

# Topic Paper 02: Biodiversity, Woodland and Forestry, and Soils

## 02A: Biodiversity

### **Information required by the Act regarding the issue addressed in this section:**

Town and Country Planning (Scotland) Act 1997 (as amended):

Section 15(5):

- The principal physical, cultural, economic, social, built heritage and environmental characteristics of the district; and the principal purposes for which the land is used.
- The principal purposes for which land is used.

### **NPF4 requirements for LDP:**

NPF4 Policy 3: Biodiversity

The intent is to protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks to ensure biodiversity is enhanced and better connected including through strengthened nature networks and nature-based solutions.

LDPs should protect, conserve, restore and enhance biodiversity in line with the mitigation hierarchy. They should also promote nature recovery and nature restoration across the development plan area, including by: facilitating the creation of nature networks and strengthening connections between them to support improved ecological connectivity; restoring degraded habitats or creating new habitats; and incorporating measures to increase biodiversity, including populations of priority species.

### **Links to Evidence:**

#### National

- National Planning Framework 4  
[National Planning Framework 4](#)
- IBPES The Global Assessment Report on Biodiversity and Ecosystem services  
[202206\\_IPBES GLOBAL REPORT\\_FULL\\_DIGITAL\\_MARCH 2022.pdf](#)
- UN Convention on Biological Diversity - Global Biodiversity Framework 2022  
[15/4. Kunming-Montreal Global Biodiversity Framework](#)
- Scottish Government Planning Guidance: Biodiversity  
[scottish-government-planning-guidance-biodiversity.pdf](#)
- Scottish Biodiversity Strategy to 2045: Tackling The Nature Emergency in Scotland

[Scottish Biodiversity Strategy to 2045: Tackling the Nature Emergency in Scotland](#)

- Scottish Biodiversity Strategy Delivery Plan 2024-2030  
[scottish-biodiversity-delivery-plan-20242030.pdf](#)
- A Framework for Nature Networks in Scotland  
[30x30-nature-networks-november-2024-accessible-1.pdf](#)
- Nature 30 Sites  
[Nature30 | NatureScot](#)
- State of Nature Report 2023  
[TP26056-SoN-Scotland-summary-report-v5-1.pdf](#)
- NatureScot's Developing with Nature Guidance  
[Developing with Nature guidance | NatureScot](#)
- Scotland's First Marine and Coastal Restoration Plan  
[Marine and Coastal Restoration Plan](#)

Local

- Local Development Plan 2  
[Argyll and Bute LDP2 Written Statement Feb 2024](#)
- Argyll and Bute Council Woodland and Forestry Strategy 2011  
[LUC REPORT TEMPLATE](#)

Datasets

- NatureScot Site Link  
[SiteLink - Map Search](#)
- Argyll and Bute Local Development Plan 2 Map  
[Local Development Plan 2 Map](#)

## **Summary of Evidence**

### **Introduction**

This Topic Paper provides information on the current state of biodiversity within Argyll and Bute and the urgent need for its restoration and protection in response to the global twin climate and biodiversity crises.

Due to the nature of the topic, the paper aligns with other topics within in the evidence report. Those most relevant are highlighted below:

Topic 01: Climate Change

Topic 02: Forestry and Woodland, Soils

Topic 03: Landscape

Topic 05: Vacant, Derelict and Brownfield Land

Topic 06: Energy (Renewables)

Topic 08: Local Living and Design, Quality and Place

Topic 11: Green and Blue Infrastructure

Topic 13: Coastal Development, Flood Risk and Water Management

Topic 16: Aquaculture

Topic 18: Greenbelt

Topic 19: Rural Development and Tourism

### **IBPES The Global Assessment Report on Biodiversity and Ecosystem Services**

This report identified drivers of biodiversity loss which impact not only at a global level but are the main drivers for biodiversity loss across Argyll and Bute. Climate change, invasive non-native species (INNS), pollution, overexploitation and change in land use resulting in habitat loss, fragmentation and degradation are the 5 key direct drivers, along with nature disconnectedness and a lack of value of nature as the 2 indirect drivers.

### **Scottish Government Planning Guidance: Biodiversity**

Recent guidance outlines how Scottish planning authorities should implement National Planning Framework 4 (NPF4) policies to address climate change and biodiversity loss. It emphasizes the role of planning in halting biodiversity decline by 2030 and restoring it by 2045. All decisions must prioritise climate and nature recovery, requiring developments to deliver measurable biodiversity improvements. Key concepts include on-site enhancement, nature-based solutions such as green infrastructure, and the

creation of connected habitats through Nature Networks to strengthen ecological resilience.

Local Development Plans must identify suitable development areas, set developer contributions, and integrate biodiversity objectives, supported by Strategic Environmental Assessments and Regional Spatial Strategies. Development proposals should follow the mitigation hierarchy—avoid, minimize, restore, offset—and secure long-term benefits through conditions or obligations. Major projects must demonstrate net biodiversity gain, while smaller developments should include proportionate measures. Monitoring, management plans, and emerging biodiversity metrics will ensure lasting outcomes.

### **Scottish Biodiversity Strategy (SBS) and Delivery Plan**

In response to the Kunming-Montreal Global Biodiversity Framework (2022), the Scottish Government published the Scottish Biodiversity Strategy and Delivery Plan, setting out its own targets to halt biodiversity loss and create a nature positive Scotland by 2030 and restore and regenerate biodiversity by 2045.

The 30 x 30 Framework will seek to ensure that by 2030, at least 30% of Scotland's land and sea is effectively managed and conserved for nature through protected areas and other mechanisms. The implementation of Nature Networks will be spatially defined within the Argyll and Bute Council by 2030.

### **A Framework For Nature Networks in Scotland**

Nature Networks are another term for ecological connectivity or wildlife corridors, connecting nature-rich sites together. With 50% of Scottish species currently in decline and habitats in long-term decline, Nature Networks will aim to halt this loss and eventually lead to restored and expanded habitats and boost biodiversity. They should form connections between important sites for biodiversity and those contributing towards 30x30.

Argyll and Bute is in the process of developing and mapping this system of Nature Networks, working with local communities and stakeholders to identify key areas. We are also reassessing current Local Nature Conservation Sites (LNCS) to determine how they will contribute to the network.

### **Nature30 Sites**

Based on the IUCN Other Effective area-based Conservation Measures (OECMS), Nature30 sites aim to create positive outcomes for biodiversity for a minimum of at least 25 years. However, this is on a voluntary basis with no statutory protection and is reliant on the consent from the land manager.

This is a recent concept, but Argyll and Bute is already host to one of the four recognised Nature30 sites in Scotland. Knapdale, managed by FLS, is home to some of the globally rare Atlantic rainforest habitat as well as hosting a healthy beaver population.

### **State of Nature Report 2023**

The report confirms that Scotland is a highly nature-depleted country with losses continuing to date at a rate faster than previously known, resulting in a detrimental impact to human health. It highlights the key drivers of biodiversity loss within Scotland as intensification of land use in agriculture and forestry, overgrazing, fishing practices, climate change, invasive non-native species, pollution and inappropriate development. This is a troubling statistic amidst a global biodiversity emergency and emphasises the urgent need for Scotland to do more to not only halt the loss of biodiversity by 2030, but ensure nature is enhanced to create a species-rich and diverse country.

Argyll and Bute is no exception to the issues causing biodiversity decline with invasive non-native species (INNS) and high deer numbers being a real cause for concern, especially within some of the more vulnerable habitats such as our temperate rainforests. This is a globally rare habitat with more than 50% located within Argyll and Bute. The report also highlights a worrying decline in distribution of lichens (57%) and bryophytes (62%) which are staple components of our Atlantic rainforests.

### **NatureScot's Developing with Nature Guidance**

While major and national developments are subject to an Environmental Impact Assessment (EIA) and biodiversity enhancement advice, local developments do not have the advantage of such specialist advice. This document from NatureScot seeks to provide recommendations to local development projects on biodiversity enhancement measures each development could aim to achieve. This will work with policies and legislations in ensuring the loss of biodiversity by 2030 and its enhancement by 2045. Any development which involves the removal of native habitat will be contributing to further losses. Through appropriate enhancement measures, each development can contribute to reversing the loss of biodiversity and align with the Scottish Biodiversity Strategy.

### **Designated Sites**

Argyll and Bute is a stronghold for some globally rare habitats, supporting a rich array of threatened species including bryophytes and lichens, invertebrates and mammals, birds and flowering plants. Some of our rarer and protected species and habitats found here include golden eagles, white-tailed eagles, Greenland white-fronted geese, chough, blanket bog, Atlantic temperate rainforests, sea lochs, inland lochs, machair, seagrass beds, oysters, marsh fritillary butterfly, red squirrels, hazel gloves and Irish lady's tresses. Argyll and Bute is also the Scottish stronghold for corncrake, a red listed species of UK Conservation Concern. To prevent further biodiversity decline and ensure

enhancement of a richly diverse, healthy balanced ecosystem, these habitats and species within need safeguarding and protecting, not only at a local level, but a global one.

At least 50% of Argyll and Bute is heather moorland, peatland and rough grassland with around a quarter of Scotland's peatland habitat (5 million ha) found here. This is not only vital in carbon sequestration, but also an important habitat for many species including black grouse, a Red Listed bird of UK Conservation Concern and one of the UK's fastest declining birds. However, approximately 49,500ha of peatland within Argyll and Bute is classed as degraded.

Argyll and Bute was the official trial area for beaver reintroduction. Beavers are a keystone species, actively enhancing biodiversity through their behaviour, improving and enriching native habitats and helping tackle the effects of climate change.

These rare and threatened habitats and species are offered varying degrees of protection through designations. The designations and protections of these habitats aim to ensure their long-term safeguarding against unsustainable land use practices and loss, fragmentation and degradation. It should also be noted that many species and habitats are located outwith areas of protection which is why the implementation of policies such as NPF4 and the new Scottish Biodiversity Strategy are of paramount importance in ensuring development does not create further degradation and loss.

### **Special Areas of Conservation (SAC)**

Designated under the Habitats Directive for habitats and (non-bird) species of European significance as listed on Annex I and II of the Directive and are of international importance. In Scotland, these sites are legally protected under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). Argyll and Bute is home to 21 SAC providing protection for a range of significantly important habitats including blanket bog and western acidic oak woodland as well as European Protected Species including otter (*Lutra lutra*) and marsh fritillary butterfly (*Euphydryas aurinia*).

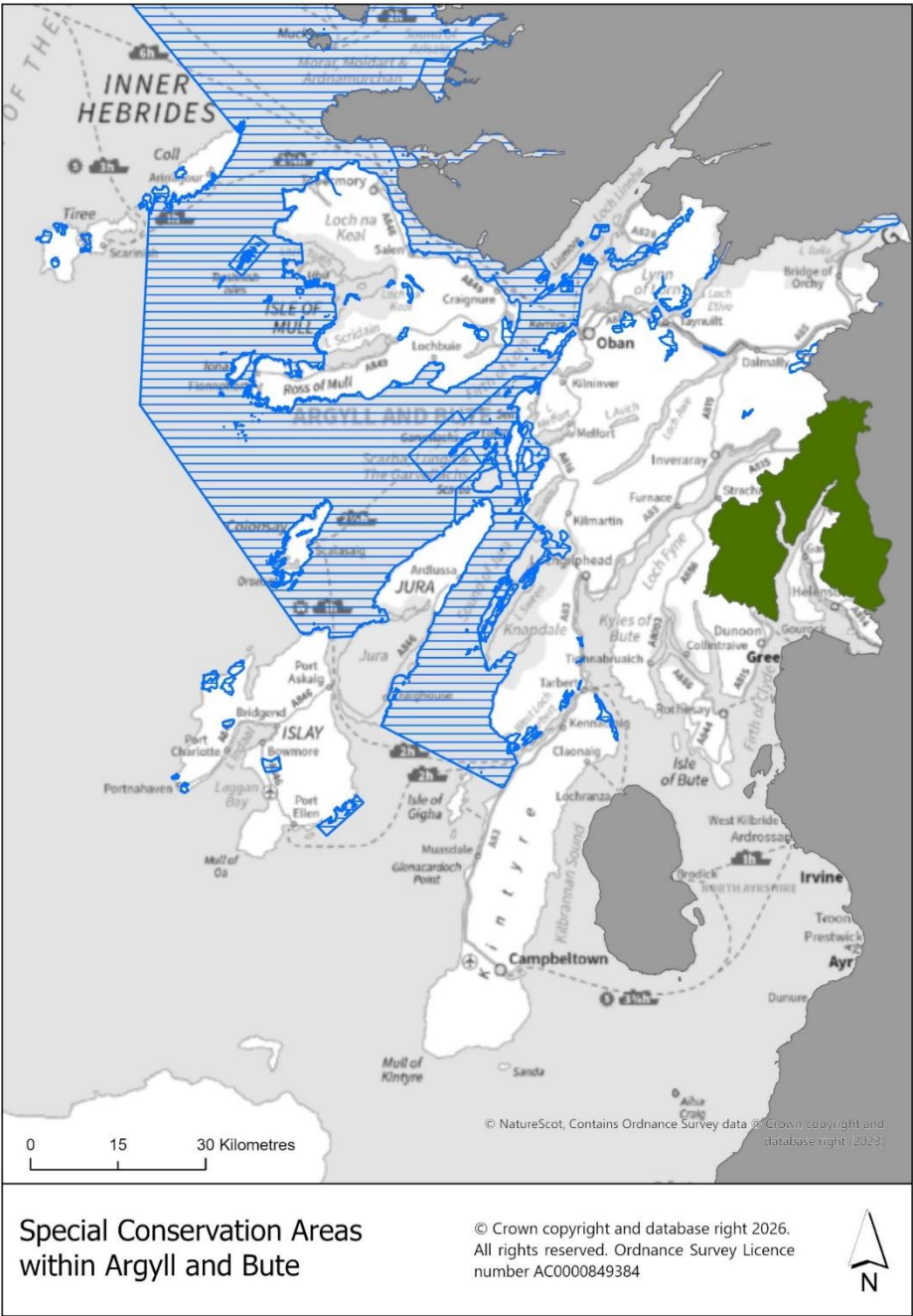


Figure 1: Special Conservation Areas within Argyll and Bute

**Special Protection Area (SPA)**

Designated under the Birds Directive for rare, threatened or vulnerable bird species as listed on Annex I of the Directive or certain regularly occurring migratory species and are of international importance. In Scotland, these sites are legally protected under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). 20 SPAs are found within Argyll and Bute offering protection to birds such as golden eagles (*Aquila chrysaetos*), Greenland white-fronted geese (*Anser albifrons flavirostris*) and great

northern diver (*Gavia immer*). These areas offer a refuge for breeding, non-breeding, feeding and roosting sensitive birds across the council area.

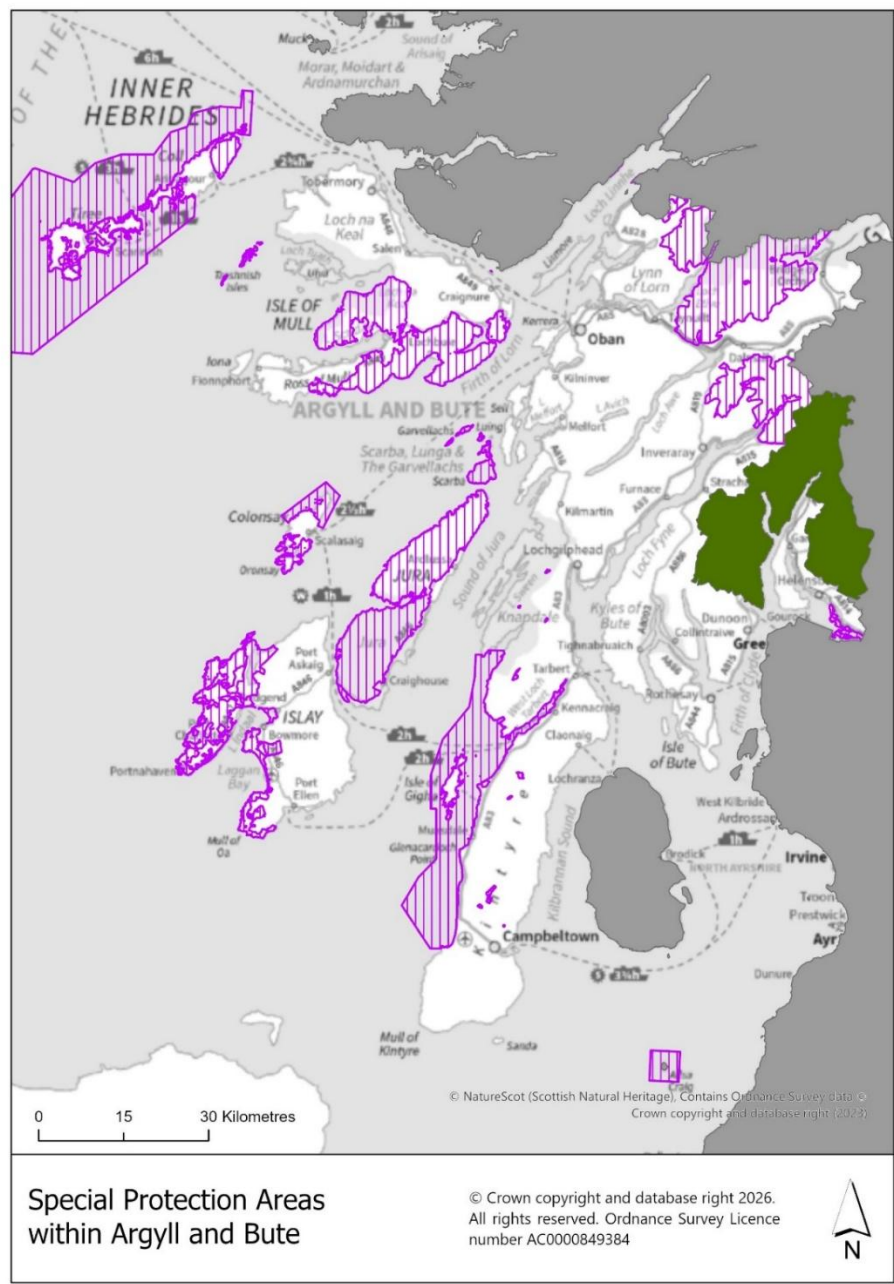


Figure 2: Special Protection Areas within Argyll and Bute

**Habitats Regulations Appraisal (HRA)**

This is a required undertaking for any European Site that may be affected by a proposed development to safeguard the qualifying interests that the designation is in place for.

Ramsar Sites

Ramsar sites are designated under the Ramsar Convention on Wetlands and are of international importance. All 8 sites found within Argyll and Bute are also designated as SPAs and/or SACs under the European Habitats Directive and protected under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended).

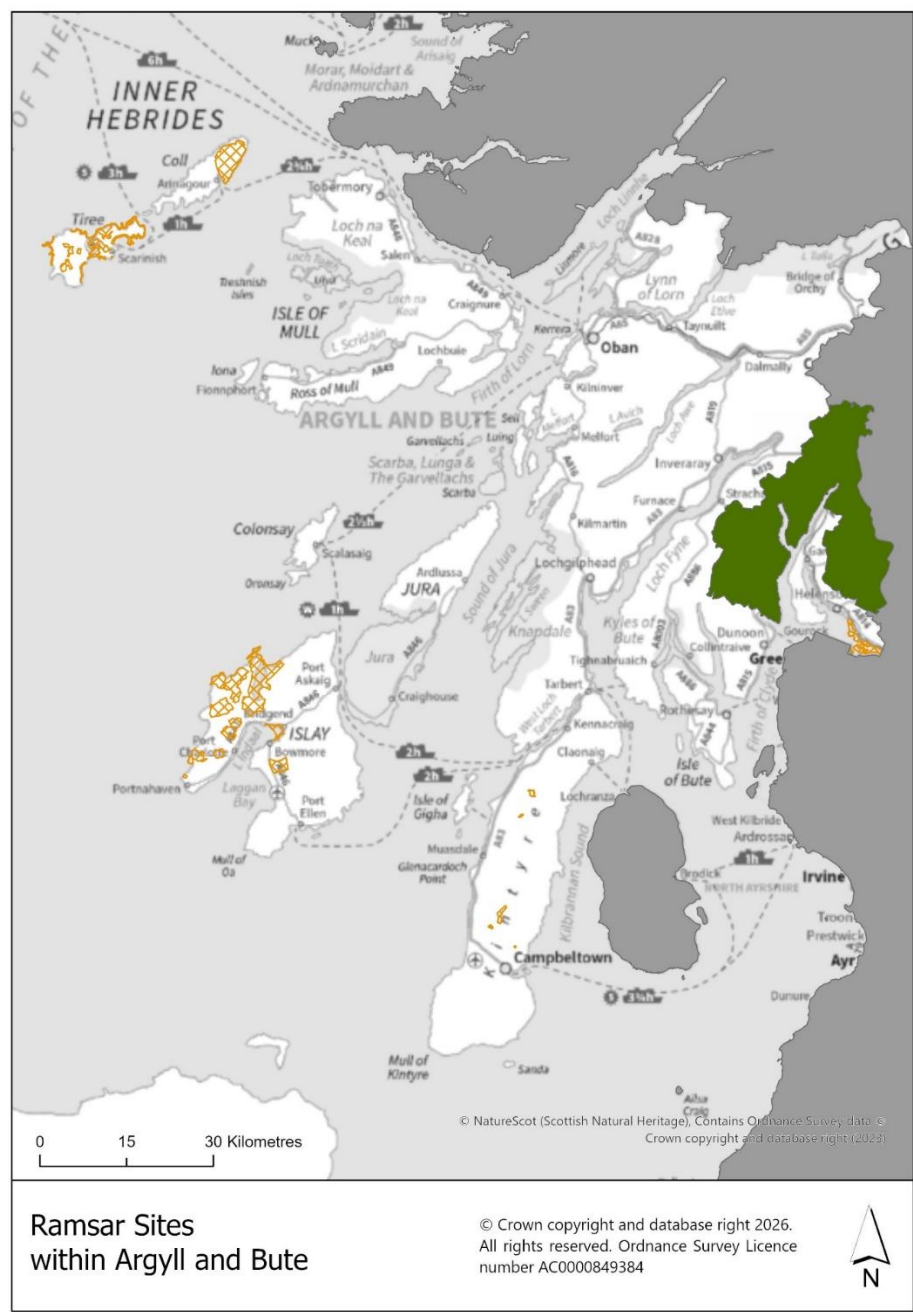


Figure 3: Ramsar sites within Argyll and Bute

### Sites of Special Scientific Interest (SSSI)

Designated under the Nature Conservation (Scotland) Act 2004 for the protection and conservation of areas with nationally important flora and/or fauna species, geology and/or geomorphology. Many of the SSSIs are also designated as SACs and/or SPAs under the European Habitats Directive. 116 SSSI sites are located within Argyll and Bute, designated for a range of ecologically and geologically significant features.

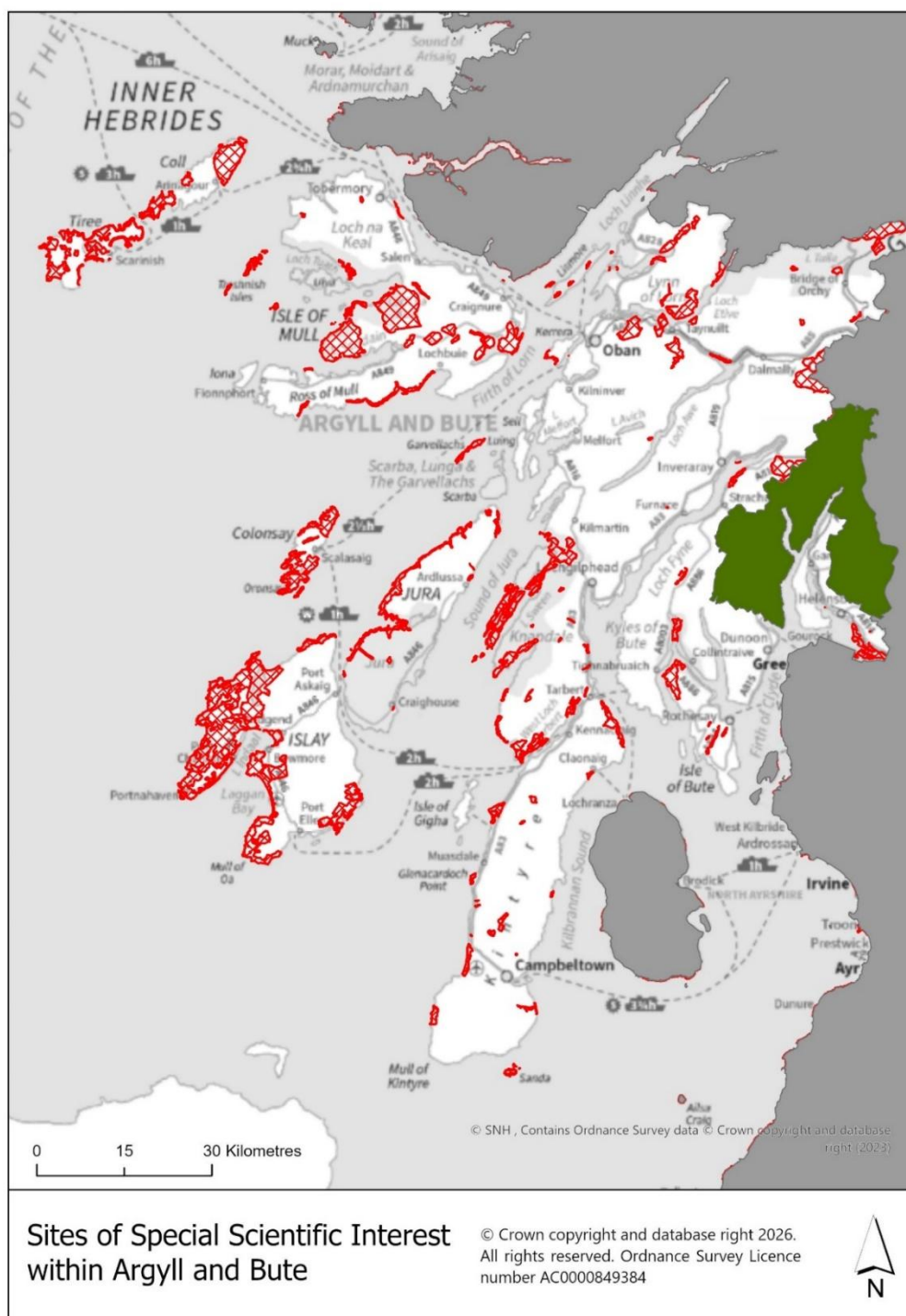


Figure 4: Sites of Special Scientific Interests within Argyll and Bute

**National Nature Reserve (NNR)**

These are nationally important areas of land set aside for nature to conserve the habitats and species found there and enable a connection of people with nature. The 4 NNRs within Argyll and Bute are also designated as SACs, SPAs and/or SSSIs due to their nationally and internationally important ecological features.



Figure 5: National Nature Reserves within Argyll and Bute

**Local Nature Reserve (LNR)**

These are areas that are at least locally important for their natural heritage and 2 are located within Argyll and Bute; Duchess Woods and Holy Loch.



Figure 6: Local Nature Reserves within Argyll and Bute

**Local Nature Conservation Sites (LNCSs)**

LNCSs set out to safeguard biodiversity and geodiversity of at least local importance. At present, Argyll and Bute has 156 LNCSs but a review of each site is currently underway to determine whether the site is still fit for purpose and it’s potential to contribute to Nature Networks.



Figure 7: Local Nature Conservation Sites within Argyll and Bute

## Loch Lomond and The Trossachs National Park (LLTNP)

Part of the south-east of Argyll and Bute is located within the LLTNP which provides its own Local Development Plan.

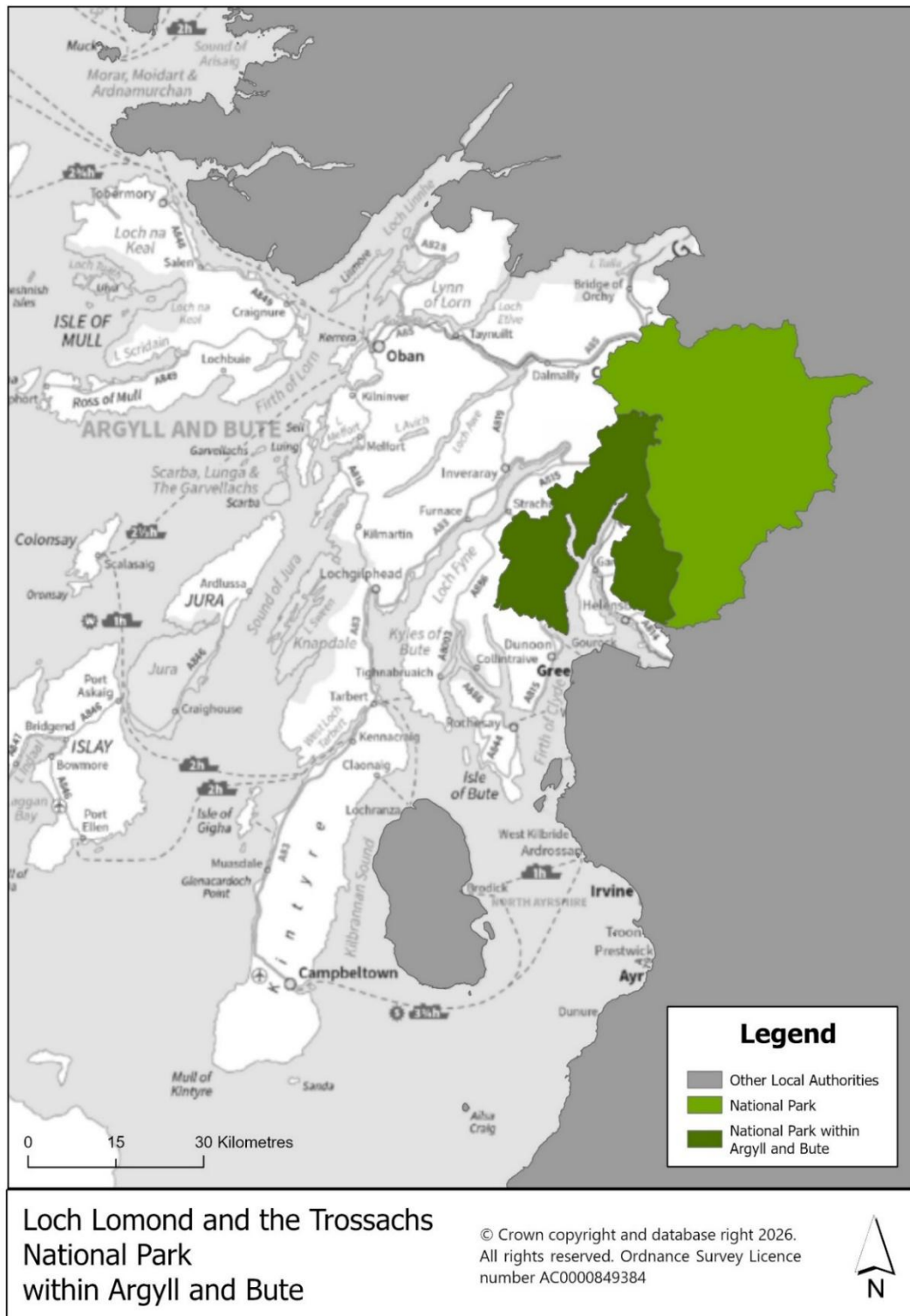


Figure 8: Loch Lomond and the Trossachs National Park within Argyll and Bute

## **Deer Priority Areas**

2 Deer Management Priority Areas are identified within Argyll & Bute, Cowal and Appin and Glen Creran. See: <https://www.nature.scot/professional-advice/land-and-sea-management/managing-wildlife/deer-scotland/managing-deer-climate-and-nature/deer-management-priority-areas>. Map below shows areas.



*Figure 9: Deer Priority Areas within Argyll and Bute*

## **Argyll and Bute Biodiversity Delivery Plan**

The Argyll and Bute Local Biodiversity Action Plan 2010-2015 needs updating to consider new policies and legislations and provide up to date biodiversity targets and actions appropriate for Argyll and Bute. The update is currently being undertaken and a new document, the Argyll and Bute Biodiversity Delivery Plan, should be in place towards the end of the year.

## **Argyll and Bute Technical Guidance for Planners and Developers**

This document is being updated to align with current policies and legislations.

### **Invasive Non-Native Species**

Invasive Non-Native Species (INNS) are prevalent within Argyll and Bute which are impacting upon the biodiversity. The proposed Biodiversity Delivery Plan will aim to address the concerns of INNS within Argyll and Bute through partnership work of eradication.

## **Summary of Engagement**

A working draft version of this template was shared with NatureScot. Representations submitted at the working draft stage are summarised below:

### **NatureScot**

General feedback on the paper found it to be a well-prepared paper with some minor but important additions were needed. These were to correct the number of NNR's within Argyll and Bute and include content around deer and deer management. NatureScot also suggested the inclusion of adding reference to key NPF4 policy connection (1, 2, 4, 5, 6, 8, 10, 11, 14, 20, 22), local Forest and Woodland Strategy, and the relevant Marine and Coastal Plans, respectively.

### **Comment**

This paper has been updated to include the corrected information on Argyll and Bute NNR's, deer management and relevant NPF4 policy connections, strategies and plans.

## **Summary of Implications for the Proposed Plan**

NPF4 Policy 3 and the Scottish Biodiversity Strategy both have a strong emphasis placed on not just protecting biodiversity but enhancing and connecting it. Many priority habitats and species are located within Argyll and Bute and consideration must be made to safeguarding and enhancing these.

- The importance of and impact upon biodiversity must take a priority in all developments to prevent further loss, degradation and fragmentation.
- Future developments must show they have considered their impact on biodiversity from the outset, by ensuring the Mitigation Hierarchy has been followed with avoidance of sensitive habitats and species as the first step. The potential of the development to contribute to Nature Networks should also be considered in the planning stage.
- The cumulative effects of developments on protected species must be considered in all applications. The impact of one development may have no impact at local level, but several developments will and may result in a loss of species at local level and so on.
- Developments must ensure they are improving biodiversity post developments through appropriate planning in the design stage, monitoring and management in the long term.

- Priority and sensitive habitats must be safeguarded, protected and enhanced. Developments should not be supported if they result in their loss, degradation and fragmentation.
- An approach of building with nature must be taken. Native trees, shrubs, hedges already present should be included in the design and not automatically felled or removed purely for the siting of the development.
- Developments should aim to be using native species, appropriate to the locality of the area and locally sourced.
- Developments must take a 'preventative over cure' approach. Mitigation measures must be considered from the outset and not as part of a monitoring programme.
- Nature Networks should be considered from the onset with developments reconnecting fragmented habitats and improving connectivity for species.
- Developments should consider INNS on site and include as part of their plan in ways to remove, control and eradicate it. This will add to enhancing biodiversity measures. This should include removal and control of both flora and fauna INNS.
- Biodiversity enhancement measures must take a more proactive approach with all aspects benefiting biodiversity. This should include no use of chemicals, native species, inclusion of bat, bird (including swift where appropriate) boxes, insect hotels, hedgehog highways within designs, pollinator friendly planting.
- Developments could also consider how they can best promote and raise awareness of biodiversity enhancements and nature networks through information / education boards.

## Topic Paper 02B: Forestry and Woodland

### **Information required by the Act regarding the issue addressed in this section:**

Town and Country Planning (Scotland) Act 1997 (as amended):

Section 15(5):

- The principal physical, cultural, economic, social, built heritage and environmental characteristics of the district; and the principal purposes for which the land is used.
- The principal purposes for which land is used.

### **NPF4 requirements for LDP:**

NPF4 Policy 6: Forestry, Woodland and Trees

To protect and expand forests, woodland and trees to ensure existing woodlands and trees are protected, and cover is expanded and woodland and trees on development sites are sustainably managed.

LDPs should identify and protect existing woodland and the potential for its enhancement or expansion to avoid habitat fragmentation and improve ecological connectivity, helping to support and expand nature networks. The spatial strategy should identify and set out proposals for forestry, woodlands and trees in the area, including their development, protection and enhancement, resilience to climate change, and the expansion of a range of types to provide multiple benefits. This will be supported and informed by an up-to-date Forestry and Woodland Strategy.

### **Links to Evidence:**

#### National

- Scotland's Forestry Strategy 2019-2029  
[SG Forestry Strategy 2019-2029.pdf](#)
- Scottish Forestry Technical Note on Preparing a Forestry and Woodland Strategy  
[PDF Forest Management and Planning Note Preparing a Forestry and Woodland Strategy\\_03022026\\_V1.0.pdf](#)
- Native Woodland Survey of Scotland Results  
[PDF Biodiversity Results Native Woodland Survey of Scotland\\_012014.pdf](#)
- Alliance for Scotland's Rainforest  
[Saving Scotland's Rainforest Report](#)
- Ancient Woodland Inventory  
[A guide to understanding the Scottish Ancient Woodland Inventory \(AWI\) | NatureScot](#)
- Scottish Government's Control of Woodland Removal  
[Control of Woodland Removal Policy FCS.pdf](#)

- SG The Right Tree in the Right Place  
[PDF\\_Guidance\\_GeneralForestryPracticePlanning\\_Right\\_Tree\\_in\\_the\\_Right\\_Place\\_01052010.pdf](#)
- Plantlife's Lichens and Bryophytes of Atlantic Woodland in Scotland: An Introduction to Their Ecology and Management  
[24476\\_AtlanticWoodland27.pdf, page 1-28 @ HotFolder \(bÿ\)](#)
- Riverwoods for Scotland Report on Scientific Evidence  
[Riverwoods-for-Scotland-Report-on-Scientific-Evidence\\_2022.pdf](#)

#### Local

- Argyll and Bute Council Woodland and Forestry Strategy 2011  
[LUC REPORT TEMPLATE](#)

#### Datasets

- Native Woodland Survey of Scotland Data Explorer  
[Native Woodland Survey Data Explorer | Scottish Forestry](#)
- NatureScot Ancient Woodland Inventory Dataset  
[Ancient Woodland Inventory](#)
- Tree Preservation Orders  
[Tree Preservation Orders | Argyll and Bute Council](#)

## **Summary of Evidence**

### **Introduction**

This Topic Paper provides information on the importance of forests, woodlands and trees within Argyll and Bute and the urgent need for their restoration and protection in response to the global twin climate and biodiversity crises and the important role they will play in Nature Networks.

Due to the nature of the topic, the paper aligns with other topics within in the evidence report. Those most relevant are highlighted below:

Topic 02: Biodiversity, Soils

Topic 03: Landscape

Topic 04: Historic Assets and Places

Topic 08: Local Living and Design, Quality and Place

Topic 10: Infrastructure (health, education, water, power, digital, cemeteries, zero waste, heat and cooling, health and safety)

Topic 11: Green and Blue Infrastructure

Topic 12: Play Space

Topic 18: Greenbelt

Topic 19: Rural Development and Tourism

### **Scotland's Forestry Strategy 2019-2029**

#### **Vision**

In 2070, Scotland will have more forests and woodlands, sustainably managed and better integrated with other land uses. These will provide a more resilient, adaptable resource, with greater natural capital value, that supports a stronger economy, a thriving environment, and healthy and flourishing communities.

#### **Objectives**

- Increase the contribution of forests and woodlands to Scotland's sustainable and inclusive economic growth
- Improve the resilience of Scotland's forests and woodlands and increase their contribution to a healthy and high-quality environment
- Increase the use of Scotland's forest and woodland resources to enable more people to improve their health, well-being and life chances

### Priorities

- Ensuring forests and woodlands are sustainably managed
- Expanding the area of forests and woodlands, recognising wider land-use objectives
- Improving efficiency and productivity, and developing markets
- Increasing the adaptability and resilience of forests and woodlands
- Enhancing the environmental benefits provided by forests and woodlands
- Engaging more people, communities and businesses in the creation, management and use of forests and woodlands

In 2018, Scotland signed the Bonn Challenge which aims to regenerate 350 million ha of deforested and degraded landscapes globally, by 2030. The aim is to increase the forest and woodland cover from 18% to 21% by 2032 in Scotland, although this still falls short of the 46% European Union average cover.

The aim is to not only increase a sustainable and inclusive economic growth, but it is also vitally important to increase the amount of native woodland through restoration and creation to enhance biodiversity and become more resilient. Improved management of woodlands, especially ancient and semi-natural woodland, including plantations on ancient woodland sites (PAWS) where appropriate. Currently, less than 46% of native woodlands are in a satisfactory condition for biodiversity. Management practices include reducing the impact from deer and other herbivores, invasive non-native species (INNS), and avoidance of areas of deep peat to aid in natural regeneration and restoration efforts. Safeguarding priority habitats and species will also increase environmental benefits, particularly in Argyll and Bute which is home to globally rare Atlantic oakwoods and associated flora and fauna species including rare and threatened bryophytes and lichens.

### **Argyll and Bute Council Woodland and Forestry Strategy 2011**

The vision of the strategy states that the woodlands of Argyll and Bute will make a significant contribution to climate change mitigation and adaptation, have significant levels of economic value retained locally, enhance biodiversity and environmental quality and support the further development of recreation opportunities, for the benefit and well-being of local people and visitors alike. Sustainable and responsible stewardship of the resource will enable communities to play an active role in the ownership and management of woodlands in their area, developing business opportunities and helping to maintain the viability of rural living.

Woodland cover in Argyll and Bute is around 200,000ha. 85% of this is non-native woodland and accounts for around 15% of Scotland's total woodland resource. Only 15% of remaining woodland cover is semi-natural and native woodland with globally rare Atlantic rainforests dominating and around 33,100ha of ancient woodland present. One of the major threats to the woodland habitats, besides climate change and habitat fragmentation, is the invasion by invasive non-native species (INNS), especially *Rhododendron ponticum*. It is estimated that 85% of the 4.654ha of *Rhododendron*

*ponticum* are located within existing woodland. Another major threat is the impact of over-browsing from high deer numbers, damages foliage and seriously hampers natural regeneration of native species.

Around 33,100ha of Argyll and Bute woodland is classed as ancient and long-established woodland, comprising around 5% of the total area including around 17,400ha (3% of land area) which may be semi-natural in origin. Argyll and Bute's woodlands provide a rich and diverse suite of habitats for wildlife, and they play a vital role in conserving nationally scarce species and are central to the character and identity of the area. These species include the hazel gloves fungi, a rare indicator species associated with temperate rainforests and the white script lichen, a species endemic to Scotland.

While the woodlands of Argyll and Bute support a vast array of biodiversity, they are also important sources of carbon capture, storing around 11 million tonnes of carbon and sequestering an additional 0.6 million tonnes per annum, thereby helping to reduce the impact of climate change.

This document will require updating to align with current policies and legislations.

### **Scottish Forestry Technical Note on Preparing a Forestry and Woodland Strategy**

This is a recently published document that provides information to support the implementation of a planning authority's updated Forestry and Woodland Strategy (FWS) to include the legal requirements as well as the planning authority's policies and proposals.

The FWS must:

- identify woodlands of high nature conservation value in the planning authority's area, and
- set out the planning authority's policies and proposals in their area, as to –
  - the development of forestry and woodlands,
  - the protection and enhancement of woodlands, in particular those of high nature conservation value,
  - the resilience to climate change of woodlands, again in particular those of high nature conservation value,
  - the expansion of woodlands of a range of types to provide multiple benefits to the physical, cultural, economic, social and environmental characteristics of the area,
  - any other matter which the planning authority considers appropriate.

A woodland is classed as having high nature conservation value if it is described as:

- native woodland and scrub on the Native Woodland Survey of Scotland (NWSS)

- ancient woodland and semi-natural woodland, including Plantation on Ancient Woodland (PAWS) and Long-Established woodlands of Plantation Origin (LEPO)
- woodland that is integral to the value of designated or special sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSIs), Ramsar sites, and National Nature Reserves (NNRs)), and
- wood pasture.

This guidance also notes the different NPF4 policies which can feed into the FWS including climate change resilience, biodiversity value, nature network potential, flood risk and water management and physical health and mental wellbeing.

### **Native Woodland Survey of Scotland Results and Data Explorer**

This survey, carried out between 2006 to 2013, provides baseline data for the condition and size of native species within Scotland. It also suggests the main threats facing the native woodlands and while some restoration work has been undertaken, more work is needed to improve their state as less than 46% were said to be in satisfactory condition. Six main woodland habitat types were recorded as well as areas of ancient woodland, including plantation on ancient woodland sites (PAWS) which many can be restored through appropriate management.

The main pressures on native woodlands include fragmentation, deer browsing, non-native tree planting and invasive non-native species (both flora and fauna), with underlying threats from pests and diseases, climate change and atmospheric deposition of pollutants. Native woodlands are important parts of natural capital, providing a range of benefits to wildlife, improved water quality, carbon sequestration, reduced soil erosion and better flood control as well as improving our physical and mental wellbeing.

The survey also discusses the importance of sustaining a healthy and resilient woodland ecosystem through structural diversity, the presence of fallen and standing deadwood and veteran trees providing high biodiversity value and supporting different communities of lichens, bryophytes, fungi, invertebrates, several bird species and bats.

The data explorer is an interactive map which displays the above information including the threats to native woodland. This information will aid in future management practices to restore, create and enhance native woodlands within Argyll and Bute.

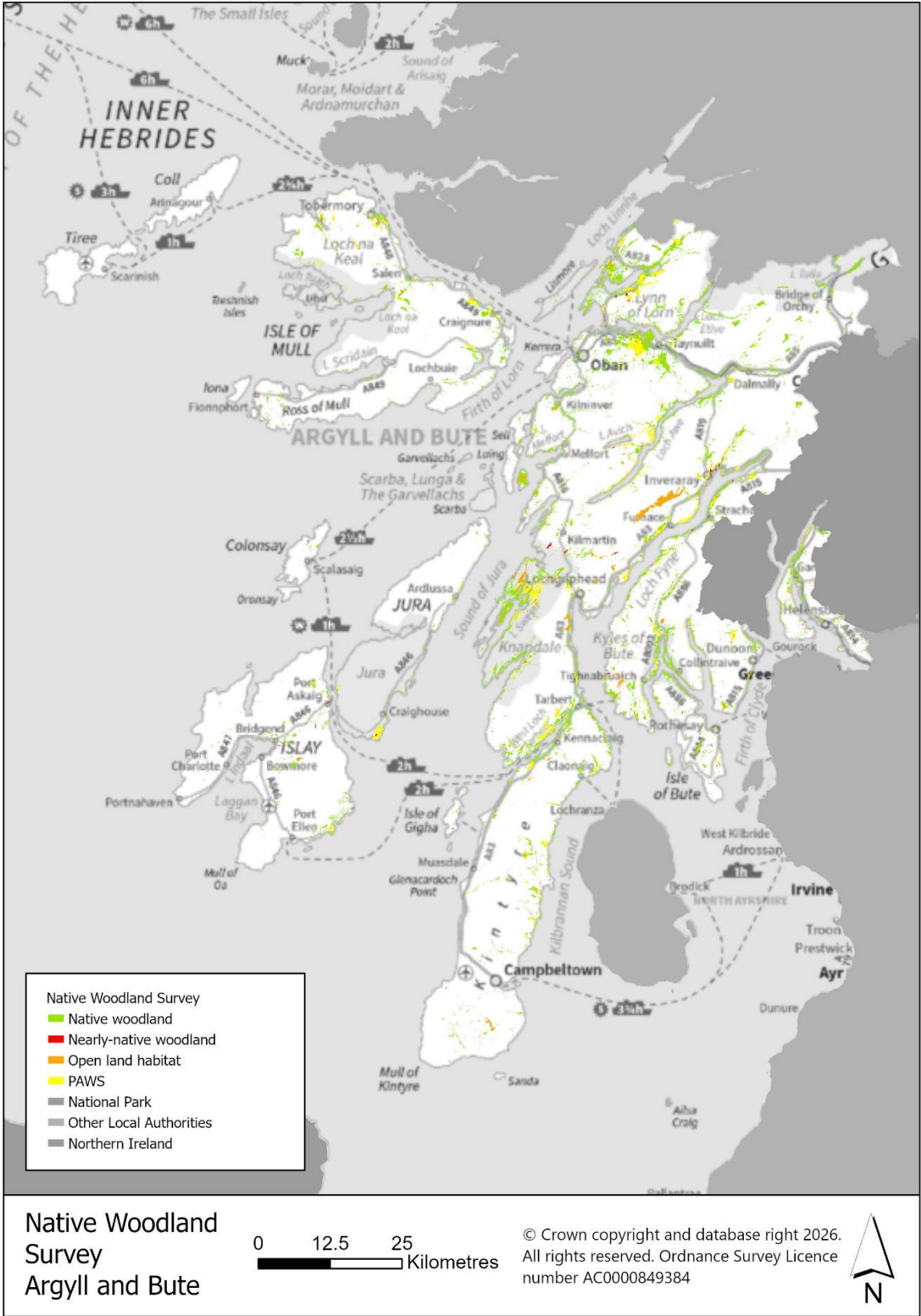


Figure 1: Locations of Native Woodlands within Argyll and Bute taken from the Native Woodland Survey of Scotland

### **Saving Scotland's Rainforest Report**

Temperate rainforests are a globally rare and important habitat, consisting of not only ancient woodlands of native oak, birch, ash, Scots pine and hazel, but also open glades, river gorges, boulders and crags. Around 2,000 lichen species can be found in these rainforest habitats, which accounts for around 40% of European lichen flora and some of which are only found in Scotland. Around 1,000 bryophytes species can also be found here, accounting for approximately 60% of Europe's flora and 5% of global flora.

However, only around 30,325ha (around 2% of woodland cover) of temperate rainforest habitat remains in Scotland with around half of that found within Argyll and Bute. The main threats to this habitat are overgrazing, the invasive non-native species (INNS) *Rhododendron ponticum*, exotic conifer plantations, disease, climate change and air pollution.

Temperate rainforest habitats are not only important for supporting rare and threatened biodiversity, but also as a Nature-Based Solution to the climate and biodiversity crises.

### **Ancient Woodland Inventory and Dataset**

Ancient woodland is an irreplaceable habitat, supporting a rich array of biodiversity including veteran trees as well as preserving the integrity of soil ecological processes and associated biodiversity. There is, therefore, a strong presumption against impact on these habitats, but rather to ensure their safeguarding, conservation and, where possible, enhancement. There is potential for these habitats to form part of Nature Network creation and further enhance biodiversity.

The dataset displays the areas of ancient woodland located within Argyll and Bute. It should be noted that the mapping is not wholly accurate and ground survey work to determine the presence of ancient woodland indicator species and therefore its current biodiversity value should also be undertaken.

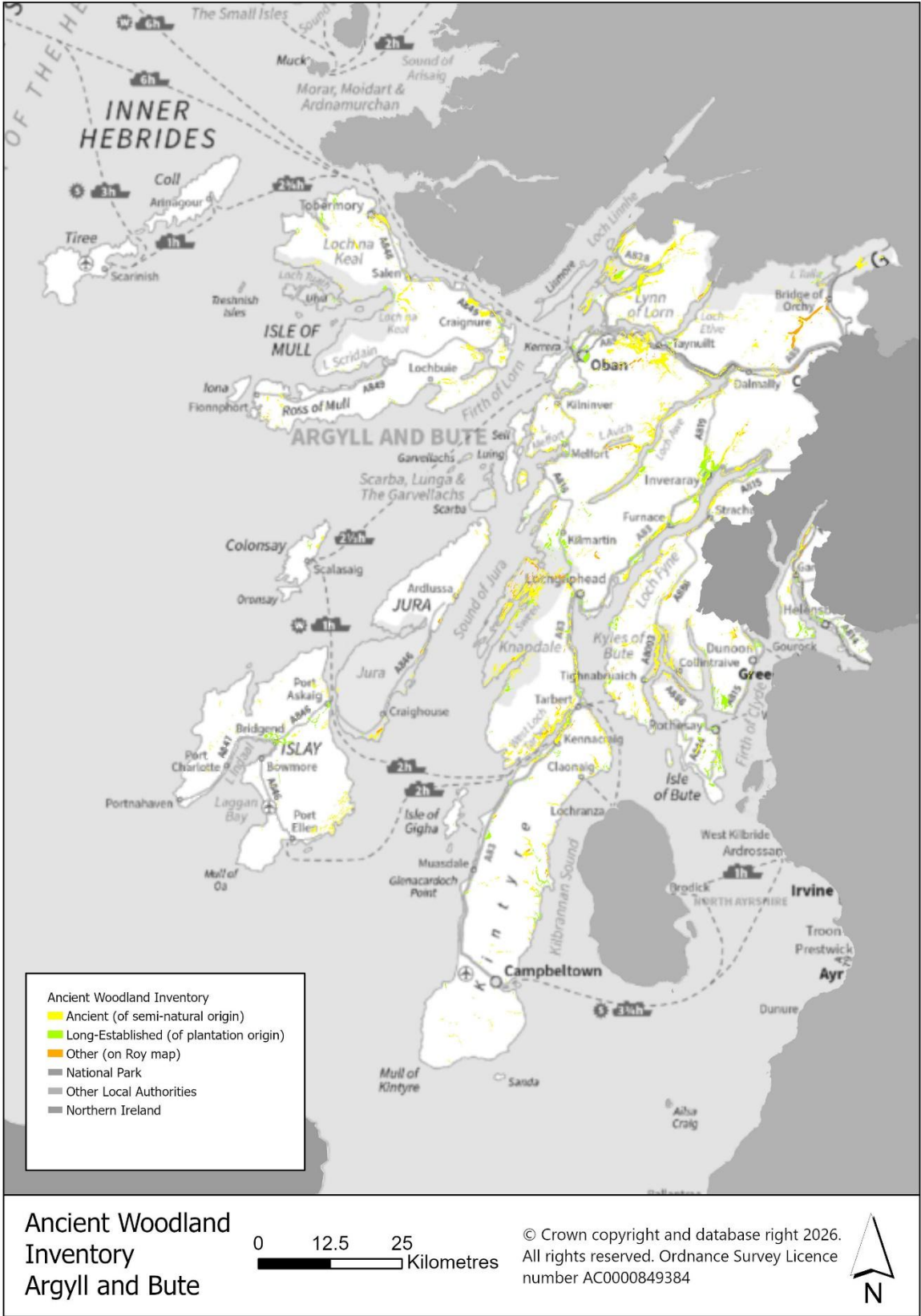


Figure 2: Ancient Woodland within Argyll and Bute

Tree Preservation Orders (TPOs)

There are currently 153 TPOs registered within Argyll and Bute. These range from individual trees to areas of woodland, protected for their amenity and/or biodiversity value.

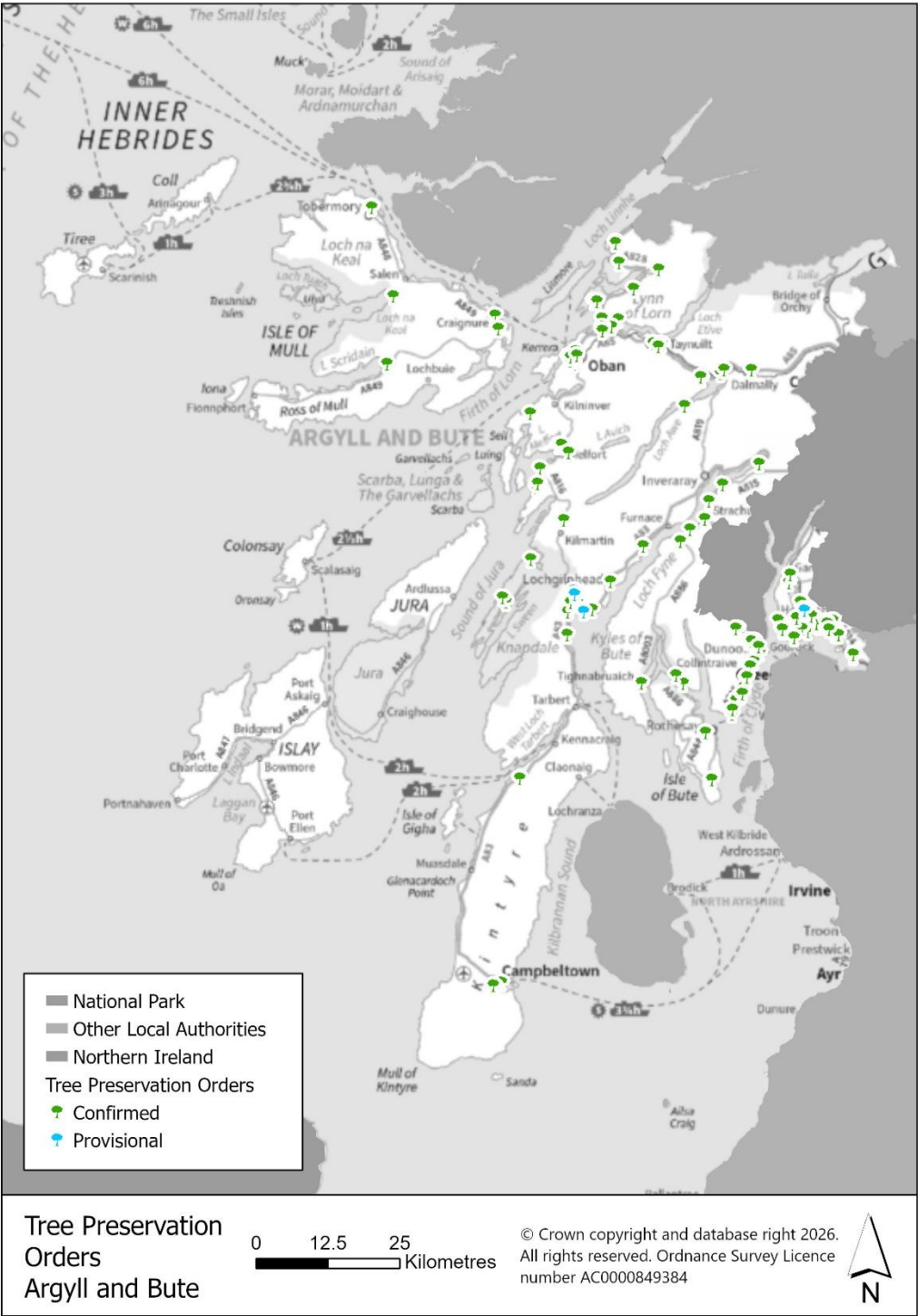


Figure 3: Locations of the Tree Preservation Orders (TPOs) within Argyll and Bute

## **Control of Woodland Removal**

This policy establishes a strong presumption in favour of protecting Scotland's woodlands. Woodland removal is permitted only when it delivers significant and clearly defined public benefits, and in many cases, compensatory planting will be required. Approval is conditional on implementing actions that ensure these benefits are achieved, and planning conditions should mitigate environmental impacts.

Removal without compensatory planting may be appropriate when it enhances priority habitats or species, improves nationally important landscapes or historic sites, conserves water or soil resources, or addresses public safety. Removal with compensatory planting may be justified when it supports climate change mitigation, sustainable economic growth, rural development, tourism, recreation, or improves the overall quality of Scotland's woodland cover.

There is a strong presumption against removing ancient semi-natural woodland, woodlands integral to designated sites, those critical for water catchment or erosion control, and Plantations on Ancient Woodland Sites. Removal that fragments important forest habitat networks is also discouraged.

Approval must deliver significant net public benefit, considering current and future impacts, including carbon and greenhouse gases.

## **The Right Tree in the Right Place**

The guidance outlines how Scottish planning authorities should integrate forestry and woodland considerations into development planning to support economic, social, and environmental goals. It promotes sustainable woodland expansion aligned with national strategies on climate change, biodiversity, and rural development. Authorities are encouraged to prepare forestry and woodland strategies as supplementary guidance, identifying suitable and sensitive areas for planting, linking to other spatial plans, and ensuring environmental assessment and monitoring. The document highlights woodlands' role in economic growth, community wellbeing, biodiversity, landscape enhancement, and climate mitigation, while addressing development management issues such as woodland protection, compensatory planting, and consultation processes.

## **Lichens and Bryophytes of Atlantic Woodland in Scotland: An Introduction to Their Ecology and Management**

Scotland's Atlantic woodlands are globally significant habitats due to their rich communities of lichens and bryophytes. These woodlands thrive in mild, wet conditions influenced by the Gulf Stream and are typically dominated by oak and birch. They support species that are rare or absent elsewhere in Europe, with some endemic and internationally important populations and a number of important lichen communities such as *Lobarion*, *Parmelion*, *Graphidion* are all located within Argyll and Bute. Species such as Tree Lungwort (*Lobaria pulmonaria*), Prickly Featherwort (*Plagiochila*

*spinulosa*), and Wilson's Filmy Fern (*Hymenophyllum wilsonii*) signal exceptional habitat quality.

However, these species are at threat from *Rhododendron ponticum*, large-scale felling and coppicing, overgrazing from deer or complete grazing exclusion and infrastructure development and hydropower schemes. It is therefore important they are managed effectively through expanding and connecting woodland habitats, eradicating *Rhododendron ponticum*, retaining old/veteran trees and deadwood, limiting coppicing (especially hazel) and conduct sensitive thinning, maintaining varied grazing regimes to prevent dense regeneration, avoiding disturbance to wet/riparian woodland and seeking specialist advice before operations in high-value sites. Coordinated deer management will aid with the impact of over-browsing from deer. This should ensure continuity and diversity of tree species and woodland structure while managing specifically for lichens and bryophytes to maintain Scotland's internationally important Atlantic woodland ecosystems.

### **Riverwoods for Scotland Report on Scientific Evidence**

Restoring riparian woodlands in Scotland is a critical nature-based solution to address biodiversity loss and climate challenges. These woodlands provide essential ecosystem services such as improving water quality, stabilizing riverbanks, reducing pollution, and supporting aquatic and terrestrial biodiversity. Despite their importance, surveys show that over half of Scotland's riparian vegetation is in poor condition, lacking trees and shrubs. The evidence report aims to present the latest scientific findings on the environmental benefits of river woodlands, quantify their functionality, and assess the strength of evidence to build confidence for conservation finance investment.

The report highlights that riparian woodlands deliver multiple benefits, including flood risk reduction, carbon sequestration, soil health improvement, and climate resilience for agriculture. Strategic design and placement at a landscape scale are vital for maximizing these benefits.

### **Deer Priority Areas**

These are discussed in detail in the Biodiversity Topic Paper.

## **Summary of Engagement**

A working draft version of this template was shared with NatureScot. Representations submitted at the working draft stage are summarised below:

### **NatureScot**

General feedback on the paper found it to be concise and well researched with some minor but important additions. These were to correct the percentage of native woodlands (from 'only 46%' to 'less than 46%' to highlight the impact of high deer numbers) and adding cross cutting NPF4 policy references (4, 5, 7, 8, 14, 15, 19, 20, 21, 23).

### **Comment**

This paper has been updated to include the corrected information of the percentage of native woodlands and relevant NPF4 policy connections.

Forestry and Land Scotland (FLS) were contacted on 3<sup>rd</sup> March 2026 and again on 14<sup>th</sup> May. No response has been received.

## **Summary of Implications for the Proposed Plan**

NPF4 Policy 6 and the Scottish Biodiversity Strategy place a strong emphasis on protecting existing woodland, avoiding fragmentation and improving connectivity with particular regard to ancient woodland and Scotland's rainforest.

- Development proposals must consider woodlands from the outset and avoid adverse impacts to their integrity including habitat fragmentation, degradation and loss.
- Development proposals must consider impact to individual trees from the outset and provide all relevant information upfront in a survey to include the biodiversity value of the tree.
- Compensatory planting must consider that a newly planted tree does not equate to an older felled tree that will be offering higher biodiversity value than that of the younger, newly planted one.
- Any compensatory planting or proposed newly planted trees, shrubs and plants for biodiversity enhancement measures, must be a native species, appropriate to the locality of the area and locally sourced.
- Development proposals must promote the expansion and enhancement of native woodlands and contribute to Nature Networks where possible.

- Due to the presence of Atlantic temperate rainforests within Argyll and Bute, it is important that future developments determine the presence of lichens and bryophytes that may be impacted upon.
- Any proposed tree planting must not impact on other priority habitats such as areas of peat.
- The importance of the presence of deadwood (standing and laying) within a habitat in maintaining a healthy functioning ecosystem must be taken into consideration by all future developments.
- The importance of the role of woodlands as Nature-Based Solutions to flooding, climate change, and biodiversity loss must be recognised and considered in all future developments.

## Topic Paper 02C: Soils

### **Information required by the Act regarding the issue addressed in this section:**

Town and Country Planning (Scotland) Act 1997 (as amended):

Section 15(5):

- The principal physical, cultural, economic, social, built heritage and environmental characteristics of the district; and the principal purposes for which the land is used.
- The principal purposes for which land is used.

### **NPF4 requirements for LDP:**

NPF4 Policy 5: Soils

To protect carbon-rich soils, restore peatlands and minimise disturbance to soils from development to ensure valued soils are protected and restored, soils, including carbon-rich soils, are sequestering and storing carbon and soils are healthy and provide essential ecosystem services for nature, people and our economy.

LDPs should protect locally, regionally, nationally and internationally valued soils, including land of lesser quality that is culturally or locally important for primary use.

### **Definitions:**

Carbon Rich Soils (CRS) - organo-mineral and peat soils are known as carbon-rich soils. A peat soil is defined in Scotland as when soil has an organic layer at the surface which is more than 50cm deep. Organo-mineral soil or peaty soil is soil which has an organic layer at the surface less than 50cm thick and overlies mineral layers (e.g. sand, silt and clay particles). There is also a relatively rare group of soils in Scotland known as humose soils. These have organic rich layers with between 15 and 35% organic matter. These are mineral soils but also considered to be carbon rich.

Peatland - Defined by the presence of peat soil or peaty soil types. This means that “peat-forming” vegetation is growing and actively forming peat or it has been grown and formed peat at some point in the past.

Mitigation Hierarchy - The mitigation hierarchy indicates the order in which the impacts of development should be considered and addressed. These are:

- i. Avoid – by removing the impact at the outset
- ii. Minimise – by reducing the impact

iii. Restore – by repairing damaged habitats

iv. Offset – by compensating for the residual impact that remains, with preference to on-site over off-site measures.



*Figure 1: Shows the Mitigation Hierarchy in ascending order of importance of consideration with Avoid at the bottom and Offset at the top.*

It should be noted that NatureScot are in the process of developing a Scottish Planning Biodiversity Metric (SPBM) for use in 2027.

### **Links to Evidence:**

#### National

- The Scottish Soil Framework 2009 – Scottish Government  
[The Scottish Soil Framework](#)
- The State of Scotland's Soil 2011 – Natural Scotland  
[state-of-soil-report-final.pdf](#)
- The Risks to Scotland's Soils: A Scoping Report 2024 – Environmental Standards Scotland  
[The-risks-to-Scotlands-soils-a-scoping-report-October-2024.pdf](#)
- Scotland's Soils (updated 2025) – Scotland's Soils  
[Planning and development | Scotland's soils](#)
- Advising on Peatland Habitats and Carbon-Rich Soils in Development Management - NatureScot  
[Advising on peatland habitats and carbon-rich soils in development management | NatureScot](#)
- Planning Advice Note: Assessing the Impact of Developments on Peatland and Carbon Rich Soils – SEPA  
[pan-on-peat-and-soils.docx](#)
- Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems - SEPA  
[guidance-on-assessing-the-impacts-of-developments-on-groundwater-dependent-terrestrial-ecosystems.docx](#)
- Peatland ACTION Five Year Partnership Plan 2025-2030 – Scottish Government  
[Peatland ACTION Five Year Partnership Plan 2025-2030](#)
- Grasslands – NatureScot  
[Thematic Document - Grassland.pdf](#)

- NatureScot Machair  
[Machair | NatureScot](#)
- Wood Wise – Secrets of the Soil  
[wood-wise-secrets-of-the-soil.pdf](#)
- NatureScot Heath and Peatland  
[Thematic Document - Heath and Peatland.pdf](#)

#### Local

- Optimising Carbon Sequestration Opportunities in Argyll & Bute. Economic Impact Final Report for Highlands and Islands Enterprise October 2022  
<https://www.hie.co.uk/media/13074/economic-impact-report-for-argyll-and-bute.pdf>

#### Datasets

- National Soil Map of Scotland  
[Scotland's Soils - soil maps](#)
- SNH Carbon and Peatland Map 2016  
[Scotland's Soils - soil maps](#)
- Scottish Environment, Food and Agriculture Research Institutions (SEFARI)  
[Healthy soils for a green recovery | SEFARI](#)

## **Summary of Evidence**

### **Introduction**

This Topic Paper provides information on the current state of soils within Argyll and Bute and the urgent need for its restoration and protection in response to the global twin climate and biodiversity crises.

Due to the nature of the topic, the paper aligns with other topics within in the evidence report. Those most relevant are highlighted below:

Topic 01: Climate Change

Topic 02: Biodiversity, Forestry and Woodland

Topic 03: Landscape

Topic 04: Historic Assets and Places

Topic 06: Energy (Renewables)

Topic 11: Green and Blue Infrastructure

Topic 13: Coastal Development, Flood Risk and Water Management

Topic 18: Greenbelt

Topic 19: Rural Development and Tourism

### **The Scottish Soil Framework**

#### **Vision**

Soils are recognised as a vital part of our economy, environment and heritage, to be safeguarded for existing and future generations.

#### **Aim**

To promote the sustainable management and protection of soils consistent with the economic, social and environmental needs of Scotland.

The Framework identifies a wide range of activities that will contribute to 13 soil outcomes:

SO1 – Soil organic matter stock protected and enhanced where appropriate

SO2 – Soil erosion reduced and where possible remediated

SO3 – Soil structure maintained

SO4 – Greenhouse gas emission from soils reduced to optimum balance

SO5 – Soil biodiversity, as well as above ground biodiversity, protected

SO6 – Soils making a positive contribution to sustainable flood management

SO7 – Water quality enhanced through improved soil management

SO8 – Soil's productive capacity to produce food, timber and other biomass maintained and enhanced

SO9 – Soil contamination reduced

SO10 – Reduced pressure on soils by using brownfield sites in preference to greenfield

SO11 – Soils with significant historical and cultural features protected

SO12 – Knowledge and understanding of soils enhanced, evidence base for policy review and development strengthened

SO13 – Effective coordination of all stakeholders roles, responsibilities and actions

Soils are a key component in providing and maintaining a healthy functioning ecosystem, providing a wide range of environmental, economic and social benefits including:

- Providing the basis for food, forestry and other biomass production
- Controlling and regulating environmental interactions – regulating water flow and quality
- Storing carbon and maintaining the balance of gases in the air
- Providing valuable habitats and sustaining biodiversity
- Preserving cultural and archaeological heritage
- Providing raw material
- Providing a platform for buildings and roads

However, soils take many years to form, therefore making them a finite, non-renewable resource, vulnerable to impacts such as development and pollution. Currently, soils face threats from:

- Climate change and loss of organic matter
- Sealing
- Acidification and eutrophication
- Loss of soil biodiversity
- Contamination by heavy metals
- Erosion, pesticides and compaction
- Salinisation

Soils support several internationally important habitats which can be found in Argyll and Bute including blanket peatlands, montane habitats, native pine woods and machair grasslands. In turn, these soils support many rare and threatened flora and fauna

species. Ensuring their protection is key in tackling the impacts of both climate and nature emergencies.

Soils provide ecosystem services including:

- Provisioning services (e.g. food)
- Regulating services (e.g. climate)
- Cultural services (e.g. recreation)
- Supporting services (e.g. soil formation) needed to maintain these other services

As stated within the framework, Scotland contains greater proportions of podzols, peat soils and gleys than Europe as a whole, making them rare, important and the habitats that they support, of high conservation value and must be protected.

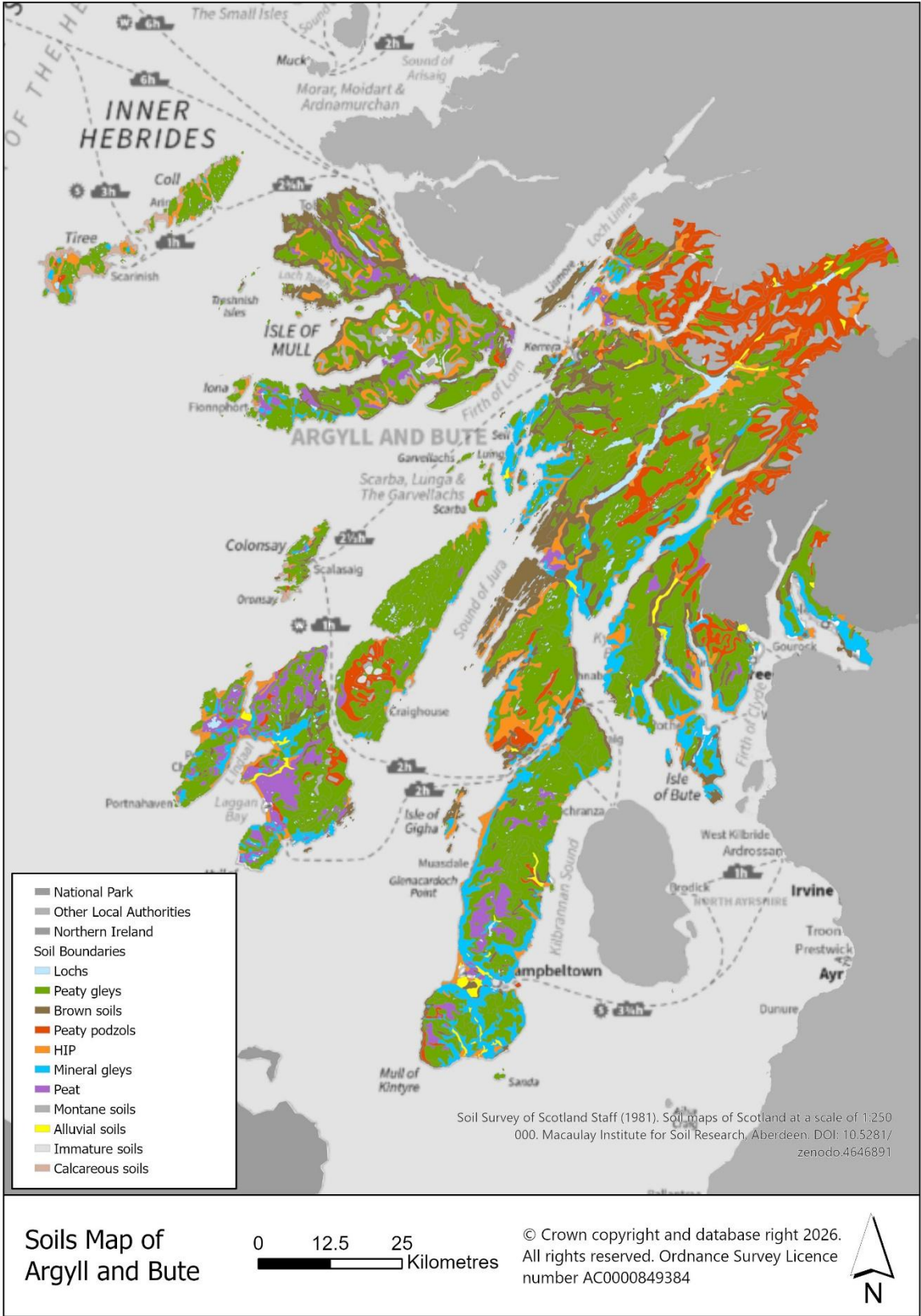


Figure 2: Soils Map of Argyll and Bute

## **The State of Scotland's Soil**

This report is a result of the 2009 Scottish Soil Framework and aims to better understand the important role soils play in supporting life and the threats they face from a range of factors, to ensure they are safeguarded for existing and future generations.

The report identifies seven threats to the quality of soil, as outlined in The Scottish Soil Framework (above) and suggests the most significant threats are:

- Loss of soil organic matter
  - the siting of windfarms on peatland sites represents a specific challenge in terms of effects on soil organic matter and greenhouse gas emissions. Their siting also results in the degradation of aquatic habitats
  - uncertainty remains on the extent of the impact to the functionality of soils from windfarms
- Changes in soil biodiversity
  - a loss in soil species can increase or decrease the rate of biological processes which, ultimately can have positive or negative effects on the environment
- Erosion and landslides
  - the undercutting of stable slopes in construction is a major trigger for landslide processes
- Soil sealing
  - permanent covering of soil surface with an impermeable material
  - sealed soil completely loses all its other functions
  - pressure from sealing endures for decades, if not centuries
  - main risk from new residential, retail and industrial developments and new transport links
  - renewable energies such as windfarms, can also pose a risk to the functionality of the soil
  - highly negative impact on the ability of soil to sustain biodiversity
  - once developed, there is little land that can be returned to multi-functional soil use

Development and transport was determined to be the second most significant pressure leading to the threats of loss of organic soil matter, changes in soil biodiversity, erosion and landslides and soil sealing, after climate change.

In Scotland, the soils are varied, rich in organic matter and contain more than half of the UK's carbon making the Scottish peatlands a globally important carbon store. They support internationally important habitats and control of the quality and quantity of water flow among others. A greater abundance and diversity of organisms are found below the ground than above, including those species that spend part or all their life in the soil for feeding, nesting, hibernating or foraging. Fungi play a critical role in maintaining soil health, with many endangered species are found only in Scotland. A significant symbiotic relationship is formed between mycorrhizal fungi and most Scottish plant species, with several Scottish species relying solely on one fungal species for their survival.

However, soils are a finite, non-renewable resource and ensuring they maintain a healthy state is imperative if they are to carry out these vital functions and secure the sustainability of the environment, including in greenspace areas in towns. It is therefore

vital that their importance in the roles they play, and their management is better understood and knowledge improved as data in this is currently lacking.

### **The Risks to Scotland's Soils: A Scoping Report**

This scoping report considers the main risks to Scotland's soils, identifies any relevant legislation and considers what further actions should be done.

Soils are complex and diverse, support a vast abundance and range of species, many of which are in decline, and mitigate against the effects of climate change through carbon storage and water retention. They are also a non-renewable resource with research to their threats and legislation to their management, monitoring and protection still lacking.

Twelve risks to Scottish soils and the wider environment are identified as being:

- From application of waste to land
- From biodiversity loss
- From carbon sequestration schemes
- From compaction
- From contamination
- From the approach to data and monitoring
- From disease and pests
- From erosion
- From landfilling waste soil
- To soil carbon
- From soil sealing
- To and from water retention, flooding and drought

### **Scotland's Soils – Planning and Development**

This website from Environment Scotland provides data and information on Scotland's soils, including that for planning and development. Soil is a non-renewable resource and activities associated with development can cause damage, ultimately impacting soil function, biodiversity, climate and the economy.

It is important that soils are considered in the development management process to where the mitigation hierarchy has been followed and appropriate mitigation measures have been implemented to ensure degradation to soils is minimised and soil quality is maintained.

### **Advising on Peatland Habitats and Carbon-Rich Soils in Development Management**

This guidance from NatureScot aligns with NPF4 policies relevant to carbon-rich soils and peatlands and development proposals that may impact them and is specifically

aimed at land not protected for its peatland interest that may be impacted upon by a development.

The guidance explains for the importance for developments to apply the mitigation hierarchy at their design stage and identifies different peatland communities which should be avoided by potential developments, or where impact has the potential to raise national interests due to the sensitivities present.

Any developments that do occur on peatlands will result in either direct or indirect impacts. The direct impact will result in the loss of resource whereas indirect impacts will result in the loss of function. Any development that results in direct or indirect impact to peatland must submit appropriate mitigation measures through a submitted Habitat Management Plan (HMP) which identifies restoration areas for offsetting and enhancement.

For offsetting, it is recommended that restoration is in the order of 1:10 (lost:restored) using the same buffer to assess loss and restored areas, unless it is clearly detailed as to why this has been deviated from. The basis of the recommendation is:

- Peatland is an important habitat type, supports biodiversity, and is a key carbon store, especially in a climate and nature crises.
- Peatland cannot be created in areas where it doesn't already exist. Peatlands only exist in limited situations where the physical (climatic, topographic, hydrology) and chemical (pH and low nutrient availability) conditions allow. In addition peat soils accumulate at a rate of approximately 1mm per year, as such take a long time to recover.
- Degraded peatland can still be capable of storing carbon and supporting rare species. If the condition is assessed as being degraded, restoration to improve condition and functioning is recommended.
- Peatland restoration can improve the condition and function of an existing peatland, but crucially it does not increase the extent of peatland. As such, restoration of an area of peatland to offset that which is lost, needs to be greater to that which is lost. It is also important that areas of restoration will restore equivalent habitat and setting to that which will be lost as a result of the development, to ensure that it does not equate to the overall loss of a peatland.
- Improving habitat and hydrological condition and function is a long-term objective as it can take many years to achieve. It is also not possible to guarantee successful restoration, even when following best practice. As such a larger area of restoration is required than is lost to ensure that the ambition is met, and if unsuccessful the developer should assess whether further action is needed.

Developments must also ensure a percentage of enhancement measures are provided in addition to that of offsetting.

### **Optimising Carbon Sequestration Opportunities in Argyll & Bute**

Argyll and Bute covers an area of just under 7,000km<sup>2</sup> with c.50% of that area classed as peatland, heather moorland, rough grassland and bracken scrub. It is estimated that around 49,000ha of peat in Argyll and Bute is degraded. However, through restoration

projects, these peatlands could be restored and function as effective carbon stores once more. The majority of peatland within Argyll and Bute is identified as Class 1 and Class 2. Class 1 and 2 peat are defined as nationally important carbon-rich soils, deep peat and priority peatland habitat, with areas likely to be of high conservation value, or potentially high conservation value and restoration potential.

### **SNH Carbon and Peatland Map 2016**

The below table shows the categories of the carbon and peatland class. The SNH carbon and peatland map shows the distribution of carbon and peatland classes across Scotland.

|                                                                                     | <b><u>Class description</u></b>                                                                                                                                                                                            | <b><u>Indicative soil</u></b>                  | <b><u>Indicative vegetation</u></b>                              |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------|
|    | Class 1 - Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas likely to be of high conservation value                                                                                   | Peat soil                                      | Peatland                                                         |
|  | Class 2 - Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential                                                          | Peat soil with occasional peaty soil           | Peatland or areas with high potential to be restored to peatland |
|  | Class 3 - Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat | Predominantly peaty soil with some peat soil   | Peatland with some heath                                         |
|  | Class 4 - Area unlikely to be associated with peatland habitats or wet and acidic type. Area unlikely to include carbon-rich soils                                                                                         | Predominantly mineral soil with some peat soil | Heath with some peatland                                         |
|  | Class 5 - Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include                                                                                                           | Peat soil                                      | No peatland vegetation                                           |

|                                                                                   |                                                                                     |                                    |                        |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------|------------------------|
|                                                                                   | areas of bare soil. Soils are carbon-rich and deep peat.                            |                                    |                        |
|  | Mineral soil - Peatland habitats are not typically found on such soils (Class 0)    | Mineral soils                      | No peatland vegetation |
|  | Unknown soil type – information to be updated when new data are released (Class -1) | Not classified (unknown soil type) | Not applicable         |
|  | Non-soil (e.g. loch, built up area, rock and scree) (Class -2)                      | No soil                            | Not applicable         |

Table 1: Categories of the carbon and peatland class.

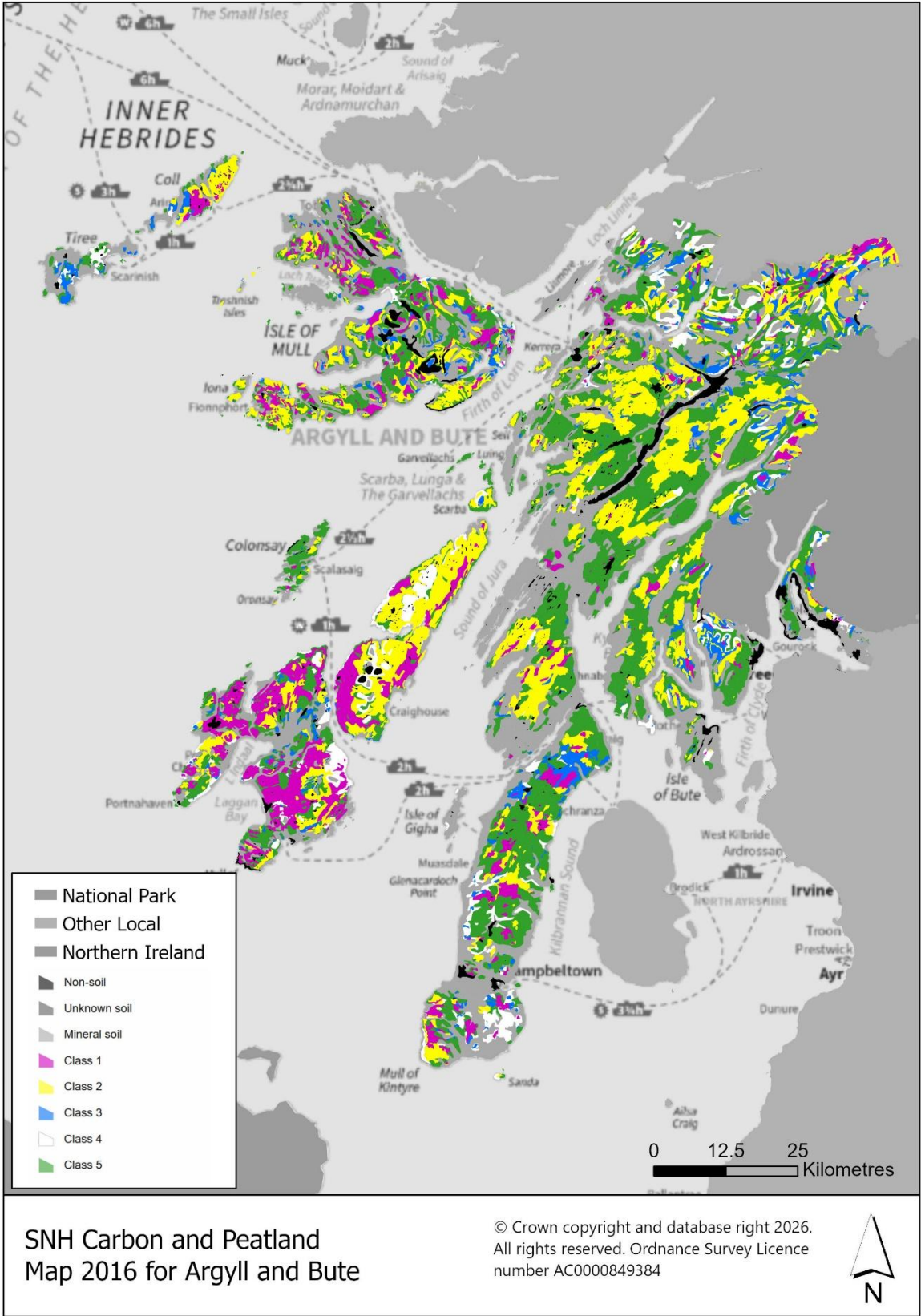


Figure 3: Carbon and Peatland Map 2016 for Argyll and Bute

### **SEPA Planning Advice Note: Assessing the Impact of Developments on Peatland and Carbon Rich Soils**

This advice from the Scottish Environmental Protection Agency (SEPA) follows that set out in NPF4 Policy 5 where developments that impact carbon rich soils (CRS) and peatland will only be supported where certain criteria are met and detailed site-specific assessments that show how the development will be designed and constructed in accordance with the mitigation hierarchy are submitted.

All development proposals on CRS are required to demonstrate and provide adequate justification in the order set out below that they have achieved the following:

- Avoidance of near-natural peatland and peat greater than 1 metre depth.
- Avoidance of other CRS where there are alternative areas of the site where CRS are absent.
- Minimisation of the absolute volume of peat material excavated and disturbed during construction, operational life and in decommissioning.
- Where the applicant has provided justification that avoidance of areas of near-natural peatland and peat deeper than 1m is not possible the applicant should investigate the use of non-intrusive building and infrastructure design to minimise the impacts. This covers infrastructure elements such as floating tracks. A contingency plan should be submitted in case the original proposal ends up not being technically feasible.

Clear and detailed peat depth surveys, including diagrams showing the locations of each probe, must be submitted to better understand the potential impact a development may have. Soils are one of the most important assets that provide a range of benefits including nature-based solutions, ecosystem services and supporting biodiversity.

### **Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems**

GWDTE are considered a sensitive receptor which can be adversely affected by developments and as such, impact to them should be avoided.

### **Peatland ACTION Five Year Partnership Plan 2025-2030**

The draft Climate Change Plan (CCP) 2026-2040 sets out the Scottish Government's vision for peatlands.

By 2040, Scotland will be internationally recognised for its restored and resilient peatlands, where sustainable and fortified land use supports nature recovery, empowers communities, and drives a dynamic green economy. This transformation will be enabled through integrated stewardship, responsible management, public support and private investment.

The draft CCP's peatland policies prioritise the protection, management, and restoration of Scotland's peatlands, underpinned by robust evidence and world-class research to support effective action. Healthy peatlands are vital for Scotland's climate and nature goals and also offer key natural benefits - they store carbon, support biodiversity and nature, reduce the risk of flooding and wildfires and improve drinking water quality.

Degraded peatlands require several years to recover and achieve the full potential for emissions reduction after restoration activities are complete. The aim is to return degraded peat to a more natural condition and reinstate the natural ecosystem functions and benefits they can provide. The Scottish Government is aiming to restore more than 400,000 hectares by 2040.

## **Habitats**

### **Grasslands**

Grasslands cover a third of Scotland's land area and are important habitats that support biodiversity including pollinators and provide ecosystem services. The different types of grassland will depend upon the type of soil and their location, but all are important.

- Species-rich grassland, including acid, neutral and calcareous
- Improved permanent pasture and agriculturally improved and reseeded grassland
- Unimproved grassland, including acid, neutral and calcareous
- Wet grassland (including fen meadow, saltmarsh and rush pasture)

Machair is a globally rare and threatened grassland, found only in the north west of Scotland and Ireland including Argyll & Bute. This habitat supports a rich array of species including corncrake and the great yellow bumblebee.

### **Native Woodlands**

Importance of soils as ecosystem services:

- Production of biomass
- Storage, filtration and transformation of nutrients, substances and water
- Provision of habitat, species and genetic diversity
- Provision of the physical and cultural environment for humans and their activities
- Provision of raw materials
- Carbon storage and cycling
- Protection of archaeological heritage

Loss of soil would impact the survival of millions of species, including humans as well as impacting on the processes carried out by soils, which cannot be replicated by technology or human activities.

Woodlands support a rich diversity of earthworms; a vital component of woodland soils that help recycle nutrients back into the soil and break down dead organic matter.

Due to the complexity of interactions and associations within soils, soil disturbance through translocations will cause great disruptions and may render it an unviable habitat for target species to grow in.

### Upland Heather, Peatlands and Blanket Bog

The largest global concentration of heather moorland is found within Scotland, offering a high value to conservation and biodiversity. In its natural state and if not intensively managed, it provides carbon storage and natural flood management as well as its rich array of flora species supporting declining pollinators and bird species.

More than 20% of Scotland's land cover is peatland, a wetland habitat that supports rare and specialised flora and fauna species. Blanket bog, raised bog and fen habitats can be found here, with blanket bog classed as a rare habitat where bog mosses and plants slowly breakdown.

These habitats provide the following ecosystem services:

#### Provisioning

- Livestock
- Wild foods
- Water supplies

#### Cultural

- Opportunities for recreation
- Landscape and aesthetic value
- Cultural heritage

#### Supporting

- Nutrient cycling
- Soil formation
- Water cycling

#### Regulating

- Local climate regulation
- Carbon storage and sequestration
- Flood control
- Soil quality and erosion regulation
- Water purification
- Water supply / groundwater infiltration
- Air purification
- Pollination
- Pest and disease regulation

Care must be taken that these habitats, as the value of these ecosystem services can be reduced through changes to drainage, burning and grazing regimes, which dry the peat surface.

## **Summary of Engagement**

A working draft version of this template was shared with NatureScot. Representations submitted at the working draft stage are summarised below:

### **NatureScot**

General feedback on the paper found it to be a well researched and clearly reported topic paper with some relatively minor but important advice. These were to include the Scottish Planning Biodiversity Metric (SPBM), currently under development by NatureScot and ready for use in 2027, within the Mitigation Hierarchy section. It was advised to reference the Scottish Environment, Food and Agriculture Research Institutions (SEFARI) Healthy Soils for a Green Recovery dataset. Further information should be provided on soils within all threatened habitats within Argyll and Bute including grasslands and coastal machair, native woodlands, upland heather, peatlands and blanket bog within the habitats section under their own heading. While these habitats had been discussed, they were underrepresented within this section.

It was noted that, as highlighted within the report, soils are complex and part of an interconnected biodiversity web vital for driving nutrient cycling, boosting agricultural and forestry resilience, and mitigating climate change. Protecting and restoring soils and associated terrestrial habitats also has positive benefits to the interconnected hydrological system and marine environments. Under NPF4 policy (and wider environmental legislation), the new generation of LDPs are required to take both terrestrial, marine and air environments into consideration (National and regional).

### **Comment**

This paper has been updated to include the SPBM within the Mitigation Hierarchy section, SEFARI Healthy Soils for a Green Recovery within the datasets and further information on soils within machair habitat, native woodlands, upland heather, peatlands and blanket bog.

### **Scottish Environment Protection Agency (SEPA)**

SEPA do not comment specifically on Soils Topic Papers, but they note that this paper is aligned with their guidance and evidence report requirements.

## **Summary of Implications for the Proposed Plan**

Soils are often overlooked in their importance to sustaining a healthy ecosystem, supporting a rich variety of biodiversity, providing a range of ecosystem services and acting as nature-based solutions. They are also a non-renewable resource, taking many years to form. NPF4 Policy 5 and the Scottish Biodiversity Strategy place a strong emphasis on protecting carbon-rich soils and peatlands, ensuring their restoration and improving knowledge of the impact development has on all soil types.

- Development proposals must consider the presence of carbon-rich soils and peatlands from the outset and avoid adverse impacts to their integrity, including avoiding areas of deep peat (>50cm depth).
- Development proposals must submit a clear and detailed peat depth survey, showing the locations of the probes along with a Peat Management Plan (PMP).
- Development proposals must consider the mitigation hierarchy for soils and peat from the outset by ensuring the Mitigation Hierarchy has been followed with avoidance of sensitive habitats and species as the first step.
- Development proposals must consider both the climate and nature crisis from the outset and ensure the integrity of biodiversity and irreplaceable habitats are not impacted including loss, fragmentation and degradation. Tackling the effects of the climate emergency must not come at the cost of the effects of biodiversity.
- Where direct and indirect loss of habitat has occurred, the development proposal must ensure restoration in the order of 1:10 (lost:restored) using the same buffer to assess loss and restored areas as well as providing enhancement measures appropriate to the scale of impact.
- The cumulative effects of developments on protected and sensitive habitats must be considered in all applications. The impact of one development may have no impact at local level, but several developments will and may result in a loss of important habitat at local level and so on.
- Developments must take a 'preventative over cure' approach. Mitigation measures must be considered from the outset and not as part of a monitoring programme.
- Nature Networks should be considered from the onset with developments reconnecting fragmented habitats and improving connectivity for species. This could include wildlife bridges where infrastructure has fragmented habitats.
- All development proposals must utilise the Scottish Planning Biodiversity Metric (SPBM) once it is published.