Comhairle Contae
Átha Cliath Theas
South Dublin County Council

Connecting with Nature

Draft Biodiversity Action Plan for South Dublin County 2020 - 2026

July 2020

Biodiversity

The variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable and which is key to our survival as a species.

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Mayor's Address

I am very pleased to present South Dublin County Council's first draft Biodiversity Action Plan, *Connecting with Nature*.

In recent years, the accelerated loss of species and habitats in Ireland and around the world poses significant problems for us all and for following generations. This challenge is further compounded by the growing and very real threat posed by climate change.

This draft plan has been prepared to ensure this Council works in a proactive manner to help address these worrying trends where we can. We aim to be to the forefront of positive action for all the residents in the County, including its wildlife and their habitats.

We know that the well-being of our citizens is closely interconnected with our ability to enjoy and protect our natural resources, our open spaces, parks, countryside, and the wide variety of habitats and species with whom we share this County.

We are now looking for your input on this draft action plan and to ensure we prepare and adopt as robust and considered a plan as we can. This plan and its actions can help make South Dublin County the best place to live, work, and do business.

Cllr. Ed O'Brien,
Mayor,
South Dublin County Council

Chief Executive's Address

I am delighted to present this Biodiversity Action Plan for the County. The Plan sets our plan to protect and enhance biodiversity across our County. This commitment is already embedded across Council plans and policy guidance documents and is aligned with national, EU and international policy and legislative requirements.

Biodiversity conservation and the sustainable use of its components, together with climate change are among our greatest challenges. Our ambition must be to find the best balance possible between these challenges and those of demographic and economic growth. The preparation of this Biodiversity Action Plan is part of a multi-faceted response to this sustainability challenge.

This plan presents a targeted and coordinated road map, outlining as it does a clear set of robust and deliverable actions that the Council will lead on over the coming years. These actions will ensure that this Council in partnership with a wide range of individuals, communities, interest groups, businesses, and state agencies will promote greater awareness and protection of biodiversity.

Nature, the natural world, and its ecosystems are for the enjoyment of everyone. Education and awareness across all of society together with focused plans like this one will greatly assist our ambition to preserve our most valuable assets for future generations.

Daniel McLoughlin
Chief Executive,
South Dublin County Council

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….. I knew the stars, the flowers and the birds, the grey and wintry sides of many glens, and did but half remember human words, in converse with the mountains, moors and fens…..

Nature's Child, J.M.Synge

1 WHY PREPARE A BIODIVERSITY ACTION PLAN?

1.1 What is biodiversity all about?

The word 'biodiversity' is used to describe the huge variety of different plants, animals, insects, spiders, birds, fish, fungi, bacteria, and other micro-organisms that occur around us in nature. It is not known for certain how many different species exist in the natural world but it is estimated that we share the planet with more than 9 million different species

The word 'biodiversity' is also used to describe the wide variety of different habitats or places where these creatures live and interact with one another. In South Dublin County, these habitats include different types of grasslands, woodlands, hedgerows, roadside verges, streams and rivers, upland bogland and heath, public parks, and private gardens.

There are many reasons why this diversity of life is vitally important to our survival as human beings (see Chapter 4), but one important element of biodiversity is genetic diversity. Variations in the genetic code allow species (including us) to adapt and survive in a changing world. If we lose too much genetic diversity in the plant varieties and the animal breeds that we depend upon, we could lose vital opportunities to ensure our own survival into the future.

Diversity truly is the spice of life!

1.2 Our connection with the natural world

As a nation, we have had a very long association with nature, from the time of our early ancestors who were hunters and gatherers in the wild woods, down through the centuries when agriculture was our main economic driver. Today, while other industries and economies dominate and when more than half of us now live in built-up towns and cities, keeping a connection with nature is becoming harder.

The natural world has been a source of vital nourishment for us, providing clean air and water, essential food and medicines for our bodies, pollinators for our food crops, and many raw materials for our daily lives. Without these 'services' our own survival as a species is at risk.

Nature has also been an inspiration for our spiritual and our creative minds. The earliest form of writing in Ireland, Ogham, is based on an alphabet where the letters represent the first letters in the Irish names of 20 trees and plants, showing how nature was a core part of our early ancestors' world.

Our natural surroundings have also been celebrated in our poetry, art and music. Many of our customs and local traditions also have their origins in an older time when we had a closer relationship with the land and with the plants, animals and birds that lived around us.

The natural world also shines through in Irish historic myths and legends. Ancient texts suggest that the pure 'joy' that Fionn Mac Cumhaill and his warriors (na Fianna) had for the natural world was the source of much of their extreme strength and agility. Many animals and plants were also deemed to have magical properties e.g. the oak was a sacred tree. Fionn was said to have received all the wisdom of the world by tasting An Bradán Feasa (the Salmon of Knowledge), which had already acquired all this knowledge by eating sacred hazel nuts that dropped into the salmon's pool from a hazel bush growing at its edge.

1.3 Taking action for our future

Today, for the first time in human history, over half (54%) of the world's population now lives in a built-up urban environment. By 2050, it is expected that this will rise to 66%[1].

As more and more of the world's citizens become urban dwellers, the challenge will be to provide the necessary good quality housing, transport routes and employment opportunities for people while also protecting the sources of our food and the very diversity in nature that is the essential foundation of our own existence as human beings.

Because we rely on biodiversity for so many things (see Chapter 4), we need to design practical and achievable nature policies and projects that will improve the lives of both urban and rural dwellers, while also leaving space for nature to thrive around us.

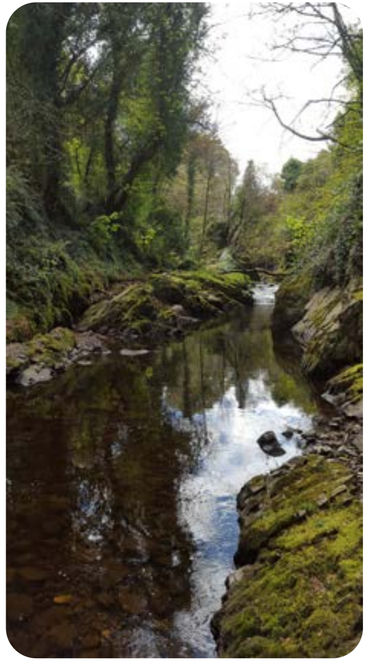
We must avoid becoming cut off from the natural world around us by finding easy and enjoyable ways to connect, or re-connect, with nature. We need to find ways to protect the natural resources that we still have and we need to be aware that we must make space for nature as our towns and populations grow.

We need to be more creative and find ways to keep existing habitats wherever we can and to bring nature back into our surroundings whenever possible. We need to plan all new living and working spaces in a way that will include nature, so that wildlife (and us) can adapt to a world in which weather and climate is becoming more unpredictable.

By doing this we will be helping to safeguard our own future.

Following a public consultation process, the South Dublin County Biodiversity Action Plan was prepared in conjunction with a County Biodiversity Forum and the County Heritage Officer. Its main objective is to plan and take action for the protection of the County's biodiversity into the future.

The Plan is a 6 year programme of policies and actions that aim to raise awareness and appreciation of the natural world in the County. Through this Plan, we will work with a wide range of partners and groups to identify ways in which we can protect and enhance this valuable resource into the future for the benefit of wildlife, the County's residents, and visitors and tourists to South Dublin County.



[1] United Nations, Department of Economic and Social Affairs, Population Division (2014). World Urbanization Prospects: The 2014 Revision, Highlights (ST/ESA/SER.A/352). https://esa.un.org/unpd/wup/

The preparation of this Biodiversity Action Plan is an objective of the South Dublin County Heritage Plan and the South Dublin County Council Development Plan 2016-2022 in Policy HCL1 Objective 2: To support the objectives and actions of the County Heritage Plan, including the preparation of a County Biodiversity Plan.

The South Dublin County Biodiversity Plan was prepared in the context of a range of national and international plans for biodiversity protection and enhancement (see Appendix 1).

Ireland's 'Vision for Biodiversity' is stated in the country's third National Biodiversity Plan 2017-2021[2].

The National Biodiversity Plan lists a range of actions for biodiversity that aim to achieve this vision, arranged under a series of 7 Strategic Objectives. These objectives include:

- the mainstreaming of biodiversity issues across the decision-making in all sectors;
- the strengthening of the knowledge base for conservation, management and sustainable use of biodiversity;
- increasing public awareness and appreciation of biodiversity and ecosystem services;
- the conservation and restoration of biodiversity and ecosystem services in the wider countryside;
- the conservation and restoration of biodiversity and ecosystem services in the marine environment;
- the expansion and improved management of protected areas and species;
- the strengthening of international governance for biodiversity and ecosystem services.

Local Authorities are identified in the National Biodiversity Action Plan as key partners to assist with the implementation of the national plan. The South Dublin County Biodiversity Plan therefore represents South Dublin County Council's commitment to the achievement this national vision.

Through the series of direct actions and policies listed in Chapter 6 of the South Dublin County's Plan, and in co-operation with a wide range of partners, the Council aims to support the National Biodiversity Plan and protect biodiversity in the County by:

- gathering information on and improving our understanding of the County's biodiversity resource
- encouraging engagement with biodiversity and enjoyment of nature in the County
- leading the way in good implementation of biodiversity policies and governance

By acting together we can make a real difference. We will be contributing to the achievement of both national and international objectives for biodiversity but more importantly, we will be ensuring a good quality of life for all in South Dublin County into the future.

[2] "That biodiversity and ecosystems in Ireland are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally."

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….The hedges are all drowned in green grass seas, and bobbing poppies flare like Elmo’s light, while siren-like the pollen-stainéd bees drone in the clover depths…….

‘June’, Francis Ledwidge

2 NATURE IN SOUTH DUBLIN COUNTY

2.1 A Nature Network in South Dublin County

Seen from the air, more than half of South Dublin County is green landscape. In the low-lying areas across most of the southwest, the west and the northern boundary of the County, there are agricultural fields, hedgerows, different types of grasslands, and small local pockets of trees. In the uplands of the Dublin Mountains, there are mountain grasslands and gorse scrub, larger areas of commercial forestry, and open wet bogland and heath.

Some of these habitats and their specialised range of species are protected under Irish and European legislation but much of our biodiversity occurs outside of these protected sites, making it easy for us to connect with nature whenever we wish.

In the built-up central and eastern areas of the County, green spaces occur in the Council’s large regional parks and smaller areas of open space and also in the mosaic of private gardens scattered across the residential areas.

Overlain onto this green landscape is the County’s ‘blue network’ of rivers, streams, and the Grand Canal. These rivers include the River Dodder, the Whitechurch Stream (or River Glynn), the Owendoher, the Camac, the Poddle, the Lisheen and the Brittas River, the Shinkeen, the Greenogue Stream, the Baldonnell Stream, the Tobermaclugg Stream, the Griffeen River, and of course, the River Liffey located at the County’s northern boundary.

Open ponds and lakes also occur throughout the County such as the upper and lower lakes of the Bohernabreena Reservoir in the Dublin Mountains, the Brittas Ponds, a variety of lakes and ponds in our public parks (Corkagh Park, Tymon Park, Ballymount Park, Rathfarnham Castle Park, and Ballycragh Park), the attenuation lake in Grange Castle Business Park, and a range of smaller water bodies located in the County’s various golf courses.

In conjunction with the Grand Canal which forms a ‘blue’ link between the River Shannon and Dublin Bay, all of these water bodies act as vital habitats and corridors for wildlife between rural areas and throughout the built-up area.

When all of these ‘green’ and ‘blue’ elements are linked together, we start to see a pattern of spaces that connect together to form a green network for nature throughout the County.

This network forms the foundation of the County’s ‘Green Infrastructure’, where our rivers, streams and green spaces interlink with one another to form a network of corridors through the County where wildlife and humans can travel.

2.2 Connecting with Nature in the County

Nature and its biodiversity occurs throughout the County and much of it can be easy to connect with and enjoy. While certain plants, animals, birds, insects and habitats are especially protected in legally protected sites, some also occur in publicly-owned parks or in our own gardens.

Much of our wildlife is not spotted very often by the County's human population as many animals are nocturnal, waiting until nightfall before they come out to feed and move around. The most common and widespread animals in the County include foxes, rabbits, hedgehogs and rodents such as rats and mice.

Less commonly seen are animals such as otters. These occur along some of our larger rivers like the River Liffey, along the Grand Canal, and in some of the lakes in our public parks. Along our waterways, wherever we see animals such as otter and birds such as kingfisher, dipper, and wagtails, we know that the water quality is good enough to support the insects and fish that these species rely upon.

Reports of pine marten and stoat along the upper reaches of the River Dodder River are also encouraging.

Of the 9 species of bats known to occur in Ireland, eight have been recorded in South Dublin County- Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Leisler's Bat, Brown Long-eared Bat, Daubenton's Bat, Natterer's Bat and Whiskered Bat. These species hunt at dawn and dusk in areas with low levels of street lighting, flying along the tops of hedgerows and trees or skimming across the surface of rivers and lakes searching for moths and other insects.

The wide variety of soil types in the County give rise to different habitats and species, adding to the biodiversity potential in South Dublin County. Dry lime-rich or calcareous soils occur across the middle of the County and along the Dodder River, giving rise to pockets of meadows and grassland with good biodiversity interest. The deep neutral soils in the west of the County supports an agricultural landscape with its lines of hedgerows and trees. Wet river banks support some interesting wet woodlands and wet grasslands, while the more acidic soils in the Dublin Mountains give rise to upland grasslands, scrub, and waterlogged bogland.

Wild orchids such as the Common Spotted Orchid, Pyramidal Orchid, Common Twayblade and the Bee Orchid can be seen in some areas of our parks where soils are suitable and where grass cutting is managed in such a way as to encourage native wild flower meadows. Where these meadows have a high number of flowering plants and grasses (species-rich), they become very important habitats for pollinating insects such as honey bees, bumble bees, and hoverflies and other creatures such as beetles, spiders, and ants. Surveys in our public parks tell us that we have a number of very interesting insect types which, because of their rare or threatened status, are particularly important to protect.

In woodland along the River Liffey and along some of our upland streams, flowers such as the scarce Yellow Archangel can be found in springtime, while riverside plants such as the rare Green Figwort are known to occur along the River Dodder and the River Liffey.

Areas that have a high value for nature (High Nature Value Areas) act as crucial 'stepping stones' for nature through the built-up environment, helping species to move about more freely, to feed and reproduce, while also helping them to adapt to changing environmental and climatic conditions. These areas are key locations or nodes in the Council's plan to develop a Green Infrastructure Strategy, as outlined in the South Dublin County Development Plan 2016-2022.

Connecting with nature and getting to know and enjoy all of the different habitats and species in the County is a primary objective of the South Dublin County Biodiversity Plan. The information gathered as part of this Plan will help the Council achieve its objectives to provide a sustainable County for both its human and its wildlife populations.

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'... sometimes my heart hath shaken with great joy to see a leaping squirrel in a tree, or a red lady-bird upon a stalk, or little rabbits in a field at evening, lit by a slanting sun ...'

The Wayfarer, by Padraic Pearse

3 PROTECTING BIODIVERSITY IN SOUTH DUBLIN COUNTY

Biodiversity in the County is protected in a number of ways. Irish and European legislation has developed over the years to extend protection to a wide range of species in Ireland and to the habitats in which they live.

In effect, the Council works within a national framework for the protection of wildlife and habitats. Key legislation and policy include the Wildlife Act, the European Union Habitats and Birds Directives, and the National Biodiversity Action Plan (see Appendix 1 for relevant national, European, and international legislation and policy).

Working at the local level in the County, projects can be identified which will assist with the implementation of these protection measures, safeguarding the quality of life for our human residents as well as our wildlife populations.

Protection for nature and biodiversity in general is enshrined in the South Dublin County Council Development Plan 2016-2022, where a variety of strategies are in place to safeguard and promote our natural resource. One of these strategies is to develop a healthy 'Green Infrastructure Network' across the County, benefiting both wildlife and people.

3.1 Protected Sites for Nature

Areas of particular biodiversity importance in South Dublin County are protected in a number of ways including the designation of locations as proposed Natural Heritage Areas (pNHAs), as Special Areas of Conservation (SACs), as a Special Amenity Area Order (SAAO), and also as County Geological Sites.

3.1.i Proposed Natural Heritage Areas

Five locations throughout the County (see Map 2) are listed as proposed Natural Heritage Areas (pNHAs). Two of these are located within County Council parks while the remainder are in private ownership:

- Dodder Valley pNHA (Site Code 000911)
- Liffey Valley pNHA (Site Code 000128)
- Grand Canal pNHA (Site Code 002104)
- Lugmore Glen pNHA (Site Code 001212)
- Slade of Saggart and Crooksling Glen pNHA (Site Code 000211)

(see Appendix 2 for descriptions of these sites).

Proposed Natural Heritage Areas are locations identified at a national level by the National Parks and Wildlife Service of the Department of Culture, Heritage, and the Gaeltacht. As the pNHAs within South Dublin County are proposed sites, they are protected at a local level under the South Dublin County Council Development Plan 2016-2022:

HERITAGE, CONSERVATION AND LANDSCAPES (HCL) Policy 13 Natural Heritage Areas

It is the policy of the Council to protect the ecological, visual, recreational, environmental, and amenity value of the County's proposed Natural Heritage Areas and associated habitats.

The Dodder Valley pNHA occurs within the Council's Dodder Valley Linear Park and represents a wet woodland habitat with shifting streams and gravels which are subject to periodic flooding by the river. This gives rise to

a very changeable environment where plants and insects need to be very adaptable in order to survive. Other more accessible habitats along the Dodder Valley Linear Park include flower-rich grasslands, hedgerows, and wooded areas.

A section of the Liffey Valley pNHA is also located within a Council park in Waterstown Park, Palmerstown. At this location, the pNHA is represented by a fringe of old wet woodland and wet grassland habitat that occurs along the banks of the river. It is along these banks that the rare Green Figwort plant has been recorded. Additional areas of wet and dry flower-rich meadows, hedgerows, a mill race, and wooded areas occur in the Park outside of the pNHA boundary.

The Grand Canal pNHA is in the ownership of Waterways Ireland and represents a vital corridor for wildlife, linking habitats that stretch all the way from the River Shannon to South Dublin County and into Dublin City. The woodlands, wet grassland and reed beds that occur along the publically accessible canal towpaths provide habitat for birds and animals such as kingfisher, otter, badger, and bats. The waters of the canal itself supports a variety of fish, crayfish, dragonflies and a wide range of other insects and water plants.

Lugmore Glen and the Slade of Saggart and Crooksling Glen pNHAs are in private ownership and represent different types of woodland habitat in a ravine. Old woodland habitats are rare in South Dublin County so these two locations are important examples. The Slade of Saggart and Crooksling Glen pNHA also includes the area of the Brittas Ponds, adding a significant wetland habitat to the interest of this pNHA.

3.1.ii Natura 2000 Sites

Three special areas in the Dublin Mountains (see Map 1) are protected under the European Union Habitats Directive and the European Communities (Birds and Natural Habitats) Regulations, 2011. These sites, known collectively as Natura 2000 sites, are protected under both European and Irish legislation and form part of a European-wide network of similarly protected sites. The designation of these sites and the development of management plans that aim to maintain their conservation interest is the remit of National Parks and Wildlife Service of the Department of Culture, Heritage and the Gaeltacht.

There are three Natura 2000 sites in South Dublin County.

- the Glenasmole Valley Special Area of Conservation (Site Code 001209)
- a portion of the Wicklow Mountains Special Area of Conservation (Site Code 002122)
- a portion of the Wicklow Mountains Special Protection Area for Birds (Site Code 004040)

(See Appendix 1 for more detailed descriptions of these three sites).

These three Natura sites are home to a range of specialised and highly sensitive habitats that include bogland, heath, upland grassland, mountain streams, freshwater springs, fens, and woodlands. A variety of mammal, bird and plant species also occur. Natura 2000 sites are protected in law from inappropriate development or other activities that would impact on the special habitats and species that occur in these locations.

Being located in the uplands, these three sites form the foundation of the highly scenic landscapes of the Dublin Mountains, drawing visitors and locals alike to enjoy the views and engage in outdoor activities

Getting the balance right between public access, protecting the livelihood of upland communities and protecting the very landscapes, habitats and species that we wish to enjoy and promote can be challenging. The protection of these areas is supported under the South Dublin County Development Plan 2016-2022:

HERITAGE, CONSERVATION AND LANDSCAPES (HCL) Policy 12 Natura 2000 Sites

It is the policy of the Council to support the conservation and improvement of Natura 2000 Sites and to protect the Natura 2000 network from any plans and projects that are likely to have a significant effect on the coherence or integrity of a Natura 2000 Site.

3.1.iii Liffey Valley Special Amenity Area

The special landscape through which the River Liffey flows is protected under a Special Area Amenity Order which was made in 1990 (see Map 3). Within South Dublin County, this Order covers approximately 199.6 hectares of land between the river and the N4 roadway and it aims to maintain the integrity of the Liffey Valley landscape, to limit development within its borders and to provide essential recreational space for the wider region.

The Liffey Valley pNHA is located within the SAAO and a number of Council-owned parks also occur within this boundary at Palmerstown (Waterstown Park) and Lucan, (Lucan Demesne/ St. Catherine's Park). The remaining lands within the boundary of the SAAO are in private ownership and are therefore not accessible to the public. The SAAO is afforded protection under the South Dublin County Development Plan 2016-2022:

HERITAGE, CONSERVATION AND LANDSCAPES (HCL) Policy 14 Liffey Valley SAAO.

It is the policy of the Council to implement the Liffey Valley Special Amenity Area Order (SAAO) and to seek to improve and extend the Liffey Valley Special Amenity Area and to promote its tourism potential.

3.1.iv County Geological Sites

At the foundation of all ecological habitats are the geological rocks and soils underneath. The nature of this geology directs the type of habitat that will naturally develop on the surface. For example, light, sandy and limey soils provide perfect conditions for grasslands that are very rich in flowering plants, grasses, butterflies, bumblebees and other insects. Examples of these habitats can be seen along the Dodder River, in Tymon Park and in parts of Lucan.

Alternatively, the more acidic nature of other rocks and soils can result in the formation of the upland grasslands and the bogland habiats of the Dublin Mountains.

The South Dublin County Council Development Plan 2016-2022 lists 10 County Geological Sites that reflect the variety and importance of the County's geological heritage.

- The Dodder Terraces
- Greenhills Esker
- Kippure Mountain
- Lucan Esker
- Newcastle Buried Channel
- The Brittas Gravel Complex
- Belgard Quarry
- The N4 Lucan Cutting
- The Liffey Valley Centre Road Sections
- Ballinascorney Quarry

Of these 10 geological sites, the soils of the Dodder Terraces, the esker at Greenhills (in Tymon Park), the gravels at Brittas, and the uplands peatland of Kippure in the Dublin Mountains, are particularly important for the biodiversity that they support. Parts of the Dodder Terraces and the Greenhills/ Tymon Esker are located within Council-owned parks while Kippure Mountain is protected within the Wicklow Mountains Special Area of Conservation. The County's geological sites are recognised under the County Development Plan 2016-20122:

HERITAGE, CONSERVATION AND LANDSCAPES (HCL) Policy 19 Objective 1

To protect designated County Geological Sites from inappropriate development and to promote the importance of such sites through the County's Heritage Plan.

3.2 Nature Outside of Protected Sites

While specially protected areas such as those listed above will help to protect the animals, plants and birds that live in them, many species of protected mammals and birds are not restricted to these sites and can occur in other locations throughout the County. The Irish Wildlife Act and the European Habitats and Birds Directives and Regulations extend protection to a range of species, whether they occur inside or outside of designated protected sites.

The Wildlife Act protects all wild species in Ireland while the EU Habitats Directive requires that species such as otter and bats are protected even outside of formally designated sites. The South Dublin County Council Development Plan 2016-2022 also recognises the need to protect species outside of designated areas:

HERITAGE, CONSERVATION AND LANDSCAPES (HCL) Policy 15 Non-Designated Areas

It is the policy of the Council to protect and promote the conservation of biodiversity outside of designated areas and to ensure that species and habitats that are protected under the Wildlife Acts 1976 and 2000, the Birds Directive (1979) and the Habitats Directive (1992) are adequately protected.

3.3 Stepping Stones for Nature - a 'Green Infrastructure'

To survive in a changing world and to keep their genetic resource healthy, small mammals, birds, bats, and insects need to be able to explore and find opportunities in new areas to feed and have young.

Ensuring there are green links or 'stepping stones' between protected and unprotected areas for biodiversity will help wildlife move safely through the County, assisting them to adapt to changing environmental conditions such as the loss of quality habitat or the effects of climate change. Article 10 of the EU Habitats Directive recognises the importance of these stepping stones and requires us to maintain areas of wildlife interest outside of protected sites[2].

In the countryside, wildlife moves from place to place using the protective cover of natural features such as hedgerows, ditches, tree lines, old walls, rivers and streams. These features are even more important in our cities and towns. If routes through South Dublin County can be identified to link the countryside and the protected sites listed above to public parks and private gardens in our towns and villages, then an effective network of corridors or stepping stones for nature can be achieved.

South Dublin County Council is working towards this is by managing selected areas in our public parks and open spaces for the benefit of wildlife. This is done by reducing the level of grass cutting in suitable locations to allow wild flowers to flower and set seed. This approach not only brings more colour into our parks for us to enjoy, it also offers more opportunities for pollinators such as honey bees, butterflies, bumblebees, and hoverflies. Local birds and bats benefit from the higher numbers of insects, resulting in a healthier ecological situation and a more interesting environment for local people to enjoy.

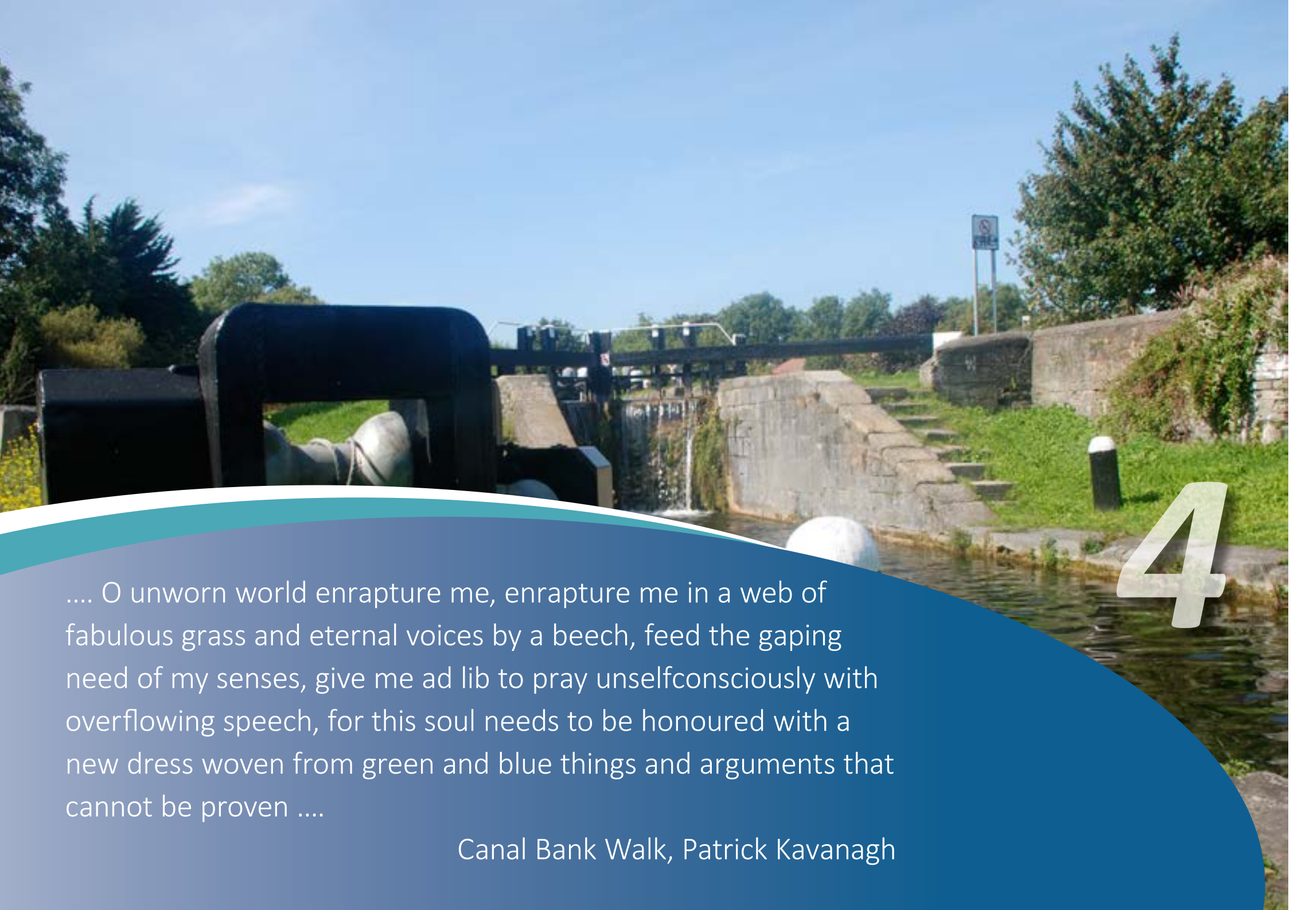
In 2019, South Dublin County Council committed to undertake projects that will specifically benefit pollinators in our parks and open spaces by formally becoming a signatory to the All-Ireland Pollinator Plan

Parks with very sensitive natural environments such as the Dodder Valley Linear Park in Rathfarnham/Firhouse, or Waterstown Park along the Liffey in Palmerstown, or the esker grasslands of Tymon Park in Tallaght, have special areas that are rich in wild flowers, butterflies, bumblebees, and other insects. Some of these grasslands are of County or National importance, supporting as they do a range of interesting orchid and insect populations. These parks also have old, mature hedgerows which are vital nesting and feeding corridors for birds, mammals, bats, and insects.

Sources of water are very important to wildlife and many of our parks have open ponds, streams or river habitats running through them e.g. the Griffeen Valley Park and Vessey Park in Lucan, and Corkagh Regional Park in Clondalkin and Tymon Park in Tallaght. The Grand Canal, which is managed by Waterways Ireland, is a vital water corridor through the county and also has important areas of hedgerow and grassland along its towpaths.

We should also not forget the contribution that private house owners, schools, businesses, local communities, and groups such as Tidy Towns, Residents Associations, and environmental groups, can make to the development and management of this green corridor network. These private areas can be a very important link for biodiversity in the built-up environment, particularly when property owners plant a variety of flowers and bushes and avoid the use of pesticide and herbicide sprays.

[2]https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043



4

…. O unworn world enrapture me, enrapture me in a web of fabulous grass and eternal voices by a beech, feed the gaping need of my senses, give me ad lib to pray unselfconsciously with overflowing speech, for this soul needs to be honoured with a new dress woven from green and blue things and arguments that cannot be proven ….

Canal Bank Walk, Patrick Kavanagh

4 WHY NATURE IS SO IMPORTANT TO US

In addition to providing us with our basic needs of food, water, medicines and raw materials, the natural world also provides a wide range of what are termed additional benefits. These are very important benefits that we receive from nature which are less obvious than our food and water but which are vital to our quality of life.

These benefits are termed 'ecosystem services', or natural activities that occur in natural habitats that we benefit from. These include the following:

- Pollination by insects- bees, bumblebees, hoverflies and other insects pollinate many of our food and fruit crops. Without these insects doing this work for us, we would lose much of the variety of fruit and vegetables that we eat.
- Clean air – trees take in carbon dioxide and use it to grow, returning oxygen to the atmosphere. By doing this, trees, hedgerows and woodlands help to clean the air we breathe while they are also providing vital habitats and 'corridors' for wildlife to move along. They are also very important habitats for pollinating insects.
- Reduce impact of flooding- our wetlands and bogland habitats are important as they can help reduce the impacts of flooding. The plants and mosses that grow in these places hold water in the specialised cells of their leaves and stems. As this water is released slowly over time, this reduces the effects of sudden flash floods.
- Carbon storage – trees, hedgerows, and wetland habitats also act as 'carbon sinks', removing harmful carbon dioxide from the atmosphere and safely storing it in the growing wood or in the layers of accumulating plants in peatlands.
- Health and well-being- more and more, studies are showing the health benefits and the cost savings to our health services that are associated with living in areas that offer good opportunities to engage with nature. Any outdoor activity, from a gentle stroll in the park to more energetic activities such as mountain biking have been proven to help reduce stress levels and improve our mental health.

Once gone, all of these additional benefits or ecosystem services that nature provides to us are very difficult and very costly to replace.

5

…Tá Tír na nÓg ar chúl an tí, tír áilinn trína chéile, lucht ceithre chos ag súil na slí, gan bróga orthu ná léine, gan Béarla acu ná Gaeilge…

‘Cúl an Tí’, Seán Ó Ríordáin

5 WHY WE NEED TO ACT?

Over the millions of years that this planet has been evolving, many changes have occurred. Continents have formed and reformed, different habitats and ecosystems have dominated the world, and countless numbers of species have evolved and become extinct.

These changes were brought about by natural geological and climatological changes, with species evolving and adapting very slowly to the changes, over long eons of time.

Nature, when left to her own devices, maintains a delicate balance between species. Prey numbers determine numbers of predators and complex interdependencies and predation levels manage population sizes within the resources of the habitats in which these creatures live.

Nothing is wasted and nothing is produced that cannot be recycled.

Today, however, the natural world has never been under so much threat from one species. Across the world, species are currently being lost up to 1,000 times faster than the natural rate. Habitat and species loss, pollution, over-use and waste of natural resources, and the resulting changes in our weather and climate patterns threatens us all.

During the planet’s different development phases, there have been five major extinction events for species. These mass extinctions were caused by natural phenomena such as ice ages, meteorites colliding with the planet, mass volcanic eruptions, and changing positions of oceans and continents.

Today, however, the planet is experiencing very rapid change in a relatively very short period. We are seeing extensive reductions and extinctions in a wide number of species all around the world. The extent of the current loss in biodiversity is so large and so rapid that it is being referred to as the sixth mass extinction. Instead of occurring slowly because of natural change, this event has occurred quickly, primarily because of the impact of just one species, humans.

Recent studies from Germany in 2019 suggest that insects in particular may be in a state of ‘catastrophic population collapse’ due to a combination of factors including habitat loss, pesticide usage, and climate change effects. The reduction in insect numbers has a corresponding negative impact on the populations of birds, bats, amphibians, and fish that feed on these insects. Insects are also vital pollinators of food crops for humans and farmed animals while many (e.g. ladybird and hoverfly larvae) also act as natural pest controllers.

5.1 How are we faring in Ireland?

The EU Habitats Directive (Directive 92/43/EEC) and the Birds Directive (Directive 79/409/EC) require that Member States submit a report every 6 years to the European Commission on how our habitats and species are faring. Ireland's most recent report in 2019[3] on the conservation status of those habitats and species protected under these EU Directives is worrying, particularly in relation to our habitats.

In Ireland, 85% of our habitats are considered to be in an 'unfavourable' state, due to being degraded, fragmented, or destroyed. This means that the species that would be typical of these habitats are not living in a healthy enough state to guarantee survival of the habitat type into the future.

Most worryingly, the survival of 41% of the 58 EU protected habitats in Ireland was deemed even to be in doubt as a habitat type. Some of these protected habitats exist in South Dublin County and include heath and blanket bog, orchid-rich grasslands, lowland hay meadows, and tufa-forming springs.

Currently in Ireland, two bee species have already become extinct and one-third of the remaining bee species are threatened with extinction. This is incredibly worrying as we rely on bees for the pollination of key food crops. The reasons for this decline in pollinators include the loss of habitats such as hedgerows, wild verges and flowering meadows; the introduction of insect pests and diseases; the widespread use of pesticides and herbicides; and changing weather and climatic conditions.

Recent studies[4] show that over 60 per cent of the 202 species of commonly occurring birds in Ireland is now on the red and amber conservation lists. Birds like the Curlew has suffered widespread declines across its European range, and bird experts estimate that in Ireland, there has been a 97% decline in numbers over the last 40 years.

Swifts, an iconic bird of the urban environment, has shown an alarming 40% decline between the years 1998-2013. it is thought that the loss of available nest sites due to the renovations of old buildings and the impacts of climate change could be significant factors.

Outside of protected sites, biodiversity is deemed to be even more at risk. Habitats such as hedgerows, scrub, stands of trees, flowering roadside verges, wet ditches and wild bramble patches do not receive specific legal protection. Yet these habitats are vital for the survival of so many species of insects, birds and mammals, while also acting as critical green 'stepping stones' through the landscape, between protected sites.

[3]https://www.npws.ie/publications/article-17-reports/article-17-reports-2019
[4]https://birdwatchireland.ie/birds-of-conservation-concern-in-ireland-2014-2019

5.2 Threats to biodiversity

Biodiversity in Ireland faces many threats. Even in locations that are protected under environmental legislation, maintaining a high-quality environment for wildlife and biodiversity is a problem. Given our reliance on nature, (see Chapter 4), this has significant knock-on effects on our own quality of life.

Five main categories of threats can be identified: the loss, deterioration, and fragmentation of habitats; pollution and litter; the threat from non-native invasive species; amenity and recreational pressures; and challenges arising from climate change.

5.2.i Loss, deterioration, and fragmentation of natural habitats

One of the greatest challenges facing nature in Ireland and across the world today is the loss and deterioration of natural habitats and the breaking up or fragmentation of wild spaces in the landscape.

Wildlife populations need to move and connect with populations in other areas to remain genetically healthy. Species living in small areas of isolated habitats like woodland, wetland, or flowering grasslands, face significant challenges in finding sufficient food and shelter in order to survive. The lack of genetic interaction with others of their own species from outside of their immediate area can also lead to reduced capacity to resist disease and adapt to changing situations.

These challenges are made worse by the additional pressure of climate change which is likely to force species to migrate northwards as temperatures increase. Without natural links in the landscape (such as lines of hedgerows or trees) to allow for this migration, the health of existing small pockets of habitat will disintegrate.

A high quality 'green infrastructure' network of interconnecting, habitats is essential to facilitate the free movement and mixing of wild species, helping habitats and species, and us, to survive. The Biodiversity Action Plan will support the development, delivery, and implementation of a Green Infrastructure Strategy for South Dublin County, planning ahead to ensure a linked-up network of parks, green spaces, hedgerows, protected sites, parks and waterways to allow wildlife to move throughout the County.

5.2.ii Pollution

All forms of pollution pose a serious threat to biodiversity and to us. The term 'pollution' describes any form of contaminant or disturbance that enters the natural environment and which results in unwanted negative effects. The term is most often used to describe impacts on air, water, and soil quality but it can also refer to excesses in light, noise, and unpleasant smells.

Littering and dumping of waste in rivers, streams, hedgerows, woodlands, parks, and open spaces introduces damaging contaminants. These contaminants have both direct and indirect effects on the very habitats and species that we reply upon to keep our water and air clean, our pollinating insects healthy, and our soils full of essential recycling invertebrates and micro-organisms.

The impact on flora and fauna can be significant. Waste dumped in or near rivers and streams can flow into larger water bodies and can ultimately cause oceanic pollution. If animals consume waste it can cause health complications, even death.

Tiny particles of soot or dust can be breathed into the lungs by us and by wildlife. These particles can also cause damage to biodiversity by changing wider environmental conditions, reducing their changes of survival. Excessive dust and smog can clog the pores on leaves, reducing the ability of trees and plants to breathe and grow, and provide us with oxygen.

Excessive and unnecessary use of pesticides and herbicides is also damaging our environment, impacting dramatically on beneficial species such as bees while also reducing the capacity for natural predators to maintain the delicate balance that nature strives for.

Working with the Council's own Litter Management Plan[5] and through the actions and projects undertaken under the County Biodiversity Plan, the threats to biodiversity and to us from pollution, litter and dumping in the County will feature strongly in the efforts to improve quality of life for biodiversity and for us.

[5]https://www.sdcc.ie/en/services/environment/recycling-and-waste/litter-management/

5.2.iii Non-native invasive species

Nature maintains a delicate balance between species, a balance which develops over a very long period of time. This results in an intricate, finely-tuned web of interactions where no single species is allowed to dominate completely over others.

When a new, non-native species is introduced into this environment the balance can be disturbed, particularly if the new species has the capacity to grow and spread rapidly and if there are no predators in its new home to control it. These are then referred to as invasive species.

In South Dublin County, plants like Japanese Knotweed, Himalayan Balsam, and Giant Hogweed fall into this category of invasive species. Because these plants grow and spread rapidly, they shade out native plant species, excluding them from their natural habitat. This reduces habitat and feeding areas for native insects and birds.

Because these invasive plants die back over winter, they leave bare soil behind. This exposes riverbanks to winter floods, increasing erosion and flooding potential.

Non-native invasive animal species in the County include American Mink and Grey Squirrel. Without natural predators in Ireland, their numbers have increased unchecked. Mink prey on water birds and fish, affecting numbers of ducks, kingfisher, dippers, and trout, while grey squirrels have pushed native red squirrel out of their natural range.

The additional impact of climate change on the challenge of invasive species is as yet unknown. For example, released pets such as Terrapins are sometimes encountered along our waterways and in the ponds in our parks. These species do not currently reproduce in the wild in Ireland because temperatures are too low. However, if temperatures increase by as much as is being suggested, this will make it easier for these non-natives to increase in numbers.

South Dublin County Council are already undertaking an annual programme of mapping and treatment of non-native invasive species. The control of such species in the County will continue to be an on-going response.

5.2.iv Amenity and recreational pressures

Evidence for the significant physical, psychological, and spiritual health benefits that we receive from being in the outdoors is growing.

In South Dublin County, our public parks offer a range of both active and passive recreational experiences for its residence and visitors including formally managed landscapes for walking, well-used football and soccer pitches, cricket pitches, skate parks, and natural play and exploration spaces. Their wilder, less-intensively managed ecological spaces also offer an important refuge for many species and habitats in the urban environment.

Dublin Mountains are also a significant backdrop to the County, inviting more challenging recreational activities like hill walking, and mountain biking.

Getting the balance right between promoting enjoyment of our outdoor spaces while avoiding damage to the landscapes and habitats that we wish to enjoy is not easy. Direct impact can occur to habitats and species when there is an increase in disturbance from walkers and dogs, littering, increased noise, and the installation of lighting.

Careful planning and sensitive design can help achieve better outcomes for biodiversity and for us.

5.2.v Climate Change

The impacts of climate change present a unique challenge to the County's environment, its residents, and its economy. A predicted rise in temperature of 1.5° with increased intensity of rainfall, drought or snow events will pose extreme of weather event rainfall levels

A projected increase in global temperature, wind speeds, cold snaps and rainfall will put an increased stress on biodiversity, by inflicting damage, causing habitat loss and increasing the prevalence of invasive species.

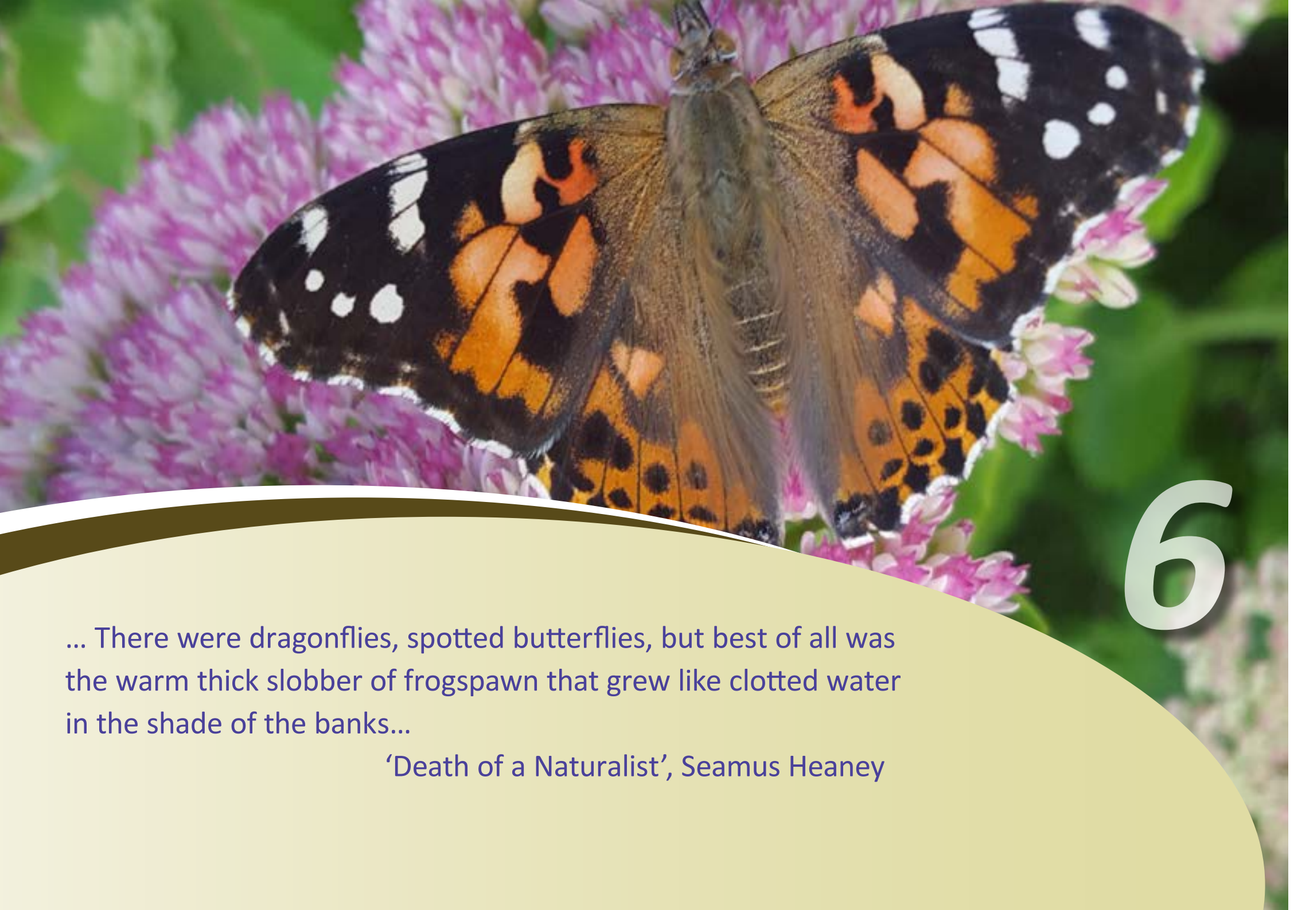
SDCC's Climate Change Action Plan 2019-2024 (CCAP) sets out measures to address the long-term causes of climate change by reducing our greenhouse gas emissions, while also adapting to effects of climate change over the short, medium, and longer terms. The aim to improve our energy efficiency by 33% by 2020 has been achieved and revised to a 50% improvement by 2030. A target of a 40% reduction in greenhouse gas emissions by 2030 has been adopted. Works are progressing on public lighting upgrades, district heating, building upgrades, flood protection and the electrification of the Council's fleet.

The SDCC Climate Change Action Plan contains actions for nature protection and adaptation measures under its 'Nature-based solutions' themes. The Biodiversity Action Plan will act to coordinate and support the efforts of the CCAP in achieving these and other climate-based objectives.

5.3 Playing our part

In May 2019, following an uncontested vote in the Dáil, Ireland became the second government in the world to declare a climate and biodiversity emergency.

Within the context of national and European efforts to tackle biodiversity loss and climate change impacts, the Biodiversity Action Plan for South Dublin County represents a road map that will assist us in the implementation of government policy at a local level in this County. By undertaking and achieving the actions as listed in this Plan, many of the threats to biodiversity that are described above can be addressed and minimised.



6

… There were dragonflies, spotted butterflies, but best of all was the warm thick slobber of frogspawn that grew like clotted water in the shade of the banks…

'Death of a Naturalist', Seamus Heaney

6 A PLAN FOR ACTION

The primary objective of the Plan is to encourage residents and visitors alike to connect with the incredible biodiversity around us in the County and to identify ways in which we can protect and enhance this diversity, for our own good and for the good of wildlife.

The Plan was prepared in consultation with a wide range of people, communities and organisations, and with Council staff and Elected Members.

The Actions listed in Section 6.2 of this Chapter represent the agreed aims and targets of these groups. They represent a road map for Council to work in partnership with interested groups and individuals to achieve positive results for biodiversity in the County. The Plan will ultimately help safeguard our own futures as well as that of the wildlife we share the County with.

The actions of the South Dublin County Biodiversity Action Plan were formulated with the aim of addressing local biodiversity needs and addressing key actions of the National Biodiversity Action Plan 2017-1721. The alignment of the South Dublin County Plan with the objectives of the National Biodiversity Action Plan is presented in Section 6.3.

6.1 Targets and Actions

The actions arising from the consultation process are listed as follows under three agreed themes or targets.

1. **Getting to know what we have -** surveying and mapping habitats and species in the county, identifying high nature value areas and local biodiversity spots, mapping the County's Green Infrastructure, locating and managing non-native invasive species

Getting to know and understand how dependent we are on the diversity in the natural world around us is the first step towards protecting and maintaining biodiversity. By recognising, appreciating, and enjoying biodiversity around us, we can begin to fully value the contribution it makes to our own lives, particularly in an urban environment where green space may be limited.

Surveying and mapping the areas in the County that form the building blocks of our Green Infrastructure network for species and habitats is a vital first step for the Biodiversity Action Plan.

2. **Telling the story -** connecting with nature around us, encouraging awareness and community involvement in biodiversity projects, celebrating and promoting the County's biodiversity, communicating our objectives and our achievements, undertaking biodiversity research studies.

More and more people are re-discovering nature and connecting with it in a new and meaningful way. This target aims to celebrate and promote the natural environment in South Dublin County by encouraging and supporting activities and projects that raise awareness and appreciation of the wide variety of habitats and species that occur in the County.

We also need to better understand the complexities of the natural world around us, to see how interdependent everything is, and to see how changes in biodiversity directly effect us and our quality of life. Undertaking research studies into these complex relationships will help us in this.

3. **Leading the way -** good governance, addressing the threats to biodiversity in the County by striving for better implementation of local, national, and international biodiversity policy and action for climate change.

There are many laws and national and international policy objectives in place in Ireland to help protect biodiversity. Many of these legislative and policy objectives are enshrined locally in the South Dublin County Development Plan 2016-2022. The Council is also implementing actions for climate change through its Climate Change Action Plan 2019-2024.

By striving for excellence in our own actions for biodiversity and climate change at the local Council level, and by working in partnership with other groups and agencies to act likewise, we can all strengthen our efforts to find better ways to implement biodiversity protection measures. By working together to tackle the challenges that face biodiversity in this County, we will be safeguarding the future for both our wildlife populations and for ourselves.

6.2 The next steps

The South Dublin County Biodiversity Action Plan is a six-year plan for the protection, enhancement, and future adaptation of biodiversity in the County.

The implementation of the agreed targets and actions will be overseen by a County Biodiversity Forum composed of Council staff, Elected members, representatives of the South Dublin County Public Participation Network, local and environmental groups, and state agencies.

With an annual budgetary allocation (subject to available resource allocation), projects will be agreed, implemented, and monitored by the County Biodiversity Forum, with an annual report issuing to South Dublin County Council recording progress and achievements.

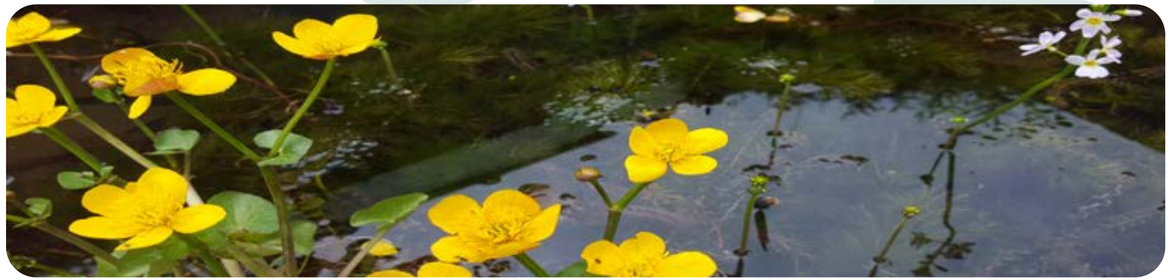
6.2 ACTIONS FOR BIODIVERSITY

1. GETTING TO KNOW WHAT WE HAVE - Spatial Projects

Action	Specific Projects	Key Partners	Key Indicators
Action 1.1	Collate ecological data and survey and map the County, to provide an evidence base for informed biodiversity decision-making and to form the basis for a Green Infrastructure network, key projects to include: 1.1.i map the distribution of the habitats and species in the County 1.1.ii map and manage the spread of non-native invasive species 1.1.iii survey and monitor biodiversity at identified pollinator sites 1.1.iv survey and map wetlands in the County 1.1.v map the tree canopy cover in the County and quantify its carbon capture 1.1.vi map the County's hedgerow network and identify key Green Infrastructure links.	SDCC, NPWS, NBDC, Tidy Towns, local and community groups, academic institutions.	Number of habitats and species mapped, number of data sets submitted to NBDC, developers and a G.I. strategy in place.

2. *TELLING THE STORY – Engagement, Education, and Research*

Action	Specific Projects	Key Partners	Key Indicators
Action 2.1	Develop a Biodiversity Communications Strategy, to celebrate and promote the enjoyment and protection of nature in South Dublin County, promoting engagement with national initiatives and events such as Biodiversity Week, Tree Week, Heritage Week, Pure Mile etc,.	SDCC, social media platforms, local media, local and national biodiversity interest groups and agencies.	Number of posts, press releases, media hits, responses, no. articles published.
Action 2.2	Support rural and urban communities to undertake local biodiversity projects, training, and citizen science, encouraging appropriate initiatives that protect biodiversity while benefiting local economies.	SDCC, rural and urban interest groups, Local Enterprise Office, LEADER, environmental organisations.	No. of projects applied for and completed.
Action 2.3	Quantify and promote the economic benefits (the natural capital) provided by the County's ecological landscapes (ecosystem services).	SDCC, NPWS, academic institutions.	A quantification of the economic benefits derived from the natural world which supports the County's economic and social development.



3. LEADING THE WAY - Policy, Good Governance and Climate Action

Action	Specific Projects	Key Partners	Key Indicators
Action 3.1	Devise and implement good governance strategies to ensure the smooth integration of national and EU biodiversity legislation and policy requirements into all Council plans, projects, and services.	SDCC, NPWS, EPA.	Biodiversity considerations integrated into all new SDCC plans, projects and services.
Action 3.2	Develop and implement best practice biodiversity protection guidelines and maintenance plans for the County's habitats and species, for use on Council lands and as guidance to assist local communities, developers, businesses, farming community, schools, etc.	SDCC, NPWS, NBDC.	Number of guideline documents prepared, launched, and actively promoted.
Action 3.3	In the preparation process for the SDCC Development Plan, innovative approaches to promote strategic biodiversity policies and objectives will be developed.	SDCC, NPWS, EPA, local groups.	Biodiversity issues mainstreamed across the reviewed SDCC Development Plan.
Action 3.4	Coordinate with the Council's Climate Change Action Plan 2019-2024 to identify impacts on biodiversity arising from climate change, targeting and implementing necessary measures to assist biodiversity adapt to changing conditions.	Council's CCAP team, State agencies, NBDC.	Delivery of Green Infrastructure Strategy that assists species adapt to climate change by maintaining interconnecting and functioning (albeit changing) habitats.

6.3 ALIGNMENT OF SOUTH DUBLIN COUNTY BIODIVERSITY ACTION PLAN WITH OBJECTIVES OF THE NATIONAL BIODIVERSITY PLAN 2016-2021

Objective	National Biodiversity Action Plan 2017-2021	SDC Biodiversity Action Plan 2020-2026
1	Mainstream biodiversity into decision-making across all sectors.	Action 3.1.
2	Strengthen the knowledge base for conservation, management and sustainable use of biodiversity.	Action 1.1, Action 2.2, Action 2.3.
3	Increase awareness and appreciation of biodiversity and ecosystem services.	Action 2.1, Action 2.3.
4	Conserve and restore biodiversity and ecosystem services in the wider countryside.	Action 2.2, Action 3.2.
5	Conserve and restore biodiversity and ecosystem services in the marine environment.	N/A
6	Expand and improve management of protected areas and species.	Action 1.1, Action 2.2, Action 3.2.
7	Strengthen international governance for biodiversity and ecosystem services.	Action 1.1, Action 3.1.