



Kilkenny's Draft Biodiversity Action Plan



An Chomhairle Oidhreachta
The Heritage Council



**Wildlife Animal Photography Front Cover Credit;
Danny Lahart Photography**

All Photographs have been captured in Kilkenny

Kilkenny County Council extends gratitude to Mr Lahart for providing his biodiversity photography catalogue to illustrate the wide variety of species he has photographed over the years in Kilkenny.

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1 INTRODUCTION

What is Biodiversity?

Biodiversity is the variety of all life. Biodiversity includes all living things from microbes in the soil, small insects like ants, to large raptor birds like buzzards that circle the sky. Biodiversity is not restricted to rare or threatened species, it includes common plants and animals. Biodiversity also includes the range of places where plants and animals live; their habitats including old stone walls, hedgerows, amenity grass areas where we play, parks, woodlands, wetlands rivers and streams.

Why is Biodiversity Important?

Natural spaces that are rich in biodiversity provide a multitude of critically important services that enable human health and wellbeing, as well as providing the foundation for economic prosperity. These services are often referred to as ecosystem services.

Examples of ecosystem services include;

- **Provisioning Services:** timber, clean air, fresh water & medicinal compounds
- **Regulating Services:** soil fertility, pest control, flood mitigation, crop pollination, air purification, coastal defences, carbon storage & sequestration
- **Cultural Services:** outdoor recreation areas

In Ireland, the value of different ecosystem services has been estimated by a number of different studies. The Pollival project¹ estimated the value of pollination to home-produced crops in Ireland was €20–59 million per year, while the ESManage project² estimated that, on average, Irish people would be willing to pay between €85 and €108 per household per year to ensure our rivers were restored to a level compliant with the Water Framework Directive. Teagasc³ estimated the annual value of forest biodiversity at €68 million.

When ecosystems are degraded they stop providing these services, therefore nature restoration can be seen as an economic investment that yields a return. The EU estimates that for every €1 invested into nature restoration, it adds between €8 to €38 in benefits to society. This view is shared by the European Central Bank (ECB)⁴. Frank Elderson, member of the Executive Board of the ECB has stated that “Humanity needs nature to survive, and so do the economy and banks. The more species become extinct, the less diverse are the ecosystems on which we rely. This presents a growing financial risk that cannot be ignored”. The ECB found that nearly 75% of all bank loans in the euro area are to companies that are highly dependent on at least one ecosystem service. This means that these companies depend on ecosystem services to continue producing their goods or providing their services.

1. Assessing Market and Non-market Values of Pollination Services in Ireland (Pollival) EPA Research Report No.291

2. ESManage Project: Irish Freshwater Resources and Assessment of Ecosystem Services Provision. EPA Research Report No. 207

3. ECOVALUE: Valuing the Ecosystem Services of Irish Forests Teagasc Research project No. 6454

4. <https://www.ecb.europa.eu/press/blog/date/2023/html/ecb.blog230608~5cffb7c349.en.html>

Ambition of the County Biodiversity Action Plan

Kilkenny's County Biodiversity Action Plan is aligned to the National Biodiversity Action Plan, it aims to record, conserve and restore habitats. It has ambition to enhance ecological connectivity by the protection and where possible the restoration of ecological corridors.

Through the formulation of the Biodiversity Working Group, the Council will facilitate co-ordination between stakeholders to identify synergies, opportunities and create partnerships to achieve biodiversity enhancement projects throughout the county.

The Biodiversity Action Plan provides an opportunity for Kilkenny County Council to examine its own work practices and lead the way by developing demonstration projects on how to design nature inclusive housing estates, manage parks and open space for biodiversity, improve the water quality and improve habitat diversity on public grounds. The Biodiversity Action Plan will help us to integrate the protection of biodiversity in the Council's day-to-day operations.



The Biodiversity Working Group

Kilkenny County Council invited various interested parties to join the Kilkenny Biodiversity Working Group (BWG), and includes representatives from the farming sector, major land holders, state agencies, the academic sector and biodiversity specialists. The community sector was invited to express their interest to participate with a prerequisite that the group must have a county wide remit and an active interest in biodiversity. The Biodiversity Working Group opens up communications between the stakeholders and serves as a platform which facilitates collaboration, promotes best practice and builds awareness of biodiversity through networking and information-sharing. The group will promote the development of innovative and collaborative initiatives which restore, enhance and protect biodiversity. The group will bolster community participation through awareness raising, training and other related initiatives. The group will meet four times a year and share one meeting with the Heritage Forum annually.

The Biodiversity Working Group includes members from the Irish Farmers Association, the Irish Creamery Milk Suppliers Association, an Inland Fisheries Officer, two Wildlife Rangers from the National Parks and Wildlife Service, representatives from the Local Authorities Water Office, OPW, Coillte, Nore Vision Catchment Trust, Kilkenny LEADER Partnership, academic representatives from Kildalton College, The Acorn Project (Non-profit CLG) and The National Reptile Zoo. Community representation includes a representation from An Taisce (Kilkenny), One Future Carlow/Kilkenny, Birdwatch Ireland the Kilkenny Naturalist Field Club and a tidy towns forum representative. A business representative is also present as well as elected members and council officials from across the different departments of the Council. In preparation of the plan, two Biodiversity Working Group workshops were held to assist with the development of the Biodiversity Action Plan and to discuss the group's ambition for biodiversity in County Kilkenny.

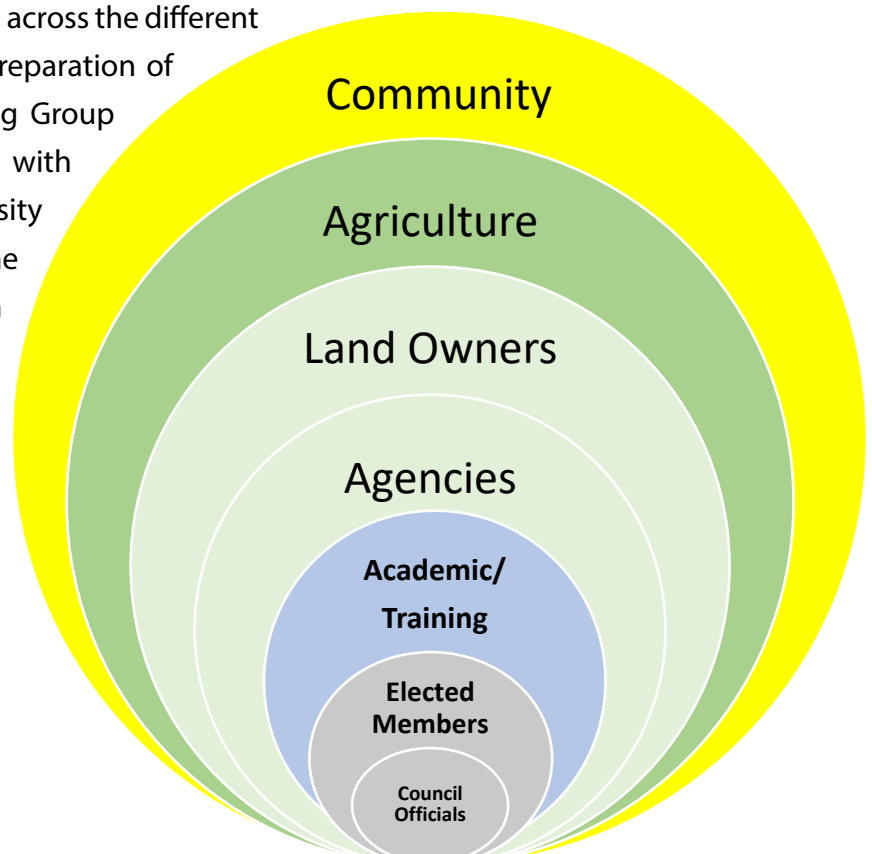




Photo Credit: Vicky's Photography

Public Consultation Process of Developing a Biodiversity Action Plan

The general public were invited to give their views about what they considered to be biodiversity action priorities, areas of concerns and issues for the county. A discussion paper was developed to outline the threats to biodiversity locally. This pre-draft public consultation phase ran from March to June 2024. It included the following programme of events and engagements:

- Presentation at three municipal district meetings (March/April 2024)
- Public notice on the Council's website inviting online submissions on kilkennyconsult.ie (May 2024)
- Information stand at Kilkenny Bike Fest (May 2024)
- Biodiversity Discussion Paper Distribution at all National Biodiversity Week Events
- Presentation to Kilkenny Public Participation Network (PPN) Plenary (May 2024)
- Interviews on local radio KCLR 96FM ("Ours to Protect" 1st of May, 23rd and 6th of June 2024) and Kilkenny Live for Biodiversity Week, 23rd of May. Community Radio Kilkenny City, 22nd of April and 21st of May 2024)
- Various press releases and social media posts

The second public consultation phase is based on the draft Biodiversity Action Plan 2025-2030, the draft plan was published on kilkennyconsult.ie, public notices were issued in local papers, local radio and on social media to alert the public of the opportunity to review the draft plan. It was presented to the Council's Strategic Policy Committee 5 Community, Culture & Fire Services for feedback.

The Biodiversity Action Plan will form the basis of an annual implementation programme agreed by the Biodiversity Working Group. This annual programme will detail the projects earmarked for the year ahead.

Biodiversity Concerns Mapped from the Public Consultation 2023 Climate Action Plan Process

Kilkenny County Council is conscious that an extensive consultation was carried out as part of the County's Climate Action Plan (CAP) prior to the preparation of the Biodiversity Action Plan. As many biodiversity related concerns were raised as part of this process, it was important to reconsider the biodiversity themed submissions of the CAP to capture the sentiment of the public. The image below captures a snap shot of the biodiversity concerns submitted as part of the CAP consultation process in 2023.



Biodiversity Concerns Raised as Part of the Submissions from the Biodiversity Discussion Paper (May 2024)

There was a total of 16 submissions received from the community as part of the Biodiversity Discussion Paper consultation, information was also collected from the PPN consultation workshop and from youth and elder's consultation outreach events. Some concerns voiced as part of this public consultation process included the impact of water pollution on biodiversity, urban tree planting and aftercare and hedgerow management, these and other topics are captured as a snapshot.



Youth Outlook

The consultation with teenagers provided two different outlooks, half of the consultation group lacked basic understanding of biodiversity while the other consultees were very knowledgeable and had strong opinions on how to address the biodiversity crisis. Ideas suggested included running educational campaigns, holding talks and making biodiversity relatable by creating engaging events. It was suggested to use a range of communication channels to promote biodiversity campaigns including, social media channels, radio, leaflets and flyers.

The key recommendations were to support practical actions like tree planting and creating pollinator friendly spaces. Wider sustainable projects like supporting renewable energy solutions and having appropriate recycling systems and litter bins in place were also mentioned.

Elder's Outlook

This consultation involved participants over the age of 70. They provided an insight of the biodiversity decline they have observed in their lifetime. They particularly noted on the reduction of bird and butterfly diversity. They noted the transition from traditional farming to more intensified farming practices. Participants fondly remembered childhood memories of foraging for hazelnuts, blackcurrants and wild strawberries. They considered the change of farming practices has reduced similar opportunities and experiences for the current generation.

A Chief Executive Report is included in Appendix 1 that responds to all the submissions received as part of the first public consultation and documents which captured the consultation outreach events.



2. POLICY CONTEXT OF KILKENNY'S BIODIVERSITY ACTION PLAN

International Policy

In 1992, the United Nations Conference on Environment and Development also known as the Earth Summit, developed a new blueprint for international action on the environment. It recognized that human activity was changing and destroying the natural environment and that action was needed to halt the loss of biodiversity. The outcome of the summit was the UN convention of Biological Diversity, which is now been signed by over 170 countries, including Ireland. Subsequent to the Earth Summit, The UN Decade on Ecosystem Restoration was launched in June 2021 with an aim to prevent, halt and reverse the degradation of ecosystems on every continent and in every ocean by 2030.

At an EU level, the EU Biodiversity Strategy for 2030 was launched in May 2020 to provide targets for all member states within the European Union to address the biodiversity crisis. This led to the development of the Land Restoration Law which was passed in European parliament in June 2024.

This law combines an overarching restoration objective for the long-term recovery of nature in the EU's land and sea areas with binding restoration targets for specific habitats and species. These measures should cover at least 20% of the EU's land and sea areas by 2030, and ultimately all ecosystems in need of restoration by 2050.

For Ireland to comply with the Law's ambitions, between 5,493 – 6,297km² of Irish land will be affected. This equates to between 7.8% – 8.9% of our land area. An important factor to consider is that Ireland is already trying to conserve 11,396 km² of land (13.5% of land area) designated as Natura 2000 sites under the Birds and Habitats Directives, though the conservation status of many of these sites is unfavourable. Therefore, proper rehabilitation, conservation and management of Natura 2000 sites offers a substantial opportunity to contribute to the goals of the Land Restoration Law by 2030. There are a total of 11 Natura 2000 sites in County Kilkenny. Each European State has two years to develop a Land Restoration Plan.





Alignment with the United National Sustainable Development Goals

Biodiversity recording, conservation and restoration aligns with the UN Sustainable Development Goals (SDGs). Specifically, SDG 15 (Life on Land) is directly targeted to conserve terrestrial ecosystems, halt biodiversity loss, and protect natural habitats. Kilkenny's Biodiversity Action Plan outlines objectives for the conservation and sustainable use of biodiversity, by recording, conserving and restoring biodiversity, facilitating collaboration, promoting best practice and supporting community participation through education and training.

SDG 13 (Climate Action) is addressed through the actions outlined in Kilkenny County Council Climate Action Plan 2024-2029 that works on climate mitigation and adaptation strategies that benefit biodiversity. Protecting and restoring ecosystems can enhance resilience and reduce the impact of climate change.

Aligning with SDG 14 (Life Below Water) is integral to Kilkenny's Biodiversity Action Plan, as with the extensive river basin catchments in the county, the improvement of water quality, restoration of riparian zones and assisting with the removal of fish barriers will greatly benefit the biodiversity.

Efforts to raise public awareness on biodiversity topics through local media and the organisation of training programmes and education workshops (SDG 4: Quality Education) will ensure communities are informed and encourage engagement in biodiversity actions.

Overall, Kilkenny's County Biodiversity Action Plan supports the SDGs, fostering a sustainable and resilient environment that benefits both nature and society.

Alignment with National Biodiversity Plan

The **4th National Biodiversity Plan** was launched in March 2024, outlining 194 actions to be completed over a seven-year period, working together to improve biodiversity governance and stewardship, recognise and value the relationships between nature and people, enhance the scientific evidence base to inform our decisions, bolster public awareness and engagement with communities, citizen scientists and the private sector. It aims to put more effort and investment into the protection, restoration and recovery of biodiversity and ecosystems across Ireland, embedding biodiversity considerations in decision-making and governance systems to achieve transformative change. The plan is broken down into 5 objectives;

Objective 1 Adopt a Whole-of-Government, Whole-of-Society Approach to Biodiversity

Objective 2 Meet Urgent Conservation and Restoration Needs

Objective 3 Secure Nature's Contribution to People

Objective 4 Enhance the Evidence Base for Action on Biodiversity

Objective 5 Strengthen Ireland's Contribution to International Biodiversity Initiatives

The Wildlife (Amendment) Act 2023 introduced a new public sector duty on biodiversity. The legislation provides that every public body, including Local Authorities are obliged to have regard to the objectives and targets in the National Biodiversity Action Plan with a statutory annual reporting requirement.

Alignment with the National Water Action Plan for Ireland

The Water Action Plan 2024 launched in September, is Ireland's third River Basin Management Plan and it outlines the measures the Government and other sectors are committed to to improve water quality in Ireland's groundwater, rivers, lakes, estuarine and coastal waters, and provide sustainable management of our water resources.

The Water Action Plan enhances and builds upon the work of the first and second cycle plans and builds on strengthening the incorporation of the integrated catchment management approach, improving the environmental ambition, along with improving the evidence base for 'targeting the right measures in the right place' and securing dedicated resources.

Each local authority supported by LAWPRO will conduct assessments of other water bodies where the pressures are unknown (which are not within priority areas for action) to identify the specific issues and actions that are required to protect or restore water quality as necessary. The Water Action Plan specifically acknowledges the importance of the Local Authorities Biodiversity Officers and on the role Local Authorities can play in the mapping, control and eradication of invasive alien species.

Alignment with Regional Plans

Under the Local Government Reform Act 2014, the Southern Regional Assembly is responsible for the preparation and implementation of a Regional Spatial and Economic Strategy (RSES) for the Southern Region of Ireland. The southern region covers 9 counties, including Kilkenny.

The RSES provides a long-term, strategic development framework for the future physical, economic and social development of the Southern Region. The RSES sets out a vision for the Southern Region to:

- Nurture all our places to realise their full potential
- Protect, and enhance our environment
- Successfully combat climate change
- Achieve economic prosperity and improved quality of life for all our citizens
- Accommodate expanded growth and development in suitable locations
- Make the Southern Region one of Europe's most creative, innovative, greenest and liveable regions

As part of the strategy's implementation, The Blue Green Infrastructure (BGI) and Nature-based Solutions (NbS) Framework has been developed on behalf of the Southern Regional Assembly as part of the Interreg Europe Blue Green Cities Project. This Framework provides a resource for Local Authorities, decision makers and developers working in the Region to guide the implementation of BGI and NbS. It will enable the implementation of a network of nature-based interventions to solve local challenges in our settlements and the landscapes that they link to. The Framework is the first of its kind at a regional level in Ireland.



Otters on the River Nore, Photography Credit Danny Laharte



Alignment with County Council Plans

The Kilkenny County Biodiversity Action Plan 2025-2030 has been developed with consideration of the strategic vision and objectives of local authority plans and aims to deliver actions with stakeholders to record, conserve, preserve and restore habitats in County Kilkenny.

The County and City Development Plan 2021-2027 sets out Kilkenny County Council's policies and objectives for the proper planning and sustainable development of the County. It is prepared with regard to relevant national plans, policies and strategies which relate to the proper planning and sustainable development. Chapter 7 details the strategic aim of rural development, Chapter 8 details the strategic aims for Open Space and Recreation, Chapter 9 outlines the Council's aims to conserve, sustainably manage and enhance the County's natural heritage and biodiversity and to promote understanding of and sustainable access to it.

The County and City Development Plan 2021-2027 is open to variations therefore it permits the strengthening of policy to attain greater biodiversity protection should the need arise. Variations will only be put forward on the bases of scientific based evidence.

Kilkenny Local Economic and Community Plan 2023-2028 is a framework to support sustainable growth of our local economy and communities. It acknowledges the urgency to implement positive climate and biodiversity actions, so that the benefits of success will be felt by all of our communities. It supports the growth of our local economy and our population but in tandem aims to ensure that this is achieved whilst protecting and improving our natural heritage and biodiversity.

Kilkenny County Council Climate Action Plan 2024 - 2029 sets out how the local authority can promote a range of mitigation, adaptation and other climate action measures, to help deliver the Government's National Climate Objective, to achieve, by no later than the end of 2050, a transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy.



Hawthorn in Dunmore;
Photo Credit Vicky's Photography

Alignment with Other Plans

The All-Ireland Pollinator Plan 2021-2025 is a five-year road map that aims to help bees, other pollinating insects and our wider biodiversity. It encourages a better way of managing our whole landscape to permanently support our struggling biodiversity.

It lists 186 actions spread across six objectives, these objectives are;

1. Make farmland pollinator friendly
2. Make public land pollinator friendly
3. Make private land pollinator friendly
4. Develop an All-Ireland Honeybee Strategy
5. Conserve rare pollinators
6. Strategic coordination of the Plan

While the All Ireland Pollinator Plan is coordinated by the National Biodiversity Data Centre (NBDC) the responsibility of action delivery is shared out between the main partner organisations.

Kilkenny County Council was the first Local Authority to sign a framework agreement with the All-Ireland Pollinator Plan in 2019, to formalise the Council's long-term commitment to support pollinators in County Kilkenny and subsequently reports annually to the National Biodiversity Data Centre on the Council's actions to protect pollinators. The Biodiversity Action Plan has been developed to incorporate actions to assist fulfil the objectives of the All-Ireland Pollinator Plan.

The Heritage Council Strategic Plan advocates for conservation of our natural heritage while also encouraging vital new approaches as the impacts of climate change emerge. It stands on the front line of fighting the effects of climate change and the protection of biodiversity. The Heritage Council was instrumental in establishing a Biodiversity Officer Network, with Biodiversity Officers employed by Local Authorities in partnership with the Heritage Council under the auspices of the Biodiversity Officer Programme, which was initiated in 2023.

The Biodiversity Action Plan reflects the 6 strategic pillars of the Heritage Council Strategic. These 6 pillars are;

1. Leadership and Stewardship
2. Climate Change and Biodiversity Loss
3. Research
4. Partnership
5. Communities
6. Education and Engagement

The Heritage Council supports the work of the Biodiversity Officer by providing professional training, provision of network supports and funding.



Robin, Photography Credit Danny Laharte

3. LEGAL RESPONSIBILITIES FOR BIODIVERSITY PROTECTION

EU Habitat Directive

The EU Habitats Directive is the most important nature conservation legislation in Europe. This Directive aims to maintain and restore the favourable conservation status for habitats and species which are rare and threatened throughout Europe. The Directive requires member states to designate Special Areas of Conservation (SAC) for habitat types and species that require conservation as part of a Europe-wide 'coherent ecological network' called Natura 2000.

EU Birds Directive

The Birds Directive requires member states to designate Special Protection Areas (SPA) to protect the most important bird areas in the country.

EU Water Framework Directive

This Directive provides a framework for the protection and improvement of all our waterbodies - groundwater, rivers, estuaries and coastal waters with the aim of achieving 'good' status (both ecologically and chemically) by 2027.

Wildlife Acts

The Wildlife Acts (1976 to 2018) and the Wildlife (Amendment) Act, 2020 are Ireland's primary national legislation for the protection of wild flora and fauna in Ireland. Under the Wildlife Act, Natural Heritage Areas (NHAs) and Refuge for Fauna (RFF) conserve species and habitats of national importance.

Flora Protection Order, 2022

The current list of plant species protected in Ireland is set out in the Flora Protection Order, 2022. Under the Flora Protection Order it is illegal to cut, uproot or damage the listed species in any way, or to offer them for sale. This prohibition extends to the taking or sale of seed. In addition, it is illegal to alter, damage or interfere in any way with their habitats. This protection applies wherever the plants are found and is not confined to sites designated for nature conservation.

Planning and Development Acts, 2000-2006

Kilkenny County Council has a central role and responsibility in protecting the natural environment. This is achieved by determining policies for its administrative area through the preparation of a Development Plan and for applying that policy, through planning control. Kilkenny County Council has a mandatory obligation to consider biodiversity when preparing plans or proposals for development.

4. KILKENNY'S DESIGNATED SITES FOR NATURE PROTECTION

Nature 2000 Sites

Natura 2000 is a network of protected areas across the European Union, established to ensure the long-term survival of Europe's most valuable and threatened species and habitats. The network is made up of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated under the Habitats Directive and the Birds Directive, respectively. Conservation efforts often include habitat management, monitoring of species, and measures to reduce impacts from human activities, their management and is the responsibility of the National Parks and Wildlife Service. Several areas in Kilkenny are designated for conservation. These sites not only contribute to the biodiversity of Kilkenny but also play a crucial role in the broader ecological network across Europe.

Table 4.1 List of Kilkenny SAC's, SPA's and NHA

(Source; <https://www.npws.ie/protected-sites>)

Map Number	Name	NPWS Site ID Number
8	Cullahill Mountain	SAC (000831)
13	Galmoy Fen	SAC (001858)
16	Hugginstown Fen	SAC (000404)
25	Lower River Suir	SAC (002137)
32	River Barrow and River Nore	SAC (002162/000698)
33	River Nore	SPA (004233)
34	Spahill and Clomantagh Hill	SAC (000849)
35	The Loughans (Turlough)	SAC (000407)
36	Thomastown Quarry	SAC (002252)
7	Coan Bog	NHA (002382)

Other

Designations

Proposed Natural Heritage Areas (pNHA) were published on a non-statutory basis in 1995. These areas have not been statutorily proposed or designated. The sites are of significance for wildlife and habitats. All pNHA's are described in the County Development Plan and afford local protection. The table below lists sites which have pNHA status and no other protection status.

Map 4.1 County Kilkenny's Designated Site Distribution

Please Note:
 All datasets used in this map are copyright of the National Parks and Wildlife Services (NPWS).
 River Barrow and River Nore SAC has multiple numbering locations to help visualise the scale of the SAC.

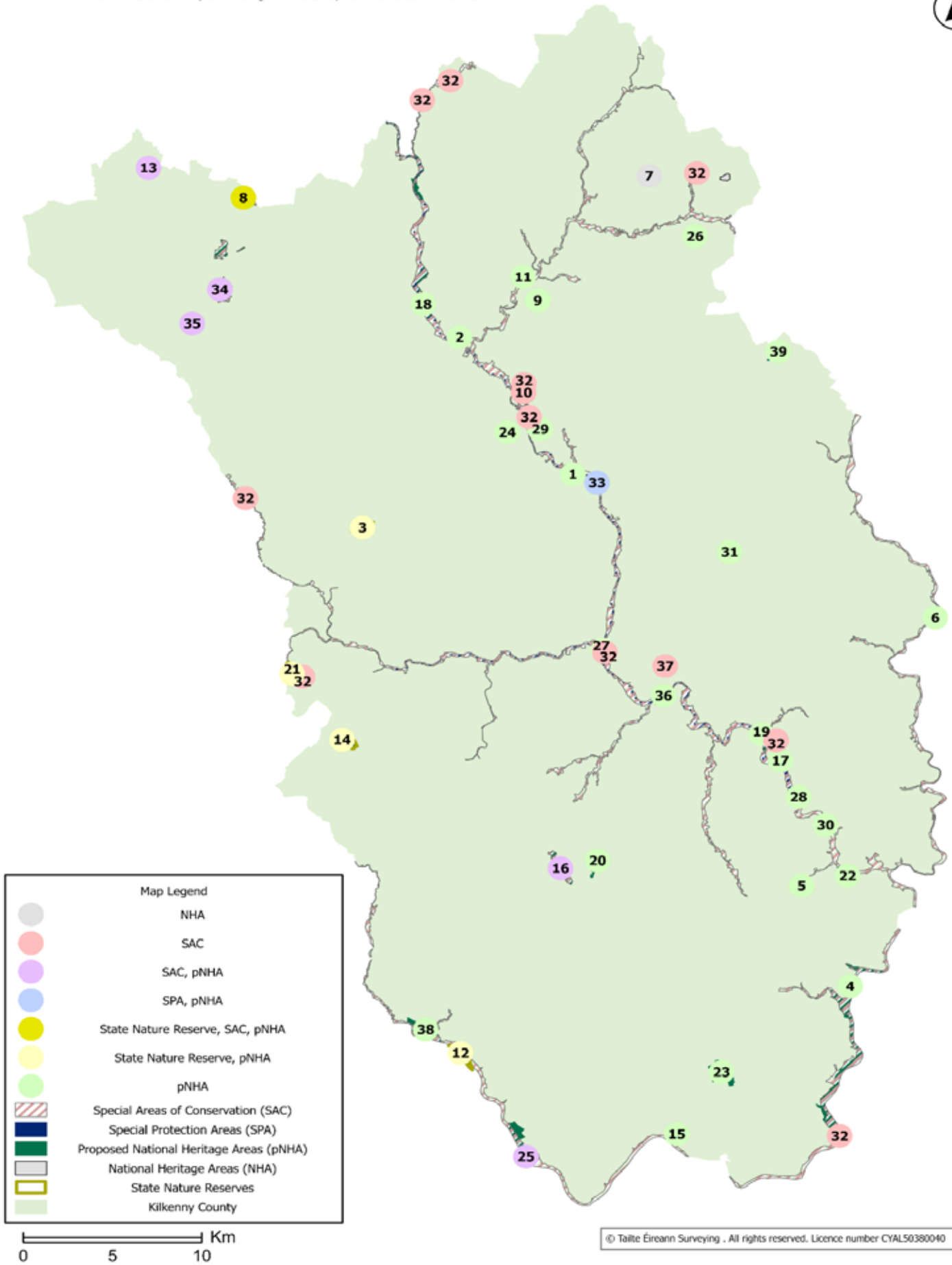


Table 4.2 List of Proposed Natural Heritage Areas

Map Number	Name	NPWS Site ID Number
1	Archersgrove	002051
2	Ardaloo Fen	00821
3	Ballykeefe Woodland	000400
4	Barrow River Estuary	000698
5	Brownstown Wood	000827
6	Clohastia	000830
9	Dunmore Cave	000401
10	Dunmore Complex	001859
11	Esker Pits	000832
15	Grannyferry	000833
17	Ice House near Inistioge	002094
18	Inchbeg	000836
19	Inistioge	000837
20	Kilkeasy Bog	000839
22	Kylecorragh Wood	000842
23	Lough Cullin	000406
24	Lough Macask	001914
26	Mothel Church Coolcullen	000408
27	Mount Juliet	000843
28	Murphy's of the River	000844
29	Newpark Marsh	000845
30	Rathsnagadan Wood	000409
31	Red Bog Dungarvan	000846
36	Thomastown	000410
38	Tibberaghny Marshes	000411
39	Whitehall Quarries	000855

State Nature Reserves, there are four in Kilkenny which have pNHA status but are owned and managed by the state, these are;

Map Number	Name	NPWS Site ID Number
12	Fiddown Island	000402
14	Garryrickin Nature Reserve	000833
21	Kyleadohir Wood Nature Reserve	000405
3	Ballykeefe Woodland	000400

A 5th nature reserve was announced during the preparation of this Plan, Minister of State for Nature, Heritage and Electoral Reform, Malcolm Noonan announced his intention in October 2024 to purchase 165 acres of lands within and adjacent to the Cullahill Mountain Special Area of Conservation (SAC) in Kilkenny, and to designate it as Gale's Hill Nature Reserve.

Wildlife Sanctuaries are areas excluded from the 'Open Season Order' so that game birds can rest and feed undisturbed. Shooting of game birds is not allowed in these sanctuaries. There are two in the county;

- River Barrow and River Nore SAC (002162/000698)
- Lough Cullin (pNHA 406)

Recreational Nature Sites

There are a number of recreational parks in the County managed by different stakeholders which encourage nature engagement.

- **Kilkenny Castle Park:** The parklands surrounding Kilkenny Castle provide habitats for various flora and fauna, offering a green space within the urban environment and is managed by the OPW.
- **Castlecomer Demesne:** Contains a mix of native and non-native woodland species, providing habitat for woodland creatures and plant species, this site is owned by Coillte and managed by the Castlecomer Discovery Park, a not for profit social enterprise.
- **Coillte Managed Forests** include Castlemorris, Jenkinstown Park and Coill an Fhailtaigh, Kilkenny's Millennium Forest. The Millennium Forest consists of about 90 hectares with 6 hectares of oak woodlands over 100 years old with the remainder replanted with sessile oak, ash, birch, cherry and spindle as part of the Millennium forest project.
- **Kilkenny County Council's** Dunmore Countryside Park opened in 2022 and is sited on a former landfill. Woodstock Gardens and Arboretum, located near Inistioge is home to a mix of formal and informal gardens and incorporates adjacent Coillte forestry.



5. BIODIVERSITY IN KILKENNY

Kilkenny is fortunate to have a wide variety of habitats, from the remnants of midland raised bogs in the northwest corner to the tidal waters of Belview and Snowhill in the southeast. Travel through the clayey uplands of the Castlecomer Plateau, the limestone lowlands of Freshford or Kells, the flagstone Slieve Ardagh hills and the Old Red Sandstone of Tory Hill and Windgap and you will meet of an abundance of different wild communities, reduced in many places by agriculture or forestry but seldom obliterated. Even in a coniferous wood or farmland there will be path edges or hedgerows where wild flora and fauna hangs on and can expand again if given the chance. However, size is important, as tiny patches of habitat will not maintain their full complement of species without connecting corridors to link with others.

River Valleys

River valleys are the primary corridors and well used by migrating birds such as sand martins and curlews. The Nore Valley shows a truly diverse mix of habitats – the permanent channel, seasonal wetlands on the floodplain, occasional springs and wet willow woods at the edges and drier forests as the valley becomes deeper south of Kilkenny City. At first these are derived from planting, with beech and hornbeam as well as oak. South of Thomastown, acid rocks dictate that oak survives the best and dominates such woods as Brownsbarn and Kylecorragh. The River Nore is one of the few Irish rivers that has not been significantly deepened so the floodplain around Threecastles shows the natural processes of water storage in action during floods, bringing in golden plovers in winter and a rich flora in summer.

The Kilkenny section of the River Barrow offers the same acid woodland but includes a new habitat in the former sand quarry at Cloghastia, a characteristic deposit of many of the south eastern river valleys in Ireland, which were brought down during glacial melt.



Kingfisher, Photography Credit Danny Laharte



Heron, Photography Credit Danny Laharte

Wetlands

Rivers are of course wetlands but there are also stand-alone wetlands such as fens and bogs which feed streams rather than receive incoming water. Hugginstown fen is one such, on the watershed between the Little Arrigle and the Black Water. Here an extensive reed bed, multiple sedges and flowering plants create a swampy habitat rich in unusual plants and insects. Other, smaller fens occur in the north of the County, at Lismaine, Castlemarket and Galmoy.

The raised bogs west of Johnstown are mostly now cutover or drained so that the peatland communities are degraded. However, water levels are being let rise again, giving rise to new habitats and species, sometimes one or two in exceptional abundance.

One of the most significant of wetlands in Kilkenny is Lough Cullin the only natural occurring lake in county, also locally known as the Loughans, is a significant habitat, a large turlough which floods in winter as the water table rises but then dries out in spring. Grazed, and apparently of grass, its vegetation is actually highly diverse with carpets of mint and meadow-rue, clovers and daisies. When flooded it attracts lapwing and sometimes wild swans.

Estuarine Habitats

Kilkenny has a larger flora than many other counties of comparable size and one of the reasons for this is the saline and flooding influence of the tide which reaches upstream to Inistioge and Piltown. The muddy reedbeds, winding drainage channels and pools hold particular species adapted to daily exposure and submergence and include sea aster and scurvy grass in the saline parts. They also provide habitats for wintering shorebirds and waders.

A related habitat is the wet willow wood on Fiddown Island, regularly flooded but supporting tall willows of at least four species and rampant herb growth.



Woodlands

Over 100 woods were identified by a survey of County Kilkenny in 1996 but the majority were planted stands, less likely to conceal significant biodiversity than natural or long-standing woods where nutrient-cycling has settled down and the vigour of ivy and brambles is somewhat reduced. The woodlands above Freshford on the Slieve Ardagh escarpment are prime examples. Here, although the oaks were felled sometime in the early 1900's, they have re-sprouted to replace the former forest while maintaining the ground flora and its associated organisms. Where woodlands have existed a long time the humus accumulates deeply on the floor benefitting the fungal flora and, thereby, the growth of the trees themselves. The softness of the ground below the deciduous stands in Woodstock are remarkable and reflected in a rich fungal flora.

Small isolated woodlands also occur on poorly-drained soils in the deep valleys of the Castlecomer plateau and around springs in the Arrigle or Little Arrigle valleys. Trees such as willows and sometimes hazels and rowan are small in stature but support a broad selection of plants and animals not seen in the adjacent fields. The contrast is immediate; from a group of 10 plant species in the field one compared to 60 species within the woodlands with mosses and ferns in abundance.

Planted forests cover 10% of County Kilkenny and are major feature of the landscape. The great majority are coniferous and many old ones replaced broad-leaved stands when they were first planted. Today some are planted on farmland of low quality for agriculture but high for biodiversity. At the outset tree planting creates the equivalent of scrub – low bushy vegetation with a community of birds and animals which is rich in species. Once canopy closure occurs, especially in conifer stands, life becomes restricted to the foliage above. While there are always some organisms in abundance, they are very limited in variety for many years until felling or natural treefall creates differences in microhabitat.

Uplands

Hilly areas, where climate and thin soils are the dominant factors, create upland communities of one sort or another. To some extent they are found on the tops of the Slieve Ardagh Hills and on Coppenagh but it is really in the south of the County that they become prominent. The granite Brandon Hill is the highest summit with dry heathery slopes. From there to the southwest the sandstone hills around Mullinavat and westwards to Corbally Hill and Windgap provide fragments of upland communities, at the edges of the widespread coniferous woods. Heather and autumn gorse make for a particular display in late summer.



Tory Hill, Mullinavat Photography Credit: Vicky's Photography

The limestone hills overlooking the M7 from Spahill to Cullahill are a special case and create some of the most species-rich communities anywhere in the County. Where the flagstones have been eroded away, limestone is revealed beneath and, just as in the Burren, it supports an array of flowering plants second to none. Grasses are reduced by the low nutrient conditions and herb species flourish with knock-on benefits for butterflies and other insects. The community can be called limestone grassland and appears again in some abandoned sand quarries where a lack of 'restoration' promotes the natural development of a diverse flora with many of the same species. Dunmore and Esker, near Lisnafunshin, would be prime examples, valuable for their biodiversity alone.

Farmland & Grassland

Grassland is not a natural community as it depends on mowing or grazing to prevent the invasion of woody species – and subsequently woodland. However, grazing has been so widespread for so long that an associated community of plants and animals has developed to the benefit of many insects. The only semi-natural grassland in the County is probably on the limestone hills just described. Second best are hayfields which are cut late in the year and support a lot of clover and knapweed and sometimes the partly parasitic yellow rattle and eyebright. Wet grasslands on the uplands can also be quite rich in species but where management dictates a regime of fertilising and early cutting, as in much of the County, the diversity of plants plummets and the stand become dominated by ryegrass. It is no exaggeration to describe such fields as green deserts as far as biodiversity is concerned. Only on the field margins or under electric fences can other species survive and it is here that roadsides and verges become the main living area for wildlife. Hedgerows provide food, shelter, corridors of movement, nest and hibernation sites for many of our native flora and fauna. Their flora provides pollen and nectar for a myriad of insects. When autumn comes, hedgerows provide a bountiful larder of fruit, nuts and berries for wild birds, mammals and a host of other small creatures. Ground flora give cover for small mammals such as wood mice and pygmy shrews and food and cover for invertebrates.

Urban Environments

All species, including humans, multiply until their resources run out so there is pressure to increase and colonise every bit of suitable habitat, whether this is a vertical wall or a suburban garden. Swallows and swifts have taken to nesting in buildings since their previous habitats of hollow trees or cliffs are in short supply. Barn owls go for castles or farmyards while jackdaws are suited to chimneys. The blackbird and woodpigeon were once shy woodland species but now are seen everywhere as gardens provide food and nest sites. Gardens in fact support a higher density of birds than most natural habitats, helped by winter feeding. Even quite rare species like blackcaps and woodpeckers take artificial food.

County Kilkenny's range of habitats shows there is considerable variety in its biodiversity and fully justifies keeping or improving what remains. This is the purpose of the Biodiversity Plan.



Starling feeding at a Bird Feeder in Kilkenny City Photography Credit; Danny Lahart Photography

6. BIODIVERSITY RECORDING IN KILKENNY

Biodiversity recording is being completed by numerous organisations on a national, regional and local level. Kilkenny County Council has commissioned specific studies on habitats and protected species and acknowledges that there is a huge volume of biodiversity collected and recorded by different organisations.

Kilkenny County Council Commissioned Surveys

Kilkenny County Council has directly commissioned studies on different aspects of biodiversity under the Heritage Office programme. The following provide invaluable baselines and a review of studies complete can assist identifying where data gaps occur and can be addressed in the future.

1. Kilkenny Barn Owl Survey (2021)
2. Kilkenny Swift Survey (2021)
3. Kilkenny Night Jar Survey (2024)
4. Recording Irish Mayfly – Establishing Conservation Status (2024/25)
5. County Wetland Survey (2020)
6. Wetland Field Survey (2021)
7. Survey of Wall Flora in County Kilkenny (2009)
8. Habitat Survey and Mapping of Kilkenny City (2010)
9. Landscape Conservation for Irish Bats. Report for Co. Kilkenny (2012)
10. Habitat Survey and Green Infrastructure Mapping of Kilkenny City (2010)
11. Habitat Survey and Green Infrastructure Mapping (2010)
Gowran, Fiddown, Piltown, Johnstown, Urlingford, Ballyragget, Ballyhale, Mooncoin, and Knocktopher
12. Geological Audit of County Kilkenny (2007 & 2012)

Other Known Audits of Kilkenny's Natural Heritage

1. Newpark Marsh pNHA Management Strategy (2005)
2. Newpark Marsh. Recommendations for its future Management. 2005
3. Survey of Woodlands in County Kilkenny (Harris, Maryann. 1996)
4. Survey of Mature Trees in Kilkenny City & Environs (Fennell, A. 2007)
5. Native Woodland Survey (NPWS, 1996)
6. Examination of bridges on the Barrow for roosting bats (2003)
7. Report on the Dirty Dozen non-native invasive species. Co. Kilkenny (2010)
8. The Tree Register of Ireland. Kilkenny (2006)

Other Sources of Biodiversity Data

National Biodiversity Data Centre

The main role of the National Biodiversity Data Centre, is to acquire, collate, manage, validate and make available, data in respect of Ireland's biodiversity in order to document wildlife resources and monitor and record changes over time. It supports national initiatives to maintain and enhance biodiversity, including recording of species and habitat information relating to the terrestrial, freshwater, marine, rivers and wetland environments. Their data portal is publicly accessible via <https://maps.biodiversityireland.ie/>.

Botanical Society of Britain and Ireland

Their mission is to advance the study, understanding and enjoyment of wild plants and support their conservation. This is achieved by supporting botanists, supporting research and through their network of county recorders. The BSBI produce national Atlases and County Floras of plants.

National Parks and Wildlife

The National Parks and Wildlife Service is part of the Heritage Division of the Department of Housing, Local Government & Heritage. The role of National Parks and Wildlife Service (NPWS) is:

- To secure the conservation of a representative range of ecosystems to maintain and enhance populations of flora and fauna in Ireland.
- To designate and advise on the protection of habitats and species identified for nature conservation
- To make the necessary arrangements for the implementation of National and EU legislation and policies for nature conservation and biodiversity
- To manage, maintain and develop State-owned National Parks and Nature Reserves.
- To promote awareness of natural heritage and biodiversity issues through education, outreach to schools and engaging with stakeholders.

NPWS has an extensive mapping system, which is publicly accessible via; <https://www.npws.ie/maps-and-data>.

Inland Fisheries Ireland

Inland Fishers Ireland's principal function is to protect, manage and conserve Ireland's inland fisheries and sea angling resources. Inland Fisheries Ireland has been assigned the responsibility of delivering the fish monitoring requirements for the Water Framework Directive (WFD) by the EPA. They are also responsible for the development of the National Barriers Programme as river fragmentation is the breaking up of a river's continual flow from source to the sea. It is one of the greatest global threats to freshwater ecosystems because it interrupts fish migration, blocks the movement of fish and other animals within the channel, alters the flow of sediment throughout the channel, affects habitat diversity and impacts overall biodiversity. The programme deals with issues related to barriers and works to reduce their impact, within the context of the Water Framework Directive.

Environment Protection Agency (EPA)

The EPA aims to protect, improve and restore our environment through regulation, scientific knowledge and working with others. It plays a large role in the monitoring of water quality. It manages www.catchment.ie which provides public access to water quality data which is collected under the requirements of Water Framework Directive.



7. THREATS TO BIODIVERSITY IN KILKENNY

Despite its rich natural heritage, Kilkenny faces challenges such as habitat loss and fragmentation, pollution, invasive species and the impacts of climate change. Intensive agriculture, urban development and human led disturbance pose significant threats to biodiversity.

Habitat Loss and Fragmentation

The Kilkenny Wetland Survey completed in 2020, identified a number of threats. Wetlands, historically regarded as less productive than adjacent agricultural land is frequently impacted by measures to improve the agricultural productivity by drainage or infilling. This can lead to damaged habitats and fragmentation. Habitat loss and the reduction in habitat quality was identified in the National Biodiversity Plan as a serious threat to biodiversity.

The countryside has been continually modified by human activity. The development of houses to cater for an expanding population, roads and other infrastructure projects to support the movement of people have increased habitat loss and habitat fragmentation. As habitats shrink and become fragmented, they support a smaller diversity of species and it leads to a loss of connection and/or increasing distance between patches. This has negative consequences for the ability of plants and animals to move through the landscape and to sustain viable populations.



Recent BirdWatch Ireland surveys focusing on the Kilkenny populations of Swifts and Barn Owls identified the safeguard of nesting sites as critical to support populations and to reverse population declines. These surveys inform what is required to safeguard specific species and also provides insight into the types of enhancement habitat measures required to deliver significant benefits for bird populations and other wildlife. Habitat creation and species-specific safe guarding measures are required to be integrated into appropriate policies, to ensure biodiversity measures are effectively implemented throughout the county.

Climate Change

The biodiversity crisis and the climate crisis are intertwined. The Future Climate Impacts Assessment carried out as part of the Kilkenny's Climate Action Plan identified key climate hazards for county to be river flooding, extreme precipitation and drought. These climate hazards could greatly impact the biodiversity of Kilkenny. Extreme rainfall events can physically degrade habitats, washing nutrients into local streams and rivers, eroding river banks and introducing sediment into the water column. The Inland Fisheries Ireland's Climate Change Mitigation Research Programme Annual Report 2021 indicated climate change is one of the greatest current and future threats facing the wider aquatic environment and fish populations. It cites altered flow regimes, increases in water temperature (and resulting decrease in oxygen concentration) and loss of habitat is likely to have serious affect on freshwater fish species and other aquatic life.



Inistioge Winter Flooding. Photography Credit: Harry Reid Photography

Climate change has resulted in shifts in the timing of spring phenological events, such as leaf unfolding, flowering, leaf decay, bird migration and insect activity. Many species are interdependent and a mis-match of seasonal timing may for example lead a bumblebee to emerge from hibernation before there is enough of a food source available for its survival, therefore phenology is another pressure on biodiversity. Research in UCC's PhenoClimate Impact of Climate Change on Phenology in Ireland confirmed shifts in the timing of spring phenological events. Nature can be a solution in the fight against climate change. Nature-based solutions, such as protecting wetlands, increased care and management of hedgerows and woodland restoration will be essential for emission reduction and climate adaptation. Nature Based Solutions can be integrated planning and design of infrastructure projects which will assist in adaptation of climate change, reducing the impact of severe climate events and also potentially creating new habitats.

Alien Invasive Species

Alien invasive species are plants or animals that have been introduced in Ireland outside their natural range and outcompete naturally occurring native species. In Kilkenny's Nore Catchment there is an annual effort by local communities to control of Himalayan Balsam thanks to the support of the Nore River Catchment Trust. However locations without control efforts continue to produce seed that can lead of the establishment of plants downstream, therefore an ongoing strategic removal approach is required to contain this plant species in the county.



Nore River Catchment Trust Volunteers Removing Himalayan Balsam. Photo Credit; Nore River Catchment

Japanese Knotweed is managed on public land by Kilkenny County Council, however ongoing surveying and management plans are required to eradicate fully. The movement of soil and stones associated with the construction industry has potential to spread Japanese knotweed and other invasive species if proper controls and measures are not put in place. Rhododendron Ponticum and Cherry Laurel cast a dense shade in some woodlands, preventing ground flora from establishing and new tree saplings emerging. An eradication programme is in place in Woodstock Gardens and Arboretum to increase the biodiversity of the woodlands near Inistioge. There are dense stands of Rhododendron Ponticum and Cherry Laurel throughout the county which if controlled would boost the biodiversity value of habitats. Emerging invasive species and plant pathogens are increasing their range across Europe due to climate change. It is imperative that all agencies must engage with the Shared Island Biosecurity and Invasive Species Stakeholder Forum to stay informed.

Water Pollution

All forms of pollution pose a serious threat to biodiversity. Nutrient pollution of waterbodies; pesticide pollution of soils and waterbodies and light pollution are the most relevant forms of pollution in County Kilkenny. Nitrogen and phosphorus are common pollutants in our rivers, some originating from chemical fertilizers and manure that are applied to fields to increase crop growth, another source is from household cleaning products that contain high levels of phosphate that enters the river systems via waste water. Any unabsorbed nitrogen and phosphorus in surface water lead to eutrophication, that is the process in which a water body becomes overly enriched with nutrients, leading to the plentiful growth of simple plant life which results in negative impacts for the water body. Historically, the under investment of waste water infrastructure has led to sewage overflows that have contributed to the nutrient loading into our rivers. It is anticipated with current government policy commitment, future investment of waste water infrastructure will result in higher standards of waste water treatment.

Light Pollution

Light pollution from artificial light has negative impacts on biodiversity. Many animals have evolved to be nocturnal such as moths, bats, and owls. They hunt or move around under the cover of complete darkness, with only the light from the moon or stars to guide their flight. Lighting can impact on commuting routes and foraging areas and disturb bats' feeding behaviour. Artificial lighting is a pollution concern which needs to be addressed by all sectors from the use of ornamental solar garden lights to public lighting.

Recreation Pressures

Since the Covid 19 epidemic, a renewed appreciation of nature led to a greater uptake in outdoor activities. The Central Statistics Office Pulse Survey "Our Lives Outdoors: Spending Time Outdoors, 2022⁵" highlighted that the most popular outdoor new activities included hill walking, hiking and sea swimming. Increased participation in outdoor activities can bring pressures with potential impacts on wildlife, habitats, farming and sensitive ecosystems such as wetlands and rivers. Careful management is needed to mitigate the potential damage from increased human activity on habitats, such as trampling impacts, littering, the increased threats of fires from the inappropriate use of disposable BBQs' and wildlife disturbance by dogs off leads. In some instances, a nature first policy may be more appropriate for sensitive habitats and eco-systems, acknowledging that these habitats may benefit more from conservation measures than being publicly accessible.

5. <https://www.cso.ie/en/statistics/social/pulsesurvey-ourlivesoutdoors/>

8. BIODIVERSITY OBJECTIVES AND ACTIONS

The Biodiversity Action Plan sets out the actions required to be achieved over the next five years in order to protect, record, conserve and restore biodiversity. There are six broad objectives that present different targets that are matched with actions and key performance indicators. The targets have been informed by the feedback received from the public consultation of the Biodiversity Discussion Paper, input from the Biodiversity Working Group, discussions with council officials and their formation has been guided by scientific data available and gaps that have been identified. Some themes are broad in nature to allow for projects to develop as project partners and funding streams are identified during the lifetime of the plan.

The objectives are:

- 1. Provide Biodiversity Leadership at Local Level**
- 2. Strengthen Local Biodiversity Policy and Integrate Biodiversity Procedures into Council Operations**
- 3. Manage Public Open Spaces for Biodiversity**
- 4. Conduct Habitat Mapping and Monitoring to Support Evidence based Data-Driven Management Decisions**
- 5. Record and Monitor Protected Species**
- 6. Foster Engagement and Promotion of Best Practice Biodiversity Action**

Proposed actions are linked with the National Biodiversity Action Plan (NBAP), denoted in the table as; **NBAP Action No.** Where an action is not directly linked to the NBAP, policy documents have been referenced for example, the Water Action Plan 2024. In the absence of a direct policy link, the proposed action is linked back to the recommendations within the Report of the Citizens Assembly on Biodiversity Loss (March 2023).

The implementation of the Action Plan will require a collective effort to protect, record, conserve and restore biodiversity requiring stakeholder collaboration, public participation and some changes in council operations. Kilkenny's Biodiversity Action Plan is a plan developed by the people, to work as a collective to halt biodiversity loss, working towards a rich biodiverse county, supporting the restoration of ecological connectivity by using scientific recording to inform action.

Reporting and Monitoring of the Plan's Progress

The progress of the Biodiversity Action Plan will be reported to the Council's Chief Executive and elected members through the monthly Chief Executive Report. An annual progress report will be prepared and presented to the Biodiversity Working Group, and various Strategic Policy Committees and summarised in Kilkenny County Council's annual report.

The progress of the Biodiversity Action Plan will be included Kilkenny County Council's annual submission under the Wildlife (Amendment) Act 2023 which requires all public bodies to submit an annual report on its performance of its commitment under the National Biodiversity Action Plan.

Kilkenny County Council will be the coordinating body overseeing the implementation of Kilkenny's Biodiversity Action Plan. The Biodiversity Officer shall be the coordinator of the Kilkenny Biodiversity Working Group, with this group meeting four times a year and share one meeting with the Heritage Forum.

The Biodiversity Working Group opens up communications between the stakeholders and serve as a platform which facilitates collaboration, promotes best practice and builds awareness of biodiversity through networking and information-sharing. The group will promote the development of innovative and collaborative initiatives which restore, enhance and protect biodiversity. The group will bolster community participation through awareness raising, training and other relevant initiatives. Regular updates promoting biodiversity actions being undertaken will be issued to local media through the Biodiversity Working Group.




Photo Credit: Biodiversity Officer, Kilkenny County Council

