The Highland Council

Agenda Item	**8**
Report No	**ECI/41/26**

Committee: **Economy and Infrastructure**

Date: **12 November 2026**

Report Title: **The Flow Country World Heritage Site – Management Plan and Setting Guidance**

Report By: **Assistant Chief Executive - Place**

1 Purpose/Executive Summary

1.1 The Flow Country Partnership is a SCIO established in February 2024 to protect, restore and manage the Flow Country, acting as the primary governing body overseeing the Flow Country World Heritage Site (WHS) which was inscribed by UNESCO in July 2024. The Highland Council and NatureScot are accountable bodies for The Flow Country WHS. On 12 February 2026, the Economy and Infrastructure Committee was provided with a Progress Report on the WHS's governance, management and planning matters since inscription, which included an update on The Flow Country WHS Management Plan, Setting Definition Study and Setting Guidance as well as the associated update to the Heritage Impact Assessment Toolkit.

1.2 The Flow Country World Heritage Site Management Plan acts as a framework for the management and protection of the World Heritage Site, providing an outline for the preservation of the inscribed Outstanding Universal Value (OUV). The Setting Definition Study and the Setting Guidance define setting for the purposes of The Flow Country WHS specifically and set out how to assess the effects of development proposals on its setting.

1.3 This report now seeks Members' agreement to endorse The Flow Country WHS Management Plan and related Setting Definition Study and Setting Guidance, noting that they will be used (where relevant) in the assessment of future development proposals that might impact on the site or its setting.

2 Recommendations

2.1 Members are asked to:-

i. **Note** the thorough formulation and consultation processes used in the production of the Management Plan;
ii. **Agree** to endorse The Flow Country World Heritage Site Management Plan, the Setting Definition Study and the Setting Guidance; and
iii. **Note** that there will be opportunity to consider planning policies for The Flow Country WHS and cross-reference to the Management Plan, within the new Highland Local Development Plan (HLDP).

3 Implications

3.1 **Resource** – There are no implications.

3.2 **Legal** - The WHS Management Plan, Setting Definition Study and Setting Guidance will be promoted for use, including as material considerations in determining planning applications, noting that it is for the decision maker to identify which considerations are material in any particular case, and then to decide what weight to accord to those that are. In due course, the Council can consider content for its Proposed Highland Local Development Plan that can assist this, and there is a statutory process for preparing the Local Development Plan.

3.3 **Risk** - Failure to protect the WHS from inappropriate development which impacts on the Site's Outstanding Universal Value could result in de-inscription and the loss of UNESCO World Heritage status.

3.4 **Health and Safety (risks arising from changes to plant, equipment, process, or people)** – There are no implications.

3.5 **Gaelic** – There are no implications.

4 Impacts

4.1 In Highland, all policies, strategies or service changes are subject to an integrated screening for impact for Equalities, Poverty and Human Rights, Children's Rights and Wellbeing, Climate Change, Islands and Mainland Rural Communities, and Data Protection.

4.2 Considering impacts is a core part of the decision-making process and when taking any decision, Members must give due regard to the findings of any assessment.

4.3 **Integrated Impact Assessment – Summary**

4.3.1 An Integrated Impact Assessment screening was undertaken on the 7 July 2026, as summarised below. The conclusions have been subject to the relevant Manager Review and Approval as detailed within **Appendix 1**. The Screening process has concluded that no Integrated Impact Assessment is needed. Members are asked to consider the summary below to support the decision-making process.

4.3.2

Impact Assessment Area	**Conclusion of Screening & Assessment**
Equality, poverty and human rights	Positive impact – recommended that full assessment is not required
Socio-economic	Positive impact – recommended that full assessment is not required
Children's Rights and Well-being	Positive impact – recommended that full assessment is not required
Island and Mainland Rural	Minor impact – recommended that full assessment is not required
Climate Change	Positive impact – recommended that full assessment is not required
Data Protection	No impact

5 The Flow Country World Heritage Site Management Plan

5.1 The Flow Country World Heritage Site Management Plan acts as a framework for the management and protection of the World Heritage Site, providing an outline for the preservation of the inscribed Outstanding Universal Value (OUV). The Management Plan outlines the threats and opportunities facing the Site, guides decision-making within the WHS and provides a framework for managing development, tourism, conservation and restoration, infrastructure, and land use in and around the Site. It meets the global aims of UNESCO while setting out the international, national and local policy context in which the World Heritage Site sits.

5.2 The pre-inscription version of the Management Plan was drafted and publicly consulted between July and September 2022 prior to submission to UNESCO in February 2023 as part of the Nomination Dossier which was assessed in the bid to establish World Heritage Status. As detailed in **Appendix 2 (link here)**, following inscription, the Management Plan has been updated to reflect the changes since the original version was drafted, including the updated planning policies contained within National Planning Framework 4 (2023) and the removal of one of the qualifying criteria. While originally proposed under both natural criteria (ix) and (x), the UNESCO World Heritage Committee ultimately inscribed the site under criterion (ix) only. During the evaluation process, the International Union for Conservation of Nature (IUCN) and UNESCO concluded that while the Flow Country contains important and diverse species (such as significant breeding bird assemblages identified under criterion (x)), its globally unique and defining characteristic is its structural, actively accumulating blanket bog ecosystem (identified under criterion ix). The removal of criterion (x) does not diminish the site's biodiversity but rather streamlines its OUV to its peerless status as the only blanket bog peatland WHS on Earth.

5.3 The Management Plan outlines:-

- an overview of World Heritage, the inscription process including both UNESCO and IUCN's evaluation, and the wider management process for World Heritage Sites;
- a detailed description of The Flow Country WHS and its setting, including the global context of the peatlands, its background, location and mapped WHS boundary;
- a justification of why the Flow Country was inscribed as a WHS, including a breakdown of the attributes of OUV;
- international, National and Regional policy context and the protection the Site receives from geographic and planning frameworks and existing conservation designations;
- the issues affecting the management of the WHS including factors such as climate change, visitor management, wildfire, conifer forest plantations and major infrastructure developments; and
- the wider implementation, governance and monitoring approach for the WHS

5.4 In accordance with the Strategic Environmental Assessment (SEA) process under The Environmental Assessment (Scotland) Act 2005, an SEA was undertaken for the Management Plan to identify, describe, and evaluate the likely significant environmental effects of implementing the Management Plan and its reasonable alternatives. The SEA Environmental Report identifies potential significant positive and negative environmental effects and, where necessary, describes how these effects can be avoided or reduced.

5.5 The SEA underwent a public consultation from 20 May 2026 to 24 June 2026. A copy of the Management Plan and the Environmental Report were available for public inspection via the website www.theflowcountry.org.uk/world-heritage/about/ and paper copies were made available at the Highland Council Headquarters and at Caithness House. The consultation was advertised on the above webpage, on the Highland Council webpage https://www.highland.gov.uk/flowcountrywhsplanning and a notice placed within the Press and Journal on 20 April 2026 including a web advert on the online public notices page from 20 April - 26 April 2026.

5.6 The feedback included responses from the three SEA Consultation Authorities – NatureScot, SEPA and HES – along with RSPB, Kyle of Sutherland Rivers Trust and Kyle of Sutherland District Salmon Fishery Board, Belltown Power UK Limited and Melvich Wind Energy Hub Limited and Scottish Renewables. All comments received have been considered, and, where relevant, changes have been made to the appropriate document(s) in response as detailed within **Appendix 3**.

5.7 As detailed within **Appendix 4**, a Habitat Regulation Appraisal Proforma was completed in consultation with NatureScot. No significant environmental effects were identified for any of the SAC, SPA or Ramsar designated sites within the vicinity of the WHS, assuming the proposed mitigation measures were followed, as outlined within the Management Plan.

6 Setting Definition Study and Setting Guidance

6.1 The definition of setting in regard to WHS is explicitly related to UNESCO's Operational Guidelines and the UNESCO Guidance and Toolkit Impact Assessment, as well as the World Heritage Convention's requirements for presentation and appreciation to be defined for WHS. The setting of a WHS fulfils two purposes – protecting key aspects of a Site's OUV from change arising outside its boundary; and facilitating or enhancing appreciation of the Site. These two purposes lead to a two-fold definition of setting – functional and experiential. The functional component relates to all of the following:-

- the aspects of the setting that directly support how the OUV and the overall Site functions;
- the environmental context in which change can affect the ecological health and resilience of the Site; and
- the areas outwith the Site that are required to maintain the ecological functioning and integrity of the Site's OUV

The experiential component relates to all of the following:-

- the way people experience, understand or appreciate the Site;
- areas outwith the Site where change may affect the presentation and appreciation of the Site's OUV; and
- specific instances where a proposed change could affect people's appreciation of the Site, where that appreciation derives directly from the Site's attributes of OUV i.e. it must be relevant to the basis of the Site's inscription

Functional setting is the primary consideration of any change that is proposed outwith the Site due to the fact the WHS is inscribed for natural criteria only (rather than cultural) and the changes would therefore directly affect the core reasons the Site is inscribed. Experiential setting is an important, but secondary, consideration in the specific instances where a proposed change could affect the way in which people experience the Site's OUV.

6.2 The Setting Definition Study and the Setting Guidance (together with the Council's Impact Assessment Toolkit for the Site) provide the guidance and tools for scoping and, where necessary, assessing the effects of a proposed development on the setting of The Flow Country WHS. The Setting Definition Study and Setting Guidance enable setting to be applied in a rational, evidenced way to ensure the Site is appropriately protected. The appropriate test for development proposals affecting a WHS or its setting is that they will only be supported where their OUV is protected and preserved, which is reflected by WHS specific provisions in NPF4.

6.3 A Setting Definition Study was undertaken in October 2023 by Land Use Consultants (LUC) overseen by NatureScot on behalf of the Flow Country Partnership, which included stakeholder consultation. Following the Site's inscription, LUC were re-engaged, overseen by officers from both Highland Council and NatureScot on behalf of the Flow Country Partnership, to update the Setting Definition Study to reflect the changes since the inscription and to develop the accompanying Setting Guidance.

A consultation workshop was undertaken on 11 February 2026 with relevant stakeholders, to present to them how the setting is defined and understood and to discuss what is needed to aid its understanding and application in development management. In July 2026, the updated Setting Definition Study and draft Setting Guidance were circulated to the stakeholders and feedback was invited. As detailed within **Appendix 5,** the combined feedback received has resulted in:-

- further clarification being provided on the requirement for the inclusion of setting considerations within assessment of proposed developments that could affect this Site;
- reassurance that setting supports and enhances existing assessment processes rather than introducing a separate regime; and
- the refinement of a step-by-step worked example of how both functional and experiential setting should be assessed in practice

6.4 The updated Setting Definition Study within **Appendix 6 (link here)**, incorporates the changes since inscription as well as changes arising from the consideration of the feedback received from the consultation workshop. It has informed the Setting Guidance within **Appendix 7**, and Members are invited to agree to endorse both documents.

6.5 A new version of the Council's tailored Heritage Impact Assessment (HIA) toolkit for The Flow Country World Heritage Site has been prepared, to accommodate the consideration of setting in line with the Setting Guidance, and which is available via the following webpage: https://www.highland.gov.uk/flowcountrywhsplanning. It also includes information on additional supporting values, in line with the post-inscription Management Plan, and other updates to assist the user.

6.6 As part of normal planning practice, all direct, indirect and cumulative impacts occurring in the entire area of influence of any development proposals are to be appropriately identified and assessed for their potential to impact the WHS. The Setting Definition Study and Setting Guidance should be viewed as tools to support this assessment in order to protect The Flow Country WHS's inscribed OUV specifically and help inform appropriately sited development. The WHS is not inscribed for any scenic or landscape factors, and visual associations are not additional attributes of OUV. Setting is not a buffer zone and is not spatially fixed nor has a defined boundary. It is defined as a process-based assessment of interactions affecting OUV rather than a mapped protection zone. Experiential setting can only be considered where changes may affect people's understanding, experience and appreciation of attributes of the Site's OUV.

6.7 The comments received during the preparation of, and stakeholder engagement on, the Setting Guidance include reservations from some stakeholders about the perceived addition of further layers of assessment and planning policy that was felt to challenge development proposals within and surrounding the WHS. However, it is not intended for setting to add unnecessary barriers to development proposals; rather it looks to guide and shape proposals that will protect the Site's unique qualities and to only require assessment where OUV of the Site or appreciation of them could be affected.

7 Conclusion

7.1 Members are invited to agree to endorse the Management Plan, Setting Definition Study and Setting Guidance. Members are also invited to note that in due course we intend to prepare and include planning policy and guidance for the WHS in the forthcoming Proposed Highland Local Development Plan, to be used alongside the policies of NPF4.

Designation:	Assistant Chief Executive - Place
Date:	08 October 2026
Author:	Sarah Lashley, World Heritage Site Co-ordinator
Background Papers:	None
Appendices:	Appendix 1 – Integrated Impact Assessment Appendix 2 – The Flow Country World Heritage Site Management Plan Supporting Documents Appendix 3 – The Flow Country World Heritage Site Management Plan Strategic Environmental Assessment - Consultation Feedback Appendix 4 – The Flow Country World Heritage Site Management Plan External Habitats Regulations Appraisal (HRA) proforma Appendix 5 – The Flow Country World Heritage Site Setting Definition Study and Setting Guidance feedback and development Appendix 6 – Setting Definition Study Supporting Documents Appendix 7 – Setting Guidance

Integrated Impact Assessment Screening

About proposal

What does this proposal relate to? Strategy

Proposal name: The Flow Country World Heritage Site Management Plan, Setting Definition Report and Setting Guidance

High level summary of the proposal: The Flow Country World Heritage Site (WHS) Management Plan acts as a framework for the management and protection of the WHS, providing an outline for the preservation of the inscribed Outstanding Universal Value. The related Setting Definition Report and Setting Guidance define setting for the purposes of The Flow Country WHS specifically and set out how to assess the effects of development proposals on its setting.

Who may be affected by the proposal? The proposal should positively affect all residents of Caithness and Sutherland who will benefit from the WHS being properly managed and conserved. The tourism aspect will bring positive benefits to the wider Highland area as well as further afield.

Start date of proposal:

End date of proposal:

Does this proposal result in a change or impact to one or more Council service? No

Does this relate to an existing proposal? No

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Sign off date: 2026-07-09

Equalities, poverty, and human rights

Protected characteristics

Select what impact the proposal will have on the following protected characteristics:

Sex: No impact

Age: No impact

Disability: No impact

Religion or belief: No impact

Race: No impact

Sexual orientation: No impact

Gender reassignment: No impact

Pregnancy and maternity: No impact

Marriage and civil partnership: No impact

Protected characteristics impact details: The Flow Country WHS Management Plan, Setting Definition Report and Setting Guidance will have no discernible impact on the above protected characteristics. The proposal focusses mainly on the framework for protecting and enhancing the Flow Country WHS and surrounding area.

Poverty and socio-economic

What impact is the proposal likely to have on the following?

Prospects and opportunities: Positive

Places: Positive

Financial: No impact

Poverty and socio-economic impact details: The proposal looks to make a positive contribution to educational and training resources and programmes, focussing on developing land-based skills and advancing peatland and climate education and research. Promoting advancements in education and training, as well as the potential for creating tourism opportunities within Caithness and Sutherland and the wider area, the proposal looks to bring positive benefits, and help support, rural and remote communities within Caithness and Sutherland.

Human rights

Which of the below human rights will be affected by this proposal? No human rights will be affected

What impact do you consider this proposal to have on the human rights of people? No impact

Human rights impact details: The proposal will have no discernible impact on the above human rights. The proposal focusses mainly on the framework for protecting and enhancing the Flow Country WHS and surrounding area.

Equalities, poverty and human rights screening assessment

What impact do you think there will be to equalities, poverty and human rights? Positive impact

Is a Full Impact Assessment required? No

Children's rights and wellbeing

What likely impact will the proposal have on children and young people? The proposal looks to make a positive contribution to educational and training resources and programmes which will benefit to children and young people in education and early employment. The proposal aims to create job opportunities within Caithness and Sutherland and the wider area, encouraging young people to remain in the area, helping support rural and remote communities and encourage the younger generation to stay within the area.

Which of the below children's rights will be affected by the proposal? Children have a standard of living that is good enough to meet their physical and social needs and support their development (Article 27), Children have a right to education (Article 28)

Explain how the children's rights selected above will be affected: The proposal will have a positive impact on children's rights by enhancing a globally recognised WHS within their local area, improving education resources, promoting outdoor learning, providing accessible access to the outdoors and improving their connection with their cultural and social history.

Children's rights and wellbeing screening assessment

What impact do you think there will be to children's rights and wellbeing? Positive impact

Is a Full Impact Assessment required? No

Data protection

Will your proposal involve processing personal data? No

Data protection screening assessment

What change will there be to the way personal data is processed? No personal data will be processed

Is a Full Impact Assessment required? No

Island and mainland rural communities

Does your proposal impact island and mainland rural communities? Yes

Could people in island and mainland rural communities be affected differently? Yes

How could the impact differ? The proposal looks to make a positive contribution to educational and training resources and programmes within the Caithness and Sutherland area, focussing on developing land-based skills and advancing peatland and climate education and research within the local area. Promoting advancements in education and training, as well as the potential for creating tourism opportunities within Caithness and Sutherland and the wider area, the proposal looks to bring positive benefits, and help support, rural and remote communities within Caithness and Sutherland.

Have any negative impacts been identified? No

Island and mainland rural communities screening assessment

What impact do you think there will be to island and mainland rural communities? Minor differences

Is a Full Impact Assessment required? No

Climate change

Does the proposal involve activities that could impact on greenhouse gas emissions (CO2e)? Yes

Does the proposal have the potential to affect the environment, wildlife or biodiversity? Yes

Does the proposal have the potential to influence resilience to extreme weather or changing climate? Yes

Provide information regarding your selection above: The proposal focusses on the protection and enhancement of the peatlands of the Flow Country and will provide a significantly positive impact on all of the above criteria. Peatlands play a vital role in the sequestration and storage of huge amounts atmospheric carbon, helping contribute to the fight against climate change. The proposals looks to protect the existing peatland habitat and restore areas of degraded peatland to improve and increase the amount of carbon being taken from the environment. The proposal also looks to bring benefits to wildlife and biodiversity by protecting and improving the variety of peatland habitats within the Flow Country, as well as providing environmental benefits such as water filtration that improves the water quality of the surrounding area.

Climate change screening assessment

Have you identified potential impact for any of the areas above or marked any as not known? Yes

Is a Full Impact Assessment required? No

The Flow Country World Heritage Site Management Plan Strategic Environmental Assessment - Consultation Feedback

Consultee	Summary of comments	Response
NatureScot	Content with the approach to the Environmental Report for the Flow Country World Heritage Site Management Plan and welcome the clear layout and assessment	Noted, no action taken
HES	Welcomes that cultural heritage was assessed as part of the Environmental Report and agree with the findings	Noted, no action taken
SEPA	No comments submitted as per previously agreed with Scottish Government	Noted, no action taken
RSPB	Include reference to guidance on the creation of Forest Plans within Caithness and Sutherland SAC/SPA	*Chapter 6, 6.3 Plantation woodland creation* reference added within Management Plan
	Include aim to expand the designated site network in line with restoration priorities	In reference to the WHS designation*, Chapter 7, Theme 1, Policy 1.6* of the Management Plan aims to incorporate areas adjacent to the boundary into the WHS designation in future if restoration status allows, and public consultation proves supportive. Any aim for the potential expansion of the wider SAC/SPA/SSSI/Ramsar network within the vicinity of the WHS, would fall under NatureScot's remit.
	Strengthen advocation for commercial forestry edge pullback from non-designated restored peatland to avoid continued impacts of non-native tree regeneration	*Chapter 6, 6.3 Plantation woodland creation* wording strengthened within the Management Plan to reflect the benefits to non-designated areas of peatland
	Include reference to NatureScot guidance on cumulative bird collision impacts modelling within WHS, and include an action related to undertaking research into the cumulative impacts of development on birds within the context of the WHS	*Chapter 6, 6.7 Renewable energy and other national or major development* updated to include reference to guidance. *Chapter 7, Theme 3, Policy 3.6* strengthened to highlight the requirement to build and maintain links with research organisations into potential impacts on OUV and supporting values.
	Include definition of 'blanket bog ecosystem' as described in Criterion ix, Attribute a)	FCP has not defined the blanket bog ecosystem by NVC alone as it thinks a wider definition reflecting the broader physical characteristics of blanket bog in the Flow Country is more appropriate. The definition of ecosystem should not be limited to vegetation alone. However, further clarification of blanket bog ecosystem has been included in *Chapter 3, 3.3 Attributes of OUV*, that emphasises the association of habitats and communities within the blanket bog ecosystem.

	Wind farm grid connections and electricity transmission infrastructure to be included as another type of development that risks deterioration of OUV	*Chapter 6, 6.7 Renewable energy and other national or major development* outlines that all development proposals will be assessed for their potential impacts, including energy transmission infrastructure.
	Review wording and highlight that impacts on OUV cannot be offset	Chapter 7*, Theme 3, Policy 3.6* wording amended to clarify impacts on OUV cannot to mitigated or offset.
Kyle of Sutherland Rivers Trust and Kyle of Sutherland District Salmon Fishery Board	Lack of emphasis on the benefits of promoting the planting and/or natural regeneration of native tree species in riparian zones, with Fiag area being a main concern. Namely: - The positive impacts on reducing water temperature which effects the survival of fish species such as salmon and trout - The contribution of these species to the tourism economy - The restrictions in gaining permission to plant native trees in riparian zones within and adjacent to peatlands within the WHS - Negative issues such as regeneration on functioning blanket bog and edge effects relate more to commercial forestry. - IUCN's peatland programme promotes a more balanced approach to coexistence of trees in riparian areas alongside peatlands. Noted frustration on the seemingly precautionary approach of competent authorities with the rejection of native tree planting. - Noted historic records of native woodland present, specifically in the Fiag area. Also noted three SSSI designations that include mountain birch as a qualifying feature, all in unfavourable status. Mitigation measures should consider the potential negative effects of restricting native tree planting.	The Flow Country Partnership is supportive of appropriately situated planting and regeneration of native tree species within the riparian habitats of the WHS. In the Management Plan, *Chapter 6, 6.3 Plantation woodland creation* identifies the establishment of native woodland, such as alongside streams and on suitable non-peatland habitats, as an opportunity for bringing benefits to the WHS and improvements to wider biodiversity. *Chapter 7, Theme 1 Policy 1.4* states "Identify suitable areas for natural regeneration or planting of native woodland for biodiversity benefits where there will be no detrimental effect on OUV.", emphasising the establishment of native woodland is seen as a priority for the WHS, where there is no negative impact on the inscribed OUV. Furthermore, *Chapter 6*, *6.9 Water catchment management* outlines the water quality of the associated catchments within the WHS are fundamental for water quality and biodiversity, as well as the contribution to the local economy. Any proposals for tree planting within the Caithness and Sutherland SAC and SPA, that underpin the WHS boundary, requires formal permission from NatureScot who will assess the potential impacts to the qualifying features of the designations. The benefits to biodiversity and water temperatures as well as impacts such as the potential degradation of the peatlands by the establishment of trees and the edge-effect impact on breeding birds such as waders will be taken into consideration when assessing proposals. While FCP is not the determining body in permitting proposals of native woodland planting within the WHS, we continue to work closely with NatureScot and follow appropriate guidance, as well as continue collaboration with the Environmental Research Institute that advances the research into the potential impacts on the peatlands of the WHS.
	Error in the Environmental Report status of condition of the River Thurso SAC. To be noted that the surrounding rivers are classed as being in 'unfavourable condition' (as per WFD). To be noted the River Shin within the Flow Country WHS is hydrologically connected to Oykel SAC, and any measures can indirectly impact the SAC.	Noted.

	Lack of detail on monitoring for a range of biodiversity within Environmental Report, the limitations of using birds as proxy for all biodiversity. Monitoring of native woodland cover is not included.	Critical Success Factor 1.2 within the Management Plan has since been updated to include "current and restored areas of blanket bog continue to exist as a functional peatland that supports the wider ecosystem, monitored via NatureScot's condition-based assessment." covering wide aspect of peatland biodiversity.
	Disagree that the Flow Country maintains a strong population of Atlantic salmon, with little emphasis on the impact of temperature on IUCN critically endangered species.	The rivers of Caithness and Sutherland maintain healthier populations and spawning rates in comparison to other areas of Scotland *(National Electrofishing Programme for Scotland (NEPS) 2023: status of juvenile Atlantic salmon and brown trout populations* (2025),), with some areas awarded Grade 1 status. However, *Chapter 6*, *6.9 Water catchment management* wording amended to reflect the populations are strong in comparison but still suffer from overall gradual declines. Wording also updated to highlight the negative implications of increased water temperature on fish species.
	Include the role of native trees within the peatland landscape in the development of opportunities for peatland restoration and associated science.	Noted, FCP continue to work closely with Environmental Research Institute in the development of understanding of peatlands and their associated habitats.
	Omission of aquatic SACs for pearl mussel and Atlantic salmon.	*Chapter 5, 5.3 Conservation designations* updated to include aquatic SAC and their qualifying features
	Confusion over terminology of blanket bog being 'treeless' in SEA and Management Plan	Noted, Management Plan reviewed to ensure consistency
Belltown Power UK Limited and Melvich Wind Energy Hub Limited	The Management Plan or Setting definition should not be used as a barrier to renewable energy development. Specifically: - Setting should not be considered as part of the Management Plan, the statement that UNESCO requires setting to be defined and assessed – either functional or experiential - is not correct - Setting should not be used to imply the WHS as either a landscape or cultural designation, and visual impacts therefore effect the OUV - Setting should not create additional controls beyond the robust national planning frameworks and controls that already exist. - Assessing visual relationships and impacts on the wider landscape risk creating the precedent of a 'buffer zone' around the WHS which is not reflected in planning law and should not be considered part of the OUV.	The Setting process supports and enhances existing assessment processes rather than introducing a separate layer of planning control – impacts to the setting of a WHS, either functional or experiential, are only relevant when it specifically affects the attributes of OUV. The World Heritage Convention requires the 'presentation' and 'appreciation' of cultural and natural heritage (Articles 4 and 27). The setting of a WHS therefore fulfils two purposes – protecting key aspects of a Site's OUV from change arising outside its boundary; and facilitating or enhancing appreciation of the Site. Landscape, visual and cultural associations and are not additional attributes of OUV but are treated only insofar as they allow people to understand, experience and appreciate attributes of OUV. The definition of setting is explicitly related to UNESCO Operational Guidelines, including the statements that setting may include topography, land use, infrastructure, visual relationships, perceptions and associations, and that management of the wider setting is related to supporting OUV. The term is less commonly applied to natural heritage sites compared to cultural heritage sites but is nevertheless used by UNESCO for all World Heritage properties.

		The Study clarifies that setting is not a buffer zone and is not spatially fixed, rather it is defined as a process-based assessment of interactions affecting OUV rather than a mapped protection zone. It has no defined boundary; it requires consideration of the Area of Influence and pathways affecting OUV rather than distance-based thresholds.
	Concern over the reduction in available land for renewable energy proposals	Noted, FCP's main objective is the protection of the Site's inscribed OUV. Each proposal is reviewed on a case-by-case basis using established guidance that helps inform the assessment of any potential impact on the WHS's inscribed OUV attributes. FCP do not oppose appropriately sited developments that do not negatively impact the OUV attributes.
	Disagree with the inclusion of wording surrounding promotion of sensitive lighting design to protect dark skies, tranquil setting and experiential setting as it implies visual impacts are being included as part of the OUV and is not relevant to the inscription	While not included within the Site's OUV, dark skies and tranquil setting do contribute to the wider value of the Flow Country. Experiential aspects of setting relate to the way people experience, understand, or appreciate the Site and encompasses the parts of the WHS's surroundings where change may affect the presentation and appreciation of the WHS's qualities which derive from its OUV.
	The positive impacts of renewable energy, including the contribution climate resilience and peatland restoration and enhancement benefits, have not been sufficiently highlighted. Benefits that renewable energy brings include: - accessible outdoor access - a source of funding - monitoring schemes on a large scale	*Chapter 6, 6.7 6.7 Renewable energy and other national or major developments* updated to emphasise additional benefits of new developments to the local and wider area.
	The disbenefit of limiting renewable energy development should be assessed in relation to the impact on fighting the climate crisis. A study should be undertaken in collaboration with the renewables industry	Noted.
	We disagree with the statement "Risk of monitoring and management not being maintained on restored peatland areas agreed as mitigation for development impacts." This is purely speculative – it is for planning authorities to monitor any restoration or mitigation requirements; the concern it should not be enacted should not present a barrier to development.	Noted, statement removed.
	We agree with the statement implying co-existence with appropriately sited infrastructure can bring about mutual benefits to both renewable energy generation and peatlands. Wind and other renewable development should be strongly supported within the WHS where appropriately sited and this should be reflected in the Management Plan.	Noted, FCP's main objective is the protection of the Site's inscribed OUV. Each proposal is reviewed on a case-by-case basis using established guidance that helps inform the assessment of any potential impact on the WHS's inscribed OUV attributes.
Scottish Renewables	The Operational Guidelines do not specify the requirement for the definition of wider setting, but that if the nominating party wish to make a distinction and provide a rationale for wider setting then that it should be provided as part of the nomination dossier. The WHS	The definition of setting is explicitly related to UNESCO Operational Guidelines, including the statements that setting may include topography, land use, infrastructure, visual relationships, perceptions and associations, and that management of the wider

	nomination dossier includes no maps or description of the wider setting.	setting is related to supporting OUV. Furthermore, the World Heritage Convention requires the 'presentation' and 'appreciation' of cultural and natural heritage (Articles 4 and 27). The consideration and definition of setting for WHS has not been introduced as a new intent following inscription. It was referenced as a priority objective within the Nomination Document, *Part 5, Management plan objectives framework PO 1.C "Undertake a study into what constitutes the setting of the nominated property, with a view to creating supplementary planning guidance*", and in *Chapter 2, section 2.3 Description of the setting* and *Chapter 5, section 5.1 Geographic framework* of the Nomination Draft version of the Management Plan.
	We disagree that the Flow Country Partnership is obligated to define experiential setting due to the WHS not being inscribed under a cultural heritage criterion. We also disagree with the definition of 'functional setting' as the existing boundary already includes the hydrological units required to support the OUV, therefore acting as its own buffer. In addition, the surrounding peatlands out with the WHS boundary are protected under existing legislation including NPF4 and should not be included under the definition of WHS setting.	The definition of setting is explicitly related to UNESCO Operational Guidelines, including the statements that setting may include topography, land use, infrastructure, visual relationships, perceptions and associations, and that management of the wider setting is related to supporting OUV. The term is less commonly applied to natural heritage sites compared to cultural heritage sites but is nevertheless used by UNESCO for all World Heritage properties. Functional setting relates to factors which directly support the functioning of the Site and its protection and the environmental context in which change can affect the ecological health and resilience of the WHS. It encompasses those areas outside the boundary that are needed to maintain the ecological functioning and integrity of the inscribed area, based on interactions between hydrological, biological and climatic processes. Setting is not a buffer zone and is not spatially fixed, rather it is defined as a process-based assessment of interactions affecting OUV rather than a mapped protection zone. It has no defined boundary; it requires consideration of the Area of Influence and pathways affecting OUV rather than distance-based thresholds.
	The implication that any impact on the WHS's OUV is not acceptable does not align with NPF4. The effect on OUV is the net result of a proposed development's impacts and benefits – the acceptability of any resultant net adverse would then be considered in the planning balance.	The protection through the Planning System includes, first and foremost, the protection of World Heritage and its setting in its own right. NPF4 states in Policy 7l).: "Development proposals affecting a World Heritage Site or its setting will only be supported where their Outstanding Universal Value is protected and preserved". Despite Policy 7 referencing cultural assets (and WHS designated for their cultural significance), Scottish Government have provided reassurance this policy also incorporates WHS inscribed for natural attributes. This allows for non-impactive development but clearly recognises the OUV of the property, including its integrity.

	We oppose the recommendation that promotes sensitive lighting design in and around the designation as it does not relate to the inscribed OUV. This looks to create unrelated planning barriers.	While not included within the Site's OUV, dark skies and tranquil setting do contribute to the wider value of the Flow Country. Experiential aspects of setting relate to the way people experience, understand, or appreciate the Site and encompasses the parts of the WHS's surroundings where change may affect the presentation and appreciation of the WHS's qualities which derive from its OUV.
	Climate change mitigation does not account for the potential loss of renewable energy development against the carbon sequestration attributes of the stored peatland. The WHS may not have a positive impact on climate change mitigation should its designation prevent the development of onshore wind farms.	FCP disagrees that the WHS may not have a positive impact on climate change mitigation should the designation restrict the development of onshore wind farms within the WHS and its setting. FCP's main objective is the protection of the Site's inscribed OUV which includes maintaining the Site's extensive blanket bog ecosystem as well as its carbon sequestration and storage properties. These properties are of huge global importance to climate mitigation and FCP oppose any development that may negatively impact these qualities. FCP do not oppose appropriately sited developments that do not negatively impact the OUV attributes.

Habitats Regulations Appraisal Proforma

The purpose of this document is to provide an example of how to record a Habitats Regulations Appraisal (HRA). It is similar to a proforma used by NatureScot staff when NatureScot (SNH) is a competent authority and when NatureScot is providing advice to a competent authority. In August 2020 SNH changed its operating name to NatureScot, although we are still legally known as SNH when carrying out some of our functions. Any references to a legal obligation involving NatureScot in this proforma should be read as one involving SNH.

Note: Summary guidance is included below for convenience. Further guidance is available on the NatureScot website on how to carry out an HRA.

Appraisal in relation to regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 as amended (Habitats Regulations Appraisal)

(Or, where relevant, under regulation 61 of The Conservation of Habitats and Species Regulations 2010 as amended, or regulation 25 of The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 as amended)

EUROPEAN SITE DETAILS

Name of European site(s) potentially affected:

1. Caithness and Sutherland Peatlands SAC
2. Caithness and Sutherland Peatlands SPA
3. Caithness and Sutherland Peatlands Ramsar
4. River Thurso SAC
5. Berriedale and Langwell Waters SAC
6. River Naver SAC
7. River Borgie SAC
8. River Oykel SAC
9. Broubster Leans SAC
10. Lairg and Strath Brora Lochs SPA
11. Foinaven SPA

Name of component SSSI if relevant:

A'Mhoine
Bad na Gallaig
Badanloch Bogs
Ben Griams
Ben Loyal
Blar nam Faoileag
Cnoc an Alaskie
Coir an Eoin

Coire na Beinne Mires
Druim na Coibe
Druim nam Bad
Dunbeath Peatlands
East Halladale
Forsinard Bogs
Knockfin Heights
Loch Caluim Flows
Loch Meadie Peatlands
Lochan Buidhe Mires
Lon a' Chuil
Mallart
Oliclett
River Borgie
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

European site qualifying interest(s) & whether priority/non-priority:

1. **Caithness and Sutherland Peatlands SAC**

<u>European priority interests (habitats)</u>

- Blanket bogs

<u>European non-priority interests (habitats)</u>

- Depressions on peat substrates of the *Rhynchosporion*
- Natural dystrophic lakes and ponds
- Northern Atlantic wet heaths with *Erica tetralix*
- Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*
- Transition mires and quaking bogs

<u>European non-priority interests (species)</u>

- Marsh saxifrage *Saxifraga hirculus*
- Otter *Lutra lutra*

2. **Caithness and Sutherland Peatlands SPA**

<u>European non-priority interests</u>

- Black-throated Diver *Gavia arctica*
- Common Scoter *Melanitta nigra*

- Dunlin *Calidris alpina schinzii*
- Golden Eagle *Aquila chrysaetos*
- Golden Plover *Pluvialis apricaria*
- Greenshank *Tringa nebularia*
- Hen Harrier *Circus cyaneus*
- Merlin *Falco columbarius*
- Red-throated Diver *Gavia stellata*
- Short-eared Owl *Asio flammeus*
- Wigeon *Anas penelope*
- Wood Sandpiper *Tringa glareola*

3. Caithness and Sutherland Peatlands Ramsar

Criterion 1:

- Blanket big
- Wet mires
- Oligotrophic lochs, dystrophic lochs, lochans and pools, wet heath

Criterion 2:

- *Sphagnum lindbergii, Sphagnum majus*
- *Hammarbya paludosa*
- *Oreodytes alpinus*
- Otter
- Freshwater pearl mussel
- Red-throated diver
- Black-throated diver
- Golden plover
- Wood sandpiper
- Dunlin

Criterion 4:

- Wigeon
- Common scoter
- Greenshank

4. River Thurso SAC

European non-priority species

- Atlantic salmon

5. Berriedale and Langwell Waters SAC

European non-priority species

- Atlantic salmon

6. River Naver SAC

European non-priority species

- Atlantic salmon
- Freshwater pearl mussel

7. River Borgie SAC

European non-priority species

- Otter
- Atlantic salmon
- Freshwater pearl mussel

8. River Oykel SAC

European non-priority species

- Atlantic salmon
- Freshwater pearl mussel

9. Broubster Leans SAC

European non-priority species

- Transition mires and quaking bogs

10. Lairg and Strath Brora Lochs SPA

European non-priority species

- Black-throated diver

11. Foinaven SPA

European non-priority species

- Golden eagle

Conservation objectives for qualifying interests:

1. **Caithness and Sutherland Peatlands SAC**

Annex I Habitats

1.To ensure that the qualifying features of Caithness and Sutherland Peatlands SAC are in favourable condition and make an appropriate contribution to achieving favourable conservation status

2.To ensure that the integrity of Caithness and Sutherland Peatlands SAC is restored by meeting objectives 2a, 2b and 2c for all qualifying features

Qualifying feature	2a. Extent and distribution	2b. Structure, function and supporting processes	2c. Distribution and viability of typical species
Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels [H3130]	Maintain	Restore	Restore
Acid peat-stained lakes and ponds (also known as ‘dubh lochans’) [H3160]	Maintain	Maintain	Maintain
Wet heathland with cross-leaved heath [H4010]	Maintain	Restore	Restore
Blanket bog* [H7130]	Maintain	Restore	Restore
Very wet mires often identified by an unstable 'quaking' surface (also known as ‘ladder fen’) [H7140]	Maintain	Restore	Restore
Depressions on peat substrates [H7150]	Maintain	Restore	Maintain

* Indicates a Habitats Directive Priority Habitat

Annex II Species

1.To ensure that the qualifying features of Caithness and Sutherland Peatlands SAC are in favourable condition and make an appropriate contribution to achieving favourable conservation status
2.To ensure that the integrity of Caithness and Sutherland Peatlands SAC is restored by meeting objectives 2a, 2b and 2c for each qualifying feature

Qualifying feature	**2a Population as a viable component of the site**	**2b Distribution**	**2c Supporting habitats within the site and availability of food**
Otter (*Lutra lutra*) [S1355]	Restore	Maintain	Maintain
Marsh saxifrage (*Saxifraga hirculus*) [S1528]	Maintain	Maintain	Maintain

2. **Caithness and Sutherland Peatlands SPA**

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained.

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

3. **Caithness and Sutherland Peatlands Ramsar**

All Ramsar features are accounted for by assessing the Caithness and Sutherland SAC and SPA features; apart from *Oreodytes alpinus* (water beetle) and freshwater pearl mussel *Margaritifera margaritifera* which will need to be considered across the Ramsar separately.

Ramsar interest feature	**Conservation objectives**
Blanket bog	Refer to the conservation objectives for Blanket bog and Depressions on peat substrates, in the Caithness and Sutherland Peatlands SAC Conservation Advice Package
Very wet mires often identified by an unstable 'quaking' surface	Refer to the conservation objectives for Very wet mires often identified by an unstable 'quaking' surface in the Caithness and Sutherland Peatlands SAC Conservation Advice Package
Oligotrophic loch	Refer to the conservation objectives for Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels in the Caithness and Sutherland Peatlands SAC Conservation Advice Package
Dystrophic loch, lochan and pool	Refer to the conservation objectives for Acid peat-stained lakes and ponds in the Caithness and Sutherland Peatlands SAC Conservation Advice Package
Wet heath	Refer to the conservation objectives for Wet heathland with cross-leaved heath, in the Caithness and Sutherland Peatlands SAC Conservation Advice Package
Sphagnum lindbergii (sphagnum moss) and Sphagnum majus (sphagnum moss) Bog orchid Hammarbya paludosa	The protection of Sphagnum lindbergii, Sphagnum majus and Bog orchid is delivered by the conservation objectives for Blanket bog, Depressions on peat substrates, Very wet mires

	often identified by an unstable 'quaking' surface and Wet heathland with cross-leaved heath, see above. Sphagnum lindbergii, S. majus and Bog orchid are all associated with the blanket bog and very wet mire habitats and those habitats occurring in close association with them.
Oreodytes alpinus	To ensure that except where due to natural environmental change the following are maintained in the long term: ➢ Population of the species as a viable component of the site ➢ Distribution of the species within site ➢ Distribution and extent of habitats supporting the species (oligotrophic loch) ➢ Structure, function and supporting processes of habitats supporting the species ➢ No significant disturbance of the species
Otter	Refer to the conservation objectives for Otter in the Caithness and Sutherland Peatlands SAC Conservation Advice Package.
Freshwater pearl mussel	Refer to the conservation objectives for Freshwater pearl mussel in the River Borgie SAC Conservation Advice Package (except the area covered by the River Naver SAC). Refer to the conservation objectives for Freshwater pearl mussel in the River Naver SAC Conservation Advice Package (except the area covered by the River Borgie SAC).
Black-throated diver Common scoter Dunlin Golden plover Greenshank Red-throated diver Wigeon Wood sandpiper	Refer to the conservation objectives for Caithness and Sutherland Peatlands SPA

4. **River Thurso SAC**

Conservation Objectives for Atlantic salmon (*Salmo salar*)

1.To ensure that the qualifying feature of the River Thurso SAC is in favourable condition and makes an appropriate contribution to achieving favourable conservation status

2.To ensure that the integrity of the River Thurso SAC SAC is maintained by meeting objectives 2a, 2b and 2c for Atlantic salmon

2a. Restore the population of Atlantic salmon, including range of genetic types, as a viable component of the site

2b. Restore the distribution of Atlantic salmon throughout the site

2c. Restore the habitats supporting Atlantic salmon within the site and availability of food

5. **Berriedale and Langwell Waters SAC**

Conservation Objectives for Atlantic salmon (*Salmo salar*)

1. To ensure that the qualifying feature of Berriedale and Langwell Waters SAC is in favourable condition and makes an appropriate contribution to achieving favourable conservation status

2.To ensure that the integrity of Berriedale and Langwell Waters SAC is maintained by meeting objectives 2a, 2b and 2c for Atlantic salmon

2a. Maintain the population of Atlantic salmon, including range of genetic types, as a viable component of the site
2b. Maintain the distribution of the species throughout the site
2c. Maintain the habitats supporting the species within the site and availability of food

6. **River Naver SAC**

Overarching Conservation Objectives for all features of River Naver SAC

1.To ensure that the qualifying features of the River Naver SAC are in favourable condition and make an appropriate contribution to achieving favourable conservation status
2.To ensure that the integrity of the River Naver SAC is restored by meeting objectives 2a, 2b, 2c for both features (and 2d for freshwater pearl mussel)

Conservation Objectives for freshwater pearl mussel (*Margaritifera margaritifera*)

2a. Restore the population of freshwater pearl mussel as a viable component of the site
2b. Restore the distribution of freshwater pearl mussel throughout the site
2c. Restore the habitats supporting the freshwater pearl mussel within the site and availability of food
2d. Maintain the distribution and viability of freshwater pearl mussel host species and their supporting habitats

Conservation Objectives for Atlantic salmon (*Salmo salar*)

2a. Maintain the population of Atlantic salmon, including range of genetic types, as a viable component of the site
2b. Maintain the distribution of Atlantic salmon throughout the site
2c. Maintain the habitats supporting Atlantic salmon within the site and availability of food

7. **River Borgie SAC**

Overarching Conservation Objectives for all features of River Borgie SAC

1.To ensure that the qualifying features of the River Borgie SAC are in favourable condition and make an appropriate contribution to achieving favourable conservation status
2.To ensure that the integrity of the River Borgie SAC is restored by meeting objectives 2a, 2b, 2c for both features (and 2d for freshwater pearl mussel)

Conservation Objectives for freshwater pearl mussel (*Margaritifera margaritifera*)

2a. Restore the population of freshwater pearl mussel as a viable component of the site
2b. Restore the distribution of freshwater pearl mussel throughout the site
2c. Restore the habitats supporting the freshwater pearl mussel within the site and availability of food
2d. Maintain the distribution and viability of freshwater pearl mussel host species and their supporting habitats

Conservation Objectives for Atlantic salmon (*Salmo salar*)

2a. Maintain the population of Atlantic salmon, including range of genetic types, as a viable component of the site
2b. Maintain the distribution of Atlantic salmon throughout the site
2c. Maintain the habitats supporting Atlantic salmon within the site and availability of food

Conservation objectives for otter (*Lutra lutra*)

2a. Maintain the population of otter as a viable component of the site
2b. Maintain the distribution of otter throughout the site
2c. Maintain the habitats supporting otter within the site and availability of food

8. **River Oykel SAC**

Overarching Conservation Objectives for both features of River Oykel SAC

1.To ensure that the qualifying features of the River Oykel SAC are in favourable condition and make an appropriate contribution to achieving favourable conservation status
2.To ensure that the integrity of the River Oykel SAC is restored by meeting objectives 2a, 2b, 2c for both features (and 2d for freshwater pearl mussel)

Conservation Objectives for freshwater pearl mussel (*Margaritifera margaritifera*)

2a. Restore the population of freshwater pearl mussel as a viable component of the site
2b. Restore the distribution of freshwater pearl mussel throughout the site
2c. Restore the habitats supporting the freshwater pearl mussel within the site and availability of food
2d. Maintain the distribution and viability of freshwater pearl mussel host species and their supporting habitats

Conservation Objectives for Atlantic salmon (*Salmo salar*)
2a. Maintain the population of Atlantic salmon, including range of genetic types, as a viable component of the site
2b. Maintain the distribution of Atlantic salmon throughout the site
2c. Maintain the habitats supporting Atlantic salmon within the site and availability of food

9. **Broubster Leans SAC**

Conservation Objectives for Transition mires and quaking bogs [H7140] (Very wet mires often identified by an unstable 'quaking' surface)

1.To ensure that the qualifying feature of Broubster Leans SAC is in favourable condition and makes an appropriate contribution to achieving favourable conservation status
2.To ensure that the integrity of Broubster Leans SAC is maintained by meeting objectives 2a, 2b and 2c for the qualifying feature.

2a. Maintain the extent and distribution of the habitat within the site
2b. Maintain the structure, function and supporting processes of the habitat
2c. Maintain the distribution and viability of typical species of the habitat

10. **Lairg and Strath Brora Lochs SPA**

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained.

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

11. **Foinaven SPA**

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained.

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
  No significant disturbance of the species

STAGE 1: WHAT IS THE PLAN OR PROJECT?

Proposal title: The Flow Country World Heritage Site Management Plan

Name of competent authority: NatureScot

Details of proposal (inc. location, timing, methods): The Management Plan's main objectives are: 1. Outlining the threats and opportunities facing the Site 2. Guiding decision-making within the WHS and provide a framework for managing development, tourism, conservation and restoration, infrastructure, and land use in and around the Site 3. Meeting the global aims of UNESCO while setting out the international, national and local policy context in which the World Heritage Site sits. 4. Establishing the four main themes that form the basis of the WHS's Aims, Policies and Priority Objectives which are: - A sustainably managed blanket bog, for peat, biodiversity and carbon. - Peatlands as a living landscape. - An educational and research resource of unparalleled value. - A well-managed and supported World Heritage Site and status. 5. Identify and support the implementation of restoration schemes. 6. Support research programmes which further our understanding of blanket bog ecosystems. 7. Develop supplementary planning guidance for those wishing to undertake development in the setting of the World Heritage Site. 8. Audit and improve where necessary the existing physical and virtual interpretation of the World Heritage Site. 9. 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. 10. Develop the visitor offer through linking with businesses and entrepreneurs. 11. Audit existing and develop new interpretation and educational resources in respect of the World Heritage Site. 12. Further develop virtual tours of The Flow Country and the wider area. 13. Focus on and support skills development for peatland restoration and ecology. 14. Establish a secure and sustainable long term funding mechanism for the World Heritage Site management function. 15. Explore green finance projects as possible options for funding. 16. Establish the community engagement mechanism.

STAGE 2: IS THE PLAN OR PROJECT DIRECTLY CONNECTED WITH OR NECESSARY TO SITE MANAGEMENT FOR NATURE CONSERVATION?

This test is to identify and remove from further assessment those proposals which are clearly necessary to, or of value to, or inevitable as part of, management of the site for its qualifying interests. For the majority of proposals competent authorities deal with the answer to stage 2 will be 'no'. However where it is thought this could be applicable the following points should be considered:

i) Has the effect on <u>all</u> qualifying interests been considered?

ii) Is the proposal part of a fully assessed and agreed management plan? If not, then further consideration or supporting information will be required.

iii) Is there a clear rationale to justify the connection with the conservation objectives?

iv) If there is a clear connection with the conservation objectives will any benefits arising from the proposal outweigh any negative effects?

v) Have any alternative methods of implementing the proposal been explored, including building in any relevant mitigation, to demonstrate that this is the least damaging option?

vi) Give a YES/NO conclusion in terms of whether the plan or project is considered directly connected with or necessary to site management for nature conservation.

- If **YES** for all elements of a plan or project, for all the European site qualifying interests (preferably as part of a fully assessed and agreed management plan), then consent can be issued. The rationale should be detailed below and no further appraisal is required (no need to proceed to stage 3 or 4).
- If **No** for one or more European site qualifying interests then proceed to stage 3.
- **If a plan has multiple elements (e.g. a range of policies or management objectives)**, elements of the plan considered directly connected with or necessary to site management for nature conservation should be discussed below and a rationale given for this conclusion. No further appraisal is then required for those elements. All other elements of the plan must proceed to stage 3.

No

STAGE 3: IS THE PLAN OR PROJECT (EITHER ALONE OR IN COMBINATION WITH OTHER PLANS OR PROJECTS) LIKELY TO HAVE A SIGNIFICANT EFFECT ON THE SITE?

The test of Likely Significant Effect (LSE) is a simple screening stage to determine whether or not an appropriate assessment is required. Each qualifying interest must be considered in relation to their conservation objectives. The following points should be considered:

i) Briefly indicate which qualifying interest could be affected by the proposal and how; if none, provide a brief justification for this decision, and then proceed to v), otherwise continue:

ii) consider whether there is connectivity between the proposal and each of the qualifying interests i.e. are there processes or pathways by which the proposal may influence the site's interests? Conclude no LSE only if there is no connection, or it is obvious that the proposal will not undermine the conservation objectives despite a connection. The potential for negative effects on the qualifying interests may be immediately obvious, in which case conclude likely significant effect and move straight to the next step.

iii) consider the nature, scale, location, longevity, and reversibility of effects;

iv) consider whether the proposal contributes to cumulative or incremental impacts in combination with other plans or projects completed, underway or proposed;

v) Where the impacts of a proposal are the same for different qualifying interests these can be considered together however a clear conclusion should be given for each interest.

vi) give Yes/No conclusion for each interest.

- **If yes**, **or** in cases of **doubt**, continue to stage 4.
- **If no** for **all** features, a consent can be given and recorded below. There is no need to then proceed to stage 4.

Remember if mitigation is required to prevent there being an effect on qualifying interests then LSE must be concluded and an appropriate assessment (stage 4) must be conducted. Further guidance on the handling of mitigation can be found as part of the European site Casework Guidance.

The Management Plan proposals assessed below are the proposals which could potentially have an impact on the qualifying interests and their conservation objectives. All other proposals are considered not to have any possible impact on the qualifying interests of these sites. As a result, they are not considered further in this assessment.

1. Caithness and Sutherland Peatlands SAC

European priority and non-priority interests habitats and species

Peatland restoration

Blocking of historic drains, reprofiling and revegetating exposed areas of peat. The methods used are industry standard undertaken by trained and experienced professionals. Vehicle movements will be undertaken in manner that will look to minimise surface damage to the peatlands such as using tracked vehicles and avoiding wettest areas or areas in good condition. Standard pollution prevention measures and watercourse protection practices will be used where appropriate, including the use of silt traps where relevant. The work and measures undertaken will benefit the SAC interests. Conclusion: No likely significant effect.

The management plan looks to support the control of conifer seedling regeneration on open peatland on or adjacent to felled commercial forestry. The work will benefit the SAC interests by removing invasive tree species.

In addition, peatland restoration works would require following the prior notification procedure through the Highland Council. This procedure allows the local authority to assess the impacts of the proposed works, including impacts on Protected Areas, to determine if they are appropriate. Conclusion: No likely significant effect.

Monitoring/research

Any monitoring and surveying of the peatlands, whether for peatland restoration or support of educational research will be undertaken by trained professionals, will be of low impact and appropriate mitigation to prevent any potential disturbance will be undertaken. These measures will ensure no risks to the SAC interests. Conclusion: No likely significant effect.

Visitor Management

Increase in promotion and visibility of the WHS as well as any events hosted by FCP or any other party will encourage visitors to the area. Any promotion of the WHS/Flow Country includes messaging around the sensitivities of the peatlands, the risk of disturbance, the importance of their protection and adherence to the Scottish Outdoor Code. The emerging Sustainable Tourism Strategy that looks to promote tourism within the wider area ensures this messaging is promoted throughout. Interpretation facilities on site also promote this messaging and signpost appropriate routes. Access to the area is directed to existing paths and tracks, ensuring the SAC interests are protected. These measures will ensure any likely significant effect is avoided.

In addition, infrastructure may be proposed to facilitate appropriate visitor management (such as car parks, toilets, new access points) would require separate planning permission. This then allows the impacts to be assessed by the local planning authority and consultees and brings the development under planning control. Conclusion: No likely significant effect.

Otter

Restoring areas of blanket bog looks to restore the water quality, hydrology and surrounding habitat of lochs, rivers and tributaries which will improve the habitat for otter. Protected species surveys are undertaken prior to any restoration work to prevent disturbance SAC qualifying species. Exclusion zones are applied to any areas identified and standard mitigation is followed to ensure no significant effects occur. Conclusion – No Likely significant effect.

Conclusion – No likely significant effect.

2. Caithness and Sutherland Peatlands SPA

European non-priority interests

Peatland restoration

Blocking of historic drains, reprofiling and revegetating exposed areas of peat. The methods used are industry standard undertaken by trained and experienced professionals. Vehicle movements will be undertaken in manner that will look to minimise surface damage to the peatlands such as using tracked vehicles and avoiding wettest areas or areas in good condition. Works will avoid bird breeding season or will follow Peatland Action guidance if during breeding season. Standard pollution prevention measures and watercourse protection practices will be used where appropriate, including the use of silt traps where relevant. The work and measures undertaken will benefit the SPA interests. Conclusion: No likely significant effect.

The management plan looks to support the control of conifer seedling regeneration on open peatland on or adjacent to felled commercial forestry. The work will benefit the habitat of SPA qualifying species by removing invasive tree species and improving the quality of habitat.

In addition, peatland restoration works would require following the prior notification procedure through the Highland Council. This procedure allows the local authority to assess the impacts of the proposed works, including impacts on Protected Areas, to determine if they are appropriate. Conclusion: No likely significant effect.

Monitoring/research

Any monitoring and surveying of the peatlands, whether for peatland restoration or support of educational research will be undertaken by trained professionals, will be of low impact and appropriate mitigation to prevent any potential disturbance will be undertaken. These measures will ensure no risks to the SPA interests. Conclusion: No likely significant effect.

Visitor Management

Increase in promotion and visibility of the WHS as well as any events hosted by FCP or any other party will encourage visitors to the area. Any promotion of the WHS/Flow Country includes messaging around the sensitivities of the peatlands, risk of disturbance, the importance of their protection and adherence to the Scottish Outdoor Code. The emerging Sustainable Tourism Strategy that looks to promote tourism within the wider area ensures this messaging is promoted throughout. Interpretation facilities on site also promote this messaging and signpost appropriate routes. Access to the area is directed to existing paths and tracks, ensuring the risk of disturbance to SPA qualifying species is minimised. These measures will ensure any likely significant effect is avoided.

In addition, infrastructure may be proposed to facilitate appropriate visitor management (such as car parks, toilets, new access points) would require separate planning permission. This then allows the impacts to be assessed by the local planning authority and consultees and brings the development under planning control. Conclusion: No likely significant effect.

Conclusion – No likely significant effect.

3. Caithness and Sutherland Peatlands Ramsar

Qualifying features under Criterion 1,2 and 4

Peatland restoration

Blocking of historic drains, reprofiling and revegetating exposed areas of peat. The methods used are industry standard undertaken by trained and experienced professionals. Vehicle movements will be undertaken in manner that will look to minimise surface damage to the peatlands such as using tracked vehicles and avoiding wettest areas or areas in good condition. Standard pollution prevention measures and watercourse protection practices will be used where appropriate, including the use of silt traps where relevant. The work and measures undertaken will benefit the SAC interests. Conclusion: No likely significant effect.

The management plan looks to support the control of conifer seedling regeneration on open peatland on or adjacent to felled commercial forestry. The work will benefit the habitat of the qualifying species by removing invasive tree species and improving the quality of habitat.

In addition, peatland restoration works would require following the prior notification procedure through the Highland Council. This procedure allows the local authority and consultees to assess the impacts of the proposed works, including impacts on Protected Areas, to determine if they are appropriate. Conclusion: No likely significant effect.

Monitoring/research

Any monitoring and surveying of the peatlands, whether for peatland restoration or support of educational research will be undertaken by trained professionals, will be of low impact and appropriate mitigation to prevent any potential disturbance will be undertaken. These measures will ensure no risks to the qualifying interests. Conclusion: No likely significant effect.

Visitor Management

Increase in promotion and visibility of the WHS as well as any events hosted by FCP or any other party will encourage visitors to the area. Any promotion of the WHS/Flow Country includes messaging around the sensitivities of the peatlands, risk of disturbance, the importance of their protection and adherence to the Scottish Outdoor Code. The emerging Sustainable Tourism Strategy that looks to promote tourism within the wider area ensures this messaging is promoted throughout. Interpretation facilities on site also promote this messaging and signpost appropriate routes. Access to the area is directed to existing paths and tracks, ensuring the risk of disturbance to qualifying species is minimised. These measures will ensure any likely significant effect is avoided.

In addition, infrastructure may be proposed to facilitate appropriate visitor management (such as car parks, toilets, new access points) would require separate planning permission. This then allows the impacts to be assessed by the local planning authority and consultees and brings the development under planning control. Conclusion: No likely significant effect.

Species

Restoring areas of blanket bog looks to restore the water quality, hydrology and surrounding habitat of the qualifying species. Protected species surveys are undertaken prior to any restoration work to prevent disturbance qualifying species and exclusion zones are applied to any areas identified and standard mitigation is followed to ensure no significant effects occur. Standard pollution prevention measures and watercourse protection practices will be used where appropriate, including the use of silt traps where relevant. Conclusion – No Likely significant effect.

4-8. River Thurso SAC, Berriedale and Langwell Waters SAC, River Naver SAC, River Borgie SAC, River Oykel SAC

The River Thurso SAC, Berriedale and Langwell Waters SAC, River Naver SAC, River Borgie SAC and River Oykel SAC flow through or adjacent to the WHS at various points. The following management measures could potentially have an impact on the SAC interest:

Peatland restoration

Blocking of historic drains, reprofiling and revegetating exposed areas of peat. The methods used are industry standard undertaken by trained and experienced professionals. Vehicle movements will be undertaken in manner that will look to minimise surface damage to the peatlands such as using tracked vehicles and avoiding wettest areas or areas in good condition. Standard pollution prevention measures and watercourse protection practices will be used where appropriate, including the use of silt traps where relevant. The work and measures undertaken will benefit the SAC interests.

In addition, peatland restoration works would require following the prior notification procedure through the Highland Council. This procedure allows the local authority and consultees to assess the impacts of the proposed works, including impacts on Protected Areas, to determine if they are appropriate. Conclusion: No likely significant effect.

Monitoring/research

Any monitoring and surveying of the peatlands, whether for peatland restoration or support of educational research will be undertaken by trained professionals, will be of low impact and appropriate mitigation to prevent any potential disturbance will be undertaken. These measures will ensure no risks to the SAC interests. Conclusion: No likely significant effect.

Visitor Management

Increase in promotion and visibility of the WHS as well as any events hosted by FCP or any other party will encourage visitors to the area. Any promotion of the WHS/Flow Country includes messaging around the sensitivities of the peatlands, the risk of disturbance, the importance of their protection and adherence to the Scottish Outdoor Code. The emerging Sustainable Tourism Strategy that looks to promote tourism within the wider area ensures this messaging is promoted throughout. Interpretation facilities on site also promote this messaging and signpost appropriate routes. Access to the area is directed to existing paths and tracks, ensuring the SAC interests are protected. These measures will ensure any likely significant effect is avoided.

In addition, infrastructure may be proposed to facilitate appropriate visitor management (such as car parks, toilets, new access points) would require separate planning permission. This then allows the impacts to be assessed by the local planning authority and consultees and brings the development under planning control. Conclusion: No likely significant effect.

Atlantic salmon, otter, freshwater pearl mussels

Restoring areas of blanket bog looks to restore the water quality, hydrology and surrounding habitat of lochs, rivers and tributaries which improve the habitat for the SAC qualifying species. Protected species surveys are undertaken prior to any restoration work to prevent disturbance SAC qualifying species and exclusion zones are applied to any areas identified and standard mitigation is followed to ensure no significant effects occur. Standard pollution prevention measures and watercourse protection practices will be used where appropriate, including the use of silt traps where relevant. Conclusion – No Likely significant effect.

Facilitate monitoring of water quality following restoration activities in key catchments, in collaboration with the Environmental Research Institute (PhD study) to address concerns over negative impacts of restoration on water quality in rivers will benefit the SAC interest.

Conclusion – No likely significant effect.

9. Broubster Leans SAC

Broubster Leans SAC is situated approximately 1.75 km northeast of the WHS at its nearest point, however it is included in this assessment due to its loose hydrological connectivity with the WHS, via Allt Torigila and Forss Water.

Peatland restoration

Peatland restoration techniques look to improve the adjacent peatland, improve hydrology and water quality. Any vehicle movements in the vicinity to the site, to facilitate access, will look to minimise surface damage to the peatlands such as using tracked vehicles. Standard pollution prevention measures and watercourse protection practices will be used where appropriate, including the use of silt traps where relevant. Conclusion: No likely significant effect.

The management plan looks to support the control of conifer seedling regeneration on open peatland on or adjacent to felled commercial forestry. The work will benefit the habitat of SPA qualifying species by removing invasive tree species and improving the quality of habitat.

In addition, peatland restoration works would require following the prior notification procedure through the Highland Council. This procedure allows the local authority and consultees to assess the impacts of the proposed works, including impacts on Protected Areas, to determine if they are appropriate. Conclusion: No likely significant effect.

Monitoring/research

Any monitoring and surveying of the peatlands will be undertaken by trained professionals, will be of low impact and appropriate mitigation to prevent any potential disturbance will be undertaken. Conclusion: No likely significant effect.

Visitor Management

Increase in promotion and visibility of the WHS as well as any events hosted by FCP or any other party will encourage visitors to the area. Any promotion of the WHS/Flow Country includes messaging around the sensitivities of the peatlands, risk of disturbance, the importance of their protection and adherence to the Scottish Outdoor Code. The emerging Sustainable Tourism Strategy that looks to promote tourism within the wider area ensures this messaging is promoted throughout. Interpretation facilities on site also promote this messaging and signpost appropriate routes. Access to the area is directed to existing paths and tracks, ensuring the risk of disturbance to qualifying interests is minimised. These measures will ensure any likely significant effect is avoided.

In addition, infrastructure may be proposed to facilitate appropriate visitor management (such as car parks, toilets, new access points) would require separate planning permission. This then allows the impacts to be assessed by the local planning authority and consultees and brings the development under planning control. Conclusion: No likely significant effect

10. Lairg and Strath Brora Lochs SPA

Lairg and Strath Brora Lochs SPA is situated approximately 3.5 km southwest of the WHS at its nearest point, however it is included in this assessment due to its potential connectivity with the WHS.

Peatland restoration

Peatland restoration techniques looks to improve the adjacent habitat, improve hydrology and water quality. Any works would be out with the disturbance zone for qualifying species but would benefit in improving the wider habitat availability, foraging and nesting grounds.
Any vehicle movements in the vicinity to the site, to facilitate access, would require surveys to establish the presence of qualifying species and will look to minimise surface damage to the peatlands such as using tracked vehicles. Standard pollution prevention measures and watercourse protection practices will be used where appropriate, including the use of silt traps where relevant. The work and measures undertaken will benefit the SPA qualifying species. Conclusion: No likely significant effect.

The management plan looks to support the control of conifer seedling regeneration on open peatland on or adjacent to felled commercial forestry. The work will benefit the habitat of SPA qualifying species by removing invasive tree species and improving the quality of habitat.

In addition, peatland restoration works would require following the prior notification procedure through the Highland Council. This procedure allows the local authority and consultees to assess the impacts of the proposed works, including impacts on Protected Areas, to determine if they are appropriate. Conclusion: No likely significant effect.

Monitoring/research

Any monitoring and surveying of the peatlands will be undertaken by trained professionals, will be of low impact and appropriate mitigation to prevent any potential disturbance will be undertaken. These measures will ensure no risks to the SPA interests. Conclusion: No likely significant effect.

Visitor Management

Increase in promotion and visibility of the WHS as well as any events hosted by FCP or any other party will encourage visitors to the area. Any promotion of the WHS/Flow Country includes messaging around the sensitivities of the peatlands, risk of disturbance, the importance of their protection and adherence to the Scottish Outdoor Code. The emerging Sustainable Tourism Strategy that looks to promote tourism within the wider area ensures this messaging is promoted throughout. Interpretation facilities on site also promote this messaging and signpost appropriate routes. Access to the area is directed to existing paths and tracks, ensuring the risk of disturbance to SPA qualifying species is minimised. These measures will ensure any likely significant effect is avoided.

In addition, infrastructure may be proposed to facilitate appropriate visitor management (such as car parks, toilets, new access points) would require separate planning permission. This then allows the impacts to be assessed by the local planning authority and consultees and brings the development under planning control. Conclusion: No likely significant effect.

Conclusion – No likely significant effect.

11. Foinaven SPA

Foinaven SPA is situated approximately 4.5 km west of the WHS at its nearest point, however it is included in this assessment due to its potential connectivity with the WHS.

Peatland restoration

Peatland restoration techniques look to improve the adjacent habitat, improve hydrology and water quality. Any works would be out with the disturbance zone for qualifying species but would benefit in improving the wider habitat availability for hunting and foraging grounds. Any vehicle movements in the vicinity to the site, to facilitate access, would require surveys to establish the presence of qualifying species and will look to minimise surface damage to the peatlands such as using tracked vehicles. Works will avoid breeding season, but where not possible will follow Peatland Action's guidance. Standard pollution prevention measures and watercourse protection practices will be used where appropriate, including the use of silt traps where relevant. The work and measures undertaken will benefit the qualifying species. Conclusion: No likely significant effect.

The management plan looks to support the control of conifer seedling regeneration on open peatland on or adjacent to felled commercial forestry. The work will benefit the habitat of qualifying species by removing invasive tree species and improving the quality of habitat.

In addition, peatland restoration works would require following the prior notification procedure through the Highland Council. This procedure allows the local authority and consultees to assess the impacts of the proposed works, including impacts on Protected Areas, to determine if they are appropriate. Conclusion: No likely significant effect.

Monitoring/research
Any monitoring and surveying of the peatlands will be undertaken by trained professionals, will be of low impact and appropriate mitigation to prevent any potential disturbance will be undertaken. These measures will ensure no risks to the SPA interests. Conclusion: No likely significant effect.

Visitor Management
Increase in promotion and visibility of the WHS as well as any events hosted by FCP or any other party will encourage visitors to the area. Any promotion of the WHS/Flow Country includes messaging around the sensitivities of the peatlands, risk of disturbance, the importance of their protection and adherence to the Scottish Outdoor Code. The emerging Sustainable Tourism Strategy that looks to promote tourism within the wider area ensures this messaging is promoted throughout. Interpretation facilities on site also promote this messaging and signpost appropriate routes. Access to the area is directed to existing paths and tracks, ensuring the risk of disturbance to qualifying species is minimised. These measures will ensure any likely significant effect is avoided.

In addition, infrastructure may be proposed to facilitate appropriate visitor management (such as car parks, toilets, new access points) would require separate planning permission. This then allows the impacts to be assessed by the local planning authority and consultees and brings the development under planning control. Conclusion: No likely significant effect.

Conclusion – No likely significant effect.

STAGE 4: UNDERTAKE AN APPROPRIATE ASSESSMENT OF THE IMPLICATIONS FOR THE SITE IN VIEW OF ITS CONSERVATION OBJECTIVES

(It is the responsibility of the competent authority to carry out the appropriate assessment. The competent authority must consult NatureScot on the appropriate assessment. NatureScot can provide advice on what issues should be considered in the appropriate assessment, what information is required to carry out the assessment, in some circumstances carry out an appraisal to inform an appropriate assessment and/or provide comments on an assessment carried out.)

An 'appropriate assessment' consists of two parts: a scientific, reasoned appraisal (stage 4) and a conclusion (stage 5). Consider the proposed plan/project, its impact on the qualifying interests assessed against their conservation objectives, and take account of any possible in combination effects with other plans or projects.

The following points should be considered:
i) Describe for each qualifying interest the potential impacts of the proposal detailing which aspects or effects of the proposal could impact upon them and their conservation objectives.
ii) Evaluate the potential impacts, e.g. whether short/long term, reversible or irreversible, and in relation to the proportion/importance of the interest affected, and the overall effect on the site's conservation objectives. This should be in sufficient detail to ensure all impacts have been considered and sufficiently appraised. Record if additional survey information or specialist advice has been obtained.
iii) Each conservation objective should be considered and a decision reached as to whether the proposal will affect achievement of this objective i.e. whether the conservation objective will be undermined if the proposal is consented to. Restore objectives may have been set where qualifying features of a site are in an unfavourable condition. In such cases the appropriate assessment should

consider whether the plan or project would prevent the qualifying feature from being able to be restored.

No likely significant effects identified.

STAGE 5: CAN IT BE ASCERTAINED THAT THE PROPOSAL WILL NOT ADVERSELY AFFECT THE INTEGRITY OF THE SITE?

In the light of the appraisal, ascertain whether the proposal will not adversely affect the integrity of the site. Conclusions should be reached beyond reasonable scientific doubt. If more than one SAC and/or SPA is involved, give separate conclusions. If mitigation or modifications are required, detail these below. Mitigation must be deliverable and enforceable, and there should be certainty that this should work. Further details on what should be considered when assessing potential mitigation options are outlined in section 4.3 of the European site casework guidance.

In light of the appraisal, this proposal should not adversely affect the integrity of the sites.

Modifications required to ensure adverse effects are avoided and reasons for these

Only list those modifications (i.e. further mitigation) that have been identified as being required to prevent there being an adverse effect on site integrity.

Do not include mitigation that has already been planned in the plan/project or best practice that is already being followed unless you believe these should be added as conditions to the permission given. As noted above, further details on what should be considered when assessing potential mitigation options are outlined in section 4.3 of the European site casework guidance.

N/A

ADVICE SOUGHT

Include here details of, or clear reference to, any advice sought. If an appropriate assessment has been carried out NatureScot must be consulted.

N/A

CONCLUSION IN RELATION TO PLAN OR PROJECT

In view of the appraisal above select the appropriate response position and whether the plan or project can be consented/approved/undertaken. Note: this conclusion is just in relation to effects on a European site. There may be impacts to other natural heritage interests that also need to be considered.

No likely significant effect - consent/approval can be given

Comments: -

Appraised by: Dave Mackay, NatureScot
Date: 17/07/2026

Development timeline

November 2023 - LUC was appointed to undertake a study into the concept of ‘setting’ and how it may apply to the then proposed The Flow Country World Heritage Site.

January-March 2024 - A stakeholder consultation programme was undertaken to inform the Setting Definition Study, collecting feedback on the approach, scope and issues anticipated in understanding setting.

June 2024 - The feedback was incorporated into the pre-inscription setting definition report which formed part of the supporting material to the draft WHS Management Plan.

July 2024 – Inscription of The Flow Country as a World Heritage Site.

September 2025 - LUC was approached to translate the setting definition study into a practical piece of guidance to aid planners, developers and statutory consultees in understanding how to assess applications relating to areas of setting outside of the WHS boundary and the potential for impacts on or relating to the Site's Outstanding Universal Value (OUV). In parallel, this required the 2024 setting study to be updated to reflect the inscription of the WHS under Criterion ix only and not criterion x as well.

February 2026 - A stakeholder consultation workshop was carried out, seeking feedback on the proposed approach to the setting guidance, users’ needs and the issues it would need to reflect.

July 2026 - The Setting Definition Study and draft Setting Guidance were circulated to stakeholders and feedback invited.

The following response schedule summarises the questions and issues raised in and following the workshop, including stakeholder feedback received in July 2026 following circulation of the Setting Definition Study and draft Setting Guidance, and how changes and clarifications are now reflected in the two documents. For the purposes of this schedule, points raised are broadly grouped under the following headings:

A) Setting Generally
B) Functional Setting
C) Experiential Setting
D) Assessment Tools and Proportionate Assessment

The document has grouped comments into sections of similar themes and therefore should be read in full to gain a comprehensive overview. It should also be borne in mind that impacts on setting can be positive or negative.

AI usage statement for the feedback summary: Microsoft CoPilot has been used in analysing and summarising workshop feedback and tracking responses.

You said	Source of comment	We did
A) SETTING GENERALLY		
Application of Setting for natural WHS		
The concept of setting for a natural WHS is unclear and may not be recognised by UNESCO.	Summary from workshop	The definition of setting is explicitly related to UNESCO Operational Guidelines, including the statements that setting may include topography, land use, infrastructure, visual relationships, perceptions and associations, and that management of the wider setting is related to supporting OUV. As mentioned in UNESCO Guidance and Toolkit Impact Assessment, paragraph 3.2.3 page 14, every world heritage property is surrounded by a wider setting which is the immediate and extended environment that is part of or contributes to its significance and distinctive character, it is clear therefore, that UNESCO's position is that setting is a consideration for both natural and cultural WHS. The UNESCO guidance goes on to state, that: "*The wider setting might also play an essential role in protecting the authenticity and integrity of the property, and its management is related to its role in supporting the Outstanding Universal Value.*" Whilst it is acknowledged in the Operational Guidelines that authenticity is only a consideration for cultural sites, integrity is relevant to natural site and cultural sites. The Setting Guidance now directly addresses the concern that the term is less commonly applied to natural heritage in general but is nevertheless used by UNESCO for all World Heritage properties. UNESCO refers to setting in terms of both cultural and natural WHS and that is why we have been defining setting for the Site and developing guidance for the assessment of effects on setting, we are not relying on NPF4 for our justification for addressing setting.
It is considered that the Definition Study has substantially misapplied NPF4 policy in particular with what it regards as the "NPF4 WHS setting clause". NPF4 provides no policy basis whatsoever to address the setting of a natural inscribed WHS.	David Bell Planning (on behalf of Shinness & Nadara)	
Buffer zone		
The study appears to be creating a buffer zone around the WHS.	Summary from workshop	The Study clarifies that setting is not a buffer zone, it is not defined by a line on a map, is not spatially fixed, and has no defined

MWEHL is concerned that the setting of the FCWHS may end up as a “buffer zone” around the site, which is not supported in planning. The inscription makes clear that a buffer zone is not required to support the OUV. In addition, the reporter assigned to the Kirkton wind farm DPEA case stated in their decision report that “I agree that the concept of ‘setting’ is not a relevant one”. It would be very useful to understand NatureScot and LUC’s view on this decision as it relates to the setting guidance.	Belltown Power (Melvich Wind Energy Hub Limited - MWEHL) feedback after original workshop in Feb 2026	boundary. There is no intention to see it as a buffer and as rightly pointed out, we nominated the site without a buffer and the rationale for that was accepted and we still maintain it. The Definition Study concludes that a mapped setting extent is neither useful nor desirable, and the Setting Guidance glossary explicitly notes that the Site has no buffer zone. The Kirkton reporter referred to that statement as ‘in this instance’ meaning that in the reporter’s opinion it was not relevant to Kirkton. This does not mean that setting could not apply to another scheme in future. Setting is defined as a process-based assessment of interactions affecting OUV rather than a mapped protection zone. The Guidance requires consideration of the Area of Influence and pathways affecting OUV rather than distance-based thresholds.
How will assessments reflect the fact that UNESCO accepted the WHS without a buffer zone?	Summary from workshop	
Alignment and reference to existing policy frameworks and positive impacts		
Neither document references National Planning Framework 4 (NPF4), Local Development Plan, the Onshore Wind Sector Deal or the wider climate policy frameworks within which any planning balance must take into consideration.	Scottish Renewables	It is the purpose of neither the Setting Definition Study nor the Setting Guidance to set out the wider planning policy framework within the context of which development proposals are considered. The WHS Management Plan provides an overview of such context. It is correct that WHS Impact Assessment conclusions are one consideration in wider planning and consenting processes and a sentence to this effect has been added to the Setting Guidance. The Setting Guidance has been drafted and the Toolkit updated to allow positive impacts to be captured more clearly for full consideration of all effects.
Neither document specifically references NPF4 or The Highland-wide Local Development Plan that form the Local Development Plan. As such, the guidance should explain its relationship with the statutory development plan, including the relevant provisions of NPF4, while making clear that WHS Impact Assessment is an evidential assessment of effects on OUV and is not itself a determination of planning acceptability. Asks that: Section 1 of the Setting Guidance references NPF4 Policies 5 and 11 and confirms that they remain the policy framework for consenting decisions, but must	Scottish Renewables	

be considered in the balance of policies 1, 3, 4 and 7 with the relevant weight attached; A short "policy context" statement is added, acknowledging the material public benefits of renewable energy, grid and energy storage development; and The Setting Guidance explicitly confirms that a WHS Impact Assessment finding of "minor negative impact" does not, of itself, indicate that a proposal is unacceptable in planning terms. - recognising that the WHS IA conclusions are one consideration in wider planning and consenting processes.		
The very significant positive contribution the onshore wind sector already makes to peatland restoration in and around the WHS is neither acknowledged nor structurally captured in the assessment process.	Scottish Renewables	
How should positive impacts on OUV be weighed against residual negative impacts? Asks that the guidance includes: A dedicated section on positive impacts on OUV, requiring assessors to consider these; and An express statement that renewable energy generation provides substantial climate and public-interest benefits relevant to the planning and consenting balance. Where a proposal also restores peatland, improves hydrological function or increases blanket bog connectivity, those measures may separately produce positive effects on Attributes (a) and (e) and should be recorded as such.	Scottish Renewables	

Recognition that onshore wind schemes deliver net habitat gain, and that these are enhancements of OUV, not offset of OUV loss. Asks that the guidance: Distinguishes between offset (compensation for loss) and enhancement (net gain in attributes of OUV); Applies avoidance and mitigation before residual effects are evaluated; Confirms that enhancement is to be reported separately; Confirms there is no automatic arithmetic balancing of positive and negative scores; Provides clear guidance on the distinction between reinstatement and enhancement; Confirms that enhancement measures delivered as embedded mitigation may legitimately be relied upon in the evaluation of impact; and Acknowledges the sector-level contribution the onshore wind industry is already making to peatland restoration in Scotland including through the SR Wind Power and Peatland publication.	Scottish Renewables	UNESCO Guidance and Toolkit (p.27) states that "It is always preferable to avoid, rather than minimize, impacts on a World Heritage property's attributes. Any loss of, or damage to OUV is unacceptable, which means that rectification, reduction (to less severe but still significant) or offsetting of impacts is inappropriate in a World Heritage context." The UNESCO Guidance and Toolkit (p.44) states: "*The evaluation should result in a clear conclusion about whether the likely impacts of a proposed action on OUV overall are acceptable or not. If the proposed action would have negative impacts on OUV, the report should give one of three conclusions*:" *The negative impact would be negligible and raises no concerns* *The negative impact would be significant, but with avoidance and mitigation measures it could be eliminated or minimized to an acceptable level** *The negative impact would be significant and could not be avoided or mitigated, so the proposed action should not proceed.* This also underscores that any impact to OUV beyond 'negligible' is significant and must be recorded and avoidance/ minimisation applied. The World Heritage calibration of 'significant' needs to be reflected within EIA assessment and the importance of World Heritage and the established approach to its protection reflected within the application of policy before a determination is made on an application for consent. This has been further clarified within the Setting Guidance. * We consider acceptable level to mean an insignificant impact which includes negligible.
The guidance appears (at least in part) to be a vehicle for informing how national planning policy is to be interpreted by NatureScot and applied in the context of its role as a statutory consultee on development proposals. Taking account of	David Bell Planning (on behalf of Shinness & Nadara)	It is a Flow Country Partnership project which has been clarified in the Setting Guidance. The guidance is for all stakeholders to use in guiding whether a scheme might have an impact positive or negative on the OUV of the WHS. As the boundary was drawn as far as possible to

NatureScot's public body status, related statutory duties, and its approach to consulting on guidance with a comparable role and effect, our client might reasonably have expected the guidance to be the subject of a formal public consultation.		encompass hydrological units it is likely that most of the time there would not be an effect, however there could potentially be effects depending on how close to the boundary the scheme elements sit. There was a public consultation for the Setting Definition Study in 2023/24 which generated many responses. A targeted stakeholder workshop and consultation for the guidance with main stakeholder groups to help develop the content began in early 2026. As noted above the guidance is not a NatureScot production it is a Flow Country Partnership one. The Highland Council has been a partner in running the project and a variety of stakeholders from planners, NatureScot staff, renewables companies, network rail and utilities have been involved from the start of the guidance project.
We note from the Flow Country website today that these documents are referred to as 'Final' and are available to the public and we would be grateful if you can clarify why these documents are noted as final, when they are still subject to consultation.	David Bell Planning (on behalf of Shinness & Nadara)	The Setting Definition Study report is now final - this was originally produced and consulted on prior to the inscription of the WHS and has been revised since in order to account for the fact that only criterion ix was inscribed as having OUV and not also criterion x (relating to the biodiversity/species mainly birds) which was also submitted in the nomination. The guidance document version issued in July was not final and erroneously was not clearly identified as such when it was added to the website. That version is no longer on the website and will be replaced by a new version in due course.
NPF4 requires OUV protection; should assessment focus only on functional setting?	Summary from workshop	The Setting Definition Study confirms that functional setting is the primary consideration because the Site is inscribed exclusively under natural criterion (ix). Experiential setting remains relevant (albeit secondary) because the Convention requires presentation and appreciation of natural heritage.
Avoid expanding setting to include species interests associated with former Criterion (x).	Summary from workshop	Following inscription, the ecosystem receptor discussion was refocused on ecological and biological processes, ecosystems and communities of plants and animals rather than individual species' conservation interests, consistent with Criterion (ix). This direction is also reflected in both the Setting Definition and Setting

		Guidance including the receptor framework. This is also in line with the World Heritage Nomination – IUCN Technical Evaluation.
Would renewables development that helps address climate change be recognised positively?	Summary from workshop	It is explicitly recognised that the protection and enhancement of the WHS contributes positively to climate change mitigation and that positive effects on OUV should be considered alongside adverse effects within planning and management decisions. The assessment process is designed to identify both beneficial and adverse effects.
What if parts of the WHS do not strongly express OUV? Do they have setting?	Summary from workshop	The Study shifts the assessment focus away from distance and mapped setting toward whether receptors carry, support or embody attributes of OUV, and whether meaningful pathways exist for change to affect those attributes.
B) FUNCTIONAL SETTING		
Functional Setting is already included within the WHS boundary		
How can areas outside the WHS affect functional setting when the boundary already captures key ecological interests?	Summary from workshop	The Study develops a receptor-based approach identifying climate, hydrological units, ecosystems and communities, and land management practices as pathways through which change outside the boundary can affect ecological functioning, integrity and resilience. Whilst every attempt was made to include entire units, there could still be some hydrological connection between areas in and out of the boundary, for example, some areas where it was not possible to fully include all hydrological connections e.g. due to a pre-existing development/forestry/infrastructure. A development scheme within the setting, could, produce pollutant run-off, or airborne potentially impact adjacent areas of bog. We are proposing to include worked examples of both positive and negative impacts to the setting in an annex to the Guidance in due course. UNESCO Guidance and Toolkit (p.42) requires consideration of potential for effects anywhere within the **area of influence**, which
The WHS boundary already includes all areas on which the blanket bog is functionally dependent. Asks that the guidance: Expressly adopts a "reasonable connectivity" test with appropriate weight attached to it in decision making and/or the tool kit such as the Golticlay worked example does in practice, by repeatedly noting "hydrological connectivity with the WHS is very limited"; Confirms that where an EIA or Habitats Regulations Appraisal has already concluded no likely significant effect via a hydrological or ornithological pathway, no separate functional setting assessment is required; and	Scottish Renewables	

Confirms that functional setting does not create a buffer zone, consistent with Appendix A of the Setting Guidance and with the Statement of Outstanding Universal Value itself.		might include areas beyond its defined boundaries (or buffer zone, for sites which have one). The Setting Guidance clearly states that the aim is to avoid duplication. Findings relevant to OUV should be recorded/ signposted within the Toolkit.
MWEHL would note from involvement in consultation on the boundary of the FCWHS, and as restated by NatureScot during the workshop, that it was designed to include entire hydrological units that have a functional connection to the OUV. As such, MWEHL would not expect to see functional setting extend substantially beyond the boundary of the FCWHS. In effect, the functional setting is understood to have been "designed-in" to the boundary and so the functional setting beyond the boundary of the world heritage site is expected to be minimal in scale. Additionally, functional setting should only apply to the clearly defined OUV attributes and not be extended to further species and considerations that are not directly referenced in the OUV.	Belltown Power (Melvich Wind Energy Hub Limited - MWEHL) feedback after original workshop in Feb 2026	Discussion already included on buffer zones in the Setting Definition Report, as well as in The Flow Country WHS Management Plan, which explain it clearly. In relation to extending criteria, species should be considered wherever they are part of the blanket bog ecosystem i.e. some species are integral parts of it such as the blanket bog plants which form the peat. Species that are supported by the blanket bog ecosystem are still of value in their own right and some are dependent on the ecosystem particularly those that are specially adapted to living in such a relatively 'harsh' environment – acidic, waterlogged, anaerobic conditions.
Functional setting appears similar to HRA and existing ecological assessment processes.	Summary from workshop	Functional setting is structured around receptor categories that are informed by existing baseline information, ecological, hydrological and land management evidence and existing impact assessments. The Guidance specifically seeks to minimise duplication and use existing EIA and other assessment outputs.
C) EXPERIENTIAL SETTING		
The concept of Setting considering the WHS is a natural, not cultural, inscription		
How can landscape, visual or cultural considerations be relevant when inscription is under Criterion (ix)?	Summary from workshop	UNESCO refers to setting in terms of both cultural and natural WHS and the Setting Definition Study clearly finds that experiential effects are relevant to a solely natural WHS. The Study establishes that experiential setting derives only from the attributes of OUV and confirms that functional setting is the primary
The introduction of an "experiential setting" concept risks reintroducing landscape-, wildness and	Scottish Renewables	

scenic-based tests that were raised as a concern by us in our June 2026 letter on the Management Plan and SEA, which have no basis in the WHS's natural-criterion-only OUV.		consideration because the Site is inscribed exclusively under natural criterion (ix), experiential setting remains relevant (albeit secondary) because the Convention requires presentation and appreciation of natural heritage. The Study also clarifies that culture and history are not additional attributes of OUV, however it should be noted scale and continuousness is encompassed under attribute a); surface patterning (pool systems, hummock and hollow etc), is part the blanket bog landscape also encompassed under attribute a) and also by b); time depth is encompassed in the OUV under attribute c), and attributes d) and e) also have cultural and historical associations relating to the formation of the blanket bog ecosystem. People's associations and activities with the blanket bog for around 9000 years have partly shaped the area it is today with living and working communities as part of it. They are also contributing factors of experiential qualities through which people understand and appreciate attributes of OUV, particularly the archive and scientific dimensions of the peatland. The Setting Guidance has been updated to clarify that 'landscape patterning' refers to the surface patterning across the blanket bog landscape. As stated above, scale, continuousness and surface patterning are all components of OUV. These associations are reflected within the Nomination Dossier (Part 2.B History and Development, from p.53), the subsequent World Heritage Nomination – IUCN Technical Evaluation (4.4 Community, p.7) as well as within the main themes of the WHS Management Plan. Landscape, visual and historical dimensions are treated only insofar as they allow people to understand, experience or appreciate OUV. Visual and other landscape considerations do not apply as such but could be used from the setting to interpret and
The 'Experiential setting' concept should be removed	Scottish Renewables	
In relation to functional and experiential setting, it is noted that paragraph 1.17 of the draft Guidance states that "experiential setting" is secondary to functional, because the WHS is not inscribed under cultural criteria. It adds "it is only relevant in the specific instances when the ways in which people appreciate the WHS derive directly from its attributes of OUV, and the proposed change that can affect that appreciation". As you are aware and as stated in the draft Guidance, the FCWHS is inscribed solely for natural heritage values relating to peat and habitat and not in relation to any aspect of cultural or landscape/scenic or visual attributes.	David Bell Planning (on behalf of Shinness & Nadara)	
It is considered that there is no policy basis for treating visual setting as an aspect of cultural heritage attributable in this case, given the WHS is not inscribed for any aspect of visual or scenic value. The Reporter in the Kirkton Public Inquiry Report gives specific support to this position – as stated at paragraph 238. "The applicant points to the reference to effects on "setting", which is a concept more usually applied to cultural heritage assets rather than natural heritage, in support of the proposition that NPF4 covers only WHS inscribed for their cultural heritage. However I do not think that, on its own, that is a telling point. A policy could encompass consideration of effects on the setting of WHS even if that would only be a consideration for some of those sites. In this case	David Bell Planning (on behalf of Shinness & Nadara)	

though, I agree that the concept of “setting” is not a relevant one.” (emphasis added)		allow better public appreciation of the WHS and the wider blanket bog landscape.
It is considered that the authors have misplaced reliance on Articles 4 and 27 of the World Heritage Convention which do not justify the need to put in place further development management constraints in relation to the matter of the visual and landscape setting of the FCWHS. It is considered that there is a flawed reliance on a national policy basis for the guidance.	David Bell Planning (on behalf of Shinness & Nadara)	The Setting Definition Study and Setting Guidance contain what is considered necessary in order to understand and apply functional setting and experiential setting, consistently. Notwithstanding this, some refinements have been made to the Toolkit such that the overall assessment is more compact and consequentially less ‘setting-heavy’. The WHS Impact Assessment screening process demands that any and all potential for effects is considered at the outset of a proposal. Because the WHS is still relatively new, we do not yet have a broad range of proposals to examine. But because the theoretical possibility remains, assessment must remain alert to the potential, but it is appropriate to spend a proportionately small effort in identifying and scoping out such effects – and, crucially, briefly explaining why – in order to build the body of evidence and experience.
There is acknowledgement in the documents that setting of a WHS is only relevant when it specifically affects OUV, and indeed that there is acknowledgement that the site has not been inscribed for cultural heritage - there are numerous references to the contended relevance of cultural associations in particular as part of the referenced experiential qualities. In addition, whilst it is said that the functional setting is of primary importance, there is a focus on guidance on the approach to the assessment of experiential setting, the majority of which appears to relate to visibility of the WHS and a number of the references to visual connectivity refer to cultural heritage associations.	David Bell Planning (on behalf of Shinness & Nadara)	There could be potential for positive impact relating to experience and appreciation of the WHS from within the setting should a developer choose to capitalise on that aspect by highlighting or improving people's appreciation and understanding of the WHS. This may involve the addition of accessible public access and interpretive panels within a development that would provide a location and viewpoint which would enhance the experience and appreciation of the WHS. If such interpretation was done from somewhere in the setting of the site, that would provide a positive impact on its OUV.
We note reference in the Guidance to scale, continuousness, landscape patterning, appreciation and experience. The Guidance does not clearly explain the evidential basis for treating effects on these experiential qualities as effects on OUV. Although the Guidance does demonstrate how the Toolkit should be used in this regard, the basis for including experiential impacts in the Toolkit is unclear. We disagree with the statements in paragraph 1.24 that the process suggested is ‘*intended to minimise additional burden required of*	Stephenson-Halliday (on behalf of Coriolis)	We are not relying on NPF4 for our justification for addressing setting. In the case of Kirkton Energy Park, the PLI Reporter was of the view and Scottish Ministers agreed that Policy 7 of NPF4, whilst relevant to world heritage sites of cultural value, is not of

those proposing change.' With the expansion of the setting to include both the functional as well as the experiential setting it does exactly the opposite.		direct relevance to proposed development's effects on the FCWHS (which is of natural value). In reaching their view that policy 7(l) was not of direct relevance to the case, they were of the view that the test it would apply is of relevance, and very important. As above, and in line with the UNESCO position, setting is a consideration for both natural and cultural WHS. The test in that policy is relevant in applying Policy 4a of NPF4 to the consideration of a proposed development's effects on the FCWHS. In the Kirkton case, setting may not have been seen as relevant in that instance; however, that does not preclude that it could be relevant in other schemes. Note that the Kirkton case was being considered before the Setting Definition Study had been finalised and published.
The special qualities discussed in the workshop as potentially contributing to the experience and appreciation of OUV are very broad and go substantially beyond what should be associated with protecting what is a fundamentally ecological inscription. Of particular concern are "Scale and continuousness", "Variety of landscape patterning" and "Time depth, cultural and historical associations". As the OUV is ecological in nature it cannot be undermined from an experiential aspect, only a functional aspect, and so experiential setting is not relevant for assessing impacts on the FCWHS. As such, experiential setting should be explicitly excluded from setting guidance and assessments	Belltown Power (Melvich Wind Energy Hub Limited - MWEHL) feedback after original workshop in Feb 2026	
Criterion (ix) contains no cultural value. Why include cultural and historic associations?	Summary from workshop	
Overall, aspects of the guidance appear to conflate the purpose and meaning of setting in a UNESCO context, with that which applies to cultural heritage in a policy context. It is considered that there is no basis to treat visual aspects of setting, especially in relation to any cultural and historical associations, as an attribute of OUV of the FCWHS. As noted, no visual or cultural attributes form the basis of inscription.	David Bell Planning (on behalf of Shinness & Nadara)	
Worked examples		
Need examples of where experiential setting may or may not be significant.	Summary from workshop	The Setting Definition Study and Setting Guidance include discussion of real development case studies and a worked

Within the workshop, a worked example of a solar development adjacent to the FCWHS was discussed. This development was generally deemed to have acceptable impacts on experiential setting based on the draft guidance. It would be very instructive to see a hypothetical example of what NatureScot and LUC currently view as a development with unacceptable experiential setting impacts.	Belltown Power (Melvich Wind Energy Hub Limited - MWEHL) feedback after original workshop in Feb 2026	example demonstrating circumstances where experiential effects are unlikely, where intervisibility may be relevant, and where effects on appreciation of OUV require further testing. We have sought to identify other examples for both aspects and will do on an ongoing basis. However, it is likely that it will be difficult to find examples that relate to experiential setting other than where there might be a positive impact pursued to enhance appreciation of the WHS. It is also likely that it will need the toolkit to be used in practice with setting in mind in order to find more examples and to see how the guidance works with the toolkit. We are proposing to include worked examples of both positive and negative impacts to the setting in an annex to the Guidance in due course.
Who determines experiential setting and how is it different from LVIA?	Summary from workshop	Experiential setting is defined as relating only to the presentation and appreciation of qualities derived from OUV. It is secondary to functional setting and only relevant where experience derives directly from OUV and where proposed change can affect that experience. The Guidance cross-references LVIA and cultural heritage evidence rather than replacing them.
The Operational Guidelines of the Convention do not impose any requirements on State Parties to define ‘experiential’ setting specifically. Instead, they require protection of whatever OUV-defining attributes are listed for each site. Similarly, the UNESCO Guidance and Toolkit for Impact Assessments in a World Heritage context also makes clear that the purpose of assessments is to “protect the Outstanding Universal Value of World Heritage properties”. The guidance does require assessment of the impacts arising in the ‘wider setting’ but only insofar as they may affect OUV.	Belltown Power (Melvich Wind Energy Hub Limited - MWEHL) feedback after original workshop in Feb 2026	You need to know what the setting is and entails in order to be able to know how it might be impacted and how those impacts might affect the WHS’ OUV and consequently how to protect the OUV should there be a negative impact. The Setting Guidance has been updated to clarify impacts on experiential setting could be positive or negative.
When considering appreciation, does this apply inside the Site, outside the Site, or both?	Summary from workshop	We are obligated to abide by the World Heritage Convention that aims at the identification, protection, conservation, presentation

		and transmission to future generations of cultural and natural heritage of Outstanding Universal Value. The Study defines experiential setting as the parts of the surroundings where change may affect the presentation and appreciation of qualities derived from OUV and identifies receptor groups both within and beyond the WHS which may experience those qualities.
It is unclear how appreciation will be defined and applied.	Summary from workshop	The Study defines appreciation through specific experiential qualities derived from OUV, including scale and continuousness, interaction with ecosystems and communities of plants and animals, transient environmental qualities, landscape patterning and time-depth associations.
There is a risk that appreciation could be weaponised against development.	Summary from workshop	The Study is very clear that experiential effects only matter where experience derives directly from OUV and where the proposed change materially affects that experience. Visibility alone is not sufficient; a proposal must affect presentation or appreciation of OUV.
How is visibility being used?	Summary from workshop	The Study clarifies that visibility is relevant only to experiential setting. The use of ZTV is presented as an illustrative tool and not as a definition of setting. Intervisibility is only the starting point for assessing whether appreciation of OUV could be affected.
D) ASSESSMENT TOOLS AND PROPORTIONATE ASSESSMENT		
Correlation with existing EIA assessment		
How will overlap with EIA and other assessment processes be handled?	Summary from workshop	The process outlined in the Setting Guidance draws directly on existing EIA chapters and technical appendices, using them as the evidence base for both functional and experiential considerations. The Setting Guidance clearly states that this is the case – the aim is to avoid duplication. Findings relevant to OUV should be recorded/ signposted within the Toolkit.
Where an EIA, HRA or other statutory assessment has already examined the same receptor, pathway and geographical area, the WHS assessment should rely on and signpost that information. Additional assessment should only be required	Scottish Renewables	

where an identified OUV question remains unanswered. Sheets 6–10 replicate the structure of EIA scoping/impact/evaluation. The Toolkit should be clear that these sheets are to be populated from existing EIA/HRA outputs, with signposting rather than restatement, and should provide a worked example of a minimum-viable completion where the EIA has already scoped out effects on a given attribute.		As the work is already carried out in assessments it is not additional work other than a few moments to note anything relevant to setting in the toolkit which should be being used anyway to report that work already done. Experiential setting could be the subject of positive impact through interpretation of the WHS and its OUV for the benefit of public appreciation. This could be relevant, for example, where a development such as a windfarm adjacent to the WHS allows for public access along tracks.
The Setting Guidance as currently drafted adds additional levels of reporting which is not proportionate and already covered by assessment and is likely to result double counting of effects, which will have negative implications for Scotland's journey towards energy security, Net Zero and compliance with carbon targets. Whilst our client considers that the protection of the FCWHS as a globally significant natural resource of peat and blanket bog is important, the Setting Guidance places unjustifiable weight on the 'Experiential Setting' aspect of the guidance. The Setting Guidance does not align with current national planning policy and, by placing weight on the experiential setting of the Site, misinterprets the OUV for which the Site was prescribed as a World Heritage Site. Should the Setting Guidance be adopted in its current form, Coriolis consider these incompatibilities will weaken the guidance, leave it open to legal challenge, and will ultimately lead to further delay in the protection of the functional setting of the FCWHS as well as the consenting	Stephenson-Halliday (on behalf of Coriolis)	

process for infrastructure of national importance in Scotland's response to the global climate crisis.		
Screening threshold		
The Toolkit's screening thresholds are set so low that virtually every renewables proposal in Caithness and Sutherland will require full WHS Impact Assessment by default, regardless of pathway to OUV.	Scottish Renewables	UNESCO Guidance and Toolkit (p.44): "By definition, World Heritage properties are sensitive and internationally important, so even a small change may have a significant impact." The Guidance and Toolkit are clear that the process applies to all scales and types of change that have potential to create negative impacts. The Setting Guidance also provides a way for positive change to OUV to be captured in the process.
Guidance requires impact assessment where there is potential for any negative impact, not just significant. This is disproportionate and inconsistent with EIA/HRA practice and UNESCO Guidance and Toolkit. Suggests adding the qualifier: WHS Impact Assessment should be required where there is potential for material adverse impact on an identified attribute of OUV, with a light-touch screening for other proposals. Also suggests rewording screening questions as "Is the project/development likely to materially and adversely affect…" or "Is there a credible hydrological pathway to an identified attribute of OUV?".	Scottish Renewables	
Use of 'Site' terminology		
It would appear that the use of Site in the Toolkit moves about from referring to the development under consideration in some places and then the WHS in others. Can a consistency check be done for this to avoid information being wrongly inserted. There also appears to be a discrepancy between the guidance and the Toolkit with the approach to cumulative impacts, which needs to be addressed.	Scottish Renewables	A consistency check has been done and instances corrected in the post-consultation edits to the Guidance (so that 'the Site' refers to the WHS and 'development site' is used for the site of development proposals under consideration). The Toolkit has been checked for use of word 'Site' and clarified where necessary. All direct, indirect and cumulative impacts occurring in the entire area of influence of the proposed action (development) need to be

We also found several examples of 'The Site' referencing both the Development Site and the World Heritage Site and would ask that this is made clear which site you are referencing when. It is often apparent through context but we did find it confusing in a number of places.	RWE	identified and assessed for their potential to impact the WHS. The potential for cumulative impacts should therefore be borne in mind throughout the assessment process. As far as possible, the other projects or activities to be considered for World Heritage cumulative assessment specifically should be identified at the outset; where the proposed development is subject of EIA, this could be done as part of EIA Scoping. Wording has been added to the Instructions in the Toolkit and to the Setting Guidance, to draw attention to this. The consideration of impacts of a proposed development, both individually and cumulatively with other developments, is a normal part of planning practice and the Toolkit is flexible enough that it can accommodate the recording of cumulative assessment considerations as well as individual assessment considerations, for example by using an additional row to describe a cumulative scenario and then assess it. If experience in using the Setting Guidance and Toolkit in due course shows that more guidance is needed for cumulative assessment or specific provisions needed for it within the Toolkit, we will consider making enhancements to them. However, it should be noted that cumulative assessment is does not relate solely to 'setting impacts', it is a consideration for all World Heritage impacts.
How will workload and proportionality be managed?	Summary from workshop	The Setting Definition Study and Setting Guidance emphasise screening, use of existing evidence, proportionate assessment and early identification of cases where no pathway exists to affect OUV. The Guidance explicitly notes that many proposals will have no effect on OUV and should briefly explain why.
Need practical guidance showing how to undertake assessment.	Summary from workshop	The Setting Guidance presents a step-by-step assessment process linked to the Highland Council WHS Toolkit, with worked examples using Golticlay Wind Farm, prompts for functional and experiential assessment, screening questions and evaluation tools.
Need clarity for developers and decision-makers about what information is required.	Summary from workshop	Structured tables are provided identifying receptors, interpretation of attributes, sources of evidence and data requirements, together

		with guidance on using existing baseline studies and impact assessments.
The additional values cited in the Toolkit creates a serious risk that ornithological effects, in particular, are elevated into WHS Impact Assessment findings without any demonstrated relationship to criterion (ix). An additional supporting value should only be treated as a receptor for the WHS Impact Assessment where it directly expresses, supports or sustains an OUV process under criterion (ix).	Scottish Renewables	The statement is correct in regard to strict WHS Impact Assessment but additional supporting values remain legitimate aspects of the WHS's overall value and should be considered in planning / consenting assessment – they just do not reach the threshold to be of OUV.
Process should not create another layer of assessment.	Summary from workshop	The Setting Guidance explicitly states that the process supports and enhances existing assessment processes rather than introducing a separate regime. Existing EIA, LVIA, ecology, hydrology and cultural heritage evidence is used and interpreted through the WHS lens.
There is no way to record "no pathway for impact" or "impact scoped out", which the Golticlay worked example demonstrates will be very common for renewables proposals outwith or partly within the Site. We recommend adding "No pathway /not applicable". It may also be useful to consider "impact rating", "significant for OUV" and the "confidence or evidence level being applied".	Scottish Renewables	The working-through of the toolkit, as per the Golticlay example, allows for this option to be identified where it applies. The key point is to provide the place and the language to express where this is the case, and why. The Toolkit provides opportunities to record any 'no impact' conclusions and to explain them, within the Screening Form (columns B and C), and prompts now provided within the Identify Potential Risks sheet (cell C1) and within the Description & Evaluation Tool (cells K2 and L2) for how and where to record this. It is important to not reach a conclusion of no impact prematurely, and also (in the interests of efficiency) to only carry forward to the next stage those matters requiring further evaluation – hence why a number of options are provided within the Toolkit for the stage in the assessment process that any such conclusion may be reached, recorded and explained. Rather than add more on "impact rating" and "significant to OUV" into the Toolkit, the Setting Guidance now includes more explanation of significance. In the Toolkit, the Description & Evaluation Tool form now includes a prompt to note "confidence or

		evidence level being applied" within the Explanatory Notes (column L).
The Toolkit and Setting Guidance together appear to capture routine maintenance, permitted development, minor works and micro-siting within the same regime as major applications. This is disproportionate. The Toolkit should include a de minimis threshold and confirm that permitted development, non-material variations and routine operational maintenance do not require WHS Impact Assessment absent a specific pathway to OUV.	Scottish Renewables	The planning concept of 'de minimis' does not apply. In practice, as more and different types of proposal come forward, likelihood of actions reaching a level which creates effects to OUV will become evident.
Publishing the password within the workbook is unusual and creates ambiguity around version control and the correct outputs being displayed if cells are amended in error. We recommend a formal versioning protocol (with perhaps access to previous versions as they progress to allow a lookback on changes), locked formulas, open publication of the master document, and a public change log to support cumulative assessments across successive schemes.	Scottish Renewables	We will consider options for version control and password protection going forward.
Having reviewed the guidance we believe that it would be appropriate to add the following clarification at the end of paragraph 6 of the toolkit instructions: *Experiential considerations should be confined to effects on the appreciation of Outstanding Universal Value and should not duplicate the assessment of landscape character and visual effects already undertaken through the established landscape planning and LVIA framework.* Our reasoning is that whilst the worked example demonstrates an appropriate application of the	RWE	Agreed. The suggested wording has been added to the Toolkit instructions.

methodology, without further clarification, there is a risk that future users of the toolkit may interpret the references to "scale and continuousness" as introducing an additional assessment of perceived landscape scale or openness, beyond that already undertaken through established landscape planning policy and LVIA. We believe this could inadvertently extend the scope of experiential setting beyond its intended purpose of assessing effects on the appreciation of Outstanding Universal Value. We therefore suggest that the Instructions include a brief clarification to avoid inconsistent interpretation.		

NatureScot/ Flow Country WHS Steering Group

The setting of The Flow Country World Heritage Site

Definition study

Final report
Prepared by LUC
July 2026



NatureScot/ Flow Country WHS Steering Group

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Definition study

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Chapter 1
Executive summary

Purpose

1.1 This setting study was commissioned to examine what comprises the setting of the Flow Country World Heritage Site, and how the setting can be interpreted by stakeholders.

1.2 The setting study establishes that there is a strong argument for defining the setting of The Flow Country. Management of the World Heritage Site (WHS) must address change which may affect its Outstanding Universal Value (OUV). This applies to change happening both within and outside its boundaries. Management proposals therefore need to address the setting of the WHS – the area outside and surrounding it.

1.3 Setting is not an entity in its own right, or a separate consideration from the inscription itself. It is simply a way of recognising the contribution that the surroundings of a Site make to the qualities that make it special, and allowing that contribution to be considered in planning and management processes.

1.4 The planning policy context in which management of the Site will take place requires protection of the WHS and its setting, principally through NPF4 2023, Policy 4, Natural Places: ensuring that "*Natural places are protected and restored*" and "*Natural assets are managed in a sustainable way that maintains and grows their essential benefits and services*"; and Policy 7L: "*Development proposals affecting a World Heritage Site or its setting will only be supported where their Outstanding Universal Value is protected and preserved*".

1.5 Defining setting enables the NPF4 WHS setting clause to be applied in a rational, evidenced way to ensure the Site is appropriately protected. It is essential to enable developers, decision-makers and stakeholders to hold rational, informed debate and come to reliable, evidence-based conclusions.

Setting in relation to Outstanding Universal Value

1.6 Change in the setting of a WHS is only relevant when it specifically affects OUV. This report sets out what the concept of setting means in relation to the natural criteria of OUV for which The Flow Country is inscribed. The World Heritage Convention requires the 'presentation' and 'appreciation' of cultural and natural heritage (Articles 4 and 27). The setting of a WHS therefore fulfils two purposes – protecting key aspects

of a Site's OUV from change arising outside its boundary; and facilitating or enhancing appreciation of the Site.

1.7 These two purposes lead to a two-fold definition of setting - functional and experiential:

Functional setting

1.8 Functional aspects of setting are those which directly support the functioning of the Site and its protection. Functional setting is the primary consideration because the Site is inscribed under natural criteria of OUV only, and the receptors of change are the attributes of OUV, directly.

1.9 Functional setting means the environmental context in which change can affect the ecological health and resilience of the WHS. These effects could be positive or negative. It encompasses those areas outside the boundary that are needed to maintain the ecological functioning and integrity of the inscribed area, based on interactions between hydrological, biological and climatic processes.

1.10 Functional setting identifies the parts of the WHS's surroundings which carry or embody the attributes of OUV ('receptors'). These are grouped into broad categories of receptor type: local climate and environmental conditions; water sources and hydrological units; ecosystems and communities of species; land use and land management practices. Data on these receptor types is analysed, and considered against the types of change which could affect them, to determine how change in the setting may affect OUV.

Experiential setting

1.11 Experiential aspects of setting are those which relate to the way people experience, understand, or appreciate the Site. Experiential setting encompasses the parts of the WHS's surroundings where change may affect the presentation and appreciation of the WHS's qualities which derive from its OUV.

1.12 Experiential setting is an important consideration, though secondary to functional, because the Site is not inscribed under cultural criteria. It is only relevant in the specific instances when the ways in which people appreciate the WHS derive directly from its attributes of OUV and the proposed change can affect that appreciation.

1.13 The human experience of the WHS is through a series of qualities, which include the sensory characteristics and associations by which humans respond to the attributes of OUV. These qualities include the Site's scale and continuousness; the interaction with and appreciation of its species; transient aspects such as light, weather and seasonal variations; the variety of its landscape patterning; and its time-depth, cultural and historical associations.

1.14 Existing land types which are shared or intersect with the WHS provide a proxy for understanding where these qualities can be experienced. These include land use/ landcover data and designations based on landscape and historic character types which relate to the peatland. The final step in defining experiential setting is considering where, and which groups, of people can experience the qualities that derive from OUV – such as local residents, visitors or travellers – and how change of various types could affect their experience and appreciation of OUV.

Mapping and application of setting

1.15 The process of investigating and defining setting has concluded that a mapped setting with a defined, spatial extent is neither useful nor desirable. Mapping can be used to illustrate the concept of setting and its application, but the definition itself relies on understanding and expressing how different types of change can interact with the many and complex setting receptors, and whether that change can affect OUV or its presentation and appreciation.

1.16 This report explores how the concept of setting can be applied when considering the potential effects of change on the WHS. This is achieved by applying the steps of the World Heritage Impact Assessment guidance, to determine whether a proposed change in the setting of the Site will affect OUV or the presentation and appreciation of the qualities deriving from OUV, whether that effect is positive or negative, and to what level, so it can be given proportionate weight in the planning balance.

Further steps

1.17 Consideration is then given to further steps which may be required or desirable to address issues and questions arising from the setting study which are beyond its scope, including addressing data gaps, potential further refinement of the understanding of setting in some areas and whether tailored guidance on some issues would be beneficial for owners, developers and decision-makers.

Chapter 2
Defining setting

> **"*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.*"**
>
> Flow Country World Heritage Site Management Plan (Post-Inscription Draft May 2026)

Purpose of the setting study

2.1 UNESCO (the United Nations Educational, Scientific and Cultural Organization) sets criteria for the selection of World Heritage Sites (WHS). These criteria are applicable globally, irrespective of any local designation systems. The importance of a World Heritage Site is expressed in terms of its Outstanding Universal Value (OUV). To qualify for World Heritage Site status, a site must embody Outstanding Universal Value in one or more categories of natural or cultural heritage value. It must also demonstrate Integrity – a measure of the wholeness and intactness of that heritage and its attributes.[1]

2.2 UNESCO's international definition of Outstanding Universal Value is taken into account for each individual World Heritage Site through its country's national legislation and its planning and environmental consents systems.

2.3 UNESCO requires the tools and processes through which a site's Outstanding Universal Value will be protected to be set out in a Management Plan. UNESCO guidance notes that an effective management system depends on the type, characteristics and needs of the property and its cultural and natural context.[2]

2.4 The Flow Country World Heritage Site Management Plan (FCWHSMP) recognises that what makes The Flow Country special could be affected by change happening both

[1] World Heritage Operational Guidelines, II.E.87-89

[2] Operational Guidelines for the Implementation of the World Heritage Convention (WHC.23/01 2023), para. 110

within and outside its boundaries. Management proposals for The Flow Country therefore need to address the setting of the World Heritage Site – the area outside and surrounding it.

2.5 The Management Plan recognises that planning policy, "*affords protection to the parts of the boundary without statutory environmental designation, and the area outside of the 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 World Heritage Site are strong and appropriate for the designation*." (FCWHSMP p.8).

2.6 In Scotland, the National Planning Framework 4 (NPF4, 2023) sets out national planning policy. Policy 7(l) requires that "development proposals affecting a World Heritage Site ***or its setting*** will only be supported where their Outstanding Universal Value is protected and preserved" (LUC emphasis).

2.7 NPF4 Policy 4 (Natural places) is also of critical importance to managing the WHS, particularly through the statutory designations which cover large parts of the Site.

2.8 Annex F of NPF4 notes that WHS are internationally important and that the impact of proposed development upon their outstanding universal value, authenticity and integrity, and setting, are a material consideration in determining planning applications.

2.9 There is a view that Policy 7 does not apply to natural sites, such as The Flow Country WHS, because its title covers 'Historic assets and places'. However, it must be remembered that at the time of drafting NPF4, The Flow Country WHS was not at an advanced stage of preparation for inscription, and no other solely natural heritage WHS exist in Scotland.

2.10 The inscription process required the State Party to demonstrate that existing legal and policy protections would be sufficient to manage the OUV of the Site. The nomination documents included a commitment to protection including through appropriate consideration of boundaries, setting and the planning framework, including all policies involving reference to world heritage, natural heritage and biodiversity.

2.11 One recent Ministerial decision (Kirkton Wind Farm, January 2026) discusses the relevance of NPF4 policy coverage to The Flow Country WHS. In issuing that decision, Scottish Ministers found that Policy 4 should be considered to apply to The Flow Country as a natural place, while Policy 7's coverage of historic places is not of direct relevance to The Flow Country WHS. However, despite the precise structure and content of NPF4, "*irrespective of what planning policies say, the proposed Development's impacts on the FCWHS are a significant material consideration".* Setting is not discussed in the Kirkton decision as the proposed development lies within the WHS boundary.

2.12 A key purpose of defining setting is therefore to assist those in assessment and decision-making roles interpret and apply the requirements of legislation and policy.

What is 'setting'?

2.13 Setting, broadly, is the area surrounding any asset within which change is capable of affecting the qualities which make the asset unique or special.

2.14 The concept of 'setting' is crucial for understanding and managing the impacts of external factors on the WHS. It is needed to understand the implications of any proposed developments or changes in land use, practices or policies, and it will help inform decisions to ensure that the characteristics that define the Site are maintained and, where appropriate, enhanced through managing development and through encouragement and focusing of enhancement projects.

2.15 Relating to WHSs, "*setting may relate to the property's topography, natural and built environment, and other elements such as infrastructure, land use patterns, spatial organization, and visual relationships. It may also include related social and cultural practices, economic processes and other intangible dimensions of heritage such as perceptions and associations*."[3]

2.16 Crucially, "***management of the wider setting is related to its role in supporting the Outstanding Universal Value***."[4] These references to setting in the Operational Guidelines relate to all properties without differentiating between those inscribed for cultural or natural heritage values.

2.17 Setting is not an entity or a prescription in its own right, or a separate consideration from the inscription itself. It is simply a way of recognising the contribution that the surroundings of a Site make to the qualities that make it special, and allowing that contribution to be considered in planning and management processes.

2.18 Managing World Heritage Sites, including their setting, is inherently challenging and requires a fine balance to ensure inscribed places continue to have a viable life and future, while protecting what makes them special and of universal value.

Defining setting

2.19 The World Heritage Convention[5] places a duty on State Parties to ensure:

[3] Ibid., para.112
[4] Ibid., para. 112

[5] UNESCO 1972, Convention Concerning the Protection of the World Cultural and Natural Heritage

- "*the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage*" (Article 4), and requires that they
- "*shall endeavor* [sic] *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*" (Article 27).

2.20 UNESCO guidance suggests that the setting of a World Heritage Site should include the immediate setting of the property, important views and other areas or attributes that are functionally important as a support to the property and its protection.

2.21 It also states that 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 a buffer zone or otherwise protected.

2.22 Defining the setting of a World Heritage Site can therefore fulfil two purposes – protecting key aspects of a site's Outstanding Universal Value from change arising outside its boundary; and facilitating or enhancing appreciation of the site. These two purposes provide the basis for defining the setting of the Flow Country World Heritage Site.

2.23 Setting can be considered in terms of function and experience:

Functional – aspects of setting which directly support the functioning of the Site and its protection.

Experiential – aspects of setting which relate to the way people experience, understand, or appreciate the Site.

2.24 The Outstanding Universal Value of The Flow Country World Heritage Site (WHS) relates to ecosystem processes (criterion ix). It was not nominated for its cultural or historical values (criteria i to vi), nor its natural beauty (criterion vii). Although originally also proposed under criterion x (covering the most significant habitats for conservation of biological diversity), only criterion ix was applied in the inscription of the Site in July 2024.

2.25 The criteria are then further refined into a series of attributes which explain in detail why The Flow Country meets these criteria for inscription:

Table 2.1: Criteria and Attributes of Flow Country OUV

Criterion	Attribute
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	a) most extensive near continuous example of natural, actively accumulating, blanket bog ecosystem found globally
	b) climatic, topographic gradients and geological diversity: bog macroform diversity
	c) archive it stores (4th dimension)
	d) natural laboratory – ongoing scientific and educational use
	e) carbon sequestration and storage
	f) water filtration and the impact on the water quality of associated riverine habitats

2.26 The functional aspects of setting are therefore of primary importance in protecting Outstanding Universal Value because they directly affect the core reasons for the Site's inscription.

2.27 However, the experiential aspects of setting are an important consideration in management because so many of the ways in which people understand and interact with The Flow Country are through these aspects. Articles 4 and 27 of the World Heritage Convention, quoted above, explicitly recognise the importance of the experience and appreciation of the asset.

2.28 Although the definition of Outstanding Universal Value for The Flow Country does not include cultural values, the World Heritage Site's Outstanding Universal Value has evolved through, and will continue to be affected by, the interaction of cultural and natural factors. Identifying these factors therefore helps us to understand its attributes in their wider context, and to recognise any issues and opportunities for the sound management of the site.

2.29 The setting of The Flow Country World Heritage Site is defined by identifying:

- the interaction of cultural and natural factors, insofar as they relate specifically to OUV and its component attributes;
- how these factors translate into functional and experiential setting;
- the key characteristics of that setting.

2.30 These steps are then considered through a process to determine whether change in the surroundings of the WHS affects OUV or its appreciation. In this report, the nature of change is considered in a broad sense, identifying types or categories of change. The report then addresses how change would be considered at a more detailed, case-by-case level, when required for management or decision-making processes.

To define or not to define setting?

2.31 Effects occurring as a result of change outside the WHS boundary could be dealt with solely through existing planning mechanisms and guidance. Inspection of recent major planning decisions in the surroundings of the WHS provide an approximate parallel for this scenario. A sample of these decisions was assessed, and an overview and commentary provided on the findings, presented at **Appendix A**. This assessment was carried out as a hypothetical scenario, reflecting on how these cases might have progressed had the WHS been in place at the time of decision-making. It should be read as one opinion on these cases.

2.32 Issues identified in these cases which would translate directly to setting considerations suggest that it would be extremely valuable to provide clarity on how to interpret the NPF4 WHS setting clause in this context.

2.33 For example, these cases highlight that really clear thinking is required on whether a particular proposal or development site can affect the experiential aspects of setting derived from OUV. Having the means by which to respond to the NPF4 WHS setting clause in a rational, evidenced way is crucial to ensure sustainable development is not impeded by the perception of the WHS as a constraint, which is not reflected in reality.

2.34 As a result, it is clear that there is risk involved in not addressing the concept of setting as it relates specifically to The Flow Country WHS. If setting is not addressed or described at all, some may take the view that it does not matter what happens outside the boundaries. Or, if no guidance is provided to help apply NPF4, wide variations or gaps in approach may result.

2.35 Both of these scenarios open the WHS to unconsidered, unplanned risk to OUV and leave key decisions for developers, landowners, stakeholders and decision-makers open to excessive uncertainty. This would potentially create more of an obstacle to sustainable development than the alternative, 'do nothing/ do not define setting' scenario, because (perhaps unfounded) perceptions of potential for harm would weigh too strongly in debate, creating inconsistency and without an agreed approach to resolution.

2.36 UNESCO Guidance for Wind Energy Projects in a World Heritage Context[6] addresses precisely this issue. Its recommendations and related case studies support the view that setting needs to be considered specifically in relation to the particular attributes of any given WHS, because change affecting it only matters when it specifically affects OUV or its appreciation. This is essential to enable developers, decision-makers and stakeholders to hold rational, informed debate and come to reliable, evidence-based conclusions which focus strictly on change to OUV.

Setting vs. buffer zone

2.37 A buffer zone is an area surrounding a WHS which has complementary legal and/or customary restrictions placed on its use and development to give an added layer of protection to the property, such as through an additional planning policy in the local development plan. It is usually an area with a firmly-defined spatial extent, within which additional policies or management measures apply, reflecting that zone's particular importance to the OUV of the Site.

2.38 In the case of The Flow Country WHS, a buffer zone is not considered necessary (FCWHSMP p.39). Buffer zones have no basis in Scottish law, so would not add more protection than is already in place. They have not been considered appropriate for natural sites in Scottish national planning policy given the protection accorded to and provided by existing nature designations (SSSI/SPA/SAC/Ramsar).

2.39 Setting is a broader, and looser, concept than a buffer zone. Setting is not a fixed, permanent entity and can change as the asset, its values and understanding evolves. This change in the understanding of setting is likely to be very gradual, based on the evolution of understanding of the principles underlying it. Setting need not have a defined boundary or extent, but is instead defined by the factors which operate outside its boundaries which can interact with OUV.

Defining 'setting' in the context of natural World Heritage Sites

2.40 The concept of 'setting' is prevalent and well understood for cultural heritage. A definition of setting in the Scottish legislative context is included in National Planning Framework 4 and, specifically for cultural heritage, in Historic Environment Scotland (HES) guidance.[7] However, a definition of setting for natural heritage is not well established.

[6] World Heritage Centre - Wind Energy (unesco.org) [accessed 02/05/24]

[7] Including in HES 2016, Managing Change in the Historic Environment: World Heritage

Functional setting

2.41 Considering the specifically natural criteria of OUV, functional setting means the environmental context in which change can affect the ecological health and resilience of a World Heritage Site. This influence can be through ecological and geomorphological processes, such as water and nutrient cycles, animal migration paths, and plant pollination networks, which are dynamic and do not recognize man-made boundaries.

2.42 Environmental impacts such as noise, pollution, and light intrusion from the setting can negatively affect wildlife behaviour and habitat quality. Conversely, positive changes within the setting, like restoration projects or sustainable land management practices, can enhance the Site's ecological connectivity and resilience.

2.43 The setting of the WHS is dynamic because the attributes of the site are dynamic. The peatland and the flora that form some of its attributes are, to an extent, static, but are interdependent with the water, nutrients and biodiversity that cycle through, and live in and on it. The concept of setting must also reflect evolving ecological knowledge, conservation priorities, and societal values toward natural heritage. It may include areas with variable ecological contribution to the conservation area, acknowledging that some parts may currently have neutral or even negative effects due to human activity or natural processes, but have potential to have a positive effect on OUV through enhancement.

2.44 This explains why a fixed, spatially-defined buffer zone is not desirable or appropriate to protect the attributes of OUV of The Flow Country WHS. The range and variability over which change could affect the attributes of OUV mean that any assessment process must be based on an approach which defines principles rather than attempting to set ranges for intensity or magnitude, which will inevitably omit or misrepresent most likely types of change, or the specific circumstances in which change would happen.

2.45 The functional setting is therefore an integral part of conservation management, contributing to the protection and enhancement of natural heritage assets through a holistic approach that considers both direct and indirect influences on the Site's ecological and conservation values. A setting can be generally defined as those areas outside the boundary that are needed to maintain the ecological functioning and integrity of the inscribed area, based on interactions between climatic, hydrological and biological processes.

2.46 The receptors of change in functional setting are the attributes of OUV, directly. For this reason, functional matters are the primary consideration in assessment of the effects of change in the setting of the Site, because it is inscribed for natural criteria of OUV only. Functional effects to OUV could fall within a wide range of magnitude, up to and including severe harm to or destruction of OUV. Equally, major benefits to OUV could derive from change in the setting.

Experiential setting

2.47 Human beings tend to think of a cohesive ecosystem with tangible qualities such as The Flow Country as a 'landscape' – in this context meaning a place (rather than necessarily a defined area of specific 'landscape character'). The qualities of The Flow Country as a landscape cannot be completely separated out from its natural value. These qualities include its visual and other sensory characteristics such as scents and sounds, and its associations with people, events and history. We naturally respond to a landscape, space or place with human emotions, no matter the reasons behind any formal recognition. Change in the surroundings of The Flow Country has the potential to affect our understanding and appreciation of its qualities, which ultimately derive from its natural value. This is recognised in the World Heritage Convention's inclusion of the terms 'presentation' and 'appreciation' in relation to the protection of both cultural and natural heritage (in Articles 4 and 27 of the World Heritage Convention, respectively).

2.48 Defining setting must address the experiential aspects of the place, because issues relating to those aspects will always arise in discussions and decision-making. However, the definition must be realistic and proportionate, and helpful in guiding people on how to take it into account in planning for and managing change.

2.49 Defining experiential setting therefore focuses on identifying which parts of the WHS's surroundings have a relationship with the natural attributes of the WHS and where change may affect people's experience and appreciation of the site's qualities which derive from its OUV.

2.50 This requires a means of understanding and testing the human experience of the identified factors. This experience relies on connectivity between the WHS and the factor interacting with it. In most instances this will be visual connectivity, although occasionally it may also rely on a historical or functional connection (such as historic areas of peat cuttings).

2.51 The receptors of change in experiential setting are human beings, through their experience and appreciation of the qualities of the Site which derive from OUV. Experiential matters are therefore an important, but secondary consideration in assessment of the effects of change in the setting of the Site. It is only relevant in the specific instances when the ways in which people experience the WHS derive directly from its attributes of OUV and the proposed change can affect that experience. Many types of change may have

no effect on the experience and appreciation of OUV, even if they are visible from or in combination with the Site.

2.52 For example, if a proposed development cannot be experienced from, or in combination with, the World Heritage Site, it cannot affect or harm the experience or appreciation of it. Even if visible, if the proposed development does not distract from, or undermine, the experience or appreciation of the attributes of OUV, no harm is caused by it. This would apply to developments considered individually and cumulatively.

Chapter 3
The setting of The Flow Country WHS

Functional setting

Key elements of setting

3.1 The environmental context and conditions surrounding The Flow Country WHS play a pivotal role in protecting the ecological integrity, biodiversity, and natural significance of the blanket bog within the WHS boundary. It includes not only the adjacent lands but also the hydrological units, climate conditions, and environmental and social mechanisms that influence the peatland's health and functions. These influences can be both positive and negative.

3.2 The only parts of the setting where change could meaningfully affect the WHS are those which are susceptible to types of change that could affect the attributes of OUV. This could encompass both positive and negative effects.

3.3 To define functional setting we must identify the parts of the WHS's surroundings which carry or embody these attributes ('receptors'). Existing designations or datasets have been identified which contain, or represent, the attributes of OUV of the WHS. These are grouped into broad categories of receptor type.

3.4 Analysis of these types of data would allow an understanding of the current state of receptors' contribution to OUV, against which the potential effects of change can be assessed.

Functional receptors

Local climate and environmental conditions

3.5 This includes patterns of precipitation, temperature ranges, wind dynamics, and atmospheric purity. The climate parameters dictate the ability of the blanket bog to form and the water level within the peatland, affecting its ability to support specifically adapted plant, and animal communities and to perform essential ecological functions such as carbon storage and flood regulation.

3.6 It also encompasses the potential for wildfire caused by prolonged periods of dryness affecting the surface vegetation, drying it and making it more susceptible to fire damage.

3.7 Although climate conditions cannot be directly managed in the local context, setting must consider these climatic and environmental factors, anticipating changes and implementing

adaptive measures to mitigate potential adverse effects on the blanket bog and maintain its hydrology. This may require monitoring of climate trends, assessing environmental impact from cumulative change and consideration of measures to cushion the blanket bog from the impacts of climate change.

3.8 It is recognised that climate change operates over, and is affected by, factors at the global scale. It is not reasonable to expect local management measures to attempt to tackle these types of global negative effects on the WHS in isolation – this must come from national and international action. However, the protection and enhancement of the WHS would be an important contributor to addressing climate change and would form an important consideration on the positive side of any cost/benefit or planning balance assessment.

3.9 Change to this type of receptor could affect Criterion ix, attributes a, b, c d, e, f (**see Table 1.1**).

3.10 Baseline data relevant to this type of receptor would cover:

- Climate trends, particularly
  - Precipitation
  - Temperature observations and projections
  - Drought risk analysis

  These apply at a coarse scale in relation to the WHS boundary and will tend to affect it as a whole. This theme is therefore more appropriate for broad trend and behaviour analysis than for assessing effects relating to change at a local scale.

Water sources and hydrological units.

3.11 The blanket bog is mainly precipitation-fed and divides into distinct hydrological units reflected in its surface patterning. The bog regulates water flow and acts as a filter. The health of freshwater systems in the surroundings of the WHS is partly dependent on the blanket bog which regulates the flow and quality of water reaching them. The setting is defined by its hydrological and ecological connectivity to the blanket bog, where water flow and nutrient cycling extend beyond its boundaries.

3.12 Change in the setting relating to this theme will encompass many of the opportunities for enhancement of currently degraded blanket bog outside the WHS. For example, assisting identification of similar but poorer quality blanket bog habitat in the surrounding area, where and to what extent it may be suitable for restoration, and by what method – where it is similar in composition, within the same catchment, contiguous with areas within the boundary, and capable of enhancement.

3.13 Change to this type of receptor could affect Criterion ix, attributes a, b, c, f (**see Table 1.1**).

3.14 Baseline data relevant to this type of receptor would cover:

- Hydrology
  - Catchments and water courses

    Data is available and vital to understand the blanket bog's context. There will be places where the WHS would be sensitive to change taking place in areas of its catchment upstream of the blanket bog, outside its boundaries. However in most instances, water flow downstream, *out of* the boundary, affects the surrounding hydrological systems, rather than the other way around.
  - Water flow patterns

    Modelling within and across the WHS boundary needs expert hydrology input, beyond the scope of this setting study.
  - Run-off, drainage, and, by extension:
  - Nutrient filtration and nutrient pollution

    These are not currently specifically mapped, but proxy data (such as land use types, peatland survey, peatland condition) could be used as a starting point for further study – e.g. applying the James Hutton Institute soil runoff risk[8] approach for cultivated land.

Ecosystem areas and species

3.15 The interaction between abiotic components and plant and animal species is what enables the creation and maintenance of a resilient blanket bog ecosystem. Some species characteristic of the blanket bog are highly adapted and specialised, but not all are confined strictly to its physical boundaries. Many species found in or on the blanket bog can and will thrive on shallower, drier, peaty soils. Related habitat types, such as wet and dry heath, rushy and grassy areas, extend into the surroundings of the WHS. Further ecological processes related to the blanket bog, such as dispersal and migration, also take place within these surrounding habitats.

[8] Illustrated at https://map.environment.gov.scot/Soil_maps/?layer=21# [accessed 29/4/24]

3.16 Change to this type of receptor could affect Criterion ix, attributes a, b, c, d, f (**see Table 1.1**).

3.17 Baseline data relevant to this type of receptor would cover:

- Distribution of key communities of species; and
- Core habitats within the WHS and supportive habitats in surrounding areas

  These could be mapped using blanket bog categories of peatland mapping, plus designated sites containing relevant ecological values.
- Ecological connectivity and corridors

  Mapping an understanding of these would require specialist input. This type of data tends to be produced at a fine scale on a reactive, case-by-case basis, responding to potential change.

Land use and land management practices

3.18 Some land uses outside the boundary are inherently linked to the function and health of the blanket bog. Management practices outside the site boundaries have the potential to affect the site's ecological functioning and integrity.

3.19 In the context of the blanket bog, positive influences could include sustainable land management practices that prevent degradation and support ecological processes, such as water and nutrient cycling, and species dispersal and migration. Practices that maintain the hydrological conditions necessary for peatlands to thrive or restoration efforts that repair past damages and enhance resilience are positive contributions to the setting.

3.20 Conversely, there may be land use types and management practices which have potential negative effects to the health of the blanket bog. These might include practices which create risks to OUV from air- or water-borne pollutants, or inappropriate species introduction. Understanding these potential interactions in more detail would help to guide land use change to appropriate locations and influence management plans and practices to avoid or reduce harm and encourage adoption of those which protect or enhance OUV.

3.21 Change to this type of receptor could affect Criterion ix, attributes a, e, f (see **Table 1.1**).

3.22 Baseline data relevant to this type of receptor would cover:

- Forestry and farming

  Data on land capability, forestry-related species conservation, native woodland; peatland restoration could assist understanding this type of receptor.
- Planning use classes – planning policy and history recording changes of land use requiring planning permission (covering broad use classes such as industrial, business, housing etc)
- Sporting estate management

  Management approaches are not currently mapped; more data analysis or a case-by-case approach needed.

Data availability

3.23 Tables B.1 – B.4, **Appendix B** illustrate the types of data relevant to the four categories of functional setting described above. These lists of data are not comprehensive; they have been used to develop and sense-check the definition of setting and its potential application in impact assessment. In some cases, data types are identified which can be used as a proxy to understand how different types of change outside the boundary may interact with OUV.

3.24 The specifics of any development proposal would require more detailed analysis of the data available, relevant to that particular location/ type of change. Paragraphs 3.39-3.42 on impact assessment provides more detail on the process involved.

3.25 Gaps in data or knowledge and recommended further work to address broad questions in the understanding and definition of setting, beyond the scope of this report, have been flagged at **Further steps**, paragraphs 3.61 on.

Experiential setting

3.26 Experiential setting is concerned with people's experience and appreciation of the qualities of the Site which derive from OUV.

3.27 To define experiential setting we must identify:

1. the experiential qualities of the WHS which derive from its OUV;
2. the parts of the WHS's surroundings which carry or represent these qualities;
3. whether change in those surroundings could alter people's understanding and appreciation of the site's qualities (which could be in either a positive or negative way).

Experiential qualities

3.28 The experiential qualities of the WHS which derive from its OUV (refer to **Table 1.1** for criteria and attributes) are its:

- **Scale and continuousness**

  relating to **Criterion ix, attribute a** and to The Flow Country's **integrity**.

- **Interaction with and appreciation of ecosystems and communities of plants and animals**

  relating to **Criterion ix, attribute d**

- **Transient aspects** – diurnal and seasonal variations, appreciated alongside weather conditions and patterns, light, skies etc.

  relating to **Criterion ix, attribute b**

- **Variety of landscape patterning**

  relating to **Criterion ix, attribute b**.

- **Time-depth, cultural and historical associations**

  relating to **Criterion ix, attribute c and d**

3.29 These qualities do not have a ready-made spatial definition. To estimate where the qualities may be experienced outside the boundary of the WHS, the following designations or datasets, broadly covering different land types, have been identified and within these, which sub-types are shared or intersect with the WHS. This process helps to understand the distribution of these qualities within and surrounding the WHS, approximating the ways in which people experience OUV.

3.30 Existing landscape designations, benefitting from existing policy protections, may help define where these qualities can be experienced. However, land which is not covered by existing designations may also be susceptible to change which affects the experience and appreciation of OUV.

Land use/ land cover

- Scottish Habitat and Land Cover Map (NatureScot/ Space Intelligence) specifically sub-types shared or intersecting with the WHS boundary, such as:
  - D1 Raised and blanket bogs
  - D2 Valley mires, poor fens and transition mires
  - E3 Seasonally wet and wet grasslands
  - F4 Temperate shrub heathland

Landscape character

- National Scenic Area (Scottish Government)
- Special Landscape Areas (Highland Council)
- Wild Land Areas (Scottish Government)
- Landscape Character Type (NatureScot) specifically sub-types shared or intersecting with the WHS boundary, such as:
  - 134 Sweeping Moorland and Flows
  - 136 Rocky Hills and Moorland
  - 142 Strath – Caithness and Sutherland

Cultural heritage sites and landscapes with peatland connections

- Historic Land Use Assessment (Historic Environment Scotland) specifically sub-types shared or intersecting with the WHS boundary, such as:
  - Crofting townships
  - Rough grazing
  - Plantation
  - Traditional peat cutting
- Historic Environment Record (Highland Council) specifically sub-types shared or intersecting with the WHS boundary, such as records of historical:
  - Transhumance (seasonal, nomadic pastoral activity)
  - Crofting landscapes
  - Abandonment/ clearance

Receptors

3.31 The receptors for change in an experiential sense are human beings. The final step in defining experiential setting is considering where, and which groups, of people can experience the qualities – such as local residents, visitors or

travellers – and how change of various types could affect their experience and appreciation of OUV.

3.32 Consideration of whether change affects the experience of OUV must therefore address the relationship between the land which carries the qualities deriving from OUV with the groups of people able to experience or appreciate that land. For example, **Table 2.1**, overleaf, illustrates some examples of groups of people who may be receptors of change to experiential setting.

3.33 Additional refinement of these examples, in relation to the land types carrying the qualities above, would be useful to more firmly define where areas of experiential setting would be of particular sensitivity, and, conversely, areas where change would be unlikely to be able to affect the experience and appreciation of OUV. This is discussed further at **Further steps**, paragraphs 3.61 on.

Relationship between functional and experiential setting

3.34 As explained in Chapter 2, functional setting is the primary consideration for change happening outside the boundaries of The Flow Country WHS because it is inscribed for natural criteria of OUV only. Experiential setting is an important, but secondary, consideration because it is only relevant in the specific instances when the ways in which people experience the WHS derive directly from its attributes of OUV and the proposed change can affect that experience.

3.35 **Table C.1**, **Appendix C** illustrates the connections between the attributes of OUV and the functional and experiential setting receptors relevant to them.

Levels of detail in definitions of setting

3.36 It is acknowledged that the discussion of experiential setting above appears less detailed than that of the functional setting. This is to be expected – the definitions of the two aspects of setting are not equivalent or symmetrical in content and detail, because their derivation is very different.

3.37 Functional setting necessarily requires a great deal of detailed evidence to consider the implications of interactions in the environmental surroundings of the WHS which may directly affect the attributes of OUV. Experiential setting, on the other hand, is concerned with human experience of the WHS and therefore applies at a much more general level, and at a broad, landscape scale.

3.38 The consideration of experiential setting effects is also largely dependent on understanding the nature of the change proposed. At the early stage of assessment covered in this report therefore, setting can only be defined in a broad sense, and would be refined as more detailed information on change (such as development scheme information) became available.

Table 3.1: Experiential setting - receptors

Receptor group	Impact of change in visual/ landscape setting	Sensitive to…
Land managers, forestry workers, infrastructure workers	Limited impact – perceptions shaped by their working relationship with the landscape.	Restrictions on operations
Residents and communities	Possible sense of encroachment on core areas of bog – level of concern influenced by cultural relationship with peatland.	Loss of bog habitat
Tourism, recreation, hospitality businesses	Possible concerns about change impacting tourism and recreation.	Indirect effects
Visitors – scientific / education	Landscape and visual impacts on key access (walking and cycling) corridors Focus on change affecting areas of similar habitat around the WHS or impacting functional aspects of setting.	Loss of bog habitat Changes in visual setting Functional setting changes
Visitors – outdoor recreation	Landscape and visual impacts on key access (walking and cycling) corridors and viewpoints – affecting views over WHS or surrounding areas of similar and contiguous character.	Changes in visual setting Changes in landscape, cultural character
Visitors – tourism	Landscape and visual impacts on key transport routes (road and rail) – affecting views over WHS or surrounding areas of similar and contiguous character.	Changes in visual setting Changes in landscape, cultural character
Travellers on road and rail corridors	Landscape and visual impacts on key transport routes (road and rail) – affecting views over WHS or surrounding areas of similar and contiguous character.	Changes in visual setting Changes in landscape character

Next steps – identifying meaningful change

3.39 Not all receptors, or areas within them, will be equally sensitive to change which could affect the WHS. Many types of change in the surroundings of the WHS are unlikely to affect its OUV at all.

3.40 ICCROM, IUCN, ICOMOS provide Guidance and Toolkit for Impact Assessments in a World Heritage Context (2022). Highland Council has applied this guidance to create a toolkit for impact assessment tailored to the specific attributes of OUV for The Flow Country WHS.[9] The toolkit can be applied regardless of whether the change proposed occurs within or outwith the WHS boundary. The setting discussion above can help frame consideration of whether change outside the boundary is meaningful or not – i.e. whether it affects OUV.

3.41 The steps required to determine this are:

1. Where is the change proposed to take place in relation to the WHS boundary?
2. What is the nature of the change?
3. What types of receptors are affected?
4. How does the change affect
   - the attributes of OUV, or
   - the qualities which are derived from OUV?
5. Are those qualities already affected by existing change? (i.e. are there cumulative effects to consider)
6. Is the effect significant, i.e. does it matter for OUV, or for its presentation and appreciation?

3.42 This setting definition study provides information to help answer the questions in steps 3 and 4. Impact assessment of a specific proposal can use this at screening stage, to set scoping expectations, identify the need for additional research and to frame detailed evaluation. Overall, these steps will assist in confirming whether the proposal will affect OUV or the qualities deriving from OUV, whether that effect is positive or negative, and to what level, so it can be given proportionate weight in the planning balance.

3.43 The following maps and discussion have been provided as an example of how to apply the definition and steps.

3.44 IMPORTANT: These maps do not define setting. They illustrate ways in which the concept of setting can be applied to help understand the potential impact upon OUV of change happening outside the boundaries of the WHS.

3.45 These maps are indicative only. Site-specific, detailed analysis would be required, informed by professional interpretation and judgement, to form an evidence-based view on whether, and to what extent, a specific proposal for change would affect OUV or its appreciation.

Functional setting illustration

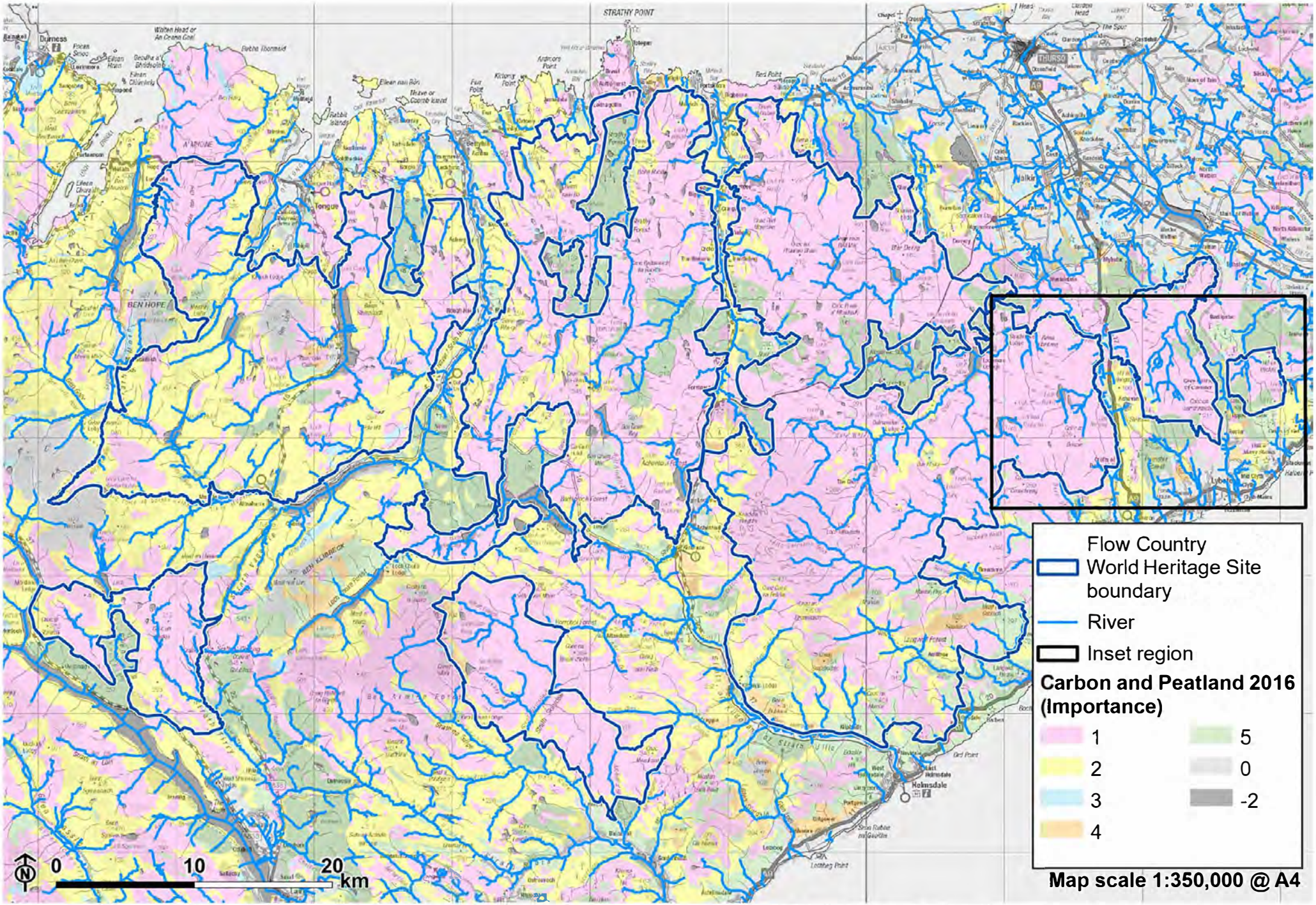
3.46 The following series of four maps illustrates two examples of categories of functional receptors: water sources and hydrological units, and ecosystem areas. A selection of receptor datasets for each category is illustrated, at the scale of the whole WHS and with an inset example area.

3.47 These examples would form a starting point for considering the relationship between the location of a particular proposal for change with:

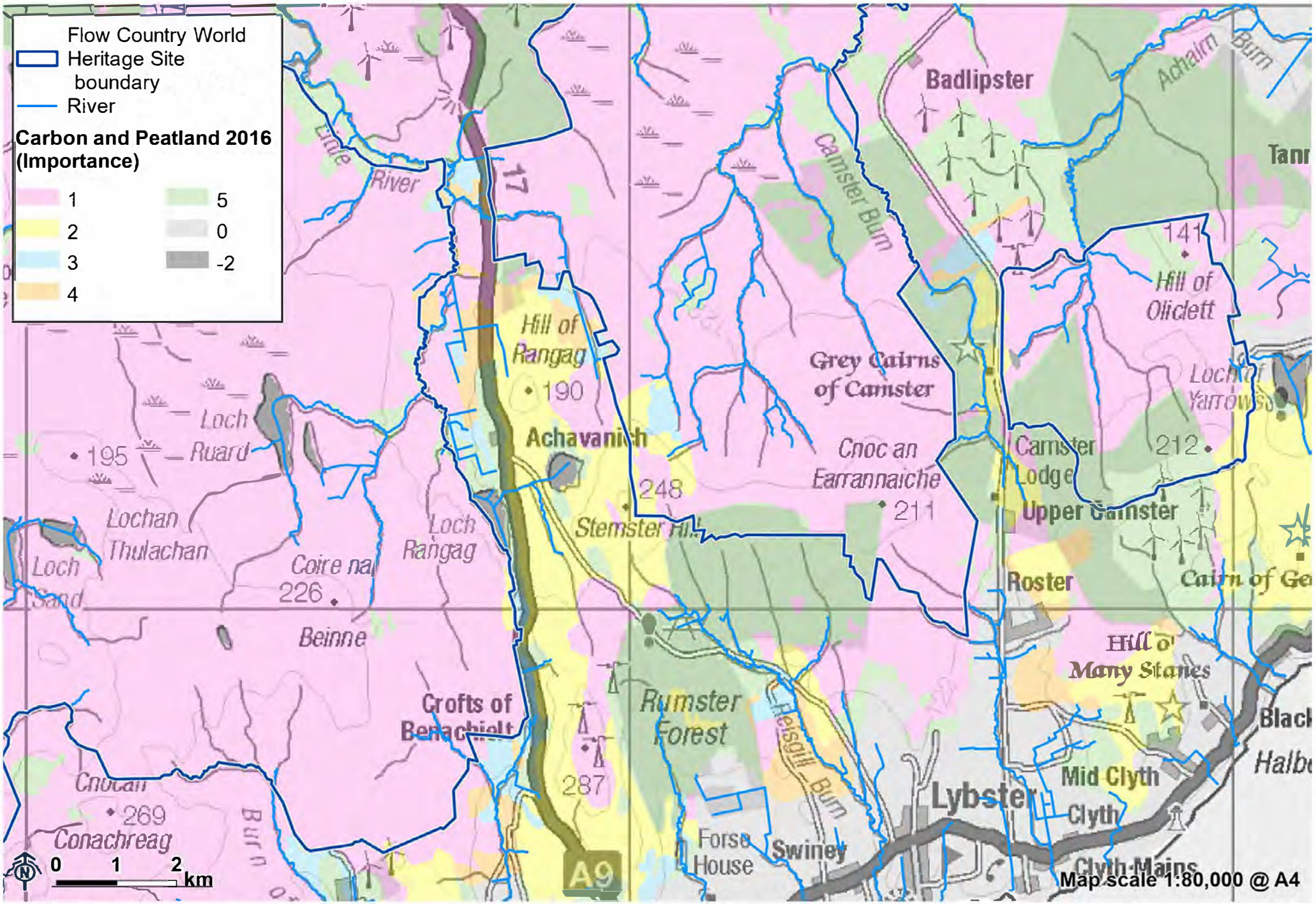
- the boundaries of the WHS
- the extent and distribution of habitat designations/ protections relevant to the WHS's ecosystems and communities of plants and animals
- water flow patterns and associated nutrient cycling through the blanket bog

3.48 Further relevant information could then be identified to work through the impact assessment steps summarised at paragraph 3.41.

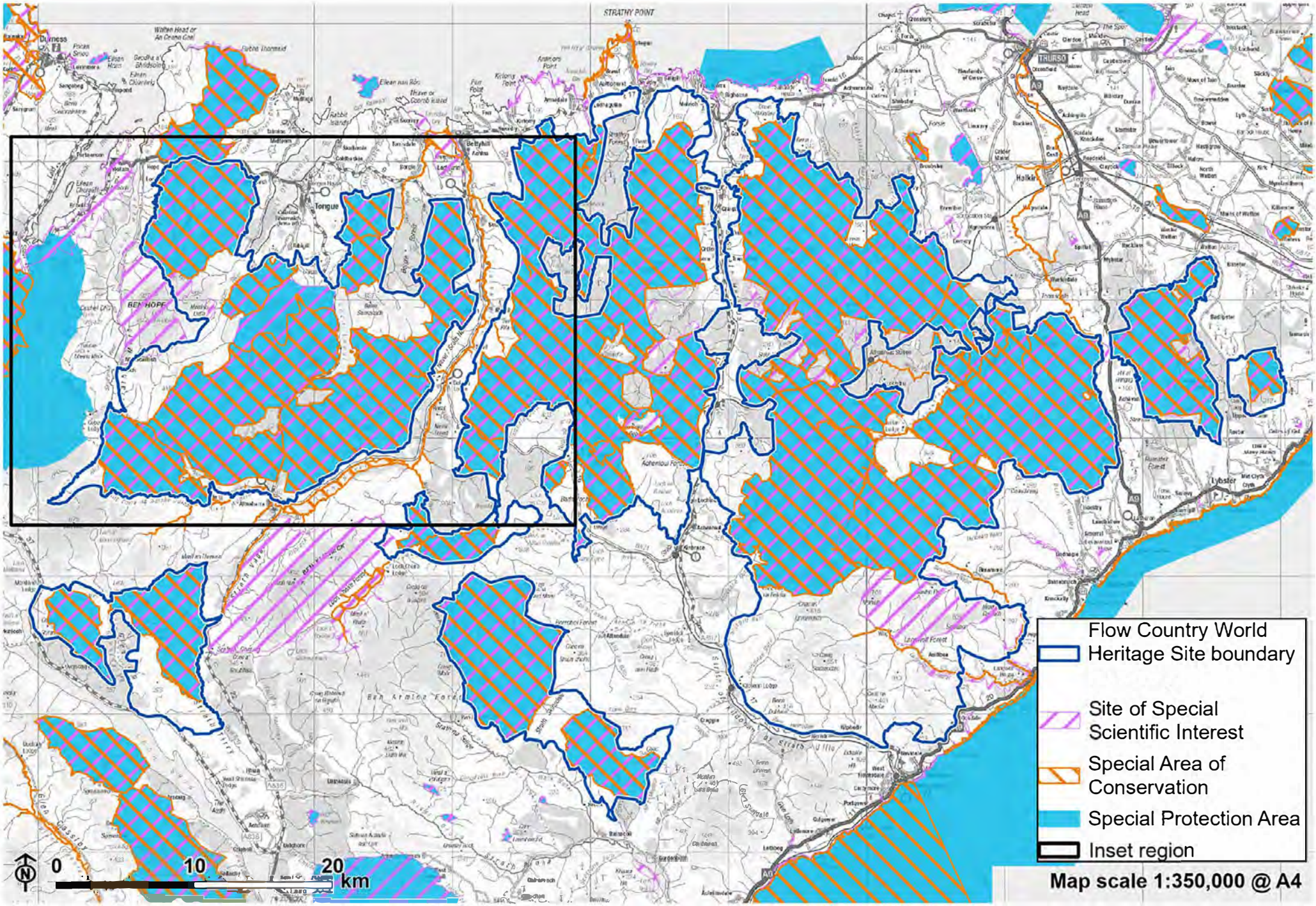
[9] Available at https://www.highland.gov.uk/flowcountrywhsplanning



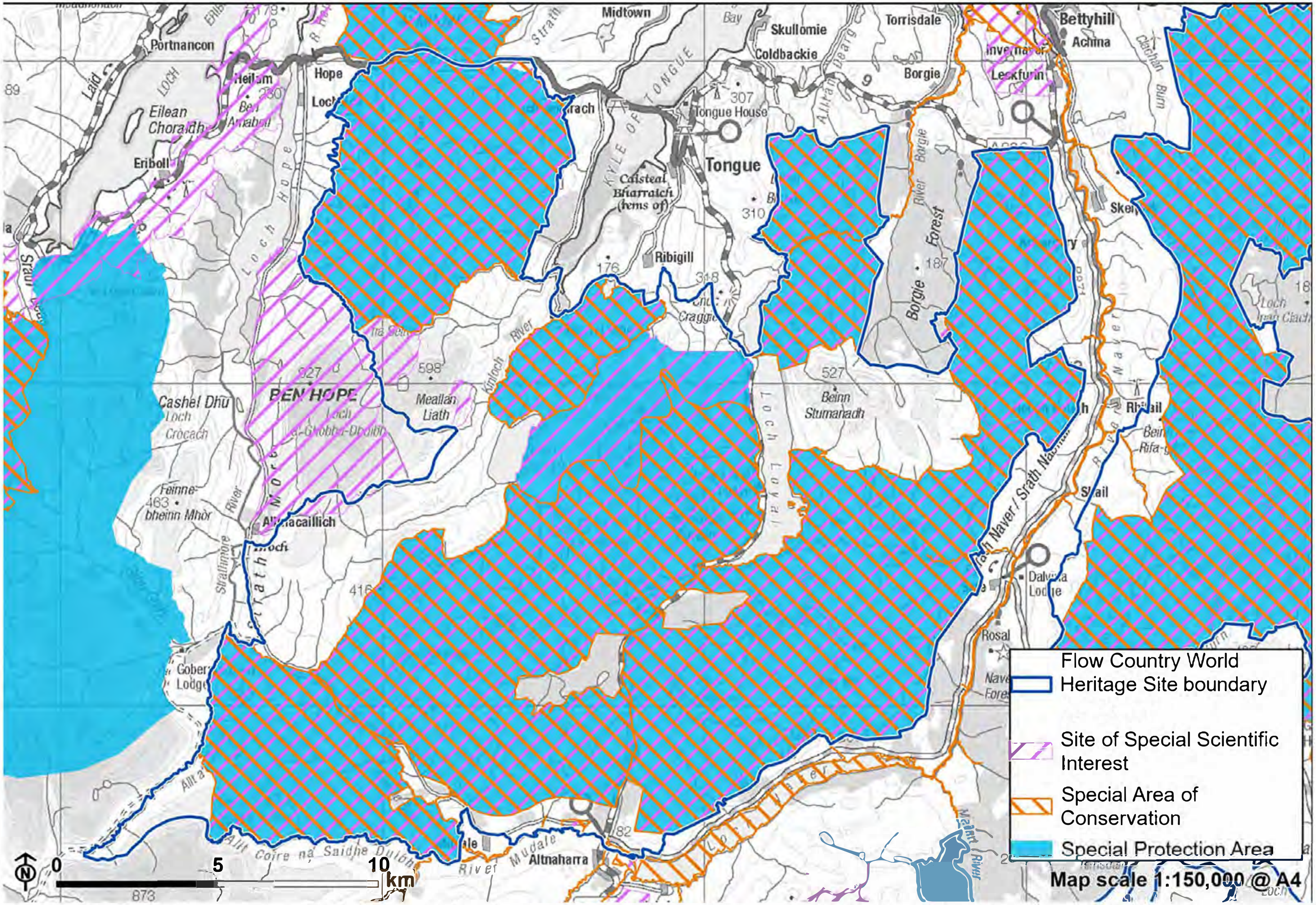
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Experiential setting illustration

3.49 To explore how the surroundings of the WHS could be experienced, the first step was to create a zone of theoretical visibility (ZTV) of The Flow Country WHS, shown overleaf.

3.50 This maps the visibility of the WHS. A grid of points at 1000m intervals was applied across a bare earth terrain model of the WHS. Data for existing woodland areas, assuming a growth height of 15m, was used to create a vegetation-screened digital surface model. The resulting visibility of each point in the grid was then mapped from a viewing height 2m above ground level, to approximate the human viewer's perspective.[10]

3.51 The number of grid points visible from any particular location is then shown using a colour ramp. This is graded as follows:

- ≤10% of points visible (blue tone)
- 10%-50% of points visible (yellow tone)
- 51%-100% of points visible (purple tone)

3.52 The banding of this grading has been selected to help understand that visibility is generally low – 10% or fewer points visible. The areas with higher percentages of visibility are, logically, the high points of the Site. Areas of zero visibility within the Site occur because of the vegetation screening and the 1000m grain of the grid, which causes some small areas to have no points visible from them.

3.53 It is important to note that visibility, indicated by the ZTV, is only relevant to experiential setting.

3.54 Having created the ZTV, the next step is to understand how change in the surroundings of the Site could affect OUV. The only parts of the setting where change could meaningfully affect the presentation and appreciation of the qualities which derive from OUV are those which:

- can be experienced in tandem with it, and
- are susceptible to types of change that could alter the understanding and appreciation of the site's qualities which derive from its OUV.

3.55 Following the ZTV, the series of five maps illustrates one example of land types which carry some of the qualities which derive from OUV: landscape character designations.

3.56 In these, the ZTV is shown alongside examples of landscape character designations (the National Scenic Area and Special Landscape Areas) to provide an indication of where change in the surroundings of the WHS could be experienced in a location with visibility of the WHS.

3.57 This example would form a starting point for considering the relationship between the location of a particular proposal for change and:

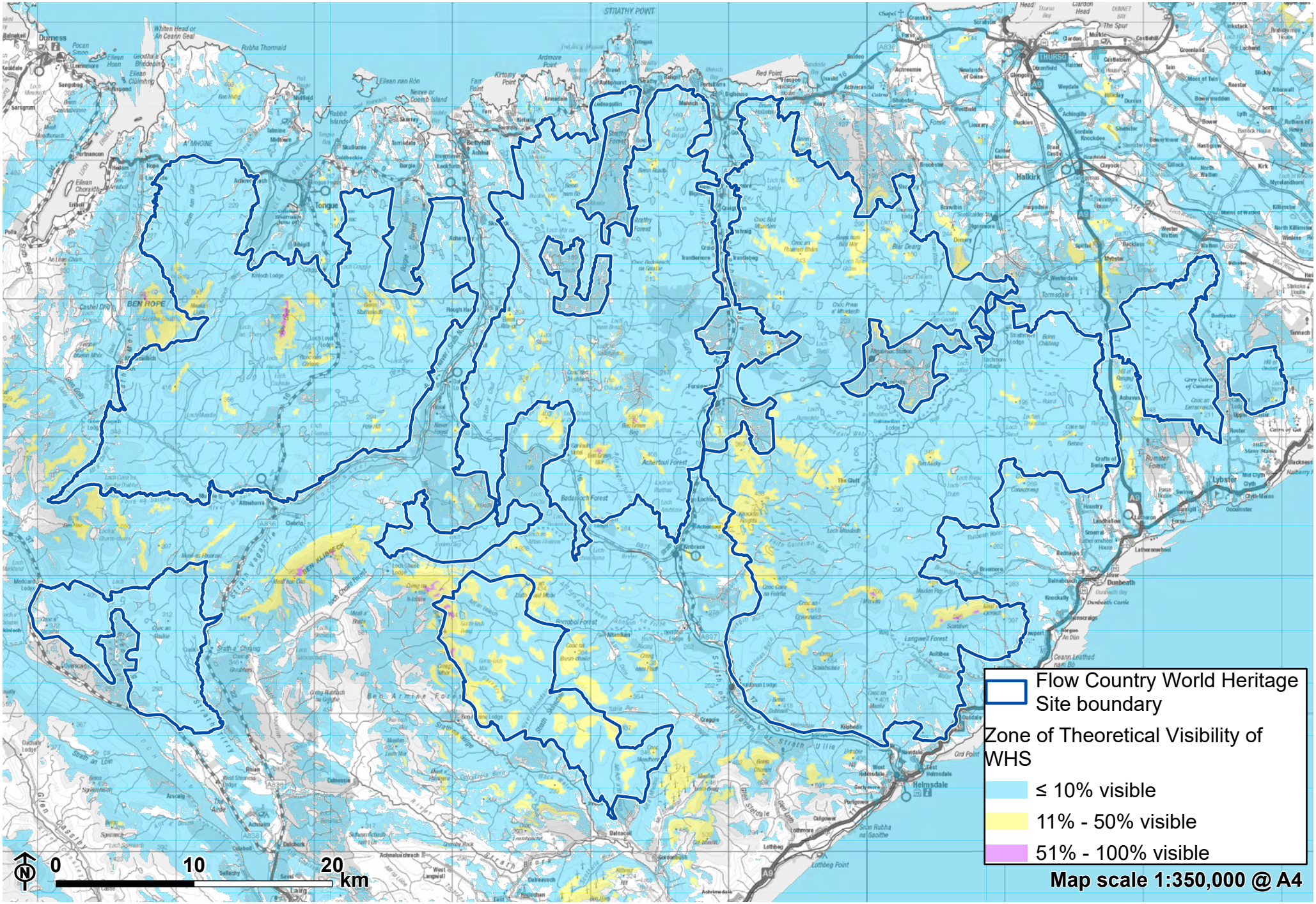
- the boundaries of the WHS
- the extent and distribution of relevant land types which carry the qualities of OUV
- whether the qualities can be experienced at that location
- whether the proposed change would interfere with the presentation and appreciation of OUV

3.58 This would also help to focus in on whether specific areas, particularly any which are outside the current designations and the WHS, would be particularly sensitive to change, and whether that change could affect the qualities derived from OUV.

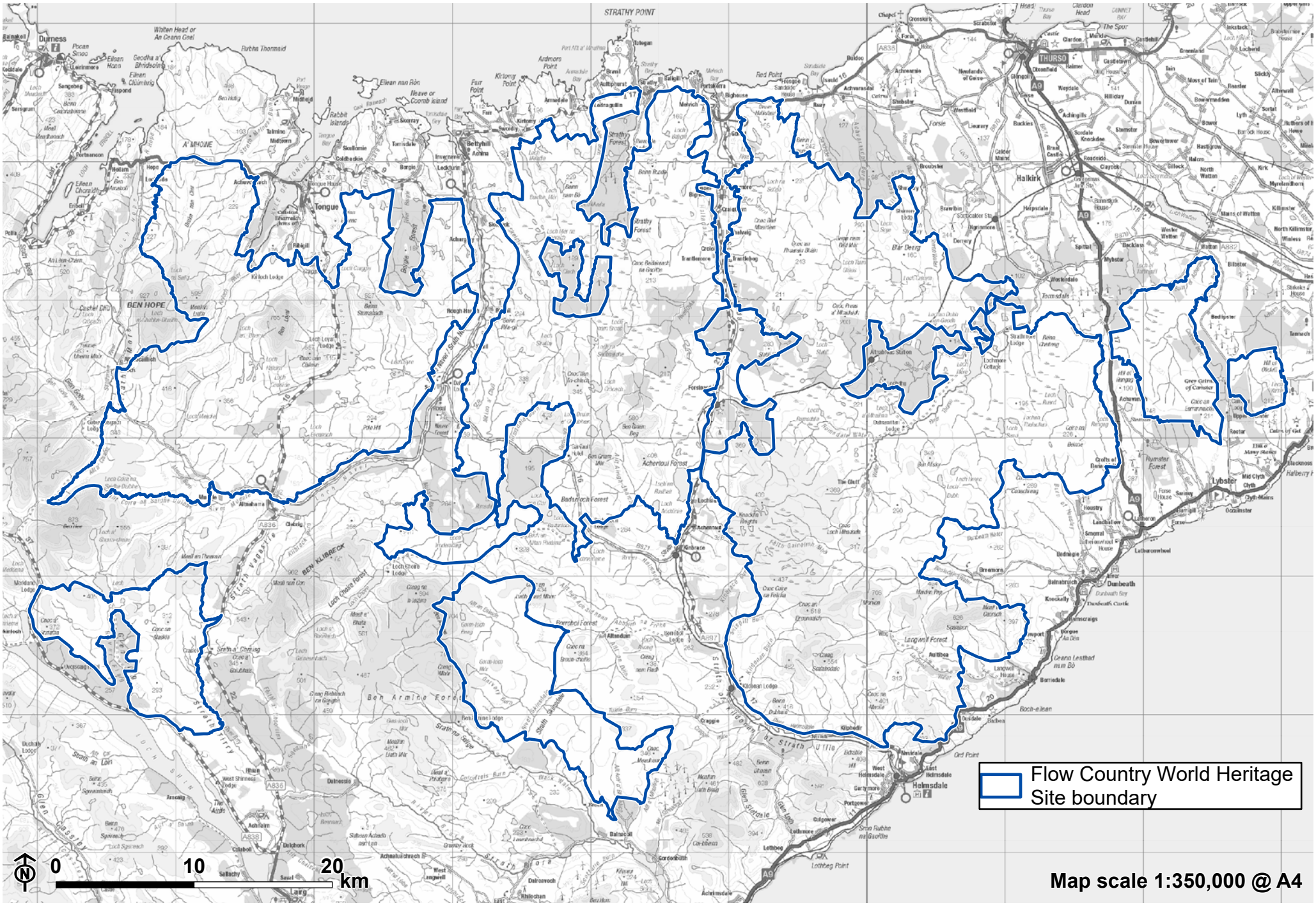
3.59 Further relevant information could then be identified to work through the impact assessment steps summarised at paragraph 3.41.

3.60 The ZTV created for the illustrative example is fairly simple, at a coarse scale (a 1000m grid covering the whole WHS) and with a relatively simple gradation of visibility applied, to create a suitable level of detail for the purposes of this study. Variations of this approach, at a more refined level of detail, or taking into account additional factors such as the locations of receptors (such as those in Table 3.1 and combined with data research as above), could usefully be tailored to understand a range of issues, discussed further at **Further steps**, paragraphs 3.61 on, below.

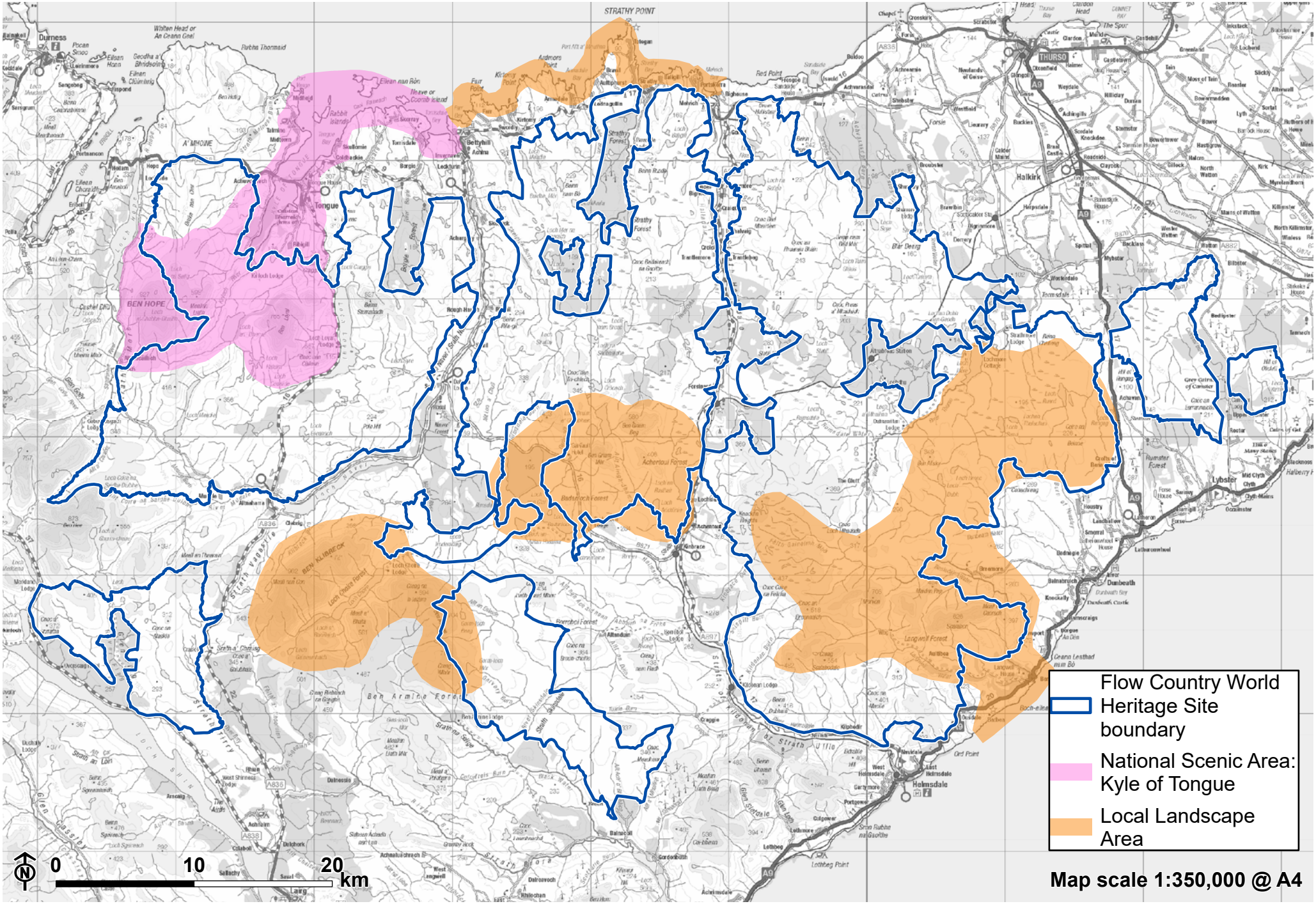
[10] ZTV technical information:
The ZTV indicates the theoretical visibility of the World Heritage Site from a viewing height 2m above ground level.
Visibility was calculated based upon a 1000m spaced point grid assigned bare earth terrain height across the site.
The terrain model is based on OS Terrain 50 height data (50m grid, obtained from Ordnance Survey in July 2020).
Existing woodland data from the Forestry Commission NFI 2022 dataset, with an assumed height of 15m, was used to create a vegetation screened digital surface model.
Earth curvature and atmospheric refraction have been taken into account.
The ZTV was calculated using ArcGIS Pro 3.2.1 software.



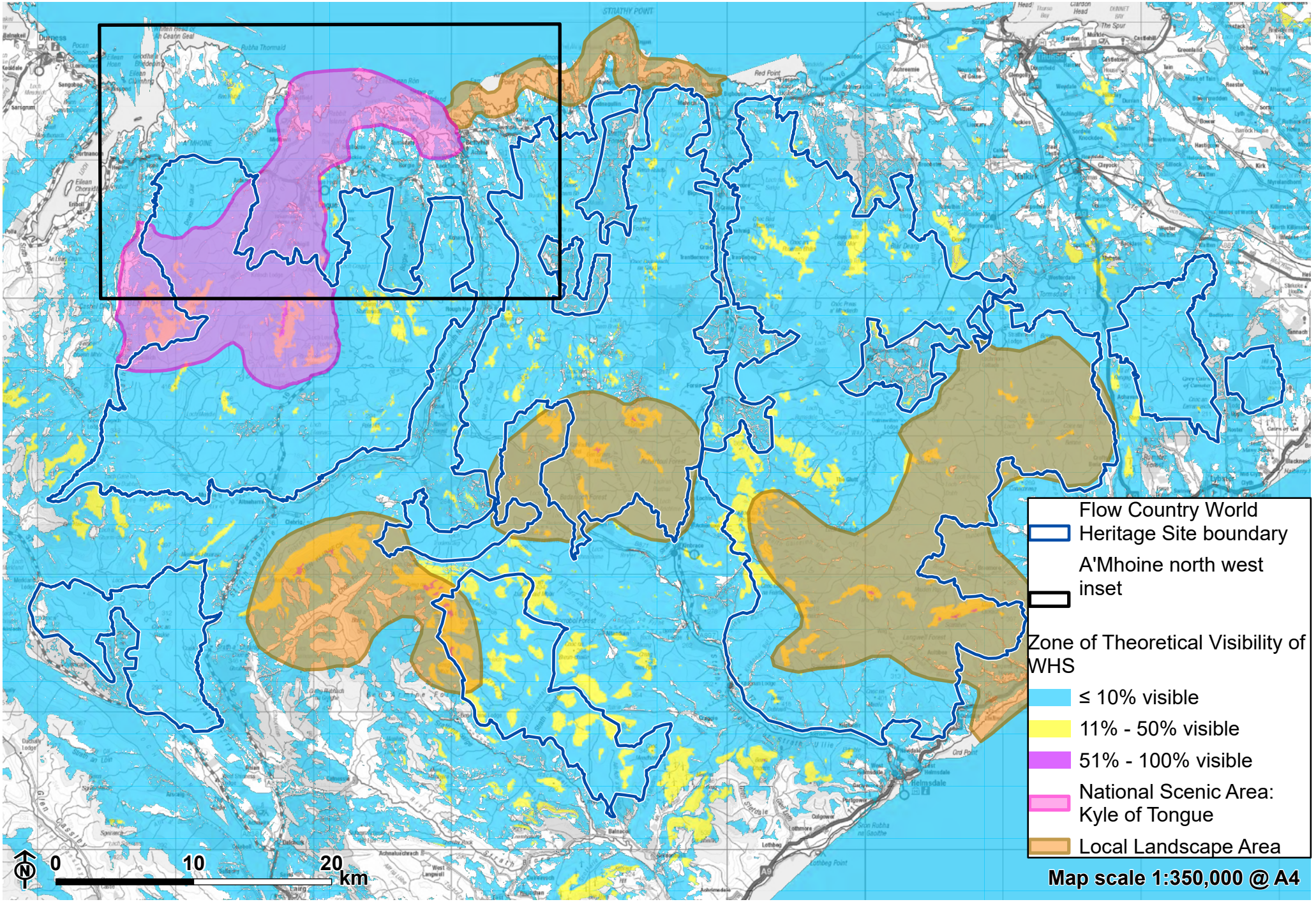
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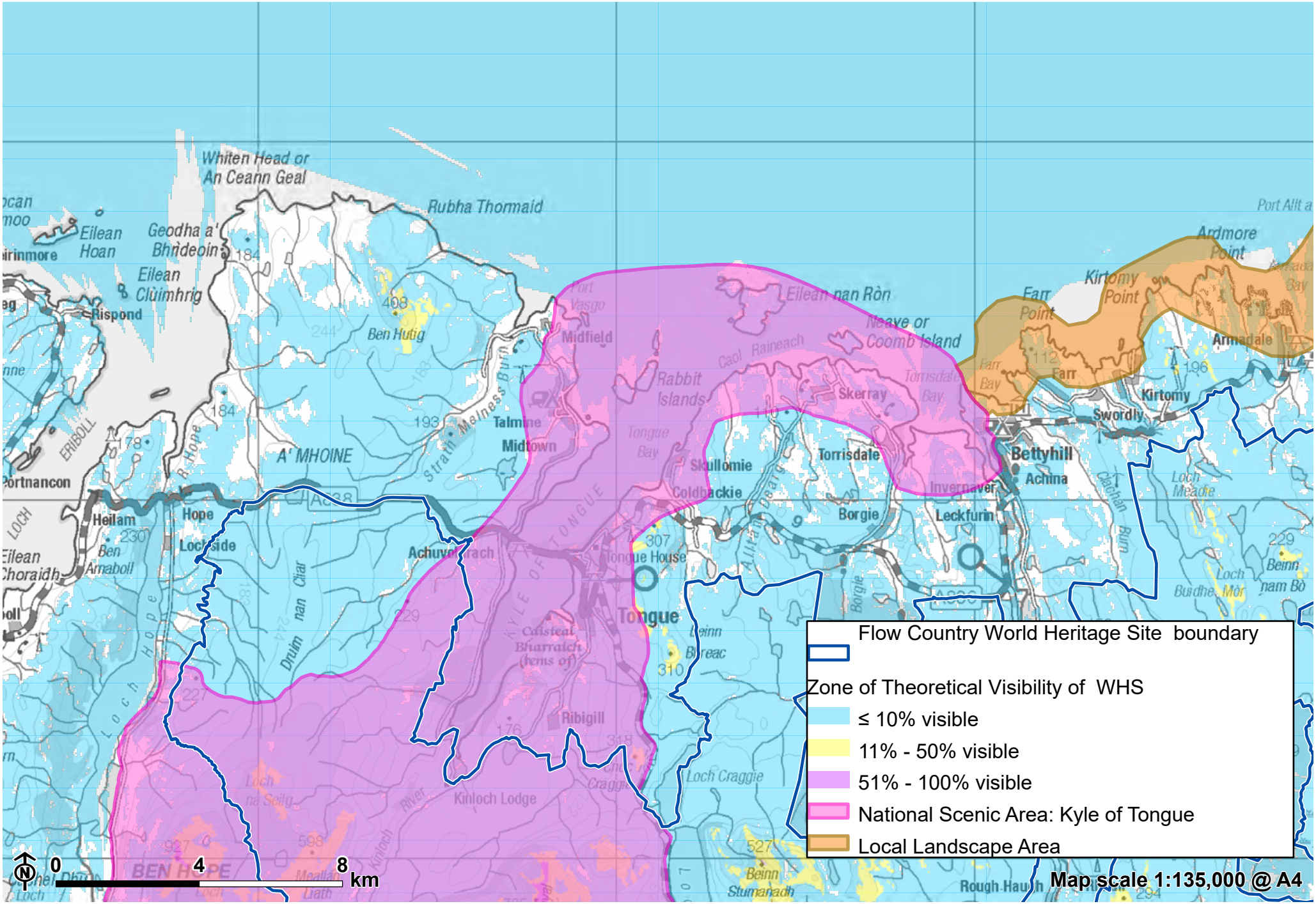
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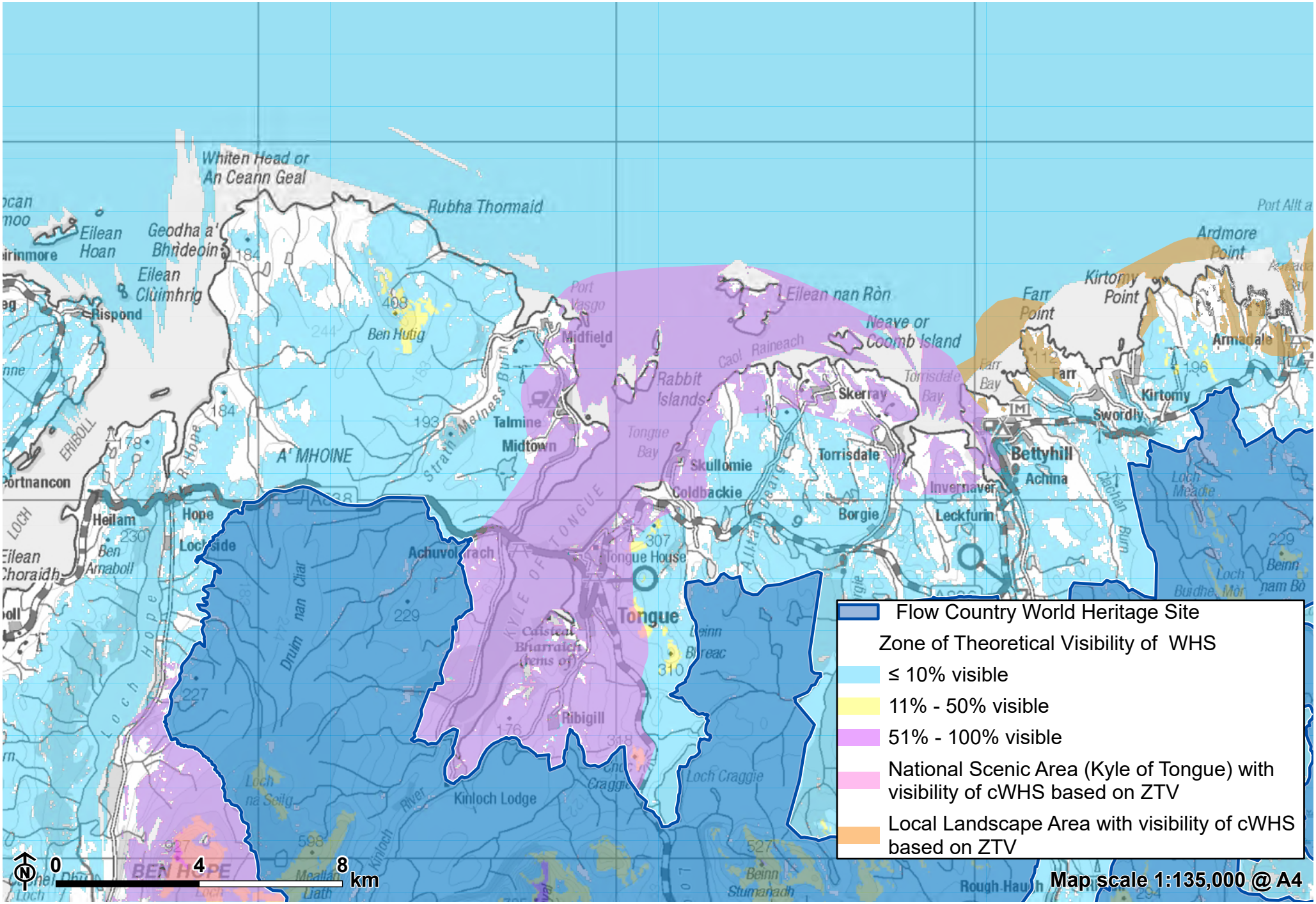
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Further steps

3.61 The scope of this setting study has been to investigate the setting of The Flow Country. This is a complex subject and has inevitably raised additional questions or the potential for further detail or research which are beyond its initial remit. The following issues were raised through the process of creating this report, which may benefit from further research.

3.62 The aim of these would be to better understand the setting implications of specific proposals for change, or types of change. This would assist owners, developers, stakeholders and decision-makers in understanding and communicating where change is genuinely significant for OUV, and to give practical advice for feasibility studies, appropriate siting and design of development, particularly of substantial scale or impact.

Receptor data

3.63 Tables B.1-B4 identify a number of data gaps or proxy datasets. Addressing some of these gaps would assist in providing a fuller understanding of functional setting interactions, particularly in the land use and land management receptor category.

3.64 Some of these data gaps would need to be addressed by the developer or applicant to support the development of any detailed, site-specific proposals for change. Additional data, gathered through survey, research and analysis, may be required reflecting that proposal's particular implications, to an appropriate level of detail for the assessment regime required.

3.65 Other gaps could be addressed by statutory bodies or the local authority, particularly where they would support production of strategic guidance, discussed further below. Further work could be done to identify and prioritise data or research needs, and which public bodies would be best-placed to address them.

Sensitivity of setting

3.66 The approach, tools and data examined through this report at a relatively high level of detail could usefully be refined or expanded to understand a range of issues:

- Distribution of and ability to experience OUV through the qualities of experiential setting, particularly in those areas not covered by existing designations.
- Whether any parts of the setting are particularly sensitive or, conversely, where development is unlikely to be able to affect OUV.
  - This could be through additional tools or guidance to assist management and decision-making, such as refinement of the ZTV; combining with receptor locations such as roads, the railway, settlements, to identify areas requiring a particular approach or guidance.
- Whether tailored guidance would be beneficial for owners, developers and decision-makers to assist in feasibility, siting and design of substantial development.

3.67 Again, some of these issues could be addressed by statutory bodies or the local authority, to support the effective management of the WHS and to provide certainty at appropriate points in the development of proposals for change. Guidance could in turn define what information applicants would be responsible for providing to support particular proposals.

Appendix A

Development assessment 2024

Date of assessment and post-inscription note

This assessment of a selection of planning decisions around The Flow Country was carried out in March 2024. It refers throughout to the candidate World Heritage Site ('cWHS') as this reflects the pre-inscription position and assumptions on which the assessment was made.

Purpose of assessment

This development assessment reflects on the question of whether effects occurring as a result of change outside the cWHS boundary could be dealt with solely through existing planning mechanisms and guidance. A sample of recent major planning decisions in the surroundings of the cWHS was assessed. The commentary picks out the key issues relevant to cWHS setting identified for each development and reflects on what impact, if any, the presence of the WHS may have had on these decisions. This has been considered as a hypothetical scenario, reflecting on how these cases might have progressed had the WHS been in place at the time of decision-making. It should be read as one opinion on these instances.

Strathy South (2016 - approved)

ECU Ref: EC00003113, Highland Council Planning Ref: 07/00263/S36SU and associated application documents

A wind farm containing 39 wind turbines, with a hub height of 83m, tip height of up to 135m

Comments from report of handling and statutory consultees

- There would be 'harmful impacts to the Caithness and Sutherland Peatlands Special Protection Area in relation to red-throated diver and greenshank' (SNH[11])
- 'Unacceptable harm to greenshank, hen harrier, red-throated diver, and wood sandpiper; adverse effects on the integrity of the adjacent Caithness and Sutherland Peatlands Special Protection Area, Ramsar site, and underlying SSSIs'. Of note were the 'permanent legacy of turbine base, roads, hard-standings and damaged peatland hydrology (even after decommissioning) undermining the potential inscription of The Flow Country as a UNESCO World Heritage Site.' (RSPB Scotland)
- 'Supports the position of Scottish Natural Heritage and considers that application to be contrary to policies 57 and 67 of the Highland-wide Local Development Plan.' (Highland Council)

Commentary

Although The Flow Country WHS has not been inscribed, it was discussed at length, though only in regards to functional effects.

The application site falls outwith the Caithness and Sutherland Peatlands SAC, SPA and Ramsar designations (and the 39 separate Sites of Scientific Interest that underpin these). The site has been damaged by commercial forestry and is not part of The Flow Country that stands out as exceptional.

The application site is completely outside the area likely to be judged as having outstanding universal value and integrity, such that it could be considered for inclusion with the boundary of a candidate WHS. Therefore, there would be no physical overlap between any future WHS and the proposed development.

[11] The name of the consultee at the time of the planning report was Scottish Natural Heritage, SNH, now known as NatureScot. SNH is, however, still its legal name.

The proposed development was supported by national policies which promote the development of onshore wind farms in appropriate locations, and is consistent with the provisions of the Highland-wide Local Development Plan, supplementary guidance and national guidance. Any adverse environmental effects of the proposal were considered to be satisfactorily mitigated by the provisions within the proposed conditions, or are otherwise acceptable as part of the balancing exercise, and that there were no other material considerations which would justify refusing consent for the project.

This case highlights the focus on functional over experiential. SNH, RSPB and HC in their responses effectively considered the functional setting of the SPA and other designations which are relevant to the proposed attributes of OUV, albeit without using that term. No issues relevant to experiential setting were identified or discussed. The potential ecological/hydrological harm identified was considered to be outweighed in the planning balance by the benefits of the scheme.

This solely functional approach may not be viewed as sufficient once the WHS is established and its setting becomes a material consideration in NPF4. This applies to proposals of this type viewed individually and cumulatively (such as in this example, as forming part of the 'Strathy Wall' group of developments).

Dalchork Substation (2019 - approved)

Highland Council Planning Ref: 19/00374/FUL

The erection and operation of a 132kV substation

Commentary

This case involved discussion of landscape and visual effects – i.e. potential for experiential setting effects – but there was no consideration explicitly in relation to the proposed WHS.

A building of this scale in a semi-rural location will result in some visual impact, and that due to the overall proportions of the building the magnitude of change will be particularly perceptible from some locations. It is noted that the site selection process has been carefully considered by the applicant so as to take advantage of the landform, and the bowl-like contours within the site to minimise visual impact as far as practicable. At c.10.7km south-east of the cWHS, it is therefore unlikely that Dalchork substation would affect the appreciation of the Site's OUV.

However, experiential setting considerations for similar developments are likely to be more relevant or prominent where sites are located closer to the proposed WHS boundary, and more so if in prominent locations. Associated Overhead Lines (OHLs) in the direction of the site may be of more immediate relevance to the WHS than the substation itself.

Highland has been successful in attracting inward investment in renewables, enabled in part by a matching level of investment in the improvement of the grid transmission system. This success has led to the Highlands having a good understanding of this type of project and this Council having appropriate policies and guidance to assist in its assessment and to effectively manage their implementation on the ground. For example, the use of Construction and Environmental Management Documents ('CEMD'), a particular approach to assist with the implementation / management of such large scale projects with a focus on environmental protection.

There may be a concern based on perception that WHS status could impact the level of renewable investment the Highland Council area experiences and the resulting generation it contributes in this part of the region. This underlines the importance of being really clear about when proposals are visible from/ in combination with the cWHS, this only matters in decision-making invoking the NPF4 WHS setting clause when the experiential aspects of setting derived from OUV are directly affected.

Sutherland Space Port (2020 – approved)

Highland Council Planning Ref: 20/00616/FUL

Construction of vertical launch space port with launch operations control centre etc.

Comments from report of handling and statutory consultees

- SEPA requested a condition to: 'ensure the foundations for the Launch Operations Control Centre and the rail track are piled foundations.' (SEPA)
- 'lack of information related to visitor management in relation to the impact on European designated sites. The applicant subsequently provided SNH with a document clarifying how the visitor management strategy could be implemented. Following that document being provided SNH consider that there would be no likely significant effect on the integrity of the European designated sites subject to mitigation be secured as a condition and the mitigation being strictly implemented.' (SNH)

Commentary

This case would be complex and controversial, whether the WHS were in place or not. Consideration was given to multiple issues relevant to functional setting within the application. Proposed mitigation and the likely benefits meant the scheme was considered acceptable overall in the planning balance.

Issues were not raised relevant to experiential setting, but the proximity of the NSA Kyle of Tongue and wild land considerations mean that the question of whether the proposed development would be capable of affecting the experience and appreciation of OUV if the WHS were in place. In this case, the level of intervisibility of the development site with the cWHS; or the potential for temporary, short-term visibility during launches would need to be assessed, and in turn whether these effects could interfere with the experience and appreciation of OUV, and to what degree. It highlights the key point that really clear thinking is required on whether a particular proposal/ site is capable of affecting the experiential aspects of setting derived from OUV.

Creag Riabhach (2014 – approved)

ECU Ref: EC00002078, Highland Council Planning Ref: 14/00004/S36

A windfarm containing 22 wind turbines

- 'The physical attributes of these WLA's [Wild Land Areas], and the perceptual responses evoked by them, are very sensitive to the scale of development proposed. The effects of the proposal will extend over a very large area, well into the centre of the Ben Hee WLA to the west. Effects to the east within the Ben Klibreck WLA do not extend so far but include impacts on well-used routes access routes and the summit of the popular Munro Ben Klibreck.' (SNH)
- 'Although climbers of the many hilltops in Sutherland are experiencing cumulative effect of onshore wind energy projects there is no evidence to suggest that the development would adversely impact on climbing or walking activity.' (Highland Council)
- 'Many of the key viewpoints are largely protected or unaffected including large parts of the SLA. On balance, the development from a landscape and visual impact perspective is acceptable.' (Lord Boyd Of Duncansby)

Commentary

The experiential element is most clearly identified in this case, both with regards to the S36 decision but also the subsequent hearing of a petition to undo the S36 decision. The degree of visibility from designated landscapes was a key factor in the S36 decision.

Ministers here recognised that as wild land areas are very sensitive to any form of development, a substantial development of this nature would always be likely to, and this case was considered to, give rise to effects on the qualities of the wild land areas which are regarded as significant. Not all significant impacts on a wild land area however are of the same nature or extent.

Ministers reached a view that the renewable energy and economic benefits of this development outweigh the impacts on the Ben Hee and Ben Kilbreck WLAs in the circumstances of this case, having particular regard to the location of the development at the very edge of the Ben Hee WLA and largely outwith the boundaries of both WLAs. Consideration was also given to impacts to the SAC and regarding peat management.

Negative effects to both experiential and functional elements of the landscape were therefore relevant in this case. Considering the proximity of the cWHS, it appears likely that the existence of an inscribed WHS would have created an additional, potentially challenging consideration.

Hope Lodge Main Building (2016 – approved)

Highland Council Planning Ref: 16/03455/LBC

Restoration and extension of B-Listed sporting lodge including formation of additional low-level wing

Commentary

This is a significant extension to the existing building, which at ground-level adds approximately 75% to the current floorplate. The design of the proposal sought to minimise the visual and physical impacts upon the building. It was therefore deemed acceptable, on balance.

Compared with other case studies in this assessment, this proposal is very small-scale, but illustrates a type of development which is dependent upon the appeal of the area. The presence of the WHS would be likely to add to this appeal. There is therefore a perception of some tension between developments which are dependent upon The Flow Country, including its functional and experiential setting, and others which might threaten the cWHS and its setting.

The potential generation/harnessing of additional tourism activity as a result of the inscription of WHS as a new aspect to the draw of the area, is an interesting point. Given that this proposal was not judged to have significant negative impacts on the listed building itself, it is perhaps unlikely that the presence of the WHS would have posed a serious constraint though it may have been considered from an experiential standpoint. It seems unlikely that any individual development such as this would cause significant adverse effects sufficient to undermine the inscription. The cumulative effect of multiple such developments would, however, need to be considered. This underlines that the means by which to respond to the NPF4 WHS setting clause in a rational, evidenced way is crucial to ensure sustainable development is not impeded by the perception of the WHS as a constraint, which is not reflected in reality.

Coul Links (2017 – refused)

Highland Council Planning Ref: 17/04601/FUL

An 18-hole golf course, with erection of a clubhouse

Commentary

This example is located a substantial distance (c. 20km at its closest point) south of the proposed WHS and impacts on OUV would probably only be a highly marginal consideration were the cWHS in place, given this relationship. This case has been included as an example to consider whether, if similar proposals arose sited closer to the cWHS boundary, the presence of the WHS might make a difference to the decision.

The reporters concluded that the proposed golf course development has the potential to have a significant adverse impact on multiple ecological receptors including dune heath and dune slack habitats, lichens, wintering and breeding birds and invertebrate assemblages. Economic development arguments were presented as a substantial part of the planning consideration, on the opposing side of the planning balance to environmental issues. Given that the primary environmental concerns pertained to the functional elements of the site and its surroundings, it appears likely that the presence of the cWHS would add weight to the environment side of the balance if the location made these relevant.

Appendix B

Functional setting receptor data

Functional setting receptor data

Tables B.1 – B.4 below illustrate the types of data relevant to the four categories of functional setting described in Chapter 3. These lists of data are not comprehensive; they have been used to develop and sense-check the definition of setting and its potential application in impact assessment. In some cases data types are identified which can be used as a proxy to understand how different types of change outside the boundary may interact with OUV.

The specifics of any development proposal would require more detailed analysis of the data available, relevant to that particular location or type of change.

Table B.1: Functional setting receptor category: Local climate and environmental conditions

Sub-category	Dataset	Proxy data	Comments
Climate trends	Climate Data Portal (12km resolution) ■ Annual precipitation observations 1991-2020 ■ Annual temperature observations 1991-2020 ■ Annual precipitation projections 2050-2079 RCP8.5 high emissions scenario ■ Annual average temperature change (change relative to a 1981-2000 baseline) for range of scenarios		The available datasets from the Met Office climate portal are very coarse resolution (12km grid), and do not show that much variation across The Flow Country.
Drought risk			NatureScot drought risk analysis report (2021) – underlying data may be available.
Environmental impact zones		Agricultural and built up land from Landcover 2022 Scotland (SpaceIntelligence/ NatureScot)	Relevant agricultural and urban land types to highlight areas that may contribute to air/ temp/ microclimate/ water quality issues

Table B.2: Functional setting receptor category: Water sources and hydrological units

Sub-category	Dataset	Proxy data	Comments
Water flow patterns		OS Open rivers	There is no 'out of the box' dataset to show water flow patterns (such as via SEPA,

Sub-category	Dataset	Proxy data	Comments
			Marine Scotland, UKCEH) – this would require hydrology specialist to model these patterns. River system/ watercourse/catchment data would assist in understanding this receptor because the WHS would be sensitive to change taking place in areas of catchment upstream of the blanket bog.
Catchment areas	SEPA main river catchments		As above.
Run-off areas	James Hutton Institute soil runoff risk – however only covers the cultivated land in Scotland (does not cover Flow Country)	Agricultural land classes: Arable land and market gardens Bare field from 'Landcover 2022 Scotland' (SpaceIntelligence/ NatureScot)	There does not seem to be a soil run-off risk map covering the study area – agricultural land could be used as a proxy.
Sources of nutrient pollution		Agricultural land classes: Arable land and market gardens Bare field Built-up Commercial forestry - Highly artificial coniferous plantations from 'Landcover 2022 Scotland' (SpaceIntelligence/ NatureScot)	Sources of nutrient pollution are not available as a dataset, instead use proxy to show where land use might be source of nutrient pollution.
Areas of natural nutrient filtration		Grasslands categories from from 'Landcover 2022 Scotland' (SpaceIntelligence/NatureScot)	Could map land use categories that can act as a natural nutrient filtration, such as grassland.
Drainage	Peatland Action Peat condition (NatureScot)		Consolidated datasets of peat depth measurement and condition collected during surveys (2013-2023). The condition information indicates if the peatland is drained; drained: artificial or drained: hagg/gully.

Table B.3: Functional setting receptor category: Ecosystem areas and species

Sub-category	Dataset	Proxy data	Comments
Distribution of key species, including core habitats within the peatland and supportive habitats in the surrounding landscape	Blanket bog categories of peatland mapping.	Designated sites with ecological values	Species distribution datasets are not easily accessible, alternative is to use peatland habitats and designated sites that have ecological values
Ecological connectivity and corridors			Relevant datasets not readily available for The Flow Country area. This would require specialist input (modelling).

Table B.4: Functional setting receptor category: Land use and land management practices

Sub-category	Dataset	Proxy data	Comments
Sustainable farming		National scale land capability for agriculture	Land capability for agriculture dataset to map land capable of uses sympathetic/ complementary to the blanket bog such as improved grassland / rough grazings.
Sustainable forestry	Scottish Forestry Open Data: - FGS SMF Species Conservation - FGS SMF Native Woodlands		The FGS SMF dataset identifies areas approved for species conservation and native woodlands under FGS.
Community-led conservation practices			Needs further research
Sporting estate management practices		Sporting estates locations/ extents	Needs further research to establish density/ distribution of different estate management practices relevant to the blanket bog.
Peatland restoration	Peatland Action Completed restoration footprints (NatureScot)		Completed restoration projects' footprints in PeatlandAction provides the geographic extent of peatland restoration projects that have been completed.

Appendix C

Relationship between functional and experiential setting

Relationship between functional and experiential setting

Functional setting is the primary consideration for change happening outside the boundaries of The Flow Country WHS because it is inscribed for natural criteria of OUV only. Experiential setting is an important, but secondary, consideration because it is only relevant in the specific instances when the ways in which people experience the WHS derive directly from its attributes of OUV and the proposed change can affect that experience.

Table C.1 illustrates the connections between the attributes of OUV and the functional and experiential setting receptors relevant to them.

Table C.1: Relationship of WHS criteria, attributes and receptors

Criterion	Attribute	Functional setting		Experiential setting		
		Category of receptor which carries that attribute	Designations/ datasets within that receptor category (refs. to Appendix B tables)	Quality derived from attribute	Category of land type which carries that attribute	Designations/ datasets within that category
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	a) most extensive near continuous example of natural, actively accumulating, blanket bog ecosystem found globally	Local climate and environmental conditions	Table B.1	Scale and continuousness	Landscape character	National Scenic Area (Scottish Government) Special Landscape Areas (Highland Council) Wild Land Areas (Scottish Government) Landscape Character Type (NatureScot), specifically sub-types shared or intersecting with the WHS boundary, such as: – 134 Sweeping Moorland and Flows – 136 Rocky Hills and Moorland – 142 Strath – Caithness and Sutherland
		Water sources and hydrological units	Table B.2			
		Ecosystem areas and species	Table B.3			
		Land use and land management	Table B.4			

Criterion	Attribute	Functional setting		Experiential setting		
		Category of receptor which carries that attribute	Designations/ datasets within that receptor category (refs. to Appendix B tables)	Quality derived from attribute	Category of land type which carries that attribute	Designations/ datasets within that category
	b) climatic, topographic gradients and geological diversity: bog macroform diversity	Local climate and environmental conditions	Table B.1	Transient aspects Variety of landscape patterning	Land use/ land cover	Scottish Habitat and Land Cover Map (NatureScot/Space Intelligence), specifically sub-types shared or intersecting with the WHS boundary, such as: – D1 Raised and blanket bogs – D2 Valley mires, poor fens and transition mires – E3 Seasonally wet and wet grasslands – F4 Temperate shrub heathland
		Water sources and hydrological units	Table B.2			
		Ecosystem areas and species	Table B.3		Landscape character	National Scenic Area (Scottish Government) Special Landscape Areas (Highland Council) Wild Land Areas (Scottish Government) Landscape Character Type (NatureScot), specifically sub-types shared or intersecting with the WHS boundary, such as:

Criterion	Attribute	Functional setting		Experiential setting		
		Category of receptor which carries that attribute	Designations/ datasets within that receptor category (refs. to Appendix B tables)	Quality derived from attribute	Category of land type which carries that attribute	Designations/ datasets within that category
						– 134 Sweeping Moorland and Flows – 136 Rocky Hills and Moorland – 142 Strath – Caithness and Sutherland
	c) archive it stores (4th dimension)	Local climate and environmental conditions	Table B.1	Time-depth, cultural and historical associations	Cultural heritage sites and landscapes with peatland connections	Historic Land Use Assessment (Historic Environment Scotland), specifically sub-types shared or intersecting with the WHS boundary, such as: – Crofting townships – Rough grazing – Plantation – Traditional peat cutting Historic Environment Record (Highland Council), specifically sub-types shared or intersecting with the WHS boundary, such as records of historical: – Transhumance (seasonal, nomadic pastoral activity)
		Water sources and hydrological units	Table B.2			
		Ecosystem areas and species	Table B.3			

Criterion	Attribute	Functional setting		Experiential setting		
		Category of receptor which carries that attribute	Designations/ datasets within that receptor category (refs. to Appendix B tables)	Quality derived from attribute	Category of land type which carries that attribute	Designations/ datasets within that category
						– Crofting landscapes – Abandonment/ clearance
	d) natural laboratory – ongoing scientific and educational use	Local climate and environmental conditions	Table B.1	Interaction with and appreciation of species Time-depth, cultural and historical associations	Land use/ land cover	Scottish Habitat and Land Cover Map (NatureScot/Space Intelligence), specifically sub-types shared or intersecting with the WHS boundary, such as: – D1 Raised and blanket bogs – D2 Valley mires, poor fens and transition mires – E3 Seasonally wet and wet grasslands – F4 Temperate shrub heathland
		Ecosystem areas and species	Table B.3		Landscape character	National Scenic Area (Scottish Government) Special Landscape Areas (Highland Council) Wild Land Areas (Scottish Government) Landscape Character Type (NatureScot), specifically

Criterion	Attribute	Functional setting		Experiential setting		
		Category of receptor which carries that attribute	Designations/ datasets within that receptor category (refs. to Appendix B tables)	Quality derived from attribute	Category of land type which carries that attribute	Designations/ datasets within that category
					Cultural heritage sites and landscapes with peatland connections	sub-types shared or intersecting with the WHS boundary, such as: – 134 Sweeping Moorland and Flows – 136 Rocky Hills and Moorland – 142 Strath – Caithness and Sutherland Historic Land Use Assessment (Historic Environment Scotland), specifically sub-types shared or intersecting with the WHS boundary, such as: – Crofting townships – Rough grazing – Plantation – Traditional peat cutting Historic Environment Record (Highland Council), specifically sub-types shared or intersecting with

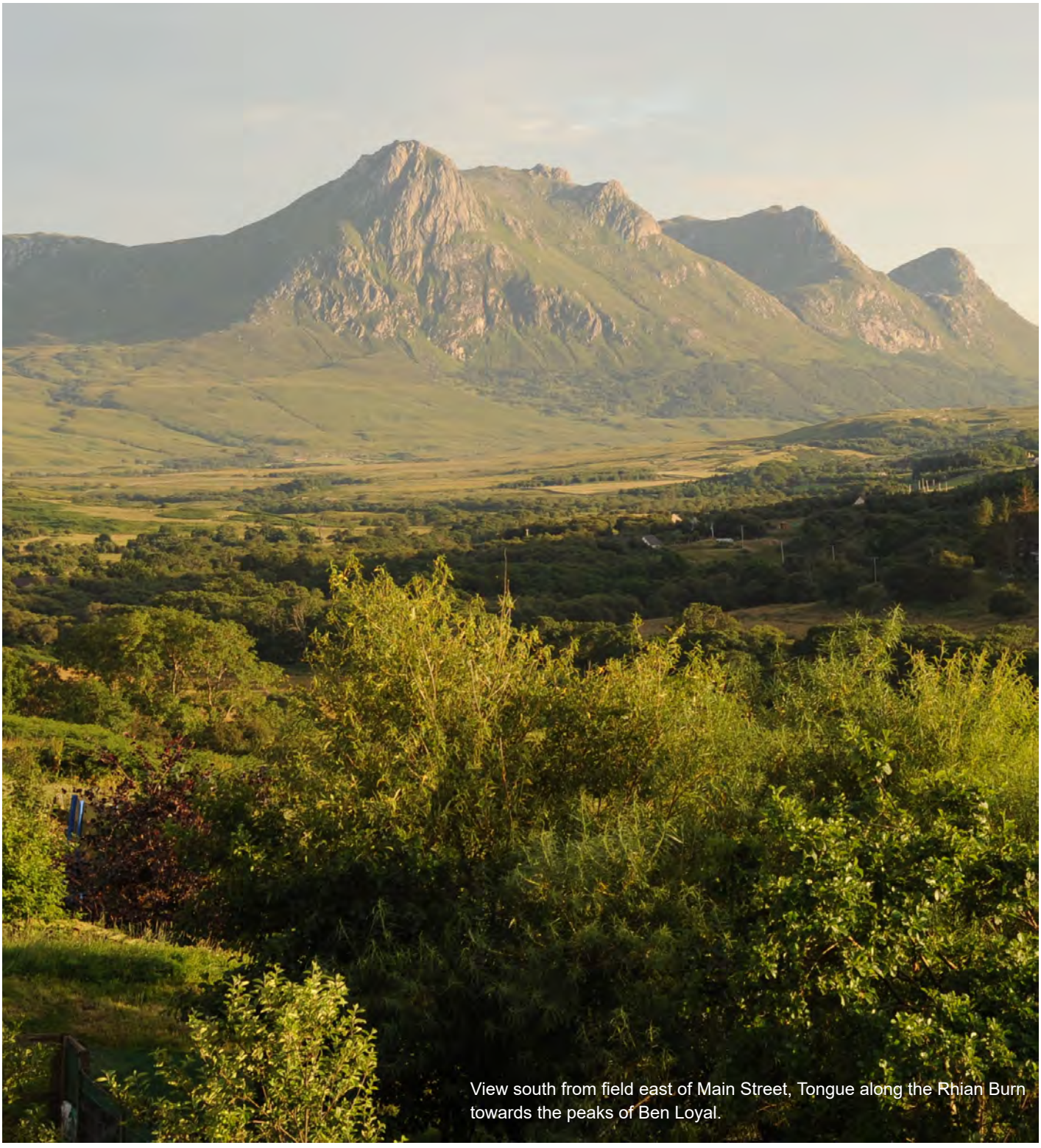
Criterion	Attribute	Functional setting		Experiential setting		
		Category of receptor which carries that attribute	Designations/ datasets within that receptor category (refs. to Appendix B tables)	Quality derived from attribute	Category of land type which carries that attribute	Designations/ datasets within that category
						the WHS boundary, such as records of historical: – Transhumance (seasonal, nomadic pastoral activity) – Crofting landscapes – Abandonment/ clearance
	e) carbon sequestration and storage	Local climate and environmental conditions	Table B.1	This Attribute is unlikely to be readily appreciated through experiential qualities – perceptible time-depth covered under Attribute (c)	-	-
		Land use and land management	Table B.4			
	f) water filtration and the impact on the water quality of associated riverine habitats	Local climate and environmental conditions	Table B.1	This Attribute is unlikely to be readily appreciated through experiential qualities – perceptible water flow and research roles covered under Attributes (b) and (d)	-	-
		Water sources and hydrological units	Table B.2			
		Ecosystem areas and species	Table B.3			
		Land use and land management	Table B.4			



The Flow Country World Heritage Site

Setting Guidance

Final report
October 2026
Prepared by LUC
Finalised by The Flow Country Partnership



View south from field east of Main Street, Tongue along the Rhian Burn towards the peaks of Ben Loyal.

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01

Setting Guidance



View northeast from the eastern bank of Strathmore River, over the river, towards a cluster of buildings and Leitir Mhuiseil with Ben Hope in the distance.

Introduction

Why is this guidance needed?

1.1 Following inscription of The Flow Country as a World Heritage Site (WHS) in 2024, a need was identified to help those proposing or managing change potentially affecting the Site to understand what that means, particularly in relation to change occurring outside its boundaries where this might affect the Outstanding Universal Value (OUV). There is no written guidance or tested approach applicable to The Flow Country because of its unique circumstance as Scotland's only WHS inscribed solely for natural heritage and the world's first and only peatland WHS, at the time of writing.

1.2 This piece of guidance therefore aims to help those proposing or managing change fulfil the obligations of the World Heritage Convention and apply the Operational Guidelines, interpreted for the specific circumstances of The Flow Country. The development of this setting guidance has been a Flow Country Partnership project.

1.3 The relevant obligations for this guidance are:

"the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage" (Article 4)

1.4 and that signatories,

"shall endeavor [sic] 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" (Article 27).

1.5 WHS Impact Assessment conclusions are one consideration in wider planning and consenting processes that involve a balancing of considerations before making a determination. Within that balance, the global importance of World Heritage and the international obligations associated with it should be recognised and in general terms accorded significant weight.

Why guidance on setting?

1.6 UNESCO requires the tools and processes through which a site's Outstanding Universal Value will be protected to be set out in a Management Plan. UNESCO guidance notes that an effective management system depends on the type, characteristics and needs of the property and its cultural and natural context.

1.7 The Flow Country's Management Plan recognises that what makes The Flow Country special could be affected by change happening both within and outside its boundaries. Management proposals for The Flow Country therefore need to address the setting of the World Heritage Site – the area outside and surrounding it.

1.8 Although the term 'setting' is not commonly applied to the surroundings of natural heritage sites, it is used in this guidance because that is the term used by UNESCO:

"setting may relate to the property's topography, natural and built environment, and other elements such as infrastructure, land use patterns, spatial organization, and visual relationships. It may also include related social and cultural practices, economic processes and other intangible dimensions of heritage such as perceptions and associations."

1.9 Crucially, *"management of the wider setting is related to its role in supporting the Outstanding Universal Value."* These references to 'setting' in the Operational Guidelines relate to all World Heritage properties without differentiating between those inscribed for cultural or natural heritage values.



View northwest from path north of the A838 over Loch Ach'an Lochaidh.

Definition of Setting

1.10 A study into the concept of setting and how it applies to The Flow Country World Heritage Site was undertaken to support the production of the Management Plan prior to inscription. Finalised following inscription, *The setting of The Flow Country World Heritage Site: Definition study (2026)* has been published.

1.11 A key finding of that study was that understanding and applying setting is a process, and cannot be a fixed description or spatially-defined zone.

1.12 The need to consider change to the setting of a World Heritage Site is only relevant when it specifically affects OUV. Given that the World Heritage Convention requires the 'presentation' and 'appreciation' of cultural and natural heritage (Articles 4 and 27), the setting of a WHS therefore fulfils two purposes – protecting key aspects of a Site's OUV from change arising outside its boundary, and supporting the presentation or appreciation of the Site.

1.13 These two purposes lead to a two-fold definition of setting - functional and experiential.

1.14 There can be positive and/or negative effects for the WHS, including its setting, that arise from proposed projects. It is therefore appropriate that where the proposed project is subject of planning control, such effects are assessed and considered as part of the planning process. As previously noted, WHS Impact Assessment conclusions are one consideration in wider planning and consenting processes that involve weighing and balancing considerations prior to making a determination.

Functional setting

1.15 Functional aspects of setting are those which directly support the functioning of the Site and its protection. **Functional setting is the primary consideration because the Site is inscribed under natural criteria of OUV only, and the receptors of change are the attributes of OUV, directly.**

1.16 Functional setting means the environmental context in which change can affect the ecological health and resilience of the WHS. These effects could be positive or negative. It encompasses those areas outside the boundary that are needed to maintain the ecological functioning and integrity of the inscribed area, based on interactions between hydrological, biological and climatic processes.

1.17 Functional setting identifies the parts of the WHS's surroundings which carry or embody the attributes of OUV ('receptors'). These are grouped into broad categories of receptor type: local climate and environmental conditions; water sources and hydrological units; ecosystems and communities of species; land use and land management practices. Data on these receptor types is analysed, and considered against the types of change which could affect them, to determine how change in the setting may affect OUV.

Experiential setting

1.18 Experiential aspects of setting are those which relate to the way people experience, understand, or appreciate the Site. Experiential setting encompasses the parts of the WHS's surroundings where change may affect the presentation and appreciation of the WHS's qualities which derive from its OUV.

1.19 **Experiential setting is an important consideration, though secondary to functional, because the Site is not inscribed under cultural criteria.** It is only relevant in the specific instances when the ways in which people appreciate the WHS derive directly from its attributes of OUV, and the proposed change can affect that appreciation. It should be noted that change in experiential setting can be both positive or negative. For example, the installation of interpretive signage or accessible walking routes amongst new developments can improve people's appreciation of the WHS.

1.20 The human experience of the WHS is through a series of qualities, which include the sensory characteristics and associations by which humans respond to the attributes of OUV. These qualities include the Site's scale and continuousness; the interaction with and appreciation of its species; transient aspects such as light, weather and seasonal variations; the variety of its surface patterning across the blanket bog landscape; and its time-depth, cultural and historical associations. Although not specific attributes of OUV, the cultural and historical associations are reflected in the inscribed OUV, specifically attributes c), d) and e), in relation to the human influence over the past 9000 years that has shaped the Flow Country and blanket bog ecosystem. This was reflected within the nomination process and upon inscription.

Setting and integrity

1.21 Integrity is the measure of the wholeness and intactness of the natural heritage and its attributes: the extent to which the property includes all elements necessary to express its Outstanding Universal Value. Findings on effects should be considered in the light of whether they can affect the wholeness and intactness of the WHS.



World Heritage Impact Assessment

1.22 Impact assessments for proposed interventions are essential for all World Heritage properties.

1.23 The Operational Guidelines make clear this applies to all proposals with potential to affect OUV, whether they are located within or outside a WHS:

"States Parties shall ensure that Environmental Impact Assessments, Heritage Impact Assessments, and/or Strategic Environmental Assessments be carried out as a pre-requisite for development projects and activities that are planned for implementation within or around a World Heritage property."

1.24 UNESCO, ICCROM, ICOMOS and IUCN have issued a joint resource manual, *Guidance and Toolkit for Impact Assessments in a World Heritage Context* (2022). The Highland Council has issued a toolkit to assist in navigating and applying the Guidance and Toolkit to proposals affecting The Flow Country.

1.25 This setting guidance is intended to help apply the Highland Council toolkit where setting considerations may arise.

Impact Assessment Process

1.26 The following process, set out in Section 02, is intended to minimise additional burden required of those proposing change. It supports and enhances existing impact assessment processes, rather than introducing a new or additional process. It enables information being produced for impact assessment processes required under existing consenting regimes to be adapted and interpreted to satisfy World Heritage impact assessment requirements.

1.27 World Heritage impact assessment is required where there is potential for negative impacts (note - any impact, not just 'significant'), but the process can be used to identify and assess all impacts, positive and negative. All direct, indirect and cumulative impacts occurring in the entire area of influence of the proposed action (development) need to be identified and assessed for their potential to impact the WHS. [The potential for cumulative impacts should therefore be borne in mind throughout the assessment process. As far as possible, the other projects or activities to be considered for World Heritage cumulative assessment specifically should be identified at the outset; where the proposed development is subject of EIA, this could be done as part of EIA Scoping.]

1.28 In many cases (for whole projects, or for some components of a project), this may result in no elements of a proposal being found which could affect the attributes of OUV. In such cases it is important to briefly explain why that is the case.

1.29 Within EIA, it is appropriate to calibrate significance in a manner that is appropriate to the particular receptor(s). Therefore, in assessing the effects of a proposed development on a WHS, significance accorded to effects should have regard to the international importance of World Heritage. Care must be taken however; if World Heritage were to be combined with other considerations and significance calibrated and assessment undertaken for that wider group, the assessment could be skewed. The assessment of impacts on World Heritage needs to be able to be identified in isolation and the completed Toolkit can be appended to the EIA Report.

1.30 In general terms, the assignation of significance within EIA for effects on a particular receptor does not necessarily indicate that those effects are unacceptable. However, for the FCWHS the threshold above which a proposal would be unacceptable is anticipated to be lowest compared to other peatland designation types (middle) and to non-designated peatland (highest), particularly when taking account of the FCWHS's importance, including consideration of effects on integrity, and the approach to mitigation.

1.31 UNESCO Guidance and Toolkit for Impact Assessment in a World Heritage Context (p.27) states that: "It is always preferable to avoid, rather than minimize, impacts on a World Heritage property's attributes. Any loss of, or damage to OUV is unacceptable, which means that rectification, reduction (to less severe but still significant) or offsetting of impacts is inappropriate in a World Heritage context". The UNESCO Guidance and Toolkit (p.44) sets out the types of conclusions available in cases where the proposed action (development) would have negative impacts on OUV. This underscores that any negative impact to OUV beyond 'negligible' is significant and must be recorded and avoidance/ minimisation applied. The result needs to be at least reduced to insignificant negative impact in order to be acceptable in World Heritage terms.

1.32 In making use of the overall EIA to inform the broader assessment, consideration and determination of an application for consent, the importance of particular designations should be reflected and relevant policies and/or procedures applied.

Worked Example

1.33 The impact assessment process set out in Section 02 is illustrated with a worked example, set out in Section 03. Section 03 presents the relevant sections of the Highland Council toolkit, completed to demonstrate the consideration of setting effects. Section 02 cross-refers to the corresponding parts of the worked example to illustrate the process.

1.34 The worked example takes a real case study of a development proposal located at the edge of The Flow Country - Golticlay Wind Farm (Variation) (ECU00004946), consented in December 2024.

1.35 Information has been obtained from scheme Environmental Impact Assessment and other submission documents, all of which are available in the public domain (via https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00004946)

1.36 Scheme impact information in the worked example illustrates the level of detail, signposting to existing documentation, and the types of considerations and conclusions which would be likely to be appropriate and proportionate to present within a WHS Impact Assessment. It is based entirely on pre-existing assessment information, introduces no new judgements, and is not intended as a commentary on the specific scheme used as an example.

1.37 The impact information is necessarily a snapshot taken at the end of the scheme's evolution, because it is taken from the consented scheme documentation. In practice, the WHS Impact Assessment process should be started at the beginning of a proposal's development journey, in order to anticipate and avoid potential harmful effects to OUV, and if possible incorporate beneficial effects to OUV, from the outset.

02

World Heritage Site Impact Assessment Process



View south from field east of A838 near Tongue cemetery towards the peaks of Ben Loyal.

World Heritage Impact Assessment Process



The Highland Council Impact Assessment Toolkit

Screening tab	Sets out whether the project or development is capable of affecting OUV

Does the project / development lie wholly or partly within the boundary of the inscribed Site?	Does the project / development lie outwith the Site but would include actions that might impact aspects of the OUV?	Has the project / development been subject to an Environmental Impact Assessment or any other relevant assessment?
NO, or PARTLY WITHIN	YES	YES, in progress, or likely to be required

Understand OUV and its Attributes

1 **Nominate a World Heritage impact assessment lead within the project team**

This could be an EIA project manager, Ecology lead, etc - someone who has an overview of project impacts and can communicate with all relevant specialists.

2 **Discuss OUV with your team specialists**

Consult them throughout the process.

3 **Think about how OUV may be relevant to their topics**

How OUV might be affected by the project or development?

4 **Minimise duplication as far as possible**

Use information from relevant assessments, adapted to answer the WHS Impact Assessment questions.

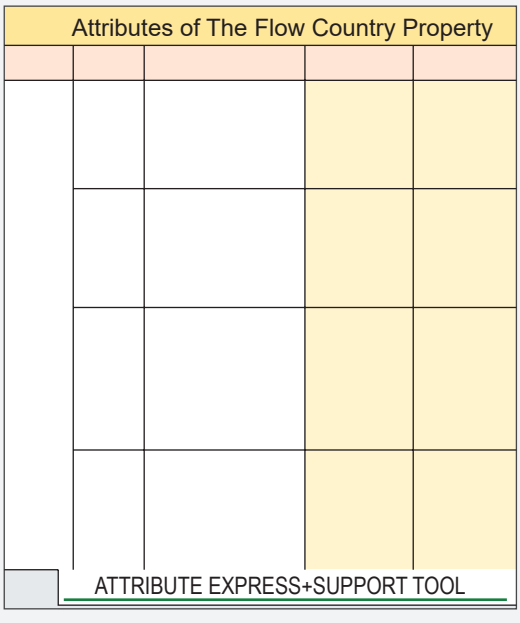
Sources of Information

See p.22

Flow Country WHS Management Plan



THC WHS Impact Assessment Toolkit:



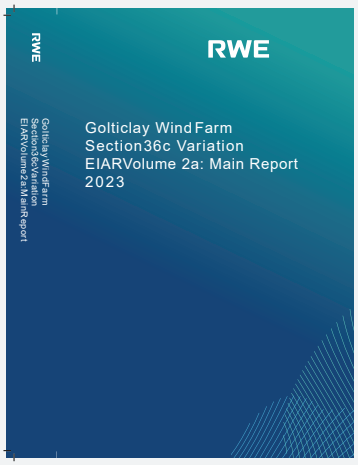
Consider how they apply to your site/ proposal

1. How are the Attributes of OUV expressed or supported by the development Site?

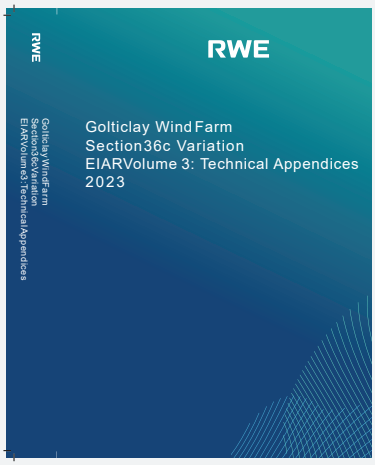
See Table 1.1 Functional change: Attributes of The Flow Country - What to consider? ..... See p.35

Sources of Information

Environmental Impact Assessment Report



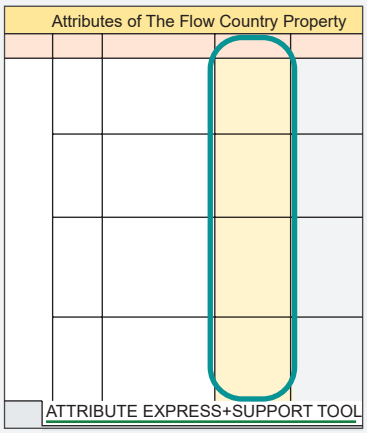
CH 09: Ecology | CH 11:Geology, Hydrology, Hydrogeology



Technical Appendix 9.5: UNESCO World Heritage Site Toolkit Assessment
Technical Appendix 9.6: Revised Habitat Management Plan

THC WHS Impact Assessment Toolkit

See p.22



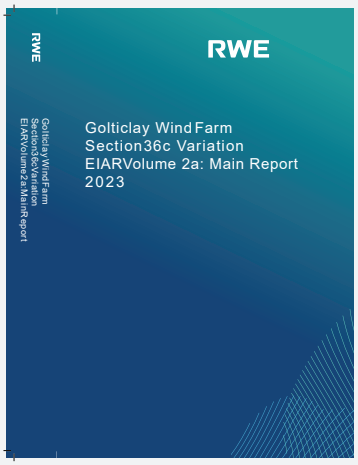
Briefly record information using attributes and values in tool as prompts

2. How does the development site support the presentation or appreciation of each Attribute?

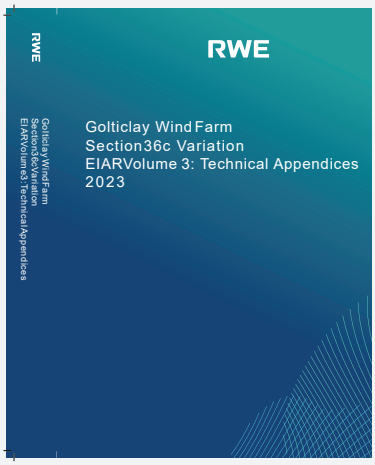
See Table 1.2 Experiential change: Attributes of The Flow Country - What to consider? ..... See p.38

Sources of Information

Environmental Impact Assessment Report



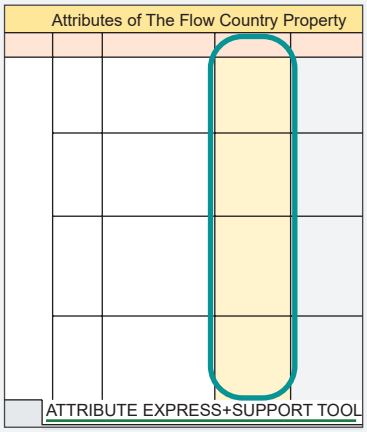
CH 09: Ecology | CH 11:Geology, Hydrology, Hydrogeology | CH 07: LVIA| CH 12:Archaeology and Cultural Heritage



Technical Appendix 9.5: UNESCO World Heritage Site Toolkit Assessment
Technical Appendix 9.6: Revised Habitat Management Plan

THC WHS Impact Assessment Toolkit

See p.22



Briefly record information using attributes and values in tool as prompts

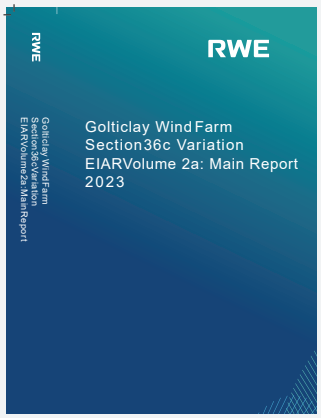
Consider Actions and Impacts

1 How might the change created by your proposal affect OUV, or its presentation or appreciation?

Identify ACTIONS

Sources of Information

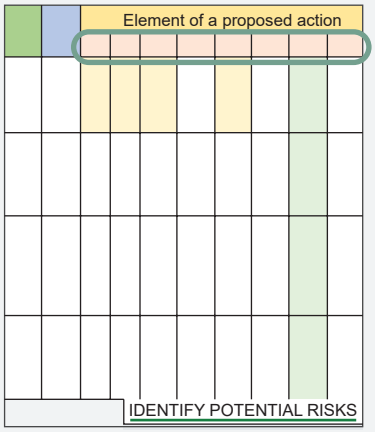
Environmental Impact Assessment Report





Main report and Figures:Scheme description,development scope and constraints

THCWHSImpact Assessment Toolkit See p.26



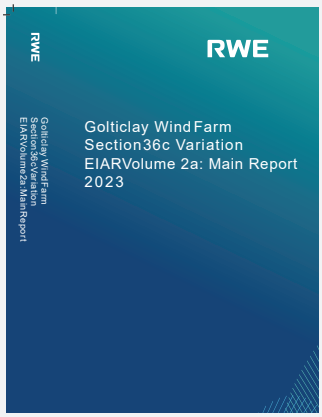
Complete Elements of a proposed action in Identify Potential Risks Tool

2 Think about where each Action could have an effect on OUV or its presentation or appreciation - do study areas include or overlap with the WHS?

Consider AREA OF INFLUENCE

Sources of Information

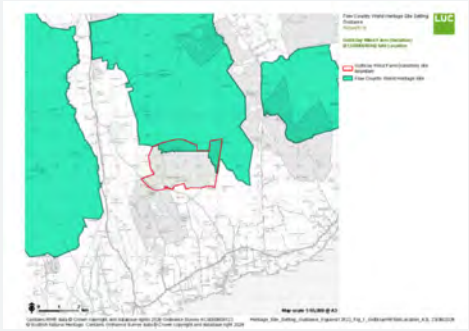
Environmental Impact Assessment Report



CH 09: Ecology | CH 11:Geology, Hydrology, Hydrogeology |



CH 07: LVIA | CH 12:Archaeology and Cultural Heritage

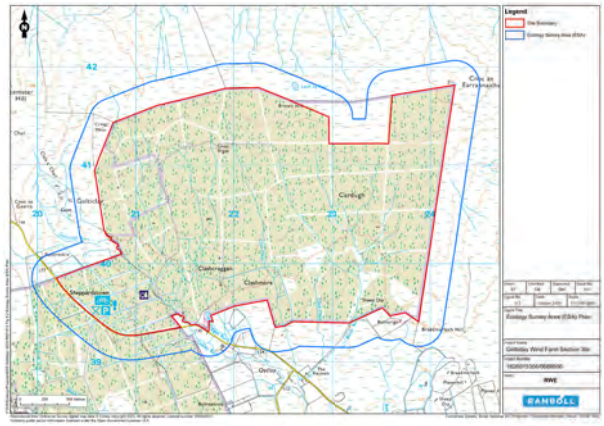


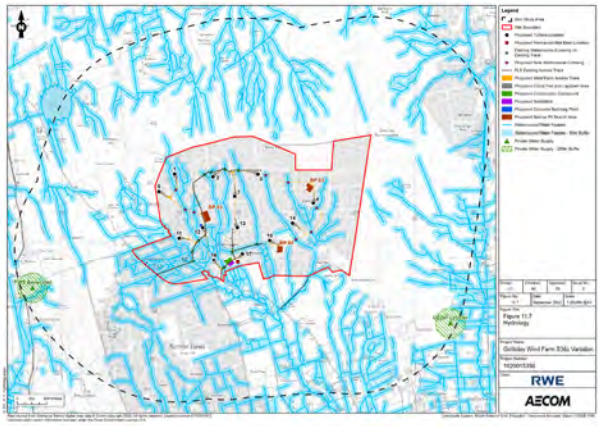
Golticlay Wind Farm (Variation)(ECU00004946) Site Location

See Section 03

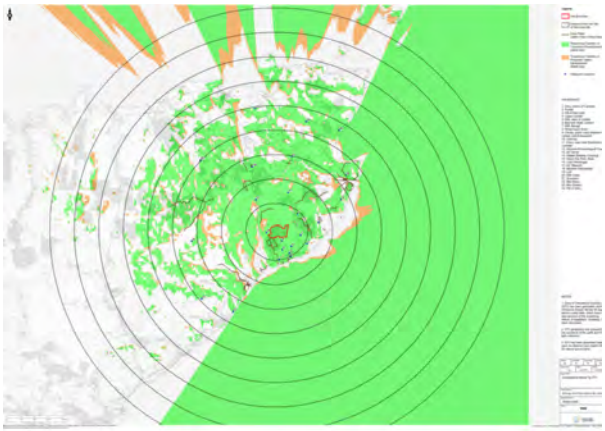
Worked Example: Actions and Areas of Influence

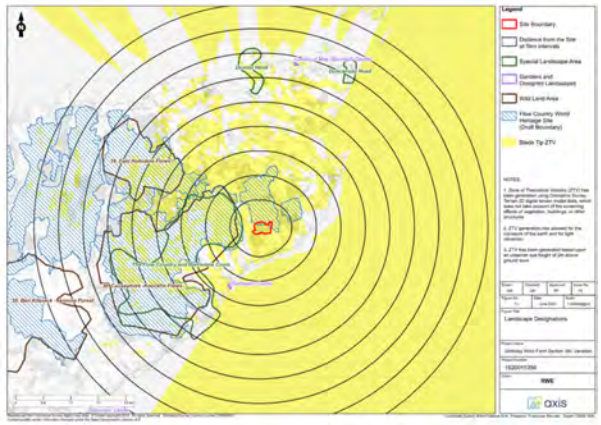
Functional considerations: Ecological, hydrological survey areas



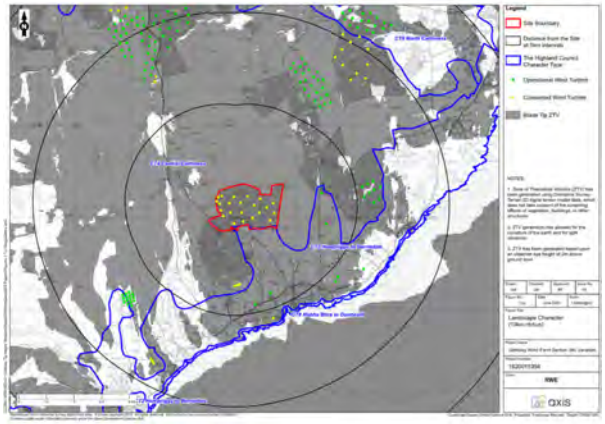


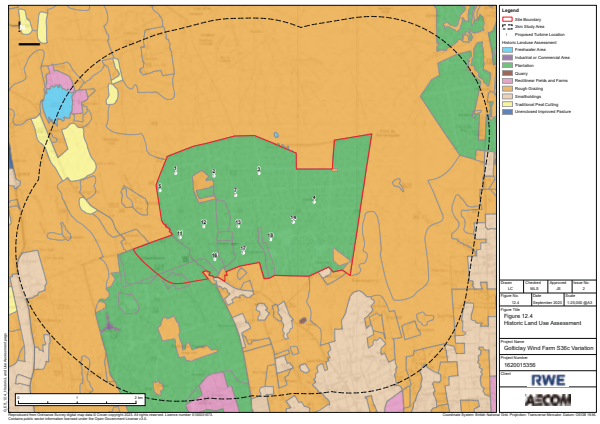
Experiential considerations: Project design ZTV, receptor study areas - landscape designations, visualisations





Experiential considerations: landscape character, historic land use





3 Identify the potential impacts of each element of a proposed action on each Attribute of OUV

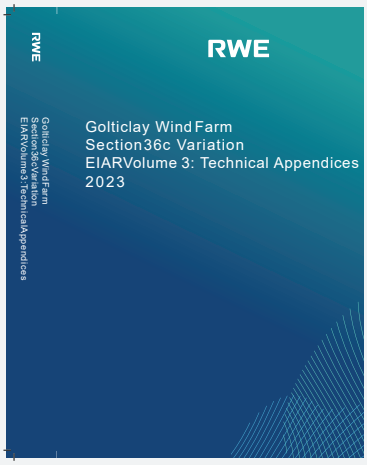
Use the findings of existing impact assessments to identify potential impacts

Functional impacts How could each Attribute be changed by each action?

See Table 1.1 - Functional change: Attributes of The Flow Country - What to consider? See p.35

Sources of Information

Environmental Impact Assessment Report

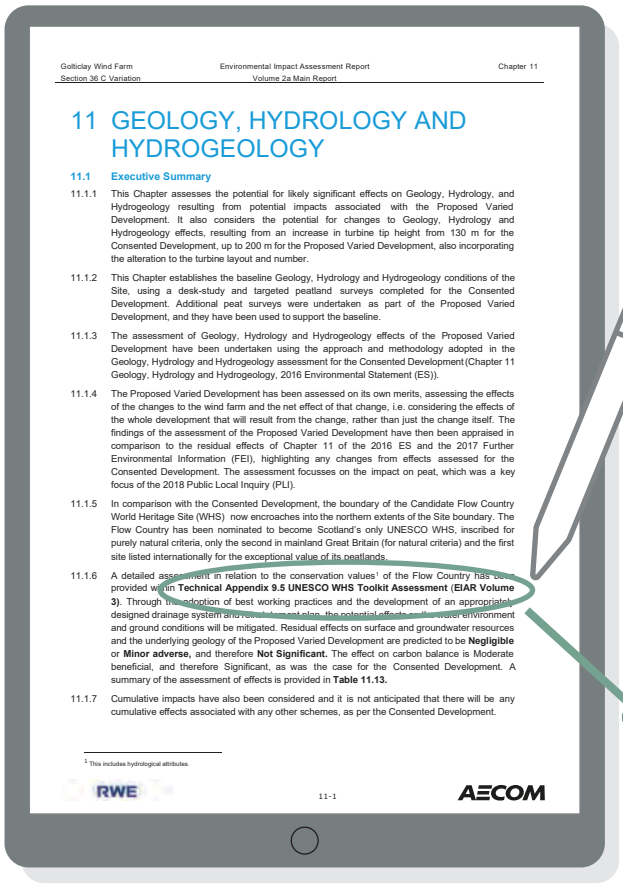


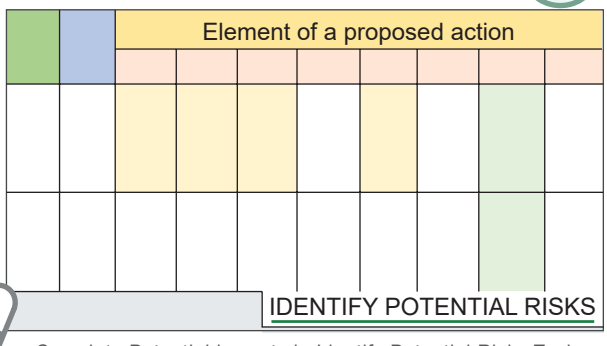


Ecology studies and relevant EIAtechnical appendices,e.g. :
Initial Desk Studies
Habitats and Vegetation Survey Reports
Protected Species Survey Reports
Shadow Habitat Regulations Assessment (sHRA)
Mitigation/ enhancement information e.g. Outline Biodiversity Enhancement Plan (OBEP),and supporting figures

Example illustration of using sources of information

See p.26





Complete Potential impacts in Identify Potential Risks Tool

11.7.17 The peat will be restored as soon as possible after disturbance. During the construction of access tracks and crane pads, mitigation can be undertaken as access road construction progresses. However, for small temporary quarries reinstatement cannot be undertaken until extraction is complete. This is detailed in the Preliminary PMP **Technical Appendix 11.4 (EIAR Volume 3)**

11.7.18 Mitigation measures in relation to the soil environment include use of good practice during construction to prevent or minimise spillage risk and spillage effects. The Good Practice during Wind Farm Construction[17] guidance and Advising on carbon rich soils, deep peat, and priority peatland habitat in development management[18] will be used to inform a CMS to be approved by SEPA and THC and will be developed covering each construction activity before construction commences. This will include compliance with all of the guidance contained in relevant GPPs and PPGs.

11.6.18 Access tracks and cable trenches have the potential to become barriers to natural surface water pathways or groundwater 'pipes' in peat deposits. This could result in drying out areas of peat, which is considered to have a permanent adverse impact of Medium magnitude and **Moderate** significance on peat deposits without mitigation.

11.6.19 Access tracks could become conduits for flow, which could lead to erosion of the road surface and pollution of adjacent watercourses or groundwater receptors, if adequate drainage is not in place. This is expected to have a temporary adverse impact of Medium magnitude and **Moderate** significance to adjacent watercourses, water bodies (coastal strips), groundwater bodies and on GWDTEs without mitigation.

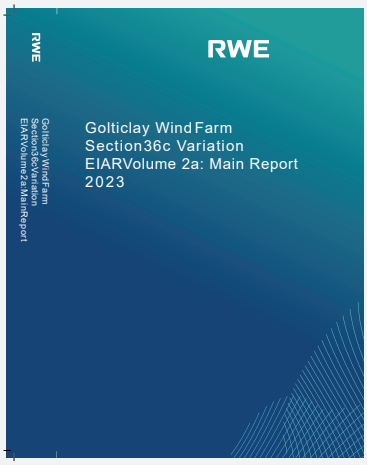
Experientialimpacts

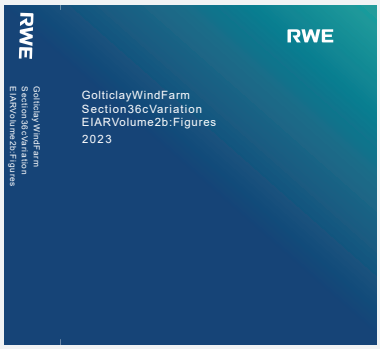
How could the presentation or appreciation of each Attribute be changed by each action?

See Table 1.2 - Experiential change: Attributes of The Flow Country - What to consider? ..... See p.38

Sources of Information

Environmental Impact Assessment Report

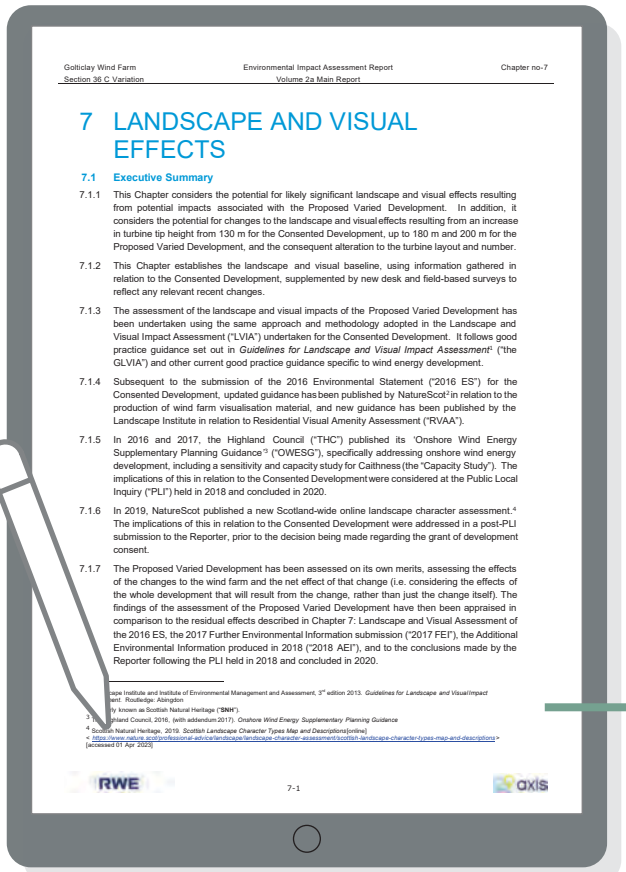




LVIAand relevant EIAtechnical appendices, e.g. EIARVolume 2a CH.07LVIA EIARVolume 2a CH.12Archaeology and Cultural Heritage and supporting figures, Mitigation/ enhancement information

Example illustration of using sources of information

See p.26



Golticlay Wind Farm — Environmental Impact Assessment Report — Chapter no-7
Section 36 C Variation — Volume 2a Main Report

7 LANDSCAPE AND VISUAL EFFECTS

7.1 Executive Summary

7.1.1 This Chapter considers the potential for likely significant landscape and visual effects resulting from potential impacts associated with the Proposed Varied Development. In addition, it considers the potential for changes to the landscape and visual effects resulting from an increase in turbine tip height from 130 m for the Consented Development, up to 180 m and 200 m for the Proposed Varied Development, and the consequent alteration to the turbine layout and number.

7.1.2 This Chapter establishes the landscape and visual baseline, using information gathered in relation to the Consented Development, supplemented by new desk and field-based surveys to reflect any relevant recent changes.

7.1.3 The assessment of the landscape and visual impacts of the Proposed Varied Development has been undertaken using the same approach and methodology adopted in the Landscape and Visual Impact Assessment ("LVIA") undertaken for the Consented Development. It follows good practice guidance set out in *Guidelines for Landscape and Visual Impact Assessment*[4] ("the GLVIA") and other current good practice guidance specific to wind energy development.

7.1.4 Subsequent to the submission of the 2016 Environmental Statement ("2016 ES") for the Consented Development, updated guidance has been published by NatureScot[2] in relation to the production of wind farm visualisation material, and new guidance has been published by the Landscape Institute in relation to Residential Visual Amenity Assessment ("RVAA").

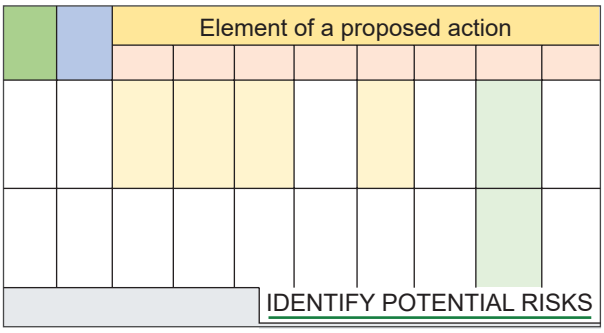
7.1.5 In 2016 and 2017, the Highland Council ("THC") published its 'Onshore Wind Energy Supplementary Planning Guidance'[3] ("OWESG"), specifically addressing onshore wind energy development, including a sensitivity and capacity study for Caithness (the "Capacity Study"). The implications of this in relation to the Consented Development were considered at the Public Local Inquiry ("PLI") held in 2018 and concluded in 2020.

7.1.6 In 2019, NatureScot published a new Scotland-wide online landscape character assessment.[4] The implications of this in relation to the Consented Development were addressed in a post-PLI submission to the Reporter, prior to the decision being made regarding the grant of development consent.

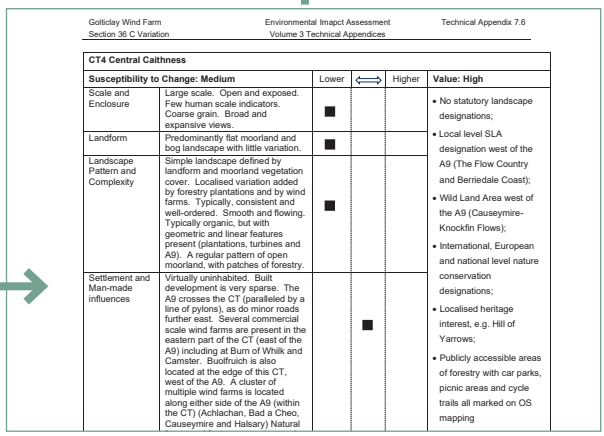
7.1.7 The Proposed Varied Development has been assessed on its own merits, assessing the effects of the changes to the wind farm and the net effect of that change (i.e. considering the effects of the whole development that will result from the change, rather than just the change itself). The findings of the assessment of the Proposed Varied Development have then been appraised in comparison to the residual effects described in Chapter 7: Landscape and Visual Assessment of the 2016 ES, the 2017 Further Environmental Information submission ("2017 FEI"), the Additional Environmental Information produced in 2018 ("2018 AEI"), and to the conclusions made by the Reporter following the PLI held in 2018 and concluded in 2020.

[1] ...cape Institute and Institute of Environmental Management and Assessment, 3rd edition 2013. *Guidelines for Landscape and Visual Impact ...ment*. Routledge: Abingdon
[2] ...ly known as Scottish Natural Heritage ("**SNH**").
[3] ...ighland Council, 2016, (with addendum 2017). *Onshore Wind Energy: Supplementary Planning Guidance*
[4] Scottish Natural Heritage, 2019. *Scottish Landscape Character Types Map and Descriptions*[online] < https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions > [accessed 01 Apr 2023]

RWE — 7-1 — axis



Complete Potential impacts in Identify Potential Risks Tool



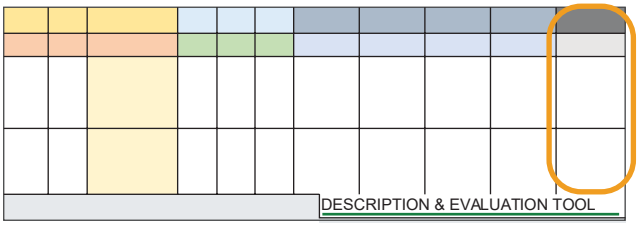
Golticlay Wind Farm — Environmental Impact Assessment — Technical Appendix 7.6
Section 36 C Variation — Volume 3 Technical Appendices

CT4 Central Caithness					
Susceptibility to Change: Medium		Lower	⟺	Higher	**Value: High**
Scale and Enclosure	Large scale. Open and exposed. Few human scale indicators. Coarse grain. Broad and expansive views.	■			• No statutory landscape designations; • Local level SLA designation west of the A9 (The Flow Country and Berriedale Coast); • Wild Land Area west of the A9 (Causeymire-Knockfin Flows); • International, European and national level nature conservation designations; • Localised heritage interest, e.g. Hill of Yarrows; • Publicly accessible areas of forestry with car parks, picnic areas and cycle trails all marked on OS mapping
Landform	Predominantly flat moorland and bog landscape with little variation.	■			
Landscape Pattern and Complexity	Simple landscape defined by landform and moorland vegetation cover. Localised variation added by forestry plantations and by wind farms. Typically, consistent and well-ordered. Smooth and flowing. Typically organic, but with geometric and linear features present (plantations, turbines and A9). A regular pattern of open moorland, with patches of forestry.	■			
Settlement and Man-made influences	Virtually uninhabited. Built development is very sparse. The A9 crosses the CT (paralleled by a line of pylons), as do minor roads further east. Several commercial scale wind farms are present in the eastern part of the CT (east of the A9) including at Burn of Whilk and Camster. Buolfruich is also located at the edge of this CT, west of the A9. A cluster of multiple wind farms is located along either side of the A9 (within the CT) (Achlachan, Bad a Cheo, Causeymire and Halsary) Natural		■		

Evaluate the effects of change

1 **Complete Description & Evaluation Tool tab to evaluate the effects of the impacts identified.**

See p.29



2 **Consider Integrity: do the impacts affect the wholeness and intactness of the WHS?**

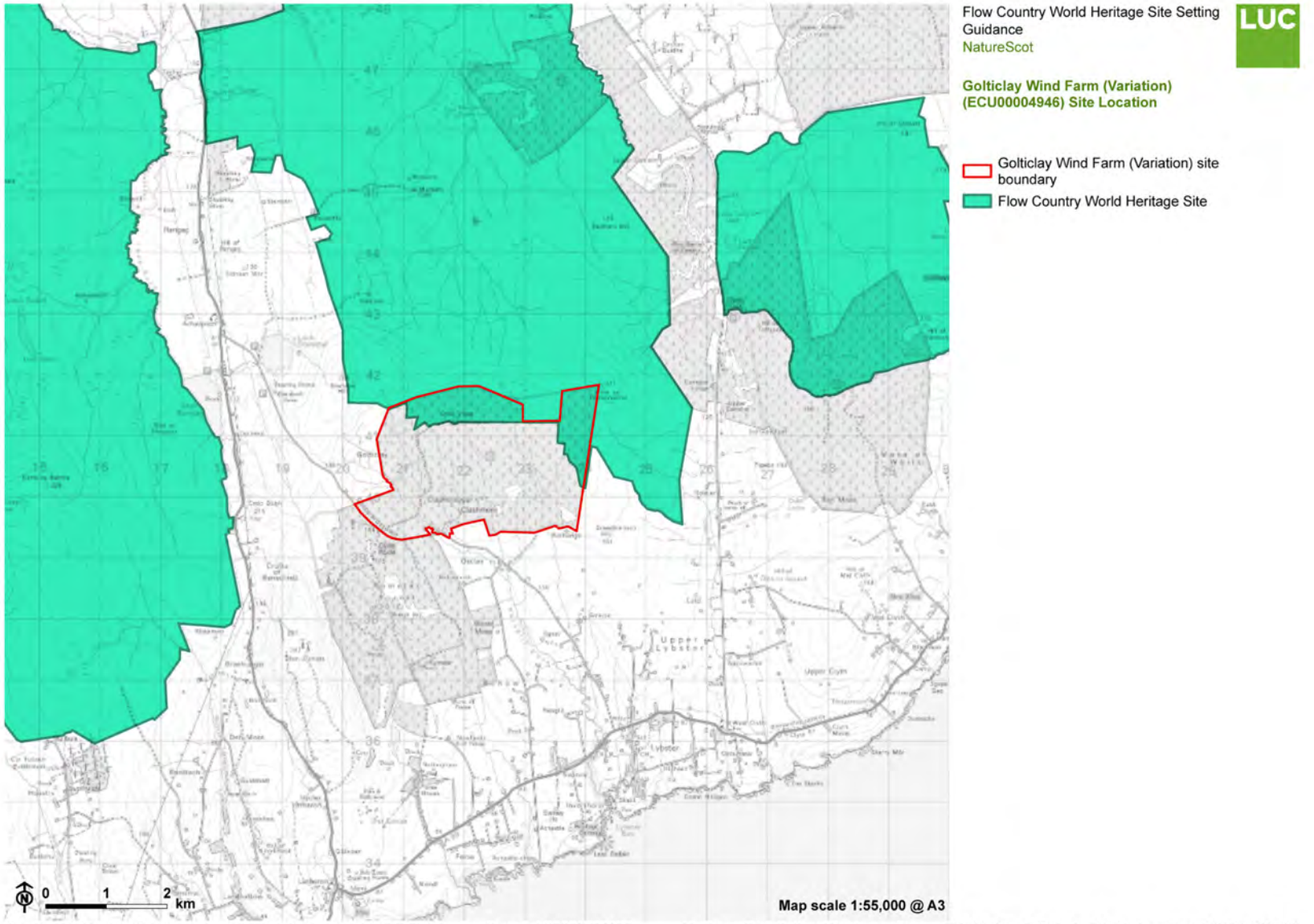
3 **Summarise findings in Screening & Summarising Form tab.**

Amend the proposal to reduce or remove potential harmful effects

Iterate - repeat/ refine WHS Impact Assessment as the proposal evolves

03

Worked Example



The Highland Council Impact Assessment Toolkit - Extract > SCREENING & SUMMARISING FORM TAB

Flow Country World Heritage Impact Assessment Screening (and Summarising of impact assessment where undertaken)	
Brief description and location of the project / development	Golticlay Wind Farm Variation (ECU00004946) The Consented Development is situated at land (the "Site") located approximately 15 km south-west of Wick and approximately 4.5 km north-west of Lybster. The Variation Site boundary remains the same as the Consented Development. RWE Renewables UK Onshore Wind Ltd. (the Applicant) is proposing to submit a variation to the Consented Development under Section 36C of the Electricity Act 1989 (1989 Act) to construct and operate a wind farm with a generating capacity in excess of 50 MW on the existing Site. In addition, the Applicant is seeking a direction under section 57(2) of the Town and Country Planning (Scotland) Act 1997 (the 1997 Act) that planning permission be deemed to be granted in respect of the varied description of the Consented Development (the Proposed Varied Development). A copy of the variation application will be submitted to The Highland Council (THC) in accordance with regulation 4(2)(b) of the Electricity Generating Stations (Applications for Variation of Consent) (Scotland) Regulations 2013 (as amended), particularly Regulations 3 and 4 (the 2013 Regulations). The Applicant proposes to reduce the number of turbines to 13 (removal of T6, T8, T9, T10, T15 and T19); re-locate three turbines (T4, T14 and T18) by approximately 75 m ; increase the maximum tip height of the turbines from 130 metres (m) to a maximum of 200 m (except for T3 and T4, which will be up to 180 m); increase the operational period from 25 to 35 years and increase the micro-siting distance from 50 m to 100 m.
Does the project / development lie wholly or partly within the boundary of the inscribed Site?	Partly within
Does the project / development lie outwith the Site but would include actions that might impact aspects of the OUV?	Yes
Has the project / development been subject to an Environmental Impact Assessment or any other relevant assessment (please include details)?	Yes

A. Screening Criteria Question	B. Response to the Screening Criteria Question in Column A (yes / no / N/A)	C. Briefly explain reasons for response in Column B and, if applicable and/or known, include name of feature(s), connectivity and proximity
Flow Country World Heritage Site OUV*		
Might the project/development negatively impact the extent or continuity of natural, actively accumulating, blanket bog ecosystem?	No	Potential for negative impacts to OUV is Neutral (with embedded mitigation). Potential for Minor positive impacts to OUV through implementation of mitigation and enhancement.
Might the project/development reduce the range of climatic, topographic gradients and geological diversity that result in the recorded bog macroform diversity?	No	No potential for negative impacts to OUV. Potential for Minor positive impacts to OUV, and its presentation and appreciation, through implementation of mitigation and enhancement activities.
Might the project/development degrade the temporal and spatial record of peatland development and related factors?	No	No potential for negative impacts to OUV. Potential for Minor positive impacts to OUV, and its presentation and appreciation, through implementation of mitigation and enhancement activities.
Might the project/development impact on ongoing scientific work or the educational value of the peatlands and associated biodiversity?	No	No potential for negative impacts to OUV. Potential for Minor positive impacts to OUV through implementation of mitigation and enhancement.
Might the project/development reduce the carbon sequestration and/or storage potential of the peatlands?	No	No potential for negative impacts to OUV. Potential for Minor positive impacts to OUV through implementation of mitigation and enhancement.
Might the project/development impact the water filtration and resultant water quality of associated riverine habitats?	No	Potential for negative impacts is Neutral (with embedded mitigation). Potential for Minor positive impacts to OUV, and its presentation and appreciation, through implementation of mitigation and enhancement activities.
Flow Country World Heritage Site Integrity		
The Site boundary encapsulates all of the elements of OUV needed to demonstrate the ecological and biological processes and associated biodiversity of a blanket bog landscape as well as ensuring ecosystem integrity and coherence. Would the project/development impact on the integrity of the Site as a whole?	N/A	Development has no effect on the integrity of the WHS.

* for more detailed background information on each of the questions please review the Site attributes.

The Highland Council Impact Assessment Toolkit - Extract > ATTRIBUTE EXPRESS+SUPPORT TOOL

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

Additional supporting values that relate to the biodiversity of the Site but not considered globally significant so not included under the criteria of Outstanding Universal Value (OUV). These features combined with the attributes of OUV help to make the property especially distinctive. *

Attributes of The Flow Country Property (the Site)		How are the Attributes expressed or supported by the proposed development site?	Additional Supporting Values
Attributes	Description	**Consider the World Heritage Site and its Setting.** **Functional considerations:** How does the proposed development site express or support each Attribute? **Experiential considerations:** How does the proposed development site support the presentation or appreciation of each Attribute? **Also, select the relevant effect context(s) in the dropdown below, to indicate those for which the proposed development site does express or support the attribute.**	Description
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 lead 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.	FUNCTIONAL: The development site contains areas of blanket bog habitat, outwith the FCWHS boundary. As habitats in this area are significantly degraded and drained through tree planting, hydrological connectivity is currently very limited. Mitigation may have potential to enhance the development site's support for this Attribute. EXPERIENTIAL: The development site is located within LCT134 Sweeping Moorland and Flows – Caithness & Sutherland. Key characteristics of LCT134 overall include long, low and largely uninterrupted skylines offering extensive views across this landscape and result in a feeling of huge space. The extensiveness and continuousness of the WHS are potentially appreciated through this aspect of the LCT. However, topography - the landform of the development site dropping away from the WHS boundary - and the presence of commercial forestry limit the expression of this character within the development site itself or its understanding from within the development site, or within the WHS in combination with the development site. The development site does not support the presentation or appreciation of this Attribute. S-F	**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 genetic resilience to species it contains.

Attributes of The Flow Country Property (the Site)		How are the Attributes expressed or supported by the proposed development site?	Additional Supporting Values
Attributes	Description	**Consider the World Heritage Site and its Setting.** **Functional considerations:** How does the proposed development site express or support each Attribute? **Experiential considerations:** How does the proposed development site support the presentation or appreciation of each Attribute? **Also, select the relevant effect context(s) in the dropdown below, to indicate those for which the proposed development site does express or support the attribute.**	Description
b) climatic, 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 huge 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 such a diverse collection of surface patterning within a single area.	FUNCTIONAL: Blanket bog habitat in the development site is significantly degraded. It does not express or support this Attribute. Mitigation may have potential to enhance the development site's support for this Attribute. EXPERIENTIAL: The development site is located within LCT134 Sweeping Moorland and Flows – Caithness & Sutherland. Key characteristics of LCT134 overall include very distinct flora, dominated by sphagnum mosses, produced by the wetness and infertility of the flows. The scale, geological diversity, bog macroform diversity or surface patterning of the WHS are potentially appreciated through this aspect of the LCT. However, the presence of commercial forestry and the degraded nature of the blanket bog within the development site limit the expression of this character within the development site itself or its understanding from within the development site, or within the WHS in combination with the development site. The development site does not support the presentation or appreciation of this Attribute. Mitigation may have potential to enhance the presentation or appreciation of this Attribute. S-F, S-E	**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.
c) archive it stores (4th 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 4th 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 sub-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).	FUNCTIONAL: Historic archive/ evidence is potentially stored in the peat within the development site, but it is disconnected from the WHS. It does not support this Attribute. Mitigation may have potential to enhance the development site's support for this Attribute. EXPERIENTIAL: Evidence potentially within the development site of its role in the past evolution and exploitation of the Flow Country's landscape and resources cannot currently be appreciated owing to present land use (forestry). The development site does not support the presentation or appreciation of this Attribute. Mitigation may have potential to enhance the presentation or appreciation of this Attribute. S-F, S-E	**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 hairgrass, water

Attributes of The Flow Country Property (the Site)		How are the Attributes expressed or supported by the proposed development site?	Additional Supporting Values
Attributes	Description	**Consider the World Heritage Site and its Setting.** **Functional considerations:** How does the proposed development site express or support each Attribute? **Experiential considerations:** How does the proposed development site support the presentation or appreciation of each Attribute? **Also, select the relevant effect context(s) in the dropdown below, to indicate those for which the proposed development site does express or support the attribute.**	Description
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 a huge scope for research. Furthermore, the breadth of existing studies provides a fantastic foundation for future research.	FUNCTIONAL: The blanket bog within the development site is degraded and disconnected from the WHS. It does not support this Attribute. Mitigation may have potential to enhance the development site's support for this Attribute. EXPERIENTIAL: The development site's potential value for research cannot be readily appreciated through its experiential qualities. The development site does not support the presentation or appreciation of this Attribute. Mitigation may have potential to enhance the presentation or appreciation of this Attribute. S-F	lobelia, bog orchid, marsh saxifrage and at least 29 species of Sphagnum (over 10% of global Sphagnum flora). **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 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
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 producing a valuable carbon store. The Flow Country provides a superb example of ongoing sequestration, alongside carbon storage demonstrated by peat thicknesses which reach over 8 meters.	FUNCTIONAL: The blanket bog within the development site stores carbon which would be released if disturbed. However the blanket bog in the development site is degraded and disconnected from the WHS. It does not support this Attribute. Mitigation may have potential to enhance the development site's support for this Attribute. EXPERIENTIAL: The nature of carbon sequestration and storage cannot be readily appreciated through the experiential qualities of the development site. The development site does not support the presentation or appreciation of this Attribute. Mitigation may have potential to enhance the presentation or appreciation of this Attribute. S-F	

Attributes of The Flow Country Property (the Site)		How are the Attributes expressed or supported by the proposed development site?	Additional Supporting Values
Attributes	Description	**Consider the World Heritage Site and its Setting.** **Functional considerations:** How does the proposed development site express or support each Attribute? **Experiential considerations:** How does the proposed development site support the presentation or appreciation of each Attribute? **Also, select the relevant effect context(s) in the dropdown below, to indicate those for which the proposed development site does express or support the 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. European eel (classed by the IUCN as Critically Endangered) are also recorded from these catchments. Furthermore, the rivers of The Flow Country are maintaining strong populations of Atlantic salmon which are in global decline.	FUNCTIONAL: As habitats in this area are significantly degraded and drained through tree planting, hydrological connectivity is currently very limited. The development site's importance to the water quality of the Flow Country WHS is extremely limited. EXPERIENTIAL: The development site is located within LCT134 Sweeping Moorland and Flows – Caithness & Sutherland. Key characteristics of LCT134 overall include lochs and mature, meandering rivers. However, water quality and water filtration cannot be readily appreciated through the experiential qualities of the LCT. In addition, the watercourses within the development site do not embody the character of the LCT, being largely artificial or straightened. The development site does not support the presentation or appreciation of this Attribute. Mitigation may have potential to enhance the presentation or appreciation of this Attribute. S-F, S-E	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.
	SOURCES OF INFORMATION>>	FUNCTIONAL: EIAR Chapter 9 - Ecology EIAR Chapter 11: Geology, Hydrology, and Hydrogeology Technical Appendix 9.6, EIAR Volume 3 – Revised Habitat Management Plan Summarised in EIAR Volume 3 - Technical Appendices - Technical Appendix 9.5 - UNESCO World Heritage Site (WHS) Toolkit Assessment EXPERIENTIAL: Functional sources as per list above, + EIAR Volume 2a - Main Report - Chapter 07 - LVIA EIAR Volume 2a - Main Report - Chapter 12 - Archaeology and Cultural Heritage	* In its evaluation of the Flow Country nomination, the IUCN concluded that "the species assemblages cited frequently in the documentation, particularly the blanket bog vegetation and bird assemblages form an integral part of the ecosystem and ecological processes under criterion (ix)".

The Highland Council Impact Assessment Toolkit - Extract > IDENTIFY POTENTIAL RISKS TOOL TAB

Attribute	**Element of a proposed action (development) that has the potential to cause an impact** (e.g. formation of access track / installation of turbine foundations / installation of new drainage system) **then describe its potential impact(s) on each of the attributes (and, if can readily conclude 'no impact' at this stage without need for further evaluation*, state so and explain why). Also, select the relevant effect context(s) in the dropdown below, to indicate those for which potential impact (positive or negative) is identified.** *It may be expected that in most cases the potential impact will need to progress to the next stage: Description & Evaluation Tool						
	Construction of turbines, associated hard standing and infrastructure (Borrow pits, Battery Energy Storage System [BESS])	Construction of temporary access tracks	Construction of new permanent access tracks, including water crossings	Operation of new permanent access tracks	Operational maintenance and presence of personnel and vehicles	Operational presence of towers and BESS	Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses.
a) most extensive near continuous example of natural, actively accumulating, blanket bog ecosystem found globally	FUNCTIONAL: Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: No pathway for impacts to occur - no potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: No pathway for impacts to occur - no potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Potential to enhance the development site's support for this Attribute. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.
	S-F	S-F	S-F	Effect Context (select)	S-F	Effect Context (select)	S-F
b) climatic, topographic gradients and geological diversity: bog macroform diversity	FUNCTIONAL: Blanket bog habitat in the development site is significantly degraded. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Blanket bog habitat in the development site is significantly degraded. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Blanket bog habitat in the development site is significantly degraded. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Blanket bog habitat in the development site is significantly degraded. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Blanket bog habitat in the development site is significantly degraded. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Blanket bog habitat in the development site is significantly degraded. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Potential to enhance the development site's support for this Attribute. EXPERIENTIAL: Potential to enhance the development site's support for the presentation or appreciation of this Attribute.
	Effect Context (select)	Effect Context (select)	Effect Context (select)	Effect Context (select)	Effect Context (select)	Effect Context (select)	S-F, S-E

Attribute	Construction of turbines, associated hard standing and infrastructure (Borrow pits, Battery Energy Storage System [BESS])	Construction of temporary access tracks	Construction of new permanent access tracks, including water crossings	Operation of new permanent access tracks	Operational maintenance and presence of personnel and vehicles	Operational presence of towers and BESS	Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses.
c) archive it stores (4th dimension)	FUNCTIONAL: Archival evidence potentially stored within the peat in the development site does not support this Attribute of the WHS owing to location, distance and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Archival evidence potentially stored within the peat in the development site does not support this Attribute of the WHS owing to location, distance and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Archival evidence potentially stored within the peat in the development site does not support this Attribute of the WHS owing to location, distance and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Archival evidence potentially stored within the peat in the development site does not support this Attribute of the WHS owing to location, distance and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Archival evidence potentially stored within the peat in the development site does not support this Attribute of the WHS owing to location, distance and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Archival evidence potentially stored within the peat in the development site does not support this Attribute of the WHS owing to location, distance and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Potential to enhance the development site's support for this Attribute. EXPERIENTIAL: Potential to enhance the development site's support for the presentation or appreciation of this Attribute.
	Effect Context (select)	Effect Context (select)	Effect Context (select)	Effect Context (select)	Effect Context (select)	Effect Context (select)	S-F, S-E
d) natural laboratory – ongoing scientific and educational use	FUNCTIONAL: Peat within the development site is of unknown/ limited research potential and does not support this Attribute of the WHS owing to location, distance, degradation and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Peat within the development site is of unknown/ limited research potential and does not support this Attribute of the WHS owing to location, distance, degradation and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Peat within the development site is of unknown/ limited research potential and does not support this Attribute of the WHS owing to location, distance, degradation and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Peat within the development site is of unknown/ limited research potential and does not support this Attribute of the WHS owing to location, distance, degradation and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Peat within the development site is of unknown/ limited research potential and does not support this Attribute of the WHS owing to location, distance, degradation and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Peat within the development site is of unknown/ limited research potential and does not support this Attribute of the WHS owing to location, distance, degradation and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Potential to enhance the development site's support for this Attribute. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.
	Effect Context (select)	Effect Context (select)	Effect Context (select)	Effect Context (select)	Effect Context (select)	Effect Context (select)	S-F

Attribute	Construction of turbines, associated hard standing and infrastructure (Borrow pits, Battery Energy Storage System [BESS])	Construction of temporary access tracks	Construction of new permanent access tracks, including water crossings	Operation of new permanent access tracks	Operational maintenance and presence of personnel and vehicles	Operational presence of towers and BESS	Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses.
e) carbon sequestration and storage	FUNCTIONAL: Carbon storage role of peat within the development site does not support this Attribute of the WHS owing to location, distance, degradation and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Carbon storage role of peat within the development site does not support this Attribute of the WHS owing to location, distance, degradation and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Carbon storage role of peat within the development site does not support this Attribute of the WHS owing to location, distance, degradation and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Carbon storage role of peat within the development site does not support this Attribute of the WHS owing to location, distance, degradation and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Carbon storage role of peat within the development site does not support this Attribute of the WHS owing to location, distance, degradation and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Carbon storage role of peat within the development site does not support this Attribute of the WHS owing to location, distance, degradation and very limited hydrological and functional connectivity. No potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Potential to enhance the development site's support for this Attribute. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.
	Effect Context (select)	Effect Context (select)	Effect Context (select)	Effect Context (select)	Effect Context (select)	Effect Context (select)	S-F
f) water filtration and the impact on the water quality of associated riverine habitats	FUNCTIONAL: Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: No pathway for impacts to occur - no potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: No pathway for impacts to occur - no potential for impacts to OUV. EXPERIENTIAL: The development site does not support the presentation or appreciation of this Attribute - no potential for impacts to OUV.	FUNCTIONAL: Potential to enhance the development site's support for this Attribute. EXPERIENTIAL: Potential to enhance the development site's support for the presentation or appreciation of this Attribute.
	S-F	S-F	S-F	Effect Context (select)	S-F	Effect Context (select)	S-F, S-E

The Highland Council Impact Assessment Toolkit - Extract > DESCRIPTION & EVALUATION TOOL TAB

Element of proposed action (development)	Attribute	Description of potential impact	Frequency of action	Duration of action	Reversibility of action	Reversibility of change to the attribute	Longevity of change to the attribute
			Once / intermittent / continuous	Short-term / long-term	Reversible / irreversible	Reversible / irreversible	Temporary / permanent change
Construction of turbines, associated hard standing and infrastructure	a) most extensive near continuous example of natural, actively accumulating, blanket bog ecosystem found globally	Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Once	Short term	Irreversible	Reversible	Temporary
Construction of temporary access tracks		Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Once	Short term	Irreversible	Reversible	Temporary
Construction of new permanent access tracks, including water crossings		Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Once	Short term	Irreversible	Reversible	Temporary
Operational maintenance and presence of personnel and vehicles		Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Intermittent	Short term	Irreversible	Reversible	Temporary
Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses		Potential to enhance the development site's support for this Attribute through enhanced extent, condition and connectivity of blanket bog outwith WHS boundary.	Once	Long term	Reversible	Reversible	Permanent
Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses	b) climatic, topographic gradients and geological diversity: bog macroform diversity	Potential to enhance the development site's support for this Attribute through enhanced extent, condition and connectivity of blanket bog outwith WHS boundary. Potential to enhance the Site's support for the presentation or appreciation of this Attribute.	Once	Long term	Reversible	Reversible	Permanent
Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses	c) archive it stores (4^{th} dimension)	Potential to enhance the development site's support for this Attribute through enhanced extent, condition and connectivity of blanket bog outwith WHS boundary. Potential to enhance the Site's support for the presentation or appreciation of this Attribute.	Once	Long term	Reversible	Reversible	Permanent

Element of proposed action (development)	Attribute	Description of potential impact	Degree of change to the attribute	Quality of change to the attribute	Evaluation of Impact	Explanatory Notes
			None / negligible / some / large change	Positive / negative change	Neutral / minor / moderate / major impact (negative or positive) [If no impact, leave blank]	Briefly note here anything that the evaluation of impact is based upon (e.g. with embedded mitigation) and the confidence or evidence level being applied. If it is established that there will be no impact, then indicate so here and explain why (e.g. no pathway).
Construction of turbines, associated hard standing and infrastructure	a) most extensive near continuous example of natural, actively accumulating, blanket bog ecosystem found globally	Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Negligible	Negative	Neutral	(with embedded mitigation)
Construction of temporary access tracks		Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Negligible	Negative	Neutral	(with embedded mitigation)
Construction of new permanent access tracks, including water crossings		Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Negligible	Negative	Neutral	(with embedded mitigation)
Operational maintenance and presence of personnel and vehicles		Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Negligible	Negative	Neutral	(with embedded mitigation)
Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses		Potential to enhance the development site's support for this Attribute through enhanced extent, condition and connectivity of blanket bog outwith WHS boundary.	Some (small)	Positive	Minor positive impact	
Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses	b) climatic, topographic gradients and geological diversity: bog macroform diversity	Potential to enhance the development site's support for this Attribute through enhanced extent, condition and connectivity of blanket bog outwith WHS boundary. Potential to enhance the Site's support for the presentation or appreciation of this Attribute.	Some (small)	Positive	Minor positive impact	
Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses	c) archive it stores (4^{th} dimension)	Potential to enhance the development site's support for this Attribute through enhanced extent, condition and connectivity of blanket bog outwith WHS boundary. Potential to enhance the Site's support for the presentation or appreciation of this Attribute.	Some (small)	Positive	Minor positive impact	

Element of proposed action (development)	Attribute	Description of potential impact	Frequency of action	Duration of action	Reversibility of action	Reversibility of change to the attribute	Longevity of change to the attribute
			Once / intermittent / continuous	Short-term / long-term	Reversible / irreversible	Reversible / irreversible	Temporary / permanent change
Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses	d) natural laboratory – ongoing scientific and educational use	Potential to enhance the development site's support for this Attribute through enhanced extent, condition and connectivity of blanket bog outwith WHS boundary.	Once	Long term	Reversible	Reversible	Permanent
Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses	e) carbon sequestration and storage	Potential to enhance the development site's support for this Attribute through enhanced extent, condition and connectivity of blanket bog outwith WHS boundary.	Once	Long term	Reversible	Reversible	Permanent
Construction of turbines, associated hard standing and infrastructure	f) water filtration and the impact on the water quality of associated riverine habitats	Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Once	Short term	Irreversible	Reversible	Temporary
Construction of temporary access tracks		Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Once	Short term	Irreversible	Reversible	Temporary
Construction of new permanent access tracks, including water crossings		Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Once	Short term	Irreversible	Reversible	Temporary
Operational maintenance and presence of personnel and vehicles		Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Intermittent	Short term	Reversible	Reversible	Temporary
Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses		Potential to enhance the development site's support for this Attribute through enhanced extent, condition and connectivity of blanket bog outwith WHS boundary. Potential to enhance the Site's support for the presentation or appreciation of this Attribute.	Once	Long term	Reversible	Reversible	Permanent

Element of proposed action (development)	Attribute	Description of potential impact	Degree of change to the attribute	Quality of change to the attribute	Evaluation of Impact	Explanatory Notes
			None / negligible / some / large change	Positive / negative change	Neutral / minor / moderate / major impact (negative or positive) [If no impact, leave blank]	Briefly note here anything that the evaluation of impact is based upon (e.g. with embedded mitigation) and the confidence or evidence level being applied. If it is established that there will be no impact, then indicate so here and explain why (e.g. no pathway).
Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses	d) natural laboratory – ongoing scientific and educational use	Potential to enhance the development site's support for this Attribute through enhanced extent, condition and connectivity of blanket bog outwith WHS boundary.	Some (small)	Positive	Minor positive impact	
Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses	e) carbon sequestration and storage	Potential to enhance the development site's support for this Attribute through enhanced extent, condition and connectivity of blanket bog outwith WHS boundary.	Some (small)	Positive	Minor positive impact	
Construction of turbines, associated hard standing and infrastructure	f) water filtration and the impact on the water quality of associated riverine habitats	Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Negligible	Negative	Neutral	(with embedded mitigation)
Construction of temporary access tracks		Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Negligible	Negative	Neutral	(with embedded mitigation)
Construction of new permanent access tracks, including water crossings		Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Negligible	Negative	Neutral	(with embedded mitigation)
Operational maintenance and presence of personnel and vehicles		Indirect damage/loss to habitat, e.g. as a result of a pollution event. However, hydrological connectivity with the WHS is very limited, and this is considered highly unlikely to occur with the implementation of embedded mitigation.	Negligible	Negative	Neutral	(with embedded mitigation)
Mitigation and enhancement activities - net increase in blanket bog area and connectivity through restoration of previous coniferous plantation and watercourses		Potential to enhance the development site's support for this Attribute through enhanced extent, condition and connectivity of blanket bog outwith WHS boundary. Potential to enhance the Site's support for the presentation or appreciation of this Attribute.	Some (small)	Positive	Minor positive impact	

Appendices



View southeast from the A838 looking towards Moine Ho and Cnoc Lòn nan Eildean.

Appendix A

Glossary

Definitions of terms used in this guidance are the same as those in The Highland Council The Flow Country Candidate World Heritage Site Planning Position Statement 2, with the addition of Action and Area of Influence, taken from UNESCO Guidance and Toolkit for Impact Assessments in a World Heritage Context.

ACTION - A policy, plan, programme or project. Any proposed action that may affect the property's OUV should require an impact assessment, regardless of its size or location – within the property, its buffer zone or wider setting.

AREA OF INFLUENCE - The geographical area in which direct, indirect and cumulative impacts may occur. It is the area which a proposed action will actually occupy, as well as the wider area which a project will influence (e.g. through air emissions, traffic or economic activity).

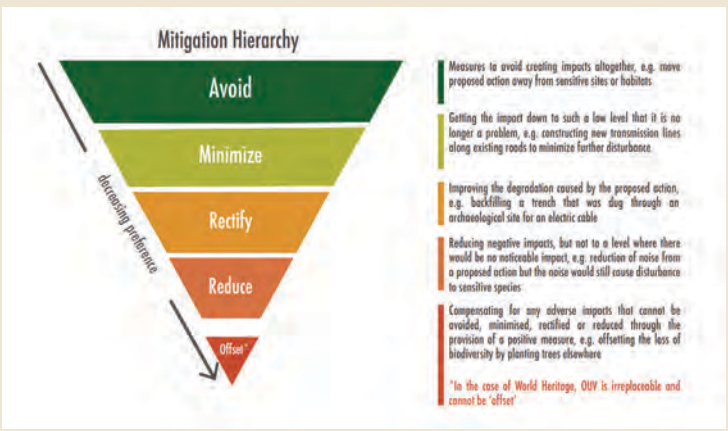
BUFFER - The Flow Country World Heritage Site does not have a buffer but rather, much as with Special Area of Conservation (SAC) and Special Protection Area (SPA) designations, any activity outwith the Site that impacts the OUV within the boundary would be considered to impact the OUV and should be included within assessment at proposal stage.

DEVELOPMENT - as set out in The Town and Country Planning (Scotland) Act 1997 as amended, means: construction, engineering, mining or other operations, or the making of any material change in the use of any buildings or other land.

INTEGRITY - As set out in the Operational Guidelines, the integrity of a World Heritage Site is a measure of the wholeness and intactness of its natural and/or cultural heritage and its attributes. In line with the Operational Guidelines, for a property to maintain its integrity as inscribed it must therefore: a) retain all elements necessary to express its Outstanding Universal Value b) remain of adequate size to ensure the complete representation of the features and processes which convey the property's significance (as laid out in the attributes) c) remain protected from adverse effects of development and/or neglect.

MANAGEMENT PLAN - means the Management Plan prepared for the Site.

MITIGATION and MITIGATION HIERARCHY - The mitigation hierarchy indicates the preferences for the consideration and addressing of the impacts of development through types of mitigation. For a World Heritage context, the mitigation hierarchy is explained by the following diagram:



(Source: UNESCO's Guidance and Toolkit for Impact Assessments in a World Heritage Context, 2022)

Not all levels of the hierarchy may necessarily be suitable for and capable of delivering full and appropriate protection of the Site from any particular case and effect of proposed development, in the context of complying with the World Heritage Convention. Specifically, UNESCO says in the diagram above that "in the case of World Heritage, OUV is irreplaceable and cannot be offset".

OUV - Outstanding Universal Value – as defined by UNESCO's Operational Guidelines for the Implementation of the World Heritage Convention (the Operational Guidelines), means "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". The specifics of what is required for a natural World Heritage Site to have OUV is set out in the Operational Guidelines. However, in summary such a Site must meet: a) one or more specific criteria of natural value; b) a threshold of wholeness and intactness, called integrity; c) a threshold of effective protection and management to ensure its safeguarding. A significant negative impact, or incremental damage, to any of these could lead to a Site being placed on the World Heritage in Danger list if that Site is threatened by serious and specific dangers – which could potentially in turn lead to that Site losing its inscription.

SETTING - means the area around the Site and, as explained by UNESCO in the Operational Guidelines, the setting of a World Heritage Site: "…may relate to the property's topography, natural and built environment, and other elements such as infrastructure, land use patterns, spatial organization, and visual relationships. It may also include related social and cultural practices, economic processes and other intangible dimensions of heritage such as perceptions and associations. Management of the wider setting is related to its role in supporting the Outstanding Universal Value. Its effective management may also contribute to sustainable development, through harnessing the reciprocal benefits for heritage and society".

SITE - means The Flow Country World Heritage Site, inscribed by UNESCO on 26 July 2024, as shown on the maps of the inscribed property.

Appendix B

Table 1.1 Functional change: Attributes of The Flow Country – What to consider?

Criterion ix	Attribute	Description	Functional considerations	Where to find relevant information
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.	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 lead 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.	The extent to which the **development site** expresses or supports **Attribute (a)** **Area of Influence** – where and how **Attribute (a) could be changed** by the project/ development.	Existing baseline studies and impact assessment relating to: • Local climate and environmental conditions • Water sources and hydrological units • Ecosystems and communities of species • Land use and land management practices
	b) climatic, topographic gradients and geological diversity: bog macroform diversity	The scale of the nominated property, 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 huge 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 such a diverse collection of surface patterning within a single area.	The extent to which the **development site** expresses or supports **Attribute (b)** **Area of Influence** – where and how **Attribute (b) could be changed** by the project/ development.	Existing baseline studies and impact assessment relating to: • Local climate and environmental conditions • Water sources and hydrological units • Ecosystems and communities of species

Criterion ix	Attribute	Description	Functional considerations	Where to find relevant information
	c) archive it stores (4th 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 providing a 4th dimension to The Flow Country blanket bog. The processes responsible for the development of the blanket bog system and the ecosystems it supports [RH3.1] can be scrutinised back through time across the vast area it covers using pollen records; plant sub-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).	The extent to which the **development site** expresses or supports **Attribute (c)** **Area of Influence** – where and how **Attribute (c) could be changed** by the project/ development.	Existing baseline studies and impact assessment relating to: ▯ Local climate and environmental conditions ▯ Water sources and hydrological units ▯ Ecosystems and communities of species ▯ Land use and land management practices
	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 a huge scope for research. Furthermore, the breadth of existing studies provides a fantastic foundation for future research	The extent to which the **development site** expresses or supports **Attribute (d)** **Area of Influence** – where and how **Attribute (d) could be changed** by the project/ development.	Existing baseline studies and impact assessment relating to: ▯ Local climate and environmental conditions ▯ Water sources and hydrological units ▯ Ecosystems and communities of species

Criterion ix	Attribute	Description	Functional considerations	Where to find relevant information
	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 producing a valuable carbon store. The Flow Country provides a superb example of ongoing sequestration, alongside carbon storage demonstrated by peat thicknesses which reach over 8 meters.	The extent to which the **development site** expresses or supports **Attribute (e)** Area of Influence – where and how **Attribute (e) could be changed** by the project/ development.	Existing baseline studies and impact assessment relating to: ▯ Local climate and environmental conditions ▯ Water sources and hydrological units ▯ Land use and land management practices
	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. European eel (classed by the IUCN as Critically Endangered) are also recorded from these catchments. Furthermore, the rivers of The Flow Country are maintaining strong populations of Atlantic salmon which are in global decline.	The extent to which the **development site** expresses or supports **Attribute (f)** **Area of Influence** – where and how **Attribute (f) could be changed** by the project/ development.	Existing baseline studies and impact assessment relating to: ▯ Local climate and environmental conditions ▯ Water sources and hydrological units ▯ Ecosystems and communities of species

Appendix C

Table 1.2 Experiential change: Attributes of The Flow Country – What to consider?

Criterion ix	Attribute	Description	Experientialconsiderations	Where to find relevant information
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.	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 lead 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.	The extent to which the **development site** supports the presentation or appreciation of Attribute (a) - through the **extensiveness** and **continuousness** of the WHS. How the presentation or appreciation of those aspects of Attribute (a) could be changed by the project/ development.	Baseline studies and impact assessment relating to: ▯ Sensitivity of landscape designations or categories forming the area of influence, which express the **extensiveness** and **continuousness** of the WHS, such as: • National Scenic Area • Special Landscape Areas • Wild Land Areas • Landscape Character Type. typically – 134 Sweeping Moorland and Flows – 136 Rocky Hills and Moorland – 142 Strath – Caithness and Sutherland

Criterion ix	Attribute	Description	Experiential considerations	Where to find relevant information
	b) climatic, topographic gradients and geological diversity: bog macroform diversity	The scale of the nominated property, 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 huge 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 such a diverse collection of surface patterning within a single area.	The extent to which the d**evelopment site** supports the presentation or appreciation of **Attribute (b)** - through the **scale** **geological diversity** **bog macroform diversity or** **surface patterning** of the WHS. How the presentation or appreciation of those aspects of Attribute (b) could be changed by the project/ development.	Baseline studies and impact assessment relating to: ▯ Sensitivity of landscape designations or categories forming the area of influence, which express the **scale, geological diversity, bog macroform diversity** or **surface patterning** of the WHS (examples as per Attribute (a) above) ▯ Cross-reference with hydrology, peat and ecology considerations can help understand where and how these aspects of the WHS are expressed, such as through data on: • Land use/ land cover, e.g. Scottish Habitat and Land Cover, typically: – D1 Raised and blanket bogs – D2 Valley mires, poor fens and transition mires – E3 Seasonally wet and wet grasslands – F4 Temperate shrub heathland

Criterion ix	Attribute	Description	Experiential considerations	Where to find relevant information
	c) archive it stores (4th 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 providing a 4th dimension to The Flow Country blanket bog. The processes responsible for the development of the blanket bog system and the ecosystems it supported can be scrutinised back through time across the vast area it covers using pollen records; plant sub-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).	The extent to which the **development site** supports the presentation or appreciation of Attribute (c) - through the **time-depth** or **archival role** of the WHS How the presentation or appreciation of those aspects of Attribute (b) could be changed by the project/ development.	Baseline studies and impact assessment relating to: ▯ Preservation of scientific features and environmental records ▯ Cultural heritage sites and landscapes with peatland connections
	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 a huge scope for research. Furthermore, the breadth of existing studies provides a fantastic foundation for future research	The extent to which the **development site** supports the presentation or appreciation of Attribute (d) – through the WHS's role as **type-site** for blanket bog study How the presentation or appreciation of those aspects of Attribute (d) could be changed by the project/ development.	Baseline studies and impact assessment relating to: ▯ Preservation of scientific features and environmental records

Criterion ix	Attribute	Description	Experiential considerations	Where to find relevant information
	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 producing a valuable carbon store. The Flow Country provides a superb example of ongoing sequestration, alongside carbon storage demonstrated by peat thicknesses which reach over 8 meters.	This Attribute is unlikely to be readily appreciated through experiential qualities – perceptible time-depth covered under Attribute (c)	
	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. European eel (classed by the IUCN as Critically Endangered) are also recorded from these catchments. Furthermore, the rivers of The Flow Country are maintaining strong populations of Atlantic salmon which are in global decline.	This Attribute is unlikely to be readily appreciated through experiential qualities – perceptible water flow and research roles covered under Attributes (b) and (d)	


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