



**Crown Estate
Scotland**
Oighreachd a' Chrùin Alba



Statutory Biodiversity report

December 2023

Section 1 • Introductory information about your Public Body

Crown Estate Scotland's role, purpose and environmental responsibilities

Crown Estate Scotland is a self-financing public corporation established in 2017 and governed by the Scottish Crown Estate Act 2019.

Our core purpose is to invest in property, natural resources, and people to generate lasting value for Scotland. We have a statutory duty to maintain and seek to enhance income from the value of the Scottish Crown Estate assets in a way that furthers sustainable development in Scotland, specifically economic development, regeneration, social wellbeing, and environmental wellbeing.

We are responsible for managing the Scottish Crown Estate which comprises a range of rural, coastal, and marine assets as well as some commercial property.

These assets include:

- 35,558 hectares of rural land with agricultural tenancies, residential and commercial properties and forestry on four rural estates (Glenlivet, Fochabers, Applegirth and Whitehill).
- 4,898 hectares of forestry.
- Rights to fish wild salmon and sea trout in river and coastal areas.
- Rights to naturally occurring gold and silver across much of Scotland.
- Just under half the foreshore around Scotland including moorings and some ports and harbours.
- Leasing of virtually all seabed out to 12 nautical miles including fish farming sites and agreements with cables & pipeline operators.
- The rights to offshore renewable energy and gas and carbon dioxide storage out to 200 nautical miles.
- Retail and office units at 39-41 George Street, Edinburgh.
- The Zero Four development near Montrose.

We lease land and seabed for a variety of uses including farming, residential, commercial, sporting, mineral operations, infrastructure, aquaculture, and energy generation. We manage forestry assets on the Scottish Crown Estate.

Sustainable management of these assets is key to our business. The strategic objectives set out in our current corporate plan demonstrate this:

- Support the sustainable expansion of Scotland's blue economy, focussing on marine and coastal development.
- Develop built environment that strengthens communities and benefits businesses.
- Invest in innovation and work with tenants to enable sustainable natural resource use.
- Build partnerships for people and the planet.
- Develop and deploy our people's expertise to deliver value and success.

There are internationally or nationally designated nature conservation sites either partially or wholly within our rural estates. They are as follows:

Whitehill

Roslin Glen Site of Special Scientific Interest (SSSI).

Applegirth

Perchall Loch SSSI.

Fochabers

- Moray and Nairn Coast Special Protection Area (SPA) and Ramsar.
- River Spey Special Area of Conservation (SAC) and SSSI.
- Lower River Spey – Spey Bay SAC and SSSI.
- Moray Firth SPA.
- Spey Bay SSSI.

- Dipple Brae SSSI.
- Tynet Burn SSSI.

Glenlivet

- Ladder Hills SAC and SSSI.
- Lower Strathavon Woodlands SSSI.
- Tips of Corsemaul and Tom Mor SPA and SSSI.
- Bochel Wood SSSI.
- Creag nan Gamhain SAC and SSSI.
- Fodderletter SSSI.
- River Spey SAC and SSSI.

[NatureScot](#) carries out a national programme of condition monitoring of protected sites. The condition of designated sites within the Scottish Crown Estate is recorded as ranging from 'favourable' to 'unfavourable declining', although some of the designated sites identified above have not been surveyed for some time. Our management regime continues to focus on actions to improve the condition of these assets.

Section 2 • Actions to protect and enhance biodiversity

Actions undertaken to benefit biodiversity directly, to tackle the main drivers of biodiversity loss, or to achieve wider outcomes for nature and people

We have carried out a wide range of activities across the Scottish Crown Estate to protect and enhance biodiversity and to achieve wider outcomes since 2020. These include the practical steps we have taken to implement our Glenlivet Estate Local Biodiversity Action Plan 2021 - 2023 which we prepared in 2021. Further detail on our work at the Glenlivet Estate is provided below.

The Glenlivet Estate

The 23,000-hectare Glenlivet Estate lies between the Cromdale and Ladder Hills in Moray and falls largely within the Cairngorms National Park. It incorporates Tomintoul and a number of settlements throughout the Glenlivet area. There are over 30 let farms and over 3500 acres of commercial forestry within the estate. Access is supported and enabled by a visitor centre, a range of educational services, an extensive network of walking trails and a dedicated mountain bike centre.

Glenlivet is home to a wide variety of species of flora and fauna. We work in partnership with a range of public bodies and other organisations to protect and enhance biodiversity. We have detailed action plans in place across the estate, as part of the Local Biodiversity Action Plan. They provide the basis for the implementation of measures for the full range of habitats and species present and include actions to remove invasive species. Specific activities under these plans are subject to regular monitoring to ensure that actions undertaken are progressing as expected. We have provided some examples of the range of projects and activities which have been taken forward during the 2020 – 2023 reporting period below.

Woodland Action Plan

Scottish Wildcat

We are working with the Saving Wildcats Project to undertake monitoring on the estate as Glenlivet is a

potential dispersal site for cats released in Badenoch and Strathspey.

The first 22 wildcats were released in June 2023 into Cairngorms Connect owned land. The project team are monitoring their movement, and to date, one cat has been spotted close to Glenlivet. We are working with local gamekeepers to ensure that they are aware of the presence of wildcats in their area. This is essential in ensuring that we can support the project to achieve its aim to restore Scotland's critically endangered wildcat population. We will also support public education where appropriate.

Twinflower

Twinflower is a distinctive plant which is found mostly in the north-east of Scotland. It is a conservation priority in the UK Biodiversity Action Plan, the Cairngorms Local Biodiversity Action Plan, and is included on the Scottish Biodiversity List. It is the subject of conservation efforts in the Cairngorms National Park.



The Glenlivet Estate is home to a patch of twinflower. We have an ongoing action to monitor and expand this area. Cuttings from the north of the Cairngorms National Park were translocated to Glenlivet under licence.

In Spring 2023 direct cuttings were planted out in an initial area of Drumin Wood. Plantlife and Cairngorms National Park Junior Rangers were involved in this activity. Cuttings were also grown on at our Glenlivet Estate office. In autumn 2023, they will be planted into area that has been prepared with the help of the Cairngorms National Park Junior Rangers. The new site has been spatially recorded and the forestry team informed to safeguard plant from future forestry operations.

Wetland Action Plan

Wading birds

We have been working with the RSPB as part of the Tomintoul and Glenlivet Landscape Partnership on their 'Peesie' project. This aims to conserve and enhance a network of important wetland areas along with working

in partnership on adjacent farmland to provide homes for breeding waders. Lapwings - known locally as peesies – are one of the target species for this project, along with curlews. Both species are in decline across the UK, but Tomintoul and Glenlivet are breeding hotspots.

We have created and maintained suitable habitat for both species on the Glenlivet Estate, in partnership with the RSPB and Cairngorms National Park Authority. We also manage and maintain a bird hide as part of the project. This enables the public to engage with nature on the estate and our Ranger has hosted wading bird-based walks and talks at the hide.

Working with Peesie project partners, we are looking to identify suitable areas for the creation of new wetlands and ponds to enable further expansion of the nature networks for these species. We are in the process of setting up a new group with these partners to address how best to continue beneficial management over the long term.



A Lapwing chick

Moorland Action Plan

Raptors

Moorland within the Glenlivet Estate provides habitat for a range of raptor species such as hen harrier, merlin, and peregrine falcon. Glenlivet is also home to golden eagles. Our Ranger Service monitors a golden eagle nesting site, in partnership with the North East Raptor Study Group. In 2023, two chicks were fitted with satellite tags to monitor their movements. This has been a successful nest in recent times and chicks have been satellite tagged over the last five years. Data from the tags is showing that chicks from previous years are returning to the area to establish their own territories.



Golden Eagle chicks (credit: Ewan Weston)



Black Grouse

Black Grouse

Black Grouse are present at Glenlivet. It is one of the fastest declining bird species in the UK, and needs a combination of habitats – moorland, grassland and woodland – to thrive.

Numbers on our Estate are monitored and data is submitted to the Game and Wildlife Conservation Trust’s Speyside Black Grouse Study Group who compile it with data from across Speyside.

In 2023, our Head Ranger trained Volunteer Rangers from the Cairngorms National Park on how to monitor Black Grouse. Our managing agents have supported two of our tenant farmers to manage land for black grouse under the Agri Environment Climate Scheme.

Other Habitats and Species Action Plan

Wildflowers and associated insects

We have planted wildflower meadows at appropriate sites at Glenlivet to support the delivery of NatureScot’s Pollinator Strategy for Scotland, including wildflower meadow at the scheduled monument Blairfindy Castle in June 2022.

Our Head Ranger has put monitoring and management processes in place including:

- Bee monitoring surveys across the Estate with the Bumblebee Conservation Trust which began 2023.
- Scything days to manage the wildflower meadows on the estate. They are cut once a year with all the cut material moved away to keep the nutrient level low. In 2023, around 30 participants got to learn how to scythe, collect seed, and were hopefully inspired to introduce some wildflowers into their gardens.

Invasive species

Our ranger service has undertaken a range of activities at Glenlivet to tackle invasive species on the estate. Highlights include:

- In 2022 pupils from Speyside High participated in a project to remove Sitka spruce from the Glenmullie peatland restoration site as part of our work with the Wilderness Foundation.
- An area of invasive Butterbur has been reduced along the River Livet with the help of Cairngorms National Park Volunteer Rangers. Further work on this site will be required in 2024 including monitoring and further interventions.

Marine Natural Capital

To complement the work that we are doing on natural capital on land, we have also begun work on understanding how we can contribute to enhancing marine natural capital during this reporting period. This is a rapidly developing area of both policy and practice which is receiving increased interest from Scottish Government, commercial

companies, non-government organisations, and communities who wish to carry out marine enhancement projects.

We have been involved in supporting the emerging national policy framework for marine natural capital by engaging with the Marine Directorate of Scottish Government as they prepare the second National Marine Plan (NMP2). Whilst the policy framework is developing, we are also carrying out work to understand how we can enable the delivery of marine enhancement projects on a practical basis for our role as seabed manager through our leasing and agreement processes. During 2022 we carried out research into how we can better support community-led marine enhancement projects which resulted in a number of practical recommendations that will be implemented. This is discussed in more detail in section 6.



Volunteer Rangers remove Butterbur on the Livet

Aquaculture

We joint fund, with the Scottish Government's Marine Directorate, projects to protect biodiversity at aquaculture sites. Finfish farms attract marine wildlife such as seals as they are seen as a good source of food. We are currently joint funding a project investigating and testing the use of non-lethal measures to address seal predation issues in aquaculture. This project investigates alternative measures to deter seals from fish farms which are less intrusive.

We joint fund projects to manage the interactions of sea lice on finfish farms and wild fish. We have helped fund the development of SEPA's spatial management tool being implemented to assess the risk from open pen finfish farms on wild salmon. Models are being developed to identify risk areas and we have provided support in the validation of these models.

We also fund a post at Fisheries Management Scotland. The purpose of the post is to provide support to the fisheries board & trusts in the development of environmental management plans required through the planning process to manage the risk to wild fish and to help improved relationships between the wild and farmed fish sectors. The work of these projects and the post contribute to Scottish Government's Scottish Wild Salmon Strategy.

Marine litter

Tackling marine litter is a key priority and we have taken a range of actions to address the issue. Aquaculture tenants now report on the use of plastics as part of our lease terms. This requirement will help to raise awareness of the need to use and dispose of plastics responsibly.

We have supported partner organisations through funding for projects which will deliver community awareness and capacity to deal with plastic waste in our rivers and seas including:

- Keep Scotland Beautiful.
- Marine Conservation Society.

- The Scottish Islands Federation.

Much of this work has enabled children and young people to engage in outdoor activities and citizen science through schools and outdoor activity providers.

Further information about projects that we have funded can be found below.

Upstream battle on the Tay

In 2022, we supported Keep Scotland Beautiful to help deliver their Upstream Battle campaign on the River Tay. The campaign aimed to raise awareness that 80% of marine litter comes from land, gather information, and take direct action to address litter in river catchments, preventing it reaching the sea. The project included community action to remove litter from their local stretches of river, helping to address biodiversity impact.

Our funding enabled Keep Scotland Beautiful to organise a Source to Sea Spring Clean in April 2023 which removed over 150kg of litter during 6 litter picks in 3 locations along the river. To achieve this, Keep Scotland Beautiful worked with 3 outdoor providers and Upstream Battle Anchor Groups to support public involvement in the litter picks on land and in the water. [Further information on this project is available here.](#)

Tackling marine litter on Scotland's islands

Marine litter is a significant issue on Scotland's islands and we are part funding two posts to support the Scottish Islands Federation (SIF) to address this.

SIF has set up a Marine Litter Working Group (MLWG) which will enable island groups to share experiences and resources. MLWG will raise awareness of marine litter in the islands and will look for solutions to key issues. The two Marine Litter Officer posts which have been set up to cover the northern islands and is based in Orkney and the western islands and is based in Oban, will help SIF to develop and build capacity in this work.

Section 3 • Mainstreaming biodiversity

Steps Crown Estate Scotland has taken to incorporate measures to protect biodiversity into its wider policies, plans or strategies, decision-making structures, staff and organisational roles and responsibilities

Corporate Plan

Our current corporate plan was published in 2020 with a focus on helping to meet Scotland's target of net zero emissions by 2045, to deliver for biodiversity and to further sustainable development in Scotland. Our objectives focus on Scotland's blue economy, creating great places, natural resource use, and involving people in how land, coastline and seabed are managed.

The plan recognises that our work has a wide reach – across the seabed, coastline, rural estates, and urban areas and across sectors including offshore renewables, aquaculture, farming and ports and harbours. It also notes that we take plan-led approach ensuring that, on leasing for offshore renewable energy projects for example, environmental considerations are taken into account by the planning authority.

Our current corporate plan has been extended to 2025.

We are in the process of preparing our new corporate plan for 2025 – 2030. This period will be critical for delivering tangible actions to tackle the climate and biodiversity crises. This includes ensuring that we have the staff and resources available to deliver lasting value and sustainable management of the Scottish Crown Estate.

We are engaging widely with our tenants, communities, key stakeholders within the Scottish Government and key agencies as part of our plan preparation. We are also making sure that children and young people are active participants in the corporate planning process through our Future Forum. We will involve them in corporate planning by inviting them to talk to us about the actions that they want to see happen during this period through the plan and to challenge us to deliver for present and future generations.

Climate Change Action Plan

Our first Climate Change Action Plan was published in 2021. We have committed to achieving zero direct emissions by 2040. We have established our emissions baseline and are reporting annually in line with the requirements of the Climate Change (Scotland) Act 2009. The plan identifies short, medium-term and long-term actions to reduce our emissions.

We are taking action to develop lower carbon working practices at our Edinburgh and Glenlivet offices, including incorporating home working into normal working practice, reducing energy and water use and reducing the amount of waste produced. We are also in the process of implementing our green travel policy to encourage staff and Board members to travel less, and where travel is necessary to go by more sustainable means.

The plan also sets out how we will work with our tenants and partners to tackle wider emissions and facilitate climate change mitigation and adaptation across the Scottish Crown Estate. This includes promoting sustainable and diverse agricultural businesses by embedding natural capital approaches into farm business planning, identifying opportunities for tenants and other stakeholders to plant trees on the rural estates and implementing peatland restoration projects at Glenlivet and beyond.

We have also made a commitment to establish a method for factoring wider value, including environmental and climate change considerations, into our decision-making. More detail on The Value Project is set out below.

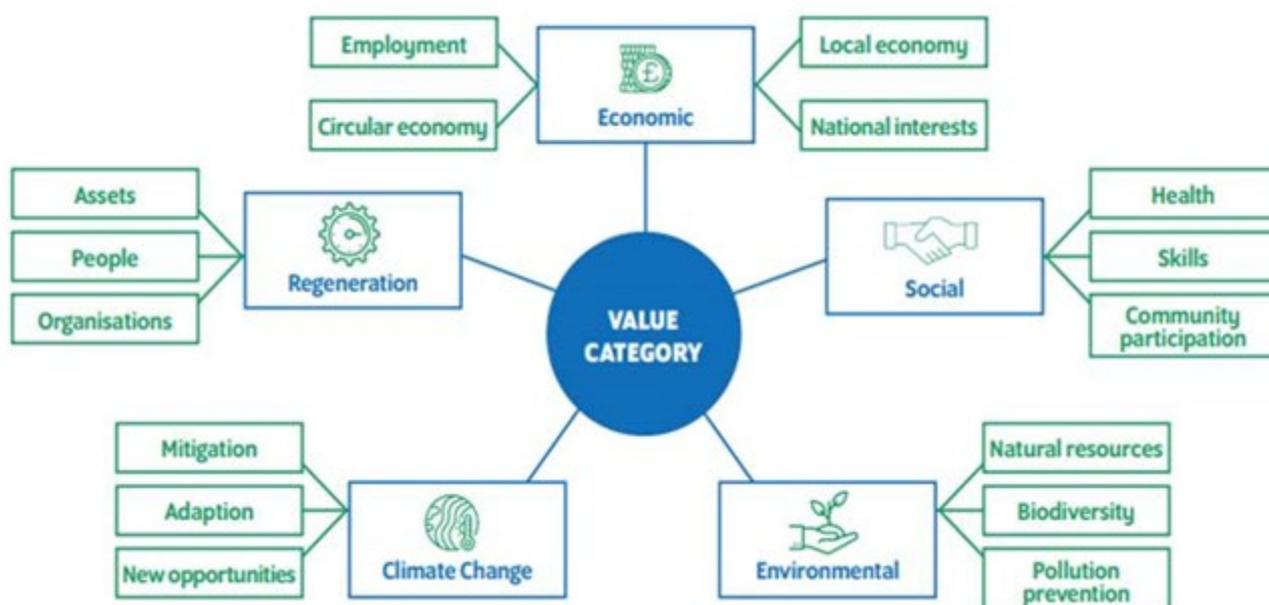
The Value Project

The Scottish Crown Estate Act 2019 requires us to manage our assets in a way that is likely to contribute to the promotion or improvement of economic development, regeneration, social wellbeing, and environmental wellbeing.

To do this we need to understand the wider value delivered by the assets and our management activities. To achieve this, in 2018 we set up The Value Project. Key outputs from The Value Project were asset profiles for each of our asset classes and the incorporation of wider value questions and criteria into our template for investment decision-making.

The Value Project identified five value categories and 16 value indicators, as illustrated below.

We are working with consultants to design a methodology that will enable us to report on wider value, including biodiversity. This will also enable a variety of audiences to analyse the information provided, including internal users and external stakeholders.



Sustainable Communities Fund

We launched the Sustainable Communities Fund in 2020 to support local regeneration and sustainable development. To date, we have provided a total of £970,000 over the first three years of the fund.

The fund is split into two separate streams:

- **Community Capacity Grants** for community enterprise projects. This programme is open to all communities up to five miles from Scotland’s coastline or within five miles of our rural estates.

- **Environment Grants** provide funding for Crown Estate Scotland tenants to deliver projects with demonstrable environmental benefits.

Through our Environment Grants, we have awarded a total of £203,330 to 15 projects to enhance or restore biodiversity. This funding has enabled our tenants to carry out a wide range of projects including biodiversity enhancement, education projects on agricultural land and the removal of invasive non-native species.

Some examples of these projects are included below. For more information on the fund, please [visit our website](#).

Restoring reedbeds (2021)

We funded RSPB Scotland to restore habitat across the Tay Reedbeds to tackle a dense stand of older and poorer quality reed and provide a more diverse habitat for wildlife.

The project entailed the management of approximately 9.5 hectares of reedbed which resulted in an improved habitat for the target species and improved the overall diversity of the reedbeds and estuary, creating a more robust habitat for a variety of wildlife. Opening-up the older reed will facilitate management of these open areas, ensuring the area continues to benefit the widest range of biodiversity possible. The reedbeds are also accessible to visitors ensuring that local communities can benefit from a connection with nature.

Filming was carried out to promote the project, and baseline surveys were conducted to assess the impact on bearded tit and water rail populations. See the film [here](#).

Biodiversity enhancement on farms

We have provided over £75,000 in funding to five agricultural tenants to support biodiversity enhancement work on their farms.

In one example (2021), this includes funding for hedgerow planting to create a wildlife corridor between two small areas of woodland amid arable land, and around a newly created pond/wetland habitat, providing shelter and cover for wildlife species attracted to the pond. In a previously declining small area of woodland, 1.5m – 2m tall fruit trees were planted, producing fruit that is beneficial to wildlife. The leaves provide a source of food for caterpillars, and the flowers attract insects with their pollen and nectar.

Another agricultural tenant transformed an unused, wet, boggy area of their farm into a wildlife conservation site (2021). The project focused on creating a welcoming and peaceful space for people and nature, designed to attract wildlife and promote biodiversity. The area was transformed into a large pond, bird and owl boxes were constructed and native trees planted.

The project's achievements were as follows:

- There was an increase in wildlife activity, with ducks, herons, geese, pheasants, and small songbirds being observed in the area.
- The establishment of a pond and planting of trees also helped mitigate flooding and provided habitat for local species.
- Over 100 trees were planted, contributing to the overall tree cover on the farm.
- Increased the area of wildflowers to support pollinators.

The applicant recognised the importance of the positive impact of nature on well-being. The site provided a space for the farm's family, staff, and visitors to unwind, enjoy the surroundings, and connect with nature. It offered a break from the busyness of everyday life and provided an opportunity for children to witness and learn from the changes and activity in the area.



Controlling invasive non-native species (INNS)

We have provided funding to several tenants to undertake works to control invasive non-native species (INNS) across the Scottish Crown Estate. These grants were awarded for projects which are taking place within a variety of locations including within protected areas, alongside rivers and to help support peatland restoration. We have provided some examples of these projects below.

Spey Bay Wildlife Reserve (2021)

The Scottish Wildlife Trust are our tenants at the Spey Bay Wildlife Reserve, which is within the Spey Bay SSSI. Our funding helped them to achieve part of their objective to control and eradicate INNS which disrupt key habitats at the reserve. They have a long-term ambition to manage INNS at the site over the next fifty years.

Staff, volunteers, and contractors have implemented an ongoing programme to control and eradicate INNS such as Giant hogweed, Japanese knotweed, Himalayan balsam, small balsam, white butterbur, and American skunk cabbage.

Controlling INNS at the reserve has brought the designated features into a more favourable condition so native plants can thrive, leading to improved plant and insect diversity. Local volunteers involved in the project said that they gained multiple benefits from their work. This included having made a positive impact for wildlife but also noted that they enjoyed the physical and mental health benefits of outdoor activities and connecting with nature.

Allan Water Angling Improvement Association (2022)

Our funding enabled a tenant to take action to control Giant hogweed along the River Allan in Perth and Kinross. Part of the work undertaken in this project was to identify sources of INNS and to develop ways of halting their spread. A survey of the river increased knowledge about the location of several species of INNS namely Giant hogweed, Japanese knotweed, and American skunk cabbage.

The survey covered approximately 12 miles of the river over a span of 17 days, with the help of both staff members and trained volunteers. Treatment of the invasive species

included the use of chemical solutions to cut off and treat flowering plants. Whilst the initial actions were successful, continued management is necessary for at least the next 15 years due to the long-lasting viability of Giant hogweed seeds in the soil.

The control efforts have yielded positive outcomes. Treated areas from previous years have shown a significant reduction in Giant hogweed numbers and flowering seed heads. This reduction in seeds within the seed bed is promising for the future eradication of the plant in this area.

The project also benefited from the involvement of dedicated volunteers who contributed six days of work, assisting in the treatment of large areas of the Allan Water.

Lower Urr River (2022)

Our funding enabled a tenant to contract the Galloway Fisheries Trust to survey and control Giant hogweed, an invasive non-native plant species, along the lower Urr river in Dumfries and Galloway. The project aimed to ensure safe access to the riverbank, prevent environmental degradation, and protect native plant species. A survey was conducted, and spot treatments using Glyphosate were carried out to control the Giant hogweed population. The project successfully reduced the number of Giant hogweed plants along the lower Urr, creating a safer riverbank for recreational fishers and the public.

In addition, by controlling the invasive species the project:

- Helped decrease Giant hogweed seed input along the lower Urr, reducing the potential for future growth from the existing seed bank.
- Created space for native plant species to grow along the riverbanks, strengthening the riverbanks and reducing erosion.
- Led to reduced herbicide use, lower control costs, and less impact on the river, protecting native species from being outcompeted.

River Devon (2023)

This project is to control invasive species in locations along the River Devon in Clackmannanshire. The project will support the restoration of the river, thus helping to work towards Scottish Government targets in the Wild Salmon Strategy by creating a healthier ecosystem for salmon, sea trout and brown trout populations.

Removal of invasive self-seeded Sitka spruce (2023)

A recently awarded and ongoing Environment Grant project is the removal of invasive self-seeded Sitka spruce which has spread from adjacent conifer woodland onto peatland. If left unchecked, the Sitka may damage the peatland's current carbon storage capabilities. The invasive Sitka has spread several hundred metres beyond the plantations on both the Balloch and Benmain hill in Moray. As well as engulfing large areas of dry heath, it is now encroaching on to deep peat and blanket bog. If this continues unchecked, it will be very damaging for the wet heath and deep peat areas as the Sitka spruce will eventually cause the bogs to desiccate with negative implications for their current carbon storage capabilities.

Improving salmonid populations (2023)

Our funding is supporting the implementation of the recommendations of a report looking at improving the river environment of the River Eden in Fife. This involves:

- Planting native trees along the banks and transplanting water crowfoot into the river to improve habitat diversity and enhance invertebrate biodiversity.
- Regrowth of native vegetation, bank stabilisation, and improved local biodiversity will occur in 3-5 years.

The resulting increase in cover and shade will improve fish habitat, particularly for critically endangered salmon and offer a small contribution to mitigation of the impacts of climate change which have already resulted in elevated temperatures and low flow.

The project has also had additional benefits including the installation of educational information boards at key sites to illustrate the work carried out and the biodiversity of the

area. Local schools have also been involved in invertebrate monitoring with Buglife Scotland.

Enabling seagrass restoration (2022)

We provided grant funding to a mooring association tenant, in conjunction with the charity, Seawilding, to map and restore 1000m² of seagrass meadow in the southern end of Loch Craignish in Argyll and Bute. This is the first seagrass restoration project in Scotland.

Seagrass meadows provide essential habitat for a diverse range of marine species, support local fisheries, improve water quality, and sequester carbon. Baseline surveys revealed a significant decline in seagrass extent, with current coverage at 5.5ha compared to a potential historical extent of 92ha. Seagrass beds hosted 68% of the biodiversity in the area despite occupying only 0.4% of Loch Craignish.

In 2022, 200,000 seagrass seeds were harvested, and different planting methodologies were trailed, including hessian bags, seed injection, seed scattering, and sod transplantation. The success of each method was evaluated in spring 2023, with further assessment planned after 18-months. Seed scattering and injection showed promise, and spring planting was favoured. Three young conservationists were trained in seagrass surveying and restoration techniques, leading to one pursuing a conservation career and another studying marine biology. The project engaged in various activities, including producing educational materials, conducting training weekends, and featuring in TV broadcasts. Socio-economic benefits included community job creation, overnight stays, and support for local businesses. Additionally, the Wild Seas Weekend event raises public awareness and engages the community in appreciating and protecting the marine environment.

The project delivered significant environmental benefits by restoring and expanding seagrass meadows, a Priority Marine Feature.

[A link to the full report can be found here.](#)

Community Woodland (2023)

Three Hares Community Woodland, a 20-acre community woodland in Auchendinny in Midlothian recently received an Environment Grant from us to start their 'Growing Roots' project. The project will involve:

- Creating a new orchard, contributing to the growth of orchards in Scotland and helping to ensure they exist for future generations. In the long-term, the orchard will encourage locals to come and pick their own apples and will provide opportunities for running apple pressing events and tree-grafting workshops. The apple trees will also encourage greater biodiversity in the woodland, supporting pollinators and other wildlife. Planting heritage apple varieties which contribute to supporting genetic diversity amongst apple trees, are more resilient to climate change risks and support a range of biodiversity.
- Removing non-native invasive species will benefit the local native wildlife and plant populations. Invasive species tend to have a detrimental impact on woodlands as they quickly spread and outcompete more delicate native plants.
- Installing notice boards to provide information for the local community about getting involved in upcoming educational and community building activities. Installing an outdoor blackboard will provide the opportunity for locals to record the wildlife they observe on the land. This will support locals with their nature identification skills and help The Three Hares record and monitor the wildlife using the woodland.

Glenlivet 2050

As part of our commitment to developing vibrant communities, we are preparing a plan for the Glenlivet Estate which will secure the long-term management of the area in line with local priorities. We are working with communities and key stakeholders from across the Estate to understand their priorities for the future of their place.

The 'Glenlivet Estate 2050' project began in 2022, with community consultation continuing during 2023. An action plan will be developed by early 2024.

Early feedback from stakeholders demonstrates that people value their local environment and want to see it managed so that it can thrive in the long-term. Themes identified during the first stage were:

- A thriving farming sector which manages the transition to net zero, where farm tenants are supported and valued as stewards of the Estate, its soils and its wildlife.
- An approach to woodland planting and management based on the principle of having 'the right trees in the right places.'
- Sporting and wildlife management that supports healthy ecosystems and a vibrant rural community.
- Safeguarding water resources for future generations.
- Balancing tourism with environmental and community interests, encouraging visitors to stay and explore the area and become a rural exemplar of 'active lifestyles.'
- Housing stock that provides affordable, high-quality, energy-efficient accommodation.

Three working groups have been created to develop these themes into options and opportunities that will form the basis of an Action Plan. We will deliver this with our partners, tenants and the community.

The actions identified in the plan will also align with the Cairngorms National Park Partnership Plan and support the delivery of priorities identified at regional level.

[More information on Glenlivet 2050 can be found here.](#)

Combined sporting lease

The Combined Sporting Lease at our Glenlivet Estate was retendered during 2023. Broadly, the current lease covers grouse, deer, fishing, game and ground game species as well as the management of vermin to support forestry and sustainable farming activities. This will be similar for the new lease. The terms of the new lease will reflect the changing legislative environment, Crown Estate Scotland's wider sustainable development objectives, and the themes that are emerging from the Glenlivet Estate 2050 project.

The new lease will align with the Scottish Government's new Biodiversity Strategy and future tenants will be required to manage the estate in a way that delivers positive effects for biodiversity. The new lease will reflect the requirement for effective control of impacts from deer, wild boar and other game species to support our farm tenants, whose leases this sporting lease overlays. Tenants will need to agree a management plan with us covering sustainable management practices, including actions to

further the conservation of biodiversity on the estate. Plan implementation will be supported by regular reviews.

Leasing for aquaculture

We manage natural resources such as the licensing of wild seaweed harvesting on crown owned foreshore. We work in partnership with NatureScot to ensure the licensing of wild seaweed harvesting is done in a manner that would not result in significant environmental harm. The activity must be carried out in a manner that is in accordance with best practice and would not cause disturbance for example to bird populations or impact on protected features. We take advice from NatureScot and incorporate any mitigation measures the relevant body suggests as necessary.

We are looking to work in partnership with others to develop a robust and credible method of managing natural capital in the marine environment.

Section 4 • Nature-Based Solutions, Climate Change and Biodiversity

Integration of biodiversity into actions on the climate emergency such as through nature-based solutions.

Implementing nature-based solutions on the Scottish Crown Estate

Our [2023-24 Business Plan](#) sets out how we will address the twin nature and climate crises. We will do this through a range of actions for our work on marine natural capital, supporting sustainable communities, and opportunities in strategic development land.

Key actions for nature include:

- Work with partners to understand the opportunities and risks associated with the blue carbon market.
- Build on work to date to develop a marine natural capital strategy.
- Work with tenants and stakeholders to identify and progress plans for new woodland planting to support delivery on climate change and biodiversity targets.
- Progress peatland restoration at Glenlivet Estate working with Cairngorms National Park Authority.
- Restore and regenerate biodiversity on the Scottish Crown Estate.

We are already implementing a range of nature-based solutions across the Scottish Crown Estate. Tenants on our four rural estates – Glenlivet, Fochabers, Whitehill and Applegirth – are involved in a wide range of activities including farming, leisure, commercial and residential. We work with them to support their work on implementing nature-based solutions such as tree planting and nature education projects. We have provided examples of the projects we fund to support our tenants to carry out projects which benefit biodiversity and people through environmental education.

Peatland restoration

We have been carrying out peatland restoration on two sites within our Glenlivet Estate - Feith Mussach and Glenmullie Moor. Information on these projects is provided below.

Feith Mussach

We are working with our tenant at the Feith Mussach peatland to continue the restoration and reprofiling of a commercial peat cutting site. Small scale engineering works to improve water retention within the peat were completed in August/September 2022. Recent monitoring inspections have demonstrated that these works have generated positive results.

Glenmullie Moor

Peatland restoration was carried out on Glenmullie Moor in 2015. Since then, it has been identified that some of the dams installed by Peatland Action need repair to effectively rewet the area. It has also become clear that spruce is regenerating on the site. Peatland Action have undertaken to repair the dams while we have committed to removing the regeneration of the spruce.

In 2023 several pieces of work were carried out to progress this, including bird surveys, mapping of the regeneration density and discussions with contractors about the removal of the trees. Volunteers from the Wilderness Foundation and a local school have already removed some small sections of spruce while learning more about peatland and restoration. More information on our work with the Wilderness Foundation can be found in section 5.



Peatland restoration area, Glenmullie Moor

Tree Planting

We are working to deliver tenant led tree planting to expand woodland cover and are developing policy to support its wider uptake. Work is also underway with partners of the Spey Catchment Initiative and tenants to formulate a plan for riparian planting in this area. We also support the work of others implementing nature-based solutions including the East Cairngorms Moorland Partnership and Cairngorms Connect.

Marine recovery, restoration and enhancement

The Scottish Marine Environmental Enhancement Fund (SMEEF) is a funding mechanism to enable private finance to support grant-aided projects that enhance the marine environment.

The types of projects funded include:

- Recovery, Restoration and Enhancement of marine and coastal habitat and species.
- Marine and coastal nature-based solutions to climate related impacts.
- Invasive species management.
- Research which sheds new light on relevant issues and/or makes projects more effective.

Together with other partners, Crown Estate Scotland provided initial seed funding in 2020 and the fund was established in 2022. It has now raised £3.3m, with £2.9m coming from the Scottish Government's Nature Restoration Fund, along with almost £400,000 from private finance, led by the offshore wind industry. The money has been distributed to 45 projects around Scotland's coasts and seas. Projects supported by the fund include community-led native oyster and seagrass restoration schemes and equipment to support new research into the way that complex marine habitats work and how they contribute to carbon sequestration.

We will continue to support SMEEF through our membership of the Steering Group, the grants panel and the Ethical Contributions Board. More information on SMEEF and our involvement can be found in the first impact report.

Solway Coast and Marine Pilot Project

We are providing partnership funding to the Solway Coast and Marine Pilot Project (SCAMPP), which is a Borderlands Natural Capital Innovation Zone project. SCAMPP aims to develop a landscape scale project to address carbon sequestration, halt biodiversity loss and support a healthy commercial fishery in the Solway estuary. The project also aims to include relevant infrastructure and coastal landscape enhancement to support access to the environment for communities and visitors. Projects likely to be considered in the scope of the pilot include marine habitat restoration and expansion through planting of seagrass meadows and creating Native Oyster reefs; the restoration and expansion of key coastal habitats such as saltmarsh and wetland and expansion of the coastal temperate rainforest.

Aquaculture

We commissioned a report on Alternative Markets for Shellfish in 2021. One of the alternative markets identified was for environmental gain. Following on from this project we are supporting a Shellfish Marketing Development post at the Scottish Shellfish Marketing Group to lead on the development of alternative markets for shellfish such as ecosystems services.

What do you think the main climate change related challenges for biodiversity over the next three years will be?

The next three years are likely to be critical for delivering tangible actions to address the climate and biodiversity crises. Our corporate and business plans set out our ambition to be an exemplar and to provide leadership on tackling them. There are several challenges that we foresee in this context:

Legislation and policy

The forthcoming Natural Environment Bill and Strategic Framework for Biodiversity are expected to set challenging targets for halting biodiversity loss. The implementation of the legislative and policy framework will require a well-resourced workforce, clear targets and clear direction from the Scottish Government on policy implementation and milestones.

The developing second National Marine Plan (NMP2) will set the long-term decision-making framework for both offshore development and marine enhancement projects. There is increasing competition for space in the marine environment and NMP2 will need to provide a clear approach for decision-makers to ensure that projects which will mitigate the effects of climate change, such as offshore renewable energy production and others which will enable us to adapt to an already changing climate including marine restoration projects can proceed.

Impact of climate change

Some of the effects of climate change are already being felt across the Scottish Crown Estate. Over the last three years, the effects of increased storminess on have been experienced. A series of storms at Glenlivet in the winter of 2022 had a significant impact on woodland and forestry, leading to significant areas of damage and windthrow.

Other effects which have been observed include the following:

- Wildfires – Glenlivet spent most of June 2023 under high fire risk warnings and had a wildfire in 2022 that required significant intervention from the fire service.
- Availability of water – prolonged dry periods in the summer cause issues for our tenants housing including private water supplies, affecting both people and livestock. Extreme weather events including increased flooding in autumn and

winter are also likely to cause issues for species, infrastructure and people.

- Pests and diseases – the changing climate is likely to lead to outbreaks of pests and diseases which have the potential to affect specific species e.g., tree disease, avian influenza, and tick-borne diseases. Ticks were a significant problem at Glenlivet in 2023.

There is also the potential for disturbance of species and habitats due to increased visitor pressure across Scotland. There will be multiple triggers for this but could include to the desire to reduce flying and reluctance to travel as natural disasters increase.

Climate change is also likely to impact on food production, changing growing conditions and seasons. These effects are likely to be felt on land and at sea, impacting farmers and the aquaculture sector which faces challenges such as changes to sea temperature which may make it difficult to grow products.

Skills

There will need to be an appropriately skilled workforce to implement measures including nature-based solutions and energy efficiency improvements to buildings. It will be a challenge to educate and support others to take the necessary actions in time to meet public expectations and Scottish Ministers' ambitions set out in legislation and policy.



Crown Estate Scotland Rangers attend to storm damage on the Glenlivet Estate

Section 5 • Public Engagement and Workforce Development

Public Engagement

Over the last three years, our Ranger Service at Glenlivet has managed a full programme of public engagement events to involve people and promote awareness about biodiversity and the environment on the estate. Whilst some of the in-person events were necessarily put on hold in 2020 and 2021 due to COVID-19 protective measures, our Ranger Service was able to deliver some online events and to continue to raise awareness through social media posts about the estate. The Ranger Service also records a regular slot for Keith Community Radio with a focus on biodiversity and encouraging people to be active outdoors.

During 2022 and 2023, our estate team delivered a range of events including guided walks, speaking at regional nature festivals and participation in the Moray Walking Festival. During 2022, Jubilee Volunteering opportunities were also available for the public on the estate. A range of activities were available such as tree planting, wildlife surveys, land management activities such as scything and learning about the historic environment of the estate through participation in archaeological excavations. Attendees at the events and volunteering days have included local primary and high schools, universities, and members of the public.

As part of our work across the Scottish Crown Estate, we have recognised the need to engage with children and young people. We have worked to engage various groups with nature over this reporting period and to help them to realise the benefits of spending time outdoors. Our Ranger Service at Glenlivet has been particularly proactive in this. Since 2022 our children and young people's panel, the Future Forum, has been engaging with our wider work and we look forward to benefiting from their enthusiasm and engagement in shaping our work including the emerging Corporate Plan.

We have provided some examples of the public engagement work we have been doing during this reporting period below.

Estate Open Day

In July 2023, our Ranger Service held the first open day on the Glenlivet estate since 2014. The open day enabled the public to learn about how the estate is run, including the work of Crown Estate Scotland in supporting sustainable communities, dark skies, wading bird conservation, wildflower meadows, and responsible access. Visitors also learned about how tenants use technology as part of their work, particularly in habitat management. Attendees were also able to learn about other aspects of the Glenlivet estate including its cultural heritage, forestry and the challenges of modern farming.



Visitors attend a talk given by our Sporting tenant on the Glenlivet Estate

Dark skies

Our Glenlivet estate is located within the [Tomintoul and Glenlivet – Cairngorms Dark Skies Park](#), the most northerly in the world. Dark skies are important for both recreation and biodiversity as light pollution can disturb animals and ecosystems.

As part of the ongoing work on dark skies, our Head Ranger has been leading work to ensure that tenant farms and our estate offices have lighting which complies with the Lightscape Management Plan.

Our Head Ranger has been involved in organising outreach and training events to support the Dark Sky Group. These include:

- A visitor centre exhibition in 2022 and a star party to engage the local community and visitors in activities including astrophotography, mobile planetarium, telescope observation and naked eye stargazing.
- In 2023 a Scottish Countryside Ranger Association Dark Sky Training event took place in Tomintoul.

Wilderness Foundation

At Glenlivet, our Ranger Service has been working children and young people to inspire and engage them with the environment. Working primarily with the Wilderness Foundation, which brings young people who may have complex needs or are experiencing mental health challenges to work together in a rural setting. This aims to deliver benefits for the resilience, wellbeing, and employability of participants. The group camped and explored the estate as part of a week-long visit in autumn 2022. They also helped the Ranger Service with conservation tasks. Groups have taken part in activities such as pond vegetation management and spruce removal to prepare areas of the estate for peatland restoration.



Volunteer Rangers remove spruce from a peatland area undergoing restoration

Future Forum

As part of our commitment to the sustainable development of places and communities, and in recognition of the need to take a long-term approach to our decision-making, we have established a forum to enable inclusive engagement. Our Future Forum was set up in June 2022 to help ensure that children and young people are informing and influencing our work.

The Forum is a group of children and young people aged 11 to 20 from all over Scotland. They meet regularly supported by a specialist organisation, Children in Scotland, commissioned by Crown Estate Scotland.

To date the Forum has:

- Developed a vision statement to explain the different interests and priorities of the forum members, and production of a video to communicate this to a wider audience.
- Met with Crown Estate Scotland's Board, Chief Executive, Director of Corporate Operations, and members of staff to get to know each other and to look for ways to work together to shape Crown Estate Scotland's work. Crown Estate Scotland staff have been impressed by the Future Forum's knowledge and interests and are keen to translate these into tangible actions.
- Visited the Glenlivet Estate to learn more about our work, meet the people who work there, and explore the estate.
- Identified the areas of Crown Estate Scotland's work that they are most passionate about and fed these into early discussions about CES's next corporate plan. The Forum has chosen to learn more about renewable energy and biodiversity first because they care about the environment and want to help tackle the climate and nature crisis. They kicked this process off by hearing from members of the Crown Estate Scotland team across two sessions, the first about renewable energy and the second on biodiversity. At each of these online meetings, the forum had an opportunity to discuss these topics and to put forward their ideas for future action.

Workforce development

To engage colleagues with work taking place on the Glenlivet estate, our Head Ranger publishes regular blogs on Crown Estate Scotland's intranet. They cover topics including the role of the Ranger Service, seasonal changes on the estate – including the impact of extreme weather events - the natural heritage that can be observed throughout the year and public engagement events taking place.

To engage our staff with emerging on biodiversity, sustainability, and environmental topics, amongst others, we regularly invite leading academics and other leaders to speak to us and to challenge our thinking on these matters. Recent speakers include Professor Sir Dieter Helm, Chris Stark, and Susan Davies.

We are part funding a Junior Ranger Development Post over a three-year period (2022-2025) with Forestry and Land Scotland, NatureScot, Historic Environment Scotland and the Cairngorms and Loch Lomond and the Trossachs National Park Authorities. The outcome to date has been a more coherent and organised award scheme with central support resulting in opportunities for more young people to experience and connect with nature and to undertake practical tasks to increase biodiversity. This builds skills that increase employability in the rural sector.

Identify any opportunities that are available to your staff to take part in practical actions

To mark Crown Estate Scotland's 5th anniversary in 2022, colleagues and Board members gathered at Portobello for a beach clean event with staff from the Marine Conservation Society.

To learn more about the beach clean, [please view this video](#).



Section 6 • Research and Monitoring

Offshore Renewables

We remain a key funding partner for a wide range of research into the impact of offshore renewables on the marine environment, with a focus on ornithology and marine mammals. This work provides an evidence base to support the planning of appropriately sited and designed developments and contributes to the provision of a robust consenting framework. We work in partnership with the following organisations to fund, shape and deliver research:

ScotMER, led by the Offshore Wind Directorate of the Scottish Government, is producing a range of research programmes to provide an evidence base for offshore renewables planning and consenting frameworks. This includes projects such as:

- Seabird tagging feasibility study for the Sectoral Marine Plan.
- Development of a framework to evaluate ornithological compensatory measures.
- Review and recommendations of energy conversion factors used in underwater impact pile driving noise models.

Offshore Renewables Joint Industry Programme (ORJIP)

is a UK-wide collaborative programme of environmental research with the aim of reducing consenting risks for offshore wind and marine energy developments. Research projects underway under ORJIP include:

- Review of current and planned monitoring of seabird behaviour across operational wind farms.
- Improving quantification of mortality rates associated with displacement within the assessment process.
- Improving methods for apportioning seabirds seen at sea both in the breeding season and non-breeding season.

Offshore Wind Evidence and Change Programme

(OWEC). We are part of the OWEC steering group and provide expertise to help shape the programme and to ensure that the impact of research is realised. Research being taken forward under OWEC includes a project led by the Marine Directorate of the Scottish Government looking at the behaviour of Predators and Prey Around Renewable Energy Developments. The project aims to study seabird and marine mammal predator and prey (fish) distribution and behaviour in and around offshore wind farms. This will provide insight into cumulative effects from development for key species, strengthening the evidence base for both planning and consenting.

Community-led marine enhancement projects

We are committed to supporting current and planned community-led marine restoration and enhancement projects. To inform our approach, we commissioned research to better understand community aspirations for marine restoration and enhancement projects and to gather knowledge on the challenges and opportunities that are presented by these projects. The recommendations set out in the report will form the basis for future action.

The research highlighted that communities perceive that there are some challenges in delivering marine enhancement and restoration projects. These range from lack of clarity in leasing and licencing processes, to perceived ethical challenges with funding. The need to consider the whole life cycle of projects when planning them, including decommissioning was also highlighted as a key challenge.

We will be working to implement the recommendations from the research into our developing work on marine enhancement.

Describe any research activities that your organisation has undertaken to help develop understanding and awareness of biodiversity

Crown Estate Scotland jointly funded a post with Marine Directorate, hosted by NatureScot during 2022 and 2023 to develop tools and techniques to apply marine natural capital approaches into decision-making with the aim of supporting the mainstreaming of this concept. The post provided opportunities for recent graduates to develop their knowledge and understanding of marine natural capital, through NatureScot's Programme for Youth Employment.

A range of research projects looking at different aspects of marine natural capital were undertaken during the placement including:

- Natural Capital policy brief for the MASTS Marine Planning and Governance forum.
- Developing options for a project around shellfish cultivation and payments for ecosystem services.

Aquaculture

We have been working with the Marine Directorate of the Scottish Government on the sealice framework for managing interactions from farmed finfish and wild salmon. We will work with them collaboratively to develop a plan and future strategy for wild fish monitoring.

Boards & Trusts in Scotland mainly complete wild fish monitoring. We are funding a post with Fisheries Management Scotland, that supports their work. We encourage engagement with them with regards to development proposals. We have worked in the past to develop a [fykenet protocol](#) for wild fish monitoring with FMS.

What follow-up actions or monitoring have you undertaken to assess the impacts of the actions you have taken? How have you measured this? If you do not carry out any monitoring activities, please explain why.

We work with partners to monitor the impact of wider programmes on the Glenlivet Estate. The monitoring is done in conjunction with partners such as RSPB, Scottish Raptor Study Group, Cairngorms National Park, Game and Wildlife Conservation Trust, East Cairngorms Moorland Partnership, Plantlife, and Bumblebee Conservation Trust.

Does your monitoring show any significant trends or highlight any areas of concern?

Due to the partnership approach we have taken to monitoring to date, we are not able to report on significant trends at this time. We are looking to develop a meaningful baseline which will enable us to carry out analysis of trends in future.

Have you added any data collected to the National Biodiversity Network or your Local Records Centre?

Our Glenlivet estate staff record sightings and submit to the [North-East Scotland Biological Records Centre \(NESBREC\)](#). In 2022, we submitted over 400 sightings to NESBREC.

Section 7 • Biodiversity highlights and challenges

Describe your organisation's main achievements for biodiversity over the reporting period and what you are most proud of (this can include processes, plans, projects, partnerships, events and actions)

A highlight has been the engagement of young people with nature on Glenlivet Estate. This has included practical tasks such as bird box building, bug hotel building, tree planting, peatland management, and pond management.



Young people assist our Rangers with pond management on the Glenlivet Estate

Through the Junior Ranger programme young people have also been directly involved in the hands-on conservation of Twinflower on the Estate and throughout the northern part of Cairngorms National Park. Working with Plantlife this has improved the chances of survival of this species in the area.



A Twinflower translocation site on the Glenlivet Estate

Another highlight has been bringing together members of the North East Biodiversity Partnership and Cairngorms National Park Rangers to support the local community to manage the Tomintoul Wildflower Meadow by scything. This has direct positive impacts for biodiversity but also for community engagement and skill building.



A group scythes the Tomintoul Wildflower meadow

Aquaculture

For aquaculture a key achievement is the introduction of lease terms asking tenants to report on sustainable performance in line with our remit. Tenants are required to report on their use of plastics and area management of sealice. Plastic in the marine environment is a known major issue to marine wildlife, introducing this reporting requirement will hopefully help tenants to be able to demonstrate responsible use and stewardship of the marine resource. Reporting on area management for sealice between tenants will help demonstrate collaborative working to minimise sealice impacts from farming activity.

Looking ahead, what do you think will be the main challenges over the next three years?

We have highlighted several challenges for the next three years in section four, above. However, we also asked our Future Forum what they thought these challenges would be. As part of supporting their discussion of these issues, they were introduced to the topic of biodiversity by Crown Estate Scotland staff, including our Head Ranger from the Glenlivet Estate, at a virtual meeting in October 2023.

They then discussed what they had heard and the following themes emerged:

- **Conserving endangered species** - the group spoke about how conserving certain types of endangered animals may be a challenge because there is a need to be aware of the impact of actions taken on the food chain and on ecosystems.
- **The economic climate** – the group recognised that the current economic climate presents a challenge and may diminish the amount of resource that is allocated to actions that will aid biodiversity. One member said, “the bad economic situation might mean less money is put towards conservation”.
- **The impact of the food industry** - the group discussed how land being used for the food industry is a challenge for biodiversity, the gave the specific example of large amounts of land being used for the fast-food industry. The group recognised that a lot of demands are being put on our land and that it is important to keep spaces for nature.

We also asked the group to say what action they would like to see Crown Estate Scotland take to help support biodiversity and to see addressed in the next report. However, the forum noted that they would like to see work continue in these areas:

- **Focus on supporting wildlife** - the group has previously identified wildlife as one of their key areas of focus. They said that Crown Estate Scotland should continue to take direct action to help wildlife and support biodiversity. They said they could continue to support in developing habitats.
- **Working with farmers** - the group discussed some of the positive work they had seen during their trip to the Glenlivet Estate in 2022, and they spoke about how the Crown Estate Scotland could work directly with farmers to support them to work in ways that help plants and wildlife. Members said they thought this could include providing training, helping farmers to improve practice by sharing positive

examples of what Crown Estate Scotland had done, and providing support. They said that collaboration was important and suggested that Crown Estate Scotland could work directly with farming groups or farming councils.

- **Collaborating with communities** - Forum members also spoke about the importance of collaborating with community groups, and they said they were pleased to see that this was happening already.

Work is already underway in a number of these areas. However, we will ensure that the Forum's views are included in our work on developing our priorities for our next Corporate Plan.