

# THE FLOW COUNTRY

MANAGEMENT PLAN FOR THE PROPOSED FLOW COUNTRY  
WORLD HERITAGE SITE

NOMINATION DRAFT  
DECEMBER 2022

THE MORE YOU LOOK THE MORE YOU SEE

T H E

F L O W

C O U N T R Y



*“There was once a Bog Girl. Her dress was peat-black fringed with soft green moss. In her dark hair she wore tiny flowers of white bog cotton and pink bog-bean, and her long necklace was made from dark green Bog-firs.*

*But she was lonely, this Bog-Girl, and often gazed at her reflection in dark pools for company. The Bog Girl looked after the wilderness of the Flow Country, caring for its marvel of deep peat Blanket Bog that covered the ancient and vast sunken forest.*

*The Bog Girl sang with the wind to help the people of Scotland breathe good clean air. She sang songs to encourage the insects, the birds, the running deer, and she sang to remember the Bog People, now gone, but not forgotten, for she, The Bog Girl, remembered them.*

*Some called the Bog Girl the spirit of the wind. Others called her the guardian of the great bog. Though few have ever seen her.”*

*From ‘The Bog Girl of the Flow Country’, by Janis Mackay, 2022*

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## Acronyms commonly used in the Management Plan

IUCN	International Union for the Conservation of Nature – UNESCO’s Natural WHS advisors
OUV	Outstanding Universal Value – see Chapter 3 for details
SAC	Special Area of Conservation – designated for conserving protected habitats and species
SPA	Special Protection Area – designated for protected bird species
SSSI	Site of Special Scientific Interest – designated for plants, animals, habitats or geology
SOUV	Statement of Outstanding Universal Value – see Chapter 3 for details
TFC	The Flow Country (as a World Heritage Site, if inscribed)
UNESCO	United Nations Educational, Scientific and Cultural Organisation – they oversee the World Heritage convention
WH	World Heritage
WHS	World Heritage Site(s)

## Background to 2022 Pre-inscription draft

In early 2023, and after many years of preparation, the blanket bog peatlands of The Flow Country are being nominated to the United Nations Educational, Scientific and Cultural Organisation (UNESCO), to become a World Heritage Site. This means that if successful, The Flow Country would be seen globally as important as the Great Barrier Reef, the Serengeti, the Okavango Delta and the 160+ other World Heritage Sites inscribed on the World Heritage List for their outstanding natural values.

This Management Plan (the Plan) is the first version of a document that will be of significance if The Flow Country achieves World Heritage status. It has been produced by a local partnership of organisations and individuals in order to explain to UNESCO how the World Heritage Site will be looked after, collaboratively, should the area achieve the globally important accolade. The work in this Plan is supported by, and in turn supports a Nomination Dossier, an extensive piece of work which sets out in detail why The Flow Country should be a World Heritage Site, and which is sent to UNESCO for scrutiny.

At this pre-inscription stage, this Plan has no basis in law, but should the area achieve World Heritage status it will be submitted for adoption by the Local Authority as supporting information for the planning system, and to help protect the World Heritage Site. This edition of the Plan is called the Nomination Draft and has been subject to public scrutiny for eight weeks in summer 2022, the feedback from which can be seen at [theflowcountry.org.uk](http://theflowcountry.org.uk).

If the nomination bid is successful – and on the current timetable, that decision will be made in summer 2024. Once the UNESCO decision is known this Plan will be reviewed in light of their comments and any necessary changes made including those in legislation or policy that might affect the Site. The Management Plan will subsequently be submitted to further public scrutiny.

### Note on terminology:

- 1) The words **designation** and **inscription** are both used throughout this document to refer to the application of a 'layer of significance' over a geographical area. In the UK we tend to use designation for 'layers of significance' such as National Parks or SSSI, but UNESCO use 'inscription' in the context of World Heritage Sites because when a place is given World Heritage Status, it is *inscribed* – literally written – onto the World Heritage List. Both of these terms are used in the Plan depending on the context and type of site being referred to.
- 2) The words **Site** and **property** are both used by UNESCO when referring to places on the World Heritage List. Referring to them as World Heritage *Sites* is more commonplace, whereas use of the word *property* by UNESCO tends to be for technical reasons. As per Note 1, both words are used in this Plan, depending on the context, but when referring to the proposed WHS, **Site** is always capitalised to differentiate it from other sites (such as SSSI/SAC/SPAs) within the area.
- 3) When we refer to **The Flow Country**, all capitalised, or **(The) Flow Country World Heritage Site**, we refer to the proposed World Heritage Site area – see Chapter 2 for the draft proposed boundary. When we use '**the Flow Country**', or '**the wider Flow Country**', without a capitalised '**the**', then we refer to the wider area in Caithness and Sutherland that people call the Flow Country, but that is undefined by a specific border, and relates to the area including and surrounding all of the peatlands, no matter what condition they are in.

## Foreword by the Chair of The Flow Country World Heritage Site Bid Steering Group

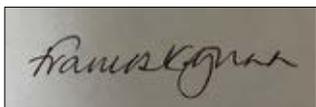
As a native of The Flow Country and a long-time advocate for sensitive development in our beautiful and remote part of the world, it gives me great pleasure to write the foreword for this Management Plan for the prospective Flow Country World Heritage Site.

It is more than 30 years<sup>1</sup> since the idea of gaining World Heritage status was first proposed, and work began in earnest 10 years ago. Much has happened in our beautiful part of the world over that period. Perhaps of most significance for this Plan is that during this period the world has started to recognise the huge importance of peat, for biodiversity, for our climate, for our water and air quality, and for our way of life. World Heritage status, should we be successful in gaining it, will firmly put our incredible blanket bog on the map for all time as the best example of its type in the world.

This Management Plan provides detail about how we intend to look after the World Heritage Site, and what arrangements need to be in place in order to achieve that. By 'we', I mean you and me, the people who own, live and work in the area, and those organisations who work with us to make it special. The Plan has been written with the intention of safeguarding this outstanding natural heritage for future generations. There are some complex and challenging issues in there, and we are always happy to get your thoughts about what is being proposed, not just about the difficult issues, but also about the really positive benefits that might come from becoming a World Heritage Site.

As the Chair of the World Heritage Site Steering Group, I can genuinely say that this Plan, and the decisions made in it, have been made collaboratively, with the best interests of the blanket bog and the wider Flow Country and its communities in mind.

With best wishes and thanks



Frances Gunn, on behalf of the following partner organisations that are on the Steering Group for the World Heritage Site bid. More details about the Partnership can be seen Chapter 8.



Organisations represented on the WHS Bid Steering Group (the Partnership):

NatureScot, The Highland Council, University of the Highlands and Islands (ERI), RSPB Scotland, Crofting Commission, Highlands and Islands Enterprise, VisitScotland, Confor, Scottish Land and Estates, Wildland Ltd, Flow Country Partnership, Forestry and Land Scotland, Historic Environment Scotland, Scottish Government, Joint Nature Conservation Commission, with Historic England and the Department for Culture, Media and Sport as observers..

<sup>1</sup> Resolution (17/63) of the 17<sup>th</sup> General Assembly of the IUCN in Costa Rica, 1987 (<https://portals.iucn.org/library/efiles/documents/GA-17th-011.pdf> p147) and in Lindsay et al, 1988, (<https://repository.uel.ac.uk/item/86qqv>)

## Executive Summary

Our vision for the Site is:

*Our vision is that World Heritage Status for the Flow Country will ensure that its world-class blanket bog, associated biodiversity and carbon storage ability is protected and enhanced, that it is an unparalleled and accessible natural resource for education and well-being, and that the status is beneficial both for our vibrant communities and our visitors.*

Those responsible for managing World Heritage Sites have a duty to ensure that they are protected for present and future generations, for the whole world<sup>2</sup>. This is not just through legal means, but also through responsible, inclusive, sustainable management practices, which is the primary reason why a Site must have an appropriate, agreed management framework in place, highlighting the need for this document.

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*“Heritage is our legacy from the past, what we live with today, and what we pass on to future generations. Our cultural and natural heritage are both irreplaceable sources of life and inspiration.” (UNESCO)<sup>3</sup>*

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This Management Plan sets out how the people and organisations of the Highlands, Scotland and the UK will look after The Flow Country as a World Heritage Site, should it achieve this status. The intention within the plan is to meet both the global aims of UNESCO, and the aspirations of local Highland communities.

The blanket bog of The Flow Country is an outstanding peatland ecosystem, with associated, unique biodiversity assemblages and a record of the past 9,000 years. Its future value is also highly significant, not least because of the local and global significance for biodiversity, but also because of its role in sequestering and storing carbon in the fight against human-induced climate change. It is also a living landscape; people live and work in and around it. The ‘flows’ have always been a part of people’s lives here, whether through cutting peat for fuel, crofting, sporting pursuits or other forms of work or recreation. This proposal for World Heritage Status does not intend to change that, but instead seeks to work with stakeholders in order to manage the blanket bog landscape in the best interests of people and the peatland.

Given the size of the area, the level of human intervention over millennia, and the complications of land tenure, setting out how the World Heritage Site will be managed is no straightforward task. Working in partnership across many stakeholders and communities, it is achievable, and this Plan sets out how we hope to do it. The document is broken down into three parts: (1) Introduction, description and justification, (2) Policy context, protection, and issues and opportunities, (3) Policy framework, governance, and implementation.

Part 1 (Chapters 1-3) sets the scene for World Heritage and the reasons why the status is being sought for The Flow Country. This would be the world’s first World Heritage Site based on the importance of peatland, but that in itself does not guarantee the status. The proposed boundary area, with rationale for why some areas are included and others

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<sup>2</sup> From the World Heritage Convention (1972) “the States Parties to this Convention recognize that such heritage constitutes a world heritage for whose protection it is the duty of the international community as a whole to co-operate.”

<sup>3</sup> UNESCO – <https://whc.unesco.org/en/about>

aren't, is also described in this section as are the key 'attributes' of the areas that together make up the concept that UNESCO calls Outstanding Universal Value, or OUV; the reason why a place deserves to be a World Heritage Site.

Part 2 (Chapters 4-6) sets out the international, national and local policy context in which the proposed World Heritage Site sits, demonstrating that the proposal is being developed in a very supportive political environment which can only benefit the Site's future safeguarding. The legislative and planning context is also set out here and shows the multiple levels of protection that are already afforded to much of the area within the boundary. It also discusses the planning policy that affords protection to the parts of the boundary without statutory environmental designation, and the area outside of the proposed World Heritage Site that may have an impact on the Site itself; known as the setting. The conclusion is that existing protection arrangements for the proposed World Heritage Site are strong and appropriate for the designation.

The final part of this section – Chapter 6 – is a detailed discussion about the threats and opportunities facing the proposed Site, including issues such as deer management, woodland creation and wind turbines arrays. These are all complex issues, and it is clear that there will be challenges going forward, however, it is also apparent that there is nothing in here that cannot be resolved through collaboration and discussion.

Part 3 (Chapters 7-8) of the document presents the policy framework – the decision-making structure by which the area, as a World Heritage Site, will be managed in the future, should the status be achieved. It is important to recognise that this does not override decisions or impose conditions on landowners or managers, it sets out a suite of policies to which, by working in partnership, landowners and managers, organisations and individuals will adhere, as they are in the best interests of the World Heritage Site. The policies are broken down into four themes that can be broadly summarised as protection, living landscape, education and management, and the policies contained therein will set the tone for World Heritage Site management into the future. This section also sets out the governance arrangements for the Site, and touches on how implementation of the Plan will take place.

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*“What makes the concept of World Heritage exceptional is its universal application. World Heritage sites belong to all the peoples of the world, irrespective of the territory on which they are located.”<sup>4</sup>*

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World Heritage status has the potential to bring considerable benefits to the far north of Scotland, and not just for the protection and recognition of the blanket bog. Following the example of other World Heritage Sites, sensitive use of the designation can bring real and long-term social, economic and cultural benefits to the area that work in harmony with protection of the natural asset. This Plan aims to achieve that balance.

## Acknowledgements

This Plan, alongside the Nomination Dossier, has been put together with the commitment and support of the organisations on the Partnership, as listed out on page 6. Most notably, the Highland Council, NatureScot, ERI, RSPB and Wildland Ltd have taken a lead in providing financial and staff support over the last 5-6 years and have driven the work programme and thanks are due to them. Thanks also are due to all members of the Steering Group, Technical Working Group and Flow Country Partnership for their roles in helping to develop this bid.

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<sup>4</sup> UNESCO – <https://whc.unesco.org/en/about>

# PART 1

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## Chapter 1. Introduction, World Heritage and OUV

World Heritage Sites (WHS) are places of global significance. The United Nations Educational, Scientific and Cultural Organisation (UNESCO) recognises WHS through the Convention Concerning the Protection of the World Cultural and Natural Heritage (1972), more commonly known as the World Heritage Convention and which has been ratified by 194 member states.

### 1.1 UNESCO and World Heritage

UNESCO was established in 1945, and its Constitution declares that *'since wars begin in the minds of men and women, it is in the minds of men and women that the defences of peace must be constructed'*<sup>5</sup>.

The overriding purpose of UNESCO is: *"to contribute to peace and security by promoting collaboration among nations through education, science and culture in order to further universal respect for justice, for the rule of law and for the human rights and fundamental freedoms which are affirmed for the peoples of the world, without distinction of race, sex, language or religions"*. We talk about peace more in Chapter 7.

One of UNESCO's roles relates to the protection of both natural and cultural heritage and ensuring that the conservation of sites and monuments contributes to social cohesion. *"Insofar as monuments and sites are also spaces for sustainable development and reconciliation, UNESCO coordinates actions of its partners by administering the World Heritage Convention (1972)."*

#### The World Heritage Convention

UNESCO further states that: *"Reflecting the natural and cultural wealth that belongs to all of humanity, World Heritage Sites and monuments constitute crucial landmarks for our world. They symbolize the consciousness of States and peoples of the significance of these places and reflect their attachment to collective ownership and to the transmission of this heritage to future generations."*

*"What makes the concept of World Heritage exceptional is its universal application. World Heritage Sites belong to all the peoples of the world, irrespective of the territory on which they are located. The United Nations Educational, Scientific and Cultural Organization (UNESCO) seeks to encourage the identification, protection and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity."*

The Convention (ratified by the UK Government in 1984), is exceptional in two ways: first, it is international, able to be applied equally over all 194 member-states, and with a global level of responsibility; secondly, it embraces both culture and the natural environment in one designation and depends very much on the interdependence of the two dimensions of heritage.

*"in regarding heritage as both cultural and natural, the Convention reminds us of the ways in which people interact with nature, and of the fundamental need to preserve the balance between the two."*

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<sup>5</sup> This and subsequent quotes on same page from whc.unesco.org

The Convention also has objectives, strong messages to emphasise that inscription onto the World Heritage List is not just a badge of honour, and that World Heritage is trying to make a real difference in the world. These objectives are described in Box 1.1.

Box 1.1 The ‘five Cs’ of World Heritage<sup>6</sup>

<b>Credibility:</b>	<i>Strengthen the Credibility of the World Heritage List, as a representative and geographically balanced testimony of cultural and natural properties of outstanding universal value.</i>
<b>Conservation:</b>	<i>Ensure the effective Conservation of World Heritage properties.</i>
<b>Capacity-building:</b>	<i>Promote the development of effective Capacity-building measures, including assistance for preparing the nomination of properties to the World Heritage List, for the understanding and implementation of the World Heritage Convention and related instruments.</i>
<b>Communication:</b>	<i>Increase public awareness, involvement and support for World Heritage through communication.</i>
<b>Communities:</b>	<i>Enhance the role of communities in the implementation of the World Heritage Convention.</i>

Logistically, the World Heritage Convention sets out the guidance for nomination and, once inscribed, management of World Heritage Sites. In this context, UNESCO’s World Heritage mission is to:

- encourage States Parties to establish Management Plans and set up reporting systems on the state of conservation of their World Heritage Sites;
- help States Parties safeguard World Heritage properties by providing technical assistance and professional training;
- provide emergency assistance for World Heritage Sites in immediate danger;
- support States Parties’ public awareness-building activities for World Heritage conservation;
- encourage participation of the local population in the preservation of their cultural and natural heritage;
- encourage international cooperation in the conservation of our world’s cultural and natural heritage.

The implications of being on the World Heritage List are that properties have “*Outstanding Universal Value*” (OUV), a “*cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole*”

## Outstanding Universal Value (OUV)

OUV, is defined in terms of three pillars for natural Sites:

- **Criteria** – the factors for which the Site is globally outstanding; there are six cultural and four natural heritage criteria
- **Integrity** – the ‘wholeness’ or completeness of the Site; an expression of whether all of the component parts of what is being described are present in good condition within the boundary area
- **Protection and management** – the extent to which the area proposed for inscription can be protected and managed effectively

All three pillars must be met before the Site can be inscribed on the List, and if one of these is at risk, UNESCO can ask for it to be remedied. If that is not possible, the Site could be put on the World Heritage in Danger list. Once on

<sup>6</sup> Source: <https://whc.unesco.org>

this list, the only way off it is if the risk is minimised or the Site is de-listed, as happened with Liverpool Mercantile City in 2021. More about this can be seen on UNESCO’s website.

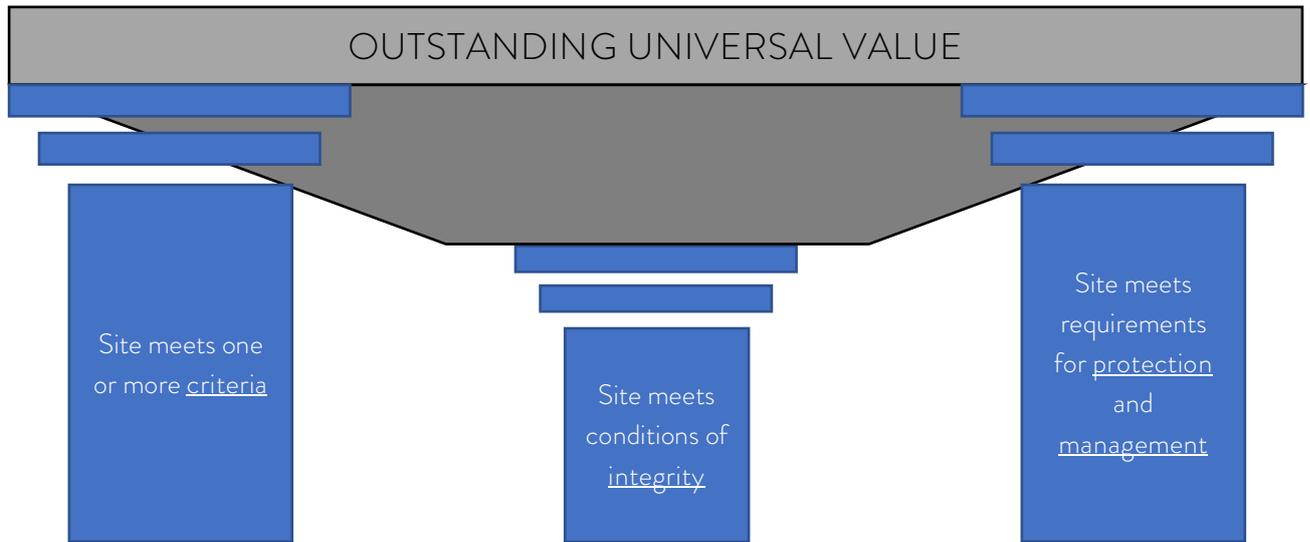


Figure 1.1 The three pillars of OUV

Those responsible for managing World Heritage Sites have a shared obligation to ensure that they are protected for present and future generations, not just through legal means, but also through responsible, inclusive, sustainable management practices. This is the primary reason why a World Heritage Site must have an appropriate, agreed management framework in place, and therefore highlights the need for this document.

## 1.2 How is a World Heritage Site inscribed?

World Heritage status is not automatically bestowed on a property by the States Party<sup>7</sup> Government or UNESCO. All World Heritage Sites must have a clear case for Outstanding Universal Value to be inscribed onto the World Heritage List.

The normal route to inscription in the UK is for a local Partnership to come together around a common belief that a place or area has the potential to be a World Heritage Site, and then work with the Government and its agencies to gain a place on the UK’s ‘Tentative List for Nominations’<sup>8</sup>. They must then produce a Technical Evaluation of the Site’s potential OUV for approval by the UK Government.

The Partnership is then able to develop and submit a Nomination to UNESCO, whose World Heritage Committee makes the decisions at their annual meetings. The Flow Country Partnership has been working since 2012 to develop and put forward the case for World Heritage status and passed the Technical Evaluation stage in 2020. There are many people to thank for their input along the way, both those working on the bid currently and those instrumental in getting it going and maintaining momentum.

<sup>7</sup> State Party is UNESCO terminology for a nation state that has signed the World Heritage Convention.

<sup>8</sup> <https://www.gov.uk/government/consultations/unesco-world-heritage-sites-uk-tentative-list-revie>

For The Flow Country, the bid submission will be made to UNESCO in January 2023, after which time there will be an evaluation period of 18 months. IUCN – the International Union for Conservation of Nature – is UNESCO’s Advisory Body for natural heritage, and they will arrange for an assessor to visit to the Site and meet the team and community. This will help them form their opinion as to whether the Site meets the criteria and demonstrates OUV. They will then give their recommendation to UNESCO where it will be considered by its World Heritage Committee. This group, comprising representatives from 21 States Parties who have ratified the World Heritage Convention, will then make the final decision about whether to inscribe the Site based on the information with which they have been provided. This decision is likely to be made in 2024.

### 1.3 How is a World Heritage Site managed?

Management of World Heritage Sites is complex, but always based on a partnership approach. Sites vary in tenure, from wholly owned Sites such as Blenheim Palace, to places with many landowners, such as the Lake District, cities like Bath or Edinburgh, or serial Sites such as the Cornish Mining landscape. Land management, whether ownership or tenancy has a key role in management, and it is important that land managers are supportive. In the UK, World Heritage does not currently carry any *direct* legal implications, so there is no statutory or legal obligation to consult residents or property owners. That said, all Sites in the UK make a point of providing mechanisms for owners to input, and many are involved at the pre-inscription phase. The Flow Country Partnership has held two periods of public consultation on the proposed WHS with local communities prior to consultation on the draft Management Plan, as well as holding many other less formal meetings. Notably, it has made every effort to ensure that all parties involved in the management of land within the proposed WHS, irrespective of the nature of their land tenure, have been given opportunities to engage in the consultation process.

Wider public, private and organisational involvement in a WHS is normally through the mechanism of a stakeholder Partnership. This Partnership should have a transparent governance structure, with one or more groups or committees set up to oversee it, which tend to be non-executive bodies that work on a consensus basis to make coordination decisions and actions.

In the case of the Flow Country, as with other Sites, there is a pre-inscription Steering Group comprising representatives of key stakeholder organisations, as well as individual technical specialists. Because the Steering Group is non-executive, the Partnership has ‘accountable bodies’ which are The Highland Council and NatureScot, the two main public authorities responsible for initially seeking and funding the Nomination of the Site. The Steering Group is chaired by an independent Chair from within the community.

The technical need for such a Group and its role is to meet the requirements of the Operational Guidelines for the Implementation of the World Heritage Convention<sup>9</sup>. They state in para 111 in respect of the management system requiring “*the development of mechanisms for the involvement and coordination of the various activities between different partners and stakeholders*”. Regulations aside, a wide stakeholder partnership is of most importance to ensure that all of the key partners who will play a part in the management of the WHS when it is inscribed have a voice around the table. Steering Groups often also have representatives of the local communities, which in this case includes Councillors from the Highland Council. Governance is set out in more detail in Chapter 8, but the list of partners currently in this Steering Group is in Table 1.1 below.

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<sup>9</sup> <https://whc.unesco.org/en/guidelines/>

Table 1.1 Flow Country Steering Group partners and their roles

Organisation / Expert	Role, responsibilities, expertise and experience it brings to the Steering Group	Role on the Steering Group
The Highland Council (THC)	Local Authority – planning, highways, tourism, education etc.	Member, Accountable Body
NatureScot (NS)	Scottish Government adviser on all aspects of nature, wildlife management and landscape	Member, Accountable Body
Environmental Research Institute (ERI), University of the Highlands and Islands (UHI)	University department with focus on peatland science	Member
Flow Country Partnership (FCP)	Wider stakeholder body with multiple projects in the area	Member
RSPB Scotland (RSPB)	Wildlife charity, landowner, education provider	Member
Wildland Ltd.	Large private landowner with a focus on nature conservation	Member
Forestry and Land Scotland (FLS)	Scottish Government agency responsible for managing our national forests and land	Member
Scottish Land and Estates (SLE)	Supporting and representing land-based businesses and estates	Member
Highlands & Islands Enterprise (HIE)	HIE support economic development and growth in the Highlands	Member
Historic Environment Scotland (HES)	Scottish Government Agency with responsibility for World Heritage	Member
Confor	Trade body for forestry industry	Member
Federation of Small Businesses (FSB)	Represent SMEs within the wider Flow Country area	Member
Rural Payments and Inspections Division (RPID)	They deliver the Rural Payments and Services in Scotland	Member
VisitScotland (VS)	National Tourism body	Member
Peatland expert	Peatland knowledge and expertise	Member
Crofting Commission (CC)	Understanding and knowledge of, and connections with, the crofting community	Member
Scottish Government	Devolved Government	Member
Scottish Forestry (SF)	Scottish Government agency responsible for forestry policy, support and regulation	To be confirmed <sup>10</sup>

<sup>10</sup> As of date of consultation

Organisation / Expert	Role, responsibilities, expertise and experience it brings to the Steering Group	Role on the Steering Group
Joint Nature Conservation Committee (JNCC)	Oversight of international natural designations in the UK, including natural WHSs	Member
English Heritage (EH)	UK Focal point for World Heritage	Observer
UK Department for Digital, Culture, Media and Sport (DCMS)	UK State Party to the World Heritage Convention	Observer

## 1.4 Purpose of this document

This document is the first version of a proposed Management Plan for the proposed World Heritage Site, should it become inscribed onto the World Heritage List. It is a formal requirement of both UNESCO and the UK Government for Sites to have a Management Plan, but it cannot play any role in protection until the Site is inscribed. Should that happen, the Plan will need to undergo any revisions necessary and be once more be presented to the UK Government and UNESCO for approval.

At this stage therefore it is important that the Plan gets as much public scrutiny and support as possible. It is a public document which outlines a Vision and Aims for the Site over the coming years and indicates a range of policies setting out how those Aims, and other aspirations, will be achieved. It also explains the reasons for designation and how it is to be protected and managed.

There is no prescribed format for a World Heritage Site Management Plan, either in the UK or anywhere else. This is because every Site is different and needs to be managed according to its needs. The approach set out here is based on experience and good practice from other UK Sites, leading to a comprehensive document, which at this initial stage, seeks to lay out all of the issues in detail for local policymakers, communities and UNESCO to scrutinise. The structure for The Flow Country WHS Management Plan is set out in the following sections:

- Chapter 2 describes the Site, including a level of detail for each of the areas within the boundary;
- Chapter 3 then presents the proposed Site's Statement of OUV and its Attributes;
- Chapter 4 gives the International, National, Regional and Local policy contexts to the proposed Site and its values;
- Chapter 5 presents a detailed analysis of the protection arrangements;
- Chapter 6 provides an analysis of the issues affecting the proposed Site, including both threats and opportunities;
- Chapter 7 then sets out the policy framework in detail;
- Chapter 8 completes the main document with details of implementation, governance and monitoring.

An accompanying Action Plan will be prepared between Nomination submission and potential inscription date in June 2024, and will have more details about implementation, including priorities, resources, monitoring and evaluation.

## 1.5 Summary of the Management Plan process

This Management Plan builds on work done by members of the Partnership over the last 12 years, most notably by NatureScot, RSPB, the Flow Country Partnership (formerly the Peatlands Partnership) and the Highland Council. It also draws heavily on existing resources and materials, including the Peatlands of Caithness and Sutherland Management Strategy (2021-2030)<sup>11</sup>, and the Flows to the Future project<sup>12</sup> which was instrumental in building the final case towards nomination.

The Technical Working Group that has been instrumental to developing the document have considered all the potential issues that an inscribed Site might face, and set out the context, protection arrangements and policies to prevent harm and promote benefits from the designation. Policies have been tested with the Steering Group and other Stakeholders along the way and this version of the Plan is now the subject of a public consultation.

The Operational Guidelines require very strong partner and stakeholder involvement. The nature of the Site and the scope for its management is such that it is really only possible through collaborative working between organisations and individuals, and it is this approach that runs throughout, not just the Plan, but also the process.

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<sup>11</sup> Download at: <https://www.theflowcountry.org.uk/news/new-edition-of-the/>

<sup>12</sup> Find out more at: <https://www.theflowcountry.org.uk/flows-to-the-future/>

## Chapter 2. Description of the proposed WHS and its setting

This chapter sets out the geographical context of the proposed Site and its setting, with an introduction that sets out the context for peatlands globally.

### 2.1 Global context of peatlands

Peatlands are very important ecosystems that are under threat globally. Dr Roxane Anderson of the University of the Highlands and Islands' Environmental research Institute (ERI) sets out below the current situation.

Box 2.1 Summary of the current global context of peatlands (with thanks to Dr Andersen).

#### Global peatlands context

Peatlands are the most carbon-dense ecosystems on Earth and should be second only to the oceans in their potential to remove carbon dioxide (CO<sub>2</sub>) from the atmosphere<sup>1,2</sup>. In good condition, peatlands are inherently extremely resilient, accumulating and storing carbon for millennia<sup>3</sup>. They also support a unique and specialist biodiversity across a range of taxa and are known to provide a whole range of wider ecosystem services.

However, the huge stock of carbon stored by peatlands globally is under threat from extraction, fire, and accelerated decomposition from increased aeration<sup>4</sup>. As a result of historic drainage and land conversion, peatlands have now become the globally most intensive source of carbon emissions from the land use sector, contributing an estimated 5% of all anthropogenic emissions<sup>5, 6,7</sup>. In other words, despite drainage impacting only ~10% of global peatlands mostly in Europe and in the tropics, the whole global peatland system has now shifted from a net sink to a net source of C<sup>8</sup>.

In addition, peatlands across the spectrum of condition are now facing the added threat of rapid climate change. Climate change is already impacting upon peatlands, with widespread, long-term drying already evidenced in Europe<sup>9</sup>. While there are clear messages around the urgent need to protect and conserve peatlands in good condition and large investments in the restoration of degraded peatlands, the benefits of these interventions may take decades to fully materialise. In that time, based on the current trajectory, shifts in both average and extreme conditions are predicted to become more acute. The added pressure from climate change may threaten the stability of natural peatlands, hamper the recovery of restored peatlands, accelerate the degradation of heavily modified peatlands, and generally increase the likelihood of catastrophic losses through e.g. wildfires and landslides.

<sup>1</sup> Yu et al. (2010) *Geophys. Res. Lett.* 37, L13402.

<sup>2</sup> Loisel et al. (2014) *Holocene* 24, 1028–1042.

<sup>3</sup> Alexandrov et al. (2020) *Biogeosci.* 17, 47–54.

<sup>4</sup> Crump, J. (Ed.) (2017) *Smoke on Water – Countering Global Threats From Peatland Loss and Degradation*. A UNEP Rapid Response Assessment. United Nations Environment Programme & GRID-Arendal, Nairobi and Arendal, [www.grida.no](http://www.grida.no).

<sup>5</sup> Leifeld & Menichetti (2018) *Nat Comms* 9, Article number: 1071.

<sup>6</sup> Parish et al. (2008). *Assessment on Peatlands, Biodiversity and Climate Change: Main Report*. Global Environment Centre, Kuala Lumpur & Wetlands International, Wageningen.

<sup>7</sup> Tanneberger et al. (2017) *Mires & Peat* 19, 1–17.

<sup>8</sup> Leifeld, J., Wüst-Galley, C. and Page, S., 2019. *Intact and managed peatland soils as a source and sink of GHGs from 1850 to 2100*. *Nature Climate Change*, 9(12), pp.945–947.

<sup>9</sup> Swindles, G.T., Morris, P.J., Mullan, D.J., Payne, R.J., Roland, T.P., Amesbury, M.J., Lamentowicz, M., Turner, T.E., Gallego-Sala, A., Sim, T. and Barr, I.D., 2019. *Widespread drying of European peatlands in recent centuries*. *Nature Geoscience*, 12(11), pp.922–928.

## 2.2 Description of the proposed World Heritage Site

### Background and location

The 'Flow Country' is the name given to the extensive area of blanket bog situated in the very far north of mainland Scotland, and within the Scottish counties of Caithness and Sutherland. It is a wide, open, landscape visually not unlike the Arctic tundra, but that is where the similarity ends. The Flow Country has no permafrost and is instead waterlogged due to high levels of precipitation, mainly rain, experienced in this region. The input of water is consistently greater than the evaporation potential, resulting in a water balance that allows for the formation and accumulation of peat.

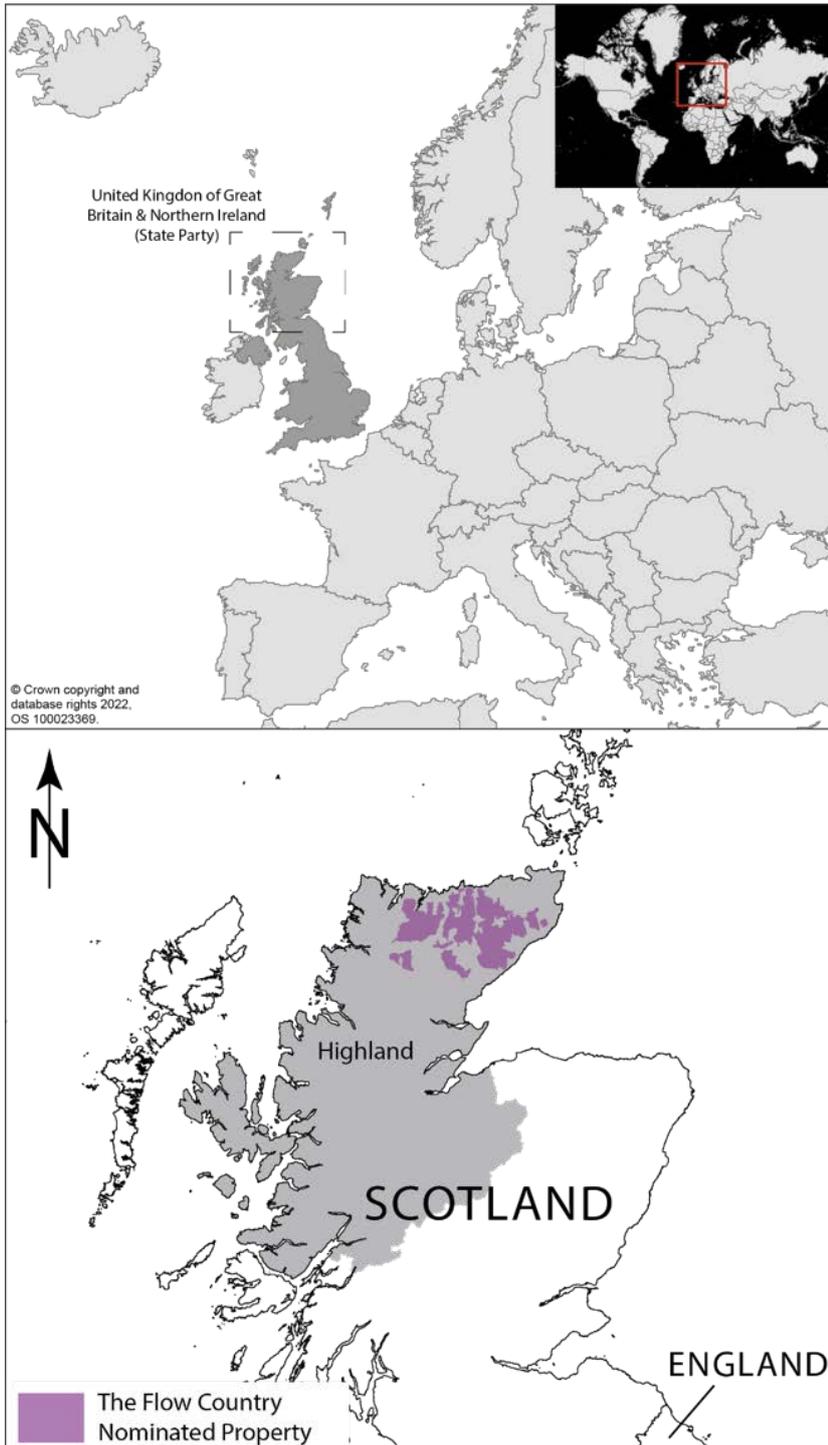


Figure 2.1 Location of The Flow Country in the world and Scotland

## Special qualities

Blanket bog is a specific and globally rare form of peatland, confined to the oceanic margins of the cool temperate zones of the northern and southern hemispheres. It is typically treeless over much of its range, covering undulating mineral soil of varying topography like a blanket.

The range of climatic conditions and landforms found across Caithness and Sutherland together give rise to distinctive forms of blanket bog habitat characterised by varied vegetation assemblages and surface patterns. The variety of characteristic surface patterning, including numerous groups of pools and pool systems, known as ‘dubh lochs’ (meaning dark pools), of various shapes and sizes, “*glitter like jewels in the landscape*” when seen from above or higher ground (Lindsay et al., 1988). These occur in intricate patchworks with alternating hummocks of bog moss (*Sphagnum spp.*) and lichens, and wet hollows.

These surface patterns are more extensive and unbroken to the east, in Caithness, and more scattered in south and west Sutherland where the relief is more pronounced. Together with intimately associated areas of mountains, heaths, fens and open water, this area is of international importance for its habitat and the range of wildlife it supports, including a variety of specialist plants, globally unique assemblages of birds, and a range of other major groups (mammals, fish, insects, microbes).

The biodiversity found across The Flow Country reflects the internationally rare and important assemblage of habitats, flora and fauna, with variation in the specialist species found across a climatic gradient from east to west. It is also home to a bird assemblage not seen anywhere else in the world due to a conjunction of latitudinal and climatic gradients and supports over 10% of the global *Sphagnum* bog moss flora.

The size and scale of the nominated Site, and the wider blanket bog landscape setting, ensures that genetic diversity is retained amongst breeding populations of resident species. The advantage of its extent and scale means that within a relatively short distance, it supports a diverse mosaic of mire and vegetation types with associated species assemblages, including an exceptional diversity of microtopographic features, usually rare and localised in other peatlands globally.

This allows for connectivity, maintaining diversity, supporting genetically diverse populations of key species and enabling their movement. At the same time, the relative isolation of the Flow Country from the rest of Eurasia has meant that it has also supported evolutionary processes with non-mobile populations of species allowing genetic distinction from their continental counterparts.

As well as the quality of its habitat and representative biodiversity, the Site also has significance for carbon sequestration and storage, climate regulation, oxygen production, water regulation and water quality. Carbon sequestration, and subsequent storage, has occurred as an integral part of the eco-hydrological process of blanket bog formation throughout the Holocene<sup>13</sup> and continues today.

The Outstanding Universal Value is explained in more detail in Chapter 3.

## Site Location and the ‘wider Flow Country’

The wider Flow Country area across the counties of Caithness and Sutherland is the most extensive and varied expanse of treeless blanket mire in the world. It dominates an approximate 400,000 ha ice-scoured plain forming the northernmost part of the Scottish mainland and is gently inclined from north-east to south-west from sea level to 350m, with occasional higher hills.

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<sup>13</sup> Go to this link for more details: <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/holocene>

The maps in Figs 2.2 and 2.3 are useful. The first, Fig 2.2, shows the estimated extent of peatland – in any condition – in the wider Flow Country area from Lindsay et al (1988), the first published paper to suggest that the area could be a WHS; this is the wider Flow Country area. The second map, Fig. 2.3, shows the proposed WHS boundary overlain on the current peatland condition map. This latter map has a lot more data and shows that some of the wider peatland has been excluded from the proposed boundary because it cannot demonstrate OUV at this time but is still seen as part of the wider Flow Country.

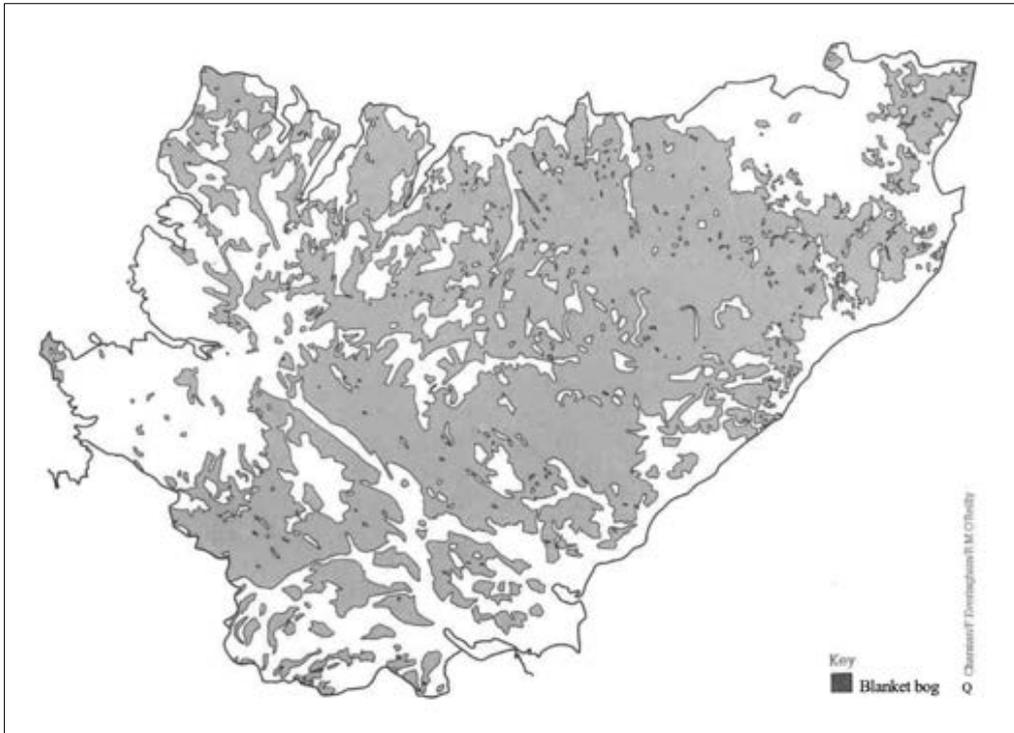


Figure 2.2 The extent of the wider Flow Country peatlands, from Lindsay et al. 1988<sup>14</sup>

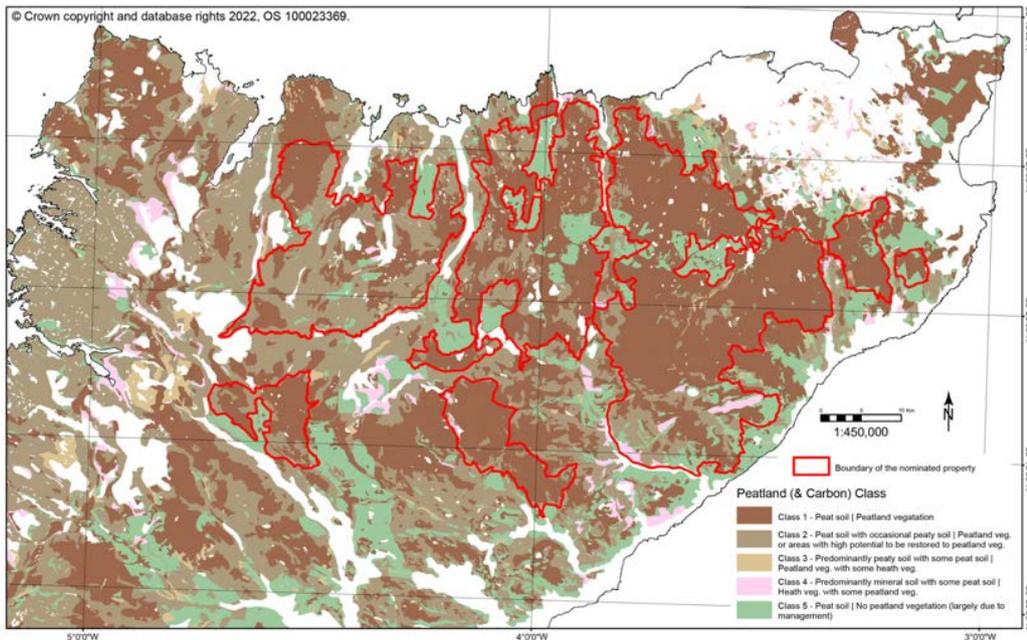


Figure 2.3 The proposed WHS boundary in relation to the extent of peatlands in the wider Flow Country based on data from 2016<sup>15</sup>

<sup>14</sup> Source, Lindsay et al 1988

<sup>15</sup> Source, NatureScot

## Draft proposed Site boundary

The proposed World Heritage Site comprises seven discrete but adjacent areas totalling around 200,000 ha. In UNESCO's terminology, a Site such as this is referred to as a *serial* site and when 'the boundary' is discussed it refers to all of the boundaries around the seven areas.

The rationale for the proposed boundaries is threefold:

- 1) that they contain areas of the blanket bog landscape in the most natural condition, the majority of which is contained within SSSIs and other designations, which provide the required protection;
- 2) that they include areas adjacent to the blanket bog landscape that are functionally important as part of the bog hydrological units and provide protection to the property's values. This will include areas that are otherwise surrounded by blanket bog and form part of the blanket bog landscape;
- 3) that they include areas under restoration, or with potential to be restored, as there is sufficient evidence to suggest that over time they would be on a trajectory towards functional blanket bog.

This means that significant areas of mineral soil or in-bye land, such as in the straths, are excluded, as are any areas of population. In contrast, small areas of mineral soil, rocky outcrops or hills, tracks or roads, and areas of woodland on deep peat that are likely to be restored in the future will all be included within the boundary area if they are completely enclosed by a blanket bog ecosystem.

Whilst not as big as the whole of the wider Flow Country, it is made clear in the nomination document to UNESCO, that the area proposed for the Site is easily sufficient to demonstrate OUV, meeting the requirements for criteria ix) and x), containing all component parts (integrity) and demonstrating appropriate and effective protection and management.

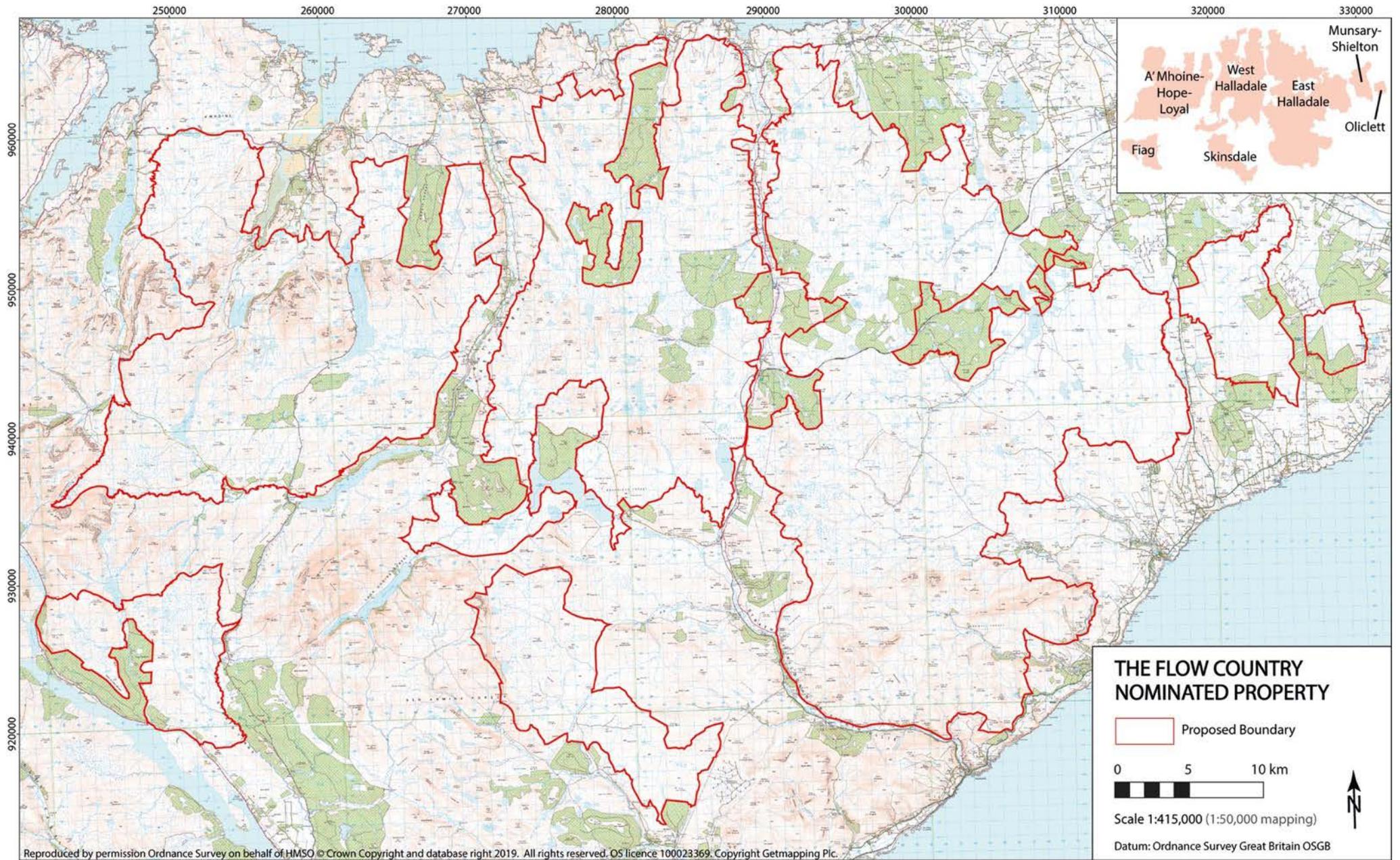


Figure 2.4 Draft proposed World Heritage Site boundary showing the seven constituent parts.

The seven areas have some differences in bog features, quality of naturalness, and biodiversity. These are summarised in the table below, and more detail is available in the nomination document of by contacting the Team. The areas are also shown in more detail in the maps on the subsequent pages.

Table 2.1 Summary table of the seven areas that comprise the serial WHS. The brief descriptions of some sections inevitably overlap to a large extent as the changes in the blanket bog landscape between east and west are gradual.

Area number	Name	Size (ha)	Brief description
001	A'Mhoine- Hope-Loyal	42,438	<ul style="list-style-type: none"> <li>– Blanket mires are broken up by rocky outcrops, knolls and hills, including the rugged Ben Loyal.</li> <li>– A combination of mire types of restricted distribution is found, alongside wet and dry heath, dry grassland, native woodlands, montane habitats, but also swamp, flushes, lochs and streams.</li> <li>– Markedly oceanic in its vegetation composition.</li> </ul>
002	Fiag	8,450	<p>Similar characteristics to A'Mhoine-Hope-Loyal but with a more rolling landscape :</p> <ul style="list-style-type: none"> <li>– Blanket mires are interrupted by rocky outcrops, knolls and hills.</li> <li>– A combination of mire types is found in combination with pool systems, wet and dry heath, dry grassland, native woodlands, montane habitats, but also swamp, flushes, lochs and streams. Ladder fens occur at a range of altitudes; watershed mires over gently rounded hill tops merge with valley-side mires on slopes, and saddle mires in the intervening hollows.</li> <li>– Markedly oceanic in its vegetation composition.</li> </ul>
003	West Halladale	41,735	<ul style="list-style-type: none"> <li>– A glaciated landscape broken by rocky ridges and knolls of the underlying Moine schist.</li> <li>– The irregular nature of the ground has led to the formation of a more complex mosaic of habitats with blanket mires (including quaking, valley side, and watershed mires), wet heath and pool systems in a landscape of rocky ridges.</li> <li>– Includes more westerly distributed bog specialists and some of the scarce <i>Sphagnum</i> species.</li> <li>– To the west, the vegetation also begins to show signs of a distinct oceanic influence.</li> </ul>
004	Skinsdale	11,387	<p>Some similar characteristics to both West Halladale and East Halladale:</p> <ul style="list-style-type: none"> <li>– A glaciated landscape with a wide range of mire types (especially watershed, valley side and terrace mires), and pool systems with water bodies through the range of sizes. This is all broken by knolls, basins and river valleys.</li> <li>– To the west, the vegetation also begins to show signs of a distinct oceanic influence.</li> </ul>

Area number	Name	Size (ha)	Brief description
005	East Halladale	75,536	<ul style="list-style-type: none"> <li>- Characterized by gently sloping terrain underlain mostly by Old Red Sandstone, with a band of Moine schist along the western edge and granites and Moine granulites in the south.</li> <li>- Euoceanic, extremely humid, southern boreal and lower oroboreal climatic zone.</li> <li>- Gentle topography with a continuous blanket of peat Interrupted by small streams, lochs and only occasional rocky outcrops.</li> <li>- The different types of blanket bog here reflect the varied topography. The range of mires includes - low-relief northern boreal blanket bog with well-defined patterns of parallel, long narrow pools, low ridges and extensive Sphagnum carpets; watershed mires with widely spaced, oval pools; and terraced blanket bogs at higher elevations with linear pools amongst ridges.</li> </ul>
006	Munsary & Shielton	5,989	<ul style="list-style-type: none"> <li>- Characterized by gently sloping terrain underlain mostly by Old Red Sandstone.</li> <li>- Hyperoceanic humid southern boreal and humid hemiboreal bioclimatic zone transitioning to euoceanic extremely humid southern boreal and lower oroboreal.</li> <li>- Blanket bog has formed on a gently undulating landscape between 50m and 150m above sea level. Mainly comprises valley side and watershed mires. The type of watershed mire here has numerous, deep, widely spaced pools, particularly noteworthy being found only in this part of Caithness.</li> </ul>
007	Oliclett	1,491	<ul style="list-style-type: none"> <li>- Characterized by gently sloping terrain underlain mostly by Old Red Sandstone.</li> <li>- Hyperoceanic, humid southern boreal, and humid hemiboreal bioclimatic zone.</li> <li>- Gentle topography.</li> <li>- These Eastern blanket mires tend to be dominated by valley side and watershed mires. There are also spur mires. This area is dominated by a large saddle mire in the area between Hill of Oliclett and Hill of Yarrows.</li> <li>- Some pool systems with long, narrow pools and hollows running parallel to the contours.</li> </ul>

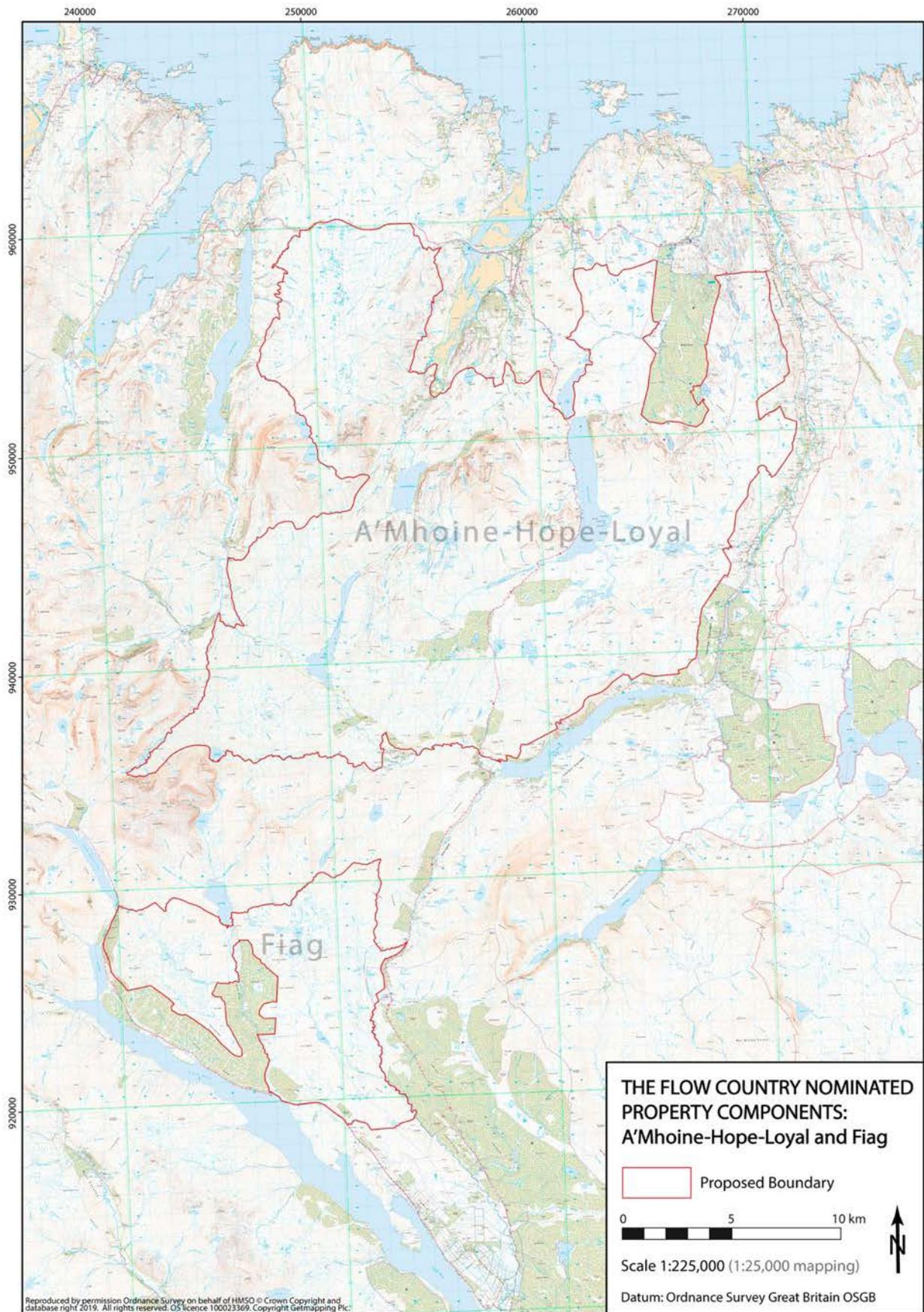


Figure 2.5 Draft proposed Site boundary – components 1 and 2

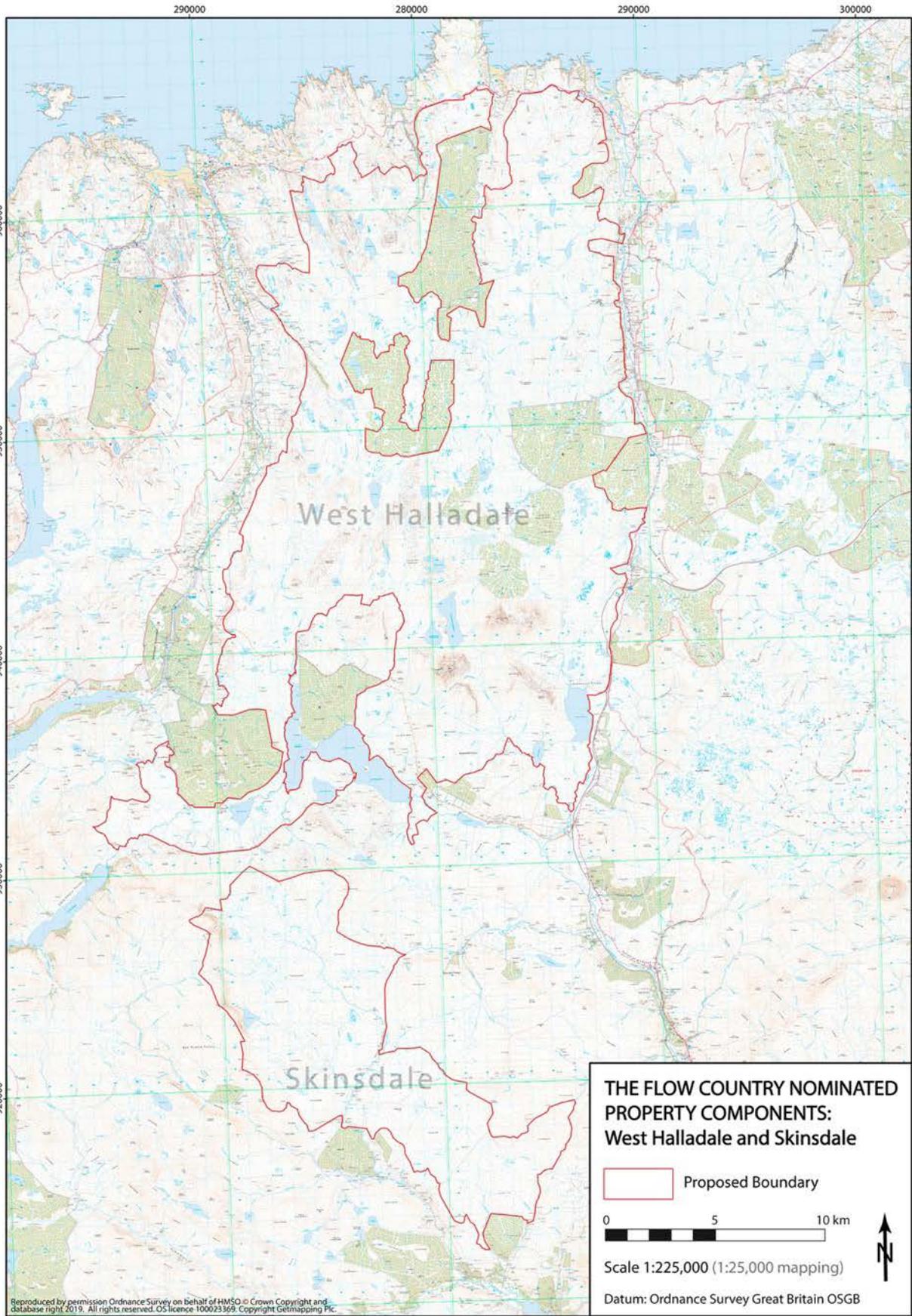


Figure 2.6 Draft proposed Site boundary – components 3 and 4

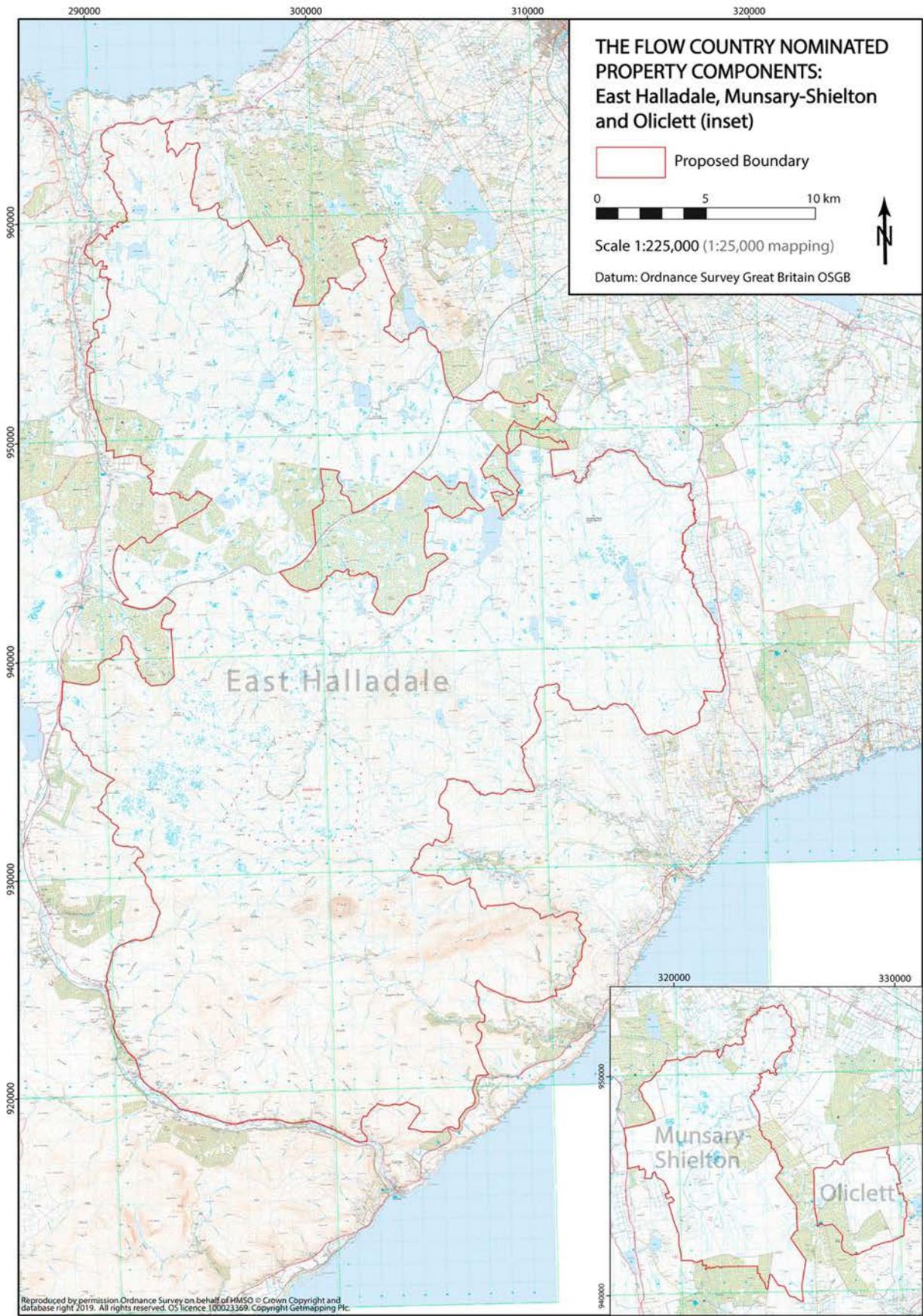


Figure 2.7 Draft proposed Site boundary – components 5, 6 and 7

In terms of land tenure, the proposed Site is owned by many different landowners, primarily from private and non-governmental organisation (NGO) sectors, and either owner- or tenant-managed. This comprises a few individual owners of large estates, a conservation charity with c. 21,000 ha, and many smaller landowners, mainly crofters<sup>16</sup> who are either owner-occupiers or tenants. The issues that impact upon owners and tenants are set out in Chapters 5 and 6, and converted to policies in Chapter 7. At this stage it is sufficient to say that continuation of the close ongoing cooperation and dialogue between land managers and the agencies regarding Site management for an inscribed World Heritage Site will be essential.

## 2.3 Description of the proposed setting

UNESCO requires that areas around World Heritage Sites that support the Site and emphasise its importance are also protected. They refer to this area as the setting. This section describes the setting whereas Chapter 5 identifies how it is protected.

UNESCO states<sup>17</sup>, in reference to protection of the property, that: “[protection] *should include the immediate setting of the nominated property, important views and other areas or **attributes that are functionally important as a support to the property and its protection.***”

They further state<sup>18</sup>: “*Where the setting **may assist in the appreciation** of the Outstanding Universal Value, but does not contribute to the Outstanding Universal Value, then it is desirable that it be incorporated in the buffer zone or otherwise protected.*”

The definition of setting for a World Heritage Site is first and foremost dependent on its role and importance in supporting OUV, which is explored fully in Chapter 3. In the context of the setting, the proposed OUV of The Flow Country is focused on ecosystem processes (criterion ix), and biodiversity (criterion x), and not natural beauty (criterion vi). This means that there is no explicit link between OUV and important views, visual relationships or natural beauty. This is not to rule out any importance attributed to views in terms of appreciation of the OUV, but technically there is only a very marginal link to the OUV, as is set out below

The second factor to take into account is that the setting contributes towards the Site's **distinctive character**, helps understanding of it, and links to cultural associations and perceptions of the Site.

So in respect of the two factors, it is appropriate for the definition of setting to be considered in terms of the **functional** component – the parts of the wider setting that may, through their topography or other factors have a tangible impact on OUV – and the **experiential** component, in terms of how the proposed Site is experienced and understood. This is set out in the following section, but the means by which the setting is protected are discussed in Chapter 5. Moreover, it is important to recognise that if inscribed on the World Heritage List, the status of the setting as it is at date of inscription acts as the baseline for the future and the potential for change.

### Functional setting

The functional setting of The Flow Country essentially includes any areas in the region from which an action can impact upon the OUV, and more specifically the Attributes. For example, any water courses that flow into and through the blanket bog area from external catchments, infrastructure that might lead to damage through tourism activity, or the cumulative impact of wind farms on bird migration routes.

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<sup>16</sup> See Chapter 6 for more details about crofting

<sup>17</sup> Para 104 Operational Guidelines

<sup>18</sup> <https://whc.unesco.org/en/preparing-world-heritage-nominations/> p33

On a more granular level this might include forestry outside of the proposed site which is leading to natural regeneration on the fringes of the blanket bog, or it might include the creation of new fence lines outside of the proposed boundary that in fact lead to a greater concentration of deer grazing within the Site. It is impossible to predict much of this, but it is something that must be considered when assessing development proposals in the area outside of the proposed boundary. Functional setting is unlikely to be possible to define by a line on a map, more by an analysis of potential impact through activity nearby.

## Experiential setting

The experiential setting should be regarded as the surrounding landscape, and it is more complex to define than the Functional area. It concerns the quality of the cultural and sensory experience surrounding the nearly 200,000 ha. of peatland and is not easy to define due to the nature of the Site; The Flow Country covers a great expanse of the counties of Sutherland and Caithness, both of which are highly diverse in their natural and cultural character, consequently the way the area is understood, appreciated, and experienced will vary across the Site.

The physical environment follows a gradient from mountains of hard rock in the west with a transition through The Flow Country to the rolling sandstone hills in the east. With that comes a gradually varying landscape and feel, reflected in the diversity within the blanket bog landscape, and the land use patterns of the dissecting straths. The central and eastern areas of lower lying but extensive blanket bog is notable for its sheer scale.

Culturally, humans in the Mesolithic settled the far north of Scotland and from which point onwards its inhabitants shaped the landscape in which they live. In return, the landscape has shaped their culture. The Flow Country area is a living landscape in which inhabitation and development have gone hand in hand and have seen significant changes over time. For more detail, see section 2.4.

In the east of The Flow Country where the peatlands give way to fertile farmlands we find greater concentrations of people, and in the north, along the storm ravaged coast further concentrations of communities are found, with others dotted through the straths.

The cultural influences of The Flow Country relate to the more traditional influences of crofting, game management and forestry, and the more recent increases in tourism and renewable energy generation. Evidence of these influences can be found throughout the setting of the proposed Site, including wind turbines, forestry, deer fences, existing or derelict crofts or communities. Whilst some of these are in the proposed Site itself (see Figure 2.4) anything that does not contribute to OUV, and is not restorable to naturally developing blanket bog, sits within the setting.

The sheer size of the proposed Site is also an important factor and is necessary to demonstrate its integrity. Although in itself the scale is not an attribute of OUV, it is an important defining feature of the area, and the ability to travel through the proposed Site, and experience that vastness, is a significant experiential property. To this end, small-scale changes in the setting such as permitted developments for householders are *unlikely* to be an issue.

The setting of The Flow Country is, therefore, where people live, work, visit and travel through. It contains wind turbines, farm buildings, small communities, a railway, and roads. It can be divided into three characteristic zones each of which comes with its own unique experience related physically or culturally to the proposed Site. They are:

- i) **The eastern zone**, mainly in Caithness, characterised by the drier and lower-lying flat areas bordering more fertile agricultural land,
- ii) **The central zone**, characterised by some higher ground, straths with in-between land between large areas of bog, and
- iii) **The western foothills**, interspersed with higher peaks and characterised by more rocky outcrops, increased rainfall and a greater diversity of bog morphology.

### Setting summary

The setting is complex, as evidenced at many WHS elsewhere. In this instance it is proposed that one of the key pieces of work to be undertaken upon inscription is a 'setting study'. This is designed to fully describe and interpret the setting, map it in detail, and set out any potential implications its presence poses in respect of the planning system. This type of work has been done successfully at other Sites in the UK.

## 2.4 Prehistory and history of the Flow Country: Humans and the peatlands

The Nomination Dossier has a significant section about the human history of the area over the 9,000 years or more during which the blanket bog has been forming. This is very relevant contextual information, particularly as UNESCO ask for a summary of “*significant events in history or pre-history that have affected the evolution of the property and give an account of its interaction with humankind*<sup>19</sup>”.

For this Plan, it is useful to summarise the timeline (Table 2.2) written into the nomination dossier, as this tells the story of the development of the area and how the location of the blanket bogs, their extent and condition, have been affected by people throughout their development. It is important to recognise that these cultural and historic values are supportive and illustrative of the ecosystem and biodiversity values rather than additional 'values' in their own right.

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<sup>19</sup> Operational Guidelines for the Implementation of the World Heritage Convention <https://whc.unesco.org/en/guidelines/>

Table 2.2 Summary of major historical and pre-historical timescales relating to the proposed WHS.

Theme	Time period and context
The Wooded Landscape, Foraging to Farming and Advancing Bogs (Mesolithic to Neolithic)	Post-glacial woodland growth and decline during early Holocene, with major decline some 4-5,000 years ago. Major bog growth throughout this period.
Circles within Circles within Ovals (Bronze Age & Iron Age)	Era of roundhouses and brochs, from c.3,500 to c. 2,500 years ago at the end of the Bronze age.
The hidden people and invisible invaders (Norse)	4 <sup>th</sup> to 8 <sup>th</sup> centuries AD the area was home to the Picts, followed by the Norse in the 8 <sup>th</sup> -10 <sup>th</sup> centuries.
Transhumance	Around the 16 <sup>th</sup> -18 <sup>th</sup> centuries, and possibly long before then, people would spend the summer with their livestock on the bogs to take advantage of the more lush vegetation.
Emptying of the straths: the Highland Clearances	During the 18 <sup>th</sup> and 19 <sup>th</sup> century, with a particular focus on 1790-1850, leading to people being cleared off the land to accommodate a significant increase in the number of sheep being grazed there.
Draining the Land and Pasture Improvement	Post Clearances expansion of drained land on to the edges of the peatlands adjoining the straths.
Changing Values: from Sheep to Grouse & Deer	The decline in sheep and rise of management for game (particularly deer and fish) began in the 19 <sup>th</sup> Century and has continued since.
Planting and Ploughing: afforestation	Post-WW2 introduction of ploughing for forestry and in particular Sitka spruce and lodgepole pine.
Forestry boom	Tax incentives in the 1980s led to wide scale afforestation on deep peat.
Fuel from the Flows	Domestic peat cutting has been done on a small scale for hundreds of years, but commercial cutting has stopped.
The growth of peatland conservation	Conservation efforts started to gather momentum in the 1990s and continue apace.

## Chapter 3. Justification for World Heritage Status

For inclusion on the World Heritage List, Sites must have Outstanding Universal Value (OUV). This is defined through how a Site meets one or more of UNESCO's ten criteria, and, through a global comparative analysis assessing whether it is exceptional in a global context. Furthermore, it must meet conditions of integrity, and must have an adequate protection and management system to ensure it is safeguarded into the future. A summary of these aspects follows, and further information can be found in the Operational Guidelines for the Implementation of the World Heritage Convention, on the UNESCO World Heritage website<sup>20</sup>.

### 3.1 Introduction: justifying Outstanding Universal Value

OUV is introduced in Chapter 1, and as set out there, is comprised of three pillars for natural Sites: criteria, integrity, and protection and management. An additional factor – the comparative analysis – is also important for justifying OUV, and that is also described in this section.

#### Criteria

UNESCO identify ten criteria for World Heritage Sites – four of which, criteria vii) - x), relate to natural heritage. The Flow Country is being nominated under criteria ix) and x):

*(ix) to be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals; and*

*(x) to contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.*

How The Flow Country meets these criteria is summarised below and is set out in detail in the Nomination Dossier.

#### Comparative analysis

To date, no World Heritage Site has been Inscribed primarily for peatlands. This fact makes The Flow Country bid even more important globally, but the omission of peatlands from the World Heritage List thus far does not mean that World Heritage status for The Flow Country is guaranteed, and the proposal must still meet the criteria set out above.

To achieve inscription onto the List, a natural Site must not only show that it has outstanding natural values but must also show that it is exceptional on a global scale; “A comparative analysis of the property in relation to similar properties ... shall also be provided. The comparative analysis shall explain the importance of the nominated property in its national and international context”.

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<sup>20</sup> <https://whc.unesco.org>

The Comparative Analysis for the proposed Flow Country World Heritage Site concludes<sup>21</sup>:

*“Based on current literature, and visual assessments using satellite imagery, The Flow Country represents one of the most important blanket bog landscape areas in the world. To date, no WHS has a comparable blanket bog landscape to those found in The Flow Country. Although several blanket bog habitats are present on the tentative list, they are not comparable with The Flow Country in extent and quality (e.g. The Céide Fields and North West Mayo Boglands) nor do they contain this type of peatland as the main characteristic (e.g. The Great Vasyugan Mire).*

*Regarding the total extent of blanket bog landscape, The Flow Country represents the most important continuous blanket bog landscape globally; however, it is important to highlight that not all this continuous peatland is currently functional, and restoration actions are needed in order to recover the total functional area. It should also be noted that blanket bog landscapes reported as being larger than The Flow Country are usually fragmented and their geomorphological characteristics (such as peat depth and pool systems) are less diverse, making The Flow Country a remarkably unique blanket bog landscape. “*

To add further context, the comparison of natural sites relies on the availability of comparable data, but blanket bog landscapes often occupy areas of low population and present logistical challenges to their access and have consequently gone understudied at a global level.

The more recent realisation of the importance of these ecosystems has gone some way to rectifying this bias but many areas remain where reliable data is scarce. Therefore, alongside a review of published sources of information on blanket bog globally, the interpretation of remote sensing data has been heavily utilised in The Flow Country comparative study to provide information on the less studied regions. In this context it has also been important to ensure that comparison was made using metrics which are as robust as possible.

Of particular importance for comparison is the area of each site considered in the comparative analysis, which tend to represent ‘gross’ areas. Although the area of the proposed Flow Country World Heritage Site is well defined (c.200,000 ha), it sits within a larger, gross, blanket bog landscape (c.401,400 ha)<sup>22</sup>. To provide consistency it is this latter, gross figure, which has been used for comparison.

Given the paucity of data on a number of the peatland ecosystems worldwide it was not possible to compare their biodiversity (Criterion x). However, the outstanding diversity of the fauna and flora characteristic of the biogeographic province and ecosystems under consideration is described in detail in the Nomination Dossier for the Site.

The summary of this is that to the best of all available knowledge, The Flow Country proposed property represents an outstanding example of blanket bog on a global scale. Whilst there are other, larger areas of peatland, none has the quality, continuity, depth of peat and consistent climatic regime that The Flow Country does.

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<sup>21</sup> Chico (2022)

<sup>22</sup> Lindsay et al. 1988 - <https://repository.uel.ac.uk/item/86qqv>

## Integrity

A Site must also meet criteria of integrity:

*“Integrity is a measure of the wholeness and intactness of the natural and/or cultural heritage and its attributes.*

*Examining the conditions of integrity therefore requires assessing the extent to which the property:*

- a) includes all elements necessary to express its Outstanding Universal Value;*
- b) is of adequate size to ensure the complete representation of the features and processes which convey the property’s significance;*
- c) suffers from adverse effects of development and/or neglect.*

*This should be presented in a statement of integrity”*

UNESCO identifies that “it is recognized that no area is totally pristine and that all natural areas are in a dynamic state, and to some extent involve contact with people.”

The Statement of Integrity for The Flow Country follows in section 3.2 the Statement of Outstanding Universal Value (SOUV).

## Protection and management

UNESCO states that the “Protection and management of World Heritage properties should ensure that the outstanding universal value, the conditions of integrity and/or authenticity at the time of inscription are maintained or enhanced in the future.” protection and management of the Site is set out in detail Chapter 5, with a short paragraph in the SOUV.

## UNESCO Evaluation

All of these factors are set out in detail in the Nomination Dossier, and in a short form below in a Statement of Outstanding Universal Value (SOUV). IUCN and UNESCO will evaluate these details and will decide whether they meet the required threshold for OUV.

## 3.2 Statement of Outstanding Universal Value (SOUV)

The Statement of Outstanding Universal Value must identify the criteria under which the property aims to be inscribed, including an assessment of the conditions of integrity, and of the requirements for protection and management in force. The following SOUV is written in the form of language expected by UNESCO.

# Statement of Outstanding Universal Value

## A brief synthesis

The Flow Country property is the most outstanding example of a blanket bog ecosystem in the world. With its intricate network of pools, hummocks and ridges, the bog stretches across some c. 190,000 hectares of northern mainland Scotland, with the property boundary comprising seven discrete, but adjacent areas. The underlying peat has been accumulating for the past 9,000 years and the bog displays a remarkable range of features resulting from the climatic, altitudinal, geological and geomorphological gradients found across the region. Alongside the extensive record of peat accumulation that The Flow Country contains, and the store of carbon this represents, the ecological processes that result in peat formation continue to sequester carbon on a very large scale.

The Flow Country blanket bog also provides a globally significant natural habitat for an internationally important assemblage of specialist biodiversity. The area supports a unique and distinctive assemblage of birds, with a combination of arctic-alpine, temperate and continental species not found anywhere else in the world. This is a result of the site's location and the diversity of blanket bog habitats it contains, combined with the patchwork of connected farming and coastal landscape elements within the wider setting.

Protection for The Flow Country is provided through international and national designations, as well as national and local planning policies, and there is scope for future expansion of the site through restoration of adjacent degraded blanket bog. The area is also considered to be the type-locality for the description of blanket bog and so represents a significant research and educational resource.

## Justification of criteria

### Criterion (ix)

The Flow Country is the most extensive and diverse example of an actively accumulating blanket bog landscape found globally. Since the glaciers receded from Scotland climatic conditions, in combination with the underlying geology, the resultant topography, and the biogeography have led to the formation of a vast and diverse blanket bog landscape that stretches across the north of Scotland. The persistent precipitation-fed waterlogging of the soil has led to an expanse of peat bog, c. 400,000 hectares, that blankets the landscape, including hills, slopes and hollows, together forming a globally rare and significant peatland ecosystem. Of this, nearly 190,000 hectares is identified as suitable to be included within the property, on the basis of current quality and continuity of habitat.

The Flow Country therefore represents the most extensive, near-continuous, high quality and near-natural blanket bog landscape found globally. The active processes of blanket bog formation have continued uninterrupted for 9,000 years, and the diversity of blanket bog features is not found anywhere else on Earth. Moreover, the processes of blanket bog formation provide an outstanding example of carbon sequestration and long-term storage on a massive scale.

The blanket bog also provides an incredible record of its formation, preserved as pollen and plant fossils, and telling a story of its past flora, fauna, climate, palaeoecology and human influence. This is also important for helping us understand the future functioning of this and other blanket bogs globally.

## Criterion (x)

The Flow Country contains an exceptional example of the biodiversity found within a blanket bog landscape. The geographical position of The Flow Country and the diversity of habitats result in biological associations unlike any other found globally. Furthermore, the scale and connectivity of the property afford resilience to the ecosystem and the species it contains.

The blanket bog of The Flow Country is a globally significant natural habitat for the conservation of biodiversity, not least because of its unique and specialised assemblage of flora and fauna, but also because of the rarity of the ecosystem and the declining condition and extent of comparable ecosystems globally.

The diverse range of blanket bog features that The Flow Country contains, such as pools and hummocks, support an exceptional and specialised blanket bog biodiversity and holds biological associations unlike any other blanket bog found globally. This diversity is a consequence of the overlapping distributions of species typical of both arctic and temperate climatic zones and is further influenced by altitudinal and climatic gradients, and geological diversity found across the site.

The property includes some species that are rare, scarce or threatened, but it is the distinct assemblage of specialised flora and fauna within a high-quality blanket bog that make The Flow Country so significant, along with its pivotal position at the crossroads of bird flyways and migration routes. Furthermore, the scale and connectivity of the property afford resilience to the ecosystem and the species it contains.

## Statement of integrity

The Flow Country property comprises seven discrete but adjacent areas totalling around 190,000 hectares, which encompass a large expanse of actively accumulating blanket bog ecosystem. The overwhelming majority of the blanket bog within the property boundary is in near-natural condition. The remainder includes areas of blanket bog that are undergoing restoration, and areas that are expected to be restored in the short to medium term.

The property is of sufficient size to contain all the elements of Outstanding Universal Value (OUV) needed to demonstrate the ecological and biological processes, and the biodiversity that comprise this globally significant ecosystem. These include the blanket bog itself, the wider peatland landscape complex in which it lies and the finer elements, including intricate pool systems, diverse surface patterning, fens, and the range of flora and fauna that all of these systems support. The climatic, altitudinal, geological and geomorphological gradients that occur across The Flow Country all contribute to ensuring that the variety of features that make up blanket bogs are represented. Furthermore, the boundaries of the nominated property are largely defined on the basis of the hydrological elements that comprise the blanket bog, and therefore ensure ecosystem integrity and coherence.

Large areas of the wider Flow Country peatland have suffered from poor historical management decisions in relation to matters such as drainage and woodland creation, but the boundary has been chosen to include only those areas of deep peat which are in good condition or have the ability to return to a near-natural state within the next 10-25 years. It is expected that in time, it will be possible to integrate some of the more degraded bog in the wider Flow Country into the property.

## Requirements for the protection and management of the Site

Around 73% of the area within the proposed property boundary has the highest level of statutory protections, with national regulation and policy reflecting their national and international significance, including those originally introduced via the EU Habitats and Birds Directives leading to Special Protection Area (SPA) and Special Area of Conservation (SAC) classification which are now protected through domestic legislation. The majority of the area is also protected through the Ramsar Convention. These instruments provide specific protection for the elements of OUV as set out in the Site's attributes, notably including the processes for the maintenance and formation of blanket bog, and the associated flora and fauna.

Further to the statutory protection, peatlands – particularly those containing peat greater than 50cm in depth – are protected through planning policies, both at Scottish national and local levels. There are specific planning policies at national level in relation to both World Heritage Sites and areas of peatland that afford them effective protection from development proposals that might impact adversely on OUV. Moreover, where the boundary is not coincident with existing environmental designations, protection will again be ensured by national and local planning policy; the Local Authority will have regard to the Management Plan as a material consideration.

The property has no buffer zone. Areas important for the protection of OUV outside of the boundary are protected through a combination of national and local planning policy, and the wider protection afforded by the existing high-level designations. Buffer zones also have no basis in Scottish law, so would not add more protection than is already in place.

Management of the Site's OUV will be guided by a single clear Management Plan, developed by a stakeholder partnership comprising key landowners and managers, government agencies, local communities and scientific experts, and also through public consultation. The key management opportunity is bog restoration, and potential threats include commercial forestry and unwanted tree regeneration, inappropriate deer management, water management and drainage, intensive agriculture, inappropriately sited and/or designed wind farms, burning and climate change. A key requirement for the management of this property lies in continued strong and adequately resourced coordination and partnership arrangements focused on the World Heritage property.

### 3.3 Attributes of OUV

Attributes, sometimes called ‘features’ for natural Sites, provide detail about the criteria for Outstanding Universal Value at a more granular level. In essence, they break down the reasons why the area is considered to be worthy of World Heritage Site inscription into a straightforward list. The attributes for The Flow Country are set out in Table 3.1.

Table 3.1 List and description of proposed World Heritage Site Attributes

Attribute	Description
<b><i>Criterion ix. - outstanding example representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals</i></b>	
a) most extensive near continuous example of natural actively accumulating blanket bog ecosystem found globally	Persistent rain fed wetness and low rates of evaporation across the Flow Country led to widespread, year-round waterlogged ground conditions which are ideal for the growth and preservation of peat forming plants. This ongoing process (paludification) began around 9,000 years ago and is key in the formation of blanket bog. Unlike other bog types, which are confined by topography, this allows blanket bog to mantle entire landscapes. The Flow Country is one of only a few locations globally where conditions exist that are conducive to blanket bog formation, and combines a quality, extent and connectivity of this habitat exceeding that of any other known blanket bog.
b) climatic and topographic gradients, and geological diversity: bog macroform diversity	The scale of the site, alongside the gradients in climate and topography, and the diversity of the underlying geology, provide the setting for subtle variations in processes which result in a wide diversity in the character of the blanket bog. These factors control the development of complex systems of hummocks, moss lawns, hollows and pools, and the associated plant species, which produce surface patterning that has been classified into 15 site-types. No other blanket bog in the world contains, or is reported to contain, such a diverse collection of surface patterning within a single area.
c) archive it stores (4 <sup>th</sup> dimension)	Delving deeper, the peat, which has been forming for over 9,000 years, reaches thicknesses of over 8 m, providing an exceptional archive and a 4 <sup>th</sup> dimension to the Flow Country blanket bog. The processes responsible for the development of the blanket bog system and the ecosystems it supports can be scrutinised back through time across the vast area it covers using pollen records; plant fossils (e.g. hazelnuts, pine cones, pine stumps); lake sediment records (midge and diatom (alga) remains); tephra (ash) layers blown south from Icelandic volcanoes; charcoal (indicating in situ burning).
d) natural laboratory – ongoing scientific and educational use	The exceptional nature of the Flow Country makes it the ‘type site’ for blanket bog study and it continues to be used as a ‘test bed’ for peatland research globally. The diversity of features related to altitudinal and climatic gradients across the region and the depth of archive provides significant scope for research. Furthermore, the breadth of existing studies provides a fantastic foundation for future research.
e) carbon sequestration and storage	Globally peatlands are the largest natural terrestrial carbon store. Covering only 3% of the world’s land area, they hold nearly 30% of all the carbon stored on land. In blanket bog, year-round waterlogged conditions slow the process of plant decomposition such that the dead plants accumulate to form peat, and thereby sequester carbon from the atmosphere. Over thousands of years this plant material builds up and becomes several metres thick creating a valuable carbon store. The Flow Country provides a superb example of ongoing sequestration, alongside carbon storage demonstrated by peat thicknesses which reaching over 8 metres.

Attribute	Description
f) water filtration and the impact on the water quality of associated riverine habitats	The catchments draining the Flow Country sustain exceptional water quality, resulting from the natural filtration of rainwater as it slowly seeps through these vast peatlands. The superb water quality is critically important in sustaining globally important populations of the freshwater pearl mussel in rivers which drain from the Flow Country. The European eel (classed by the IUCN as Critically Endangered) is also recorded from these catchments. Furthermore, the rivers of the Flow Country maintain strong populations of Atlantic salmon which is in global decline.
<b><i>Criterion x. contains the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation</i></b>	
a) species associations	The diverse range of habitats that The Flow Country contains supports an exceptional and specialised blanket bog biodiversity and holds biological associations unlike any other blanket bog found globally. This is a consequence of the overlapping distributions of species typical of both arctic and temperate climatic zones and is further influenced by altitudinal and climatic gradients and the geological diversity found across the site. Furthermore, the scale and connectivity of the site provides resilience to species it contains.
a.i) birds	The diversity of environments within the blanket bog of The Flow Country, and the patchwork of connected landscape elements within the wider setting (farmland, coastal, etc.), supports a distinctively special assemblage of birds. The precise combination of species, with arctic-alpine and temperate and continental elements is not found anywhere else in the world and includes; red-throated diver, black-throated diver, common scoter, Eurasian wigeon, golden plover, Eurasian greenshank, dunlin, wood sandpiper, golden eagle, merlin, hen harrier and short-eared owl.
a.ii) plants	The floristic composition of the Flow Country blanket bogs, and associated wet heath, is not found anywhere else globally, and represents a highly Atlantic influence on plant distribution and development. Key plants of importance are dwarf birch, alpine bearberry, bogbean, bog hair-grass, water lobelia, bog orchid, marsh saxifrage and 29 species of <i>Sphagnum</i> (over 10% of global <i>Sphagnum</i> flora).
a.iii) genetic diversity	The Flow Country occupies a position at the western extreme of the Eurasian landmass. As such it is a haven of locally adapted genetic diversity. Many species here are isolated from their continental relatives, which means that local lineages have developed. Whilst small, isolated populations frequently suffer from inbreeding depression, the large size of the Flow Country means that this is not a significant issue here. Furthermore, many species operate as metapopulations: groups of smaller populations between which individuals can move. Not only does this mean that genes can flow between populations, it also means that individuals can recolonise sites in the event of short-term localised extinction, as has been demonstrated with newts. Given models that suggest droughts will increase in both frequency and intensity in the north of Scotland, the large number of waterbodies in the Flow Country will greatly reduce the likelihood of population loss. This makes it a valuable refuge for wildlife of many species at both a population and a genetic level.

### 3.4 State of conservation

To support the justification as set out above it is important to assess the current biological condition of the proposed area. Assessing the condition of the proposed WHS is complex due to the vast size and relative isolation of much of the blanket bog.

Around 73% of the proposed Flow Country WHS is notified as a series of Sites of Special Scientific Interest (SSSI) under domestic legislation, and has also been designated as the Caithness and Sutherland Peatlands Special Area of Conservation (SAC) and Special Protection Area (SPA); originally under the EU Habitats and Birds Directives respectively, and now via domestic legislation. The Caithness and Sutherland Peatlands are also listed as a single Site under the International Ramsar Convention on Wetlands, to which the UK is a contracting party. The qualifying features of these protected areas are obliged to be monitored regularly so as to determine their condition, enabling the reporting required by Scottish Government and the Bern Convention<sup>23</sup>.

Blanket bog is the most extensive feature of Caithness and Sutherland Peatlands SAC and Ramsar Site. Wet heath also forms large parts of the SAC. Two other terrestrial SAC features - 'very wet mires often identified by an unstable quaking surface', and 'depressions on peat substrates' – are found as small areas embedded within the blanket bog and wet heath. All four habitats form an intricate mosaic across the SAC ensuring that they are managed together. The blanket bog and depressions on peat substrates habitats are so intimately related that they are monitored together as one feature, and both are included in the term 'blanket bog' in the rest of this section.

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<sup>23</sup>The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) was adopted in Bern, Switzerland in 1979, and came into force in 1982. For more details go to <https://jncc.gov.uk/our-work/bern-convention/>

### **Summary of the condition of the proposed Site in 2022**

*Based on the best information as of summer 2022, a majority of the features of the Caithness and Sutherland Peatlands SAC, where it overlaps with the proposed WHS, are currently in favourable condition. Those features are: very wet mires often identified by an unstable quaking surface, acid peat-stained lakes and ponds, marsh saxifrage, and, clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels.*

*Although the blanket bog and wet heath features of the SAC were both assessed in 2017 as being in 'Unfavourable – no change' condition, this was mainly because, although much of the site was showing the benefits of good management, some parts had been damaged by fire and trampling by red deer. Since 2017, there have been notable improvements in the management of the SAC, particularly in places where pressure from deer trampling had previously been a concern.*

*By October 2021, more than 90% of the blanket bog and wet heath in the SAC was either in favourable condition or under management intended to bring the habitat back into favourable condition. The pressures in the remaining parts of the SAC include burning, deer trampling, drainage and other land disturbance, are being monitored and where possible, interventions are in place to start to move the condition forward to being in more favourable condition..*

*In addition to the regular habitat monitoring, the SAC is monitored for any fire impact using Sentinel satellite imagery backed up with ground-truthing. By October 2021, there had been fire damage to 6% of the blanket bog and 20% of the wet heath in the SAC since the most recent scheduled monitoring. However, the number of uncontrolled fires has been decreasing in recent years, with none in 2021, and most of the land previously damaged by burning is under management that aims to prevent future fires.*

*The majority of the bird features of Caithness and Sutherland Peatlands SPA and Ramsar Site were monitored, most recently, in the six years running up to 2018. the others between 2004 -2009. Ten of the twelve qualifying SPA bird species and the one Ramsar bird feature were all in 'favourable condition'. This analysis has enabled us to identify the parts of the SAC where we need to focus efforts to encourage land management that should bring all features into favourable condition before the next monitoring cycle. The main pressures that need to be addressed are burning, trampling by red deer and drainage. Existing initiatives such as the Muirburn Code, Agri-Environment schemes, Deer Management Groups and the Peatland ACTION scheme should help address these pressures both within the SAC/SPA and in the parts of the WHS that lie outwith the SAC/SPA. In addition, the WHS bid itself has raised the profile of the habitats and species of the Flow Country and is encouraging land managers to work in partnership towards their good management.*

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<sup>24</sup> More work will be done on this between nomination and the decision by UNESCO, as there are complexities around assessing and monitoring peatland condition

# PART 2

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## Chapter 4. International, National and Regional Policy Context

World Heritage designation is a complex process in the UK, especially so where Sites lie within one of the devolved nations. There is currently no primary legislation for World Heritage in UK law, with protection instead relying on existing statutory designations, the strength of the convention and a highly developed planning system.

Chapter 6 will focus on the details of protection for the proposed WHS, but first it is important to recognise the geographic and demographic context in which the Site will sit. For example, an area that is under pressure from large or growing populations, and with multiple vehicular access routes will be harder to protect than one which is served by only a few communities and roads such as with The Flow Country.

This chapter first very briefly sets out the international context in terms of peatlands, climate change and biodiversity. This is followed by the UK national context that relates to the proposed Site, and then goes into more depth in terms of Scottish devolved national policy. This is then followed by a more granular look at the Highlands, specifically Caithness and Sutherland.

By way of reminder, when the wider area known as the Flow Country is referred to, it relates to the sub-region covering parts of Caithness and Sutherland and is written as ‘the Flow Country’. When the proposed Flow Country World Heritage Site is referred to, it is written as ‘The Flow Country’ (with a capitalised ‘The’) and means the proposed boundary area.

### 4.1 International policy context

There is no doubt now that human-induced climate change is very real and presents an existential threat to people and other species on the planet. CO<sub>2</sub> and other greenhouse gases continue to rise and replacement technologies for energy and fuel remain slow in becoming mainstream. The evidence of increased temperatures, extreme weather events and the resulting natural disasters are clear to see, with the Global South being disproportionately affected.

Biodiversity has also been degraded and depleted globally, with areas of ‘potential for exploitation’ such as forests, peatlands and wetlands being affected more than others. The changing climate is also having an impact on nature, exposing very sensitive ecosystems to extreme weather events, forcing changes in species distribution patterns and leading, in some cases, to genetic isolation.

The problems are highly significant, manifold and interconnected. Many countries globally are starting to make changes that will, in time, lead to improvements, but whether it is too little too late it is not yet possible to say. This represents the international context in which The Flow Country’s bid for World Heritage Status sits, and its role may be important.

Of peatlands, an IUCN report<sup>25</sup> states:

- *Peatlands are the largest natural terrestrial carbon store. They store more carbon than all other vegetation types in the world combined.*
- *Damaged peatlands are a major source of greenhouse gas emissions, responsible for almost 5% of global anthropogenic CO<sub>2</sub> emissions. Peatland restoration can reduce emissions significantly.*

IUCN also notes that the peatlands cover nearly 3% of the Earth's land surface, but that in some areas they are up to 80% degraded from drainage, cultivation for agriculture, burning and mining for fuel. The report also states, and is, supported by other studies, that it is clear that there is also a lack of awareness of the benefits of peatlands:

*“Peatlands provide indispensable Nature-based Solutions for adapting to and mitigating the effects of climate change, including regulating water flows, minimising the risk of flooding and drought, and preventing seawater intrusion. Wet peatlands lower ambient temperatures in surrounding areas, providing refuge from extreme heat, and are less likely to burn during wildfires. This helps to preserve air quality.”*

It is therefore clear that globally, in terms of both biodiversity and climate change mitigation, peatlands are of immense international importance, and particularly those areas that are least degraded and form large continuous areas. The Flow Country fits into both of these categories, and although there has been variable disturbance across the proposed WHS Site, areas of the blanket bog where damage has occurred have demonstrated remarkable resilience with active peat formation proven to return quickly once restoration measures are taken.

Of equal importance to the value of the proposed site in directly addressing climate change impacts as a carbon store and water regulator, is the potential for the area, as a World Heritage Site, to be a global beacon for raising awareness about peatlands and their importance to the world. Even locally, in Scotland, the full benefits of peatlands are not widely understood, but this is changing alongside the initiation of national climate and biodiversity emergency measures. Having the world's first peatland World Heritage Site, will allow The Flow Country management team to reach out to those involved in the management of other blanket bog ecosystems globally, to share learning concerning restoration and raising awareness, and to generally benefit and improve peatlands globally.

## 4.2 UK National Policy and Devolved matters

Since 1999, Scotland has had a devolved government whereby a range of powers and legislation lie within the remit of the Scottish Government. The UK government retains power and responsibility over certain pieces of legislation some of which are particularly relevant to the World Heritage bid. Devolution of power in certain areas, including healthcare and environment, has enabled the Scottish parliament to make decisions and bring forward laws that are more tailored to the lives of people in Scotland, and recognises their wishes to have more say over matters that affect them.

Under the devolution settlement, the environment is one of the areas where a wide range of powers were passed to the Scottish Parliament and Government. The World Heritage Convention oversight has, however, not been devolved. The United Kingdom government works closely with UNESCO on many issues including World Heritage. The UK Government's Department for Digital, Culture, Media and Sport (DCMS) is the lead government department on World Heritage issues and is responsible for ensuring that the UK as a State Party fulfils its obligations under the World Heritage Convention<sup>26</sup>. DCMS liaises with the devolved administrations on the nomination, conservation and protection of UK World Heritage Sites and on matters of policy as appropriate.

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<sup>25</sup> <https://www.iucn.org/resources/issues-briefs/peatlands-and-climate-change>

<sup>26</sup> <https://historicengland.org.uk/images-books/publications/protection-management-of-world-heritage-sites-in-england/englishheritagewhsplanningcircularguidance/>

The Wildlife and Natural Environment (Scotland) Act 2011<sup>27</sup> and the Nature Conservation (Scotland) Act 2004<sup>28</sup> are the Scottish Acts of Parliament that have the most relevance to the protection of the proposed Site. Details can be accessed in full online, but their expression of the legislation in terms of the proposed World Heritage Site is set out, in relation to protective designations in Chapter 5, and in the Policy Framework in Chapter 7.

Whilst the legislative situation related to the devolved administration is complex, it is clear that environmental protection is taken very seriously by the Scottish and UK administrations, as are their duties to fulfil its obligations under the World Heritage Convention. Furthermore, as representative of the States Party, DCMS is committed to supporting World Heritage anywhere within the United Kingdom and maintaining a positive dialogue with the devolved administrations and their agencies.

### 4.3 Scottish policy context

The inscription of Scotland's first wholly natural World Heritage Site, and the World's first peatland World Heritage Site, is well supported by and well aligned with Scottish policy and legislation. The key Acts and Policies/Strategies that provide this support are outlined below.

## Environment and climate change

### *Natural Environment*

In 2020 the Scottish Government published The Environment Strategy for Scotland: Vision and Outcomes (Scottish Government, 2020) which has long-term ambitions for restoring the natural environment, tackling the global climate and nature crises, and ending Scotland's contribution to climate change by 2045. The strategy is designed to act as an overarching framework for Scotland's existing environmental strategies and plans, including: the Nature Conservation (Scotland) Act (Scottish Government 2004); the Wildlife and Natural Environment (Scotland) Act (Scottish Government, 2011); and the Update to the Climate Change Plan 2018-2032: Securing a Green Recovery on a Path to Net Zero (Scottish Government 2020)). As part of this work, the Scottish Government published in draft an ambitious Scottish Biodiversity Strategy<sup>29</sup> in late 2022, which sets out a framework, to 2045, allowing Scotland to tackle both biodiversity and climate crises in tandem. A consultation on the Draft Scottish Biodiversity Strategy will take place in Spring 2023.

The Flow Country has an important role to play in relation to the strategy, both in terms of the biodiversity that is commensurate with a healthy blanket bog ecosystem, and its ability to sequester and store carbon. Any work done to meet these strategies in Scotland, including through The Flow Country Management Plan, will contribute to National Outcomes and UN Sustainability Development Goals, as illustrated in Figure 4.1.

### *Climate change*

The Climate Change (Scotland) Act 2009 (as amended) (2019)<sup>30</sup> was drafted as a direct response to the UN Paris Agreement (2015). Set out within the Act is the target to reach net zero emissions by 2045. In 2018, the Scottish Government also published the Climate Change Plan: The Third Report on Policies and Proposals: 2018-2032 and this was updated in 2020 with the publication of the Update to the Climate Change Plan 2018-2032: Securing a Green Recovery on a Path to Net Zero (2020). Within the Climate Change Plan update Scotland's natural capital, biodiversity, peatland restoration, and ensuring our peatlands are in good condition are recognised as key in tackling climate change, as is indicated by the commitment of £250million of investment in peatland restoration promised over

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<sup>27</sup> <https://www.legislation.gov.uk/asp/2011/6/contents/enacted>

<sup>28</sup> <https://www.legislation.gov.uk/asp/2004/6/contents>

<sup>29</sup> <https://www.nature.scot/scotlands-biodiversity-strategy-2022-2045>

<sup>30</sup> <https://www.gov.scot/policies/climate-change/>

the next 10 years. As Scotland's largest area of functional peatland, the Flow Country is clearly central to the aspirations of this legislation, and to meeting Scotland's commitment to net zero. Seeking World Heritage status for The Flow Country is wholly compatible with this approach and will have the added bonus of improving the case for accelerated restoration within the property.

An important strand of the Scottish Government's policy around the climate emergency relates to renewable energy, and of particular pertinence to the Flow Country is the development of onshore wind, as set out in the Onshore Wind: Policy Statement (Scottish Government, 2017)<sup>31</sup>. Central to this policy is the decarbonisation of our energy generation, whilst it is also recognised that balance must be struck between development, environmental impact, local support and benefit. The appropriate development of onshore wind infrastructure is managed through local and national planning policy and may have implications for the setting of the proposed Site. This is discussed in Chapters 5, 6 and 7, which provide some background to the potential for conflict between the issues of protecting natural spaces for the long term. Specifically, there is a need to promote the development of carbon reducing energy generation sources – essential for reducing the severity and impacts of climate change – but without negative impact on carbon sequestering natural habitats such as blanket bog and the species they support.

### **Biodiversity**

The 2020 Challenge for Scotland's Biodiversity (Scottish Government, 2013)<sup>32 33</sup> updated the Scottish Biodiversity Strategy (2004) and was published in response to the *Aichi Targets (2010)* set by the *United Nations Convention on Biological Diversity (2010)* and the *European Union's Biodiversity Strategy for 2020 (2011)*. A new Scottish Biodiversity Strategy to 2045<sup>34</sup> has recently been published in draft, and after further consultation alongside a detailed delivery plan, should be fully published in the summer of 2023.

The new Scottish Biodiversity Strategy sets out a nature positive vision for Scotland. It has three key outcomes:

- By 2045, Scotland will have restored and regenerated biodiversity across our land, freshwater and seas.
- Our natural environment, our habitats, ecosystems and species, will be diverse, thriving, resilient and adapting to climate change.
- Regenerated biodiversity will drive a sustainable economy and support thriving communities and people will play their part in the stewardship of nature for future generations.

In general terms the main aims relating to the conservation and management of biodiversity in Scotland are to support healthy ecosystems through protection and restoration of biodiversity; aiding that by connecting people with, and encouraging their involvement in decision making about the environment. It is envisaged that this approach will maximising benefits to both the environment and to Scotland. World Heritage status for The Flow Country is clearly closely aligned to these outcomes, and the approaches taken in Scotland – that will apply to the proposed WHS – also fit with the UN Development Goals, as shown in Fig. 4.1.

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<sup>31</sup> <https://www.gov.scot/binaries/content/documents/govscot/publications/speech-statement/2017/12/onshore-wind-policy-statement-9781788515283/documents/00529536-pdf/00529536-pdf/govscot%3Adocument/00529536.pdf>

<sup>32</sup> <https://www.gov.scot/publications/2020-challenge-scotlands-biodiversity-strategy-conservation-enhancement-biodiversity-scotland/>

<sup>33</sup> <https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy-and-cop-15>

<sup>34</sup> <https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland/>



**Key**

**National Outcomes in the National Performance Framework:**

-  **Children & young people:** We grow up loved, safe and respected so that we realise our full potential
-  **Communities:** We live in communities that are inclusive, empowered, resilient and safe
-  **Culture:** We are creative and our vibrant and diverse cultures are expressed and enjoyed widely
-  **Economy:** We have a globally competitive, entrepreneurial, inclusive and sustainable economy
-  **Education:** We are well-educated, skilled and able to contribute to society
-  **Environment:** We value, enjoy, protect and enhance our environment
-  **Fair work & business:** We have thriving and innovative businesses, with quality jobs and fair work for everyone
-  **Health:** We are healthy and active
-  **Human rights:** We respect, protect and fulfil human rights and live free from discrimination
-  **International:** We are open, connected and make a positive contribution internationally
-  **Poverty:** We tackle poverty by sharing opportunities, wealth and power more equally

Figure 4.1 Environment Strategy Vision and outcomes and their contribution to National (Scottish) Outcomes and UN Sustainable Development Goals<sup>35</sup>

<sup>35</sup> <https://www.gov.scot/publications/environment-strategy-scotland-initial-monitoring-framework/pages/6/>

## Peatland Management

The Scottish Government policy for peatland management and restoration is set out in Scotland's National Peatland Plan (SNH, 2015). The principal aim of this plan is to facilitate the protection, management and restoration of peatlands to maintain their natural functions, biodiversity and benefits. As well as highlighting the importance of peatlands for climate, biodiversity, wellbeing and education it emphasises the necessity of a joint working approach, between landowners, technical expertise, funders and policy makers. The work required to take this plan forward is led by The National Peatland Group, which is chaired by NatureScot. Alongside Scotland's National Peatland Plan the UK Peatland Code, managed by the IUCN UK Peatland Programme, has been developed. This is a voluntary standard that ensures restoration projects deliver tangible climate change mitigation and environmental benefits. Protection, conservation and transition, stated as key aims of World Heritage are closely aligned with Scotland's National Peatland Plan, which directly includes all the peatlands of the wider Flow Country.

Peatland ACTION<sup>36</sup> is the national programme in Scotland for peatland restoration. This is a substantial, long-term investment program in peatland restoration with more than £250 million of Scottish Government funding between 2020 – 2030. Restoring peatlands is one of the most effective ways of locking in carbon and re-starting sequestration, offering a clear nature-based solution to the twin climate and biodiversity crises. The wider Flow Country area, including blanket bog within the WHS boundary, is already benefitting and will continue to benefit from this ongoing and extensive programme of restoration.

## Culture

Scotland's Culture Strategy (Scottish Government, 2020)<sup>37</sup> has three overarching ambitions: strengthening culture, transforming through culture, and empowering through culture. Although The Flow Country is being nominated for World Heritage Status on the basis of its natural attributes, there is a long history of cultural interaction with the peatlands, both while the peatlands were expanding during prehistory (e.g. Tipping et al, 2007) and in more recent times, as a resource and for inspiration (e.g. Below the Blanket, 2019). This deep cultural history is recognised in the Nomination Dossier, and the inscription of the Site will strengthen these cultural links. Furthermore, the culture and history of the region will form an important part of the visitor experience and transmission of the region's value.

**World Heritage:** Scotland's World Heritage is considered in the Scottish Government's Arts, Culture and Heritage Policy<sup>38</sup>. As a signatory of the United Nations World Heritage Convention the UK has promised to identify sites which could be nominated for World Heritage Status and to protect our national heritage (both cultural and natural). Scottish ministers report to the UK Government on any for aspects relating to Scotland's World Heritage Sites.

**Tourism:** Scotland Outlook 2030: Responsible Tourism for a Sustainable Future<sup>39</sup> is the national tourism strategy. It was developed through an equal partnership between the Scottish Tourism Alliance, Scottish Government, VisitScotland, Scottish Enterprise, HIE and Skills Development Scotland. The strategy focuses on four key priorities: Our Passionate People, Our Thriving Places, Our Diverse Businesses and Our Memorable Experiences. Responsible tourism, inclusivity and use of data, digitalisation & technology are key commitments.

The tourism strategy has the vision to take Scotland forward as the World leader in 21st century tourism with sustainability, responsibility, innovation and technology at its core, and a full commitment to contribution to net-zero by 2045. These aims are aligned with aspirations for tourism across the Flow Country and wider Highland area.

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<sup>36</sup> <https://www.nature.scot/climate-change/nature-based-solutions/peatland-action-project>

<sup>37</sup> <https://www.gov.scot/publications/culture-strategy-scotland/>

<sup>38</sup> <https://www.gov.scot/policies/arts-culture-heritage/>

<sup>39</sup> <https://scottishtourismalliance.co.uk/scotland-outlook-2030-overview/>

## 4.4 Highlands, specifically Caithness and Sutherland

### Geography and demographics

The proposed World Heritage Site is entirely within the Highland Council administrative area, and at a more granular level it lies within the historic counties of Caithness and Sutherland. The Highland Council area has a population density of just nine people per sq. km, and the area within the proposed boundary of The Flow Country WHS is significantly lower than that, in fact containing very few dwellings at all<sup>40</sup>. The population of the wider area is subject to significant fluxes across the peak tourist season, but the isolation of the proposed Site means that under current circumstances it is less likely to suffer the negative effects of mass tourism that other World Heritage Sites face.

**Physical environment:** The Flow Country forms the heart of Caithness and Sutherland, with many of the area's riverine arteries flowing from the peatlands. These historic counties are characterised by a varied landscape, topography, climate and geology - all of which provide for a variety of ways of life across the area, from the rolling farmlands of northeast Caithness to the fishing communities that line the rocky sea lochs in the west of Sutherland. The mountain belt which runs north-south in the west of the region catches much of the moisture brought in on the prevailing westerly winds and records annual average rainfall figures between 1500 and 2500 mm (spread over up to 220 wet days per annum). This contrasts markedly with the east where average annual rainfall ranges between 650 and 1000 mm (with up to 160 wet days per annum). Average annual temperatures are cool across the region (8°C) with slightly elevated temperatures recorded in the west.

**Population and demographics:** The physical environment has a great impact on the inhabitants of the area. The population is largely concentrated around the coastal regions, in part for historical reasons (e.g. the Highland Clearances), and in part due to the distribution of cultivatable and fertile land. The population of Caithness and Sutherland was 38,246 in 2020, which was down 3.9% from 2011, against a national picture of rising population. This ongoing rural decline is projected to continue. Some of the larger settlements on the periphery of The Flow Country include Thurso, population 7,600 in 2016; Wick, 7,000 in 2016; Lairg, 891, in 2011; Helmsdale, 764 in 2011; Tongue, 564 in 2011; Bettyhill, 492 in 2011; Halkirk, 980 in 2011.

**Employment:** Employment in the more *sparsely populated* areas is dominated by crofting agriculture, forestry and fishing (but this makes up only 2.8% of total employment in the region) alongside tourism. The top three employment sectors overall in the region are human health & social work (18.8%), accommodation & food services (15.6%), and wholesale and retail (12.5%), highlighting the importance of the tourist industry (all figures from HIE 2020). Caithness and Sutherland contain four data zones in the most deprived 20% in Scotland (SMID 2020): totalling approximately 0.5% of the most deprived areas in Scotland. These are concentrated in urban coastal areas. However, it should be considered that, in 2012, 85% of income- and employment-deprived people lived outwith areas recognised as containing concentrations of deprivation. Furthermore, geographic access almost universally ranks at the highest levels of deprivation throughout the sparsely populated regions. However, the limitations of the SMID report include that it identifies deprivation in more dispersed communities where more well-off people may live alongside the more deprived. It is expected that the WHS will bring some opportunities for employment and entrepreneurship in the area to counter some of this disparity. Figure 4.2 shows the deprivation indices within the wider Flow Country area.

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<sup>40</sup> This will not be an issue for any dwellings in the Site as they do not contribute to OUV.

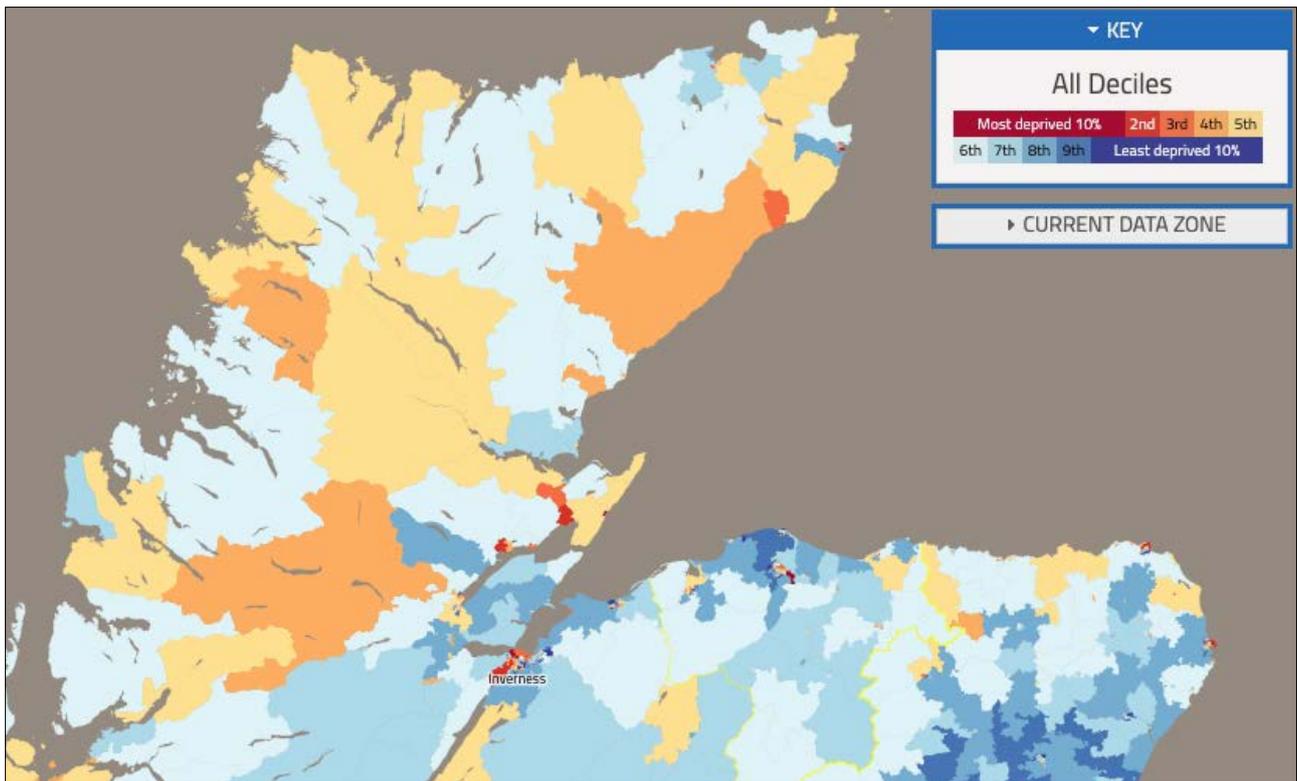


Figure 4.2 Map of Scottish Index of Multiple Deprivation 2020<sup>41</sup>

## Environment

### *Peatland policy and strategy:*

The peatlands of the Highlands are recognised as important for nature conservation, archaeological interests and carbon sequestration (Highland Council, 2012). As such, policies laid out in the Highland-wide Local Development Plan (Highland Council, 2012, Policy 55)<sup>42</sup> provide protection for all of the region’s peatlands, as shown in Box 4.1 .

These policies outline the importance of the conservation of peatlands and, where disruption is unavoidable, management plans to minimise and mitigate issues should be put in place. This protection is further reinforced in the Caithness and Sutherland Local Development Plan<sup>43</sup> which recognises the vital role of peatlands as a carbon store and the area's transition to a low carbon economy.

*Policy 83. Peatland is a vital carbon store and Caithness and Sutherland’s peatland resource is of international importance. Through the policies in the Highland-wide Local Development Plan (HwLDP) we can help safeguard important peatland resources.*

<sup>41</sup> From [www.simd.scot](http://www.simd.scot)

<sup>42</sup> Source: [https://www.highland.gov.uk/info/178/local\\_and\\_statutory\\_development\\_plans/199/highland-wide\\_local\\_development\\_plan](https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/199/highland-wide_local_development_plan) p105

<sup>43</sup> Source: [https://www.highland.gov.uk/info/178/local\\_and\\_statutory\\_development\\_plans/283/caithness\\_and\\_sutherland\\_local\\_development\\_plan](https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/283/caithness_and_sutherland_local_development_plan) P24, Para 83

**Policy 55**

*Development proposals should demonstrate how they have avoided unnecessary disturbance, degradation or erosion of peat and soils.*

*Unacceptable disturbance of peat will not be permitted unless it is shown that the adverse effects of such disturbance are clearly outweighed by social, environmental or economic benefits arising from the development proposal.*

*Where development on peat is clearly demonstrated to be unavoidable then The Council may ask for a peatland management plan to be submitted which clearly demonstrates how impacts have been minimised and mitigated.*

*New areas of commercial peat extraction will not be supported unless it can be shown that it is an area of degraded peatland, which is clearly demonstrated to have been significantly damaged by human activity, has low conservation value and as a result restoration is not possible.*

*Proposals must also demonstrate to the Council's satisfaction that extraction would not adversely affect the integrity of nearby Natura sites [now called European Sites] containing areas of peatland.*

A further mark of the importance of the region is the development of *The Peatlands of Caithness and Sutherland Management Strategy (PCSMP)* <sup>44</sup>. Whilst there is considerable overlap and consistency of approach between the PCSMP and the World Heritage Site Management Plan, the latter also has to satisfy the requirements of World Heritage Site Management. The WHS Nomination Dossier includes the PCSMP as an Annex. Its vision is:

*“Our vision for the peatlands is one of a revitalised, sustainably managed landscape, with extensive sweeps of hill and bog intersected by fertile straths and forests. These straths and coastal strips support a mosaic of productive crofts and farms, rivers, forestry and native woodland. Above and between the straths lies the open landscape of the world-renowned peatlands of Caithness and Sutherland, which, together with their lochs and lochans, support a spectacular assemblage of birds, plants and other wildlife, including internationally important numbers of raptors, waders and waterfowl. The straths, bogs, hills, lochs, rivers, woodlands and forestry are managed together for the wide range of services they provide and interests they support. Different land management objectives and uses are integrated and support each other, with everything underpinned by a healthy environment, at the centre of which is the great peatland of the north. Everyone who lives, works in or visits the area values the peatlands, which are an exemplar of good management and an inspiration to all.”*

**Climate emergency:**

In 2019 Highland Council declared a climate and biodiversity emergency in recognition of the serious and accelerating changes to the world caused by climate change. In making this declaration Highland Council has made it a central consideration in every decision they make. This commitment is borne out in the wide support given to the proposed Flow Country World Heritage Site and the recognition of its importance in both tackling climate change and maintaining biodiversity.

**Biodiversity:**

Under the Nature Conservation (Scotland) Act 2004 (Scottish Government 2004), Highland Council, and all public bodies in Scotland, are required to further the conservation of biodiversity when carrying out their responsibilities. The

<sup>44</sup> Source: SNH, 2022

Wildlife and Natural Environment (Scotland) Act (Scottish Government, 2011), further requires public bodies in Scotland to provide a publicly available report, every three years, on the actions which they have taken to meet this Biodiversity Duty. As outlined above, the importance of this work has never been more appreciated in the context of the declared climate and biodiversity emergency and is relevant as supporting context for OUV.

Highland Council has underlined its commitment to tackling the climate and biodiversity emergency by signing the Edinburgh Declaration. The Edinburgh Declaration on Biodiversity arose out of the Edinburgh Process under the auspices of the Convention on Biological Diversity (CBD) in the run up to CoP15. It is a key milestone in the formal recognition of contributions by subnational governments (including cities and local authorities) to the achievement of global biodiversity goals and targets. It sets out the aspirations and commitments of the Scottish Government, Edinburgh Process partners, and the wider subnational constituency of the Convention on Biological Diversity, in delivering for nature over the coming decade.

## Access and Transport

Scotland has long been proud of its access rights, as outlined in the Scottish Outdoor Access Code<sup>45</sup> and legislated under the Land Reform (Scotland) Act 2003 (Scottish Government, 2003)<sup>46</sup>. This provides guidance for responsible access to the outdoors based on three principals:

- respect for the interests of other people;
- care for the environment;
- taking responsibilities for your own actions.

Highland Council delivers services, including information and path networks throughout the Highland Council area, through their Access Team. Access to The Flow Country is key in transmitting its value, and the Scottish Outdoor Access Code supports this through promoting responsible access.

The area is remote and served by very few roads, many of which are a single track with passing places. There is only one railway line in this part of the Highlands - the Far North line from Inverness to Thurso and Wick. This goes through the proposed World Heritage Site, but has relatively limited services, and is seen as the slow option. In terms of cycle paths, although there is a National Cycle Network route it is not yet a formal Sustrans<sup>47</sup> route. There are also no recognised long-distance footpaths through the proposed boundary area, although access through forestry and estate tracks is available.

In partnership with the Highlands and Islands Strategic Transport Partnership (HITRANS)<sup>48</sup>, Highland Council is developing a series of masterplans across the region with the aim of establishing a network for walking, cycling and access to public transport. This network will support sustainable transport solutions throughout the region.

## Tourism

The *Highland Council Visitor Management Plan 2021*<sup>49</sup> aligns with the UNESCO guidance for sustainable tourism. It recognises that managing visitor movements and influencing visitor behaviour are critical aspects of developing sustainable tourism. Furthermore, this sets out that by managing visitors, a destination can minimize the negative effects on the host community and maximize the opportunities for them to benefit whilst creating a superb visitor experience.

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<sup>45</sup> <https://www.outdooraccess-scotland.scot/>

<sup>46</sup> <https://www.legislation.gov.uk/asp/2003/2/contents>

<sup>47</sup> <https://sustrans.org>

<sup>48</sup> <https://hitrans.org.uk/>

<sup>49</sup> [https://www.highland.gov.uk/info/1457/tourism\\_and\\_visitor\\_attractions/992/visitor\\_management\\_planning](https://www.highland.gov.uk/info/1457/tourism_and_visitor_attractions/992/visitor_management_planning)

A partnership approach is recognised as key in achieving these goals, with the wide range of stakeholders that are likely to influence the behaviour of visitors. The role of the Highland Council within this partnership is to address the provision of some of the underlying infrastructure and associated services as well as informing and educating visitors on responsible behaviour.

Venture North acts as the Destination Management Organisation for tourism in Caithness and Sutherland. It aims to promote sustainable and responsible tourism throughout the region as laid out in their Caithness & Sutherland Tourism Destination Recovery Strategy 2021-2024<sup>50</sup>. These values align well with the transmission and presentation of the proposed Flow Country World Heritage site.

## Cultural heritage

The Flow Country and wider environs contain a rich and extensive cultural history stretching back to the earliest habitation by humans during the Mesolithic. Highland Council has recognised the importance of the cultural heritage of the region in its Highland Historic Environment Strategy (Highland Council, 2013)<sup>51</sup>. Key priorities within this strategy are to protect, conserve, preserve, interpret and promote the historic environment and to raise awareness of it and its full potential as a social, cultural and economic resource. The distinctiveness of the historic environment is also considered an important characteristic. Within the Flow Country many of the influences on this distinctiveness arise from the natural environment in which it developed, from the integral importance of the peat for building and fuel, to the global exports of the quarried Caithness flagstones. This influence is set out in the Nomination Dossier and reflected in the Policy Framework, Chapter 7.

## Health and wellbeing

Scotland's natural environment is recognised for its importance in health and wellbeing, through enjoyment of nature, outdoor activity, inspiring landscapes amongst other reasons. It is promoted through the Green Exercise Partnership (GEP) which is backed by the Scottish Government's health and environment portfolios. The main purpose of the GEP is to promote better health and quality of life for Scotland's people by encouraging physical activity in the outdoors and greater contact with nature. Therefore, there is understanding and considerable support for the importance of sites such as the Flow Country for public health. This is also reflected in the Policy Framework of this Plan.

## 4.5 Summary

This chapter set out to show the policy context within which the proposed World Heritage Site will be managed at both local and national levels. Although the UK currently lacks primary legislation relating to World Heritage, at all of the UK national, Scottish and Highland levels, the necessary policies are already in place and integrated within the planning and strategic frameworks of the relevant authorities.

More detail concerning the specific measures of protection are provided in Chapter 5. Given the details outlined above, there is confidence that the proposed World Heritage Site sits within a supportive policy context. On inscription, and if needed, appropriate policy changes can be made locally which are directly related to the new World Heritage Site, something that cannot be done until the Site is on the list.

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<sup>50</sup> [https://www.venture-north.co.uk/site/assets/files/1329/caithness\\_and\\_sutherland\\_-\\_tourism\\_destination\\_recovery\\_strategy\\_2021-24\\_1.pdf](https://www.venture-north.co.uk/site/assets/files/1329/caithness_and_sutherland_-_tourism_destination_recovery_strategy_2021-24_1.pdf)

<sup>51</sup> [https://www.highland.gov.uk/downloads/file/11047/highland\\_historic\\_environment\\_strategy](https://www.highland.gov.uk/downloads/file/11047/highland_historic_environment_strategy)

## Chapter 5. Protection

UNESCO states that the “*Protection and management of World Heritage properties should ensure that the Outstanding Universal Value, the conditions of integrity and/or authenticity at the time of inscription are maintained or enhanced in the future.*”

This chapter outlines how it is proposed that this will be undertaken for The Flow Country, if inscribed as a World Heritage Site. Protection arrangements will consider both the area within the proposed Site boundary, and areas outwith the boundary – in the setting – that may have an impact on OUV within the Site, or the way in which the Site is presented.

### 5.1 Geographic framework

The geographic framework for a World Heritage Site, comprises Site boundaries, setting, and in some cases buffer zones. These are all set out here.

#### Site boundaries

The boundaries of the seven sections of the site are fully described in Chapter 3. The definition of the boundary is based on the highly protected (SAC, SPA, Ramsar) area of the Caithness and Sutherland Peatlands SAC/SPA, which are in turn based on numerous SSSI designations. These areas are largely designated for the exceptional quality of the blanket bog features they hold and the species they support.

In some instances, the boundary has been extended beyond the designated areas in order to include previously afforested and/or historically drained areas that are being or have been restored to actively accumulating blanket bog. In other areas, the boundaries extend beyond the original designated sites in order to ensure they reflect the hydrological boundaries of the patchwork of blanket bog elements that comprise the ‘blanket bog landscape’. Sometimes these elements will be obvious on the ground such as a watercourse but otherwise there will be less obvious features on the ground.

Restoration has proved extremely successful with peat forming processes returning quickly to the most restored areas, some of which already demonstrate the characteristics of healthy blanket bog systems<sup>52</sup> and which it is anticipated will be added to the existing designated areas in due course. Whilst the timescale for restoration is very dependent on site and condition, 20 years is a reasonable estimate for restoring a bog from previous forestry land to active accumulating peat with no sign of prior forestry.

#### Setting

The setting is discussed in detail in Chapter 3 of this Plan. It needs no additional information here other than to reiterate that it is a complex arrangement that is not reliant on a line on a map, but more on the functional and experiential understanding of what the setting of a World Heritage Site means. This will be explored after submission of the nomination through a setting study, so it would be premature to anticipate the outcome of that work.

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<sup>52</sup> Marshall et al. (2021), Bradley et al. (2021)

## Buffer zone

UNESCO states that “For the purposes of effective protection of the nominated property, a buffer zone is an area surrounding the nominated property which has complementary legal and/or customary restrictions placed on its use and development to give an added layer of protection to the property. This should include the immediate setting of the nominated property, important views and other areas or attributes that are functionally important as a support to the property and its protection...”.

They also add: “Where no buffer zone is proposed, the nomination should include a statement as to why a buffer zone is not required.”

In Scotland, a World Heritage Site buffer zone is not a statutory designation, and so brings with it no specific legal protection. The Scottish Government actively discourages the use of buffer zones around natural spaces. Instead, existing national and international designations (SSSI, Ramsar, SPA, SAC) set their boundaries such that they already include a level of protection for the designated natural features from actions outwith the site which would lead to them being negatively impacted.

The setting is best protected through the use of existing conservation legislation and the planning system. This is normally done either through using existing policy, adopting the policies in the Management Plan, or through developing supplementary planning guidance.

If existing protection arrangements for the setting are sufficiently robust, UNESCO considers that a specific buffer zone is unnecessary, and the argument in favour of this is set out in the rationale below. The role of the local planning authorities, their Local Development Plans and Scottish Government’s new National Planning Framework 4 (NPF4<sup>53</sup>) is crucial with respect to protection of the setting.

Our statement in terms of the Buffer Zone is as follows:

### *Buffer zone rationale*

The proposed Flow Country World Heritage Site will not have a buffer zone for the following reasons:

- There are no specific legislative or existing Planning Policy instruments to protect a buffer zone for a natural property, so one would have no basis in planning law;
- Whilst most existing cultural World Heritage properties in Scotland have buffer zones, they are not encouraged by Scottish Government for natural Sites;
- The European level designations, and national and local planning policies, provide protection for areas outside of their boundaries where any actions might impact upon the designated features within the boundary. In some instances, this will include some of proposed WHS setting;
- Additional local planning policy will be developed *if necessary* to reflect the requirement to protect the setting as defined within this document, or within any further setting study;
- The use of an unfamiliar and non-statutory additional layer of environmental designation - Buffer Zone – will add a level of confusion to the local population in respect of their interaction with the Site.

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<sup>53</sup> NPF4 was adopted by the Scottish Government in Jan 2023. Before this Plan is consulted on again, it will be updated to allow for any changes arising from the new policy.

## 5.2 Planning framework

The Flow Country World Heritage Site will be protected through plans, policies and strategies within the Scottish planning system. The planning system provides a framework for consideration of proposals for “development”. The term development here broadly refers to construction, engineering, mining or other operations in, on, over or under land, or the making of any material change in the use of any buildings or other land in the circumstances specified in law, all subject to certain exceptions specified in law. The Scottish Government oversees the national planning system and is responsible for the preparation and implementation of legislation. The legislation sets out:

- requirements for the preparation of development plans, the purpose of which is to manage the development and use of land in the long-term public interest;
- which developments are ‘permitted development’ i.e. not requiring a planning application to be made and granted (by reference to type, scale and circumstance) and by doing so enabling identification of developments that do require a planning application to be made and granted before they may proceed – and the framework of the application and determination process; and;
- the powers and processes for enforcement.

Scottish Government is also responsible for the preparation and implementation of national planning policy. The Highland Council is the planning authority covering The Flow Country and is responsible for administering three main parts of the planning system:

- local development plans – setting out how places should change in the future using plans;
- managing development – receiving and making decisions on planning applications and other related consents, with decisions on planning applications having to be guided by policies in the development plan;
- enforcement – making sure development is carried out correctly and taking appropriate action when it is not.

The determination (decision) of the planning application is, unless material considerations indicate otherwise, to be made in accordance with the Local Development Plan. For developments identified in National Planning Framework 3 (NPF3) as national developments, the determination is additionally to be made in accordance with parts of NPF3 (of the types specified in law), unless material considerations indicate otherwise.

The Local Development Plan is critical in respect of current and future protection of the proposed WHS, and comprises:

- Current (June 2022): Statutorily adopted Local Development Plan(s) and Supplementary Guidance for the area.
- Future (transition from current is anticipated to take place now that NPF4 has been adopted): Statutorily adopted National Planning Framework (NPF4 onwards) and Local Development Plan(s) for the area.

It is worth noting that that under Scottish law there is a right of appeal against refusal of planning permission, so the ultimate determination of a planning application may, in some cases, be made by a Scottish Government appointed reporter, rather than by The Highland Council.

## National Planning Framework

At time of preparation of this management plan, the Scottish planning system was undergoing reform under the Planning (Scotland) Act 2019, including the completion of NPF4. As it stands, this document is based on the content of National Planning Framework 3 (NPF3) 2014 and Scottish Planning Policy (SPP) 2014. These can be material considerations in the determination of planning applications and provide a context for local planning policies. This will be changed in the next iteration of this document, but as of publication (Feb 2023) these changes are not done. That said, from early analysis of the adopted NPF4, the changes are unlikely to be significant.

NPF3<sup>54</sup> identifies World Heritage Sites as part of the historic environment<sup>55</sup> which is an integral part of our well-being and cultural identity (paragraph 4.6), part of a set of distinctive assets of value to tourism and recreation (paragraph 4.27) including specific acknowledgement of the importance of Scotland's tentative list sites (paragraph 4.32).

NPF3 seeks four planning outcomes, which include an outcome that planning makes Scotland a natural, resilient place – helping to protect and enhance our natural and cultural assets and facilitating their sustainable use. It also identifies Scotland as having a world-class environment and that our nature and culture are inextricably linked (paragraph 4.1). It says that Scotland's principal physical asset is its land and goes on to recognise that peatlands are an important habitat for wildlife and a very significant carbon store, containing 1,600 million tonnes of the 3,000 million tonnes in all Scottish soils (paragraph 4.2).

NPF3 (paragraph 4.10) refers to 'The 2020 Challenge for Scotland's Biodiversity' which aims to promote and enhance Scotland's nature, and to better connect people with the natural world. Furthermore, the planning framework states that maintaining our natural capacity to provide services makes economic sense – to help achieve this, biodiversity in Scotland needs to be viewed at a landscape scale. NPF3 (paragraph 4.22) identifies that rural areas have a particular role to play in building Scotland's long-term resilience to climate change, and reducing our national greenhouse gas emissions. It indicates that peatland restoration is planned on a large scale, and that The National Peatland Plan will guide planning and decision-making to ensure we protect and enhance the multiple benefits of this internationally significant resource.

Scottish Planning Policy (SPP) 2014 states that planning should take a positive approach to enabling high-quality development and making efficient use of land to deliver long-term benefits for the public while protecting and enhancing natural and cultural resources (paragraph 2) and planning can help to manage and improve the condition of our assets (paragraph 21). It goes on to say that policies and decisions should be guided by a range of principles, including protecting, enhancing and promoting access to natural heritage; green infrastructure, landscape and the wider environment (paragraph 29).

SPP 2014 says that World Heritage Sites are of international importance and that where a development proposal has the potential to affect a World Heritage Site, or its setting, the planning authority must protect and preserve its Outstanding Universal Value (paragraph 147). In respect of valuing the natural environment, SPP 2014 sets out a number of Policy Principles (paragraph 194), saying that the planning system should:

- facilitate positive change while maintaining and enhancing distinctive landscape character;
- conserve and enhance protected sites and species, taking account of the need to maintain healthy ecosystems and work with the natural processes which provide important services to communities;
- promote protection and improvement of the water environment, including rivers, lochs, estuaries, wetlands, coastal waters and groundwater, in a sustainable and co-ordinated way;
- seek to protect soils from damage such as erosion or compaction;

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<sup>54</sup> Reference to follow

<sup>55</sup> This is a peculiarity of the UK in which the Culture Department (DCMS) is responsible for World Heritage.

- protect and enhance ancient semi-natural woodland as an important and irreplaceable resource, together with other native or long-established woods, hedgerows and individual trees with high nature conservation or landscape value;
- seek benefits for biodiversity from new development where possible, including the restoration of degraded habitats and the avoidance of further fragmentation or isolation of habitats; and
- support opportunities for enjoying and learning about the natural environment.

A raft of policies in SPP 2014 (paragraphs 193 – 218) in respect of various designated and non-designated assets also shows Scottish Government’s commitment to the natural environment.

All of the above policy context has relevance to The Flow Country and any significant changes and improvements to the planning system resulting from the government’s Transforming Planning work programme will be added as updates in future iterations of this Plan.

### *Large scale wind energy*

In respect of planning for onshore wind energy developments specifically, as part of a spatial framework (SPP 2014 paragraph 161 and Table 1) to be prepared by planning authorities, SPP 2014 amongst other things identifies that it should include the following as areas of significant protection, so would need a strong rationale for permission to be granted:

- **World Heritage Sites**, as well as:
  - European Sites and Ramsar Sites
  - Sites of Special Scientific Interest
  - National Nature Reserves
  - Wild Land Areas (as shown on NatureScot’s map 2014)
  - Carbon Rich Soils, Deep Peat and Priority Peatland Habitat (Classes 1 and 2 on NatureScot’s carbon and peatland map 2016)

National Scenic Areas, of which there are several that overlap with the proposed WHS, are amongst areas that the spatial framework should identify as areas where wind farms will not be acceptable.

SPP 2014 (paragraph 169) also includes development management policy in respect of energy infrastructure developments, which it says should always take account of spatial frameworks for wind farms and that considerations are likely to include, amongst others:

- effects on the natural heritage, including birds;
- impacts on carbon rich soils, using the carbon calculator;
- landscape and visual impacts, including effects on wild land;
- effects on hydrology, the water environment and flood risk.

The Electricity Act 1989 provides that certain applications in relation to energy infrastructure are determined at National level by ministers, instead of locally by The Highland Council. These include, amongst others:

- Applications under Section 36 for consent for the construction, extension and operation of electricity generating stations with capacity in excess of 50 megawatts (applications below this threshold are made to the relevant local planning authority);
- Applications under Section 37 for the installation of certain overhead electric lines and associated infrastructure. Such applications cover new developments as well as modifications to existing developments.

In the case of such applications to Scottish Ministers, The Highland Council is a consultee and still comes to a view on the proposal. However, instead of this leading to the Council determining the application, it leads to the Council’s view

on the application being submitted to the Scottish Government's Energy Consents Unit (ECU). If needed, wind farms involve a Public Local Inquiry (PLI), whereby the Directorate for Planning and Environmental Appeals (DPEA) appoint a Reporter who holds the PLI and produces a report. Following any PLI and taking into account any such report, Scottish Ministers consider and determine the application.

Applications of these types are determined in line with relevant national and local planning policy and energy policy in the context of Schedule 9 of the Electricity Act 1989. Such consents for all developments onshore carry deemed planning permission under Section 57 of the Town and Country Planning (Scotland) Act 1997 as amended. For such applications to Scottish Ministers, the development plan is a material consideration which holds significant weight, although it *does not have primacy*. However, Policy 67 'Renewable Energy Developments' in the Highland-wide Local Development Plan has strength and contains the same considerations as are found in paragraph 169 of Scottish Planning Policy 2014. Wind farms are discussed in more detail in section 6.7.

## Local Planning Framework

The Flow Country lies within the Caithness and Sutherland area of Highland. As at May 2022 the Highland-wide Local Development Plan (HwLDP), which came into force in April 2012, sets out the overarching vision statement, spatial strategy and general planning policies for the whole of the Highland Council area.

Its 'Vision for Caithness and Sutherland' area states that by 2030, Caithness and Sutherland will be a place of outstanding heritage: safe in the custody of local people – and that The Flow Country will have been inscribed on the World Heritage Site List and enjoy the support of local communities, land managers and visitors alike.

The Highland-wide LDP will be reviewed now that NPF4 has been finalised, and the next version of this Management Plan will reflect any changes from that. The current policies and details of supplementary guidance that relate to the WHS designation will be available for the Plan if it is inscribed.

The Caithness and Sutherland Local Development Plan (CaSPlan) was adopted in August 2018 and operates alongside the Highland-wide LDP. Its vision for 2035 is expressed as four outcomes, including an outcome for *Environment and Heritage*: high quality places where the outstanding environment and natural, built and cultural heritage is celebrated, and valued assets are safeguarded.

CaSPlan's associated strategy includes protecting and enhancing the unique natural environment and also recognising the value of the peatland resource as a vital carbon store. The associated Action Programme includes advancing the application for World Heritage status for The Flow Country. The Highland Council's continued commitment to this – and to recognising the carbon benefits of our peatlands – is further evidenced by the Indicative Regional Spatial Strategy for Highland<sup>56</sup>, prepared and submitted to Scottish Government to inform the NPF4 development process.

## Non-statutory Plans

There are a wide range of plans that relate to the area in terms of peatland management, visitor management, cultural strategies and other related issues. These are all listed in the Nomination Dossier bibliography. Some of these are material considerations in planning law whilst others are not. Any that will have a significant bearing on the protection of the proposed WHS will have their policies already reflected within the Local Plan where they preceded it, but there are two plans worth highlighting here, the National Peatland Plan and the Peatlands of Caithness & Sutherland Management Strategy, 2022 (PCSMS).

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<sup>56</sup> <https://www.highland.gov.uk/downloads/file/23582/highland-indicative-regional-spatial-strategy-to-2050-refined>

The Scottish Government's National Peatland Plan is an important and far thinking strategy document and includes in its Vision for 2020 "*The Flow Country will have moved from the UK Tentative List towards being a fully "inscribed" World Heritage Site.*" There is nothing in the National Peatland Plan that conflicts with the policies in this Management Plan, only supportive policies and actions. Moreover, the National Peatland Plan is capable of being counted as a material consideration in planning terms. Likewise, at a local level there is the PCSMS, which includes the Flow Country blanket bogs as its focus. Again, this WHS Management Plan is consistent with the PCSMS, and indeed draws on it substantially in order that they work in parallel. This, also, would be a material consideration in planning terms.

### Implementing effective protection through the planning system

The whole area of the nominated Site is protected through the system of planning regulation for Scotland. There is specific planning policy at national level in relation to both inscribed WHS and areas of peatland that would afford effective protection from development proposals that might have an impact on the OUV. Inscribed WHS are capable of being counted as a material consideration in planning terms (the decision maker determining a planning application comes to a view on what is a material consideration in the case being handled). Should the Site be inscribed, regional/local planning policy and guidance will be prepared as appropriate to complement the national policies.

There is already regional/local policy safeguarding peat and soils, the water environment, a range of species and habitats and the extensive and numerous sites already designated for nature conservation. This means that the Planning Authority (generally The Highland Council, or otherwise Scottish Government) is already experienced at considering the impacts of development proposals on peatland habitats, species and bog systems – including the consideration of potential connectivity and the impact of proposals located outwith designated sites, on those sites. World Heritage inscription would bring an additional focus (based on the Site and OUV) and framework, and that would build on an already well-practiced approach to consideration of development proposals and protection of valued natural assets, including those of international importance.

Peatlands, as a significant carbon sink, also attract protection through policies relating to climate change reduction, although there can be tensions here in respect of the national strategy to increase the number and size of onshore wind farms as renewable energy generation capacity solutions. These tensions are addressed via process set out in planning legislation and in local/regional and national planning policy. The planning policies are also taken into consideration in cases involving the largest wind farms which are considered through the consenting process under electricity legislation. The Planning Authority is experienced in considering the potential impacts of proposed wind farms on peatlands, in Caithness and Sutherland and across the wider Highland area.

### Summary

The absence of primary legislation for World Heritage Sites in the UK means that the range of statutory designations and planning policies are those that afford legal protection for the features within Site boundaries. The designations are discussed in Section 5.3, but from National Planning Framework down to Local Plan level, the development plans that apply to the wider Flow Country area and The Flow Country proposed WHS are all positive in respect of affording protection, of various types, for the proposed WHS. Moreover, it is likely that NPF4 will increase that level of protection in light of the global climate and biodiversity emergencies.

There may always be challenges to the planning documents, and differing interpretations of phrases such as 'significant protection', but the array of policies to draw on is robust. Of particular significance is that the policies discussed above are *irrespective* of the statutory and non-statutory feature-based designations (e.g., SACs) that afford the legal protection that World Heritage relies on in the UK, and so cover the areas of the proposed property that are outside of these designations, and the setting.

## 5.3 Conservation designations

### Statutory designations

Approximately 73% of the site is afforded statutory protection through environmental designation, and the majority of this area by the highest levels of protection that UK law can provide. These designations are summarised below, listed in Table 5.1 and their extent is illustrated in Figure 5.1:

The following designations protect the *core criterion and integrity values* of The Flow Country OUV:

**Sites of Special Scientific Interest (SSSI)** are the bedrock of the UK environmental designation system and cover sites of biological and / or geological interest. There are 35 complete SSSIs within the proposed boundary and parts of a further six.

**Special Areas of Conservation (SAC)**<sup>57</sup> were originally designated via the Habitats Directive whilst the UK was still a member of the EU. The level of protection has been retained and they are now called European Sites and protected through UK domestic legislation. They cover important species and habitats, and there is one, very large SAC (with multiple component areas) within the proposed WHS boundary. Along with SPAs they provide the highest level of protection that the UK offers to a natural area.

**Special Protection Areas (SPA)** were also originally designated via the EU Birds Directive whilst the UK was still a member of the EU. As with SACs they are retained, also called European Sites and protected through UK domestic legislation. They cover specific habitats important for birds. As with the SAC, there is one SPA (with multiple component areas) within the proposed Site area and sharing the same boundary as the SAC.

**National Nature Reserves (NNR)** are areas of land set aside for nature, and include the best sites for wildlife, to promote their conservation and enjoyment. There is one NNR in the nominated property - Forsinard Flows - which is designated primarily for its peatland interests.

The following designation protects the *landscape value* of parts of the proposed Site, relevant for experience, presentation and setting:

**National Scenic Areas (NSA)** are a Scottish statutory designation for areas “of outstanding scenic value in a national context”. The designation’s purpose is both to identify the finest scenery through specific landscape qualities, and to ensure its protection from inappropriate development.

Although these are statutory designations, it is through the planning system set out above that protection is achieved. Any proposal for development is considered and tested in relation to its potential impact on any of these designations (even if the proposal is outwith the designated area), with all tests relating to the specific properties of the protected features. Certain designations also restrict types of permitted development within their areas. Each SSSI has a list of specific activities which NatureScot consider may cause damage to its special qualities. These activities are known as Operations Requiring Consent and they set out the parameters for permitted development within the SSSI.

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<sup>57</sup> In addition to national legislation, there are international obligations for safeguarding these sites through the Bern Convention, as components of the Emerald Network - <https://www.coe.int/en/web/bern-convention/emerald-network>

## International designations

**Ramsar Sites** are wetlands of international importance designated under the Ramsar Convention on Wetlands. The UK has ratified the Convention, but like World Heritage, this does not provide statutory protection per-se. “All Ramsar sites are also Natura 2000 sites and/or Sites of Special Scientific Interest and are protected under the relevant statutory regimes”<sup>58, 59</sup> so their protection is provided through the existing, underpinning, designations, in this case the SSSI and SAC/SPA designations, and then hence through the planning system (through Scottish Planning Policy). There is one Ramsar Site with multiple component parts within the proposed boundary, and the boundary matches that the SAC / SPA. The Ramsar Site helps to protect the core values of OUV at an international level.

## Non-statutory designations

There are additional important designations within/near the nominated property, all of which carry a degree of protection within the planning system.

**Wild Land Areas.** Large areas of Scotland, chiefly in the north and west, have semi-natural landscapes that show minimal signs of human influence. These may be mountains and moorland, undeveloped coastline, or peat bog, and they have distinct and special characters, which is increasingly rare, and therefore require protection. These areas are considered to be nationally important and are protected through the planning system. They cover close to 50% of the area of the proposed WHS.

**Local Landscape Areas** – LLAs – (formerly known as Special Landscape Areas) is a designation applied to regionally valuable landscapes to protect and enhance landscape qualities and promote their enjoyment. They are confirmed through the local development plan – and do not overlap with NSAs.

The following table summarises how these designations apply to the proposed WHS.

Table 5.1 Summary of the designations covering the nominated property

Designation	Purpose	Sites - Number and list	
A. Site of Special Scientific Interest (SSSI)	The notified features of interest for these designated SSSI as they relate to the WHS are Blanket bog; breeding bird assemblage; and several individual bird species, also included in the assemblages - dunlin, Eurasian greenshank, golden plover, common scoter, black-throated diver and wigeon; and the beetle <i>Oreodytes alpinus</i> .	<b>35 full sites:</b> Altnaharra A’Mhoine Bad na Gallaig Badanloch Bogs Ben Griams Ben Loyal Blar nam Faoileag Carn a’ Mhadaidh Cnoc an Alaskie, Coir’ an Eoin Coire na Beinne Mires Druim na Coibe Druim nam Bad	Rumsdale Peatlands Shielton Peatlands Skelpick Peatlands Skinsdale Peatlands Sletill Peatlands Strath Duchally Strathmore Peatlands Strathy Bogs Syre Peatlands Truderscaig West Borgie West Halladale West Strathnaver

<sup>58</sup> <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2020/12/scottish-planning-policy/documents/scottish-planning-policy/scottish-planning-policy/govscot%3Adocument/scottish-planning-policy.pdf?forceDownload=true> Para 211 also Natura Sites are now called European Sites

<sup>59</sup> <https://www.gov.scot/publications/implementation-of-scottish-government-policy-on-protecting-ramsar-sites/>

Designation	Purpose	Sites - Number and list	
		Dunbeath Peatlands East Halladale Forsinard Bogs Knockfin Heights Loch Caluim Flows Loch Meadie Peatlands Lochan Buidhe Mires Lon a' Chuil Mallart Oliclett	<b>7 sites partly included:</b> Armadale Gorge Ben Hope Ben Klibreck Morven and Scaraben Berriedale Water Langwell Water River Borgie
B. Special Area of Conservation (SAC)	Blanket bog, associated surface features, wet heath, transition mires and quaking bogs, otter, marsh saxifrage, dystrophic, oligotrophic and mesotrophic lochs.	1: Caithness and Sutherland Peatlands	
C. Special Protection Area (SPA)	Bird assemblage, specifically populations of Red-throated diver, Black-throated Diver, Hen harrier, Golden eagle, Merlin, Golden plover, Wood sandpiper, Short-eared owl, Dunlin, Common scoter, Greenshank and Wigeon.	1: Caithness and Sutherland Peatlands	
D. Ramsar Site for wetlands conservation	Blanket bog and wetland plants and animals under Criteria 1, 2, and 6. Supports one of the largest and most intact areas of blanket bog in the world; supports a number of rare species of wetland plants and animals; and holds internationally important population levels of Dunlin.	1: Caithness and Sutherland Peatlands	
E. National Nature Reserve (NNR)	Nature conservation and enjoyment of nature. Interest here is the blanket bog ecosystem and its wildlife, especially birds.	1: Forsinard Flows	
F. National Scenic Area (NSA)	Landscape, coastal and settlement – Kyle of Tongue presents: - An ever-present backdrop of mountains - The Kyle – a link from an inhabited coast to a wild, moorland - Scale, from domestic to monumental - The constantly changing character of the Kyle - Rich variety of coastal scenery - Distinct pattern of settlement	1: Kyle of Tongue	

Designation	Purpose	Sites - Number and list
G. Wild Land Areas	Wild Land Areas (WLAs) are the most extensive areas of high wildness. Large areas of Scotland – chiefly in the north and west – have largely semi-natural landscapes that show minimal signs of human influence. These may be mountains and moorland, undeveloped coastline or peat bog.	4: Ben Klibreck – Armine Forest, Causeymire – Knockfin Flows, Ben Hope – Ben Loyal, East Halladale Flows
H. Local Landscape Areas	Areas of high Local landscape value, but not covered by NSAs	5: Eriboll East and Whiten Head; Farr Bay, Strathy and Portskerra; The Flow Country and Berriedale Coast; Bens Griam and Loch Nan Clar; Ben Klibreck and Loch Choire;

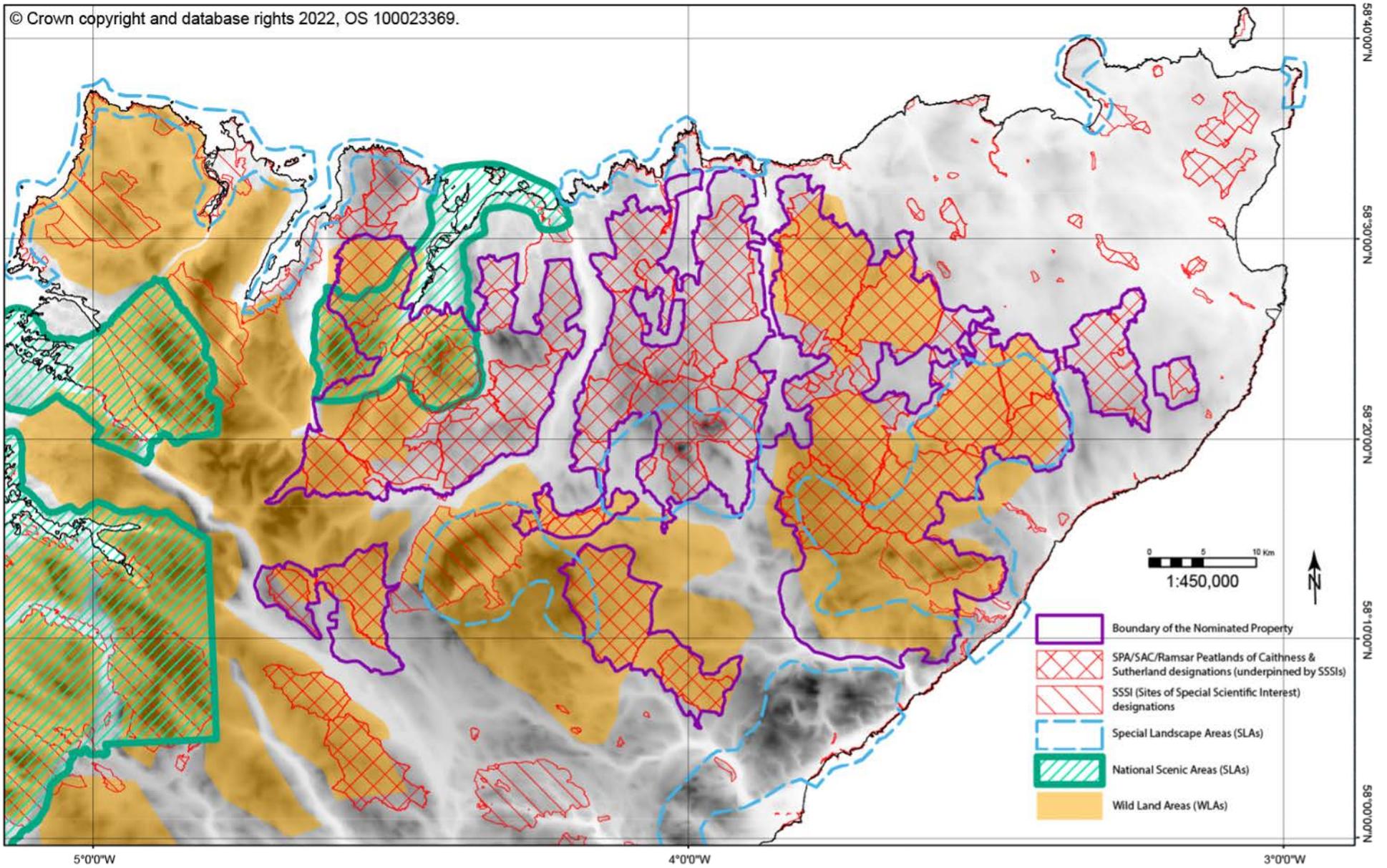


Figure 5.1 Map of the proposed Site boundary against the boundaries of the other designations discussed in this chapter.

## Historic environment

In addition to its natural qualities, the area of the nominated property is home to a high number of Scheduled Monuments<sup>60</sup>, as protected by the Historic Environment Scotland Act (2014). Whilst these are not part of OUV, they help to tell the story of human occupation of the nominated property and provide valuable insight into the changes that have been made over the last 8-10,000 years. It will also be important to ensure that any peatland restoration works take account of any Scheduled Monuments.

## 5.4 Summary

The protection of peatlands in Scotland has been transformed over the last 20 years and through designation and policy, currently affords a comprehensive range of approaches to safeguard OUV should the area be inscribed. Whilst there will always be concerns, particularly around complex issues such as non-designated areas or developments such as wind farms in the setting, the system is robust.

The Site is being proposed without a buffer zone, but with a comprehensive set of national and local planning policies that will provide effective protection to both Site and setting, and with extensive multi-layers statutory designations. The strive towards net zero and reversing the biodiversity emergency will also give added incentive to ensure the area is fully protected.

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<sup>60</sup> <https://www.historicenvironment.scot/advice-and-support/listing-scheduling-and-designations/scheduled-monuments/>

# Chapter 6: Issues affecting management of the proposed World Heritage Site

## 6.1 Introduction

This chapter reviews current and historical land management in and around the proposed Flow Country WHS and identifies the main threats, or challenges, and opportunities facing the OUV. Understanding these issues is key in promoting and carrying out sustainable land management that maintains and enhances the nationally and internationally important areas of peatland, the associated habitats and species, and the wide range of ecosystem services they provide.

Understanding these issues is also important when considering the area as a living landscape, impacted by people over the last 9,000 years during which the bog has been forming. Despite this human interaction – and there is nowhere in the world now that is not exposed to the impact of people – the proposed boundary area defines a fully functioning blanket bog landscape, and one that is, for the most part, in excellent condition.

Despite this, a number of threats for OUV and integrity exist, including forestry edge effects, conifer regeneration from woodland creation, drainage, grazing, trampling and wildfire damage. These are explored below and provide the backdrop to the policies that follow in Chapter 8. It is also important to consider that many of the challenges and opportunities discussed have their roots outside of the proposed Site boundary, and therefore provide context for the Site setting as set out in Chapter 3.

The issues discussed in this section are all interlinked, and together highlight the complexity of a landscape which has provided a resource for the communities that have lived there for generations and, for the most part, has retained its natural status. Traditional land-uses do not detract from the proposed Site's overall OUV. However, continued careful management has the potential to improve its condition, as any direct negative human influences will be reduced in scale and scope over time, in line with conservation aspirations<sup>61</sup>.

Whilst some areas still suffer negative effects from historical land management decisions, national and local policies and people's understanding of blanket bogs' importance are all moving firmly in the direction of an expanded and healthier Flow Country over the next 50-100 years. Key to this direction of travel is collaboration between public, private and third sector organisations, which is well reflected in the planned governance of the proposed Site (see Chapter 8). Within this wide partnership, landowners and tenants play an important role, and their influence – in the context of the regulatory framework in which they operate – will be significant. The discussion in this document is with this collaboration in mind.

The order of the issues is significant. The chapter starts with global climate change, which is outwith of the control of those having a role in Site management. The seven issues that follow are all potentially significant but are broadly in order of decreasing importance in respect of Site management.

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<sup>61</sup> The Conservation Advice Package for the SAC is available at <https://apps.snh.gov.uk/sitelink-api/v1/sites/8218/documents/66>

## 6.2 Climate change

### *Background*

Climate change is emerging as one of the key drivers of environmental change across Scotland. It is noted that Scotland's climate is moving from one of cool summers and mild winters, with rainfall throughout the year, to one with hotter, drier summers and warmer, wetter, winters, with more frequent extremes (Scotland's Environment, 2021). These changes will have a range of impacts, but most likely, and most problematic if the models hold true, is the drying out of the bogs through drier periods, and the commensurate reduction in bog growth.

### *Negative impacts on the Blanket Bog*

The Climate Vulnerability Index (CVI)<sup>62</sup> process was used in 2022 to provide a 'quick assessment' of the potential effects of climate change on The Flow Country. Eight key values were identified for the area, drawn from the attributes defined for the proposed site. Assessments of the current condition of these key values revealed that all were considered to be in good condition, although concerns for some values were raised regarding the effects of recent climatic related trends. By considering a standardised list of climate stressors used in the CVI process, those most likely to impact each key value were identified as the long-term trends in temperature and precipitation, which together also influence the risk of wildfire.

Environmental conditions considered ideal for bog formation are annual precipitation of at least 1000 mm spread over at least 160 wet days (> 1 mm), and average temperature in the warmest month less than 15°C. Historical values for the central Flow Country (1300 mm, 200 days and 12°C, respectively) indicate there is a good degree of buffer in the system and that climate risks to the key values from changing conditions are likely to be low in the medium term. However, regions towards the eastern extremities of the proposed Site may be more vulnerable due to their lower levels of precipitation.

The principal threat therefore is from drying. This will not only slow or stop peat accumulation but will also increase the risk of wildfire, both of which are dependent on upon the combined factors of temperature and precipitation. Drying would in turn impact upon the structure of the peat, through exposure. This not only harms the ecosystem and biodiversity but also accelerates the emission of stored carbon. If climatic conditions reach the point that blanket bog can no longer be sustained, in particular through the growth of *Sphagnum* mosses, then increasing levels of erosion through oxidation, physical removal of particulate peat and increased release of heavy metals, organic compounds and nutrients into watercourses can also be expected.

The release of huge quantities of carbon stored in the peat along with other greenhouse gas emissions would further accelerate climatic warming, and currently 20% of Scotland's carbon emissions currently come from degraded or damaged peatlands<sup>63</sup>. Scotland's peatlands contain c.1,620Mt of carbon<sup>64</sup>, and it is vital that any carbon loss is reduced, halted and reversed. WHS status for The Flow Country will allow it to become a powerful tool in promoting best practice in peatland management globally.

Climate change is also likely to affect the plants and animals found in the peatlands. For example, most of the characteristic bird species are normally northerly breeders near or at the southern edge of their range. They would, therefore, be expected to be particularly vulnerable to any changes in the climate. Changes to marine and coastal habitats as a result of climate change may also affect peatland species that use these areas for feeding.

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<sup>62</sup> See: <https://cvi-heritage.org/>

<sup>63</sup> Salisbury et al, (2015); Evans et al, (2017)

<sup>64</sup> [https://www.researchgate.net/publication/227790279\\_Carbon\\_stocks\\_in\\_Scottish\\_Peatlands](https://www.researchgate.net/publication/227790279_Carbon_stocks_in_Scottish_Peatlands)

Further negative impacts from the changing climate in respect of the peat could include a further increase in wildfires throughout the year; the movement of certain species into different climatic zones, including losses of those that cannot move sufficiently fast to be able to adapt to new conditions; and the agricultural intensification of marginal areas.

### *Management*

Good management of peatlands can, in itself, have a positive impact on climate change, ensuring that they act to their maximum capacity as a carbon sink. Balancing this, with other mitigation approaches, such as renewable energy developments will be critical over the coming years. Therefore, it is key to ensure that the peatland is in good condition, reducing the dangers of erosion and carbon loss from the system. A particular priority is to reduce any artificial drainage to help mitigate the predicted increase in summer drying and to reduce winter run-off. It will also be important to reduce areas of bare peat in order to decrease the likelihood of erosion.

### *Summary*

#### *Threats or challenges*

Threat to OUV is primarily from the potential for increased drying of the blanket bog. This may not only affect the fabric and structure of the bog, but also its biodiversity. Secondary impacts such as increases in wildfires and species' responses to changing climate are also potentially a problem.

#### *Opportunities*

It is difficult to see opportunities from anthropogenically induced climate change if the modelling<sup>65</sup> proves correct however, there is a window of time to accelerate the restoration opportunities through Scottish Government funding, developer funds or green finance. There are also significant opportunities in terms of education around the energy and climate change story, and WHS status for The Flow Country will allow it to become a powerful tool in promoting best practice in peatland management globally.

## 6.3 Plantation woodland creation

### *Background*

Plantation woodland creation is a complex and sometimes contentious issue. The Flow Country blanket bog ecosystem has evolved over the last 8,000 years to one largely devoid of large trees, with the main woody plants being *Betula nana* (dwarf birch) and *Pinus sylvestris* (Scots pine).

In the 1970s and 1980s, the UK government encouraged the draining of peatlands to establish plantations of mainly non-native conifer species, including Sitka spruce and lodgepole pine, for commercial wood production. This has contributed to what is a valuable part of the rural economy in the Highlands, with forestry providing important jobs and income for the region. However, in the Flow Country many of these plantations were established on peatland of similar quality to that subsequently designated as SSSI, leading to a direct negative impact on blanket bog and associated habitats.

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<sup>65</sup> There are a range of different models for this, not all of which agree with each other. This analysis will be developed more between nomination submission and inscription.

### *Impacts of woodland*

Commercial plantations in the Flow Country have a detrimental impact on underlying and adjacent peatland habitats and species, and on the carbon stored in the peat. In some instances, non-native trees are also regenerating from these plantations onto adjacent areas of open peatland, which will cause further damage. Regeneration occurs across land ownerships, and co-ordination is needed to ensure the resulting trees are removed as soon as possible and in the correct manner, so that both damage and costs can be minimised.

The establishment of commercial woodlands on peatlands has a major impact on the hydrology of these ecosystems. When conifer plantations are established on peatland the water level is lowered through drainage works, water extraction by tree roots and through the interception of rain and snow by growing trees. This causes the peat under and adjacent to the trees to dry out and subside. This, in turn, has a net overall negative impact on carbon sequestration, despite the growth of trees. Furthermore, woodlands established adjacent to the peatlands can harbour predators that can have a negative impact on bird populations, most notably on golden plover and dunlin.

### *Management*

In light of the understanding we now have of the significance of blanket bog, both for biodiversity and as a carbon store, there has been a shift away from forestry in the deep peat regions of the Flow Country, as laid out in the Highland Forest and Woodland Strategy (The Highland Council, 2018). There is a presumption against new planting on peatlands where peat depth is greater than 50cm<sup>66</sup>, and planting design should ensure long-term protection of deep peat areas. This policy, alongside the statutory protection given to the area post 1980s, means that there is no new commercial forestry being undertaken on protected blanket bog, nor on areas of deep peat (>50 cm) without statutory protection.

Restocking is also now not appropriate where the woodland is identified as having a significant negative impact on the European Sites (see Chapter 5), as described in Scottish Forestry's guidance to forest managers (Forestry Commission Scotland, 2015). There is also a presumption to restore as opposed to restock on deep peat where a site meets certain conditions<sup>67</sup> including adverse impact on functional connectivity of adjacent European Sites.

Any proposed new planting outside of the boundary, in the setting, will not be an issue unless it directly affects peatlands within the site, in which case it will most likely fall under the regulations surrounding SACs and SPAs. If the area in question is not a designated European Site, Ramsar, NNR or SSSI, Scottish Forestry will make a decision based on their policies and national guidance.

### *Peatland Restoration*

Since 2013, the Scottish Government has funded the Peatland ACTION<sup>68</sup> project which promotes and supports peatland restoration across Scotland. In February 2020, the Scottish Government committed a further £250 million funding for peatland restoration over the next 10 years. Restoring peatlands is one of the most effective ways of ensuring that the carbon they store is not released, and that they continue to draw down CO<sub>2</sub> from the atmosphere. Restoration of bog offers a clear nature-based solution to both the climate crisis and biodiversity loss helping the UK and Scottish Governments reach net zero.

Whilst there are currently some issues with upscaling restoration, related to the availability of the appropriately skilled workforce, these are being addressed and restoration is seen as part of a new growth of skilled nature-based industries.

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<sup>66</sup> <https://forestry.gov.scot/news-releases/forestry-action-to-protect-peatlands>  
<https://forestry.gov.scot/publications/1-deciding-future-management-options-for-afforested-deep-peatland/viewdocument/1>  
<https://forestry.gov.scot/forests-environment/soil-and-water-management>

<sup>67</sup> Conditions set out in: <https://forestry.gov.scot/publications/1-deciding-future-management-options-for-afforested-deep-peatland/viewdocument/1>

<sup>68</sup> See: <https://www.nature.scot/climate-change/nature-based-solutions/peatland-action-project>

This will become increasingly important and complex as the carbon offsetting market grows and may include significant employment opportunities in both site monitoring and management. There are areas within the proposed boundary that still retain commercial forestry, but for those planted on blanket bog there are now clear pathways to peatland restoration in the medium term.

## Summary

### *Threats or challenges*

The threats to blanket bog from existing commercial woodlands include the damage caused during establishment, the ongoing uptake of water from the trees, the impact on blanket bog biodiversity, notably on important bird species. An additional challenge is the natural regeneration of non-native tree species adjacent to forested areas, and in some poorly restored parcels of bog where post restoration maintenance has been neglected. There will be no new commercial woodland creation within the proposed boundary, and over time, it is likely that due to increasingly pro-peat and protected area policy, all restocking of peatland within the boundary will eventually stop.

### *Opportunities*

The rate and quality of restoration is increasing and with more investment and the heightened recognition of the natural value of the blanket bog, this will almost certainly continue to accelerate. World Heritage status would provide further impetus. This will lead to both improved ecosystem health and an increase in skills and awareness across the Highlands. There is also an opportunity for natural regeneration of native woodland alongside burns (small streams) in small, incised valleys and more marginal settings that exist within the boundary, which are important for biodiversity.

## 6.4 Deer, livestock and game management

### *Deer and game*

Grazing by herbivores has always been part of the Flow Country peatland ecosystem. Within the last 5-8,000 years, this would have included aurochs, wild horses and deer, each favouring their own part of the ecosystem. There is still some livestock grazing now but deer dominate.

Primarily managed for sport, the presence and behaviours of deer are part of the natural processes of the area, and the lack of an apex predator means that management is required to control the populations. Much of the open ground in the peatlands is managed for deer stalking, with a significant proportion being in the ownership of a small number of large estates. Whilst not of major significance it is useful to note that the different types of deer are Red, Roe and Sika, with Red being in the majority. Whilst they all affect the ecosystem slightly differently, it is more the impact of large numbers that can cause problems.

Deer management is undertaken by individual landowners and is coordinated by the area Deer Management Groups (DMGs). There was a rise in deer numbers from the 1960s to the 1980s. During this period, the traditional deer range was reduced with the widespread afforestation, and concomitant fencing, of the 1970s and 1980s and the associated fences to protect the young trees. Some estates have made significant efforts to reduce deer numbers, but densities remain high over much of the area.

The main issues that arise from deer, livestock and game management include grazing, trampling and some elements of management practices, such as all-terrain vehicle (ATV) use. These issues are outlined below.

### *Grouse moor management*

Grouse shooting is restricted to the east of the proposed WHS. In terms of issues, the challenge is associated more with the associated muirburn and ATV use than the trampling and overgrazing that is associated with deer.

### *Grazing*

Due to slow vegetation growth and poor nutritional quality, blanket bogs can only support low densities of grazing animals. Sheep and deer have been active grazers, in recent years, on most of the designated peatlands, with the impacts of the two being difficult to distinguish. However, sheep numbers on peatland have reduced significantly over the past 15 years, with stock largely kept on better 'in-bye' ground.

Cattle grazing takes place on a few areas at the peatland margins, and limited summer cattle grazing can be beneficial to biodiversity by creating a more diverse vegetation structure, which in turn can benefit moorland birds and other wildlife. However, cattle grazing has to be carefully managed as it can lead to excessive trampling and the erosion of the fragile peat soils.

Deer have moved into the vacuum left by sheep on open ground and the increased availability of artificial feeding provided by land managers has led to higher deer productivity, exacerbating problems of grazing and trampling.

### *Trampling*

Trampling can have a more significant impact than grazing, particularly in the wetter areas, as grazing is only attractive in these areas for a short period during the early winter and spring. Excessive trampling can damage and kill off bog mosses and other plants leaving bare peat. Deer fencing can form a focus for this problem when it channels or re-directs deer movements. Where pools and wetter areas lie adjacent to fences, trampling damage can be more severe. Overgrazing and excessive trampling can both lead to erosion with the slow growth of vegetation, with the cool wet climate slowing or preventing vegetation recovery.

### *ATV use*

Alongside the impact of deer and livestock, some elements of associated management practices can also damage the peatlands. The use of all-terrain vehicles (ATVs) and quad bikes, which are now seen as an essential tool for both sporting and agricultural work, can damage the fragile plant communities. Recovery of the damaged ground can either be very slow, or result in active erosion of the soil, or both. Whilst the scale of this is very small overall, it is an issue that needs collaboration and a consensus on the approach taken to be agreed.

### *Management*

In light of the issues outlined above, landowners and managers, public bodies and conservation organisations are now working together at a national level to promote and deliver sustainable deer management, which can provide a range of benefits, including healthy ecosystems. This is expressed as a vision, with priorities for future work, in the 2014 policy document 'Scotland's Wild Deer, a National Approach, Including 2015-2020 priorities' (Scottish Government, 2014). Part of this process has involved a national Deer Working Group<sup>69</sup>, which has resulted in a set of recommendations for change, including: creating new, modernised Deer Management legislation; giving stronger regulatory powers to NatureScot; creating a new code of practice and a new series of best practice guidance notes.

Deer Management Groups (DMG) have also been established as forums for Government agencies, conservation organisations and land managers to discuss and address the issues highlighted supported by evidence on habitat condition monitoring and deer numbers. There is a recognition that DMGs need to engage wider community interests in their work and deliver public benefits such as contributing to the management of areas of countryside, that are not protected, to improve their condition.

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<sup>69</sup> This link sets out recommendations of the national Deer Working Group: <https://www.gov.scot/publications/deer-working-group-recommendations-scottish-government-response/>

Deer numbers are monitored across the peatlands, but to get an accurate figure is difficult because they are widely dispersed over a large area. There is now more emphasis on analysing trends, rather than absolute numbers, and monitoring the impacts of deer and other grazing animals on habitats. Best practice guidance has been developed to enable deer managers to carry out Habitat Impact Assessments using a standardised monitoring methodology<sup>70</sup>.

Drier parts of the moorland in the east of the Flow Country peatlands are managed for grouse, although this is restricted in extent, including, in recent years, through reductions in numbers. A range of factors have led to this, including changes in land use and burning practice. The most significant issue for the Site is the practice of muirburn and this is considered in section 6.5.

## Summary

### *Threats or challenges*

The challenges within the proposed boundary are mostly from excessive grazing and trampling, and to a lesser extent from ATV use and grouse management. The latter activity is linked to vegetation burning (see 6.5). These risks are recognised and acknowledged by land managers and are being addressed through multi-stakeholder initiatives.

### *Opportunities*

Increased collaboration between landowners and managers, public bodies and conservation organisations has led to improved understanding of the importance of the blanket bog and the issues that affect it. The development of the management plan for the World Heritage Site provides the opportunity to continue and expand engagement with landowners, residents and visitors and to address the issues identified. There is great potential to review the effective use of in-bye land for domesticated stock, and evidence-based methods for the reduction of negative impacts from deer. It should also be acknowledged that appropriate levels of grazing are important in maintaining certain habitats and reducing the spread of conifer regeneration originating from plantations.

## 6.5 Burning and wildfire

### *Background*

‘Muirburn’ is the name given in Scotland to the land management practice of burning moorland, including peatland, to promote new vegetation growth and so increase the amount and quality of food available for livestock, deer or grouse. Muirburn is declining, and at the same time, wildfires have become an increasing concern across rural Scotland, with a general increase in the number of recorded fires year on year. Four times as many wildfires were recorded during 2018 compared to the number recorded in 2017, which also saw an increase on the year before. It is unclear whether there is a link between the reduction of muirburn and the increase in wildfires, or if the increase is due to other factors, such as the influence of dryer periods caused by climate change.

### *Muirburn*

The Muirburn Code (Scottish Natural Heritage, 2017) discourages muirburn on peatlands, including blanket bog, unless it is part of an agreed peatland restoration project. However, problems can arise when extensive and less well-controlled burns encroach into areas of blanket bog. Such damage has occurred in recent years within the proposed boundary, and the Muirburn Code needs to be followed to help ensure that no further damage occurs. On SSSIs muirburn is subject to consultation as an ‘Operation Requiring Consent’. On any land, burning outwith the statutory muirburn season currently requires a licence from NatureScot. Scottish Government plans to enhance the monitoring and regulation of muirburn and to introduce a licensing regime for all muirburn.

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<sup>70</sup> Methodology found at: <https://bestpracticeguides.org.uk/impacts/>

Muirburn, other than that on the more intensively managed grouse moors which do not occur in The Flow Country, is generally carried out less regularly now than in the past, as the number of people with expertise has fallen and the requirement for stock management has reduced. The resultant tall leggy heather and purple moor grass litter can lead to fires spreading more quickly over larger areas than intended. Some habitats are extremely sensitive to burning and many of the rare and sensitive plants and animals found in peatlands cannot survive frequent fires or fires that eliminate them entirely from their specialised range. However, there are conflicting views as to whether burning would reduce or maintain biodiversity levels, something which is most likely to depend on the expertise and practices of those undertaking it. It is clear though, that poorly managed muirburn can lead to habitat degradation and erosion.

### Wildfire

Wildfires can be caused deliberately by wilful fire raising or through carelessness e.g., via sparks from unmanaged garden fires, campfires and barbecues, residual heat from unextinguished bonfires, casually discarded litter including glass bottles and cigarette butts, or by inappropriate or badly managed muirburn. They are particularly concerning on drier peatland because the fires can smoulder within the peat long after they are thought to have been extinguished.

Wildfires can cause significant damage to biodiversity as well as agricultural, forestry, recreational and sporting interests and can threaten infrastructure, property and life. There are significant costs and risks to firefighting and disruption to communities and transport during the event. They release carbon dioxide; damage the capacity of peatlands to sequester carbon and the smoke produced can affect human health.

### Management

Muirburn is regulated by legislation and guided by the Muirburn Code (Scottish Natural Heritage, 2017). It aims to ensure that when Muirburn is carried out, it is in the right place, avoids damage to sensitive habitats and ecosystem, and does not lead to wildfire.

The Environmental Research Institute (ERI) is developing Earth Observation techniques to assess fires that have taken place. Research has shown that wetter, intact bogs, were less affected and should recover sooner than drained or otherwise damaged bogs. This research has concluded that not only will peatland restoration efforts lock up more carbon, but they will also help to limit the amount of carbon released during wildfire events (Andersen *et al.* 2021).

The Scottish Wildfire Forum aims to raise awareness of the work being undertaken across Scotland in relation to minimising the impacts of wildfire and is working with the Scottish Fire and Rescue Service (SFRS) to develop training for land managers in wildfire response. The SFRS has a Community Asset Register on its website, where people can register equipment and skilled practitioners who could help with a wildfire. The creation of local fire partnerships and plans could also help SFRS and individual estates to access additional equipment and personnel to jointly tackle wildfires on the peatlands.

## Summary

### Threats or challenges

Muirburn is a reducing challenge for the proposed Site as the practice is slowing, and the Muirburn Code clearly lays out that bogs and protected areas should be avoided. However, the threat from wildfires is increasing with a changing climate, increased levels of visitors, and the limited resources available to manage planned muirburn.

### Opportunities

There is a significant opportunity for education in respect of burning. World Heritage status will bring a renewed profile to the bogs and will support the encouragement of alternative, and collaborative, means of management for areas affected. It will also give greater impetus to encourage education about the dangers of wildfires.

## 6.6 Agriculture

### *Background*

The decline of sheep farming means that agriculture is currently active on very little of the proposed WHS, largely comprising small areas utilised as hill or rough grazing<sup>71</sup>. However, croft land (crofting is a form of land tenure usually defined by small scale food production) and larger farms border the peatlands throughout the wider region, and these provide important feeding habitat for many of the bird species found in the Flow Country. Crofting tenure predominates in the north and west, coexisting with large sporting estates and larger farms are found in the fertile straths, and to the east on the plains of Caithness.

Recent years have seen a reduction in the number of active crofters, with a few running a greater number of holdings in some areas. The financial support schemes for crofters have changed significantly over the past 5-10 years and may yet change again following the exit of the UK from the European Union. Any future scheme must now consider the area more strongly in terms of protection of the peatland, for both biodiversity and helping the nation meet net zero targets.

The key threats to The Flow Country through agricultural practices are historic drainage, in-bye<sup>72</sup> management and stock management. The latter activity was outlined in section 6.3 and will therefore not be repeated here.

### *Drainage*

Through the 1950s and 1960s, financial incentives were provided for the draining of agricultural land, as part of a post-war policy to promote food production. Whilst there was considerable uptake, in reality, these drains did little to improve agricultural output in most areas of the peatlands, and they are detrimental to the nature conservation interest and to water quality and storage.

Drains affected over half of the designated part of the proposed site, with 22% of the area seriously affected. Typically, damage is caused by the lowering of the water table, slumping of the peat and a slowing or halting of peat formation. The resultant drying of the peat can also reduce the number of invertebrates, which in itself has a knock-on effect on birds and other species.

Although this impact may seem severe and extensive, it does not mean that the proposed Site does not demonstrate OUV. Blanket bog is both resilient and once rewetted is able to bounce back to a natural state relatively quickly; indeed, many drains on very flat ground are infilling naturally, without intervention. Moreover, the areas affected by drains show a spectrum of degradation from places with minimal impact to those with severe erosion, the latter being in the minority.

Unrestored drains dug on the gentlest of gradients are gradually naturally infilling, but on steeper slopes, some drains have experienced erosive scouring due to increased flow, which has increased their size and capacity. The silt carried into streams and rivers by these drains may also have negative effects on fisheries and on drinking water supplies. Periods of high rainfall exacerbate the problems of erosion and lead to increased flows in adjacent watercourses.

Restoration through drain blocking has been undertaken across extensive areas of the Flow Country and there is great potential for this to be extended further. Alongside government funded restoration, the potential for green finance to play a major role in the area is beginning to be realised and is discussed in Section 6.10.

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<sup>71</sup> Definition of 'active' to be confirmed with RPID

<sup>72</sup> See <https://www.ruralpayments.org/topics/all-schemes/agri-environment-climate-scheme/management-options-and-capital-items/organic-farming--conversion/guidance-for-organic-farming/organic-description-of-land-categories/>

### *In-bye management*

A further opportunity augmented by the proposed World Heritage Site is for improvement of management practices for in-bye land. This can play an important role in supporting many of the bird populations that inhabit the peatlands. Species making use of farmland close to the peatlands include dunlin, golden plover, snipe, curlew, hen harrier, short-eared owl, merlin, greylag goose and lapwing. Active management is needed to ensure the conditions are right to provide plenty of food and, for some species, nesting sites. Further interaction with crofters to help farm in a way that is better for nature is something that is being supported at a national level.

## **Summary**

### *Threats or challenges*

The threats from agriculture currently practiced in the region have reduced significantly in recent years. The biggest existing pressure for the bog is the historic, and as yet unrestored, drains, with their corresponding negative impacts on the blanket bog habitat and the associated flora and fauna.

### *Opportunities*

The biggest opportunity to improve the already strong OUV is the ongoing national campaign aiming to protect and restore Scottish peatlands. The next 10-15 years will see a significant increase in funding to restore those areas most affected. In the case of the proposed Site, a new initiative linked with carbon credits and landscape finance should be able to further accelerate the restoration process. Also providing an opportunity to support the OUV of The Flow Country is the improvement of in-bye land for use by bird species through agri-environment schemes that would strengthen their populations.

## **6.7 Wind farms and national or major developments**

### *Background*

The issue of renewable energy generation is complex in respect of peatlands. There is a clear policy from the Scottish Government to increase the amount of onshore wind turbines to move towards net zero by 2050. It states that ‘Scotland will continue to need more onshore wind development and capacity, in locations across our landscapes where it can be accommodated<sup>73</sup>.’ Moreover, in 2019 The Highland Council declared a climate and ecological emergency with an aspiration to meet net zero emissions by 2025.

The wind regimes of Caithness and Sutherland combined with low population densities, proximity to electricity grid and availability of grid capacity make the area particularly attractive to developers, and a significant number of wind farms have been developed or consented to in the region. However, no wind farms exist within the designated peatlands of Caithness and Sutherland, or within the proposed WHS boundary. Nonetheless, the potential negative impact of wind farms on peatlands, particularly where adjacent to the proposed site should be considered, hence this section.

Other potential types of national and major developments that may negatively impact the WHS include hydroelectric schemes and a satellite launch facility. Both are discussed here.

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<sup>73</sup> Source: <https://consult.gov.scot/energy-and-climate-change-directorate/onshore-wind-policy-statement-refresh-2021/>

## Wind farms

The following list identifies a number of potential challenges to the peatland and blanket bog from wind farm (and most other) developments that would need to be assessed and managed in any development project:

- Habitat loss, damage or fragmentation and impacts on species either through land take, hydrological disruption (during construction or decommissioning), through peat slides, or when infrastructure is renewed in the future;
- CO<sub>2</sub> emissions from peat disturbance both during and after construction;
- Displacement of birds if they avoid wind farms due to turbine operation / visitor disturbance or are deterred from using their normal routes to feeding and roosting grounds, which can have implications for their energy consumption and lead to a collision risk with turbines;
- Impacts on deer welfare, habitats (including potential for grazing and trampling damage elsewhere if deer are displaced), and other interests (e.g., impact of displaced deer on any nearby access and recreation areas);
- Risk of concentrations of suspended solids or contaminants entering watercourses during construction, during operation or as a result of a peat slide;
- Risk of monitoring and management not being maintained on restored peatland areas agreed as mitigation for development impacts;
- Potential impacts on landscape, archaeological and historic sites, and on access and recreation.

The level of impact would depend on the location, design and management of the wind farm development. The cumulative impact of wind farms on, habitats, species and wider ecosystems now also has the potential to be a significant issue for the wider Flow Country.

The siting and design of wind farms has to be mindful of peatland resources, which vary in quality. However, successful co-existence can bring about not only renewable energy generation benefits, but also specific peatland restoration opportunities, which taken together are aimed at combating the global Climate Emergency. For example, new wind farm schemes are being established that will remove commercial woodland and restore the peat in all but the specific areas where the turbines and access roads are sited.

## Management of Windfarm Developments

Appropriately sited wind farm development provides an opportunity to implement habitat management and peatland restoration and wind farms can provide a source of finance to support the restoration of degraded habitats. Environmental Impact Assessments, Habitat Management Plans and Construction Environment Management Plans are all tools that can help to substantially reduce negative impacts of wind farms. However, if wind farms are constructed on peatland or bog in good condition, development would still cause a negative impact; any negative impact on OUV in one part of the nominated property would be seen as a negative impact on OUV of the whole property.

Scottish Planning Policy (SPP) gives guidance for identifying where wind farm developments are likely to be appropriate<sup>74</sup>. National Parks and National Scenic Areas are in Group 1, in which wind farm developments are not acceptable, and World Heritage Sites, Ramsar Sites, SACs, SPAs, SSSIs, NNRs, Wild Land Areas and areas of deep peat are in Group 2, which are 'areas of significant protection'. The policy states:

*Recognising the need for significant protection, in these areas wind farms may be appropriate in some circumstances. Further consideration will be required to demonstrate that any significant effects on the qualities of these areas can be substantially overcome by siting, design or other mitigation*

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<sup>74</sup> SPP (2014)

Whilst this does not preclude wind farm developments within the nominated property boundary, it significantly raises the bar which developers will need to pass for them to be allowed to progress, with OUV being used to define the ‘qualities’ of the area chosen.

SPP also states in relation to all types of development that ‘Where peat and other carbon rich soils are present, applicants should assess the likely effects of development on carbon dioxide (CO<sub>2</sub>) emissions. Where peatland is drained or otherwise disturbed, there is liable to be a release of CO<sub>2</sub> to the atmosphere. Developments should aim to minimise this release.’<sup>75</sup>

In addition, The Highland Council has robust planning policies set out in the Local Development Plan (2012) and further elaborated on in the Onshore Wind Energy Supplementary Guidance (Highland Council 2016 and 2017). There is a presumption against the disturbance, degradation or erosion of peat, and construction environmental management and other natural environment factors are addressed.

In essence, the challenges from new wind turbine arrays for the proposed Site are low, even if a development were proposed to replace commercial woodland. However, whilst the blanket bog itself will be largely unthreatened, there are potential negative impacts to the bird populations that inhabit the peatlands from wind farms adjacent to the proposed Site. There is currently insufficient evidence with respect to the cumulative impact of multiple wind farms on bird populations, and research supported by The Flow Country World Heritage Project is currently under way in this regard.

Although the Site is not being proposed for its natural beauty (UNESCO WH criterion vii), the visual impact of wind farm developments needs to be considered as this can be relevant for the way people experience the Site in respect to its setting. The Outstanding Universal Value of the peatlands is not just in the value of the individual areas, but also in the way in which it is experienced and understood. In terms of the setting, whether or not large schemes are a threat to the way the Site is experienced and presented will need further exploration.

### *Hydroelectric Schemes*

Other potential developments in the region include small-scale hydroelectric power schemes on rivers, for which there is renewed interest, with several schemes having consent in the west of Sutherland (Highland Council, 2018). As well as potential water quality issues, there may be impacts from access tracks and pipe installation. These will be considered on a case-by-case basis and are likely, but not necessarily, to be outside of the Site itself.

### *Satellite Launch Station*

There is currently a consented proposal to erect a satellite launch station on the Melness Crofters Estate on A’Mhoine peninsula, North Sutherland. Launch related infrastructure will include a control centre, 2.5 km of road and a launch pad, occupying a total of just over 4 hectares of a 300ha peatland site. This project has already received planning approval from The Highland Council and is outside of the proposed boundary due to the poorer quality of the peatland habitat, but it is clearly within the setting.

## **Summary**

### *Threats or challenges*

Potential negative impacts on the blanket bog within the proposed boundary from major new developments are low. However, there is potential for a greater impact on bird populations, and the way the Site is experienced, should the numbers of wind farms, or other developments, increase around the peatlands.

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<sup>75</sup> <https://consult.gov.scot/energy-and-climate-change-directorate/onshore-wind-policy-statement-refresh-2021/>

## Opportunities

The principal opportunities from development schemes that do progress are through leveraging developer funds to undertake peatland restoration and species recovery within, and adjacent to the proposed World Heritage Site area or in the setting. There are also significant opportunities in terms of education around energy production and combatting climate change, one that is well exemplified by the adjacency of renewable energy developments and blanket bogs.

## 6.8 Visitor management

### Background

The influx of visitors to the North Highlands through very successful marketing campaigns such as the North Coast 500 (a motor touring route around the north coast of Scotland) has brought much needed income and jobs to the area, but this has not been without its challenges to both local services and fragile ecosystems such as the peatlands. Although there had been steady growth in tourism until 2019, the reopening of tourism following the COVID-19 travel restrictions brought a change to the market, most notably an emphasis on domestic visitors with many choosing to come by motorhome or camping in tents – in part as this allowed them to stay away from other visitors. While some of this change may gradually be reversed as overseas travel resumes popularity, there has been a marked increase in motorhome ownership that suggests the numbers visiting in this way will continue to stay high. While the vast majority of those visitors will behave responsibly, the sheer volume allied to inappropriate behaviour by some does create some pressures on rural destinations notably:

- Many roads in Caithness and Sutherland, including most crossing the Flow Country, are single track with passing places and the increased use by larger vehicles (particularly modern motorhomes) causes road edge and verge / vegetation damage as vehicles sometimes pass without using formal passing places
- Increased numbers “wild” camping in tents or informally overnighting in motorhomes causes erosion of some sites, particularly as the same sites can often be used night after night (a number of online sites and social media groups actively promote the same selection of sites)
- Lack of toilet facilities at some of these locations has led to indiscriminate toileting / human waste issues
- Both tent and motorhome campers not using formal sites still generate rubbish. Much of this is left in or alongside roadside bins which in rural areas are not emptied as frequently. This can lead to animal activity and weather spreading litter around the area.

### Management

Visitor numbers are expected to continue to increase, particularly if the area becomes a World Heritage Site. It is therefore important to provide facilities for visitors and to educate everyone to appreciate and look after the places they visit. It is also important to encourage visitors to visit the area for the sustainable reasons e.g., to appreciate the unique landscape, wildlife and culture of the Flow Country.

Some improved infrastructure is required, such as enlarged parking areas at locations likely to receive more visitors or provision of public toilets in an area that currently has very limited provision, and some of this is already happening. A team of Access rangers has been employed since 2021, building on the work of existing ranger services, to educate and inform visitors about appropriate responsible behaviour. Currently, the Access rangers are focusing on existing hotspot areas experiencing the most significant pressures.

World Heritage Site inscription would likely increase visitor numbers to the extent that additional patrols would be needed to cover The Flow Country. Some one-off infrastructure provision such as additional parking could be provided relatively easily with funding support, but it is recognised that the sensitive nature of the location would require appropriate designs and materials. Other services to help cater for and manage visitors such as the operation of public toilets, additional waste collections or access ranger patrols have ongoing revenue costs that would require

consideration. A sensitive and appropriate increase in visitation could lead to an increase in employment and sustainable economic growth.

## Summary

### *Threats or challenges*

The threats to the proposed Site from tourism are real, but likely to remain relatively low for the foreseeable future, and hopefully for ever. The area is relatively isolated and has limited visitor infrastructure, even to cope with the influx of motorhomes along the NC500. Despite this, the potential impact from tourism, particularly in the context of accidental wildfires is likely to be on a localised basis.

### *Opportunities*

Despite the challenges, the opportunities that could come out of World Heritage Status from careful, responsible, slow and even regenerative tourism could be proportionally important for the area. There is potential for high value input into the local economy if promotion of World Heritage status is handled well over the initial 5-10 years.

## 6.9 Water catchment management

### *Background*

Water is fundamental to a high-quality blanket bog, so its properties within the catchments are of critical importance. Erosion, water-table levels and the potential impact of climate change has been mentioned elsewhere so this section is focused on the biodiversity in respect of water.

The peatlands of the Flow Country cover a vast swathe of Caithness and Sutherland and their management influences the water quality in burns, rivers and lochs both within the peatlands and throughout their entire catchments. This, in turn, affects the biodiversity and ecosystem health of the blanket bog, and hence the OUV of the proposed Site. In particular, there is an intimate link between management of the peatlands and fisheries. Fish spawning areas and juvenile habitats are often found in the smaller tributaries of the peatlands, and care needs to be taken to ensure their protection.

### *Fish and fishing*

Atlantic salmon, sea trout and brown trout are important species, not just for a thriving ecosystem but also to the economy of the area. Atlantic salmon and sea trout populations have declined markedly through most of their ranges over recent decades, due to a combination of factors including higher mortality at sea and changes in land and river management. Populations have, however, remained healthy over much of north and east of Caithness and Sutherland. This is perhaps in part due to the naturally high productivity of the rivers, resulting from the underlying geology. The Rivers Thurso, Borgie and Naver have their origins in the blanket bogs of Caithness and Sutherland and are all designated SACs for nature conservation interests that include Atlantic salmon, and for the latter two rivers, freshwater pearl mussel populations.

Brown trout are found in lochs and rivers across the area and include the important Crocach trout in the rivers and lochs which drain into Loch Hope. Brown trout populations are generally healthy and reflect the productivity of the waters – high productivity in areas where carbonate rich lithologies<sup>76</sup> feature in the geology, and low where peat predominates in dubh lochans, limiting the influence of the underlying bedrock.

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<sup>76</sup> Such as the Caithness Flagstones

### *Management of fish and mussels*

Negative pressures on the fish and mussel populations are only moderate currently, mainly from angling, overstocking of brown trout and the impacts of silt transport from deep and eroding drainage ditches. Lowering of the water table may also have an impact in terms of groundwater retention and burn feeding, but these are likely to be minor.

## **Summary**

### *Threats or challenges*

The threats to water catchments and fisheries, and the associated OUV, essentially relate to the overall health of the Flow Country peatlands, and perhaps more specifically to the effect of drainage ditches within the catchments. Climate change is the biggest direct threat, in that hot, dry summers have resulted in very low water levels in some Flow Country rivers putting strain on some species populations.

### *Opportunities*

Restoration of the peatlands through blocking drains and removing commercial forestry is the biggest opportunity for gains to OUV.

## **6.10 Other issues**

### *Peat cutting*

Peat cutting for domestic fuel is a long-standing traditional practice in the Flow Country, and more widely across Scotland, governed by Turbary rights<sup>77</sup>. However, it is much less intensive than it once was, and now only affects a few areas on the fringes of the bog, as part of crofts or adjacent to in-bye areas. On designated peatland domestic peat cutting is subject to discussion and approval under SSSI procedures. No commercial peat cutting for fuel, horticulture or whisky production takes place within the European designated area, and because of the small-scale nature of domestic use, peat cutting is not seen as a significant risk to the proposed WHS.

### *Land tenure*

As introduced in Chapter 2, the majority of the proposed Site is in private ownership. Landowners and managers were contacted as part of the 2019 and 2022 public consultation exercises and the overwhelming majority of those who responded are supportive of the bid. Many private owners are represented by Scottish Land & Estates (SLE) who sit on the stakeholder Partnership. SLE is a membership organisation for landowners, rural businesses, and rural professionals, and have developed a series of commitments to which members subscribe, setting out the principles and responsibilities of modern land ownership<sup>78</sup>. They have also instigated a Wildlife Estates Scotland initiative<sup>79</sup> in line with principles of the EU Wildlife Estates label, in which members commit to agreed standards of management which are compatible with maintaining the interests of areas of blanket bog and other important natural habitats.

About 12% of the proposed Site (23,000ha) is owned by RSPB Scotland and Plantlife Scotland. They have management Plans that focus heavily on peatland restoration and management, thus enhancing OUV. Both organisations liaise and engage with local communities regarding reserve management.

The complexities of land ownership in the Flow Country are challenging but not a threat. The approach towards peatland management has changed for the better in the last 30 years and although there are likely to be some continuing issues, the structures are in place to resolve problems that are encountered. Having an engaged and

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<sup>77</sup> Turbary is the ancient right to cut turf, or peat, for fuel on a particular area of bog (<https://en.wikipedia.org/wiki/Turbary>)

<sup>78</sup> <https://www.scottishlandandestates.co.uk/about-us/landowners-commitment>

<sup>79</sup> <https://www.scottishlandandestates.co.uk/wildlife-estates-scotland>

supportive group of landowners is seen as an opportunity and current movements towards green finance will incentivise their engagement.

As set out in the introduction to this chapter, the involvement of landowners, and their representative body (Scottish Land and Estates), in the wider stakeholder partnership, which is responsible for overseeing the proposed WHS, is critical. Moreover, the process of compiling the Nomination Dossier for World Heritage status has provided opportunities to engage more strongly than ever before with landowners across the region.

### *Carbon markets and green finance*

There is increasing interest in The Flow Country, and natural space in Scotland more widely, in respect of the carbon trading market or cryptocurrencies; particularly NFT<sup>80</sup>s. Corporations are starting to buy land for carbon off-setting, trading or to 'land bank' areas for this purpose in the future. Whilst it is in its infancy, there is no oversight of the management of acquired land, although trading on the voluntary carbon markets is governed by a number of verification schemes.

In relation to peatland, the situation is complex in that currently it can only be the recipient of carbon-related funds if the land is degraded and under restoration<sup>81</sup>, rather than under effective stewardship or management. Moreover, the system is such that land needs to be of a certain size in order for it to benefit from the schemes, leaving the many smaller landowners locked out. Land holding and tenure adds further complexity.

The Flow Country blanket bog stores over 400M tonnes of carbon and is therefore attractive for investment as part of efforts to reach NetZero. It is too early to say how any of this may affect the proposed World Heritage Site but work in these areas is being led by the Flow Country Partnership that will also have a significant role in the management of the Site in the long term. This work aims to establish a highly ethical, locally managed and transparent carbon investment proposition for the landscape that secures large-scale peatland restoration alongside wider biodiversity, local community and economic benefits. Ensuring and maintaining active carbon sequestration and maintaining carbon storage in the blanket bog will protect the OUV and is therefore considered more positive than negative for the WHS, but only if managed well.

### *Site growth and capacity building*

One significant opportunity is in terms of the potential for Site growth. Around 73% of the proposed boundary area is within designated areas (see Chapter 6), and the issues above notwithstanding, is for the most part in good and improving condition. However, with increasing restoration incentives from government and green finance, there is scope for a wider area of more degraded peatland to be effectively restored and potentially gain designated status, and over a 25+ year timescale be proposed for inclusion in the WHS area, should the site be inscribed.

Subject to public consultation, it is hoped that The Flow Country World Heritage Site could become one of the few in the world that may be able to expand. This will only be in areas of blanket bog that are shown to be on track to reverting to a natural ecosystem, and that meet OUV.

Finally, there are also opportunities for this area to become the global centre of excellence for peatland restoration and science, something for which World Heritage status could be a catalyst for. Working with landowners, government and the University of the Highlands and Islands, there is real scope for training and skills development in this field, potentially helping to build the capacity of other key locations around the world.

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<sup>80</sup> Carbon trading has been around for a while, but the use of blockchain 'Non-Fungible Tokens' (NFTs) is something new that is being explored widely. They have the potential to be more traceable and add accountability via the blockchain.

<sup>81</sup> <https://www.iucn-uk-peatlandprogramme.org/news/new-version-peatland-code-launched>

## 6.11 Summary

This chapter highlights the complexity of the Flow Country as an exceptional blanket bog landscape, but one that is also a living landscape. Like almost anywhere in the world, the proposed Site is not untouched by human influence, and has been subject to significant pressures and policies with sometimes, in the past, unfortunate consequences.

However, it is a place of great opportunity and optimism. The international, national and local communities and policymakers have recognised the value of peatlands, and this robust and exceptional example of the blanket bog landscape will only increase its ability to demonstrate why it has OUV in respect of ecosystem processes and biodiversity.

The policies in Chapter 7 set out how, as a Partnership, the issues and opportunities<sup>82</sup> expressed above will be addressed, and there is a confidence that although many of the changes will take time, there is nothing that cannot be tackled with the right expertise and resources.

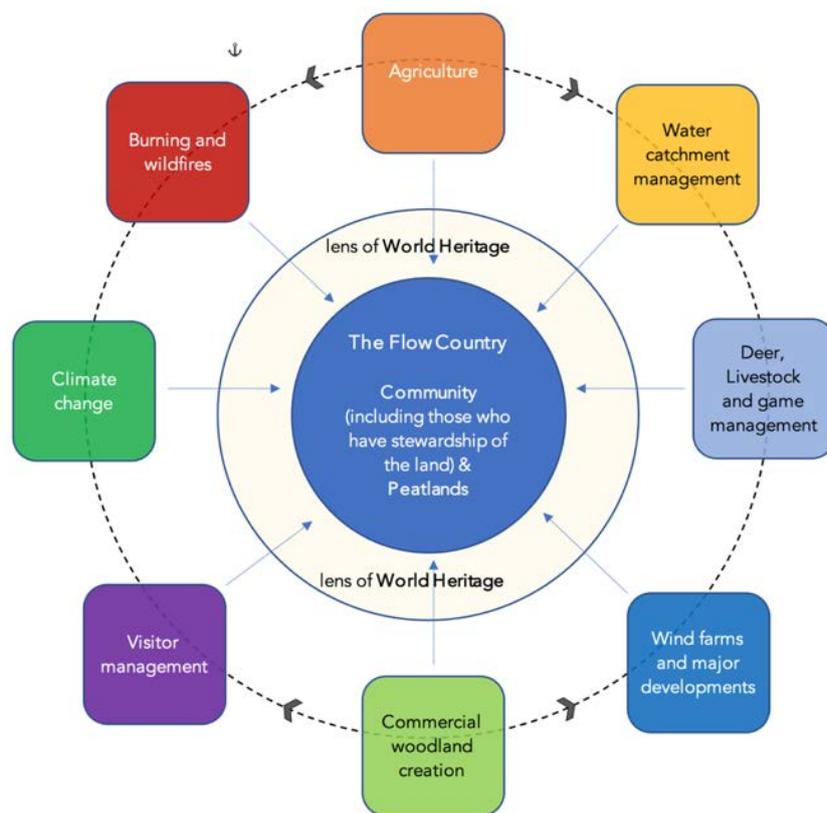


Figure 6.1 Schematic showing the various issues that impact on the Flow Country, and on each other, with the added lens of World Heritage Status

<sup>82</sup> A Site-wide risk register will be developed to summarise these issues between submission of the nomination to UNESCO and the decision of the World Heritage Committee in 2024.

# PART 3

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## Chapter 7. Strategic Framework

This chapter sets out the vision and aims for the World Heritage Site, once inscribed. It allies closely with The Peatlands of Caithness and Sutherland Management Strategy (PCSMS) but needs to be distinct from that Plan due to the international expectations set out by the UNESCO designation.

This chapter first highlights the international context in which World Heritage sits, and the Sustainable Development Goals (SDGs) which need to be addressed within this document. It then identifies the strategic framework, including vision, themes, aims and policies, working through each of the themes in turn. It sets out priority objectives for each theme but does not attempt to define actions; these will be set out in a separate document to accompany the Plan once the proposed Site is designated.

### 7.1 International context

#### World Heritage Convention

As set out in Chapter 2 the starting point for any World Heritage Site is the Articles of the Convention, most notably 4, 5 and 27. They are the ‘legal’ basis for any work done in the name of UNESCO and underpin this strategic framework.

The key text in Articles 4, 5 and 27 are:

4. **Identify, protect, conserve, present and transmit to future generations** the natural heritage, with the State doing “all it can to this end, to the utmost of its own resources”.
5. i) “adopt a general policy which aims to give the cultural and natural heritage **a function in the life of the community**”
5. iii). “develop **scientific and technical studies and research**, and to work out such operating methods as will make the State capable of counteracting the dangers that threaten its cultural or natural heritage”
27. The States Parties to this Convention shall endeavour by all appropriate means, and in particular by **educational and information programmes**, to strengthen appreciation and respect by their peoples of the cultural and natural heritage defined in Articles 1 and 2 of the Convention.

#### Sustainable Development Goals

In addition, in 2015 the World Heritage Committee agreed a policy to integrate the Sustainable Development Goals into the implementation of the World Heritage Convention. The SDGs are set out in Figure 7.1 below, and the policy<sup>83</sup> adopted by UNESCO uses the following four categories:

- Environmental Sustainability
- Inclusive Social Development
- Inclusive Economic Development
- Fostering Peace and Security

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<sup>83</sup> <https://whc.unesco.org/en/sustainabledevelopment/>

# SUSTAINABLE DEVELOPMENT GOALS

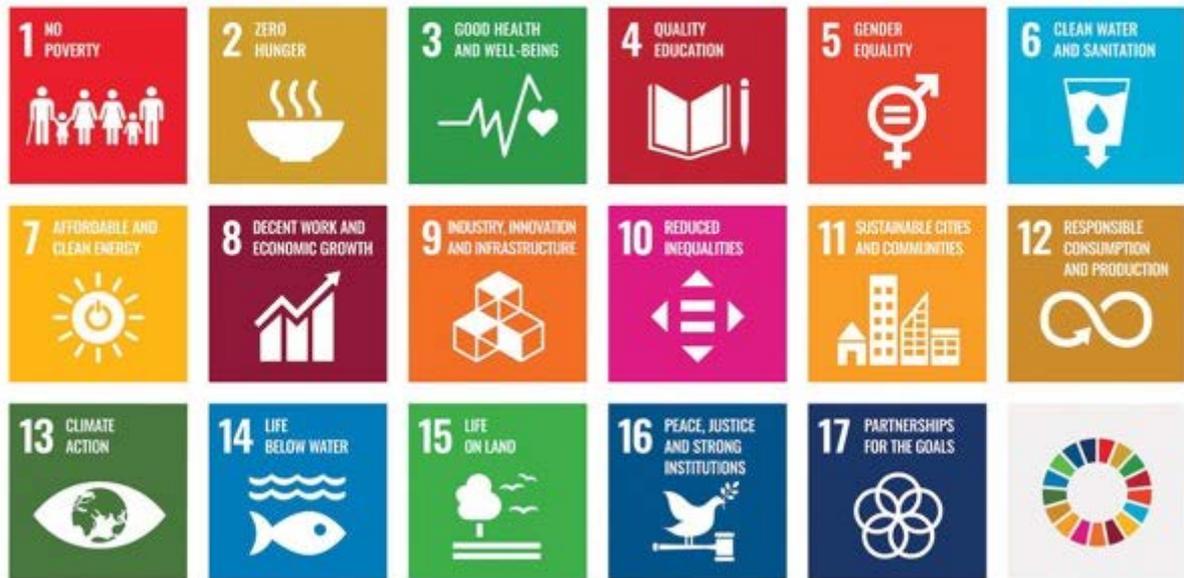


Figure 7.1 The Sustainable Development Goals<sup>84</sup>

Whilst some of these are more pertinent, and indeed urgent, for countries in the Global South, than for a highly developed nation such as the UK, all the SDGs have relevance to society overall. In creating this document, we have considered how each policy area relates to the SDGs and have used the graphic emblems above to show which are most relevant. Some will be more relevant than others and the move from policy to action – in a different document – is where the real test of SDG implementation is enacted.

In terms of development and implementation of the plan, however, the following SDGs are very broad guiding principles or approaches to which we intend to work:



<sup>84</sup> Find out more at <https://sdgs.un.org/goals>

## UNESCO Mission

UNESCO's overriding mission is that of seeking "to build peace through international cooperation in Education, the Sciences and Culture".



Figure 7.2 Expression of peace in UNESCO's mission<sup>85</sup>

UNESCO note that "sites are also spaces for sustainable development and reconciliation". Building peace comes in many forms, and whilst not in a conflict zone, The Flow Country can contribute in two ways, both of which link to the climate change agenda:

- 1) Through **effective stewardship** of a vast and outstandingly important peatland as a carbon sequester and **store**. This is part of the wider UK contribution from the UK to reduce conflict that might arise through climate change;
- 2) Through **international collaboration, skill sharing and dissemination of research** to help peatland restoration globally;

This is something that we will be exploring over the year before possible inscription and then ideally developing into a full programme once the Site is on the World Heritage list.

<sup>85</sup> <https://twitter.com/natcomunesco/status/757442042788216832>

## 7.2 Policy framework

### Vision

*Our vision is that World Heritage Status for The Flow Country will ensure that its world-class blanket bog, associated biodiversity and carbon storage ability is protected and enhanced, that it is an unparalleled and accessible natural resource for education and well-being, and that the status is beneficial both for our vibrant communities and our visitors.*

### Themes

The Aims, Policies and Priority Objectives for the World Heritage Site are broken down into themes. Whilst inevitably there are crossovers and ambiguity in respect of which policy fits where, it is helpful to look at it in this way. The themes are:

- 1) A sustainably managed blanket bog, for peat and biodiversity;
- 2) Peatlands as a living landscape;
- 3) An educational and research resource of unparalleled value;
- 4) A well-managed and supported World Heritage Site and status.

Each of these is explained in more detail below. There are also two themes cutting across many of the policies within the main themes. They are:

- 1) Improved access and infrastructure for all, including policies that relate to Equality, Diversity, and Inclusion (EDI);
- 2) Actions to support Climate Change mitigation and adaptation.

### Policy Framework

Within each of the main themes there is a set of **aims** which give a strategic direction. Below that, there are a set of **critical success factors**, or ‘hoped-for outcomes’ which set out what the theme and its aims mean in practice, and in very real terms tries to show what success would look like.

These are followed by a set of **policies**, grouped by sub-theme. These are a mixture of *passive policies*, which states the partnership’s position if a specific action was to arise, and *active policies*, which state a position that would need actions in order to bring it about. Not all policies will result in actions, nor will they all be able to be addressed over the life of this Plan, but they do set a clear line in the sand as to the position of the World Heritage Site should opportunities arise.

The context to policies is set out in Chapters 5, 6 and particularly 7. Please refer to these sections for more detail. When interpreting policies, it is best to see them as introduced by the phrase **“The Partnership will...”**, referring to the WHS Partnership as represented by a project Steering Group and as identified in Chapters 1 and 8. The organisations

identified in the third column of the tables are those members of the partnership or wider stakeholder group for whom there is either a statutory or expected responsibility to have role(s) in the implementation of the policy.

At the end of each section there is a set of **priority objectives** which set out the key priorities for the period of the Plan. Whilst it is important to consider all areas of work as equally important, with a scarcity of resources there has to be prioritisation, and whilst it does not mean other policies will not be addressed, it enables the stakeholder Partnership to have a clearer vision about Plan delivery.

The delivery of this Plan is set out in Chapter 7, but as actions change based on available resources and priorities, these will be set out in a rolling Action Plan managed by the Flow Country WHS Team (FCT).

Table 7.1 Acronyms of organisations mentioned in the policy tables

CC	Crofters Commission
CoC	Community Councils
DMG	Deer Management Group
DT	Development Trusts
ERI	Environmental Research Institute (part of UHI)
FCP	Flow Country Partnership
FCT	Flow Country Team
FLS	Forestry and Land Scotland
HIE	Highlands and Islands Enterprise
NHC	North Highland College
NMS	National Museum of Scotland
NS	Nature Scot
RSPB	Royal Society for the protection of Birds
SEPA	Scottish Environmental Protection Agency
SF	Scottish Forestry
SFRS	Scottish Fire and Rescue Service
SG	Scottish Government
THC	The Highland Council
VN	Venture North
VS	VisitScotland
UHI	University of the Highlands and Islands

A glossary of peatland terms can be found at the end of the document.

# Theme 1: A sustainably managed blanket bog, for peat and biodiversity

*This theme addresses Article 4 of the Convention, and supports all criteria, integrity and protection and management pillars of OUV. It also addresses the following Sustainable Development Goals:*



## Introduction

First and foremost, this theme is about the maintenance of existing high quality blanket bog and associated ecosystems within the boundary, and the associated biodiversity. In all circumstances, whether the bog is in good condition or not, this is achieved through the prevention of harm, through the planning system, and land management practices such as deer management. Prevention of harm is also helped by protected area designation, something that covers c.76% of proposed Site area.

This prevention of harm also relates to areas outside the proposed Site boundary – in the setting – that might have a negative impact on the OUV within. This might include, for example, the potential impact of wind turbines on birds, or the water further up the catchment that comes into The Flow Country. The setting is discussed in Chapters 2 and 4, and again will be referred to within this section.

In terms of areas of bog included within the boundary in less than pristine condition, this theme will focus on policies relating to restoration<sup>86</sup> which works both for the benefit of the blanket bog and its associated biodiversity. Restoration will benefit from the ‘passive’ policies of prevention of harm as described above, and from ‘active’ policies and measures. These might include removal of forestry, blocking of drains, reduction of deer density, use of geotextiles on eroded peat, amongst others. Scotland is fast becoming a world leader in peatland restoration and the techniques used, all of which are long-term, can be shared internationally.

These factors will, when implemented successfully and in parallel, not only lead to sustainable management of the blanket bog and restoration where necessary, but also together will maintain and strengthen its role as a carbon sink and store.

For background information about some of the policy areas discussed in this theme, please refer to Chapter 6.

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<sup>86</sup> and maintenance of restoration, although this is considered within this document to be part of the restoration process

## Aims

The aims for this theme are set out here, along with a means of monitoring them, a broad timescale and a target (if applicable). The policies set out in subsequent pages will address one or more of the aims.

<b>Aim 1.1</b>	To maintain existing natural <sup>87</sup> bog in good condition and enhance degraded peatland through restoration.
<b>Aim 1.2</b>	To create the right conditions for improvements in the blanket bog's ecosystem health and biodiversity.

## Critical Success Factors

Aims are important for giving direction, but how do we know whether the aims are achieving outcomes important for OUV? How will we know we have got it right? The following are the three most important critical success factors for this theme, that relate to the aims above and the theme more broadly:

No.	CSF	Timescale for measurement
<b>CSF 1.1</b>	The area of blanket bog in favourable <sup>88</sup> condition and under active restoration is increasing	5-6 years
<b>CSF 1.2</b>	Bird records, as a proxy for wider biodiversity, are showing a healthy population and an increase in abundance <sup>89</sup>	5-6 years
<b>CSF 1.3</b>	The carbon sequestration role of the blanket bog with The Flow Country is improving	5-6 years

## Monitoring and Evaluation

This will be measured by a combination of regular assessments by NatureScot and RSPB, and by remotely sensed monitoring and analysis led by ERI.<sup>90</sup>

<sup>87</sup> Under NatureScot guidance, 'near-natural' condition is the highest quality. See: <https://www.nature.scot/sites/default/files/2017-10/Guidance-Peatland-Action-Peatland-Condition-Assessment-Guide-A1916874.pdf>

<sup>88</sup> Favourable has a specific meaning which is set out in NatureScot's monitoring protocol. We need to agree if we are going to use this or something else.

<sup>89</sup> Bearing in mind that many of key species are migratory and so not just dependent on conditions in Flow Country

<sup>90</sup> Indicators and frequency have to tie in with the monitoring section of the nomination document.

## Policies

### Guiding principles

Anything that would negatively affect the Outstanding Universal Value (OUV) of the site should be questioned, challenged and/or opposed, and if that is impossible, then mitigated as far as possible.

Where the potential effect of an action, or development, on all aspects of OUV is not fully understood (e.g., cumulative impact of wind farms on bird life) research that would help inform policy on how best to provide protection will be supported.

### Climate statement

The following policies focus on conserving and growing the area of blanket bog, and its biodiversity. These are intrinsically positive policies for carbon sequestration, and include measures such as restoration, reduction in erosion and prevention of burning. It also discourages woodland creation on peat, which, although is itself a carbon sequester, is not only harmful to OUV, but is considered a less secure and shorter-term carbon store than peat.

Actions arising from policies will be subject to scrutiny in respect of their potential climate impact, which will be reduced where possible.

**Note:** The Site's management team, the Flow Country Team (FCT) will have a coordination or facilitation role in many of these policies but are only stated specifically when it is their primary job, as opposed to another organisation's.

No.	Policy	Responsible / influential bodies
<b>Woodland creation</b>		
1.1	Oppose plantation woodland creation on blanket bog within the proposed Site boundary, following guidance from Scottish Forestry <sup>91</sup> .	SF, NS, THC
1.2	Encourage blanket bog restoration, as opposed to restocking, of existing plantation woodland on deep peat within the boundary, following Scottish Forestry guidance.	SF, NS, THC
1.3	Evaluate any proposed plantation woodland creation adjacent to the Site boundary in respect of potential impact on the Site's OUV, and challenge if the likely impact is negative.	SF, NS, THC
1.4	Identify suitable areas for natural regeneration or planting of native woodland for biodiversity benefits where there will be no detrimental effect on OUV.	SF, NS, FLS, FCP
<b>Restoration of peatland and associated habitat</b>		
1.5	Encourage and support the restoration of blanket bog within the proposed boundary where commercial forestry, historical land drains, ploughing or other factors have negatively affected it.	NS, FLS, FCP

<sup>91</sup> Reference to follow

No.	Policy	Responsible / influential bodies
1.6	Incorporate areas adjacent to the proposed boundary into the Site in future if restoration status allows, and public consultation proves supportive.	CF, SG
<b>National and Major Developments</b> (see Chapter 7 for definition and more details)		
1.7	Oppose all national and major development proposals within the proposed Site boundary that would negatively impact on OUV.	THC, NS, SG
1.8	Oppose any national and major development proposals in the setting that would negatively impact the OUV of the proposed Site.	THC, NS, SG
1.9	Support national and major development proposals that would benefit the aims of this Management Plan, the Site's OUV or have related public benefit.	THC, NS
<b>Local developments</b> (see Chapter 7 for definition and more detail)		
1.10	Oppose any local development proposal within the proposed boundary or setting that would negatively impact the OUV of the site.	THC, NS
1.11	Support local development proposals that would benefit the aims of this Management Plan, the Site's OUV or have related public benefit.	THC, NS
<b>Crofting and farming</b>		
1.12	Support low intensity grazing practices within the boundary area, ensuring that stocking levels do not increase to a point which starts to negatively affect the OUV.	Landowners, DMGs, Crofters, Farmers, CC
1.13	Support the maintenance of in-bye land on crofts within the setting of the proposed Site to maintain a patchwork of land uses of benefit to the OUV, particularly the bird populations.	Crofters, CC
<b>Deer management</b>		
1.14	Support low intensity grazing by deer within the boundary area for game, as long as the intensity does not negatively affect the OUV.	Landowners, DMGs
1.15	Encourage and facilitate research into, and monitoring of the impacts of deer populations on the blanket bog landscape, with a view to feeding into deer management decision making.	DMGs, ERI, Landowners
1.16	Manage down the density of deer in areas where excessive grazing and trampling are shown to be negatively affecting OUV.	DMGs, Landowners
1.17	Encourage and facilitate communication between different land-use managers in respect of issues, such as fence lines, that can negatively affect OUV.	FCP, DMGs

No.	Policy	Responsible / influential bodies
<b>Peat cuttings</b>		
1.18	Oppose any attempt to establish any commercial peat extraction within the boundary area or immediate setting.	NS
1.19	Encourage those with turbarry right to adhere to peatland management guidance set by NatureScot.	Crofters, CC, Landowners
<b>Burning</b>		
1.20	Oppose plans to undertake burning of peatlands within the proposed boundary area or immediate setting, despite guidance set out in the Muirburn Code. <sup>92</sup>	NS
1.21	Encourage a revision of the Muirburn Code to respect the World Heritage Site as a designation and recognising the risk of adjacency.	NS
1.22	Prevent, where possible, natural or accidental wildfires on the peatlands through visitor management, educational programmes and awareness-raising <sup>93</sup> .	THC, Landowners, SFRS, Police, Tourism bodies
1.23	Encourage forestry organisations to fully remove brash <sup>94</sup> after timber extraction in order to to reduce potential for fires that might negatively affect the Site.	Confor, FLS
<b>Catchment and fisheries management</b>		
1.24	Encourage communication between peatland restoration and river management bodies in order to avoid any negative impact on fish life cycles.	Fisheries Boards
<b>Conservation designations</b>		
1.25	Seek to enhance the condition of areas within the proposed Site boundary that are <i>not</i> currently within conservation designations, so that they might meet criteria to allow them to be included in designations in the future, following favourable public consultation.	Landowners, NS, SG
1.26	Maintain or improve the quality of the natural condition of areas within the Site already designated.	Landowners, NS

<sup>92</sup> There are plans for licensing Muirburn so we need to watch this space

<sup>93</sup> Reference Scottish Outdoor Access Code/Land Reform Act 2003

<sup>94</sup> Unless the brash is used as part of the restoration process, and within guidelines

No.	Policy	Responsible / influential bodies
<b>Access</b>		
1.27	Ensure that all users of vehicles for agricultural, stalking or forestry within the boundary minimise damage to the blanket bog and associated biodiversity, through adhering to local planning requirements, and following good practice <sup>95</sup> .	Landowners, NS, THC, SEPA
1.28	Oppose new 'private ways' <sup>96</sup> that would negatively affect OUV, either through direct damage to blanket bog, by drainage or animal disturbances.	THC
1.29	Encourage new access arrangements or infrastructure for people to better enjoy, explore and understand the proposed WHS with no negative impact on the OUV <sup>97</sup> .	THC, NS, landowners
<b>Visitor management</b>		
1.30	Ensure that any new arrangements to improve the visitor offer for the Flow Country will have no negative impact on the blanket bog, aims for carbon neutrality, and follows the relevant guidance as set out in the Scottish Outdoor Access code.	Private sector, THC
<b>Policy development</b>		
1.31	Work proactively with the Local Authority, government agencies and businesses to influence strategy and policy in respect of The Flow Country to avoid potential future conflicts.	FCP

## Priority Objectives

Key pieces of work for the first 5-6 years need to be identified. These *could include*:

- 1A. Identify and support the implementation of restoration schemes;
- 1B. Support research into cumulative impact of wind farms on the ecosystem, notably bird life;
- 1C. Undertake a study into what constitutes the setting of the World Heritage Site, with a view to creating supplementary planning guidance.

<sup>95</sup> See Constructed Tracks in the Scottish Uplands (SNH, 2015).

<sup>96</sup> A private road – in this case across hills or bog

<sup>97</sup> Damage to OUV has a lot to do with scale. A well-built boardwalk will have a slight temporary impact on the peat on which it is built, but overall there will be no negative impact on the OUV.

## Theme 2: Peatlands as a living landscape

*This theme addresses Articles 4 and 5 of the Convention and supports the protection and management pillars of OUV. It also addresses the following Sustainable Development Goals:*



### Introduction

The Flow Country is not a wilderness. The blanket bog is an ecosystem formed by natural processes, but it has and continues to be impacted by people. This is either at the macro scale, through global or atmospheric changes, or at a local level, through small-scale agriculture and peat cutting, deer management and tourism.

This does not mean it is in poor condition. As discussed earlier in this document, much of it is in good and/or improving condition, but it means that people cannot be taken out of the picture. There are small communities, crofts and farms within and around the proposed boundaries of the Site, many of which struggle with the demands of living and working in such a remote location and often harsh climate. There are many who are active in tourism, a complicated industry affected by the weather and seasonality, but one which has a huge amount to offer. There are also many people who see themselves as custodians of the area and look after their part of it.

There is also an aspiration throughout the Highlands to develop a more circular local economy that is based on the incredible natural assets the area has to offer; the peatlands, mountains, sea and sea cliffs, long distance paths, wildlife, dark skies, amongst others. There is also the industry that surrounds peatland conservation itself – research, earth observation, carbon credits, landscape funding, and project management, as well as the physical work of peatland restoration and ongoing maintenance. Sport shooting and fishing have also been an important aspect of the local economy for the last century. These industries are having to adapt to meet changing public policy, moreover the emergence of the green economy, carbon credits and landscape finance need to be considered going forward.

It is seen locally that World Heritage Status, if granted, can become a catalyst for responsible and sustainable economic development, job creation and the retention and growth of skills and knowledge, through both the visitor economy and other local industries, as it has elsewhere. In support of this there will be a need for improvements in infrastructure and facilities for The Flow Country, that are supportive for residents and visitors alike.

For background information about some of the policy areas discussed in this theme, please refer to Chapter 7.

## Aims

The aims for this theme are set out here, along with a means of monitoring them, a broad timescale and a target (if applicable). The policies set out in subsequent pages will address one or more of the aims.

Aim 2.1	To encourage sustainable growth of local employment and economy.
Aim 2.2	To integrate circular economy approaches into nature-based industries.
Aim 2.3	To create appropriate and sensitive improvements to visitor facilities and infrastructure, including virtual resources.

## Critical Success Factors

Aims are important for giving direction, but how do we know whether the aims are achieving outcomes important for OUV? How will we know we have got it right? The following are the three most important critical success factors for this theme, that relate to the aims above and the theme more broadly:

No.	CSF	Timescale for measurement
CSF 2.1	The economy is showing signs of diversification and robustness, attributable to the WHS, but without damaging the OUV or any other aspects of the ecosystem health.	5-6 years
CSF 2.2	The visitor infrastructure and offer are more accessible, beneficial and wider in scope.	3-4 years
CSF 2.3	Local communities are happy that the World Heritage Site is working for them.	3-4 years

## Monitoring and Evaluation

Monitoring and evaluation for this theme will be undertaken through macro-level data such as GDP and jobs, and at a local level through periodic surveys, website analytics and case-studies of gateway communities. At a more granular level, monitoring will be through the usage of existing or new facilities and infrastructure, such as paths, parking, panels, visitor centres, museum displays.

## Policies

### Guiding principles

If World Heritage Status is achieved, this will be used as a catalyst for the sensible, appropriate and sustainable development of the area, not for wider exploitation of the brand.

Any commercial enterprises generated by or capitalising on the presence of the WHS inscription must be subject to rigorous scrutiny in terms of risks and benefits, both in terms of OUV and community benefit and engagement.

### Climate statement

The following policies acknowledge that the Flow Country is a living landscape, and that people who live in the area need to be able to make a fair living, and in a way that allows for protection and enhancement of the blanket bog area. Its importance as a carbon sink and store is now being recognised more than ever and this will be recognised throughout any work done to promote the area and catalyse sustainable local development.

Actions arising from policies will be subject to scrutiny in respect of their potential climate impact, which will be reduced where possible.

**Note:** The Site's management team, the Flow Country Team (FCT) will have a coordination or facilitation role in many of these policies but are only stated specifically when it is their primary job, as opposed to another organisation's.

No.	Policy	Responsible / influential bodies
<b><u>Visitor and destination management</u></b>		
2.1	Promote the Flow Country as a joined-up destination for visitors and residents alike, based on the natural assets, and with a focus on education and exploration.	VS, VN, THC, Attractions, FCP
2.2	Make every effort to ensure that visitors accessing the proposed Site are made aware of the Scottish Outdoor Access Code and their responsibilities in relation to accessing the countryside, including with respect to dogs and fires/BBQs.	VS, VN, THC, Attractions, Businesses, Landowners
2.3	Support the further development and growth of Scotland's UNESCO Trail to promote and jointly link the North of Scotland's UNESCO designated natural assets	VS, VN, FCP
2.4	Advocate for the principles of responsible, slow, year-round and even regenerative tourism with visitor economy partners linking to the Flow Country	FCT, FCP
<b><u>Working with local businesses; support and training</u></b>		
2.5	Encourage local businesses and entrepreneurs to develop products or services that link to the Site's values and enable communities to capitalise on the designation <sup>98</sup> .	HIE, Businesses, Communities, DTs, CoC, FCP

<sup>98</sup> For example this might be through a business forum

No.	Policy	Responsible / influential bodies
2.6	Provide information and training for local businesses in respect of the World Heritage values and global context of the proposed WHS.	FCT, VN
2.7	Advocate for businesses linked to the World Heritage Site to develop local supply chains and support local producers.	HIE, THC, DTs, CoC
<b><u>Walking and cycling access</u></b>		
2.8	Encourage access to The Flow Country on foot, through maintenance and upgrading of existing paths, and creation of new routes to allow people to experience the Site better.	NS, THC, VN, SG
2.9	Improve access to The Flow Country when cycling, particularly through promotion and linking to existing recognised routes, such as the Great North Trail, and the National Cycle Network.	THC, VN, Sustrans
<b><u>Public transport</u></b>		
2.10	Encourage an innovative approach to integrated public transport system across the Flow Country, linking Gateway Communities with key access points to the proposed World Heritage Site, for communities and visitors.	THC, ScotGov, HiTrans, Transport providers, Rail Partnership, DTs
2.11	Support Scotrail to maximise the potential from running a rail service through The Flow Country.	ScotRail
2.12	Engage with Inverness transport hubs to highlight the choices available to access The Flow Country by public transport.	ScotRail, Inverness Airport, THC. Transport Providers
<b><u>Roads, signage, parking and associated infrastructure</u></b>		
2.13	Support plans for official campervan stops – ‘aires’ – to reduce negative impacts on the Flow Country natural environment and pressure on roadside parking, from unauthorised overnight stays.	THC, Communities, VN
2.14	Improve roadside signage sensitively in respect of key access points to the proposed Site and associated attractions <sup>99</sup> .	THC, Attractions
2.15	Support the development of new, appropriate, parking at key access points that facilitate the visitor experience <sup>100</sup> .	THC, Landowners
2.16	Ensure key access roads in the Flow Country are maintained accepted standards.	THC

<sup>99</sup> As set out in the Flow Country WHS Development Potential Strategy (in development summer 2022)

<sup>100</sup> As set out in the Flow Country WHS Development Potential Strategy (in development summer 2022)

No.	Policy	Responsible / influential bodies
2.17	Support the Highland Council's commitment to the ongoing installation of EV infrastructure, promoting the Flow Country as accessible by EV.	THC
2.18	Inform vehicle-driving visitors about respecting local road users and behaviour, through appropriate written and audio-visual products, drawing on or using existing material.	Businesses, Communities, VN, VS, THC
<b><u>Cultural heritage</u></b>		
2.19	Promote the cultural heritage within the proposed Site and wider setting, and its links to the blanket bog landscape.	THC, Museums, FC
2.20	Pursue the provisions of this plan in a way that respects and safeguards Scheduled Monuments, other cultural heritage interests and sites with archaeological potential.	THC, FCP, FCT
<b><u>Visitor centres, museums and displays</u></b>		
2.21	Support the provision and/or upgrade of Flow Country-related material in existing visitor centres and museums within the Highlands, and the National Museum of Scotland where possible.	Museums and attractions, Highlife Highlands, RSPB, NMS
2.22	Maintain and expand outdoor interpretation provision network, to provide a joined-up visitor experience identified through a recognisable and consistent brand.	FCT, FCP, RSPB, THC
2.23	Consider the potential for new visitor facilities and/or a central hub for interpretation of the proposed World Heritage Site <sup>101</sup> .	FCT, FCP, HIE
<b><u>Civic pride and engagement</u></b>		
2.24	Encourage and support community bodies such as Community Councils to develop appropriate social, economic and cultural aspirations with respect to the WHS.	CoCs, DTs <sup>102</sup>
2.25	Promote volunteering opportunities where appropriate that enhances the Flow Country communities in the context of the World Heritage Site.	FCT, FCP, RSPB, Communities

<sup>101</sup> As set out in the Flow Country WHS Development Potential Strategy (in development summer 2022)

<sup>102</sup> Including Community-Controlled Bodies within the definition given in section 19 of the Community Empowerment (Scotland) Act 2015)

## Priority objectives

Key pieces of work for the first 5-6 years need to be identified. These *could include*:

2A. Audit and improve where necessary the existing physical and virtual interpretation of the proposed World Heritage Site;

2B. Development and funding of a community-led sustainable development masterplan for the wider Flow Country area, including peatland restoration business development, transport, access and visitor infrastructure;

2C. Develop the visitor offer through linking with businesses and entrepreneurs.

## Theme 3: An educational and research resource of unparalleled value

*This theme addresses Articles 5 and 27 of the Convention and supports criteria and integrity pillars of OUV. It also addresses the following Sustainable Development Goals:*



### Introduction

UNESCO has at its heart the promotion of peace through collaboration and exchange, and one of the means it expounds to achieve this is through education. Furthermore, Article 27 of the Convention specifically asks that Sites undertake educational work in relation to properties and their OUV. With the importance of peatlands increasingly recognised globally, there is a great opportunity to use World Heritage Status to educate people about the value and importance of peatlands, and to highlight research to understand them better.

At the core of this will be the presentation of information about different aspects of the proposed Site, including the ecosystem as it is now, how it may be impacted by local and global changes, and why it is important to protect and, where necessary, restore and enhance it. Nothing promotes deep learning quite so well as field visits, so the infrastructure necessary for this will be looked at, although given the remoteness of the location, virtual field trips will need to form a key part of this offer.

In addition to considering the present time, educational work will look at the past, considering the peat as a record of time going back nearly 10,000 years. This incredible 'archive' of life over that period can be used to show how the vegetation, climate and people's behaviour has changed over time. The past is the key to the future, and by understanding this past record, we can research and show how future climatic changes may affect the blanket bog.

The Flow Country has been for many years an extraordinary natural laboratory covering all stages of blanket bog development and condition. It has supported international research and with the inception of the Flow Country Research Hub in 2012, coordinated by the Environmental Research Institute (ERI) at the University of the Highlands and Islands, the area has shown its potential to become *the* leading location globally to better understand how blanket bogs function, and how they will change with our changing climate. World Heritage Status will be used to bring a higher profile to this invaluable exemplar of collaborative, multi-disciplinary research integrating fundamental scientific advances with practical and policy implications.

## Aims

The aims for this theme are set out here, along with a means of monitoring them, a broad timescale and a target (if applicable). The policies set out in subsequent pages will address one or more of the aims.

Aim 3.1	Make a positive contribution to lives of people and communities in the Scottish Highlands through their educational engagement with the Site.
Aim 3.2	To create an enabling and supportive infrastructure for research into global peatlands and its role in climate change.

## Critical Success Factors

Aims are important for giving direction, but how do we know whether the aims are achieving outcomes important for OUV and the planet? How will we know we have got it right? The following are the most important critical success factors for this theme, that relate to the aims above and the theme more broadly:

No.	CSF	Timescale for measurement
CSF 3.1	More Highland residents of all ages are engaged and learning about the Flow Country and peatlands.	3-4 years
CSF 3.2	The demand for, and provision of actual and virtual field trips are increasing, including educational visits to visitor centres.	4-5 years
CSF 3.3	The quantity of published research investigating aspects of the Flow Country OUV, and their citations, is increasing.	5-6 years

## Monitoring and Evaluation

We will monitor and evaluate progress against the aims of theme 3 through data collaboration with the local schools, colleges across the Highlands, and the University of the Highlands and Islands (UHI). Online analytics will be used to track virtual visits and physical centres and museums will record visitor numbers. Citation indices and other publication tracking databases will be used to monitor publications.

## Policies

### Guiding principles

Work within theme 3 for the period of the Plan will focus on the biodiversity and climate emergencies, and the roles that The Flow Country plays in relation to these. The extra profile that World Heritage Status would bring will boost the area for educational and research purposes throughout the Highlands, Scotland, the UK and internationally.

With a view to making learning as accessible as possible, digital options will be considered at all times. This will run throughout this theme and is also mentioned as part of the cross-cutting elements.

### Climate statement

As set out in the guiding principles, policies within this theme will address the climate emergency and use the profile of World Heritage Status to increase awareness and understanding, and influence behaviour change.

Actions arising from policies will be subject to scrutiny in respect of their potential climate impact, which will be reduced where possible.

**Note:** The Site's management team, the Flow Country Team (FCT) will have a coordination or facilitation role in many of these policies but are only stated specifically when it is their primary job, as opposed to another organisation's.

No.	Policy	Responsible / influential bodies
<b><u>Informal / wider education</u></b>		
3.1	Promote lifelong learning opportunities for all members of the community to engage with the World Heritage Site, including through involvement of expert volunteers and the Countryside Ranger Services and Access Rangers.	High Life Highland, NHC, Community groups, Museums
3.2	Develop new, high-quality interpretation for the Site to promote enhanced understanding, enjoyment and appreciation of the Flow Country blanket bog landscape.	FCT, RSPB, NS
<b><u>Formal education</u></b>		
3.3	Update and disseminate existing educational resources from the Flows to the Future Project.	FCT, RSPB
3.4	Establish and maintain links with schools through the local education authority to build long-term relationships and mainstream peatland education.	FCT, THC
3.5	Support the development of programmes of further education for skills in peatland restoration and ecology, and other practical skills that support the OUV and community aspirations.	NHC/UHI, NS
3.6	Maintain and further build links with UHI and other Higher Educational organisations for furthering research into blanket bog ecology and biodiversity of the peatlands.	UHI

No.	Policy	Responsible / influential bodies
<b>Field visits</b>		
3.7	Encourage and provide information and advice for field trips to The Flow Country.	FCT, RSPB, UHI, THC
3.8	Explore potential for a diverse range of supporting infrastructure for field visits and research, building on the excellent Forsinard Field Centre example.	FCT, RSPB, UHI, Communities,
<b>Research and infrastructure</b>		
3.9	Support the Environmental Research Institute (UHI) Flow Country Research Hub to grow and realise the potential that World Heritage Status for The Flow Country can bring.	UHI, HIE
3.10	Encourage global links for research between other blanket bog and peatland landscapes through the World Heritage Site network and Global Peatland Initiative.	FCT, UHI

## Priority Objectives

Key pieces of work for the first 5-6 years need to be identified. These *could include*:

- 3A. Audit existing and develop new interpretation and educational resources in respect of the proposed World Heritage Site;
- 3B. Further develop virtual tours of the Flow Country;
- 3C. Focus on and support skills development for peatland restoration and ecology.

## Theme 4: A well-managed and supported World Heritage Site and status

This theme addresses Articles 5 and 27 of the Convention and supports protection and management pillar of OUV. It also addresses the following Sustainable Development Goals:



### Introduction

One of the three pillars of OUV is Protection and Management, so this has to be at the heart of the stewardship of the Site. This does not mean in terms of the statutory management of the designated areas within the Site but rather of the management structure to oversee the maintenance of World Heritage status and all that entails.

This latter aspect of management, often called the coordination or management 'function' of a World Heritage Site relates primarily to the preparation, facilitation, coordination and review of the Management Plan, and the oversight and coordination of the partnership that oversees it. Its role is to focus on the World Heritage Site and that alone, taking on board, but not being led by any other partner interest.

In addition to the function of managing the World Heritage status, the coordination function has a role linked to Article 27 of the Convention in disseminating information about the Site, whether technical or otherwise, to a wider audience. It is also the mouthpiece for everything that World Heritage Status stands for - yet is also able to connect with and listen to the voices of the community.

## Aims

The aims for theme 4 are set out here, along with a means of monitoring them, a broad timescale and a target (if applicable). The policies set out in subsequent pages will address one or more of the aims.

Aim 4.1	To have a clear and sufficiently resourced organisational entity and partnership structure for managing World Heritage Status and the associated responsibilities.
Aim 4.2	To create a mechanism by which the Flow Country community can feel informed about the Site and engaged with aspects of its management.

## Critical Success Factors

Aims are important for giving direction, but how do we know whether the aims are achieving outcomes important for OUV and the planet? How will we know we have got it right? The following are the most important critical success factors for this theme, that relate to the aims above and the theme more broadly:

No.	CSF	Timescale for measurement
CSF 4.1	A fit for purpose and sufficiently well-resourced coordination function is in place and delivering within the Management Plan.	2-3 years
CSF 4.2	An effective multi-stakeholder governance structure is in place and working efficiently.	1-2 years
CSF 4.3	Community perception of and support for the World Heritage Site is increasing.	3-4 years

## Monitoring and Evaluation

Governance will be measured through internal systems such as budgets, agreements, minutes of meetings and retention of staff. Monitoring of community perception and support will be carried out through regular community surveys looking at a range of subjects related to the proposed WHS, from environmental awareness and understanding to economic and social benefits. This will be undertaken at time of designation and then repeated regularly. Media coverage will also be monitored as a proxy for public interest and support, to add to the primary survey data.

## Policies

### Guiding principles

Management of the World Heritage Status will be based on the principles of openness, transparency, honesty, partnership and rigorous science. The stakeholder Partnership and coordination function will be listening organisations and whilst prioritising local involvement, will have a global outlook that befits the status.

In terms of communication, it is recognised that the land within the proposed boundary is owned, used and cherished by many different people for many different purposes. This diversity will be respected at all times through communications and messaging.

### Climate statement

Management and communications in respect of the proposed Site will address the climate emergency wherever possible, from minimising its own carbon footprint, to effective messaging and working with projects to ensure carbon neutrality. Most of all, the blanket bog is a story of climate and climate change, and this will be at the heart of storytelling in respect of the proposed Site.

Actions arising from policies will be subject to scrutiny in respect of their potential climate impact, which will be reduced where possible.

**Note:** The Site's management team, the Flow Country Team (FCT) will have a coordination or facilitation role in many of these policies but are only stated specifically when it is their primary job, as opposed to another organisation's.

No.	Policy	Responsible / influential bodies
<b>Governance</b>		
4.1	Maintain an effective and fit for purpose Partnership governance structure for the proposed WHS.	FCP
4.2	Show accountability and transparency of decision making which affects the proposed Site.	FCT, FCP
4.3	Maintain a sufficiently resourced coordination function to enable implementation of the Management Plan.	FCP, NS, THC
<b>Financing</b>		
4.4	Ensure sustainable long-term resources in place to enable effective delivery of the Management Plan.	FCP, NS, THC
4.5	Explore the potential for Green Finance Initiatives in the Flow Country to support both the restoration of peatlands and the management function for the proposed WHS.	FCP, NS

No.	Policy	Responsible / influential bodies
<b><u>Community Engagement and consultation</u></b>		
4.6	Ensure communities remain informed of progress in respect of the proposed WHS and have a mechanism by which they can contribute to decision-making.	FCT
<b><u>Communications and media engagement</u></b>		
4.7	Partnership communications should always follow agreed protocols.	FCP
4.8	Promote the proposed WHS, its values and their importance to local, national and global audiences, through multiple platforms.	FCP, THC, VS, VN
<b><u>Branding</u></b>		
4.9	Ensure that the World Heritage and UNESCO emblems are used in line with UNESCO guidelines.	FCT
4.10	Protect The Flow Country brand and use it effectively in support of the aims of the proposed Site.	FCP

## Priority Objectives

Key pieces of work for the first 5-6 years need to be identified. These *could include*:

- 4A. Establish a secure and sustainable long term funding mechanism for the World Heritage Site management function;
- 4B. Also, in respect of 4A, explore green finance and fintech as possible options for funding;
- 4C. Establish the community engagement mechanism.

## Cross-cutting theme 1: Improved access and infrastructure for all, including policies that relate to Equality, Diversity and Inclusion (EDI)

This theme addresses Articles 4, 5 and 27 of the Convention and supports the protection and management pillars of OUV. It also addresses the following SDGs:



This theme needs to work across all of the relevant policies set out in this Plan. Improvements to access may be, for example, in terms of changes to public transport or boardwalks to access areas of the bogs. It may mean using different languages or using sign language, or voice-over on videos. It may mean ensuring that web resources are not too 'data heavy' so that people in places with poor internet can still access them.

There are many different ways to consider this, and many actions that arise from the policies above will be specific access-related projects. However, in order to maintain a level of simplicity, this theme can be considered as a filter between the policies contained here and the actions that will come out of them.

When considering actions that arise from the aims, priority objectives and policies of this Plan, it is essential that the following factors are considered and that the actions take account of them where reasonable and possible:

- Physical access to the blanket bog is increased and improved;
- Access requirements for people with physical, sensory and other disabilities in respect of all infrastructure is taken into account at all times;
- Considerations of equality, diversity and inclusion are made with regards to all work being carried out in respect of the delivery of the Plan, be that employment, volunteering, or the way in which information is presented;
- All virtual infrastructure will follow good practice codes of conduct for full accessibility

There are many excellent organisations to work with in respect of equality, diversity and inclusion (EDI) and access issues, including many of the stakeholder partnership. We will work with them to deliver these actions and will measure how we have responded to this theme through inclusion of appropriate indicators into project delivery.

## Cross-cutting theme 2: Actions to support climate change mitigation and adaptation

This theme addresses Article 4 of the Convention and supports the criteria and integrity pillars of OUV. It also addresses the following SDGs:



As with theme CC1 about access and accessibility, theme CC2 applies across all policies set out in this Plan. Climate change actions may range from peatland restoration, to ensuring that any new infrastructure relating to the WHS is carbon neutral. It may mean that all non site-based meetings should be held virtually, and that more climate friendly options are used whenever possible to access in-person meetings or events.

At a broader scale, it means that messaging about the role peat plays in helping to address the climate crisis are emphasised wherever possible, and that all appropriate communications reflect this. It means that every action needs to be considered in terms of its climate implications, and that the learning from the work done on this can be shared elsewhere.

When considering actions that arise from the aims, priority objectives and policies of this Plan, it is essential that the following factors are considered and that the actions take account of them where reasonable and possible:

- Projects, over their lifespan, should lead to a net zero or negative carbon equation, and in assessing them we will use carbon accounting methods;
- Mitigation will be considered for any expected net positive emissions;
- Work of the coordination function should advocate for net zero or net negative emissions at all times;
- Decisions linking to the climate emergency will be based on up to date knowledge and research

There are many excellent organisations to work with in respect of climate change mitigation and adaptation, including many amongst the stakeholder partnership. We will work with them on delivery and will measure how we have responded to this theme through putting appropriate indicators into project delivery.

## Chapter 8: Implementation, governance and monitoring

This chapter briefly sets out the likely approach for delivery, governance and monitoring of the Management plan post-inscription. Because inscription is by no means a given, it is not essential to set this out in detail at this stage.

### 8.1 Implementation

It is envisaged that day-to-day management of the World Heritage Site will be undertaken by a small team of specialists who will work with stakeholders to facilitate and coordinate work on the Site that is compatible with, and can enhance, OUV. That team is referred to in Chapter 7 as the Flow Country Team (FCT) and will report to the Steering Group for the Site. Governance arrangements are set out in Section 8.2.

It is important to understand that management of the Site means managing the World Heritage status and coordination of the delivery of the Management Plan, rather than management of the inscribed land area itself. The day-to-day management of the physical Site will be carried out by the landowners, land managers and Agency staff. They will follow the guidance set out in this document, all of which draws on established practices for peatland management. In respect of this part of the work, the FCT has an influencing and facilitating role, and is able to coordinate the various parties and projects that need to work together, but it has no executive authority over any of the landowners.

That is not to say that the FCT will not deliver any of the Plan itself. There is much within this document that will only happen if World Heritage status is granted, and for which the team will need to take a lead. This might include such tasks as education or interpretation development, securing funds and delivering against externally funded projects. It will also include working to monitor progress against this Plan, coordination of the Partnership and communication to all audiences about the work being undertaken.

The following list sets out the roles which might be included in a World Heritage Site Management function for a UK Site, but it is neither prescriptive nor exclusive and will depend on the Site itself, what is needed and what is available:

- *Management plan, writing, reviewing, monitoring, coordinating, facilitating, and administration;*
- *Periodic Reporting;*
- *Partnership meetings and coordination, and administration;*
- *Direct working with partners;*
- *Liaison with Government and UNESCO;*
- *Stakeholder & community engagement;*
- *Core work in support of above: talks, media, website, information and interpretation of the Site;*
- *Financial planning and fundraising;*
- *Project Development and delivery;*
- *Educational project development, delivery and facilitation;*
- *Advice and expertise – particularly with reference to construction and development proposals.*

At the time of submitting the Nomination dossier, the FCT comprises a full-time project coordinator, whose contact details are available at the end of this document, and who is supported by staff from other agencies and consultancies to put together the documentation required for the bid to UNESCO. This role is guaranteed to be in place until at least the potential inscription date in 2024 at which point it would be an intention to consolidate this role, and resources available for the FCT into the future.

In terms of delivery against this Plan, it is too soon to set this out in any detail, but after submission of the bid, an interim action plan will be developed, to undertake four functions:

- 1) respond to UNESCO and IUCN throughout the evaluation process;
- 2) essential work that needs to be done in preparation for a positive outcome;
- 3) related work that will be of benefit to the area, whether or not inscription of WH status is granted and;
- 4) ongoing communication and awareness-raising about The Flow Country and peatlands more generally.

## 8.2 Governance

World Heritage Sites require a partnership-based stakeholder management approach. For a Site with multiple landowners and a wide range of organisations with interest in the area, it is easy to see why this is essential.

Figure 8.1 sets out the current governance structure for the bid process. There is only one full-time staff member – the Project Coordinator – the other boxes mainly represent groupings of stakeholders, and staff from other organisations also working for part of their time on the bid. The Project Coordinator is currently hosted by the Highland Council and supported by funding from multiple organisations.

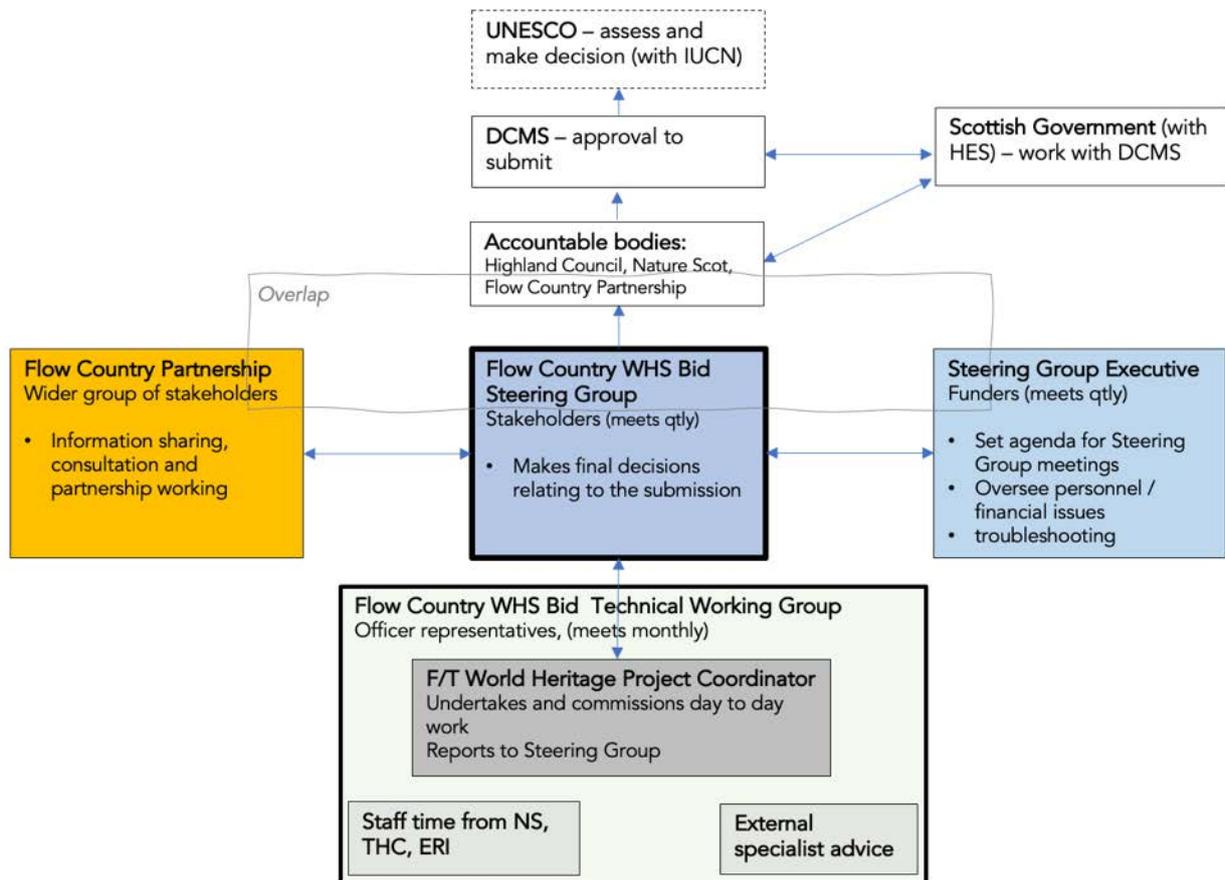


Figure 8.1 Current bid process governance structure

It is too soon to be clear about how the governance structure will change if/when the Site is inscribed on the World Heritage List. A significant component of the governance will remain the same, based around the shared understanding that: it needs to a partnership, and decisions are to be made on the basis of consensus. The Steering Group, the members of which are listed in Chapter 1, will likely remain in a similar form but will move from managing the bid to managing the Site.

It is important for all World Heritage Sites in the UK that the management function can remain relatively independent of any specific organisation. This is so that it can focus its work based on the policies set out in the Management Plan rather than those of any one of the partners' organisations. With this in mind the Flow Country Partnership is exploring whether the FCT will sit in an independent body outside of the Highland Council or NatureScot, possibly linked to the Flow Country Partnership. These ideas will be explored further between submission of the Nomination in 2022 and potential inscription in 2024.

All of the current groups involved in the governance have Terms of References, and all bid Steering Group partners have signed a Memorandum of Understanding (MoU) (attached as Annex 1). Again, these will likely change post inscription. Figure 8.2 sets out a possible new governance structure, but at this stage it should be treated only as a *potential* scenario.

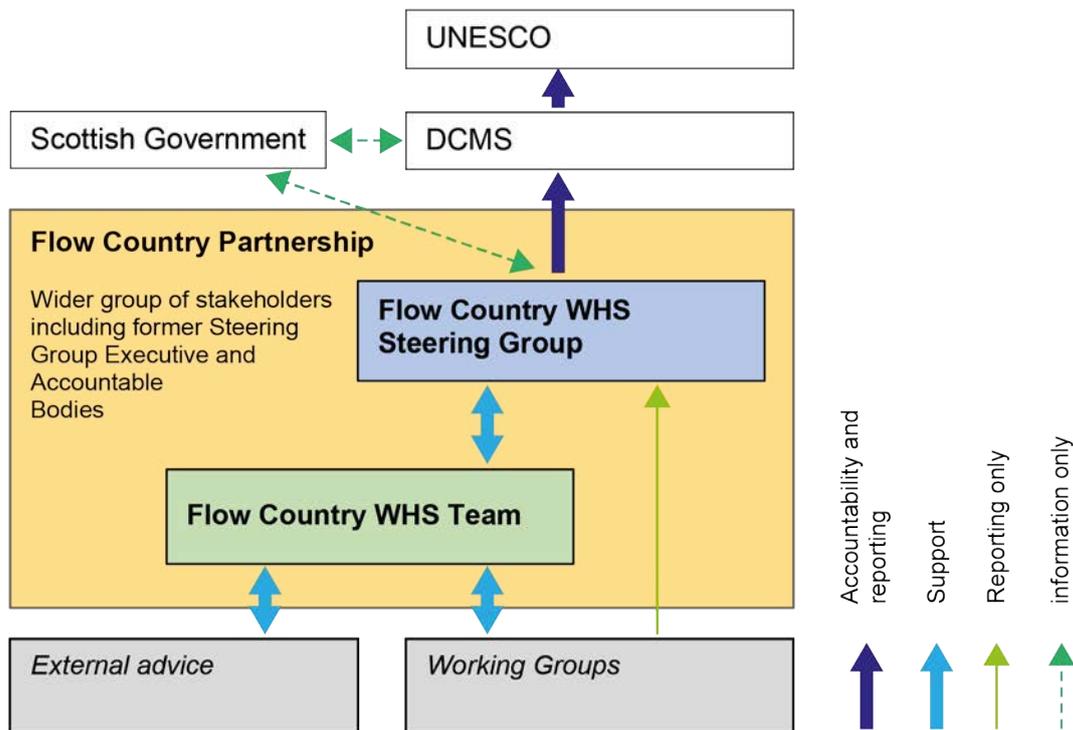


Figure 8.2 Potential governance structure for future Site management

### 8.3 Monitoring

The monitoring and evaluation regime will be established between submission of the Nomination and inscription of the Site, along with a Site risk register. Monitoring will aim to be simple and clear so that at a glance, people can see (a) the condition of the Site in relation to its Attributes, and (b) progress against delivery of the Management Plan.

In terms of timescales, UNESCO require a 'Periodic Reporting' assessment to be done every six years, so data collection needs to lead up to that, again, considered against the Attributes of the World Heritage Site. It is hoped that the local community will be involved in monitoring Site condition through citizen science and other initiatives.

### 8.4 Contact information

To find out more, please contact Steven Andrews at [Steven.Andrews@highland.gov.uk](mailto:Steven.Andrews@highland.gov.uk), or write to Steven at: The Highland Council, Glenurquhart Rd, Inverness IV3 5PB. More information is always available at The Flow Country website <https://www.theflowcountry.org.uk/> and through official feeds on Twitter, Facebook and Instagram.

## Glossary

**Acrotelm:** the fibrous uppermost layer of the peat where water movement and exchange is rapid and fluctuations in the water table lead to variable moisture content.

**Bog:** acidic waterlogged ombrotrophic peat forming system.

**Blanket bog:** rain fed (ombrotrophic) peatland that blankets the topography, often comprised of a number of units, each characterised by their topographic position and morphology (watershed, spur, valley side, saddle, etc.), and that are defined by their hydrological integrity.

**Blanket bog landscape:** a landscape where blanket bog predominates, larger blanket bog 'catchments' abut, covering extensive tracts of land. These often include elements of fen and raised bog.

**Blanket bog ecosystem:** the blanket bog considered alongside the biological community that it supports, and that contributes to its development.

**Catotelm:** the deep peat which underlies the acrotelm. This peat layer is characterised by near constant water content, very slow hydraulic conductivity and no access to atmospheric oxygen.

**Dubh lochans:** the local name for the pool systems which characterise much of the blanket bog. Their black (dubh) colour comes from the dark, peaty water they hold and the peat substrate which forms the bottom of the pools. Some of these pools are also extremely deep. For 'lochan' see below.

**Fen:** peatland development associated with ground water run-off. Fens are often mineral enriched, relative to blanket bogs.

**Flush:** area within a peatland where ground water seeps out resulting in a mineral enriched setting and associated flora.

**Loch(an):** Scottish term for body of water – lake. Lochan is the diminutive form: small loch.

**Mire:** a peatland that supports peat forming vegetation.

**Ombrotrophic:** refers to bogs that depend on precipitation as their water source.

**Paludification:** rain fed waterlogging of the ground leading to the development of peat forming plants and subsequently to the development of peat.

**Patterned ground:** this refers to the combination of micro-features, including: hummocks, high and low ridges, pools, mounds, hags, etc (illustrated in section 2 of the nomination dossier), that make up the varied surface textures that occur across blanket bogs.

**Peat:** an amorphous organic rich deposit formed by the steady accumulation of semi-decomposed plant material. Waterlogging prevents complete decomposition of the plant material.

**Peatland:** a region where the soil is predominantly composed of peat.

**Raised bog:** peatlands that originate from the infilling of depressions. Continued growth leads to a domed upper surface.

**Sphagnum:** a genus of moss, often referred to as bog moss or peat moss, which is important in peat formation. It is abundant throughout the Flow Country.

**Quaking bog:** an area of the bog that quakes with every footfall. This is usually the case due to the high saturation of both the upper fibrous layer (acrotelm) and the underlying deep peat (catotelm), the latter verging on a liquid state. Traversing such areas can be hazardous, even when walking on the ridge systems.

References to cited text can be found in the Nomination Dossier.

