

Queen's University Biodiversity Plan 2025-2030

Introduction

Queen's University Belfast, as a global leader in education and research and a major civic institution in Belfast, recognises its impact and responsibility toward the natural environment.

Aligned with our Strategy 2030 commitment to embedding the Sustainable Development Goals and our Net Zero 2040 target, this plan represents our commitment to addressing the biodiversity crisis as a core part of sustainability leadership.

The UK, including Northern Ireland, faces severe biodiversity loss, with species declining by 19% on average since 1970, and 16% of UK species threatened with extinction. In Northern Ireland specifically, 12% of assessed species are at risk of extinction, and the abundance of farmland birds has fallen by 43% since 1996, with the region being one of the most nature-depleted in the world.

This Plan aims to create a healthy and sustainable campus environment, enhance biodiversity, promote ecological awareness, support teaching and research, integrate biodiversity into university operations and planning and contribute to the Sustainable Development Goals (SDG's).

Specifically this plan

- Sets out Queen's vision, principles, and objectives.
- Defines the context and challenges facing biodiversity.
- Outlines how we will embed biodiversity into operations, design, and culture.
- Details how success will be measured and governed

This plan sits alongside the Net Zero Plan as a key enabling document for our Strategy 2030 sustainability commitments.

Our Vision and Guiding Principles

Our Vision

Our vision is to create a thriving, resilient, and biodiverse university that supports nature, enriches learning, and inspires our community to value and protect the natural world — both on campus and beyond.

Our Guiding Principles

To realise our vision our approach will be guided by the following principles, which reflect our commitment to stewardship, collaboration, and continuous improvement.

1. Governance and Evidence

Legal and Ethical Stewardship

We will meet or exceed all biodiversity legislation and relevant codes of practice, ensuring that our management of land, habitats, and species is responsible, transparent, and compliant. This includes the proactive and ethical management of invasive species.

Evidence-Based Decision Making

We will collect, maintain, and apply high-quality biodiversity data to inform planning, operations, and long-term management. Decisions will be underpinned by sound science, ensuring that our actions are effective and measurable.

2. Sustainable Operations and Partnerships

Sustainable Land and Grounds Management

We will adopt and uphold best ecological practices across all University operations, embedding biodiversity considerations into the design, maintenance, and development of our estate.

Collaborative Environmental Partnerships

We will work closely with local authorities, community organisations, conservation bodies, and other stakeholders to deliver shared outcomes that enhance biodiversity both within and beyond our campus boundaries.

3. Engagement and Learning

Engagement and Awareness

We will foster a culture that values nature and biodiversity by raising awareness and promoting active participation across our University community.

Integration with Learning and Research

We will embed biodiversity into teaching, research, and experiential learning, inspiring students and staff to become future environmental leaders and stewards of the natural world.

4. Broader Environmental Influence

Responsible Influence Beyond Campus

We will consider the environmental and ecological impact of our decisions, partnerships, and procurement practices, striving to minimise harm to biodiversity beyond the University estate and contribute positively to wider ecological systems.

3. Setting the Scene: The Biodiversity Context

Biodiversity is the variety of life on earth – animals, plants, fungi and microorganisms – which make up our natural world. These species and organisms work together in ecosystems, like an intricate web, to maintain balance and support life.

Species comprising biodiversity have an intrinsic value, as well as providing a range of vital benefits to humans:

- Pollination
- Soil Health
- Climate Regulation
- Water purification
- Flood Prevention
- Wellbeing and Mental Health
- Medicinal Properties

As society has developed, expanded and intensified so has human's negative impacts on biodiversity. This has included rapid ecosystem change and biodiversity loss. While the Earth has always experienced changes and extinctions, today they are occurring at an unprecedented rate.

Of 2,508 species in Northern Ireland that have been assessed using IUCN Regional Red List criteria, 12% have been classified as threatened with extinction from Ireland as a whole (State of Nature Report: Northern Ireland, 2023).

There are five key drivers of biodiversity loss:

- Habitat loss and fragmentation due to agriculture and urban expansion.
- Unsustainable resource use through harvesting, logging, fishing and mining.
- Invasive species that cause harm to new environments.
- Pollution from sewage, industrial and agriculture pollutants.
- Global climate change resulting in long term changes to temperature and weather patterns.

The University contributes to these drivers of biodiversity loss through both direct operations as well as indirectly. This plan aims to halt and reverse biodiversity loss associated with the University's activities, ensuring the protection of biodiversity and all associated benefits.

Policy and Legal Context

Northern Ireland is party to a new set of international biodiversity targets under the Convention on Biological Diversity (CBD): the Global Biodiversity Framework. It sets out a global mission to halt and reverse the loss of nature by 2030 and achieve recovery by 2050. To support the delivery of this, each UK country has committed to developing and implementing national biodiversity strategies.

As part of the Environmental Act 2021, the United Kingdom has set out the ambition to restore natural habitats and increase biodiversity, ultimately halting the decline in species by 2030. The Act required the creation of an Environmental Improvement Plan (EIP) and a Nature Recovery Strategy.

Northern Ireland's Environmental Improvement Plan (EIP) was published in 2024 providing coherent and effective set of interventions that will significantly improve our natural environment. There are six Strategic Environmental Outcomes:

- Excellent air, water and land quality
- Health and accessible environment and landscapes
- Thriving, resilient and connected nature and wildlife
- Sustainable production and consumption on land and at sea
- Zero waste and highly developed circular economy
- Net zero greenhouse gas emissions and improved climate resilience and adaptability

Work is currently ongoing to create a Nature Recovery Strategy. The Nature Recovery Strategy will translate global biodiversity targets to a local level, and in doing so set out proposals to conserve biodiversity in Northern Ireland, as required under the Wildlife and Natural Environment (Northern Ireland) Act 2011.

Queen's University Belfast is committed to ensuring compliance with the Wildlife and Natural Environment Act 2011 and the future Nature Recovery Strategy.

4. Biodiversity at Queen's University Belfast

The majority of Queen's University's campus is located within the heart of South Belfast, with three satellite locations: Portaferry Marine Lab, AMIC Advanced Manufacturing Innovation Centre and Momentum One Zero. As such, the estate supports a wide variety of habitats and ecological diversity.

Hedgerows are located across Queen's campus with a mixture of mature and immature hedgerow found within the Main Site, Riddel Hall, Chlorine Gardens and Elms Accommodation. Increasingly, a focus has been placed on using native species with high biodiversity – such as hawthorn and blackthorn. These hedgerows provide a food source and home for birds, bats and insects.

Amenity grasslands are highly maintained and currently offer little biodiversity value. However, they are a valuable space for physical and mental well-being. This includes sports pitches found at Malone Playing Fields and large areas of amenity space within the Main Site.

No-mow amenity grassland has been formed across seven areas across our campus. This grassland is not mowed between 1 May to the 31 August. This results in an increase in early season floral abundance and richness, which in turn supports a greater abundance and/or richness of insects.

Formal gardens are located within the Main Site and the Vice-Chancellor's garden. They are comprised of heavily maintained lawns, ornamental shrubbery, exotic and native trees. These areas provide valuable aesthetic, social and wellbeing space which is enjoyed by both our university community and the general public. The range of flowering plants, shrubs and trees provide opportunities for pollinating insects.

Community gardens have formed across the campus providing staff, students and local residents with the opportunity to enhance biodiversity, grow their own food and a host of wellbeing opportunities. Community gardens are located along University Square, the Physical Education Centre, David Kerr Building and the Elms Allotment.

Hard surfaces are common across the campus due to operational requirements. A range of initiatives have been put in place to enhance these spaces. This includes the addition of swift bricks and planters.

Case Study: Enhancing Biodiversity at Riddel Hall

Riddel Hall is home to a Conference Centre and Queen's Business School. It is composed of a Grade II listed building, a modern student hub powered by geothermal technology, manicured lawns, woodland, no mow areas and formal planting. This multi-purpose estate hosts large-scale conferences, weddings and academic events.

The Garden and Sustainability Team have been implementing a range of initiatives which aim to enhance the biodiversity of this space:

Native Planting – with the formation of the new Student Hub building, a significant amount of wildlife hedgerow was placed within the site. This is in addition to a range of native trees, ranging in age, being located on-site.

No Mow – in 2021, 633m² of manicured lawn was converted to a 'no mow' area, with cutting only taking place in April and September.

Bulb Planting – Over 5,000 bulbs have been planted within the site, providing vital early pollinating species for our insects.

Swift Bricks – The Planning Team identified the existence of Swift within South Belfast, leading to the new Student Hub containing a range of swift bricks and a calling system

Monitoring – A range of citizen science surveys are undertaken across the University, including in Riddel Hall. This includes plant, insect and hedgehog surveys.

5. Our Impact and Interaction with Biodiversity at Queen's

Estate Operations

The Grounds and Gardening Team are responsible for the development and maintenance of Queen's outdoor space. Since 2019, the University Main Site has been accredited with the International Green Flag Awards – showcasing our commitment to good environmental practice. Actions have included:

- Peat Free Compost Used
- 80% Species Sourced from the RSPB Approved Species List
- Switch from Petrol to Electric Machinery
- Minimisation of chemicals
- Climate Change Adaptation Strategies Implemented

How we build or make significant changes to our existing estate is managed through our capital projects and estates maintenance program. Queen's Net Zero Design Guide provides a road map to ensuring ecological stewardship is built into major changes to our estate, whether through new developments or major refurbishments.

The Queen's Net Zero Design Guide establishes minimum biodiversity requirement for capital works projects across the Estate. It requires all project stakeholders to consider the environmental implications of their decisions when developing capital works projects. The guidance predominantly targets large and complex projects but should be considered for all capital works activities.

The appointment of an ecologist and, typically, a landscape architect will form part of the core design team in most large and complex projects. These professionals bear significant responsibility for assessing site-specific ecological conditions and proposing viable measures to enhance biodiversity, considering site constraints. In addition, they (in collaboration with the university) should engage with external stakeholders to identify synergies to further promote biodiversity beyond the immediate site boundaries.

Project delivery includes the piloting of innovative biodiversity measures, with outcomes documented to evaluate effectiveness. These pilot initiatives contribute to the University's broader sustainability agenda, serving as 'living labs' that generate insights and best practices. Lessons learned inform future capital works, accelerating the integration of sustainable design approaches across the estate. Examples to date include the integration of green roofs, blue roofs and swift boxes.

Environmental Engagement

Fostering a culture that values the natural environment is a core principle of this biodiversity plan. By ensuring that campus spaces are both accessible and engaging, and integrated into teaching and research activities, we can strengthen appreciation for biodiversity and encourage responsible stewardship.

The University provides, and will continue to provide, a wide range of opportunities for staff, students, and local residents to actively participate in biodiversity initiatives, from volunteering in community gardens to taking part in campus-wide environmental projects, and contributing to campus-based research projects.

Tree Planting as part of the Million Trees for Belfast Initiative

Since 2021 the University have been partners with Belfast City Council on the Million Trees for Belfast Initiative. Over a four-year period, over 1,264 trees were planted in appropriate locations across the campus. Trees were a mixture of saplings and mature trees, with the figure including wildlife hedgerow species.

Saplings were grown and nurtured by the Lennoxvale Tree Nursery Community Group, who used a Queen's brown field site to grow over 4,000 saplings from acorns collected in a local park.

Development of Community Gardens

Staff and students within Queen's have created their own nature hot spots throughout Queen's campus. This has resulted in concrete courtyards and mowed lawns being converted into nature hubs that support a wide variety of species.

The most recent community garden to form in 2024 is in the Physical Education Centre (PEC). With the support of Senior Management within the PEC, and through their successful Green Fund application, staff created a thriving allotment. The garden provides a hub for wildlife, and for staff, with many viewing it as a wellbeing initiative.

Planting for Pollinator Schemes

In 2019 the University signed up to be supporters of the All-Ireland Pollinator Plan. As a result, key activities were undertaken:

- Seven No Mow Areas
- 80% New Plants Approved via the RSPB/RHS plant list
- Wildlife Hedgerows
- Two Orchards in DKB and Elms

Minimising Off-Campus Biodiversity Impact

Our impact extends beyond the physical campus, through the resources we use, the partnerships we form, and the choices we make. By recognising and managing these wider influences, Queen's seeks to protect and enhance biodiversity well beyond its own boundaries. These impacts may include land use changes, resource extraction, and environmental pollution.

Queen's is actively working to embed ecological considerations into our purchasing decisions. For example, our in-house catering team, Campus Food and Drink, promotes sustainability through the Sustainable Food Policy, which supports the local economy, prioritises responsibly sourced food (including Fairtrade and Marine Stewardship Council-accredited products), and encourages ethical practices that benefit communities and the environment.

By continuing to integrate environmental considerations into procurement, operational planning, and other institutional practices, the University aims to minimise negative impacts on biodiversity beyond our estate, helping to ensure that our wider activities support the protection and enhancement of nature.

6. Plan Objectives

The following objectives detail how the University will enhance biodiversity across its estate:

Objective 1: Increase and maintain biological diversity throughout our campus

The University's estate plays a key role in supporting urban biodiversity in South Belfast. Increasing habitat quality and connectivity strengthens resilience of species and ecosystems within and around campus.

Approach:

- Conduct a campus wide biodiversity audit
- Informed by the audit, development of targets for biodiversity and development of a management plan for existing habitats
- Become signatories to a Nature Positive University
- Continue to identify additional areas for 'wilding' and native species planting
- Maintain green spaces to actively support biodiversity.
- Minimise negative impacts of campus operations on biodiversity.
- Continue to manage and monitor invasive species.
- Invest in ongoing good environmental practices.
- Include biodiversity considerations in estate master-planning, prioritising existing habitats and avoiding development on greenfield site, aligning with the University Net Zero Design Guide.
- Increase the use of nature-based solutions to mitigate the impact of our changing climate.
- Promote biophilic and regenerative design using Net Zero Design Guide standards on Major Projects

Objective 2: Foster understanding and appreciation of biodiversity throughout the University community

Queen's can inspire future generations to value and protect nature by integrating biodiversity into teaching, research, operations, and daily life.

Approach:

- Staff, Student, and Public Engagement
 - Promote the use and enjoyment of campus green spaces.
 - Highlight the wellbeing benefits of biodiversity.
- Partnerships & Collaborative Initiatives
 - Contribute to Belfast City Council's Open Spaces Strategy (BOSS) and the Million Trees for Belfast Initiative.
 - Engage with charities and community groups to support biodiversity initiatives.
- Learning, Research, and Volunteering
 - Integrate biodiversity into the University's 'living labs' framework.
 - Provide volunteering and citizen science programme opportunities focused on biodiversity.

Objective 3: Reduce harm to biodiversity beyond our estate and campus operations

Queen's influence extends beyond its physical boundaries.

Many pressures driving biodiversity loss stem from supply chains and resource use. Queen's can model responsible practice through its purchasing choices.

Approach:

- Understand the biodiversity impacts of University activities beyond the campus.
- Apply circular economy principles to purchasing decisions to reduce external biodiversity impacts.
- Incorporate biodiversity considerations into purchasing decisions where appropriate.
Review investment policies to determine where further environmental and biodiversity considerations could be integrated.

7. Measuring Success

To realise the objectives set out in this plan, it is vital we know what success looks like. We have identified four measures to track our progress, which will allow us to continually revisit and refocus our approach to achieve long term success.

1. Define the existing habitats and natural assets across Queen's University Belfast estate by September 2026 and adopt this as our baseline
2. Make a pledge to become a Nature Positive University, including committing to setting SMART targets to increase our baseline position by December 2026.
3. Continue to enhance and integrate biodiversity into capital works projects and develop a university approach to 'best practice' through the application of our Sustainable Design Guide.
4. Implementation of annual Living Lab projects aligned with the plan to facilitate staff and student input and integration with research and learning

8. Governance and Reporting

Progress against this Plan will be reported to the Sustainability Committee. The Plan will be reviewed annually. Significant changes will be brought to the Sustainability Committee for approval.

Progress will also be reported via:

- Annual Sustainability Report
- SDG THE Impact Ratings (SDG 14 & 15)
- Queen's Annual Report
- Online web pages