Carrigaline Tidy Towns Biodiversity Action Plan

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On Behalf of: Carrigaline Tidy Towns

Wild Work is a SECAD initiative.

Contents

Acknowledgements

Sincere thanks to all in Carrigaline Tidy Towns who took the time to consider how they would like to help nature in Carrigaline.

Introduction

In 2018 Wild Work was approached by Carrigaline Tidy Towns to create a habitat map and Biodiversity Action Plan for a section of land marked Kilnagleary Site (Fig. 1). This site has been identified by Carrigaline Tidy Towns as a place that they would like to enhance for biodiversity and transform into an educational and recreational amenity. This document outlines the biodiversity actions and associated information related to the development of these actions.

About Carrigaline and the Kilnagleary Site

Carrigaline is a metropolitan town (previously known as satellite towns) located 13km south of Cork City and situated in a limestone region in the Owenabue Valley. It lies at the mouth of the Owenabue River and at the head of the Owenabue Estuary, which forms part of the Cork Harbour Special Protection Area.

The Kilnagleary site consists of section abandoned land of approximately 11.87 hectares located to the south of the Owenabue Estuary. It is bordered by housing estates to the west and the R612, Kilnagleary and Ferny roads to the north, east and south respectively (Fig.1).

Figure 1 Kilnagleary Site

What is Biodiversity?

This is a shorthand way of saying ‘biological diversity’.

But what does *that* mean?

A simple way to describe ‘biological diversity’ is to say it means all the different types and individuals of living things on the planet, the places they live and the ways they live with each other.

An even simpler way to describe biodiversity might be ‘Nature’!

What do Biodiversity Action Plans generally do?

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

Why do we need Biodiversity Action Plans?

1950s- It is increasingly noticed that the way people live on the planet is damaging other species and the places those species need to live. It is realised that this damage is also a problem for people.

1980s- Under the United Nations, people across the planet decide to take action to protect all species, the places they live and the ways they live together.

1992- Ireland is one of 168 parties that sign up to the Convention on Biological Diversity which is designed to make sure that

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

The idea of preparing Biodiversity Action Plans comes from the Convention on Biological Diversity

2002 - Ireland makes its first National Biodiversity Action Plan. This plan says that Local Authorities, like Cork County Council, need to prepare Biodiversity Action Plans too.

2009 - First Biodiversity Action Plan for County Cork is published.

The Cork County Biodiversity Action Plan says that to make sure the plan works, lots of organisations and people need to get involved (Cork County Council, 2009).

Lots of groups of people doing a little (or a lot!!) at a local level can make a huge positive impact for nature at county, country and global level.

What is in this Biodiversity Action Plan?

The content in this plan have been produced based on the following:

1. Habitat mapping by Wild Work
2. Desktop research by Wild Work

Information of interest about the Kilnagleary site

The Historic Map 25 inch (1888-1913) show this site was originally agricultural land divided into several fields. Relics of this agricultural past can still be found on the site including old field boundaries and drainage ditches (Loxton & O'Halloran, 2018) (Fig. 2). At what point agriculture ceased and the fields were abandoned is not clear, however the development of surrounding housing estates started in the 1970s, with Elmside and Mount Rivers Estate and Ashbourne Court and Ardcarraig estates constructed in the 80's. The area of upper salt marsh (CM2) in the northeast of the site is marked as mud in the old maps suggesting it was not successfully drained or used for agriculture in the past.

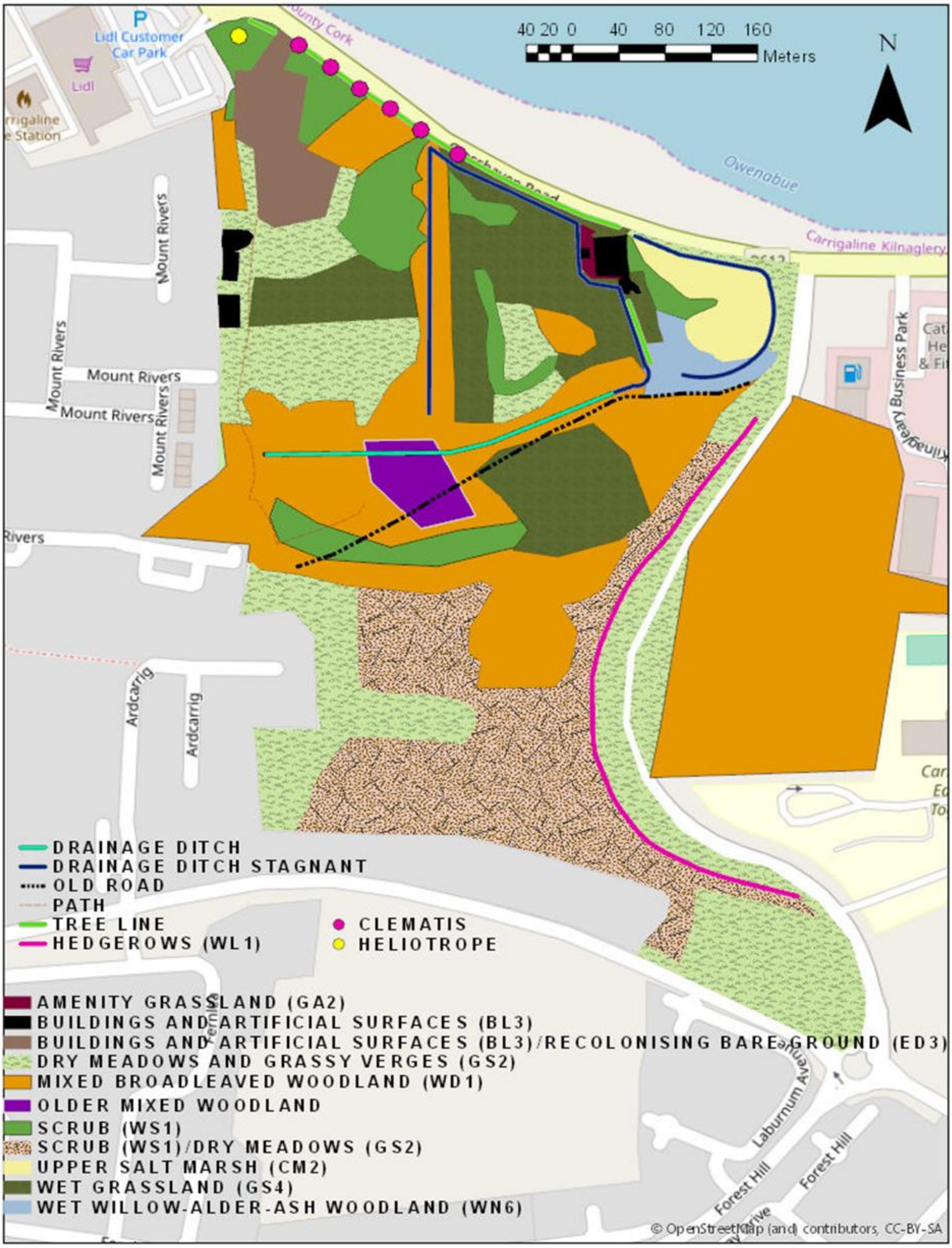

Figure 2 Habitat Map of the Kilnagleary Site

Old Field Succession

When agricultural land is abandoned for an extended period of time, it becomes a new habitat for plant and animal species to colonize, and the process of ecological succession begins. Ecological succession is simply the change in the species composition of an ecological community over time. Primary succession occurs in essentially lifeless areas resulting from processes such as lava flows or newly formed rocks. Secondary succession occurs in areas where an ecological community previously existed but has been removed/disturbed. Succession which occurs on abandoned farmland is a type of secondary succession often referred to as "old field succession" and can be characterised by a sequence of different stages. The first stage is characterised by a relatively few species of quick growing annual herbs. During the next stage these annual herbs are replaced by perennial grasses. As succession progresses shrubs begin to invade the site, with the final stage of succession being mature forest. However, succession is a continuous process and does not always proceed in these neat stages. Which species of herbs, shrubs and trees dominate depends on location, site history, soil moisture and topography of the site. Secondary disturbances (e.g. fire) can also occur causing different parts of the same old field appear to be in different stages of succession, or that older fields seem to be at an earlier stage of succession than younger fields.

Management of abandoned fields

There are two suggestions on what to do with abandoned land (Lasanta & Arnáez, 2015):

1. Do not intervene and allow the natural succession to continue (passive management)
2. Actively manage the land

Allowing natural succession to take place on abandoned fields can be very successful, leading to semi-natural vegetation with high conservation value, particularly where the intensity of cultivation was low due to traditional methods of agriculture, or where farms are small with nearby native vegetation allowing dispersal of seeds into the area (Cramer, Hobbs, & Standish, 2008).

There are exceptions where natural succession may not be desirable and blocking succession by maintaining or implementing suitable management techniques (e.g. mowing or grazing) is recommended. For example, early successional stages can serve as habitats for rare weeds and animals such as butterflies (Cramer, Hobbs, & Standish, 2008). The spread of invasive weeds can also occur during natural succession if no management is taken to control them.

Society and scientists are divided on how to manage abandoned lands. Some advocate passive management of the revegetation process, with the aim of restoring natural ecosystem processes and to reduce human control over the landscape. Others advocate active management in order to control the negative effects of natural succession (Lasanta & Arnáez, 2015)

The Kilnagleary Site

Fieldwork was carried out in 2018 for the study area. This sought to identify habitats following Fossitt (Fossitt, 2000). Habitat mapping revealed the Kilnagleary site to be a patchwork of different habitats in different successional stages (Fig. 2), details of which can be found in the Habitat Mapping Report (Loxton & O'Halloran, 2018).

Table 1 Habitats recorded by Wild Work

Habitat Category	Habitat Type	Fossitt Code
Improved grassland	Amenity grassland (improved)	GA2
Built land	Buildings and artificial surfaces	BL3
Disturbed ground	Recolonising bare ground	ED3
Highly modified/non-native woodland	(Mixed) broadleaved woodland	WD1
Scrub/transitional woodland	Scrub	WS1
Semi-natural grassland	Dry meadows and grassy verges	GS2
	Wet grassland	GS4
Semi-natural woodland	Wet willow-ash-alder woodland	WN6
Linear woodland/scrub	Hedgerows	WL1
	Treelines	WL2
Salt Marsh	Upper salt marsh	CM 2
Freshwater Watercourses	Drainage ditches	FW4

The areas of broadleaf woodland indicate more advanced stages of succession. On abandoned sites the presence of parent trees has been found to be the most important factor influencing the presence of colonizing plants (Hodge & Harmer, 1996). Within the Kilnagleary site older trees such as those on the old field boundaries have been preserved, as well as a section of woodland in the centre of the site which is recorded on the Ordnance Survey Ireland 25 inch map (1888 - 1913) suggesting some continuous woodland from at least 1913. These parent trees are an important source of the diversity trees now recolonising the site, including oak, alder, sycamore and aspen. Willow trees like Goat willow are not reliant on the presence of parent trees due to the small, light seeds which favour long-distance dispersal and as such, willow is also abundant on the site.

There was likely a series of secondary disturbances that occurred on the site during the building of surrounding estates and roads. Such an example of secondary disturbance can be seen on aerial images showing a section of land in the east of the site that was cleared during road works between 2000-2005 (Loxton & O'Halloran, 2018). These secondary disturbances have likely prevented the entire site from progressing to the later successional stages of mature woodland and patches of earlier successional habitat such as semi-natural grassland and scrub are found throughout.

While woodland has multiple benefits, afforestation can result in a decline in biodiversity as the landscape becomes more uniform. The variety of habitats found at the Kilnagleary site considerably increases its biodiversity value. Habitats such as wet grasslands (GS4) are extremely vulnerable in Ireland (O'Neill, Martin, Devaney, & Perrin, 2013) and a suite of species including orchids, breeding waders and invertebrates, such as the endangered marsh fritillary butterfly rely on such wet, open habitats. However, as stated previously, old fields are almost always transient in nature. Without management or further secondary disturbances the grassland areas will give way to scrub and eventually woodland. Wet grasslands need regular, extensive management to maintain their conservation value. Grazing or hay-cutting prevents the more competitive grasses from dominating and keeps trees and shrubs from invading. The majority of the remaining areas of semi-natural grassland within Ireland owe their continued existence to either a continuation of traditional extensive farming practices or conservation measures (O'Neill, Martin, Devaney, & Perrin, 2013)

Abandoned farmland is often perceived negatively, associated with the perception of unkept land and with the decrease on the economic usability of the land, particularly by the rural populations (Navarro & Henrique, 2015). However, the abandonment of farmland can also be viewed as an opportunity to bring nature and wilderness into people's lives. Whether the Kilnagleary site is passively or actively managed, it still provides a rich habitat for plants and animals and wonderful natural resource for the community, schools and community groups of Carrigaline. Some management of the site will have to take place. Litter is problem - from cans and bottles to dumping of building and garden waste. This litter impacts on the enjoyment of the site and in the case of broken glass, can be a hazard. The invasive plants Winter heliotrope and Clematis were recorded near the site entrance (Fig. 2) where recent disturbance has taken place. Any other disturbances that take place in the site has the potential to spread these invasive plants.

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. Use 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 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, there is no need to use herbicide to maintain border edges of green areas. This task can be carried out quite easily either with a manual hoe or shovel, or use of stimming 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…

Land ownership and necessary approval considerations

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

Where necessary approvals should also be sought from bodies such as:

• National Monuments Service

• National Parks and Wildlife Service

• Office of Public Works

• Port of Cork

• Inland Fisheries Ireland

• Cork County Council

Note that this is not an exhaustive list and other bodies / individuals may need to be consulted.

Public use of Kilnagleary site

Public paths entrances and information signs

There is only one formal entrance to the site (Entrance, Figure 4). If the proposed Lidl building goes ahead access will be restricted during construction and possible once the building is in place. There are no entrances on the west side of the site, restricting access for the residents of Mountrivers, Ardcarraig and Ashbourne estates. It is proposed that two entrances be created to the west of the site (see Figure 4). At present these points are fenced off. There are informal points of access one the eastern side of the site. A formal entrance could be created to allow access for education centres.

Each of these entrance points would lead onto a looped walkway. This walkway should as much as possible, incorporate the informal paths already at the site. At points along the walk information signs will inform walker about the route and points of ecological interest.

A boardwalk across the area of upper salt marsh (Figure 2, Figure 4) will give walkers access to a unique area of the site. However, an ecological assessment of this habitat should be carried out first to ensure that construction work and public access would not unduly disturb birds that may be using the site.

Scouts Hall and Wild Camping

There is potential for the local scout group to have a hall at the site (Figure 2, Figure 4). A wild camping area for the scouts could be located in an area of dry scrub/dry meadow a short distance from the hall. Access to part of the site would require a boardwalk/bridge to cross a drainage ditch. This wild camping area should be kept informal and follow leave no trace principles (Ireland Leave No trace, n.d.) to minimise disturbance to the habitat. Open fires should not be allowed in wild camping area. The amount of dry vegetation, particularly in the summer, poses a fire hazard to the nearby residences. However fire is an important part of the outdoor and scouting experience so as an alternative is to create a permanent covered structure where a fire can be safely lit located near to the scout hall. An example of such a structure is provided in Figure 3.

Figure 3 Example of outdoor covered fire area

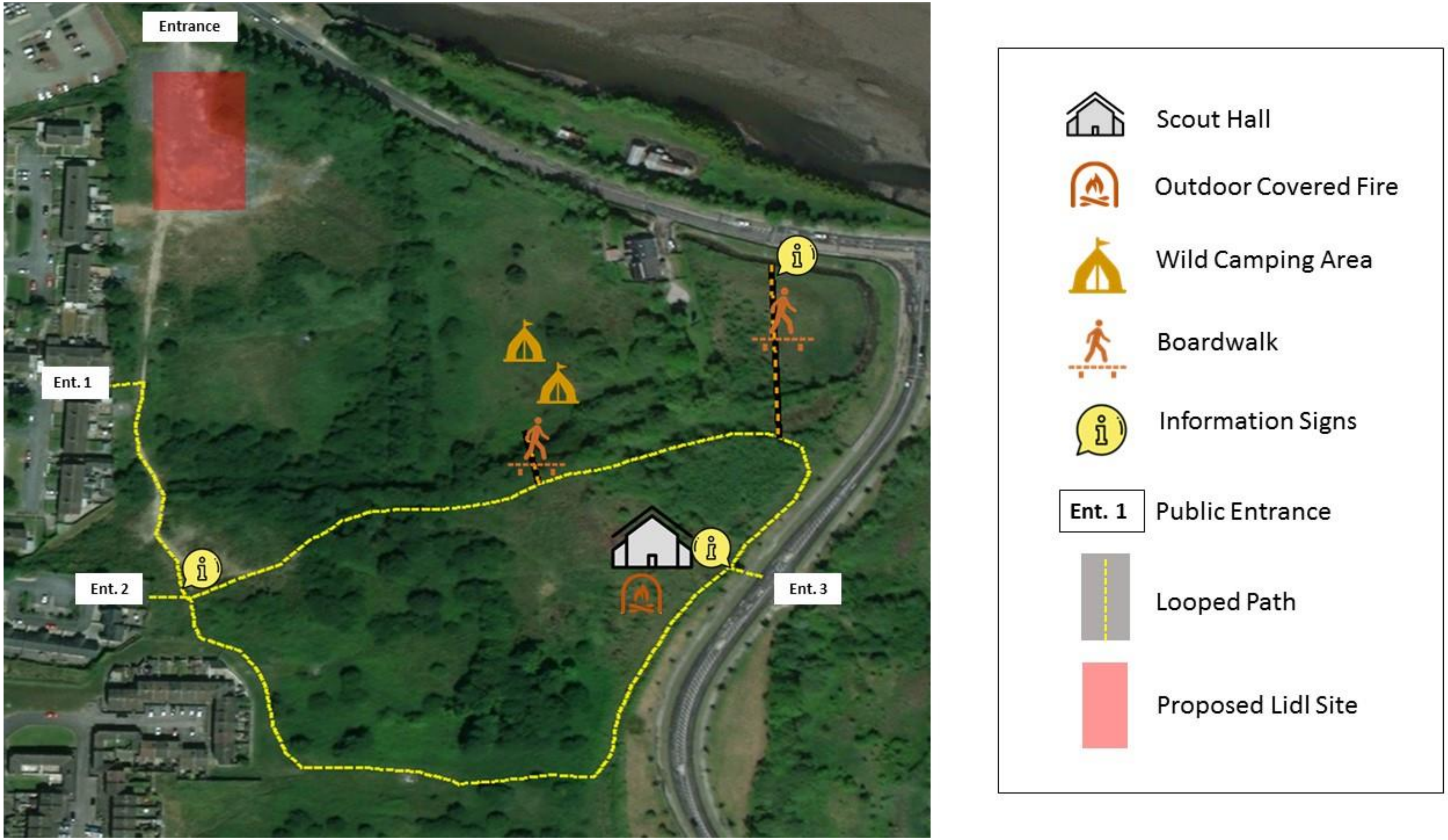

Figure 4 Visualisation of public use of Kilnagleary site.

Main Biodiversity Action Themes
1. Wild Places – for people and for biodiversity
2. Monitoring, recording and knowledge sharing
3. Management of invasive species

Identified Actions

Action areas	Suggested timeframe for undertaking the action				
	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5
1. Wild Places – for people and for biodiversity					
1.1. Invite local schools to use the site as an outdoor classroom. The Heritage in Schools Scheme provides a panel of biodiversity experts who visit primary schools.					
1.2. Invite local 55 Cork Scout Group, Carrigaline to explore use of the site for scouting activities.					
1.3. Invite local environmental groups (Cork Nature Network, Cork Environmental Forum and BirdWatch Cork) to run field excursions/walks and carry out surveys.					
1.4. Remove litter from the site. Run litter pick days and include local community, schools and scouts group.					
1.5. Create and distribute a litter pamphlet for housing estates surrounding the site explaining the dangers of litter.					
1.6. Run education sessions with members of the public to encourage and help them to get actively involved with the plan. Circulate Biodiversity Action Plan to individuals and organisations.					
1.7. Erect interpretative signage and information for the biodiversity features of the site and information on looped walk.					
1.8. Develop a plan for management the semi-natural grasslands.					
1.9. Produce a specification for how best to manage scrub habitats. Further guidance can be obtained from The Scrub Management Handbook (Day, Day, Symes, & Robinson, 2003).					
1.10. Develop a plan for managing the upper salt marsh.					
1.11. Develop a looped walking circuit making use of paths already at the site.					
1.12. Create 2 public entrances to the west of the site and 1 to the east					
1.13. Build a scout hall in north-west section of the site.					

1.14. Build outdoor covered fire area near scout hall.					
1.15. Develop a wild camping area for scouts.					
2. Monitoring, recording and knowledge sharing					
2.1. Provide training for the community on utilising the National Biodiversity Data Centre's (NBDC) online mapping tools for recording and storing biodiversity information.					
2.2. Commission a survey of bats using the site.					
2.3. Set up a bumblebee monitoring programme using NBDC methodology.					
2.4. Set up a butterfly monitoring programme using NBDC methodology.					
2.5. Carry out surveys of birds in both main part of the site and in upper salt marsh.					
2.6. Input biodiversity records into the NBDC's system					

Action areas	**Suggested timeframe for undertaking the action**				
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
3. Management of invasive species					
3.1. Run education and awareness sessions about invasive species and the role of dumping garden waste in their spread.					
3.2. Encourage the recording of invasive species on the NBDC app. or website.					
3.3 Ensure those responsible for managing and maintaining the site do not cause unnecessary spread of invasive species. If further disturbance (building, clearing ground) occurs at the site, ensure precautions are taken to prevent the spread of invasive plants.					

3.4. Encourage gardeners to plant native species where possible. For example, when purchasing bluebells, people should buy and plant the native Bluebell (*Hyacynthoides non-scripta*) rather than the non-native Spanish Bluebell (*Hyacynthoides hispanica*) or the Bluebell hybrid (*Hyacynthoides x massartiana*).					

Indicative costings per action

	Costs indicated are additional to on-going expenditure and/or volunteer effort in the community and are also additional to any expenditure that may be required for related future development.				
Action no.	Up to €1,000	Up to €5,000	Up to €10,000	Up to €15,000	€15,000 +
1.1		•			
1.2	•				
1.3	•				
1.4		•			
1.5	•				
1.6	•				
1.7		•			
1.8		•			
1.9		•			
1.10		•			
1.11		•			
1.12		•			
1.13					•
1.14					•
1.15			•		
2.1		•			
2.2	•				
2.3	•				

2.4	•				
2.5	•				
2.6	•				
3.1		•			
3.2	•				
3.3	•				
3.4	•				

Additional implementation considerations for each action

Action No.	**Suitable for trained volunteers, work placement, etc.**	**Seasonality and/or timing factor**	**Technical expertise required**	**Once-off**	**On-going**
1.1		✓	✓		✓
1.2	✓	✓			✓
1.3	✓				✓
1.4	✓				✓
1.5	✓		✓		✓
1.6	✓			✓	
1.7			✓	✓	
1.8			✓	✓	
1.9			✓	✓	
1.10			✓	✓	
1.11	✓		✓	✓	
1.12			✓	✓	
1.13			✓	✓	
1.14			✓	✓	
1.15	✓			✓	
2.1			✓	✓	
2.2		✓	✓	✓	

2.3	✓	✓			✓
2.4	✓	✓			✓
2.5	✓	✓	✓		✓
2.6	✓				✓
3.1	✓	✓	✓		✓
3.2	✓				✓
3.3		✓	✓		✓
3.4	✓				✓

Appendix

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 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.

Wild Work Pollinator Project

Some actions that will be listed are of relevance to Wild Work's Pollinator Project. The project is in support of the All-Ireland Pollinator Plan. Details of this national initiative can be found here:

http://www.biodiversityireland.ie/projects/irish-pollinator-initiative/all-ireland-pollinator-plan/resources/

Pollinators play a key role in our ecosystems; providing pollination services for wildflowers and crops to ensure successful seed and fruit production and with helping us monitor the overall health of our countryside.

In Ireland, our main pollinator species include: 1 honeybee species; 20 bumblebee species; 77 solitary bee species; and 180 hoverfly species. 33% of our native bumblebee species, 43% of our native solitary bee species and 20% of our native hoverfly species are threatened with extinction. This is due to hunger, homelessness, poisoning and other factors (NBDC, 2015)

Examples of pollinator friendly landscape management include:

• Conversion of lawn area to managed wildflower meadow

• Planting of native wildflower strips

• Creation of nesting sites for solitary bees

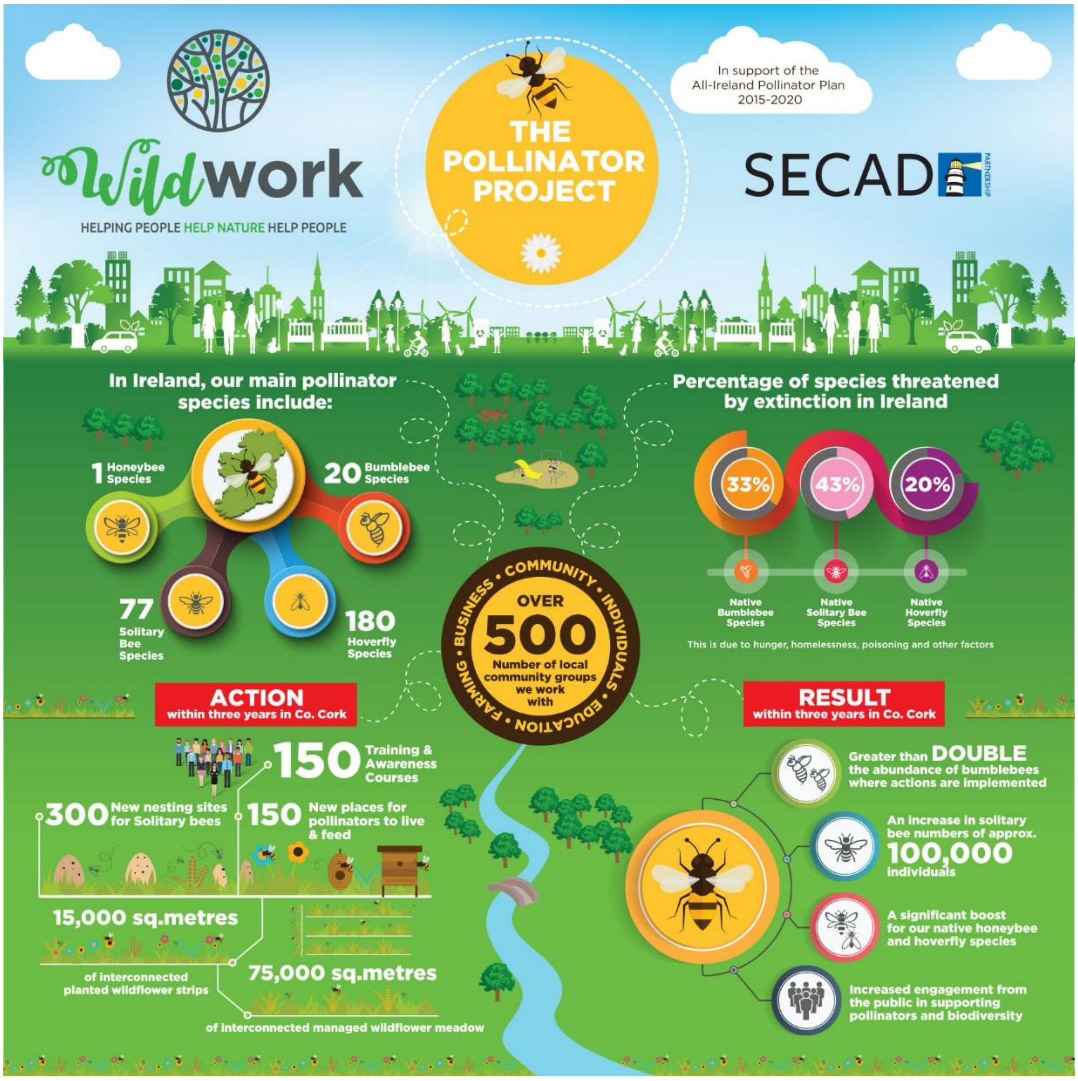

Figure 5 Wild work Pollinator Project Information

Definitions and Explanations

1. **Biodiversity**

Biodiversity is the variety and variability of life on Earth – everything from insects to whales from mushrooms to trees.

Biodiversity includes the diversity of:

- Genetic diversity - the variety of individuals within a species
- Species diversity – the variety of species within an ecosystem or habitat
- Habitat diversity- the diversity of ecosystems or habitats

2. **Ecology**

The branch of Biology that deals with the relations of organisms (living things) to one another and to their physical surroundings.

3. **Species**

A group of living organisms consisting of similar individuals capable of exchanging genes or interbreeding

4. **Habitat**

The natural home or environment of an animal, plant, or other organism. Some species only found in one type of habitat e.g. a whale only found in the sea

 Some species are found in a few habitats e.g. some grass species found in both open fields and woodlands

5. **Ecosystem**

A biological community of interacting organisms and their physical environment. The living and physical components are linked together through nutrient cycles and energy flows. Ecosystems are of any size.

6. **Ecological community**

A group of actually or potentially interacting species living in the same place. A community is bound together by the network of influences that species have on one another.

7. **Ecological succession**

The process of change in the species structure of an ecological community over time.

- Primary succession – the orderly and predictably series of events through which a stable ecosystem forms from a previously uninhabited region. Primary succession occurs in regions characterised by the absence of soil and living organisms.
- Secondary succession – occurs after an event that deeply disturbs an existing, stable ecosystem.
- Old field succession - the form of ecological secondary succession which occurs on abandoned farmland

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