moth (*Macroglossum stellatarum*). This species resembles a hummingbird in its flight behaviour and is a regular visitor here during the summer months.

Corncockle (*Agrostemma githago*) was recorded in the area in 2021, this plant is currently designated as a Threatened Species: Regionally Extinct. There are lots of records from the years 2020-2021 for other flowering plants in the area which includes Biting Stonecrop (*Sedum acre*), Common Centaury (*Centaurium erythraea),* Fool's-water-cress (*Apium nodiflorum*), Lords-and-Ladies (*Arum maculatum),* Pignut (*Conopodium majus),* Sea Aster (*Aster tripolium*) and White Dead-nettle (*Lamium album*).

Of the 4 terrestrial Mammal species recorded in the area 3 were species of Bat, Lesser Noctule (*Nyctalus leisleri*), Pipistrelle (*Pipistrellus pipistrellus sensu lato*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*). The fourth mammal species recorded was the Eurasian Red Squirrel (*Sciurus vulgaris*) which is a great record for the area. The grid square that was consulted for the above information can be found in **Appendix II NBDC Grid Square**.

From the old maps accessed on Geohive.ie it appears that the site hasn’t changed much in terms of its layout since the mid-1800s. There is evidence of the access road, old stone wall which is now located behind the road verge and a tree line which is still present behind the wall. The maps accessed can be viewed in **Appendix III Geohive Maps**.

5. Actions

Additional Resources for Actions – Please see the Resources Section below the Actions table to find links to relevant organisations, articles and best practice documents that will help guide you with any of the actions described. Additional resources have been included that do not correspond to the Actions listed below, these can be used to investigate future actions to include in this BAP or to inform actions in your own garden. Please also see the online resources available through the Wild Work Toolkit here https://wildwork.veri.ie.

***Note on Action 1** – **Pollinator Friendly Management of Road Verge**: As part of the Wild Work Public Lands course guest speakers from the locality were invited to speak to the group. One of the guest speakers for this group was Tom O'Donnell of O'Donnell Environmental who is currently developing a Pollinator Plan on behalf of Cork County Council for Cobh and other surrounding towns and villages. Tom and the Council have agreed to include the site from this BAP within their Pollinator Plan. This means that this site will be part of a wider plan looking to improve areas for pollinators.

O Donnell Environmental - https://www.odonnellenviro.ie/

Number	Action	Year (To be determined by Group)
1.*	**Pollinator Friendly Management of Road Verge**	
1.1	Implement pollinator friendly management of road verge using “cut and lift” methodology. 1 cut/year meadow along length of verge as per NBDC guidelines on managing grasslands for pollinators.	
1.2	Baseline Data Gathering along verge to monitor effects of pollinator friendly management.	

1.3	Monitor growth of Orache species along road verge and if species is still dominant after a few years consider increasing number of cut and lifts per year to encourage other species to thrive	
2.	**Control of Montbrettia along Road verge**	
2.1	Map current location of Montbrettia along road verge and upload record onto NBDC online database	
2.2	Carry out manual control (Digging out) of Montbrettia along road verge and monitor site regularly for regrowth or new plants emerging.	
3.	**Removal of Spoil Heap**	
3.1	As part of the recent roadworks at the site a spoil heap of excess gravel was left on the road verge. It was agreed with Cork County Council during one of the training sessions that they will undertake the removal of this spoil heap. If required, the area should be infilled by locally sourced topsoil.	
4.	**Creation of Solitary Bee Bank along road verge**	
4.1	Following removal of the spoil heap, consideration should be given to the creation of a solitary bee nesting habitat in this area. Keep a section of the sloped bank vegetation free by hand pulling any regrowth on a yearly basis.	
4.2	Monitor the area through Spring and Summer for the presence of mining solitary bee species. Upload any records onto the NBDC online database.	
4.3	If the solitary bee bank proves beneficial to the area and solitary bees are observed utilising the bare earth patch consider creating additional bare earth patches on appropriate sections of the road verge.	
5.	**Small scale Native Tree Planting**	
5.1	Consult with council and local inhabitants regarding small scale planting of native trees along road verge. Considerations must be given to overhead wires and lines of sight along the road verge.	

5.2	Plant native trees that reflect the surrounding trees. Native hedgerow species such as Blackthorn, Hawthorn and Holly should be considered.	
5.3	Organise an event day surrounding the planting of trees on site. Invite community engagement officers from relevant authorities eg. The Heritage Council, Tree Council of Ireland etc. Invite local schools to take part in the planting of trees.	
5.4	Clearly label any trees planted and give some information on the species and its benefit for biodiversity and people.	
6.	**Interpretive signage regarding importance of Hedgerows, Trees & Pollinators**	
6.1	Use signage templates from the NBDC to highlight that the area is being "managed for pollinators". Place signs at either end of the road verge so locals understand the area is being managed and not left to "grow wild".	
6.2	Erect a sign beside the existing sign at car parking area that highlights the importance of native trees/hedgerows for both biodiversity and people.	
7.	**Citizen Science along road verge and surrounding area**	
7.1	Engage in butterfly and bumblebee monitoring as per NBDC methodology along the road verge to monitor effectiveness of pollinator friendly management.	
7.2	Create links with other sites being managed for pollinators as part of the Cobh Pollinator Plan. Create a network of Citizen Scientists monitoring pollinators in Cobh.	
7.3	Undertake Flower Insect Timed (FIT) counts along road verge during Spring and Summer as per NBDC methodology.	
7.4	As this site is so close to the coast consideration should be given to engage with the marine based Citizen Science schemes from the NBDC as part of Explore Your Shore.	
7.5	Upload casual records from the site and the surrounding areas to the NBDC online database to increase knowledge on biodiversity in Cobh.	

7.6	Bioblitz of the site and the surrounding area during Biodiversity Week. This could be an annual event where locals and experts are invited to attend.	

6. References

Coillte 2022, Marlogue Woods. Available at: https://www.coillte.ie/site/marlogue/ (Accessed on 3rd October 2022).

Birdwatch Ireland Cork 2022, Cuskinny Nature Reserve. Available at: http://cuskinnynaturereserve.com/ (Accessed on 3rd October 2022).

NPWS 2015, Cork Harbor SPA. Available at: https://www.npws.ie/protected-sites/spa/004030 (Accessed on 3rd October 2022).

NPWS 2013, Great Island Channel SAC. Available at: https://www.npws.ie/protected-sites/sac/001058 (Accessed on 3rd October 2022).

Wikipedia 2022, Great Island. Available at: https://en.wikipedia.org/wiki/Great_Island (Accessed on 3rd October 2022).

Wikipedia 2022, Cobh. Available at: https://en.wikipedia.org/wiki/Cobh (Accessed on 3rd October 2022).

7. Resources

All-Ireland Pollinator Plan	
Lots of resources here on actions	https://pollinators.ie/
NBDC Signage Templates & How to Guides	https://pollinators.ie/resources/
Local Community Actions to help Pollinators document	https://pollinators.ie/wp-content/uploads/2021/08/Local-Communities_actions-to-help-pollinators-July-2021-WEB-JB.pdf
Citizen Science	
NBDC – Beginners Guide to Recording Ireland's Wildlife – Best place to start if considering Citizen Science	https://biodiversityireland.ie/app/uploads/2021/08/NBDC-Beginners-Guide-to-Recording-2022-WEB.pdf
Dragonfly Ireland 2019 – 2024	https://www.biodiversityireland.ie/projects/monitoring-scheme-initiatives/dragonfly-ireland-2019-2024/
Bumblebee Monitoring Scheme – Links to eLearning and other resources	https://biodiversityireland.ie/surveys/bumblebee-monitoring-scheme/
Butterfly Monitoring Scheme - Links to eLearning and other resources	https://biodiversityireland.ie/surveys/butterfly-monitoring-scheme/
Flower Insect Timed (FIT) Count	https://biodiversityireland.ie/surveys/fit-counts/#:~:text=FIT%20Counts%20are%20very%20simple,change%20in%20their%20local%20biodiversity.
Rare Plant Monitoring Scheme – For experienced Citizen Scientists to record Vascular Plants on Red List	https://biodiversityireland.ie/surveys/rare-plant-monitoring/
Spring Flower Monitoring Scheme	https://biodiversityireland.ie/surveys/spring-flowers-project-2022/

NBDC – Explore Your Shore	https://exploreyourshore.ie/
NBDC & Partners Citizen Science Schemes – Links to all schemes currently run by the NBDC	https://biodiversityireland.ie/monitoring/
Bird Watch Ireland Citizen Science Schemes – Garden Bird Survey, Barn Owl Survey, iWebs etc.	https://birdwatchireland.ie/our-work/surveys-research/research-surveys/
Citizen Science Stream Index - CSSI Tutorial Video	https://www.youtube.com/watch?v=HsDZ0siO6Ds

Solitary Bees & Solitary Bee Bank Creation

NBDC – 15 Pollinators for Beginners	https://pollinators.ie/record-pollinators/solitary-bees-for-beginners/
NBDC – Simple Guide to Solitary Bees Part 1 & 2	https://www.biodiversityireland.ie/wordpress/wp-content/uploads/Simple-guide-to-solitary-bees-in-Ireland_-part-1-2016.pdf https://www.biodiversityireland.ie/wordpress/wp-content/uploads/Simple-guide-to-solitary-bees-in-Ireland_-part-2-2016.pdf
NBDC – The secret Life of Solitary Bees	https://biodiversityireland.ie/the-secret-life-of-solitary-bees/
NBDC – Creating Pollinator Nesting Habitat	https://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-How-to-Guide-1-FINAL.pdf
NBDC - How to create solitary bee nest sites on your farm (Methodology can be applied to road verge)	https://biodiversityireland.ie/app/uploads/2022/05/ActionSheet_Solitary-Bees-WEB-2.pdf
Teagasc – How Bees Use Hedges	https://www.teagasc.ie/news--events/daily/environment/how-bees-use-hedges.php
Buglife – How to Create a Bee Bank	https://cdn.buglife.org.uk/2020/04/Bee-bank-booklet-4.pdf

Bioblitz

Bioblitz Ireland	https://bioblitz.ie/about/
Biodiversity Maps Ireland - Dataset Details - Ireland's BioBlitz	https://maps.biodiversityireland.ie/Dataset/189
Heritage Council – Heritage in Schools - School Bioblitz: Teacher's notes	https://www.heritageinschools.ie/content/files/BioBlitz_teachers_guide.pdf
Cork City Council – Biodiversity Explorers Primary Schools	https://www.corkcity.ie/en/media-folder/heritage/kids-biodiversity-explorers-education-pack.pdf
Green Schools Ireland – Bioblitz	https://greenschoolsireland.org/resources/bioblitz/

Public Engagement & Signage

EPA - Protecting-and-developing-Irelands-Green and Blue-spaces	https://www.epa.ie/publications/research/environment--health/Final_Brochure_Protecting-and-developing-Irelands-GB-spaces.pdf
EPA – Connecting with Nature for Health and Well being	https://www.epa.ie/publications/research/environment--health/JS---NEAR-Toolkit-FINAL-V1.6-1Oct20.pdf
Catchments - Public engagement & environmental policy	https://www.catchments.ie/public-engagement-environmental-policy/
EPA – Innovative Methods of Community Engagement	https://www.ucc.ie/en/media/projectsandcentres/imagining2050/InnovativeMethodsofCommunityEngagement(lowres).pdf

Leave No Trace – Biodiversity Toolkit for Communities	https://www.leavenotraceireland.org/wp-content/uploads/2020/01/Leave-No-Trace-Ireland-Biodiversity-Toolkit-for-Communities.pdf
Business in The Community Ireland – Biodiversity Handbook for Local Businesses	https://www.bitc.ie/wp-content/uploads/2019/02/Biodiversity-for-Business.pdf
Heritage Council – Ideas for interpreting Heritage sites	https://www.heritagecouncil.ie/content/files/bored_of_boards_1mb.pdf
Sample signage text for Trees, Hedgerows & Pollinators	https://pbs.twimg.com/media/E_5dBisUcAAdCfW?format=jpg&name=4096x4096
	https://naturenorthwest.files.wordpress.com/2021/10/625e6577-c4ae-4e54-a2af-6a75108af19d.jpeg https://iwaclanebiodiversitygarden.files.wordpress.com/2018/09/image-capture-native-hedgerow.png
	https://images.squarespace-cdn.com/content/v1/560b2e0ee4b040a6eb9ec078/1579458256789-EIHAST8W01UJYODI9QA9/Outdoor-Interpretive-Sign-Tree-Parts-Diagram-Understanding-Trees-Value-Function-Rings-Bark-Leaf-Pulse-Design-Nature-Series-9619.jpg?format=1500w
	https://pollinators.ie/wp-content/uploads/2021/01/Managing-hedgerows-for-pollinators.jpg
	https://www.monaghantownbiodiversity.com/uploads/7/2/2/3/7223593/6637289_orig.jpg
	https://naturenorthwest.files.wordpress.com/2021/10/tempimageztvckn.jpg?w=768

Grasslands & Road Verges	
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/
Wild Work - Climate Change and Amenity Grassland Management	https://wildwork.ie/wp-content/uploads/2022/01/Wild-Work-Climate-Change-and-Amenity-Grassland-Management.pdf
NBDC - The importance of species-rich meadows and grasslands (even mini ones!)	https://pollinators.ie/the-importance-of-species-rich-meadows-and-grasslands-even-mini-ones/
Bug Life – Road Verges and their potential for pollinators	https://cdn.buglife.org.uk/2019/10/Roberts-Phillips-Managing-road-verges-for-pollinators-report-040119.pdf
NBDC Pollinator-friendly management of: TRANSPORT CORRIDORS	https://pollinators.ie/wp-content/uploads/2019/10/Transport-Corridors_actions-to-help-pollinators-2019-WEB.pdf
Plant Life – Managing Road Verges: Best Practice Guide	https://www.wildlifetrusts.org/sites/default/files/2019-09/Managing%20grassland%20road%20verges.pdf
Don't Mow Let it Grow – Online Toolkit (Section on managing road verges for pollinators)	https://toolkit.dontmowletitgrow.com/
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
Tree related resources for schools at the leafireland.org resources section	https://leafireland.org/resources/
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/
Crann – Tree Planting Tips	https://crann.ie/trees/tree-planting-tips/
DLR Co.Co. – Tree Guide	https://www.dlrcoco.ie/sites/default/files/atoms/files/dlr_tree_guide.pdf
Fruit and Nut – Fruit & Nut Tree Planting Guide	https://fruitandnut.ie/advice.html#:~:text=At%20Fruit%20and%20Nut%2C%20most,not%20frozen%20or%20too%20wet.
The Apple Farm – Growing Fruit Trees Guide	https://www.theapplefarm.com/growingapples.pdf
Hedgerows and Treelines	
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/
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	https://www.irishtimes.com/life-and-style/homes-and-property/gardens/dig-in-now-s-the-ideal-time-to-plant-your-native-hedgerow-1.2936324#:~:text=Soak%20the%20root%20systems%20in%20water&text=Using%20a%20garden%20fork%20to,metre%20but%20stagger%20the%20rows
Tips on Managing older Hedgerows: RSPB	http://ww2.rspb.org.uk/images/englishhedgerows1_tcm9-133255.pdf
Ivy	
Ivy on Walls. Historic England. (this includes recommendation on when and when not to remove ivy, how to remove ivy, and how to manage ivy).	https://research.historicengland.org.uk/Report.aspx?i=15604
NBDC - Naturalists buzzing as new bee arrives in Ireland – Ivy Bee	https://biodiversityireland.ie/naturalists-buzzing-as-new-bee-arrives-in-ireland/

Montbretia Management	
Department of Agriculture, Food & Marine – Montbretia	https://assets.gov.ie/79142/011f8e2f-e313-40f4-903d-0f928ad5ab98.pdf
CABI – Montbretia Data Sheet	https://www.cabi.org/isc/datasheet/55282
Seaside Squirrel – We need to talk about Montbretia.	https://www.seasidesquirrel.ie/blogs/news/we-need-to-talk-about-montbretia
Invasive Species Ireland – Montbretia	http://invasivespeciesni.co.uk/species-accounts/established/terrestrial/montbretia

Spear Leaved Orache	
Wildflowers of Ireland – Orache	http://www.wildflowersofireland.net/plant_detail.php?id_flower=188&wildflower=Orache,%20Spear-leaved

Appendix I: Further information related to the actions

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. Strive to use native species whenever planting/sowing.

3. When attempting to help nature, try to fully understand the habitats and species of flora and fauna already associated with the given location.

4. Consult with a qualified ecologist or Wild Work staff to learn how to implement best practice.

5. Work with, rather than against nature to make biodiversity enhancement more efficient.

6. Cease using herbicides, insecticides, fungicides and any other pesticides or chemicals where possible. For example, it is possible to maintain border edges of green areas without using herbicides. This task can be carried out quite easily either with a manual hoe, shovel, or use of strimming equipment.

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. There are plenty of other examples.

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

Helping biodiversity and helping people

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

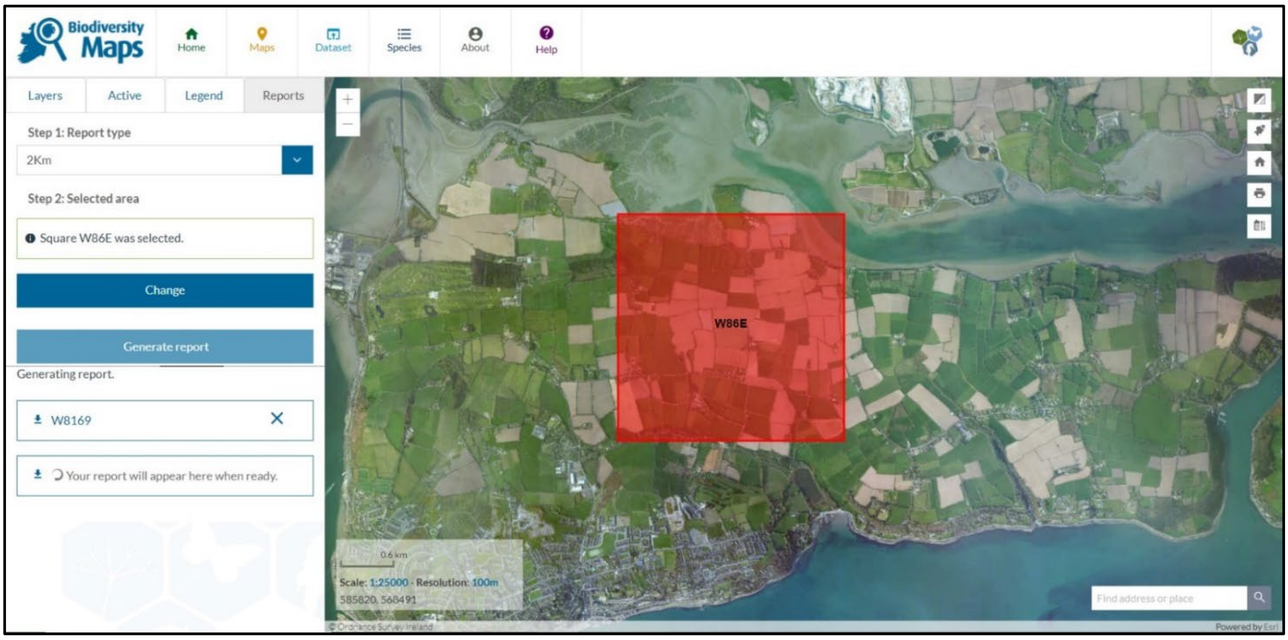
Wild Work's motto of "helping people, help nature, help people" is about recognising that people want to help nature and that people can benefit in doing so. If we help nature, we can also help ourselves and our communities, particularly in terms of health and well-being.

For example, developing and managing woodlands as spaces for people to exercise and play 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.

Appendix II NBDC Grid Square

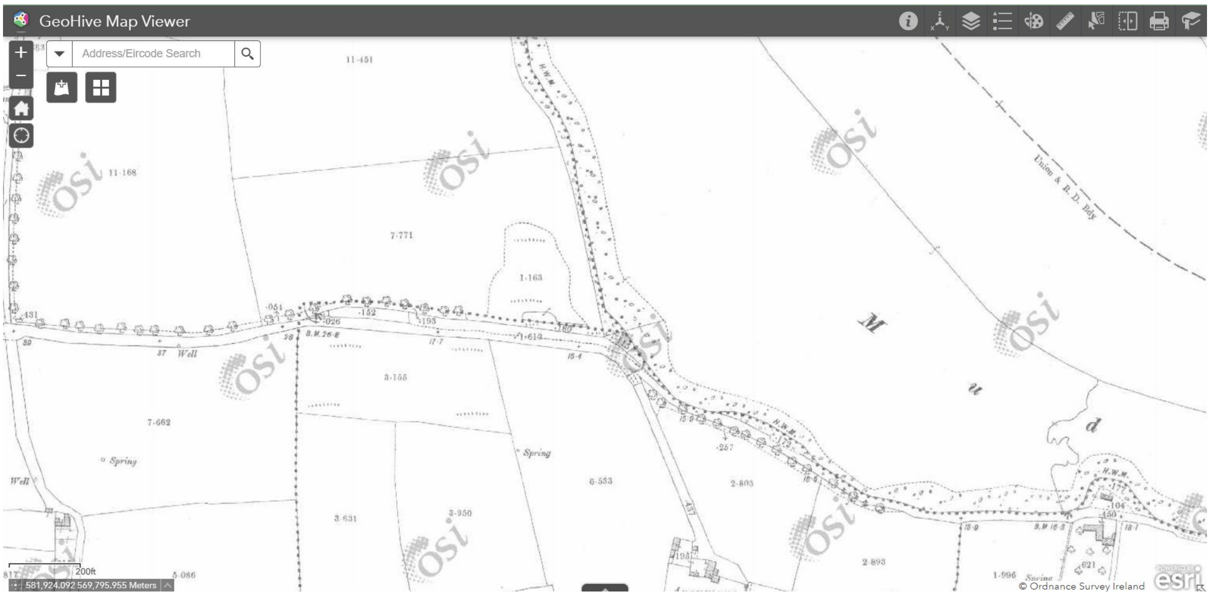
Data downloaded for this BAP from the NBDC website was from the following 2km Grid Square: W86E



Appendix III Geohive Maps

The maps below were accessed on Geohive.ie and are for the site location on the Great Island.

Between **1829 and 1842** Ordnance Survey Ireland completed the first ever large-scale survey of an entire country. Acclaimed for their accuracy, these maps are regarded by cartographers as amongst the finest ever produced. These maps are particularly relevant for genealogy or those with an interest in social history. This presentation of the Historic **Map 6 inch (1837-1842)** is in colour.



The 25 inches to one mile (1:2500) scale mapping was created to facilitate the land reforms initiated in the **1880s – 1913.**

Appendix V – Important Local Contacts

Cork County Council Heritage Officer
Name: Conor Nelligan
Phone: 021 428 5905
Email: conor.nelligan@corkcoco.ie
Website: https://www.heritagecouncil.ie/

National Parks and Wildlife Services (NPWS)
Southern Division Regional Manager
Phone: (01) 539 3208
District Conservation Officer (Cork city, Cork south and west, Kerry south-west)
Phone: (01) 539 3396
Website: https://www.npws.ie/

An Taisce Cork
Head Office Phone: 01 454 1786
Local Email: cork@antaisce.org
Administration Email: info@antaisce.org
Website: https://www.antaisce.org/

National Biodiversity Data Centre
Phone: (051) 306 240
Website: https://biodiversityireland.ie/

Birdwatch Ireland – Cork Branch
Email: info@birdwatchcork.com
Facebook:
www.facebook.com/BirdWatchIrelandCorkBranch/
Local Branch Website: https://birdwatchcork.com/
Website: https://birdwatchireland.ie/

Oceans Plastic Project
Website: http://oceansplasticproject.ie/
Facebook:
https://www.facebook.com/westcorkoceanspp/
Phone: 083 406 6021
Email: rory@oceansplasticproject.ie

Leave No Trace
Phone: +353 (0) 1 9059009
Email: info@leavenotraceireland.org
Website: https://www.leavenotraceireland.org/

LAWPRO Community Water Officer
Name: Catherine Seale
Email: cseale@lawaters.ie
Website: https://lawaters.ie/

Bat Conservation Ireland
Email No local Branch in Cork
Website: www.batconservationireland.org/

Environmental Trust Ireland
Email: environmentaltrustireland@gmail.com
Website: https://environmental-trust-ireland.business.site/

Irish Wildlife Trust
Phone: 01 445 7259
Email: info@iwt.ie
Local Branch Facebook:
www.facebook.com/IrishWildlifeTrustCork/
Website: https://iwt.ie/

Cork Environmental Forum
Website: https://www.cef.ie/
Facebook
:www.facebook.com/CorkEnvironmentalForum
Phone: 083 146 8064
Email: info@cef.ie

Cork Nature Network
Phone: 087 228 2040
Email: contact@corknaturenetwork.ie
Facebook:
https://www.facebook.com/corknaturenetwork/
Website: https://corknaturenetwork.ie/

Appendix VI About Wild Work and SECAD

Wild Work[8] is a unique initiative with biodiversity at its heart. We support everyone committed to helping nature; and our particular focus is to connect business, biodiversity and local communities. We support the work of local and national organisations involved in the conservation and protection of our natural environment. With our practical expertise, we help people create and care for meadows, woodlands, beaches, rivers and other natural habitats, both in urban and rural settings. We strive to work in line with best practice, with nature and not against nature and we value research as a key component of our work. Our aim is to understand the bigger picture, so we can help people do the right thing.

We work with:

- Local community groups and individuals
- Businesses big and small
- Schools and colleges
- Farmers
- Local authorities and other state bodies
- Conservation organisations and charities

Wild Work's Social Ethos

To benefit society and nature, we want to foster people's good will to ensure that our local flora, fauna and habitats are protected, valued and enhanced. We also want people who connect with the Wild Work movement to benefit positively in terms of improved health and well-being. **To educate and raise awareness,** we follow a place-based approach, working with nature and the environment in a positive way to have a real and practical impact on environmental issues; because increasing people's awareness, respect and

[8] Visit www.wildwork.ie for more information.

understanding, helps them care more effectively for our natural world. **To support employment activation,** we provide quality work experience opportunities for people and aim to contribute to the creation of fulfilling jobs, particularly in the biodiversity sector.

About SECAD

Wild Work is a SECAD Initiative, developed in response to a need identified by SECAD from years of experience in supporting environmental projects in local communities. Established in 1995, SECAD Partnership CLG is a Local Development Company with charitable status. SECAD has evolved over the years to manage a wide range of funds and services on behalf of various Irish government departments, state bodies and other organisations. SECAD is overseen by a voluntary board of directors made up of representatives from all sectors of society and the workplace.

As a Local Development Company, SECAD works with a range of different clients and stakeholders including: community and voluntary groups; disadvantaged target groups; job seekers; businesses (including private and social enterprise); farmers; schools; and the corporate sector. SECAD operates across various regional territories, as well as on a national basis. Primarily, the organisation works within the county (administrative area) of Cork in the area east and west of Cork Harbour. SECAD provides supports for the following: tourism (including infrastructure, marketing, training, networking); enterprise development; food producers; employment; rural and coastal towns and villages; community and youth services; community infrastructure; environment (including natural, built and cultural heritage, conservation, biodiversity etc); and social inclusion (working with people on low incomes, long term unemployed, disadvantaged communities and young people).