

Uisce Éireann's Biodiversity Action Plan – Progress Report

August 2024



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1 Executive Summary

Uisce Éireann's role is to deliver the highest quality drinking water to customers and ensure that wastewater is properly treated and safely returned to the environment. Our purpose is 'to rise to the challenge of delivering transformative water services that enable communities to thrive' and our vision is for 'a sustainable Ireland where water is respected and protected, for the planet and all the lives it supports'.



Uisce Éireann developed its Biodiversity Action Plan (BAP) in response to the Irish Government declaring a 'biodiversity emergency' in 2019 due to unprecedented biodiversity loss. Uisce Éireann's BAP outlines our objectives and the actions we are taking to conserve, enhance and work with the natural environment. The BAP ensures that biodiversity is valued across all aspects of the business, as well as verifying Uisce Éireann's commitment to complying with all relevant European and national environmental legislation. The objectives and actions set out in the BAP have been guided by Uisce Éireann's policy-level strategic objectives set out in the Water Services Strategic Plan (WSSP) and the objectives set out in UÉ's Biodiversity Policy.

This progress report has been developed to describe how the BAP has been implemented since its launch in 2021. It outlines the progress made against each of the BAP's seven objectives and provides details of how the measures have been implemented to achieve the actions so far, the challenges faced as these actions are implemented, and the next steps required to continue the work going forwards. The BAP objectives are displayed in Section 1.1 along with their completion status.

Much has been achieved so far through the implementation of Uisce Éireann's BAP, with one of our objectives complete and six actions within the other six objectives also complete. All other actions are on-going mainly due to their constant or evolving nature and the need for continuous development. Implementation of the BAP has resulted in many successful case studies which are illustrated throughout this progress report. These include the management of grasslands to increase biodiversity. This was observed at Iniscarra WTP which now supports a diversity of insects, birds, mammals and plants and Tallaght Towers Reservoir which was managed for great yellow bumblebee as part of the Great Yellow Bumblebee European Innovation Project. The establishment of a riparian woodland at Lough Guitane was progressed as a Nature-Based Solution to address water quality issues in the lake. Along with protecting and improving water quality, this project also promotes biodiversity enhancement and carbon dioxide sequestration. At Bohernabreena Reservoir the invasive species Japanese Knotweed was identified and a treatment programme to manage and control this species commenced in 2019. This programme has resulted in a 96.5% reduction in Japanese Knotweed presenting at the reservoir.

Challenges have arisen through the implementation of the actions set out in the BAP. Challenges identified include unforeseen delays, the feasibility of carrying out certain actions, availability of

appropriate equipment at operational sites, lack of national guidance relating to an approach and methodology to quantify biodiversity gain and the need for a catchment-scale approach with respect to the management of invasive species. For example, woodland planting on Uisce Éireann sites has experienced significant interruption in progress due to delays in the DAFM licencing process. Another challenge encountered relates to grassland management. The availability of appropriate equipment to manage these biodiversity measures can be a challenge for on-site staff, as grassland meadows only require cutting once or twice a year and the typical lawn mowers used on Uisce Éireann sites (e.g., ride-on lawn mowers) are not suitable for tall grass. However, many of the challenges encountered have been overcome through the identification of suitable solutions and modifications in order to continue to progress the BAP objectives.

Uisce Éireann is currently revising its Biodiversity Policy and will review the current BAP in 2024, with the aim of updating and publishing the new revised BAP in 2025. The incorporation of Biodiversity Net Gain (BNG) into Uisce Éireann projects and plans is a rapidly evolving area with certain Local Authorities requiring UÉ to demonstrate a biodiversity gain as part of planning submissions. There is currently no national approach to this and not all Local Authorities require demonstration of BNG, although this is likely to change in the future.

The new EU Nature Restoration Law requiring member states to restore and repair ecosystems was voted in by the European Parliament on 17th June 2024. This Law sets restoration targets and requires the production of National Restoration Plans by Member States to set measures to achieve such targets. Ireland's National Restoration Plan is eagerly awaited and the participatory stakeholder engagement process to support the development of the Plan has commenced. To this end, and in the absence of a National Restoration Plan, the revised BAP may require review following its publication next year with the introduction of minor revisions to reflect changes relating to restoration targets and associated measures.



Vartry Reservoir, Co. Wicklow

1.1 The Objectives

The seven objectives set out by Uisce Éireann's Biodiversity Action Plan are displayed below. Objective one has been completed and the six other objectives are on-going as they have actions which are currently being implemented. Uisce Éireann will continue to progress these objectives and their associated actions.

1. Issue all Uisce Éireann sites with a clear set of measures that will enhance and protect biodiversity



2. Raise awareness and provide educational supports on biodiversity to Uisce Éireann staff and its partners



3. Ensure 'no net loss' of biodiversity when carrying out activities, or delivering plans or projects



4. Implement actions arising from the All-Ireland Pollinator Plan across all Uisce Éireann sites, to support and increase our pollinator population



5. Promote the use of nature-based solutions for water protection and wastewater treatment



6. Manage invasive alien species at Uisce Éireann sites



7. Collaborate and work with key internal and external stakeholders, and the wider community, to protect and enhance biodiversity



2 Introduction

2.2 Background

Protection of the ecosystems in which we live and work is fundamental to Uisce Éireann's business. We manage infrastructure that is located within a range of habitats and our infrastructure often interacts directly with freshwater, estuarine, marine and terrestrial habitats through the abstraction of drinking water or the discharge of treated wastewater.

It has become very apparent in recent decades that many species are being lost at an unprecedented rate, at national, European and global scales. In 2019, with many countries failing to meet targets set to reduce biodiversity loss, the Irish Government declared a 'biodiversity emergency', prompting an increased focus across all sectors in developing actions to protect biodiversity.

In response, Uisce Éireann developed its Biodiversity Action Plan (BAP), which was launched in 2021. The BAP details the specific objectives and actions to be taken by Uisce Éireann to address this biodiversity emergency, but it also ensures that biodiversity is valued and is an integral factor in decision-making processes across the business.

In order to deliver a clear set of biodiversity objectives and actions, Uisce Éireann's BAP has been guided by the following overarching objectives:



Ensure no net loss of biodiversity as a result of Uisce Éireann activities, projects or plans. Follow the mitigation hierarchy by avoiding impacts in the first instance, before seeking to reduce, improve or compensate. Actively seek opportunities for biodiversity net gain (BNG) by identifying opportunities for biodiversity enhancement at both existing and proposed Uisce Éireann sites.



Develop a community of staff/personnel who are informed and can easily access the appropriate information in relation to biodiversity and the expertise they require to support them.



Collaborate with external stakeholders to deliver biodiversity benefits at local, regional and national scales. Work collaboratively with relevant public/private organisations and local communities to support healthy ecosystems that can deliver ecosystem services.

Uisce Éireann's purpose and vision is to deliver water services across Ireland in a manner that protects and enhances the environment where possible. Our purpose is to 'Rise to the challenge of delivering transformative water services that enable communities to thrive'. The vision is for 'a sustainable Ireland where water is respected and protected, for the planet and all the lives it supports'. THRIVE is the acronym for the delivery of UÉ's vision and purpose. UÉ's BAP and progress report align with the 'V' element of THRIVE to:

'VALUE AND ENHANCE OUR ENVIRONMENT BY PRIORITISING OUR WATER QUALITY AND RESILIENCE TO BECOME A SUSTAINABILITY EXEMPLAR'.

2.3 Purpose of this report

This report aims to describe how the BAP has been implemented since its launch in 2021 and to highlight the progress made against each of the seven key objectives.

Section 3 details the seven key objectives of the BAP and the actions designed to achieve those objectives. A summary of the measures implemented to achieve each action is provided under each objective, while Appendix A provides a more detailed record of progress made on the implementation of the BAP to date.

The EU's Corporate Sustainability Reporting Directive (CSRD) arose from the European Green Deal's climate change action objectives and became effective in January 2023. The CSRD requires all large companies to report on risks and opportunities arising from environmental and social issues, as well as the impacts of their activities on the environment and society. This progress report will support Uisce Éireann's CSRD obligations to report on the environmental risks faced by the company, and the impact Uisce Éireann may have on the environment as a result of our activities.



Dunhill ICW, Co. Waterford

3 Progress

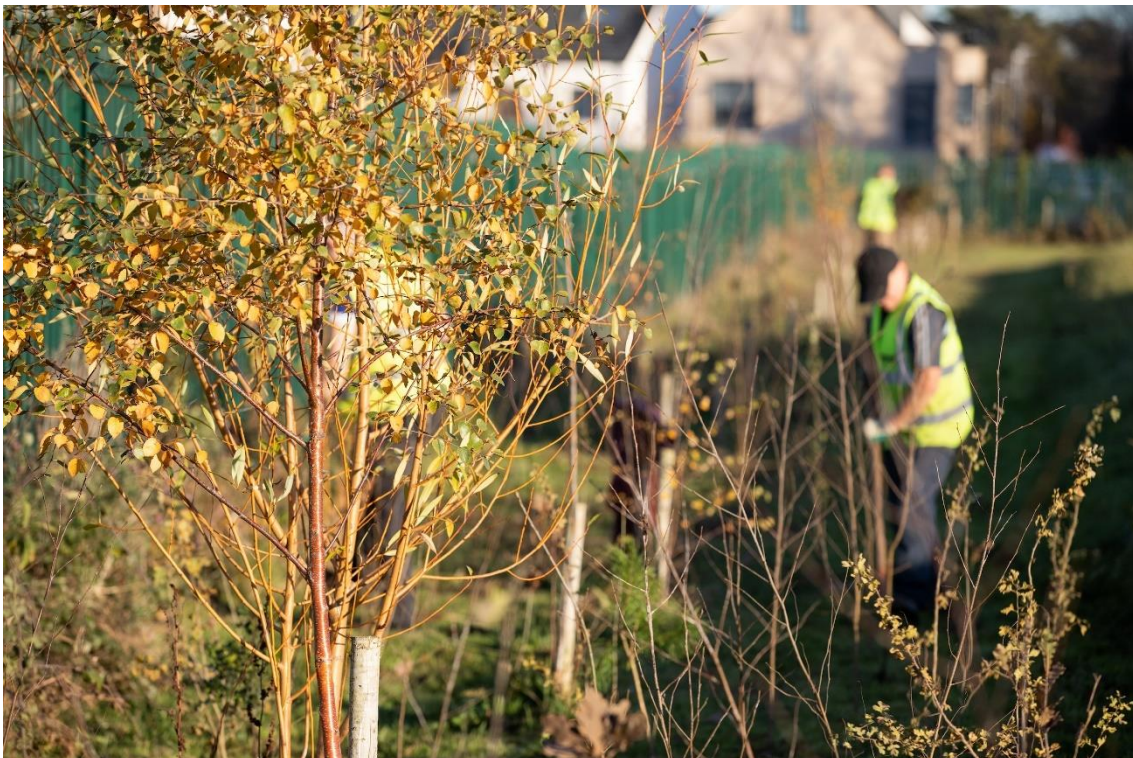
The BAP details the specific objectives and actions to be taken by Uisce Éireann to address the biodiversity emergency. The objectives and actions were developed in such a way that they could be implemented immediately. These objectives and actions align with Uisce Éireann's policy-level strategic objectives set out in the Water Services Strategic Plan (WSSP). Specifically, this BAP aligns with the WSSP objective to:

'PROTECT AND ENHANCE THE ENVIRONMENT'

As part of this objective Uisce Éireann aims to deliver our activities in a sustainable manner and support our obligations under the Birds and Habitats Directives and the Water Framework Directive. The objectives and actions of this BAP also align with the objectives set out under Uisce Éireann's Biodiversity Policy (AMS-AMT-POL-013), which aim to conserve, protect and enhance biodiversity and the natural environment while providing water and wastewater services.

As stated in the BAP, it was intended that it would be reviewed and updated every five years to ensure that it is fit for purpose and aligns with the relevant EU and national policies. However, given the new Nature Restoration Laws, impending National Restoration Plan, and the requirement of some Planning Authorities for UÉ to demonstrate Biodiversity Net Gain (BNG) as part of our planning applications, the BAP will be reviewed in 2024 and revised, if required, in 2025.

This progress report will feed into the overall review process of the BAP.



Tree Planting at Ballyboden Water Treatment Plant, Co. Dublin.

3.1 Objective 1: Issue all Uisce Éireann sites with a clear set of measures that will enhance and protect biodiversity

3.1.1 Overview

Our first objective's mission was to issue all Uisce Éireann (UÉ) sites with a clear set of measures that will enhance and protect biodiversity and to develop biodiversity management plans for our flagship sites. The following sections go into more detail on the individual actions and the progress made against these.

3.1.2 Progress

3.1.2.1 Action 1



Issue biodiversity-friendly management practices to all Uisce Éireann sites with details on how best to protect and manage areas of grassland, woodland and hedgerows within the Uisce Éireann sites

The BAP provides a list of biodiversity enhancement measures for the typical habitat types found within UÉ sites, copies of which were sent to the respective Service Level Agreement Leads to be distributed nationally. A biodiversity poster has also been developed and is being actively distributed to all sites and site managers. To date over 2,200 biodiversity posters have been distributed across Uisce Éireann sites.

A biodiversity baseline survey was conducted across all UÉ sites in 2022 to identify which UÉ sites were implementing biodiversity-friendly management practices. The survey concluded that approximately 56% (2,102 sites out of an overall 3,725 sites surveyed) of UÉ sites were implementing at least one of the biodiversity-friendly management practices, with the majority of sites implementing two or more measures.

In 2023, a target to implement biodiversity-friendly management practices at an additional 250 UÉ sites was implemented with the assistance of the UÉ Biodiversity Officer. This target has been exceeded and 270 additional UÉ sites have been added. This target of 250 new sites to be added each year to the biodiversity baseline is required in order to assist UÉ in its aim to enhance biodiversity across all operational sites. During the first 6 months of 2024 (i.e. Q1 and Q2) a total number of 245 sites have been surveyed and this work will continue throughout 2024. The cumulative total number of biodiversity measures being implemented across the 245 sites surveyed was 305 measures (Figure 1).

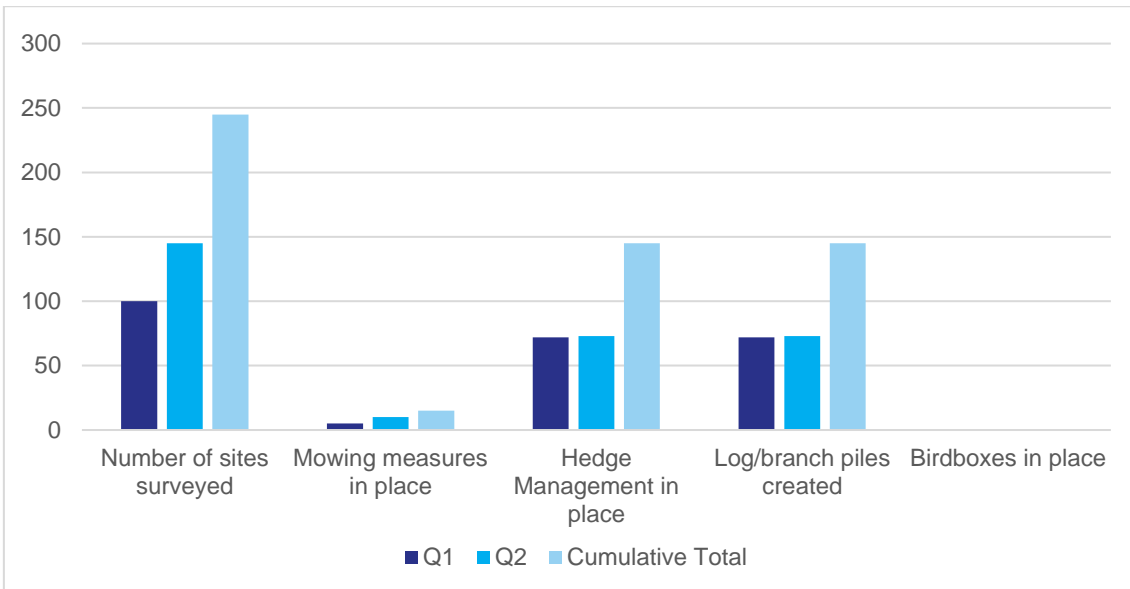


Figure 1 - Biodiversity Enhancement Measures Recorded across 245 Sites during Q1 & Q2 2024

3.1.2.2 Action 2



Develop site specific Biodiversity Management Plans for selected Uisce Éireann sites

Site specific Biodiversity Management Plans have been developed for our flagship sites such as Vartry WTP, Waterford City WwTP, Lixnaw ICW, Wherrow WTP, Luminagh WTP and Ballina WwTP. In addition to site specific Biodiversity Management Plans, on-site biodiversity training sessions are regularly rolled out across operational sites by UÉ's Biodiversity Officer. These sessions focus on informing site personnel about the different enhancement measures that can be implemented at a site and providing support and guidance on which measures are most suitable to particular sites, with active support and participation of the relevant personnel. The number of attendees at these sessions typically ranges from 2 to 20 personnel, and they are generally intended for site caretakers, although engineers and administrative staff often also attend. Future management and enhancement of sites is primarily communicated through in-person biodiversity training sessions with the additional support of site-specific guidance notes, which clearly outline the appropriate measures for a site and accounts for the equipment and machinery available.

Table 1 – The number of events and attendees at the on-site biodiversity training sessions each year.

Year	Number of Events	Number of Attendees
2022	9	72
2023	21	136
2024 (To Date)	16	44

3.1.3 Challenges

The implementation of the Uisce Éireann Transformation (UÉT) programme resulted in delays to the distribution of information relating to biodiversity enhancement measures to site operatives in the day-to-day management of UÉ sites to protect and enhance biodiversity. This is largely due to UÉT constraints and the deployment of local authority staff to different roles and/or locations.

UÉ manage over 3,700 sites nationwide and providing a plan for each site was not practical; instead we have focused on training and communication of the BAP so that caretakers and site managers are empowered to select the biodiversity enhancement measures that best suit their site and available resources.

3.1.4 Next Steps

The actions set for this objective have been achieved. Distributing the BAP and biodiversity poster nationally along with on-site biodiversity training sessions provided by UÉ's Biodiversity Officer and information regarding biodiversity-friendly management of grasslands, woodland and hedgerows has been provided to all UÉ sites. Biodiversity Management Plans have also been developed for all UÉ flagship sites. Therefore, this objective has been completed. The next steps for this objective align with objective 2 of the BAP, as UÉ continue to enhance and protect biodiversity on our sites by raising awareness and providing educational supports to all relevant internal stakeholders and external partners through our website, knowledge share sessions and biodiversity training sessions. Although, it is not possible to provide Biodiversity Management Plans for all UÉ sites, the Ecology and Biodiversity Team will continue to provide on-site biodiversity training sessions across all UÉ operational sites.

3.2 Objective 2: Raise awareness and provide educational supports on biodiversity to Uisce Éireann staff and its partners

3.2.1 Overview

Our second objective's mission was to raise awareness and provide educational supports on biodiversity to all UÉ staff and partners. This includes providing biodiversity updates on the UÉ biodiversity webpages, updating and delivering educational supports to internal stakeholders and working with our external partners, for example consultants, contractors and stakeholders, to inform staff and partners on how to enhance and protect biodiversity. The following sections go into more detail on the individual actions and the progress against this objective to date.

3.2.2 Progress

3.2.2.1 Action 1



To provide frequent updates on the Uisce Éireann biodiversity webpage to inform on the biodiversity actions taken by Uisce Éireann

The UÉ biodiversity webpage provides information on the BAP and details UÉ's commitment to protecting biodiversity across our sites. The webpage outlines UÉ's strategic aims and actions to implement objectives of the BAP and provides examples of where biodiversity enhancement measures have been taken, resulting in multiple benefits with respect to water, biodiversity and climate issues. As is evident from this progress report, a significant amount of work has been conducted since the launch of the BAP in 2021, which is not captured on UÉ's external facing website. Hence, an aim going forwards is to update the content of the biodiversity webpage to communicate and display the noteworthy efforts and work upon which UÉ is delivering in order to protect and enhance biodiversity.

3.2.2.2 Action 2



Our Ecology and Biodiversity Team to deliver regular updates and educational supports on biodiversity to all relevant internal stakeholders.

Cultivating and maintaining an awareness of the importance of biodiversity within UÉ is essential for active support of the BAP's objectives. To this end, the Ecology and Biodiversity Team have provided biodiversity training and support through activities such as the delivery of biodiversity training and information sessions, as well as knowledge share sessions and the publication of 55 biodiversity related Staying Connected articles and 7 articles for The Zone since 2020. These articles were prepared to raise awareness of biodiversity to staff via internal sharing platforms within UÉ. In 2023 alone, over 450 IDD personnel, consultants and contractors attended biodiversity training related to the integration of biodiversity into project development and delivery. In addition to biodiversity training and information sharing, the Ecology and Biodiversity Team have developed guidance and metrics to assist UÉ personnel and consultants deliver the maximum benefit for biodiversity when delivering on infrastructure projects. The Biodiversity Guidance for UÉ Developments (UÉ-AMT-GL-021), Biodiversity No Net Loss Calculators (UÉ-AMT-FM-004 & UÉ-AMT-FM-005) and Tree Protection Guidance (UÉ-AMT-GL-026) provide supports and guidance regarding the implementation of the strategic aims of the BAP.

3.2.2.3 Action 3



Working with our partners (e.g., local Tidy Towns) to deliver community and school education programmes

UÉ engage in a substantial number of community projects and initiatives, which aligns with Objective 7 of the BAP. More detail on these initiatives can be found in Section 3.7.

3.2.2.4 Action 4



Ecology and Biodiversity Team to continue to work with site-based personnel to deliver site specific solutions

On-site biodiversity training sessions are regularly rolled out across operational sites, where biodiversity enhancement measures are explained with an emphasis placed on each caretaker selecting enhancement measures suitable for their sites, with the support of UÉ's biodiversity officer.

3.2.3 Challenges

As teams within UÉ grow and develop, new personnel will require an introduction to the BAP, its aims and objectives, and UÉ's ethos regarding biodiversity. In addition, more detailed training and guidance will be required on biodiversity related topics such as biodiversity enhancement measures, no net loss and net gain of biodiversity, and the implementation of such practices and principles. Provision of training can be a resource intensive activity and hence, in 2024 there will be a focus on recording training sessions with the aim for those training sessions to be made available in UÉ's Learning platform.

3.2.4 Next Steps

The actions set for this objective are all on-going due to their nature and requirement for continuous development. The UÉ BAP webpage has been set up and clearly sets out the aim and objectives of the BAP. However, it has not been recently updated and so UÉ will continue to progress this action by updating the webpage in 2024 to display recent activities being conducted as part of the BAP to protect and enhance biodiversity on UÉ sites. The aim going forward will be to regularly update the contents of the webpage. The Ecology and Biodiversity Team will continue to deliver updates and educational supports to internal stakeholders by continuing to develop guidance documents and raising awareness through knowledge share sessions and Staying Connected articles, as well as delivering on-site biodiversity training to site-based personnel. The Ecology and Biodiversity Team is also currently engaging with UÉ's Learning and Development Team regarding the development of internal educational resources, such as short e-learning videos. We will also continue to work with our external partners where opportunities to do so arise.

3.3 Objective 3: Ensure ‘no net loss’ of biodiversity when carrying out activities, or delivering plans or projects

3.3.1 Overview

Our third objective’s mission was to ensure UÉ is achieving no net loss (NNL) when delivering projects, plans and activities, while actively seeking opportunities for biodiversity net gain (BNG), and to work with key external stakeholders on projects and activities where there is potential for environmental impact.

3.3.2 Progress

3.3.2.1 Action 1



All Uisce Éireann plans, projects and activities to comply with the Habitats and Birds Directives

The Birds and Habitats Directive aim to ensure that rare and threatened species and habitats are not endangered and are brought to favourable conservation status throughout the EU. To ensure compliance with Article 6(3) of the Habitats Directive, UÉ ecologists on behalf of UÉ as the competent authority for its own UÉ exempt works, undertake Screenings for Appropriate Assessment (AA) and upload the signed AA Determination letters to the UÉ public website, meeting Irish legal requirements. A tool to manage and track the vast scope of projects and activities being undertaken by UÉ has been successfully established and includes capturing Biodiversity NNL data. Compliance with the Birds and Habitats Directive is an iterative process and will be continued across all UÉ functions for future and ongoing projects and works.

3.3.2.2 Action 2



All Uisce Éireann plans, projects and activities to comply with the Wildlife Act

In a similar manner, the Irish Wildlife Acts focuses on the protection and management of flora and fauna in Ireland. UÉ have undertaken various approaches to ensure the ongoing protection of protected species, habitats and flora during infrastructure project delivery and whilst undertaking activities. Compliance with the Irish Acts requires continuous review and will be ongoing for future and ongoing UÉ projects and works.

3.3.2.3 Action 3



New infrastructure to be sited, designed and constructed in line with Uisce Éireann’s Civil Specifications and Guidance, and the Landscape Treatment Guidelines

The UÉ Ecology and Biodiversity Team also provide direct input to the project life-cycle with input at project meetings, attendance at workshops, and review of reports and designs as needed whilst also responding to challenges raised during project delivery. UÉ Ecology and Biodiversity Team

have fed into the Invest to Outcome (I2O) project lifecycle and Project Management handbook setting clear expectations of what is required at different stages of the project lifecycle.

Measures implemented include the production of UÉ Biodiversity Guidance document, Landscape Treatment Guidelines, Tree Guidance and Invasive Species Guidance all of which are controlled documents and are available on the internal knowledge base site and also available on the external specs and standards website. These documents set clear expectations for both UÉ personnel and consultants working on UÉs behalf. In a similar manner the UÉ Planning Guidance Suite contains an Ecological Memo setting clear standards to be applied to all infrastructure projects. As part of establishing a culture of attaining NNL of Biodiversity, the biodiversity guidance document sets out the principles to be followed when incorporating NNL into a project, with a metric for recording outputs at the final design stage. Although this action is complete, review and updates of UÉ’s suite of ecological guidance will be undertaken as required.

UÉ Ecologists contribute to a utilities industry working group aimed at gaining knowledge and further development of the implementation of NNL/BNG in Ireland.



Grassland Meadow and solar panels at Boherbue WWTP, Co. Cork

3.3.2.4 Action 4



Uisce Éireann to work with key stakeholders such as NPWS, IFI and the EPA, and local communities in undertaking projects and activities that could impact on the environment

Building on the provision of guidance, the UÉ Ecology and Biodiversity Team have provided knowledge share sessions highlighting lessons learned and show casing innovation to unique challenges raised through infrastructure project delivery. Information sharing sessions have also been presented directly by external stakeholders including representatives from the National Biodiversity Data Centre with over 80 personnel in attendance. UÉ is also addressing larger scale challenges with Conservation Strategies being created to solve conservation issues such as the fish pass programme to remove barriers to fish migration in watercourses, which is being piloted in consultation with Inland Fisheries Ireland.

3.3.2.5 Action 5



Uisce Éireann to work with the EPA with regards to achieving the objectives of the WFD

Under the River Basin Management Plan, urban wastewater agglomerations identified as significant or sole pressures on 'At Risk' waterbodies are being addressed and remedied through UÉ's Capital Investment Programme. The delivery of the programme will include upgrading existing assets and infrastructure, increasing the quality of wastewater discharge and relieving urban wastewater pressures locally on waterbodies and thus, overall enabling recovery and improvement in Ireland's aquatic environment.

During the strategic assessment of wastewater projects the required treatment process is scoped to ensure that the quality of their respective discharges will not impede the receiving waterbody from attaining its WFD objective. In turn, this ensures that UÉ are proactively assisting waterbodies in maintaining and/ or reaching Good or High status, which will have a positive impact on the habitats and species that those waterbodies support. Similarly, UÉ are working closely with the Environmental Protection Agency regarding the licensing of existing abstractions for the provision of safe drinking water and alignment with the objectives of the WFD.

3.3.3 Challenges

No national guidance exists on No Net Loss or Biodiversity Net Gain in Ireland. The main method of implementing this requirement is through County Development Plans, stipulating varying strengths of wording with respect to the achievement of No Net Loss, Net Gain and Enhancing Biodiversity. However, in the absence of national guidance on how to demonstrate the delivery of no net loss or net gain of biodiversity, various qualitative and quantitative approaches are being developed and utilised both in the public and private sectors, which can lead to confusion on approach.

Collating biodiversity data is the first step to understanding what is being delivered by UÉ projects to help ascertain whether projects are obtaining a loss or gain of biodiversity. Recording this information is key, however a dedicated IT system for the recording and querying of such data is currently not available. UÉ ecologists are working with their colleagues in the Infrastructure Delivery Directorate (IDD) to develop a dedicated database. IDD has expanded significantly in 2023 and detailed training with IDD personnel in 2024 will assist in ensuring that new personnel embrace the BAP, particularly regarding Net Gain, into their projects.

3.3.4 Next Steps

The first 3 actions of this objective have been achieved and due to the continuous and evolving nature of Action 4 and Action 5, these actions will continue to be implemented by the Ecology and Biodiversity Team across the business and with our key internal and external stakeholders.

Significant progress has been made in the last number of years regarding the buy-in from the business in terms of achieving NNL, and where possible a biodiversity gain, on infrastructure projects and programmes. UÉ's Biodiversity Policy is currently being revised and will incorporate a strategic objective of achieving BNG. Therefore, collaboration with the IDD Sustainability team will continue to establish a process to capture the delivery of BNG to support verification, reporting, monitoring, planning compliance and future review. Linked to the challenge of collating data, the Biodiversity and Ecology Team are currently exploring opportunities with Asset Intelligence in order to capture ecological data in a Geographical Information System. Initially the team are seeking to explore this using invasive species data collected from the management of invasive species at UÉ sites (Objective 6) and in turn, expanded on with further suites of data.

3.4 Objective 4: Implement actions arising from the All-Ireland Pollinator Plan across all Uisce Éireann sites, to support and increase our pollinator population

3.4.1 Overview

Our fourth objective's mission was to implement actions arising from the All-Ireland Pollinator Plan. This involved setting clear measures to support and increase our pollinator population on UÉ sites to promote biodiversity. We have made significant inroads into achieving this objective to date, with three out of four actions complete. The following sections go into detail on the individual actions and the progress made against this objective.

3.4.2 Progress

3.4.2.1 Action 1



Uisce Éireann will implement and report on the All-Ireland Pollinator actions

UÉ is a partner in the All-Ireland Pollinator Plan and implements the actions of the Plan through the management of our sites, as outlined in UÉ's BAP. All UÉ biodiversity enhancement measures are pollinator friendly and are in line with the All-Ireland Pollinator Plan. Additionally, signage has been erected at sites that informs site visitors and the public about biodiversity enhancement measures being implemented at the sites. While we transition from old site management practices to sites where biodiversity is being actively enhanced and protected, there can be a perception that certain enhancement measures appear untidy and perhaps even lacking in management. The signs assist in generating awareness to the intention behind the new biodiversity management measures, which brings an appreciation to the efforts being applied across our sites.

3.4.2.2 Action 2



Uisce Éireann will implement reduced mowing at Uisce Éireann sites in line with the All-Ireland Pollinator Plan

Reduced mowing measures are being implemented across a wide variety of UÉ sites, including reservoir sites, water treatment plants and wastewater treatment plants. Excellent examples of the application of reduced mowing measures can be seen at flagship sites such as Iniscarra WTP, Waterford WwTP and Limerick WwTP. Reduced mowing measures allow grasslands to develop at UÉ sites. With the on-going appropriate grassland management, the grasslands increase in diversity over time and develop into areas of enhanced biodiversity value. These bio-diverse grasslands provide a supporting habitat for a wide range of insects and pollinators and also greatly increase the biodiversity of the local area.

3.4.2.3 Action 3



Uisce Éireann will incorporate the use of native and/or pollinator-friendly planting at all sites

UÉ promote the planting of native tree species and use of native seed of local provenance across all sites and UÉ infrastructure delivery projects. Under Objective 7, a great example of the usage of native grassland seed collected from Iniscarra WTP, Co. Cork, is detailed and how this seed is being used not only on other UÉ sites, but also as part of community initiatives and a project to increase the resilience of agricultural grassland swards.

3.4.2.4 Action 4



Uisce Éireann will establish monitoring programmes to demonstrate the success of the All-Ireland Pollinator Plan actions

As part of the ongoing biodiversity enhancement and protection measures, surveys of all UÉ sites have been conducted. Combining a mix of managers surveys and ecology surveys, a total of 2,102 sites recorded the implementation of at least one biodiversity enhancement measure, out of 3,725 overall sites. This equates to 56% of sites having an ecologically important feature.

3.4.3 Challenges

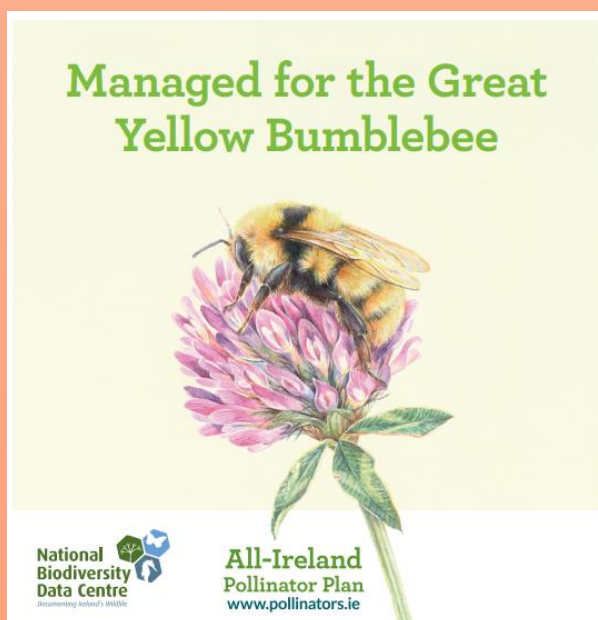
A challenge encountered regarding the implementation of biodiversity enhancement measures, in particular grassland management, is the availability of appropriate equipment to on-site staff. This is notably with respect to sites that are striving to develop grasslands that only require to be cut once or twice in a year. Equipment, such as ride-on lawn mowers, are not suitable to cut tall grass, and hence the availability of appropriate equipment is a barrier to the development of established grassland meadows at certain UÉ sites.

3.4.4 Next Steps

Implementing the actions of this objective is progressing well, with most actions complete at this stage. As a partner on the All-Ireland Pollinator Plan, UÉ is focused on implementing the actions of the Plan through appropriate site management. The implementation of biodiversity enhancement measures on UÉ sites aligns with the implementation of the All-Ireland Pollinator Plan actions as these measures are all pollinator-friendly demonstrating the completion of this action. The implementation of reduced mowing across all UÉ sites has also been complete as this action has been introduced to many sites resulting in the creation of habitats of enhanced biodiversity value, promoting pollinator diversity at our sites. The use of native and/or pollinator-friendly planting at all UÉ sites is on-going as we continue to incorporate the use of native species when planting across all sites. The establishment of monitoring programmes to demonstrate the success of the All-Ireland Pollinator Plan has also been complete, with surveys having been conducted on all UÉ sites. Although many of the actions associated with this objective are now complete, UÉ will continue to promote the implementation of biodiversity enhancement measures and other activities which support the actions of the All-Ireland Pollinator Plan across all UÉ sites.

Great Yellow Bumblebee, Belmullet, Co. Mayo

A great example of the benefits of managing our grasslands in this way is demonstrated at our site in Belmullet, Mayo where site management is supporting the Great Yellow Bumblebee in tandem with the Great Yellow Bumblebee European Innovation Project and Belmullet Tidy Towns, Co. Mayo. The Great Yellow Bumblebee was once found across Ireland but is now confined to a small number of locations along the western coast and is Endangered within Ireland. The aim of this project was to improve the abundance of native flowers on lands of the Mullet peninsula and Erris coastal mainland to provide vital food and nesting places for bees. At UÉ's Tallaght Towers Reservoir, Belmullet, the existing grassland management measures being implemented at the site contributed to the aim of the project and efforts being made locally within the community to increase the diversity of grasslands. This site contains a large meadow area where grassland biodiversity enhancement measures are implemented; the meadow is cut in Autumn and the cuttings are composted in a disused corner of the site. Even the waste cuttings are enhancing biodiversity at this site, as the composting process releases nitrogen which in turn is supporting a nettle area, which has developed into another valuable habitat on site.



Sign stating an area is managed for the Great Yellow Bumblebee

3.5 Objective 5: Promote the use of nature-based solutions for water protection and wastewater treatment

3.5.1 Overview

Our fifth objective's mission was to promote the use of nature-based solutions by advocating the use of nature based solutions in wastewater treatment and implementing appropriate tree-planting schemes, while collaborating with external stakeholders to ensure source water protection. We have made progress into achieving this objective and the following sections provide detail on the individual actions and the progress made against these to date.

3.5.2 Progress

3.5.2.1 Action 1



Uisce Éireann will advocate the use of Nature Based Solutions as wastewater treatment solutions

Uisce Éireann promotes the use of nature-based solutions in the treatment of wastewater. Nature based solutions have multiple benefits not only for the natural treatment of wastewater and sustainability, but also for biodiversity. Nature based solutions create habitats that can support insects and birds and can also increase connectivity of existing habitats within the wider landscape. In terms of the safe discharge of wastewater to the receiving environment, due to the operating characteristics of nature-based solutions, in particular integrated constructed wetlands (ICWs), there is minimal effluent discharge during summer months when receiving watercourses can be vulnerable during periods of low flow and experiencing elevated temperatures. Nature based solutions are always considered at the strategic assessment stage of a project and can be used for the full treatment of wastewater, e.g., ICWs, or as additional solutions for existing wastewater treatment plants, such as sludge drying reed beds and wetlands for stormwater attenuation. An internal working group has been established to assist in promoting nature based solutions as options. There are a number of ICWs currently being used for the full treatment of wastewater, such as those in Dunhill, Co. Waterford and Clonaslee, Co. Laois. At the time of writing, UÉ are progressing 7 feasibility study reports for ICWs on small sites as part of the National Recover and Resilience Plan.

3.5.2.2 Action 2



Uisce Éireann will implement appropriate tree-planting schemes

Nature-based solutions also include the use of native trees to re-create and bolster habitats, and buffer water sources from contaminants. UÉ is participating in funded schemes to implement the actions under this objective. Woodland planting that has been undertaken is dealt with in more detail in Section 4 and native woodland creation at Lough Guitane, Co. Kerry is discussed below.

3.5.2.3 Action 3



Uisce Éireann will collaborate with external stakeholders on wider catchment management-based initiatives that result in source water protection

In terms of collaboration on wider catchment management-based initiatives, UÉ is a member of the National Drinking Water Pesticides Action Group and chair of a number of Catchment Focus Groups such as Newport, Belturbet, River Deel-Feale and Clonroche. These focus groups bring together stakeholders within the catchment to improve and protect drinking water sources from pesticides through a collaborative catchment-based approach. UÉ's Erne-Larah Source Protection Project in the Upper Erne Catchment in Co. Cavan is examining the effectiveness of on-the-ground measures to reduce the risk of pesticides entering drinking water sources. UÉ is also currently in the process of scoping a number of potential catchment initiatives, focused on water quality improvement, climate change resilience, fish passage and biodiversity. UÉ is also partnering with Northern Ireland and others for EU funding under the Peace Plus Programme for a project called Protecting Shared Waters which includes catchment-based measures to improve our shared waters.



Sludge Drying Reedbeds at Boherbue WWTW, Co. Cork

3.5.3 Challenges

Nature-based solutions may not always be feasible over traditional measures when addressing the need of wastewater treatment. However, if the value of the multiple benefits were valued and accounted for through the multi-criteria analysis and optioneering phase of projects, nature-based solutions could be the best long-term value option. This would support the justification of nature-based solutions over traditional treatment processes and assist in addressing potential challenges in the consenting process and the acquisition of land required to facilitate the implementation of nature-based solutions.

The licensing of nature-based solutions with the EPA, e.g., ICWs, also presents a challenge in terms of the commissioning and operation of such assets. Research and monitoring is required to bridge the knowledge gap in the performance of nature based solutions and provide confidence on their operational performance to the consenting authorities.

3.5.4 Next Steps

The actions set out under this objective are all on-going, as they are currently being implemented and further developed. Advocating the use of nature-based solutions for wastewater treatment is progressing well as natural wastewater treatment systems are always considered as potential options at the strategic assessment stage of projects. ICWs are currently being used at a number of UÉ sites for the full treatment of wastewater and sludge-drying reed beds are being included as additional systems in many wastewater treatment plants. These nature-based solutions require minimal maintenance and have the added benefit of enhancing biodiversity at UÉ sites. UÉ will continue to progress this objective by advocating for nature-based solutions from the early stages of project development, where feasible.

The implementation of tree-planting schemes as a nature-based solution at UÉ sites is also on-going. A nature-based solution was successfully implemented at Lough Guitane, where the establishment of a native riparian woodland was used to address water quality issues at the lake (see case study below). Where the opportunity arises, UÉ will continue to progress the use of tree-planting schemes to address issues when appropriate. At the end of Q1 2024 UÉ has planted 22,275 trees across sites at Ballymore Eustace, Co. Kildare, Adamstown, Co. Waterford, Blackrock, Co. Louth and Foxford, Co. Mayo. UÉ collaborates with external stakeholders through many initiatives and focus groups and will continue to implement this action to ensure source water protection.

Lough Guitane Native Woodland, Co. Kerry

Over 62,000 people are supplied with clean drinking water from the Kerry Central Regional Water Supply Scheme. This scheme takes its water supply from Lough Guitane which is located a few miles from Killarney Town. Uisce Éireann owns a significant area of land surrounding the lake, however, its management was identified as an issue for the water quality in the lake, with knock on effects for the water treatment plant owing to silt run off and livestock accessing the lake.

These issues were identified by Kerry County Council and Uisce Éireann, and a “nature-based solution” (NBS) was sought to address these existing issues. The NBS to improve and protect the water quality within the lake was to establish a native woodland around the lake edge. A forestry licence from the Department of Agriculture, Food and Marine (DAFM) was approved for phase 1 of this NBS project in December 2020 and planting of the trees occurred in December 2021. Phase 2 of this NBS project began in 2022.

The Woodlands for Water DAFM scheme was identified to address the existing water quality issues along with enhancing the biodiversity of the local area. This project has seen a new, unique native woodland being established in an area that was previously used for intensive agriculture. The type of woodland that has been established is called riparian woodland meaning that it will be located along a riparian zone, in this case along the edge of Lough Guitane. Riparian woodlands have become rare features in the Irish landscape as they were often removed to make way for agriculture in the past, leaving our watercourses susceptible to pollution from adjacent lands. Riparian woodlands are a fantastic example of NBS that utilise a natural feature, in this case native woodland, to reduce the pressures on the water treatment plant and the natural environment.

The native woodlands at Lough Guitane support and enhance the local biodiversity, protect the water quality in lough Guitane, but also sequester carbon dioxide from the atmosphere.

Greenbelt Forestry Limited were selected at the early stages of this project and they have carried out all work at the site, including fencing the site to exclude grazing animals such as deer, cattle, sheep and hares. Only native tree species have been selected including Alder, Birch, Oak, Holly, Scots Pine, Willow and Rowan, in total 18,500 trees have been planted in phase 1, with an additional 7,000 trees to be planted in phase 2.



Lough Guitane, Co. Kerry

3.6 Objective 6: Manage invasive alien species at Uisce Éireann sites

3.6.1 Overview

Our sixth objective's mission was to manage invasive alien species at Uisce Éireann sites. The actions are set out to support the management of invasive species and protect biodiversity on Uisce Éireann sites. We have made inroads into achieving this objective and progress has been made on all three actions to date. The following sections go into detail on the individual actions and the progress against this objective.

3.6.2 Progress

3.6.2.1 Action 1



Uisce Éireann will provide training and guidance to relevant personnel on the identification and eradication of invasive species

Biodiversity training and information sessions have been regularly disseminated and shared throughout the different Directorates within Uisce Éireann. These sessions include information regarding invasive species and their control and management. Sessions typically take the form of on-site biodiversity information sessions, knowledge share sessions and training sessions to Uisce Éireann staff, consultants and contractors.

UÉ ecologists engage and collaborate with external stakeholders and participate in working groups regarding invasive species, for example the Quagga Mussel working group and the development of the National Invasive Alien Species Plan. Contribution and involvement in such working groups not only enables UÉ ecologists to stay abreast of developments regarding invasive species and share lessons learned with stakeholders, but also to apply new knowledge to UÉ activities and projects.

3.6.2.2 Action 2



Uisce Éireann will develop a database for recording and monitoring infestations of invasive species at our sites

The development of a database for recording and monitoring infestations of invasive species across all UÉ sites has commenced. This action will be progressed in 2024, subject to appropriate resources.

3.6.2.3 Action 3



Uisce Éireann will continue the roll-out of biosecurity protocols and guidance

Uisce Éireann guidance has been produced regarding the management of invasive species, in particular in relation to Giant hogweed (UÉ-AMT-GL-001), Himalyan balsam (UÉ-AMT-GL-002)

and Japanese knotweed (UÉ-AMT-SOP-009). Guidance has also been developed with respect to biosecurity for aquatic sampling activities (UÉ-AMT-GL-007).

Currently, invasive species are being actively managed and treated by a specialist contractor at nine sensitive Uisce Éireann sites. These sites are considered to be sensitive due to their location either within, or adjacent to, sensitive ecological receptors, for example European designated sites. The nine UÉ sites are spread across eight Counties; from Co. Louth and Co. Monaghan in the east and midlands to Co. Waterford in the south. Site specific Invasive Species Management Plans (ISMPs) have been developed, which detail the methods of treatment and management of the invasive species on each site. The invasive species that are being treated at these sites include Japanese knotweed, Himalayan balsam, Giant hogweed, Rhododendron and Skunk Cabbage. Below, a case study on the management and treatment of invasive species at Bohernabreena Reservoir details the treatment methods employed to address Japanese knotweed at the site.

In addition to the on-going long-term treatment of invasive species at nine UÉ sensitive sites, identification, control and management of invasive species is considered throughout the strategic assessment and optioneering stages of infrastructure project development. These principles are carried forward and applied throughout the design, implementation and commissioning phases of UÉ infrastructure projects. Invasive species surveys are conducted to inform the project design phase. Depending on the outcome of project-specific invasive species surveys, control measures and Invasive Species Management Plans are developed for each infrastructure project as required. Biosecurity protocols and the 'Check – Clean – Dry' principle are implemented across all UÉ projects.

3.6.3 Challenges

A large portion of UÉ's assets are situated adjacent to watercourses. A challenge that UÉ faces in terms of the management of invasive species at such sites is the lack of a joined-up approach in the control of invasive species at a catchment scale. Invasive species are very easily spread along riparian corridors, and thus, a catchment lead management strategy with collaboration of all relevant stakeholders and landowners is required to tackle invasive species in a comprehensive manner.

3.6.4 Next Steps

Uisce Éireann will continue to provide educational and information resources regarding invasive species and implement biosecurity protocols across its operational sites and projects. The management and control of invasive species at nine UÉ sites will continue and this body of work has been procured for 2024. The development of a database for recording invasive species across UÉ sites commenced in Q1 2024 and will continue to be progressed and built upon.

Bohernabreena Reservoir, Co. Dublin

Bohernabreena Reservoir is located in Co. Dublin, to the south-west of Firhouse, within Glenasmole Valley. In 2018 a survey of invasive plant species at the reservoir recorded Japanese knotweed, Rhododendron and Skunk cabbage. During the 2018 survey 82 subsites of Japanese knotweed were identified. A treatment programme to manage and control Japanese knotweed at the reservoir commenced in late 2019, although limited treatment was carried out in 2019. Since then, comprehensive bi-annual treatments have been carried out and are on-going. Substantial results have been seen as a result of the consistent and on-going treatment programme.

Results from the end of 2022, i.e., after 6 full treatments, are detailed below:

- 96.5% reduction in Japanese Knotweed presenting across the 82 identified sites;
- 96.5% reduction in the total number of plants/stems treated – from 52,763 under Treatment 1 to 1,767 in Treatment 6;
- 99% reduction in the number of plant stems injected - from 43,569 under Treatment 1 to 7 in Treatment 6;
- 87.5% reduction in the number of plants spot sprayed - from 13,958 under Treatment 2 to 1,760 in Treatment 6 (- 87.5%);
- 58% of sites showing no regrowth - 8 no. (10%) in Treatment 2 to 48 no. (58%) in Treatment 6.

The above results show a considerable reduction in both the distribution and condition of remaining Japanese knotweed stands within Bohernabreena Reservoir. The images below show the reduction in Japanese Knotweed along the riverbank between (a) 2019 and (b) 2022. The treatment programme will continue and the management of invasive species will also encompass Rhododendron and Skunk cabbage from this year onwards. The treatment and management of invasive species at the reservoir will have very positive impacts on biodiversity, eliminate the risk that such species pose to the integrity of the dam structures, and will benefit operational activities and capital investment works in the future.



(a) Mature stands of Japanese Knotweed in 2019 and (b) re-establishment of natural vegetation in 2022 following treatment at Bohernabreena Reservoir, Co. Dublin

3.7 Objective 7: Collaborate and work with key internal and external stakeholders, and the wider community, to protect and enhance biodiversity

3.7.1 Overview

Our seventh objective's mission was to collaborate and work with key internal and external stakeholders. The actions set out under this objective aim to protect and enhance biodiversity on Uisce Éireann sites. We have made inroads into achieving this to date, as the actions are progressing well. The following sections go into more detail on the individual actions and the progress made against this objective.

3.7.2 Progress

3.7.2.1 Action 1



Uisce Éireann will collaborate with external stakeholders including IFI, NPWS, LAWPRO, EPA, DAFM, and local communities

The implementation of the BAP involves collaboration with a wide variety of internal and external stakeholders and communities.

The development and implementation of biodiversity enhancement measures across all sites involved engagement with all section of UÉ. In practice across UÉ's operational sites, this entailed a novel approach as the previous management of many sites was not always biodiversity friendly and sometimes the habits of a lifetime can be hard to change. With this in mind we developed training techniques and approaches that were easily-accessible and we endeavour to empower colleagues to make their own informed decisions on biodiversity. Once we develop our colleague's skills in biodiversity management, we provide back up support to ensure that these sites continue to support biodiversity. As of year end 2022, 3725 UÉ sites have been monitored with 2102 (56%) of these sites having at least one biodiversity enhancement measures.


UÉ's Ecology and Biodiversity Team work closely with the Solar Team on site selection for the establishment of woodlands and installation of solar equipment. As renewable energy is rolled out across UÉ sites, we work closely with the Solar Team to ensure that there is no overlap between woodland and solar sites. Where solar is being rolled out at sites, we work with the development team to ensure that biodiversity measures are also rolled out, such as appropriate meadow management.

The South West biodiversity forum has been a great approach to developing links with colleagues that may not necessarily be the target audience for biodiversity training. This initiative empowers everyone involved to do their bit for biodiversity including tree planting, biodiversity education events with Local Authority staff and local schools while also adopting novel methods to increase knowledge and interest in biodiversity, examples include biodiversity photo competitions and quizzes.



Uisce Éireann stand at the Young Environmentalist Awards May 2024

3.7.2.2 Action 2

 Uisce Éireann will work with local authorities, Tidy Towns and other local community groups where possible, and support local biodiversity projects and initiatives

The appointment of Biodiversity Officers within Local Authorities provides a useful link between UÉ and the LAs. In seeking to initiate new projects we have identified Swift conservation as a common approach to biodiversity conservation and with Swift Conservation Ireland we have developed a number of projects in Kerry, Offaly, Clare and Sligo. This work entails the provision of nesting boxes on UÉ buildings in areas where Swifts have been declining in numbers. Modern construction methods exclude Swifts from their nesting sites and these specifically designed Swift boxes provide suitable nesting sites so that Swift numbers can recover again.

UÉ's Biodiversity Officer has worked closely with Sligo LA and Atlantic Technological University Sligo (ATU) to develop Farranacardy Reservoir as a showcase for biodiversity management of water infrastructure. A biodiversity enhancement plan has been developed for this site and work has begun on managing the grassland areas as a meadow. It is envisioned that environmental students will study the flora and fauna of the site and identify how the site develops with the new biodiversity enhancement measures being implemented.

3.7.3 Challenges

In general, the engagement and collaboration with both internal and external stakeholders and communities regarding the protection and enhancement of biodiversity has been very positive. An understanding of the scope of responsibility and remit that UÉ has, and thus, the extent of UÉ's participation in certain biodiversity initiatives can be a challenge, particularly when engaging with external stakeholders, third parties and the wider community. Consequently, clear communication and messaging must be considered in order to manage expectations of external stakeholders in order to build and maintain good working relationships.

3.7.4 Next Steps

The actions set under this objective are on-going as opportunities for stakeholder collaboration and engagement continually arise. UÉ will continue to progress these actions by collaborating with external stakeholders and working with local authorities and community groups to enhance biodiversity where appropriate.

Inniscarra WTP, Co. Cork

Ongoing management of the meadows surrounding the Inniscarra WTP has resulted in a wonderfully diverse grassland. Meadows were once widespread across the entire country but changes in agriculture has seen a large reduction in this type of habitat. These meadows are alive with a multitude of insect, bird, mammal, and plant species.

The meadows at Inniscarra WTP are cut and baled once per year and in recent years Cork County Council and Uisce Éireann have teamed up with Eco Seeds to harvest the seed from the meadows at this site. The seed is then being used on other ecological projects and for landscaping at other UÉ sites. This year the seed was used at a farm in North Cork, where experiments are being undertaken regarding the success of different seed transfer and sowing methods of native meadow seed onto agricultural fields. The seeding of agricultural fields, which are predominantly a monoculture of perennial rye grass, with seeds from natural meadows such as that at Inniscarra WTP will increase the biodiversity of the sward. Not only will this improve the resilience of the sward to changing climatic conditions, e.g., drought conditions during summer months, but it will also greatly improve the local biodiversity of the area and provide a greater range of food sources and refuges for insects, pollinators and birds.



Meadows at Inniscarra WTP, Co. Cork

4 Native Woodland Plantations

The landholding of Uisce Éireann is being examined to determine where gains can be made to further enhance biodiversity. Native woodlands are woodlands that are made up of trees that we consider native to the island of Ireland, i.e., tree species that have been here since the last ice age and were not introduced by humans in recent times. Native woodlands are important for several reasons – they are adapted to our climate, soils and growing conditions and a large proportion of our birds, insects and mammals have evolved to rely on them for food and shelter. A native birch tree can support over 3,000 different species of insect and these insects, in turn, support birds and mammals. At present under 2% of our land in Ireland is made up of native woodland which is a shame, as in the past this habitat would have been one of the most common habitats across Ireland.

Uisce Éireann is in a unique position where we can establish native woodlands across many of our sites and in doing so contribute to biodiversity, climate action and in many examples, source protection.

We work with the Department of Agriculture, Food and the Marine (DAFM) and Greenbelt Forestry to establish native woodlands in tandem with our colleagues in Uisce Éireann. The majority of our woodlands are established using the DAFM scheme – Woodland Creation On Public Lands. Initially the selected land is screened, in collaboration with other UÉ departments, so that everyone is in agreement that woodland is the best land use option on the selected lands. UÉ then apply for a licence from the DAFM and once approved, DAFM fund the establishment and protection of the woodland. The sourcing of trees, planting and tree protection is carried out by Greenbelt Forestry.

4.1 Native woodland establishment steps

Native woodlands were identified as a suitable biodiversity enhancement measure on UÉ lands at an early stage of the BAP implementation as they are compatible with our diverse landholdings around the country. Our sites were not managed previously for biodiversity, with many having been maintained by regular lawnmowing. The steps towards native woodland establishment are numerous, resource intensive and require collaboration with all stakeholders involved in the process.

At the outset of the process, a desk-based review of UÉ property is undertaken to identify sites greater than 0.2 hectares in size. A site visit by UÉ's Biodiversity Officer is then carried out in order to determine if the site is suitable for woodland establishment. Sites that contain areas of wetland, or that have existing trees and/or scrub present are ruled out at this stage, as wetland and scrub are valuable biodiversity habitats in themselves.

Upon selection of sites that are suitable for woodland planting from an ecology and biodiversity perspective, UÉ's Biodiversity Officer then collaborates with UÉ's Solar Team and other relevant personnel such as site managers and engineers to ensure that the proposed woodland area is not in conflict with other future intended land uses, for example solar installations or infrastructure developments and upgrades. Liaison with site managers and engineers continues throughout the entire process to maintain open communication channels and keep them informed with respect to progress of the process.

Sites that have progressed through the above screening phases are then inspected by a Forrester, again to ensure the suitability of a site for tree planting and woodland creation. A licence from DAFM must be obtained for the planting of trees, and hence, once a site is deemed suitable, the licence application process to DAFM begins. The submission for a licence to DAFM, and the granting of that licence for tree planting licence is essential as it ensures that the tree planting costs will be secured by way of a grant from DAFM. As detailed above, the majority of UÉ woodlands are established under the DAFM forestry scheme Woodland Creation On Public Lands

and a small number of woodland projects have been funded through the DAFM Woodlands For Water scheme. As part of the application process, site inspections are conducted by a DAFM forestry inspector and ecologists. Again, this is to confirm the suitability of the site for native woodland creation and ensure that the selection of the site and change in land use is robust from an ecological perspective.

Once DAFM approve and grant a forestry licence, then appropriate site preparation is necessary to maximise tree survival rates. Site preparation must take place before planting occurs and this work can vary from site to site, but generally includes fencing, marking of exclusion zones (such as underground pipes), and the mulching of heavy vegetation such as rushes and gorse. A further preparation activity called Mounding also generally occurs during the site preparation phase. This involves creating lines of small mounds of soil, with appropriate spacing for tree and canopy development, into which the young tree saplings will be planted. Tree planting is carried out by forestry contractors at a stocking rate of 2,500 trees per hectare. A diverse mix of native trees are used depending on site conditions, as certain trees are more suitable to certain conditions than others, e.g., soil type, exposure and hydrology.

A DAFM inspector visits the site and approves payment of the first grant instalment if all DAFM criteria have been met. This payment is 75% of the overall grant and goes directly to our forestry partner, Greenbelt. Greenbelt maintain the woodland to ensure that the trees are developing and replace any dead trees. Removal of vegetation surrounding the trees is also managed to prevent vegetation such as grasses from out competing the newly planted trees. In year four, post-tree planting, a final DAFM inspection is carried out to ensure that all grant conditions have been met and if they are satisfied the final grant payment is issued.



Uisce Éireann staff planting trees at Ballymore Eustace WTP

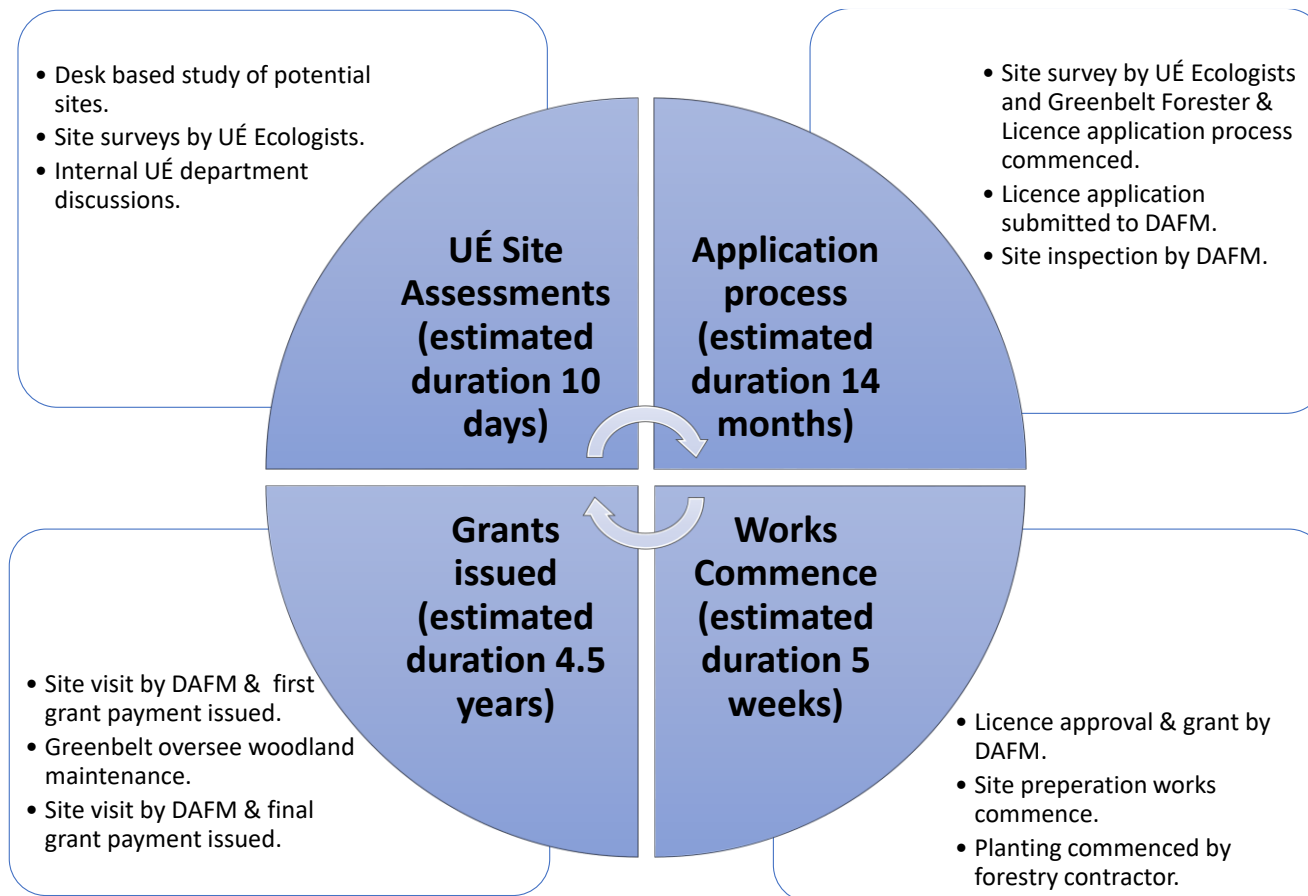


Figure 1 – Steps and durations involved in the establishment of Native Woodland.

Native Woodland Programme Timeline

- 2021/22 - 18,500 trees planted at Lough Guitane. UÉ's first native woodland required a somewhat novel approach where the lands were located in a Special Area of Conservation and contained livestock and a large deer population. In consultation with NPWS and DAFM we agreed to use a mix of tree guards and deer fencing and to date the woodland is developing well.
- 2022 - 11 native woodland applications approved in by DAFM.
- 2023 - 48,900 trees planted across 10 of the approved sites. Successful woodland establishment was due to consultation and communication with DBO managers, Tidy Towns groups and DAFM inspectors.
- 2023 - 15 New DAFM applications now being progressed after a long delay with DAFM due to issues arising with all forestry operations at an EU level.
- 2024 – Once the 15 New DAFM applications are approved it is intended to plant another 50,000 trees proposed to be planted in 2024.
- 2024 – More DAFM applications will be developed in 2024 for further planting in 2025 and beyond, and so the cycle will continue.



Newly planted native trees at Carrigrennan WWTP, Cork

4.2 Challenges

The main challenges experienced to date have been in relation to the identification of suitable sites for tree planting and attaining agreement with all relevant stakeholders. As a result of extensive communication and collaboration, UÉ's Ecology and Biodiversity Team now have a good process in place which is working well, however, an element of resistance is still encountered regarding planting trees at certain sites.

The most significant challenge with respect to woodland planting is regarding the efficiency of the DAFM licencing process. The delays experienced to date have caused considerable interruptions in progressing the planting of trees, however UÉ's Biodiversity Officer is in direct discussions with DAFM Senior Inspectors to speed up this process.

5 Direction of Travel

The preparation of this progress report has been a valuable exercise to collate and record the achievements to date in implementing the objectives of the BAP. It has also enabled the UÉ Ecology and Biodiversity Team to explore the challenges relating to certain aspects involved in the protection and enhancement of biodiversity and to look at what actions are needed to continue and expand upon the delivery of these objectives in the future.

Since the launch of UÉ's BAP in 2021, the emerging policies and plans in relation to the area of biodiversity conservation and enhancement, and implementation of the principles of NNL and BNG, have evolved significantly. A substantial number of Local Authorities have included biodiversity positive objectives in their Development Plans and thus, UÉ must demonstrate biodiversity gain as part of planning submissions to certain Local Authorities. November 2023 saw the commencement of the Wildlife (Amendment) Act 2023, which means that the 4th National Biodiversity Action Plan carries significant weight. All public service bodies, including government departments, agencies and local authorities will be required to integrate biodiversity into their plans, policies and programmes. The transposition of the Corporate Sustainability Reporting Directive will introduce mandatory reporting of climate and environmental data on a phased basis, dependent on the nature and size of an entity or organisation, which will be rolled out between January 2024 and January 2026.

The new Nature Restoration Law was approved by vote of the European Parliament on 17th June 2024. This Law aims to put measures in place to restore at least 20% of the EU's land and sea areas by 2030, and all ecosystems in need of restoration by 2050. It sets specific and legally binding targets and obligations for nature restoration across each of the listed ecosystems, from terrestrial to marine, freshwater and urban ecosystems¹. In addition to setting restoration targets, the Law requires the production of associated National Restoration Plans that will be produced by Member States to set measures to achieve such targets. In Ireland, the production of a National Restoration Plan will be led by the NPWS. The participatory stakeholder engagement process to support the development of the National Restoration Plan has commenced. One of key tasks of the restoration planning process will be to identify the design, targets and incentive schemes to deliver restoration measures, including consideration of national and EU funding opportunities and a comprehensive assessment of funding needs². The National Restoration Plan is eagerly awaited however in its absence, bodies and organisations setting objectives and targets to protect biodiversity are doing so in the knowledge that such objectives and targets will likely need to be revised upon finalisation of the National Restoration Plan. This is reflected in the 4th National Biodiversity Plan; detailing that production and finalisation of a National Restoration Plan will require updating of the National Biodiversity Action Plan by 2027.

Given the above external drivers, in addition to the progress and advances achieved to date within UÉ, the organisation's Biodiversity Policy is currently being revised and the BAP will be reviewed in 2024 and updated and published in 2025, in the absence of a National Restoration Plan. Thus, it is likely that review and revision of objectives may be required upon finalisation of the Plan. The review will build on the existing BAP and identify gaps and areas for improvement. The revised BAP will strive for ambitious objectives and actions to evolve UÉ's commitment to biodiversity, and to align the BAP with the Water Services Strategic Plan 2050, 4th National Biodiversity Action Plan and new Nature Restoration Law.

¹ Nature restoration law: Council gives final green light - Consilium (europa.eu). (Accessed 10/07/2024).

² gov - Ministers welcome approval of the Nature Restoration Law in the EU Environment Council (www.gov.ie). (Accessed 10/07/2024).

Appendix A

BAP Objectives		Actions	Implementation
1	All Irish Water sites will be issued with a clear set of measures that will enhance and protect biodiversity.	Issue biodiversity-friendly management practices to all Uisce Éireann sites with details on how best to protect and manage areas of grassland, woodland and hedgerows within the Uisce Éireann sites; and	<p>To achieve UÉ's Sustainability Framework Target of BNG by 2030, at least 250 UÉ sites will have to be added to the biodiversity baseline each year. This was exceeded in 2023 as biodiversity-friendly management practices were implemented at 302 additional sites with the assistance of the UÉ Biodiversity Officer.</p> <p>In 2022, biodiversity baseline surveys were conducted across all UÉ sites to identify which were implementing biodiversity-friendly management practices. 2,102 out of 3,725 overall sites (56%) recorded at least 1 biodiversity enhancement measure with the majority implementing 2 or more measures.</p> <p>The UÉ BAP and 2,200 biodiversity posters have been distributed nationally to sites and site managers to provide information on implementing biodiversity enhancement measures.</p>
		Develop site specific Biodiversity Management Plans for selected Uisce Éireann sites.	Site specific Biodiversity Management Plans have been distributed to UÉ flagship sites.
2	Raise awareness and provide educational supports on biodiversity to	The UÉ biodiversity webpage to provide updates on the biodiversity actions taken by UÉ;	<p>UÉ's dedicated BAP webpage enables stakeholders to access information about the BAP, providing details about UÉ's commitment to protecting biodiversity across our sites and examples of biodiversity enhancement measures: https://www.water.ie/projects/national-projects/biodiversity/.</p> <p>Aim to regularly update the content of the biodiversity webpage to communicate and display all activities protecting and enhancing biodiversity.</p>

Uisce Éireann staff and its partners.	The Ecology and Biodiversity Team to deliver regular updates and educational supports on biodiversity to all relevant internal stakeholders	Biodiversity training has been rolled out across all areas, 16 biodiversity training events with 148 participants have taken place to date.
		450 IDD PM's/Consultants/Contractions have been provided with biodiversity training in 2023 alone.
		The Ecology and Biodiversity Team have provided biodiversity training and support by presenting at knowledge share sessions.
		Since 2020, 47 Staying Connected articles have been produced to raise awareness of biodiversity to all UÉ employees.
		Working closely with the Solar Team to ensure that there is no overlap between woodland and solar sites. Where solar is being rolled out we work with the development team to ensure that biodiversity measures are also introduced.
		Working with colleague's in catchment management as part of UÉ pesticide working group to develop a policy to ban pesticide use on UÉ sites except when managing invasive species. Continuing to work with ops staff to find alternatives to pesticides.
		Working with UÉ colleagues in the SW region to carry out biodiversity initiatives including tree planting, biodiversity education events with LA staff and local schools. With aim of increasing knowledge and interest in biodiversity e.g. biodiversity photo competitions and quizzes.
		Providing support at the +/- workshops to ensure biodiversity is at the forefront of the decision making process.
	Working with our partners (e.g., local	Worked with Belcarra Tidy Towns group on the management of a WW site to solve issues which arose between the local group and site management.

		Tidy Towns) to deliver community and school education programmes; and	Working on community ecology plans with Vartry Tidy Towns where managing our site for biodiversity complements the tidy town's efforts and the wider environment.
			Inputted into design of information presented by IDD ECI Team STEPS & STEM Team to Primary and Secondary Schools.
		Ecology and Biodiversity Team to continue to work with site-based personnel to deliver site specific solutions.	On-site biodiversity training sessions are regularly rolled out across operational sites. These sessions are informal, biodiversity enhancement measures are explained, and caretakers select their own measures with the support of UÉ's biodiversity officer.
3	Ensure 'no net loss' of biodiversity when carrying out activities, or delivering plans or projects.	All UÉ plans, projects and activities to comply with the Habitats and Birds Directives;	Ecological Memo contained within IDD Planning Guidance Suite for internal and external personnel, updated in 2023.
			Completing internal AA Screenings for exempt works and publish AA Determinations on UÉ website. Processes developed with IDD for management of AA and Planning Tracker with dedicated personnel to task. Monthly and bi-weekly meetings on ECI and water programmes to discuss and raise concerns. Training being delivered to WTC Programme in IDD.
			Direct feedback on ecological sensitivities at project concept stage (AMS), design and delivery (IDD) by UÉ ecologists or external consultants working on UÉ behalf, through workshop process, report review, meetings and other communications.
		All UÉ plans, projects and activities to comply with the Wildlife Act;	As per above.

	New infrastructure to be sited, designed and constructed in line with UÉ's Civil Specifications and Guidance, and the Landscape Treatment Guidelines;	Developed Ecological Guidance Documents (i.e., Guidance for UÉ Developments, Biodiversity No Net Loss Calculators, Tree Protection Guidance, and Landscape Treatment Guidance) to assist UÉ personnel and consultants by addressing common ecological concerns and to provide a standardised UÉ approach.
		Detailed discussions and presentations with IDD project Team on delivering NNL on projects including exploring application of NNL such as Ballycoolen Trunk Main and Avoca WwTP.
		In 2023, commenced reporting IDD projects seeking planning permission with regards to achievement of NNL target. After Q2, 20 projects achieved NNL, with 2 awaiting confirmation.
		Recording system devised using UÉ metric to collate data across IDD activities in water, waste including networks, both for works that are exempt or require planning. Copies are approved and available on UÉ Standards and Spec Website. In addition, for water programmes, these metrics have been incorporated into the Planning and AA Tracker to increase efficiencies.
		Exploration of incorporating trackers into the new risk system launched in IDD in 2023. A draft template has been created by IDD solutions Team with trial recording in progress.
		Biodiversity and Environmental Planning requirements fed into the 6 stages of Invest to Outcome (I2O) project lifecycle and the Project Management handbook. This sets out ecological and environmental requirements to be considered/delivered at each stage of the project lifecycle.
		Review of project ecological design and reports plans within and outside of workshop process, providing feedback to project delivery and management as required.
		Working with UÉ colleagues through IDD Sustainability Forum devising practical delivery of UÉ sustainability targets through collation of data during delivery of projects.
UÉ to work with key stakeholders such as	Delivered Internal Training sessions (i.e., mix of UÉ staff and consultants) on AA, BAP, NNL, IAS, IMT training: <ul style="list-style-type: none"> • 2023 – 8 sessions • 2022 – 8 sessions 	

		NPWS, IFI and the EPA, and local communities in undertaking projects and activities that could impact on the environment; and	<ul style="list-style-type: none"> • 2021 – 8 sessions • 2020 – 5 sessions
			Presentations delivered to External Stakeholders: <ul style="list-style-type: none"> • Engineers Ireland on the BAP 2022 • Driving Nature Recovery Event 2023 • Business in the Community 2022"
			Dr Úna Fitzpatrick of the NBDC who leads on the All-Ireland Pollinator Plan presented a knowledge sharing session to IDD and their ESPs.
			Development of fish pass programme in consultation with Inland Fisheries Ireland.
			Consultation response submitted to DoH/LGH on behalf of UÉ on Irelands 4th National BAP highlighting need for policy on NNL and/or BNG.
		Consultation with stakeholders such as IFI is undertaken during operation of Assets or during project delivery.	
		UÉ to work with the EPA with regards to achieving the objectives of the WFD.	UÉ's Capital investment Programme aims to address issues with UWW agglomerations identified as being significant or sole pressures on 'At Risk' waterbodies, by upgrading existing assets and infrastructure, increasing WWD water quality and relieving UWW pressures on waterbodies. Thus, enabling recovery and improvement in Ireland's aquatic environment.
			Ensuring UÉ is proactively assisting waterbodies in maintaining and/or reaching 'Good' or 'High' WFD status, as part of the strategic assessment of wastewater projects, thus, having a positive impact on the habitats and species that those waterbodies support.
4	Implement actions arising	Uisce Éireann will implement and report	UÉ is a partner of the All-Ireland Pollinator Plan 2021 - 2025. The biodiversity enhancement measures being implemented at UÉ sites are pollinator friendly and align with the plan's objectives.

	from the All-Ireland Pollinator Plan across all Uisce Éireann sites, to support and increase our pollinator population	on the All-Ireland Pollinator actions;	Signs have been erected at UÉ sites to inform site visitors and the public about the biodiversity enhancement measures being implemented at the sites.
		Uisce Éireann will implement reduced mowing at UÉ sites in line with the All-Ireland Pollinator Plan;	Reduced mowing measures are being implemented across UÉ sites, creating bio-diverse grasslands providing supporting habitat for a wide range of insects and pollinators and increasing the biodiversity of the local area.
		Uisce Éireann will incorporate the use of native and/or pollinator-friendly planting at all sites; and	UÉ is promoting the planting of native tree species and the use of native seeds of local provenance across all sites and UÉ infrastructure delivery projects.
		Uisce Éireann will establish monitoring programmes to demonstrate the success of the All-Ireland Pollinator Plan actions.	<p>Surveys of all UÉ sites have been conducted as part of the biodiversity enhancement and protection measures, to understand and demonstrate the success associated with implementing the All-Ireland Pollinator Plan.</p> <p>In 2022, 262 of 292 sites reported implementing pollinator measures and in 2021, 203 of 237 sites reported implementing pollinator measures.</p>
5	Promote the use of nature-based solutions for	Uisce Éireann will advocate the use of Nature Based	Nature Based Solutions have many benefits including natural WW treatment, sustainability and biodiversity. Nature Based Solutions create habitats which can support insects and birds, as well as increasing connectivity between existing habitats within the wider landscape.

	water protection and wastewater treatment.	Solutions as wastewater treatment solutions;	Nature Based Solutions are always considered at the strategic assessment stage of a project. These include ICW's for full WW treatment, sludge drying reed beds for additional solutions for existing WwTPs, and wetlands for stormwater attenuation.
			UÉ are currently using ICW's on a number of WW treatment sites including Dunhill, Co. Waterford and Clonaslee, Co. Laois. UÉ are currently investigating the feasibility for ICW's on a number of small sites as part of the National Recovery and Resilience Plan.
		Uisce Éireann will implement appropriate tree-planting schemes; and	UÉ is participating in funded schemes to plant native trees at our sites. Tree-planting schemes are a Nature Based Solution which can be used to re-create and bolster habitats, and buffer water sources from contaminants.
			Established a native woodland on UÉ land surrounding Lough Guitane to address water quality issues in the lake caused by silt run-off and livestock accessing the lake. The riparian woodland will enhance biodiversity in the area and reduce pressures on UÉ's WTP.
		Uisce Éireann will collaborate with external stakeholders on wider catchment management-based initiatives that result in source water protection.	UÉ collaborates on wider catchment management-based initiatives as a member of the National Drinking Water Pesticides Action Group and chair of a number of Catchment Focus Groups including Newport, Belturbet, River Deel-Feale and Clonroche. These focus groups bring together stakeholders within the catchment to improve and protect drinking water sources from pesticides.
			UÉ are a partner on the Erne-Larah Source Protection Project, which is examining the effectiveness of on-the-ground measures to reduce the risk of pesticides entering drinking water sources.
		UÉ are currently scoping a number of potential catchment initiatives, focused on water quality improvement, climate change resilience, fish passage and biodiversity.	
6	Manage invasive alien species at	Uisce Éireann will provide training and	Guidance produced regarding management of Giant Hogweed, Himalayan balsam, Japanese knotweed and biosecurity for aquatic sampling activities.

	Uisce Éireann sites.	guidance to relevant personnel on the identification and eradication of invasive species.	Invasive species training incorporated into on-site biodiversity training, knowledge share and UÉ staff training sessions, including information regarding invasive species and their control and management.
			UÉ collaborates with external stakeholders and participates in working groups regarding invasive species to stay abreast of developments, share lessons learned with stakeholders and apply new knowledge to UÉ activities and projects. Groups include the Quagga Mussel working group and the development of the National Invasive Alien Species Plan.
		Uisce Éireann will develop a database for recording and monitoring infestations of invasive species at our sites.	Currently working on developing a database for recording and monitoring infestations of invasive species across all UÉ sites.
			No. 9 sensitive UÉ sites currently being actively managed by a specialist contractor, with site specific ISMPs developed for each site. Each ISMP has been subject to AA Screening prior to treatment taking place. On-site treatment requires collaboration with Asset Operations, Local Authority personnel, and where applicable Environmental Regulation, Labs and the EPA.
		Uisce Éireann will continue the roll-out of biosecurity protocols and guidance.	Management of invasive species is considered throughout project development; from strategic assessment and optioneering stages, to design, construction and commissioning phases. Invasive species surveys are conducted for IDD projects and ISMPs developed where required. Biosecurity 'Check-Clean-Dry' principle is implemented across all UÉ projects.
			A 2018 survey of invasive plants at Bohernabreena Reservoir recorded Japanese knotweed, rhododendron and skunk cabbage. Since 2019, an on-going comprehensive bi-annual treatment programme to manage and control Japanese knotweed has been carried out resulting in a 96.5% reduction in Japanese knotweed presenting across 82 identified sites.
7	Collaborate and work with key internal and external stakeholders,	Uisce Éireann will collaborate with external stakeholders including IFI, NPWS, LAWPRO, EPA,	Working with the NPWS Curlew Conservation Programme on the management of Pollen Dam for Curlew conservation.

	and the wider community, to protect and enhance biodiversity	DAFM and local communities;	
		Uisce Éireann will work with local authorities, Tidy Towns and other local community groups where possible, and support local biodiversity projects and initiatives.	Collaborating with Cork CoCo and Eco Seeds to harvest seeds from the diverse grassland meadow at Inniscarra WTP, to use on other ecological projects.
			Management of relevant sites with the GYB European Innovation Project and Belmullet Tidy Towns to promote pollinators on site and support the Greater Yellow Bumblebee.
			Working with Swift Conservation Ireland and Kerry, Offaly, Clare and Sligo Biodiversity Officers (LA staff) to enhance biodiversity at a number of sites, by installing Swift boxes along with a call device, to provide suitable nesting sites.
			Working in collaboration with the Golden Eagle Trust to develop suitable nesting sites for large raptors (White Tailed Sea Eagles and Osprey) at 10 sites nationwide.
			Steering group for Peatlands Finance Ireland, working towards the development of funding mechanisms for peatland restoration and rehabilitation, as healthy, intact peatlands will benefit water quality.
			Working with Sligo LA and Atlantic Technological University Sligo to develop Farranacardy Reservoir as a showcase for biodiversity management of water infrastructure by developing a biodiversity enhancement plan and managing grassland habitats as biodiverse meadows.