

# Biodiversity Duty Report

2021 – 2023



# Contents

<b>Section 1: Introductory information about your public body</b>	<b>3</b>
SE's approach to Biodiversity	3
<b>Section 2: Actions to protect biodiversity and connect people with nature</b>	<b>5</b>
Place Portfolio	5
Partnership Working	7
Scotland's Young People's Forest	8
Cairngorms National Park Partnership Plan 2022-27	9
Scottish Rural Leadership Programme	9
Bioregioning Tayside Learning Journey 2022	10
Scotland's Agritourism Monitor Farm Programme	10
Case Study: Sustainable Woodland Regeneration	11
<b>Section 3: Mainstreaming biodiversity</b>	<b>12</b>
Environmental Management	12
Procurement Strategy	12
Consideration of Biodiversity in Estate Management	13
<b>Section 4: Nature-based solutions, climate change and biodiversity</b>	<b>15</b>
Green Jobs Fund	15
Applying Space Data to the Net Zero Economy (CAN DO innovation challenge)	16
Main climate change related challenges for biodiversity over the next three years	19
<b>Section 5: Public engagement and workforce development</b>	<b>20</b>
Staff Volunteering	20
Workforce Development	20
Staff Charity Fund	21
Engagement	22
<b>Section 6: Research and monitoring</b>	<b>23</b>
Research	23
Monitoring	23
<b>Section 7: Biodiversity highlights and challenges</b>	<b>24</b>
Main Achievements	24
Main Challenges	24

Front cover

- Left. Woodland in East Lothian
- Right. Hillwalkers on the West Highland Way passing Buachaille Etive Mor in Glencoe

# Section 1: Introductory information about your public body

Scottish Enterprise (SE) is Scotland's national economic development agency and a non-departmental public body of the Scottish Government (SG). SE enables businesses to innovate and scale to transform the Scottish economy by focusing on new market opportunity areas through targeted investment, innovation and internationalisation.

## **SE's approach to Biodiversity**

In 2021, we published our first net zero framework for action setting out our 2025 ambitions and the actions we will take to reach those goals. Our framework is updated on an annual basis, highlighting the progress we have made and the priority actions for the year ahead to take us a step closer to our ambitions.

Our approach to net zero goes beyond decarbonisation of emissions and encompasses a broad range of areas which are fundamental to achieving a just, net zero economy. These include, adapting to climate change, protecting and improving biodiversity, stimulating circular economy practices and business models, supporting green jobs and a just transition for businesses and sectors.

SE recognises the intrinsic link between nature and the economy, and the importance of nature in supporting both Scotland's and the world's goal to reach net zero. Therefore, our framework for action focuses on economic opportunities that also deliver benefits to the environment and society. Our approach goes beyond decarbonisation of emissions and encompasses a broad range of areas which are fundamental to achieving a just, nature positive, net zero economy. This includes protecting and improving biodiversity.



In our most recent update, published externally on 27 June 2023, we recognise a thriving, growing and resilient economy needs nature. Investment and innovation in nature-based solutions are fundamental to ensuring businesses can continue to grow, remain competitive and create jobs now and in the future. This is being increasingly recognised by businesses globally, with significant developments underway on how to mitigate business impact and benefit from working in harmony with the environment. The Scottish Government recently published its Biodiversity strategy to 2045, setting out Scotland's vision for a thriving environment. To support this vision, SE committed to working with businesses who have the capabilities to respond through innovation to benefit from the opportunities. We also made our commitment to continue to work with partners to raise awareness and support businesses to monitor and respond to their impact on nature and invest in nature-based solutions.

SE owns and manages a wide portfolio of land and building assets that are held for economic development purposes such as business parks, innovation centres and future development land. A decarbonisation strategy is being developed that includes recognition of the need to protect and enhance biodiversity where possible across the portfolio. A full audit of the landholdings has been completed to identify the baseline biodiversity quality and opportunities for enhancement.



---

#### Images

- Page 3. Trees and woodland in Queen Elizabeth Forest Park
- Page 4 Left. The National manufacturing institute of Scotland (NMIS)
- Page 4 Right. Royal Deeside, Grampian

## Section 2: Actions to protect biodiversity and connect people with nature

The actions SE has taken towards the protection of biodiversity and connecting people with nature are summarised below.

### Place Portfolio

From September 2021 – March 2023, SE commissioned Ramboll to complete a review of the building stock in our property portfolio to map the route to decarbonise through to 2035, together with an assessment of opportunities for energy generation and biodiversity improvement. In 2023 we started the delivery of pilot projects to support this decarbonisation strategy.

The comprehensive report had a specific requirement to capture the biodiversity baseline and opportunities for biodiversity enhancement across SE's land portfolio. The final report included:

- Biodiversity baseline assessment across the full portfolio
- Carbon storage baseline assessment
- RAG and opportunity mapping assessment
- Biodiversity Strategic Policy Review
- Biodiversity review of disposal policy and recommendations

SE appointed a new landscape and environmental consultant in July 2023. The responsibilities of the new consultant include site biodiversity monitoring, maintenance updates and advice on biodiversity improvement where feasible. Using this evidence and support, SE aims to create strategic alignment across all our sites to support a biodiversity planning and improvement roadmap. The consultant is currently carrying out site familiarisation visits

### Pilot Project: Scottish Enterprise Technology Park

As part of our biodiversity uplift journey, Scottish Enterprise Technology Park (SETP) has been selected as a pilot project. A refined baseline was produced with an improvement action plan. These tasks will be implemented over the 2023/24 and 2024/25 FYs to align with the best seasonal opportunities for biodiversity uplift interventions.

We are also reviewing the policy for acquisitions and disposals with regard to opportunities for protecting biodiversity and maintaining the baseline.

Whilst we develop this plan for our portfolio, we have continued our approach outlined in the previous [Biodiversity Duty Report 2018-2020](#), as summarised below.

**Early Feasibility and Due Diligence:** Sites are usually subject to early due diligence to determine any environmental and ecological constraints to future development prior to purchase. This includes baseline data collation, commissioning early environmental and ecological walkover surveys to establish possible constraints to development and requirements for further survey and assessment / mitigation and establishing other environmental features with links to biodiversity such as surface water features and drainage, trees and woodland cover, ground conditions, Invasive Non-Native Species (INNS).

**Consultation and Engagement:** SE work in partnership with NatureScot, Historic Environment Scotland (HES), Scottish Environmental Protection Agency (SEPA) and Royal Society for the Protection of Birds (RSPB) and liaise with the relevant Local Authorities.

**Ecological Survey, Assessment and Reporting:** Where environmental or ecological interests are identified, SE regularly commission detailed ecological surveys to inform investment decisions, planning or site disposal / sales. Many of our sites have been subject to a level of ecological assessment with surveys commissioned including Extended Phase 1 Habitat Survey, National Vegetation Classification (NVC) Survey and Protected Species Surveys (badger, otter, water vole, great crested newt, breeding birds, wintering birds together with more specialist surveys) based on agreed methodologies.

A range of reporting and assessment has been produced to support development of SE assets including Ecological Impact Assessment (EclA), Environmental Impact Assessment, Habitats Regulation Appraisal and Sustainability Assessment.

### **Biodiversity, Habitat Enhancement & Management Plans:**

- SE continue to implement our 5-year Voluntary Management Plan on our site at Gartcosh to manage the habitats on site following over 15 years of work with North Lanarkshire Council and NatureScot to deliver the neighbouring Gartcosh Nature Reserve. We meet regularly to discuss ongoing matters and provide input to the Gartcosh Reserve Management Plan.
- Some SE sites have been subject to Licences from NatureScot where Species Protection Plans and mitigation and enhancement have been agreed.
- SE produced an INNS Strategy in 2016 which continues to be implemented by SE's Property and Asset Management Consultants and Landscape Contractors. This set out a treatment strategy for sites with known INNS and a survey and treatment strategy for further sites across Scotland.

- Production of Site Wide and Phase specific Construction Environmental Management Plans (CEMPs) to support development and inform Construction Site Licence requirements which include ecological and biodiversity interests such as protected species, tree protection and sustainable drainage systems (SUDs).

**BREEAM:** SE has both built and specified buildings with BREEAM ratings for sustainable design and construction. BREEAM Land Use and Ecology credits require consideration of ecological value and biodiversity at all project stages from design to construction and on to operation.

### **Support to Purchasers / Developers / Lessee / Inward Investment Interests:**

- Available ecological, environmental and other technical information is typically packaged up and issued to interested parties to highlight constraints and opportunities as part of due diligence.
- SE ensure ecological protection as part of ‘Licence to Occupy’ agreements for elements such as Site Investigations where there are sensitivities and require pre-start survey, detailed methodologies and Ecological Clerk of Works (ECOW) oversight on sites with known interest.
- SE in many cases have progressed sites through planning to secure consents in which cases, environmental and ecological mitigation plus biodiversity enhancements are committed through planning conditions e.g. landscape planting, native planting, newt friendly SUDs, tree protection and replacement, bat boxes etc.

### **Partnership Working**

SE continues to work closely with partners to consider interventions to mitigate some of the most severe consequences of biodiversity loss and capitalise on opportunities to conserve and enhance biodiversity where feasible. Examples of this include:

- [Scottish Forum for Natural Capital](#) - SE is a participant of this forum, to support emerging policy and practice in protecting and improving Scotland’s natural capital.
- [Landscape Enterprise Networks](#) (LENS) – SE part funded a scoping study with NatureScot to look at the potential for creating a new LENS project around Loch Leven in Fife. This study highlighted the potential opportunities for developing nature-based solutions to help address environmental business risks faced by local businesses. SE continues to support this project, providing advice where required, as it moves to the next stage of implementation.

Scotland Europa is a wholly owned subsidiary of SE and a membership-based organisation in Brussels, Belgium. Several of the membership organisations are focused on the environment, including NatureScot, SEPA, Environmental Standards Scotland, the James Hutton Institute, as well as several of Scotland’s universities. The Scotland Europa team supports the members to exchange knowledge on issues related to biodiversity with European partners, showcase Scotland’s expertise in this

field, and learn from international best practice. This includes providing support to access funding opportunities under the Horizon Europe Programme.

An example of this is the key research and innovation networks to exchange knowledge with European partners. The Scotland Europa team regularly attend and contribute to the ERRIN (European Regions Research and Innovation Network) working groups, as well as Co-Chairing the network. This includes featuring Scottish speakers when possible; for example, NatureScot presented their work on the urban perspective of forestry on 5 October 2022 to European Partners at the ERRIN Bioeconomy Working Group.

### **Scotland's Young People's Forest**

[Scotland's Young People's Forest](#) is an innovative project and first of its kind in Scotland, bringing together young people to co-design, co-create and govern to create a new forest in Scotland. The project was launched in 2021, in the lead up to COP26. The young people were brought together to co-design, create and lead the project to create a forest in Scotland which contributes to a variety of Scotland's climate ambitions. The project is delivering additional benefits in the form of skills development, education, leadership and community wealth building. SE, alongside Corra Foundation, NatureScot, Pears Foundation and Wood are the founding partners of the project. We, together with many other organisations are supporting the panel of 23 young people to realise their vision through knowledge building, empowerment and access to specialist expertise – helping to regenerate an area of land to improve biodiversity, create spaces for people to connect with nature and empower young people to take action on climate change and environmental issues.

SE provided the young people's forest panel with a choice of potential sites from our portfolio, to assess against their criteria for the forest. The SE Strategy and Place teams provided information and guidance on the sites to the young people. Ultimately, the young people's panel decided to choose an alternative site to those offered by SE, which provided a better fit with their criteria. SE also sits on the expert advisory panel and continues to support the project. The next steps will be to finalise the choice of site and begin planting.





## **Cairngorms National Park Partnership Plan 2022-27**

SE is a partner in the [Cairngorms National Park Partnership Plan](#) with the most recent 5-year Plan updated in 2022. Related to the Plan's implementation, SE is a participating partner on the Cairngorms Economic Steering Group. The Park Plan has 3 distinct, but inter-related themes: Nature, People and Place designed to ensure that conservation of the natural and cultural heritage underpins the economic, social and recreational value of the Cairngorms National Park. The Plan aligns strongly to the Scottish Government's National Strategy for Economic Transformation (NSET) priorities for a fairer, greener and more equal society as well as aiming to protect and restore the natural and social capital of the park, but importantly recognising the need to work closely with business and communities for social and economic benefit.

[Heritage Horizons: Cairngorms 2030](#) is a longer-term programme of transformational change in the park, encompassing 24 long term projects. SE is represented on the Wellbeing Economy sub-group under the Programme which cuts into many areas of the overall Park Partnership Plan that benefits people and nature, sustainable tourism, community-managed assets, peatland restoration and the transition to Net Zero.

## **Scottish Rural Leadership Programme**

Led by SE, in partnership with Highlands and Islands Enterprise (HIE) and South of Scotland Enterprise (SoSE), the Scottish Rural Leadership Programme has been running since 2006. The core programme runs annually from March to October and targets owners/managers of rural businesses across Scotland to develop the capacity of leaders in ways that are transformational, using a series of workshops and practical content that focuses on leadership and business growth, raising ambition, confidence, strategic thinking, and decision making, innovation, building industry and parliamentary connections and widening personal networks.

One of the key highlights of the Rural Leadership Programme is the strength in the Rural Leaders network – bringing together like-minded leaders across the length and breadth of rural Scotland to foster new connections, collaborate, share knowledge, support ambitions for growth, help reduce rural isolation and improve wellbeing.

The Rural Leadership Programme will grow to nearly 900 Rural Leaders by March 2025.



## Bioregioning Tayside Learning Journey 2022

The 2022 Bioregioning Tayside Learning Journey ‘**Change the Frame: Change the Story**’ was supported by the Scottish Rural Network, SE, the Rural Youth Project, NatureScot and the Collaboration for Bioregional Action Learning & Transformation. A number of ‘live’ projects are in development as a result of this programme of work.

SE helped to support the following series of Learning Journey events:

- **What Will Be on My Plate In 2042?** – this first event had a focus on food involving a day long journey around various food producers who shared their perspectives on the challenges and opportunities of producing food in Tayside over the next 20 years. Participants came from across Tayside and included food producers, scientists from the James Hutton Institute, community climate activists and journalists.
- **What Will I Do When the Waters Rise?** – the second event focused on flooding with a focus on the small town of Alyth in eastern Perthshire.
- **Can Tourism Help Tayside #RaceToZero?** – the third event focused on tourism asking the question ‘Can Tourism help Tayside?’.
- **How can Participatory Science Bring New Solutions to Ecosystem Restoration?** – the fourth event focused on the role of Participatory Science in ecosystem restoration.
- **Can Tayside become a ‘Climate Action Sweet Spot’.**

## Scotland’s Agritourism Monitor Farm Programme

The Agritourism Monitor Farm Programme is a Scotland wide network of farms across the sectors, led by farmers, for farmers, to help improve productivity and farm business profitability. The concept allows farmers to share experiences, find out how others have tackled problems and adopt best practice. SE has delivered Agritourism Monitor Farm projects since 2014, which have resulted in the creation of a trusted peer network of 400+ businesses exchanging knowledge and best practice; business growth; innovations including sustainability and environmental practices; new agritourism businesses starting from scratch; investment in new facilities, infrastructure, staff and digital systems; increased profit margins; succession plans developed and implemented; increased confidence to make informed decisions; increased resilience to mitigate Covid-19 impacts and future challenges; and an improved understanding of financial data.

In November 2021 the Cabinet Secretary for Rural Affairs and the Islands launched the new growth strategy for Agritourism ‘Scottish Agritourism 2030 - The Strategy for Sustainable Growth’. The Scotland’s Agritourism Monitor Farm Programme is included as one of the main actions to enable and facilitate growth.

---

### Images

- Page 8. SYPF Panel Members, Baron’s Haugh 2023 © YoungScot
- Page 9. Glen Clova in the Cairngorms National Park

### **Case Study: Sustainable Woodland Regeneration**

Edinburgh based [Rhizocore Technologies](#) (a spin-out company from the University of Edinburgh) has developed a first-of-its-kind fungal pellet, to enhance tree planting success. This is a sustainable solution to accelerate woodland regeneration and improve forest productivity.

Tree planting faces significant challenges with tree mortality rates regularly reaching 20-50% in the three years post planting. Commercial forestry companies are under pressure to reduce or eliminate the use of fertilisers and pesticides in planting operations. Rhizocore's solution uses local biodiversity to replace chemicals, leading to improved ecosystem health and better water quality. The company has plans to scale its operations over the next two and half years, with the aim of planting up to five million trees with accompanying fungal pellets in 2025 alone.

SE supported the company through a SMART feasibility grant, awarded in 2022, which was crucial to help build a working bench-scale production line to supply their product for upcoming trials, and to undertake trials at a large enough scale to generate proof-of-concept data and exploit the market opportunity quicker. This grant also funded the development of a screening facility to enable the company to select the strains that provide maximum benefit to Scottish and UK forestry in both yield and carbon sequestration. Using funds from the grant the company planned to employ a further two members of technical staff.

This has now enabled seed funding of £3.5m led by ReGen Ventures, Collaborative Fund and Grok Ventures, which should allow Rhizocore to expand its number of employees and develop the infrastructure needed to rapidly scale solutions.

Not only does Rhizocore offer huge environmental benefits but also provides social benefits directly by creating local planet-positive jobs in Scotland, and indirectly by accelerating the regeneration of forests and woodlands giving local communities greater access to nature.

## Section 3: Mainstreaming biodiversity

Since SE's last report in 2020 we have published our first net zero framework for action, and two updates in subsequent years. In each of the published documents, we remain steadfast in our recognition that the economy and nature are intrinsically linked. We have taken incremental steps each year to support this operationally, providing support and advice to businesses to monitor and respond to their impact on nature and benefit from new opportunities.

As part of this strategy, we launched a Net Zero Improvement Tool internally to support and enhance projects. This tool includes considerations of environmental benefits and impacts. We want projects to avoid negative environmental impacts and to result in positive outcomes.

As previously outlined, SE is in the process of reviewing our policy for acquisitions and disposals with regard to opportunities for protecting biodiversity. The policy text review is scheduled for the 2024/25 financial year and an update will be provided in the next Biodiversity Duty reporting period.

### Environmental Management

SE's Environmental Management System (EMS) is certified to the ISO 14001 Standard. The scope of our EMS covers the management of the significant environmental aspects associated with SE key office facilities and shared areas of managed properties. Since 2000 SE has also had in place an Environmental Management Policy. This enables SE to document what we already do and to help determine how we impact on the environment.

SE's aim is to work in a manner that protects the environment and continually strive to improve our environmental management and enhance our environmental performance through the setting of objectives across the organisation.

### Procurement Strategy

SE Procurement recognises that procurement delivered in a sustainable way, can make a significant contribution in realising sustainable economic growth and achieving long-term social, economic and environmental benefits for all.

As part of our procurement strategy, two questions are included on biodiversity in the sustainability test.

- **Protection** - are materials within products or those used within service delivery derived from potentially vulnerable ecosystems, where biodiversity is at risk or, in the delivery of a service, there is a risk that ecosystems will be damaged?
- **Enhancement** - is there an opportunity to enhance biodiversity in relation to services delivered?

During this reporting period 74 projects completed the sustainability tools. Of the 74, three had biodiversity actions included in the Sustainability Test.

## Consideration of Biodiversity in Estate Management

The SE place portfolio team are well informed on ecological, nature conservation and biodiversity issues through the course of their work, as well as statutory duties. Our approach is based on:

- **Site Specific Knowledge** – many of SE’s sites are long term assets and have been subject to a level of ecological survey and assessment as part of site management, development and acquisition and disposal. This information is made available to interested parties e.g. tenants / purchasers to inform their activities.
- **Due Diligence** – early work to determine any environmental and ecological constraints to future development.
- **Management and Maintenance of Estate** - working with SE’s Asset Management Agents we regularly undertake bat surveys and other protected species surveys when undertaking building repairs or demolition / site clearance works. Similarly, we work with our landlords and tenants to ensure management and repairs are done in an appropriate way to avoid impacts on biodiversity e.g. landscape works, out with bird nesting season, mowing regimes, surveys where necessary.
- **Partnership Approach** – SE work closely with Local Authorities and their teams (Biodiversity Officers / Environmental Protection), statutory bodies (NatureScot / HES / SEPA and RSPB) and we have a network of external specialist consultants with whom we work regularly who we can also contact for advice and guidance on specific sites
- **Strategic Thinking** - SE produced an INNS Strategy in 2016 which continues to be implemented by SE’s Property and Asset Management Consultants and Landscape Contractors. This set out a treatment strategy for sites with known INNS and survey and a treatment strategy for further sites across Scotland. The newly appointed landscape consultant will undertake a review of the INNS as part of their remit.
- **Sustainability** - SE has both built and specified buildings with BREEAM ratings for sustainable design and construction. BREEAM Land Use and Ecology credits require consideration of ecological value and biodiversity at all project stages from design to construction and on to operation.
- **Promoting Awareness** - SE ensure ecological protection as part of ‘Licence to Occupy’ agreements for elements such as site investigations where there are sensitivities and require pre-start survey, detailed methodologies and ECOW oversight on sites with known interest.
- **Planning and Consenting** - SE in many cases have progressed sites through planning to secure consents in which cases, environmental and ecological mitigation plus biodiversity enhancements are committed through planning conditions.
- **Landscape Management** – working with SE’s Asset Management Agents and Landscape Contractors, we actively manage and maintain our landscaped areas / trees etc. to ensure they are healthy. This work is informed by biodiversity considerations e.g. avoiding hedge cutting works during bird nesting season, surveys for bats in trees requiring work.

- **Drainage and Water Management** – SE works closely with partners (Scottish Water / SEPA) to ensure we protect and manage our sites in accordance with relevant legislation and guidance on drainage, SUDs, flood risk, use of herbicides and pesticides and general management of our estate infrastructure. We often undertake ground condition assessment and remediation on sites in our portfolio.



---

#### Images

- Left. Peacock butterfly © Lorne Gill/NatureScot
- Right. The falls of Clyde wildlife reserve © Lorne Gill/NatureScot

## Section 4: Nature-based solutions, climate change and biodiversity

SE recognises that the built environment has the potential to make the biggest impact in reducing carbon emissions. Incorporating green infrastructure, sustainable drainage / protection of water resources / soil management / woodland protection and addressing INNS are all areas we are currently working on both individually and with our partner organisations to help address climate change through nature-based solutions.

The actions outlined in our 2018-2020 report have continued into this reporting period, and include:

- Soil Protection and Remediation
- Sustainability in Buildings
- Green Infrastructure
- Drainage and Water Management

For more detail on each of these areas, please see the previous [2018-2020 report](#).

### Green Jobs Fund

In 2021 SE launched its first ever Green Jobs fund, awarding grants between £50,000 and £500,00, to 43 projects. Summarised below are those successful projects providing nature-based solutions, as part of the project outcomes.

### Angus Estates Limited

[Angus Estates Limited](#) (AEL) identified an opportunity to establish a new business division, to enable the delivery of peatland restoration, at scale, within Scotland. Peatland Restoration feasibility studies and mapping work, as well as the actual restoration work will be a new service provided by AEL. This project aims to scale up the Peatland Restoration activity in Scotland over the next 10 years through the additional training and employment of people with GIS mapping skills and machine operators. Degraded peatlands emit more carbon than they remove, becoming a net source of greenhouse gases. Restoring peatlands will help remove and store carbon from the atmosphere, support habitats and species, improve water quality and manage flood risk. The grant awarded by SE enabled the creation of 9 new jobs to be created and 7 others to be safeguarded, and the purchase of specialist machinery.

## **MiAlgae Limited**

[MiAlgae](#) is an innovative early-stage business in Scotland. SE has provided tailored advice to help the company scale up their ambitions. The company aims to eliminate reliance on wild caught fish in the Scottish fish feed sector as a source of Omega-3, this is done by growing algae from effluent. Algal blooms at sea are well documented evidence of pollution and the company aims to harness those nutrients by cultivating algae on industrial co-products to produce top quality supplements. In addition to the grant awarded to the company from the green jobs fund, MiAlgae has also received support to help unlock private sector investment.

## **Applying Space Data to the Net Zero Economy (CAN DO innovation challenge)**

In 2023, SE in partnership with the Scottish Government and The Data Lab jointly funded research and development projects demonstrating innovative space-based solutions to help accelerate the transition to net zero. Of the 12 projects awarded funding, a number of those projects address the protection and conservation of the environment and biodiversity using innovative space-based solutions.

[Space Intelligence](#) – is developing an Annual CarbonMapper, a system for detecting changes in forest biomass on an annual basis. This will support monitoring, reporting and verification of forest carbon projects. With the grant, the company will demonstrate the technological and commercial promise of the annual CarbonMapper product, with the aim of delivering jobs and economic growth for Scotland deriving from cutting edge science, alongside positive climate and biodiversity impacts.

[D-CAT](#) – The classification of crops and eventually the monitoring of crop growth and development in real time using satellite remote sensing will make a major contribution towards achieving sustainability goals and targets for more efficient and sustainable (net-zero) agriculture. D-CAT and Scotland's Rural College (SRUC) are working in partnership on this feasibility study to create a crop map for all stakeholders across the agriculture supply chain. The work will test D-CAT's crop classification and wheat yield prediction algorithms to identify Scottish arable crops and grassland. This will provide the platform to assess the open-source code base of the Scottish Crop Map 2019. This project provides the opportunity for two leading Scottish organisations to assess the creation of a dynamic and high value commercial digital crop map of Scotland for the many stakeholders driving the Net Zero transformation across the agriculture supply chain.

[GSI](#) (Woodlands) – Much of new afforestation is being incentivised by carbon markets which require carbon units to be verified by assessing increases in tree biomass as they mature. Current methods of assessment rely on manual field surveys, where a balance is struck between cost and accurate site-wide representation. Satellite data is increasingly being used to assess tree growth, but challenges exist to accurately assess younger trees before full canopy closure. GSI will test its current core technology, which combines satellite images and machine learning, by exploring methods of improving accuracy in areas of young forestry and to introduce a health metric. Investigations will focus on improving model training data, through innovation on introducing new data types and processing, focused sampling, and



additional time series analysis. GSI will test these methods on young woodland carbon code plantings, working with a nominated Scottish industry customer. The field testing will be critical to understanding the limits of detection of tree attributes (species, height, and density) using freely available satellite data, and the suitability of these parameters in supporting carbon assessments. Methods will be applied across multiple sites, to demonstrate the potential of ultimately providing a Scotland-wide service.

GSI (Peatlands) – Using the grant awarded GSI propose to build on existing technology, to develop a satellite-based solution to accurately map the key features of peatlands, including bare peat and vegetation indicative of healthy and degraded peatland to prioritise restoration. Innovative methods for peatland mapping will be investigated in a case study area with planned restoration activities. Scalability and repeatability will be tested, to assess the potential of providing a Scotland-wide service to peatland managers and restorers.

[Omanos](#) – will improve low carbon ground data collection capabilities for peatland and forestry restoration, by expanding an existing technical prototype to meet existing customer needs. The company will build out the Community-Sourced Intelligence for Earth Observation (CSI-EO) service, adapting prototype processes for ecological ground-truthing for land management and support of restoration programmes.

[Carbon 360](#) – aims to uncover the strengths and weaknesses of satellite based IoT technologies to monitor peatlands and to analyse a number of data sets via an intuitive dashboard to monitor carbon and GHG base lines and changes in these exceptionally important locations and to act when needed. The project will identify key data sets such as water levels, temperature, dissolved oxygen and GHG and extraneous data sets such as weather patterns, to not only monitor the assets but to predict changes, via artificial Intelligence and data analytics.



Other projects using nature-based solutions which have been supported by SE, include:

### **NorFrame**

The first of its kind in the UK, [NorFrame](#) a specialist in timber frame kit packages, will manufacture its product using power generated from an on-site Anaerobic Digestion plant fuelled by silage from a neighbouring farm. This unique process eliminates the need for fossil fuels to heat or power the facility and its processes. And any waste from the digestion process, is then used as fertiliser for next year's crop, creating a fully organic, closed fuel cycle. NorFrame were the first recipients of SE's Low Carbon Manufacturing Challenge Fund (LCMCF), receiving a grant of £750,000. The grant will support the design and build of the £4 million factory, which will initially create 11 new jobs and safeguard a further 14. The LCMCF is a competitive mechanism which was created to support innovation in low carbon technology, processes, and innovation. NorFrame's certified timber comes from forests managed to strict environmental, social and economic standards under the Forrest Stewardship Council UK (FSC) and Programme for the Endorsement of Forest Certification (PEFC).

### **Edinburgh BioQuarter**

[Edinburgh BioQuarter](#) is a leading location for healthcare delivery, groundbreaking medical research and health innovation. The vision is to unlock BioQuarter's full innovation potential, accelerate its growth and become a global destination for pioneering health innovation and enterprise. Along with SE, it is backed by the City of Edinburgh Council, NHS Lothian and the University of Edinburgh. Each organisation brings experience and expertise in areas crucial to BioQuarter's success and future development plans. Over the next decade BioQuarter will transition into Edinburgh's Health Innovation District – a new mixed use, urban neighbourhood of Edinburgh, centred on a world leading community of health innovators and companies. The partners are committed to achieving an exemplar net zero development and have agreed a sustainability strategy with a focus on net zero carbon buildings, biodiversity net gain and climate change adaptation. SE has supported the partners to develop an energy masterplan to examine options for energy generation as the site develops, including the supply of heat to the site via a heat network which all buildings can utilise. This is proposed to serve new buildings on the site's masterplan, with connection to existing buildings on site in due course, including the NHS Royal Infirmary of Edinburgh and the Royal Hospital for Children and Young People, and the potential to serve social housing off-site. As part of this delivery, the partners have established a working group focusing on biodiversity. Edinburgh University is leading on establishing a biodiversity strategy and action plan for the bio-quarter, on behalf of the partners.

SE is currently seeking a consultant to secure a site wide (including all partners' land assets) biodiversity baseline and high-level recommendations for improvement at Edinburgh BioQuarter. This is to be delivered by 31 March 2024 and aims to support the overarching biodiversity net gain principle for the site.

## **Main climate change related challenges for biodiversity over the next three years**

The impacts from climate change on biodiversity are ever more present and there is a growing urgency internationally to address the biodiversity crises. Scotland currently ranks in the bottom 25% of countries in terms of Biodiversity Intactness Indicators. Biodiversity is crucially important to help tackle and mitigate climate change but is also impacted by the effects of climate change, this presents a significant challenge for Scotland. It is absolutely necessary to ensure that no further loss to biodiversity occurs, and that measures are taken to protect and enhance biodiversity over the next 3 years.

Particular challenges related to this include but are not limited to; invasive non-native species, flood risk / extreme weather events and changing conditions / impacts.

Through SE's INNS strategy, we continue to monitor the impacts of this challenge on our Investment Property Portfolio (IPP). We are taking advice from our Landscape Consultant and Contractor as to success of measures and we are currently revisiting our strategy as a result in 2023/24.

Across our IPP we have sites that are adjacent to watercourses, as well as coastal sites, where groundwater levels have been problematic. We continue to monitor these sites and issues with our Asset Management Team on a regular basis.



---

### Images

- Page 17. Peatland © Lorne Gill/NatureScot
- Page 19. Peterhead

# Section 5: Public engagement and workforce development

## Staff Volunteering

SE has a volunteering leave policy, allowing employees to request up to 21 hours of paid volunteering leave per calendar year (pro rata for part-time). As part of our policy, volunteer projects should ideally have an environmental or local community benefit, however all reasonable requests are considered. In this reporting period SE employees have undertaken a total of **324 hours** of volunteer activity with environmental and biodiversity benefits. The number of hours recorded is less than previous reporting periods, this is primarily due to the COVID pandemic and less opportunity being available to participate in group activities.

In 2023, during National Volunteers Week, two SE employees carried out activities including improving public pathways at Loch Lomond for the National Trust for Scotland and planting an organic garden as part of the Cardross Community Organic Garden group.

Other examples of volunteer activities include:

- Cleaning up water areas around Glasgow with the Scottish Canoe Association
- Planting additional trees and shrubs at Westbourne Gardens Nursery, Glasgow
- Beach Clean at Tentsmuir Forest and Beach, Fife, with Forestry and Land Scotland
- Litter-picking activities at Kelvingrove Park, Glasgow, with Keep Scotland Beautiful

## Workforce Development

In 2021 SE's senior leaders undertook climate literacy training, delivered by the Royal Scottish Geographical Society (RSGS). Following the positive feedback from those on the training course, we rolled out training to all staff across the organisation. This training was delivered through the Verdancy Group in 2022/23, to date 665 colleagues have completed this training. We worked in partnership with the Verdancy Group to ensure that the training 'Leading in Net Zero' covered all of the areas of importance to support the transition to net zero and what that meant for SE as an organisation, including biodiversity.

Further to this, we ran in-depth supplementary sessions specifically focused on biodiversity for all staff including:

- In partnership with NatureScot we ran a series of webinars to highlight the importance of the inter-relationships between natural capital and economic development. In 2021/22 we held four all staff webinars, for both SE and NatureScot. The topics included nature-based solutions, green jobs and investing in natural capital.
- Further to this series, we held a lunch and learn session for SE staff in 2023. We invited a guest speaker from one of our supported companies Advanced Clothing Solutions (ACS) to present the strategy the company has taken to improving biodiversity and the environment through their operations. This highlighted the opportunities for businesses, and how SE can provide support to companies to realise the opportunities available, whilst creating a positive impact on the environment.
- Promotion of the short film series 'The Business of Nature.' Inspired by the Wild Isles, the WWF, the RSPB, the National Trust and Silverback Films produced four films for businesses and organisations across the UK.

SE staff can access a wide variety of learning materials and courses through the SE Development Hub, including OpenLearn, a free learning platform from the Open University. From this platform colleagues can access courses on nature and the environment from introductory through to advanced level.

We also have a dedicated biodiversity resources page, on our Net Zero intranet site. This is updated regularly with new developments, papers and information relevant for staff.

### **Staff Charity Fund**

The SE Staff Charity Fund encourages and supports community engagement by making donations to a wide variety of charities nominated by colleagues. SE staff are able to contribute donations to the fund directly from their salaries. This fund is entirely supported and run by SE colleagues only.

Over the reporting period the fund has made a number of donations to projects supporting the environment and biodiversity. Some of the projects which have been supported include:

- [Hessilhead Wildlife Rescue Trust](#). An Ayrshire-based charity run by volunteers. Hessilhead nurse wildlife back to health and - where possible - release them back to the wild.
- [Scottish Wildlife Trust](#)
- [Woodland Trust Scotland](#)
- [The Wildlife Conservation Society](#) (Royal Zoological Society)
- [Silverburn Park](#)
- [Nith Inshore Rescue](#) - aim is to protect life and property under threat from the sea, inland water, flooding and other water related incidents in the Upper Solway and surrounding area.

## Engagement

Scotland House Brussels (where the Scotland Europa team are based) has a conference centre which is used by the Scotland Europa members and wider Scottish stakeholders to host events in Brussels. In the biodiversity space, as part of our Road to COP26 series of events, we hosted an event on Tuesday 21 September 2021, in collaboration with ICLEI Europe and NatureScot, focusing on peatland restoration for climate and environment. The discussion was chaired by Andrew Millar, Chief Scientific Advisor for Environment, Natural Resources and Agriculture, Scottish Government. Francesca Osowska, CEO of NatureScot, was a speaker on the panel and presented the Peatland Action Programme as a best practice example from Scotland.

Another event was organised by the Scottish Rural College on a Just Transition to a Natural Economy, which was a collaboration with Wageningen University (Netherlands), in June 2023.



---

### Images

- Left. Peatland © Lorne Gill/NatureScot
- Right. Aerial view of forest Loch Lomond

## Section 6: Research and monitoring

### Research

SE recently commissioned a comprehensive report to set the biodiversity baselines across our full Investment Property Portfolio and provide an assessment on biodiversity enhancement opportunities. The final report included:

- Biodiversity baseline assessment – incl. 3 refined baselines and 1 detailed uplift pilot project
- Carbon storage baseline assessment
- RAG and opportunity mapping assessment
- Biodiversity Strategic Review
- Biodiversity review of disposal policy

SE has now appointed a new landscape & environmental consultant whose responsibilities include site maintenance updates and advice with a view to identifying biodiversity improvement. With their help, SE is looking to create strategic alignment across all our sites to support a biodiversity roadmap.

### Erskine Harbour

An ecological survey was carried out at Erskine Harbour in 2022, to capture habitat baselines. Although small, the site provides habitat for a significant range of species. It is part of the wildlife corridor along the banks of the river Clyde and loss of this site would lead to a break in the corridor. There is scope for enhancing the site for both biodiversity and for carbon sequestration. From this survey recommendations were made to support biodiversity enhancement and creation of a wellbeing space at the site supported by local public/private ownership.

### Monitoring

SE continues to monitor the known INNS within our property portfolio, to effectively manage the treatment of those sites, through our INNS Strategy.



---

Image

- Bee hotel

# Section 7: Biodiversity highlights and challenges

## Main Achievements

A full audit has been completed for the first time of SE's property & land assets to provide a comprehensive baseline of the biodiversity quality of the landholding with the intention of developing a programme around biodiversity protection and enhancement. This strategy is currently in development.

Showcasing Scotland's expertise at EU level on the protection and enhancement of ecosystems, sharing knowledge with partners about our respective biodiversity strategies, and raising awareness of Scotland's biodiversity ambitions.

## Main Challenges

The main challenges for SE over the next three years include:

### New Legislation & Frameworks

In the reporting period, Scottish Government will publish its new Biodiversity Strategy and new Natural Environment Bill. SE will have to carefully consider the targets and objectives outlined by the Scottish Government on Biodiversity and align this with our next net zero framework for action update.

The European and International landscape is changing at a fast pace since the Global Biodiversity Agreement. New frameworks, legislation and initiatives are developing and being launched on a regular basis. This poses a challenge to SE to remain up to date in terms of how we make changes which follow these changes (where required) and support the businesses we work with to do the same.

### Economic and resource pressures

It is well known that budgets have been reduced, and public organisations are required to do 'more with less'. This will present a challenge for the future in how we provide support in this area and meet the objectives set out in our biodiversity roadmap for the Investment Property Portfolio.

### Investment Property Portfolio

The challenges outlined in our 2018-2020 report remain. Warmer and wetter conditions are allowing INNS, to establish or spread further. This has already been identified as a trend within our portfolio of sites where areas have increased. Reduction in treatment options can be problematic and need for greater management / resource (time and cost). As already highlighted, this will continue to be monitored through our INNS Strategy. Fly-tipping on our sites is also an ever-increasing issue and challenge to address.



**Scottish Enterprise**

Atrium Court  
50 Waterloo Street  
Glasgow  
G2 6HQ

[www.scottish-enterprise.com](http://www.scottish-enterprise.com)

