# Sheffield Plan – Appropriate Assessment

## Sheffield City Council

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# Executive Summary

This addendum report presents the appropriate assessment undertaken on behalf of Sheffield City Council (SCC) by Cura Terrae Land & Nature under the Conservation of Habitats and Species Regulations (2017) as amended.

The assessment has relied upon previous iterations of the Habitats Regulations Assessment (HRA), appropriate assessment (AA) published in January 2023 and addenda produced in August 2023 and September 2024, as well as consultation responses from Natural England (NE) and the Peak District National Park Authority (PDNPA).

In addition, during the Examination of the draft Sheffield Plan, the Planning Inspectorate required SCC to put forward further allocation sites for housing and employment land which necessitate the assessment of the potential for these additional sites to give rise to Likely Significant Effects (LSE) on European Sites, and where these could not be ruled out based on objective information, a more detailed analysis to complete an AA was undertaken. The relevant European sites are the South Pennine Moors SAC, Peak District Moors (South Pennine Moors Phase 1) SPA and Peak District Dales SAC.

This addendum presents information to exclude the following LSE from further consideration:

- Air quality impacts; and
- Loss of Functionally Linked Land

Air quality impacts were excluded on the basis that the traffic model did not predict increases in traffic volumes or patterns which would result in either an increase of >1000 cars/LGV Annual Average Daily Traffic (AADT) or 200 HGV/buses AADT on the affected road network. The traffic model included potential increases arising from neighbouring Local Plans and therefore is an in-combination assessment of potential effects.

Loss of functionally linked land was excluded on the basis that the proposed new allocation sites all meet one or more of the criteria for exclusion from constituting effective functional habitat for the lifecycle of any species associated with the European sites, as developed and applied in previous HRA of the Sheffield Plan.

The potential for increased recreational pressure to give rise to LSE could not be ruled out and has been considered through the AA.

Mitigation measures developed in consultation with PDNPA are sufficiently developed to enable a robust conclusion that the Sheffield Plan will not have an adverse effect on the integrity of European sites.

The appropriate assessment concludes that **no adverse effect on the integrity of the European sites** will arise from the policies and allocations proposed within the Sheffield Plan.

# 1. Introduction

## 1.1 Background

1.1.1 Cura Terrae Land & Nature (formerly Ecus Limited and hereafter referred to as Cura Terrae) was commissioned by Sheffield City Council (SCC) to provide advice and support for the draft Sheffield Plan assessment under the Conservation of Habitats and Species Regulations (2017) as amended (the Habitats Regulations).

1.1.2 In 2022, Ecus Limited (Ecus) prepared a Habitats Regulations Assessment (HRA) Appropriate Assessment (AA) for SCC's draft Plan for the effects identified during the HRA screening report (The Sheffield Plan: Our City, Our Future - Integrated Impact Assessment - Scoping Report, September 2020).

1.1.3 Consultation with Natural England (NE) on the draft HRA identified several issues that had not been sufficiently identified at the screening stage and therefore had not been addressed in the HRA. Accordingly, Ecus produced an addendum to the HRA AA in August 2023 to address these additional effects.

1.1.4 Following consultation in the lead up to the Examination of the draft Plan, additional concerns were raised by both NE and the Peak District National Park Authority (PDNPA).

1.1.5 An additional HRA Addendum was produced by Ecus in 2024 to address NE's concerns.

1.1.6 Prior to the Examination, Statements of Common Ground were agreed with NE and PDNPA that confirmed their acceptance of the additional measures proposed by SCC.

1.1.7 In addition, the Planning Inspectorate wrote to SCC in February 2025 regarding the Inspectors' concerns about a potential shortfall in the supply of allocated sites for housing and employment. SCC has subsequently proposed additional site allocations to address the Inspectors' concerns.

1.1.8 In 2025, SCC commissioned Cura Terrae to provide a report to be adopted as the formal Appropriate Assessment of the draft Plan, including the additional proposed allocations for housing and employment.

1.1.9 This report relies upon the information provided in the former HRA reports and consultation with NE and PDNPA to underpin the Appropriate Assessment.

# 2. Legislation, Policy & Guidance

## 2.1 Legislation

2.1.1 The Conservation of Habitats and Species Regulations 2017 (as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019) (the Habitats Regulations); Regulation 63 (1) states that '*A competent authority, before deciding to undertake, or give any consent, permission, or other authorisation for, a plan or project which—*

*(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and*

*(b) is not directly connected with or necessary to the management of that site,*

*—must make an Appropriate Assessment of the implications for that site in view of that site's conservation objective.*'

2.1.2 Designated European sites include Special Areas of Conservation (SAC), Special Protection Areas (SPA). The Habitats Regulations also require candidate Special Areas of Conservation (cSAC) to be assessed in the same manner.

## 2.2 National Planning Policy Framework

2.2.1 The Government's overall planning policies for England are described in the National Planning Policy Framework[1]. The core underpinning principle of the Framework is the presumption in favour of sustainable development, defined as:

'*... meeting the needs of the present without compromising the ability of future generations to meet their own needs'*

2.2.2 One of the three overarching objectives of the NPPF is that planning should '*to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.*'

2.2.3 It is a matter of Government policy (NPPF paragraph 194) that sites designated under the 1971 Convention on Wetlands of International Importance (commonly known as Ramsar sites),

[1] Ministry of Housing, Communities and Local Government (December 2024). National Planning Policy Framework

possible SACs (pSACs) and potential SPAs (pSPA) (where consultation has been initiated) are also considered in the same way as SACs, SPAs and cSACs.

2.2.4 For the purposes of this report, all relevant sites as described above are collectively termed 'European Sites'.

## 2.3 Guidance

2.3.1 UK Government Guidance on the use of Habitats Regulations Assessment (2019) identifies a staged process to the assessment of the effects of plans or projects on these protected Sites. This guidance identifies three stages:

- Screening;
- Appropriate Assessment; and
- Derogation, which includes:
  - Mitigation and alternatives; and
  - Imperative Reasons of Overriding Public Interest (IROPI).

# 3. The HRA Process

## 3.1 Stage 1 – Screening

3.1.1 This is where it is established if an appropriate assessment is required and is referred to as 'screening'. Its purpose is to identify the likely impacts upon a European Site of a project or a plan, either alone or in combination with other plans or projects and consider whether these impacts are likely to be significant.

3.1.2 Following the judgement handed down by the Courts of Justice for the European Union (CJEU) in Case C-323/17 (referred to as People Over Wind), it is no longer appropriate to consider measures taken specifically to reduce a project's potential impact on European Sites into account at the screening stage.

3.1.3 For the purposes of this assessment, the term 'likely' is applied within the proper meaning of the term as defined in the corpus of EU environmental law. In that sense, a 'likely' significant effect is deemed herein to be not one which is more likely than not to occur, but rather one with a genuine possibility of occurrence, no matter how small that likelihood may be. That being so, the precautionary principle required in HRA is integrated into the very heart of the assessment methodology and the assessment is thus as robust as possible.

## 3.2 Stage 2 – Appropriate Assessment

3.2.1 Should Stage 1 determine that there is a 'likelihood' of an effect on the qualifying features of a site, or that any significant effects cannot be ruled out, then the assessment proceeds to Stage 2. This stage considers the potential impacts on the structure and function (integrity), as well as the conservation objectives of the European Sites that the plan or project may have either alone or in combination with other plans or projects. Additionally, where there are adverse effects, an assessment of the potential mitigation of those impacts is presented.

3.2.2 The definition for 'integrity' adopted in this report is that provided in ODPM Circular 06/2005 and Defra Circular 01/2005 - Biodiversity and Geological Conservation – Statutory obligations and their impact within the planning system, which defines integrity in the context of designated sites as:

*'The coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.'*

## 3.3 *Stage 3 – Derogation*

### ASSESSMENT OF ALTERNATIVE SOLUTIONS

3.3.1 This process examines alternative ways of achieving the objectives of the Proposal that avoid adverse impacts on the integrity of the European sites.

### IMPERATIVE REASONS OF OVERRIDING PUBLIC INTEREST

3.3.2 This stage is the main reason of exemption from Article 6(4) which examines whether there are imperative reasons of overriding public interest (IROPI), and where no alternative solutions exist, for allowing a plan or project which will have adverse effects on the integrity of a European Site to proceed.

# 4. Summary of Previous HRA

## 4.1 Habitats Regulations Assessment Appropriate Assessment January 2023

4.1.1 This report presented an Appropriate Assessment for three spatial options (Options 3, 4 and 5) for the delivery of growth, which includes housing and employment allocations, within SCC. It was concluded that Options 3, 4 and 5 have similar effects on each of the European Sites escalating through the Options, with effects from Option 5 being the greatest.

4.1.2 The conclusion for each of the options appraised is set out below for reference. Note, the options presented and discussed in paragraphs 4.1.4 to 4.1.12 below represent the **plan options from the January 2023 document. The Plan options have been expanded in the 2025 Integrated Impact Assessment (IIA) Update (Aecom, 2025)** but it is only necessary for this update of the AA to consider the Plan as now proposed (i.e. the submitted Plan (October 2023) plus the proposed additional housing and employment allocations in the Green Belt).

### Option 3

4.1.3 Option 3 focuses almost all housing and employment growth in the existing urban areas and proposes 270 dwellings on a brownfield site in the Green Belt located over 7 km from the European Sites. Option 3 will result in a small increase in the number and proximity of people to the European Sites, potential increased risk of wildfires, and a small increase in vehicle numbers. Given the distance from the development to the European Sites and project stage mitigation to be implemented as a result of SCC Policy ES4, emissions from traffic and impacts from air pollution are not predicted to occur.

4.1.4 The majority of anticipated impacts will not have an adverse effect on the integrity of the European Sites though impacts as a result of water pollution/quality, inappropriate weirs dams and other structure or water levels, disease, invasive species, population health, food availability within supporting habitat, landscape and vegetation structure, predation, adaption and resilience, habitat connectivity will result in an adverse effect to the integrity of the European Sites. Option 3, therefore, requires mandatory mitigation.

4.1.5 Mandatory mitigation measures for Option 3 were presented within the impact tables in Appendix 2 of the January 2023 HRA AA. With mitigation all of the effects are avoided or reduced such that there will be no adverse effect to the integrity of the European Sites.

4.1.6 The preferred option in the submitted local plan was Option 3, which concentrates development in the central area and remaining urban area, with the limited release of a single sustainably located brownfield site within the Green Belt.

## Option 4

4.1.7 Option 4 proposed up to 2,500 dwellings in Green Belt: a 9x increase from the 270 units proposed at Option 3. Some release of Green Belt land for employment would potentially be necessary under this option. Option 4 would result in a small increase in the number and proximity of people to the European Sites, potential increased risk of wildfires and a small increase in vehicle numbers. Given the distance from the development to the European Sites and project stage mitigation to be implemented as a result of SCC Policy ES4, emissions from traffic and impacts from air pollution are not predicted to occur.

4.1.8 The majority of anticipated impacts will not have an adverse effect on the integrity of the European Sites though impacts as a result of wildfire/arson, water pollution/quality, inappropriate weirs dams and other structure or water levels, disease, invasive species, population health, food availability within supporting habitat, landscape and vegetation structure, predation, adaption and resilience and habitat connectivity will result in an adverse effect to the integrity of the European Sites. Option 4 would therefore require mandatory mitigation.

4.1.9 Mandatory mitigation measures for Option 4 were presented within the impact tables in Appendix 2 of the January 2023 HRA AA. With mitigation all of the effects are avoided or reduced such that there will be no adverse effect to the integrity of the European Sites.

## Option 5

4.1.10 Option 5 sites would accommodate up to 8,500 dwellings in Green Belt: a 31x increase from the 270 units proposed at Option 3; and a 3.4x increase from 2,500 units proposed for Option 4. Further release of Green Belt land for employment would be necessary under this option. Given, project stage mitigation to be implemented as a result of SCC Policy ES4, emissions from traffic and impacts from air pollution are not predicted to occur.

4.1.11 The increase in units will increase likely impacts to the European Sites as a result of greater levels of activity (people and vehicles) in closer proximity though an increased risk of wildfires/arson, disease, invasive species, water pollution/quality, inappropriate weirs dams and other structure or water levels, population health, changes in species distribution, food availability within supporting habitat, landscape and vegetation structure, disturbance, predation, adaption and resilience will result in an adverse effect to the integrity of the European Sites. Option 5 would therefore require mandatory mitigation

4.1.12 Mandatory mitigation measures for Option 5 were presented within the impact tables in Appendix 2 of the January 2023 HRA AA. With mitigation all of the effects are avoided or reduced such that there will be no adverse effect to the integrity of the European Sites.

## 4.2 HRA Addendum August 2023

4.2.1 Following submission of the January 2023 HRA AA to NE for consultation, several issues were raised by NE:

- Excessive buffer zone
- Inadequate consideration of Functionally Linked Land
- Water impacts
- Air quality impacts
- Inadequate consideration of In-combination effects

4.2.2 The August 2023 Addendum concluded that there will be no effect from the plan alone on Functionally Linked Land and Water Resources. No further assessment was required.

4.2.3 There will be a likely significant effect from the project alone, and in-combination, arising from air quality changes from the increased population. Such effects can be suitably mitigated via the existing Air Quality Action Plan and the SYMCA and Sheffield Transport Strategies and that there is no need to make any changes to the proposed policies in the Plan.

4.2.4 There is the potential for in-combination effects arising from recreation to South Pennine Moors SPA and SAC and the Peak District Dales SAC. The existing policy approach set out in the emerging Plan (with some slight adjustments to wording) will be able to mitigate these effects.

## 4.3 HRA Addendum 2024

4.3.1 Following submission of the August 2023 Addendum, additional queries were raised by NE in relation to Functionally Linked Land and the separation of proposed allocated sites from the European Sites.

4.3.2 Additional text was added to the August 2023 document to provide clarity that any allocation which was within the agreed 2.5km buffer distance from the European Site met the criteria for exclusion from consideration as Functionally Linked Land due to the insignificant likelihood of the allocation sites supporting citation species of the European Sites.

4.3.3 The Addendum was published on the Examination website in May 2024.

## 4.4 NE Comments 2024

4.4.1 Following publication of the 2024 Addendum, NE requested additional information in relation to the Air Quality assessment within the HRA. This related to vehicular emissions on cross-Pennine routes close to the European sites.

## 4.5 Natural England Statement of Common Ground 2024

4.5.1 Prior to the 2024 Examination public hearings, Natural England and SCC undertook additional discussions. The following were the conclusions of those discussions:

- Natural England has previously provided advice based on the results shown in Table 7 of the Habitat Regulations Assessment Appropriate Assessment Addendum (August 2023). Table 7 shows there is an existing exceedance of 1% of the critical loads for ammonia and nitrogen deposition. In Table 6 of the HRAAA Addendum (August 2023) it is also demonstrated that, for these pollutants, there is an existing exceedance of the critical load/level based on the existing background. However, for NOx the current background levels are not in exceedance of the critical level, and the plan alone would not lead to an exceedance.
- Natural England has now concluded (in advice provided to SCC on 7th June 2024) that Likely Significant Effects from the plan alone can be ruled out. They advise that the number of traffic movements should be considered against the Natural England guidance NEA001, rather than the Design Manual for Roads and Bridges (DMRB). The Natural England guidance advises that '*Widely accepted Environmental Benchmarks for imperceptible impacts are set at 1% of the critical load or level, which is considered to be roughly equivalent to the Design Manual for Roads and Bridges (DMRB) guidance DMRB thresholds for changes in traffic flow of 1000AADT and for HDV 200AADT*' (para 4.25). Table 4 of the HRAAA Addendum (August 2023) shows that the modelled change in the Average Annual Daily Traffic Count is significantly less than 1,000 on all the main routes (A621, A625, A57 and A616) leading to the main cross-Pennine routes.
- Furthermore, Natural England now note that the information in Appendix 2 of the HRAAA Addendum suggests an assumption has been applied of equal weighting for both 1m and all increments up to 200m at all points on the assessed roads. Therefore, the pollution input from 1000 AADT would be less significant than this data is suggesting, as most of the roads have some distance separation between the actual road and the designated habitat.
- Natural England and the City Council agreed that further work was required to assess whether traffic flows in combination with other local plans, would undermine the achievement of the conservation objectives for the South Pennine Moors SAC/SPA and Peak District Dales SAC.
- Natural England did not have any further objections to the information provided in the HRA Addendum 2024.

## 4.6 PDNPA Comments 2024

4.6.1 Following publication of the 2024 Addendum, PDNPA raised concerns that the proposed housing allocations would result in increased recreational disturbance and or habitat damage to the European Sites.

4.6.2 PDNPA did not agree with the conclusion of the Addendum that recreational pressure would not be significantly increased, nor that the Zone of Influence used within the Addendum was sufficient to capture and adequately represent the potential for recreational impacts on the European Sites. Further, PDNPA did not consider the mitigation measures proposed within the HRA adopted by SCC to be sufficient to offset the potential recreational impacts.

## 4.7 PDNPA Statement of Common Ground 2024

4.7.1 NE commissioned a review of the Zone of Influence for recreational pressure on South Pennine Moors European Sites in 2024 (Footprint Ecology, 2024). The conclusion of this report indicated that 75% of people interviewed within the European Sites who had come directly from home, lived up to 24.4km from the European Site boundary which covers the entire Sheffield Plan area.

4.7.2 In updating the Sheffield Plan Habitat Regulations Assessment Appropriate Assessment (HRAAA), Sheffield City Council acknowledges that, when considering the Sheffield Plan, individually or in combination with other local plans, it cannot be concluded beyond reasonable doubt that the achievement of the conservation objectives for the South Pennine Moors SAC/SPA and Peak District Dales SAC would not potentially be undermined due to recreational pressure. Mitigation is therefore necessary to avoid an adverse effect on the integrity of the European Sites.

4.7.3 SCC and PDNPA agreed that a Mitigation Delivery Plan will be produced to identify and cost appropriate mitigation measures. The supporting text for Policy GS5 has been amended to clarify this requirement. A broad outline of the mitigation measures appropriate to reduce potential impacts arising from increased recreational pressure has been agreed between the parties, with SCC leading on the production of the costed Mitigation Delivery Plan, which will be completed in consultation with the PDNPA and other consultees within 12 months of the adoption of the Sheffield Plan.

4.7.4 Both parties agreed that modifications to policies NC15 and T1 of the Sheffield Plan are also necessary to help secure appropriate mitigation measures:

- Modifications to Policy NC15 ‘Creating Open Space in Residential Developments’ should assist in securing the provision of alternative natural greenspace which can help to deflect visitor pressure away from the European sites.
- Policy T1 ‘Enabling Sustainable Travel’ should identify the need to encourage sustainable travel choices between urban Sheffield and the Peak District

4.7.5 The Mitigation Delivery Plan will include an agreed funding plan to ensure adequate delivery of reasonable mitigation measures, whilst ensuring that the scale of developer contributions are at a level that will not undermine the conclusions of the Whole Plan Viability Assessment (VI01-VI03). It has also been agreed that SCC will secure proportionate developer contributions towards mitigation measures from development comprising 10 or more new dwellings. A further modification to Policy DC1 in the submitted Sheffield Plan has been proposed to make it clear what will be expected of developers. Policy GS5 also includes a cross reference to Policy DC1.

4.7.6 Table 1 below presents the broad mitigation measures agreed between SCC and PDNPA (drawn from Appendix 1 of the draft Statement of Common Ground).

**Table 1: Potential Mitigation Measures to Reduce Recreational Pressure on the South Pennine Moors SPA/SAC and Peak District Dales SAC**

| Mitigation Measure | Comments | Potential Delivery | Priority |
|---|---|---|---|
| Provision of alternative green space | • Main Modification to Policy NC15 promoting the creation/enhancement of accessible natural greenspace that would help deflect visitors away from the SPA/SAC.<br>• SCC to identify and promote Green Spaces capable of providing both "short duration" and "day visit" that could deflect visitor pressure from the Peak District National Park | SCC | H |
| Moorland path restoration and maintenance | • Moorland path restoration and maintenance<br>• Path condition assessment, impact appraisal, design and delivery required.<br>• Some known existing problem sites:<br>  ○ White Path Moss + Whitestones<br>  ○ Burbage + Houndkirk<br>  ○ Totley Moss + White Edge<br>  ○ Clod Hall Moor<br>  ○ Stanage Edge<br>  ○ Bamford Edge + access paths<br>  ○ Higger Tor + Carl Wark<br>  ○ Higher Shelf Stones<br>• Capital investment and ongoing maintenance.<br>• Restoration and maintenance should include reinstatement of damage from trampling and erosion to adjoining areas | SMP<br>SCC<br>PDNPA<br>MftF | H |
| Increased ranger presence on the ground | • Volunteer fire wardens but also a need for increased professional ranger presence to guarantee resource, manage volunteers and carry out work not suited to volunteers (e.g. engagement with a view to enforcement). Provides an effective means of preventing wildfire and controlling disturbance by dogs off leads. | SMP<br>SCC<br>PDNPA<br>National Trust/RSPB | H |

| Mitigation Measure | Comments | Potential Delivery | Priority |
|---|---|---|---|
| Strategic Fire Management | • Wildfire prevention, mitigation and firefighting strategy. | PD Moorland Group<br>PDNPA<br>MftF<br>NE | H |
| Sustainable transport options | • Main modification to Policy T1 proposed to highlight need to improve sustainable travel choices between urban Sheffield and the Peak District | SCC | M |
| Signage and information boards (including Fire Information Boards) | • Limited evidence of the positive impact of signage. To ensure robust communication this is considered a necessary measure.<br>• Needs to avoid potential conflict with Natural Zone qualities.<br>• Implement in line with “Peak District Proud” messaging. | SCC<br>PDNPA<br>NT/RSPB<br>LAF | M |
| Provision of off-site information | • Co-ordination of messaging.<br>• Opportunity to promote responsible visiting through “Outdoor City” branding<br>• Include managing social media | SCC<br>PDNPA<br>NT/RSPB<br>SMP | M |
| Management of car parking | • Review whether management of car parking provision/deterrence in different locations could help mitigate recreational impacts on the SPA/SAC. | SCC<br>PDNPA<br>NT/RSPB<br>SMP | M |

| Mitigation Measure | Comments | Potential Delivery | Priority |
|---|---|---|---|
| Allocated areas for BBQ including sand buckets/fire extinguishers (where appropriate) introduction of penalties for people using BBQs outside allocated areas | • Assess the impact of BBQ site provision<br>• Potential conflicts with landscape objectives and existing planning policies, and largely outside Sheffield City Council's control.<br>• Strategic assessment of risks and opportunities required- some evidence provision is counterproductive.<br>• Resourcing of infrastructure and personnel required. | Peak District Moorland Group<br>FOG<br>SMP | M |
| Monitoring plant disease and isolating contaminated areas | • Potentially helpful but may have a minor impact. | Natural England?<br>Landowners | L |
| Monitoring and controlling invasive species | • Potentially helpful but likely to have a minor impact. | Natural England?<br>Landowners | L |
| Provision of dog waste and litter bins | • Potential conflict with landscape.<br>• Adequate servicing unlikely.<br>• "Take home" messaging favoured via signage and off-site information. | N/A | N/A |

# 5. Amendments following the 2024 Examination

## 5.1 Introduction

5.1.1 The requirement to bring forward additional allocation sites (employment and housing) requires consideration through the HRA process.

5.1.2 The approach now being proposed to address the Inspectors concerns is effectively an iteration of Option 4 that was described in the January 2023 AA. It has been considered as one of an expanded range of options in an update to the Integrated Impact Assessment (IIA) (Aecom, 2025).

5.1.3 The level and distribution of growth now proposed is based on the Inspectors' preliminary conclusions and would accommodate higher levels of growth than the submitted Plan. It would involve providing land to enable the delivery of 38,012 additional homes and 237.2 hectares of employment land.

5.1.4 The proposed revised spatial approach would allow for the release of sustainably located Green Belt sites on land that has not been previously developed, where it would be possible to demonstrate site-specific exceptional circumstances. This would be in addition to the release of a single brownfield site in the Green Belt at the former Norton Aerodrome. It would involve release of greenfield land in the Green Belt land to provide around 3,539 more homes, as well as limited release of further land for employment. The strategy still seeks to maximise the opportunities in the urban area.

5.1.5 Appendix B below sets out revised impact and mitigation tables which take account of the submitted plan plus the proposed additional site allocations. The Appendix supersedes Tables A1i to A1iii, A2i to A2iii and A3i to A3 iii from Appendix 2 of the January 2023 AA. . Minor corrections to the separation distances between the proposed allocated housing and employment sites and the European sites have also been accounted for. Within the 2023 AA, both recommended and mandatory mitigation measures were identified but, in this update, all mitigation measures identified in Appendix B should be regarded as mandatory.

## 5.2 Air Quality

5.2.1 The potential for air quality impacts arising from the proposed Sheffield Plan have been identified as restricted to those arising from increases or changes in traffic volumes and/or patterns on the Affected Road Network (ARN).

5.2.2 The methodology for assessment of potential air quality impacts arising from these changes has been amended from the 2024 Addendum following advice from NE. The assessment uses the NE guidance NEA001[2]. This follows a stepped approach as below:

- Step 1: Does the proposal give rise to emissions which are likely to reach a European site?
- Step 2: Are the qualifying features of sites within 200m of a road sensitive to air pollution?
- Step 3: Could the sensitive qualifying features of the site be exposed to emissions?
- Step 4: Application of screening thresholds
  - Step 4a: apply the threshold alone
  - Step 4b: apply the threshold in-combination with emissions from other road traffic plans and projects
- Step 5: Advise on the need for Appropriate assessment where thresholds are exceeded, either alone or in-combination

5.2.3 Step 1: The Sheffield Plan has the potential to give rise to pollutants from traffic emissions and certain forms of development that are likely to reach South Pennine Moors SAC. The January 2023 HRA AA concluded that traffic emissions, in the form of Oxides of Nitrogen (NOx), ammonia ($NH_3$) and Nitrogen deposition (N-Dep) are the only areas of air quality concern.

5.2.4 Step 2: Qualifying features of the South Pennine Moors SAC are sensitive to these emissions. The lower critical load for NOx, $NH_3$ and N-dep are given after each habitat in brackets. The site is designated for blanket bog (5kgN/ha/yr, 1$\mu m^{-3}$, 30$\mu m^{-3}$), European dry heath (10 kgN/ha/yr, 1 or 3 $\mu m^{-3}$, 30 $\mu m^{-3}$), Northern Atlantic wet heath (10 kgN/ha/yr, 1 or 3 $\mu m^{-3}$, 30 $\mu m^{-3}$) and transition mires and quaking bog (5 kgN/ha/yr, 1 $\mu m^{-3}$, 30 $\mu m^{-3}$).

5.2.5 Step 3: The potential for qualifying features to be exposed to these emissions exists as an interrogation of the priority habitat data set held on the Multi-Agency Geographic Information for the Countryside (MAGIC[3]) online resource indicates the presence of these habitats within close proximity of the ARN.

5.2.6 Step 4: The road traffic model takes into account the potential changes in road traffic patterns arising from the Sheffield Plan and neighbouring Local Plans[4]. This gives an in-combination data set for the potential change in road traffic. This approach is accepted to be suitably precautionary

[2] Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations, June 2018
[3] Magic.gov.uk
[4] The reference case models contain National Transport Economic Model (NTEM) growth, so they include a representation of all local plan traffic in other local plans. The Sheffield Plan models have the Sheffield Plan traffic added on top of NTEM growth – this means that the AADT flows take account of other local plans (although they are controlled to an overall level of NTEM growth).

and gives a realistic outlook on the future changes in air quality emissions likely to arise as a result of local planning proposals.

5.2.7 Table 2 below presents the baseline Annual Average Daily Traffic (AADT), Future AADT and modelled change in total traffic volume for Heavy Goods Vehicles (HGV)/buses and other traffic (cars and LGV).

**Table 2: Traffic Model Output Summary**

| Road Name | Direction | 2029 | | | | | | 2039 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | HGV/Bus | | | Cars/LGV | | | HGV/Bus | | | Cars/LGV | | |
| | | Without Plan | With Plan | Change | Without Plan | With Plan | Change | Without Plan | With Plan | Change | Without Plan | With Plan | Change |
| A621 (Abbeydale Road South) | South-west | 123 | 125 | **2** | 2,307 | 2,482 | **175** | 112 | 102 | **-10** | 2,669 | 3,067 | **398** |
| | North-east | 102 | 95 | **-7** | 1,790 | 1,776 | **-14** | 90 | 82 | **-8** | 1,966 | 2,015 | **50** |
| A625 (Ecclesall Road South) | Eastbound | 74 | 75 | **0** | 3,933 | 4,029 | **96** | 72 | 72 | **0** | 4,224 | 4,426 | **202** |
| | Westbound | 170 | 168 | **-2** | 4,388 | 4,337 | **-51** | 156 | 154 | **-2** | 4,628 | 4,566 | **-62** |
| A57 (Manchester Road) | Westbound | 42 | 42 | **0** | 2,904 | 3,134 | **230** | 41 | 41 | **0** | 3,355 | 3,660 | **305** |
| | Eastbound | 70 | 69 | **-1** | 3,491 | 3,507 | **16** | 71 | 71 | **0** | 3,890 | 3,812 | **-78** |
| A616 (Stocksbridge Bypass) | Westbound | 350 | 350 | **-0** | 6,232 | 6,303 | **71** | 299 | 279 | **-20** | 6,849 | 6,832 | **-17** |
| | Eastbound | 507 | 492 | **-14** | 5,614 | 5,614 | **0** | 445 | 434 | **-11** | 6,080 | 6,023 | **-57** |

5.2.8 Step 5: None of the changes within the ARN trigger the threshold value as set out by NE and their advice as set out in the Statement of Common Ground 2024 indicates that NE are content that the plan alone, or in combination with other plans, will not give rise to significant effects and can be screened out of further assessment.

## 5.3 Potential Loss of Functionally Linked Land

5.3.1 The South Pennine Moors SAC is designated for habitats only and therefore there is no requirement to assess this European site for effects on functionally linked land.

5.3.2 The Peak District Moors (South Pennine Moors Phase 1) SPA is designated for bird species which are highly mobile and may depend on areas of land outside of the SPA boundary for part of their lifecycle (e.g. foraging), therefore an assessment of the potential for such functionally linked land has been undertaken.

5.3.3 The Peak District Dales SAC is designated for both habitats and species. No functional link exists between the citation habitats and allocation sites; therefore, they have no requirement to assess these elements of the SAC. Species within the designation comprise white-clawed crayfish *Austropotamobius pallipes,* brook lamprey *Lampetra planeri* and bullhead *Cottus gobio*. However, the SAC lies outside of the assessed zone of influence for functional linkage and therefore, there is no requirement to assess this European site for effects on functionally linked land.

5.3.4 The criteria used in the HRA Addendum August 2023 have been applied to determine whether a site which falls within 2.5km of the SPA boundary may provide suitable habitat for citation bird species of the SPA.

5.3.5 LSE can be ruled out if the location site meets one or more of the following criteria:

- Brownfield sites;
- Within the immediate curtilage of an existing farm building or house;
- Within a settlement boundary or within 25 m of a settlement boundary;
- Within 25 m of a main road;
- Woodland; and
- Arable.

5.3.6 The additional allocation sites and the assessment against these criteria are presented in Table 3 below.

**Table 3: New allocation sites – Functionally Linked Land assessment**

| Sheffield Plan Reference Number | HELAA Reference Number | Description | Does it meet the criteria for exclusion? |
|---|---|---|---|
| NES36 | S04101 | Employment<br>Land to the south of the M1 Motorway Junction 35, Ecclesfield | Yes<br>Within 25m of a main road.<br>Partial woodland.<br>Partial arable. |
| NES37 | S03034 & S03051 | Housing<br>Land to the South of the Wheel S35 8RY and land between Creswick Avenue and Yew Lane, S35 8QN, Ecclesfield | Yes<br>Within 25m of a settlement boundary. |
| NES38 | S03028 & S03100 | Housing<br>Land to the west of Grenoside Grange, Fox Hill Road, S35 8QS and Holme Lane Farm, Halifax Road, Grenoside, S35 8PB | Yes<br>Within 25m of a settlement boundary. |
| NES39 | S03035 | Housing<br>Land at Wheel Lane and Middleton Lane, S35 8PU | Yes<br>Within 25m of a settlement boundary. |
| NWS30 | S03032 | Housing<br>Land at Forge Lane, Oughtibridge, S35 0GG | Yes<br>Within 25m of a settlement boundary.<br>Within 25m of a main road. |
| NWS31 | S03483 | Housing<br>Land between Storth Lane and School Lane | Yes<br>Within 25m of a settlement boundary. |
| SES29 | S03061 | Mixed Use (Housing & Employment)<br>Handsworth Hall Farm | Yes<br>Within 25m of a settlement boundary.<br>Arable. |
| SES30 | S02502 & S03020 | Housing<br>Land between Bramley Lane and Beaver Hill Road, Handsworth | Yes<br>Within 25m of a settlement boundary. |

| Sheffield Plan Reference Number | HELAA Reference Number | Description | Does it meet the criteria for exclusion? |
|---|---|---|---|
| | | | Arable |
| SS19 | S02898 | Housing<br>Land to the south of White Lane, Gleadless Townend, S12 3HS | Yes<br>Within 25m of a settlement boundary. |
| SWS18 | S03076 | Housing<br>Land between Lodge Moor Road and Redmires Conduit | Yes<br>Within 25m of a settlement boundary. |
| SWS19 | GBOM06 | Housing<br>Land to the North of Parkers Lane, Dore | Yes<br>Within 25m of a settlement boundary. |
| CH03 | S03112 | Employment<br>Land bordered by M1, Thorncliffe Road, Warren Lane, and White Lane | Yes<br>Within 25m of a settlement boundary.<br>Arable. |
| CH04 | S04639 | Employment<br>Hesley Wood, North of Cowley Hill, Chapeltown | Yes<br>Brownfield.<br>Partial woodland |
| CH05 | S03038 | Housing<br>Land to the East of Chapeltown Road, Chapeltown, S35 9ZX | Yes<br>Within 25m of a settlement boundary.<br>Arable. |
| N/A | GBM001 | No longer in consideration | ~~Yes~~<br>~~Within 25m of a settlement boundary.~~<br>~~Within 25m of a main road.~~ |
| N/A | ~~S03004~~ | No longer in consideration | ~~Yes~~<br>~~Within 25m of a settlement boundary.~~<br>~~Within 25m of a main road.~~ |

| Sheffield Plan Reference Number | HELAA Reference Number | Description | Does it meet the criteria for exclusion? |
|---|---|---|---|
| N/A | ~~S03005~~ | No longer in consideration | ~~Yes~~<br>~~Within 25m of a settlement boundary.~~<br>~~Within 25m of a main road.~~ |
| N/A | ~~S03033~~ | No longer in consideration | ~~Yes~~<br>~~Within 25m of a settlement boundary.~~ |
| N/A | ~~S03049~~ | No longer in consideration | ~~Yes~~<br>~~Within 25m of a settlement boundary.~~<br>~~Within 25m of a main road.~~ |
| N/A | ~~S04030~~ | No longer in consideration | ~~Yes~~<br>~~Within 25m of a settlement boundary.~~<br>~~Arable.~~ |

5.3.7 All of the sites presented as additional allocation sites meet one or more of the above criteria and therefore will not present suitable functionally linked land for citation species. No LSE are predicted in relation to the loss of functionally linked land.

## 5.4 Recreational Pressure

5.4.1 As the Zone of Influence for recreational pressure has been increased to 24.4km for this assessment, all housing and employment sites from the January 2023 HRA AA and the new allocation sites are included in this assessment. This is reflected in the revised impact and mitigations tables in Appendix B.

5.4.2 Increased recreational pressure has several potential negative effects on sensitive habitats and species, including disturbance of species, erosion of sensitive habitats, accidental fire or arson, disease and invasive non-native species introduction/spread.

5.4.3 In the absence of mitigation, it has therefore been concluded that adverse impacts on the integrity of the European sites could result from recreational pressures.

5.4.4 A broad outline of the mitigation measures proposed is contained within the Statement of Common Ground between SCC and PDNPA and reproduced in Table 1 (Section 4) above. While it is acknowledged that more detail is required to complete the Mitigation Delivery Plan with multiple partner organisations, the outline measures have been committed to by SCC, and none of the measures are controversial or novel approaches which would undermine confidence in their success.

5.4.5 In addition, SCC has proposed amendments to Policies NC15, DC1 and T1 which will provide for developer contributions to be levied to fund the mitigation, strengthen the requirement for Suitable Natural Alternative Greenspace and further encourage modal shift/sustainable transport options.

5.4.6 Therefore, it is concluded that the measures outlined will be sufficient to reduce recreational impacts arising from the Sheffield Plan alone and in-combination with neighbouring plans to a level at which no adverse effect on site integrity occurs.

# 6. Conclusion

6.1.1 This report represents the appropriate assessment undertaken by Cura Terrae Land & Nature on behalf of Sheffield City Council.

6.1.2 Likely Significant Effects were identified that could lead to impacts on the South Pennine Moors SPA/SAC and Peak District Dales SAC through the January 2023 HRA AA, August 2023 HRA Addendum and 2024 HRA Addendum, as well as through consultation with Natural England and the Peak District National Park Authority.

6.1.3 Additional sites have been proposed for allocation through the examination process, and these sites have been assessed in light of the LSE identified to date.

6.1.4 Where LSE cannot be ruled out based on objective information, further assessment of the potential for adverse effects on the integrity of any European Site has been undertaken in light of the conservation objectives of those sites.

6.1.5 Where adverse effects, either from the Sheffield Plan alone or in-combination with other plans or projects, cannot be ruled out based on objective information, mitigation measures have been proposed to control the risk to these sites.

6.1.6 A robust conclusion that the Sheffield Plan, alone or in-combination with other plans or projects, will have **no adverse effect on the integrity of the European sites** has been reached.

# 7. References

Aecom (2025) Sheffield Plan Integrated Impact Assessment.

Defra and Natural England, (2021). Habitats regulations assessments: protecting a European site How a competent authority must decide if a plan or project proposal that affects a European site can go ahead. Available at Habitats regulations assessments: protecting a European site - GOV.UK (www.gov.uk). Accessed 24/04/2025

Ecus (January 2023) Sheffield Plan Habitats Regulations Assessment Appropriate Assessment.

Ecus (August 2023) Sheffield Plan Habitats Regulations Assessment Addendum.

Ecus (September 2024) Sheffield Plan Habitats Regulations Assessment Addendum.

Footprint Ecology (2024) A review of the Zone of Influence for recreational pressure on South Pennine Moors European Sites.

Natural England (2014) European Site Conservation Objectives for South Pennine Moors (Phase II) SPA (UK9007022). Accessed 23/04/2025.

Natural England (2014) Site Improvement Plan: South Pennine Moors (SIP225). Accessed 23/04/2025.

Natural England (2018) European Site Conservation Objectives for Peak District Dales SAC (UK0019859). Accessed 23/04/2025.

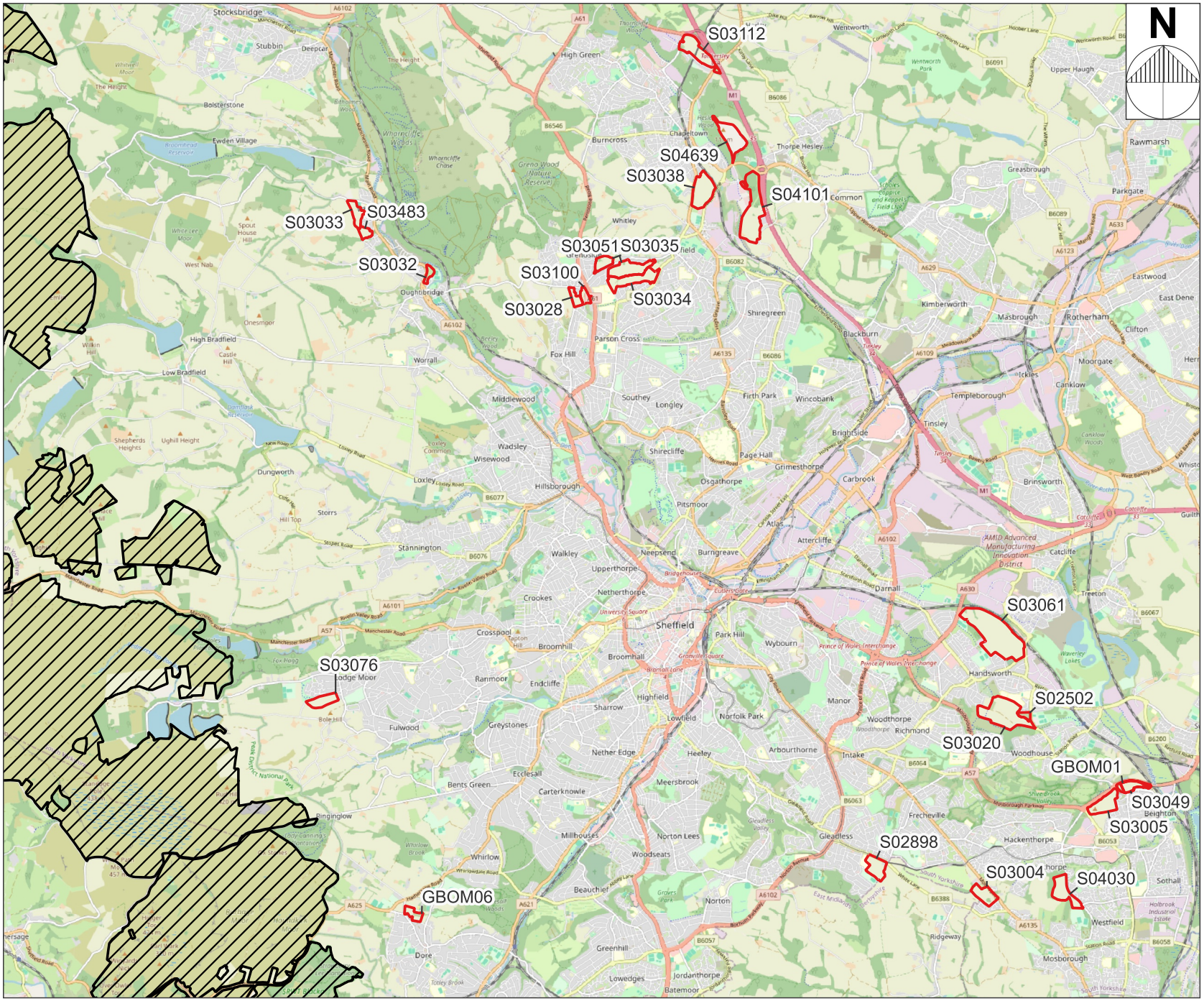
Natural England (2018) Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations (NEA001). Accessed 21/04/2025.

Natural England (2021) Identification of Functionally Linked Land supporting Special Protection Areas (SPAs) waterbirds in the North West of England (NECR361). Accessed 23/04/2025.

HMSO (2017) The Conservation of Habitats and Species Regulations (SI 2017/1012).

HMSO (2019) The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (SI 2019/579).

# Appendix A: Figures




CuraTerrae

## Key

- Additional Sites Considered in the AA
- Special Protection Area: Peak District Moors (South Pennine Moors Phase 1)

0 1,000 2,000 3,000 4,000 5,000 m

Sheffield County Council
Sheffield Plan HRA

Figure 1
Additional Sites Considered in the AA and SPA

| | | | |
|---|---|---|---|
| | | | |
| A | 28.04.25 | PFP | - |
| Rev | Date | Drawn by | Checked by |

| Site centred on: | SK 35926 88299 |
|---|---|



May 2025 | Scale: 1:100,000@A4 | Drg.Ref: 23619 - ECO - 1 - A

# Appendix B: Impact Tables

**Table A1 Submitted Draft Sheffield Plan and Proposed Additional Site Allocations - Impacts on South Pennine Moors SAC with mitigation recommendations.**

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| **H4030 European dry heaths** | Public access/disturbance – an increase in the numbers of visitors has potential to damage/destroy/degrade this habitat through direct impacts from increased footfall/footpath use and/or creation of new tracks/trails through the habitat and inconsiderate parking as a result of increased vehicle numbers and indirect impacts from littering. The remoteness of some areas of the SAC means they are less likely to be visited by high numbers of visitors and impacts are more likely to result within those areas in closer proximity to car parking/rest facilities and main trails.<br><br>Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal cycles can damage notified features and affect bird nesting activity, which in turn could affect the population viability of the species. | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 1 km from the Habitats Site.<br><br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | No adverse effect on the integrity of the qualifying feature. |
| | Wildfire/arson - Increase likelihood of fires from BBQ use, careless disposal of cigarettes during dry weather periods or deliberate fire starting are also more likely within areas in closer proximity to car parking/rest facilities and main trails, with fires having potential to impact across significant areas where the conditions are suitable. Fire damage may result in damage/destruction of vegetation structure, species composition and the long-term loss of habitat.<br><br>Some studies indicate that fire may increase opportunity for early colonising species, increasing species variance though there is considerable variability across sites dependant on the vegetation type and structure, local environmental and site conditions, and existing management regime. | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the Habitats Site and potential increased risk of fires. | • Provision of alternative green space<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | No adverse effect on the integrity of the qualifying feature. |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| | Air Pollution: impact of atmospheric nitrogen deposition, incorporating increased vehicles numbers - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily.<br><br>Nitrogen deposition is as a result of air pollution, with a significant contributor being increased vehicle movement in the area. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br><br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System1. | No adverse effect on the integrity of the qualifying feature. |
| | Disease – Introduction of disease may result in impact to species life cycles or growth habits and long-term reduction in biodiversity including the possible reduction/loss/fragmentation of the habitat in the long term.<br><br>Weakened plants are more likely to be outcompeted (resulting in habitat succession), be more susceptible to secondary disease and pests which may damage/destroy/degrade the existing habitat. | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the Habitats Sites, though any increased likelihood of the introduction or spread of disease as a result will be low. | • Monitor disease incidents and occurrences within similar habitats in the vicinity, nationally and internationally.<br>• Monitor the long- and short-term health of habitats and indicator species in order to identify early signs of disease.<br>• Have action plans in place which identify potential disease risks, how to shut down/reduce potential contamination pathways and how to respond should the disease be identified within the site at any time, e.g. by isolating contaminated areas. | No adverse effect on the integrity of the qualifying feature. |
| | Invasive species - Introduction/colonisation of invasive species may result in native plants getting shaded/outcompeted or the introduction of pests which will damage/destroy/degrade the existing dry heath habitat. Invasive plants potentially carry disease which may further impact species within the habitat. | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the Habitats Site though any increased likelihood of the introduction or spread of invasive non-native species as a result will not have an adverse effect on the integrity of the Habitats Site. | • Monitor the status of invasive species within similar habitats in the vicinity, nationally and internationally.<br>• Monitor habitats and indicator species in order to identify early signs of invasive infiltration. Promote citizen science to monitor for high-risk species and provide information on identification and ways to reduce introduction of invasive species.<br>• Have action plans in place which identify potential risks, from invasive species, how to shut down/reduce potential contamination pathways and how to respond should they be identified within the site, e.g. by isolating and treating contaminated areas. | No adverse effect on the integrity of the qualifying feature. |
| | Conservation Objectives - H4030 European dry heaths | | | |
| | Extent and spatial distribution – A reduction in the extent and spatial distribution of the qualifying feature within the Habitats Site would predominantly result where development was taking | The extent and spatial distribution of European dry heaths within the Habitats Site will not experience any measurable reduction or contraction in its range/geographic spread as a result of the development of the proposed allocated sites as there will be no | • None required – no impacts identified. | N/A |

[1] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| | place in the Habitats Site and would result in direct land take.<br><br>Some measurable reduction or contraction in area, range or geographic spread of the qualifying feature could also be the result of a significant impact (or significant in-combination impacts) from those 'potential impacts' highlighted above. | encroachment into the Habitats Site. The closest proposed site allocation is located approximately 1 km from the Habitats Site boundary; therefore, no impacts are likely to result.<br><br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | | |
| | Structure and function of vegetation – Maintenance of the structure and function of the qualifying feature may be impacted by damage/destruction/degradation of the habitat as a result of 'potential impacts' identified above. | Impacts to vegetation community structure and functionality (including transitional areas, community/vegetation composition, connectivity, adaptation and resilience) will not result from the proposed allocated sites due to those reasons discussed above. | • None required – no impacts identified. | N/A |
| | Conservation measures including nutrient cycling – Active maintenance and restoration using appropriate management measures is required to maintain and restore the structure, functions and supporting processes associated with the qualifying feature. | The submitted plan plus the proposed additional site allocations development areas fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site, including soil restoration or other management prescriptions which may impact nutrient cycling, water quality or hydrology. | • None required – no impacts identified. | N/A |
| | Air, water quality and hydrology - This habitat is considered sensitive to changes in air quality and supported by surface and/or ground water.<br><br>Exceedance of critical air pollutant values may modify the chemical status of the habitat substrate while changes to the quality and quantity of water supply (notably at sensitive times of year) may result in the accelerating or damaging plant growth, altering vegetation structure and composition and causing the loss of sensitive typical species associated with the Habitats Site. | Given the distance between proposed allocated sites and the Habitats Site impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • See Air Pollution impacts, above. | No adverse effect on the integrity of the qualifying feature. |
| **H7130 Blanket bogs (priority feature when active)** | Public access/disturbance – an increase in the numbers of visitors has potential to damage/destroy/degrade this habitat through direct impacts from increased footfall/footpath use and/or creation of new tracks/trails through the habitat and inconsiderate parking as a result of increased vehicle numbers and indirect impacts from littering. The remoteness of some areas of the SAC means they are less likely to be visited by high numbers of visitors and impacts are more likely to result within those areas in closer proximity to car parking/rest facilities and main trails. | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 1 km from the Habitats Site.<br><br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers | No adverse effect on the integrity of the qualifying feature. |
| | Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal | | | |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| | cycles can damage notified features and affect bird nesting activity, which in turn could affect the population viability of the species. | | (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | |
| | Wildfire/arson - Increase likelihood of fires from BBQ use, careless disposal of cigarettes during dry weather periods or deliberate fire starting are also more likely within areas in closer proximity to car parking/rest facilities and main trails, with fires having potential to impact across significant areas where the conditions are suitable. Fire damage may result in damage/destruction of vegetation structure, species composition and the long-term loss of habitat. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily.<br>Some studies indicate that fire may increase opportunity for early colonising species, increasing species variance though there is considerable variability across sites dependant on the vegetation type and structure, local environmental and site conditions, and existing management regime. | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the Habitats Site and potential increased risk of fires. | • Provision of alternative green space<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | No adverse effect on the integrity of the qualifying feature. |
| | Air Pollution: impact of atmospheric nitrogen deposition, incorporating increased vehicles numbers - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily.<br>Nitrogen deposition is as a result of air pollution, with a significant contributor being increased vehicle movement in the area. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System2. | No adverse effect on the integrity of the qualifying feature. |
| | Disease – Introduction of disease may result in impact to species life cycles or growth habits and long-term reduction in | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the | • Monitor disease incidents and occurrences within similar habitats | No adverse effect on the integrity of the |

[2] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| | biodiversity including the possible reduction/loss/fragmentation of the habitat in the long term.<br><br>Weakened plants are more likely to be outcompeted (resulting in habitat succession), be more susceptible to secondary disease and pests which may damage/destroy/degrade the existing habitat. | Habitats Sites though any increased likelihood of the introduction or spread of disease as a result will not have an adverse effect on the integrity of the Habitats Site. | in the vicinity, nationally and internationally.<br>• Monitor the long- and short-term heath of habitats and indicator species in order to identify early signs of disease.<br>• Have action plans in place which identify potential disease risks, how to shut down/reduce potential contamination pathways and how to respond should the disease be identified within the site at any time, e.g. by isolating contaminated areas. | qualifying feature. |
| | Conservation Objectives - H7130 Blanket bogs | | | |
| | <u>Extent and spatial distribution</u> – A reduction in the extent and spatial distribution of the qualifying feature within the Habitats Site would predominantly result where development was taking place in the Habitats Site and would result in direct land take.<br><br>Some measurable reduction or contraction in area, range or geographic spread of the qualifying feature could also be the result of a significant impact (or significant in-combination impacts) from those 'potential impacts' highlighted above. | The extent and spatial distribution of blanket bogs within the Habitats Site will not experience any measurable reduction or contraction in its range/geographic spread as a result of the development of proposed allocated sites as there will be no encroachment into the Habitats Site. The closest allocated sites are located approximately 1 km from the Habitats Site boundary; therefore, no impacts are likely to result.<br><br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| | <u>Structure and function of vegetation</u> – Maintenance of the structure and function of the qualifying feature may be impacted by damage/destruction/degradation of the habitat as a result of 'potential impacts' identified above. | Impacts to vegetation community structure and functionality (including transitional areas, community/vegetation composition, connectivity, adaptation and resilience) will not result from proposed allocated sites due to those reasons discussed above. | • None required – no impacts identified. | N/A |
| | <u>Conservation measures including nutrient cycling</u> – Active maintenance and restoration using appropriate management measures is required to maintain and restore the structure, functions and supporting processes associated with the qualifying feature. | The proposed allocated sites fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site, including soil restoration or other management prescriptions which may impact nutrient cycling, water quality or hydrology. | • None required – no impacts identified. | N/A |
| | <u>Air, water quality and hydrology</u> - This habitat is considered sensitive to changes in air quality and supported by surface and/or ground water.<br><br>Exceedance of critical air pollutant values may modify the chemical status of the habitat substrate while changes to the quality and quantity of water supply (notably at sensitive times of year) may result in the accelerating or damaging plant growth, altering vegetation structure and composition and causing the loss of sensitive typical species associated with the Habitats Site. | Given the distance between proposed allocated sites and the Habitats Site impacts to air quality from residential development sites are not considered likely to have an adverse effect on the integrity of the Habitats Site. | • None required – no impacts identified. | N/A |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| **H91A0 Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles** | Wildfire/arson - Increase likelihood of fires from BBQ use, careless disposal of cigarettes during dry weather periods or deliberate fire starting are also more likely within areas in closer proximity to car parking/rest facilities and main trails, with fires having potential to impact across significant areas where the conditions are suitable. Fire damage may result in damage/destruction of vegetation structure, species composition and the long-term loss of habitat.<br><br>Some studies indicate that fire may increase opportunity for early colonising species, increasing species variance though there is considerable variability across sites dependant on the vegetation type and structure, local environmental and site conditions, and existing management regime. | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the Habitats Site and potential increased risk of fires. | • Provision of alternative green space<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | No adverse effect on the integrity of the qualifying feature. |
| | Air Pollution: impact of atmospheric nitrogen deposition, incorporating increased vehicles numbers - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily.<br><br>Nitrogen deposition is as a result of air pollution, with a significant contributor being increased vehicle movement in the area. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br><br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System3. | No adverse effect on the integrity of the qualifying feature. |
| | Disease – Introduction of disease may result in impact to species life cycles or growth habits and long-term reduction in biodiversity including the possible reduction/loss/fragmentation of the habitat in the long term.<br><br>Weakened plants are more likely to be outcompeted (resulting in habitat succession), be more susceptible to secondary disease and pests which may damage/destroy/degrade the existing habitat. | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the Habitats Sites though any increased likelihood of the introduction or spread of disease as a result will not have an adverse effect on the integrity of the Habitats Site. | • Monitor disease incidents and occurrences within similar habitats in the vicinity, nationally and internationally.<br>• Monitor the long- and short-term heath of habitats and indicator species in order to identify early signs of disease.<br>• Have action plans in place which identify potential disease risks, how to shut down/reduce potential contamination pathways and how to respond should the disease be identified within the site at any time, e.g. by isolating contaminated areas. | No adverse effect on the integrity of the qualifying feature. |
| | Invasive species – Introduction/colonisation of invasive species may result in native plants getting shaded/outcompeted or the introduction of pests which will damage/destroy/degrade the | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the Habitats Sites though any increased likelihood of the introduction or | • Monitor the status of invasive species within similar habitats in the vicinity, nationally and internationally.<br>• Monitor habitats and indicator species in order to identify early | No adverse effect on the integrity of the qualifying feature. |

[3] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| | existing dry heath habitat. Invasive plants potentially carry disease which may further impact species within the habitat. | spread of invasive non-native species as a result will not have an adverse effect on the integrity of the Habitats Site. | signs of invasive infiltration. Promote citizen science to monitor for high-risk species and provide information on identification and ways to reduce introduction of invasive species.<br>• Have action plans in place which identify potential risks, from invasive species, how to shut down/reduce potential contamination pathways and how to respond should they be identified within the site, e.g. by isolating and treating contaminated areas. | |
| | Conservation Objectives - H91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles | | | |
| | Extent and spatial distribution – A reduction in the extent and spatial distribution of the qualifying feature within the Habitats Site would predominantly result where development was taking place in the Habitats Site and would result in direct land take.<br>Some measurable reduction or contraction in area, range or geographic spread of the qualifying feature could also be the result of a significant impact (or significant in-combination impacts) from those 'potential impacts' highlighted above. | The extent and spatial distribution of old sessile oak woods within the Habitats Site will not experience any measurable reduction or contraction in its range/geographic spread as a result of the development of allocated sites as there will be no encroachment into the Habitats Site. The closest allocated site is located approximately 1 km from the Habitats Site boundary; therefore, no impacts are likely to result.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| | Structure and function of vegetation – Maintenance of the structure and function of the qualifying feature may be impacted by damage/destruction/degradation of the habitat as a result of 'potential impacts' identified above. This includes compaction of root zones of mature or ancient trees which could result from increased activity (e.g. walkers, vehicles etc.). | Impacts to vegetation community structure and functionality (including transitional areas, community/vegetation composition, connectivity, adaptation and resilience) will not result from proposed allocated sites due to those reasons discussed above. | • None required – no impacts identified. | N/A |
| | Conservation measures including nutrient cycling – Active maintenance and restoration using appropriate management measures is required to maintain and restore the structure, functions and supporting processes associated with the qualifying feature. | The proposed allocated sites fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site, including soil restoration or other management prescriptions which may impact nutrient cycling, water quality or hydrology. | • None required – no impacts identified. | N/A |
| | Air, water quality and hydrology - This habitat is considered sensitive to changes in air quality and supported by surface and/or ground water.<br>Exceedance of critical air pollutant values may modify the chemical status of the habitat substrate while changes to the quality and quantity of water supply (notably at sensitive times of year) may result in the accelerating or damaging plant | Given the distance between the proposed allocated sites and the Habitats Site impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • See Air Pollution impacts, above. | No adverse effect on the integrity of the qualifying feature. |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| | growth, altering vegetation structure and composition and causing the loss of sensitive typical species associated with the Habitats Site. | | | |
| **H4010 Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath** | Public access/disturbance – an increase in the numbers of visitors has potential to damage/destroy/degrade this habitat through direct impacts from increased footfall/footpath use and/or creation of new tracks/trails through the habitat and inconsiderate parking as a result of increased vehicle numbers and indirect impacts from littering. The remoteness of some areas of the SAC means they are less likely to be visited by high numbers of visitors and impacts are more likely to result within those areas in closer proximity to car parking/rest facilities and main trails. | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest proposed allocated sites are located approximately 1 km from the Habitats Site.<br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | No adverse effect on the integrity of the qualifying feature. |
| | Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal cycles can damage notified features and affect bird nesting activity, which in turn could affect the population viability of the species. | | | |
| | Wildfire/arson - Increase likelihood of fires from BBQ use, careless disposal of cigarettes during dry weather periods or deliberate fire starting are also more likely within areas in closer proximity to car parking/rest facilities and main trails, with fires having potential to impact across significant areas where the conditions are suitable. Fire damage may result in damage/destruction of vegetation structure, species composition and the long-term loss of habitat.<br>Some studies indicate that fire may increase opportunity for early colonising species, increasing species variance though there is considerable variability across sites dependant on the vegetation type and structure, local environmental and site conditions, and existing management regime. | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the Habitats Site and potential increased risk of fires. | • Provision of alternative green space<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | No adverse effect on the integrity of the qualifying feature. |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| | Air Pollution: impact of atmospheric nitrogen deposition, incorporating increased vehicles numbers - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily.<br><br>Nitrogen deposition is as a result of air pollution, with a significant contributor being increased vehicle movement in the area. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br><br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System4. | No adverse effect on the integrity of the qualifying feature. |
| | Invasive species – Introduction/colonisation of invasive species may result in native plants getting shaded/outcompeted or the introduction of pests which will damage/destroy/degrade the existing dry heath habitat. Invasive plants potentially carry disease which may further impact species within the habitat. | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the Habitats Sites though any increased likelihood of the introduction or spread of invasive non-native species as a result will not have an adverse effect on the integrity of the Habitats Site. | • Monitor the status of invasive species within similar habitats in the vicinity, nationally and internationally.<br>• Monitor habitats and indicator species in order to identify early signs of invasive infiltration. Promote citizen science to monitor for high-risk species and provide information on identification and ways to reduce introduction of invasive species.<br>• Have action plans in place which identify potential risks, from invasive species, how to shut down/reduce potential contamination pathways and how to respond should they be identified within the site, e.g. by isolating and treating contaminated areas. | No adverse effect on the integrity of the qualifying feature. |
| | Conservation Objectives - H4010 Northern Atlantic wet heaths with Erica tetralix; Wet heathland with cross-leaved heath | | | |
| | Extent and spatial distribution – A reduction in the extent and spatial distribution of the qualifying feature within the Habitats Site would predominantly result where development was taking place in the Habitats Site and would result in direct land take.<br><br>Some measurable reduction or contraction in area, range or geographic spread of the qualifying feature could also be the result of a significant impact (or significant in-combination impacts) from those 'potential impacts' highlighted above. | The extent and spatial distribution of Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath within the Habitats Site will not experience any measurable reduction or contraction in its range/geographic spread as a result of the development of the proposed allocated sites as there will be no encroachment into the Habitats Site. The closest allocated site is located approximately 1 km from the Habitats Site boundary; therefore, no impacts are likely to result.<br><br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| | Structure and function of vegetation – Maintenance of the | Impacts to vegetation community structure and functionality (including | • None required – no impacts identified. | N/A |

[4] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| | structure and function of the qualifying feature may be impacted by damage/destruction/degradation of the habitat as a result of 'potential impacts' identified above. | transitional areas, community/vegetation composition, connectivity, adaptation and resilience) will not result from the proposed allocated sites due to those reasons discussed above. | | |
| | Conservation measures including nutrient cycling – Active maintenance and restoration using appropriate management measures is required to maintain and restore the structure, functions and supporting processes associated with the qualifying feature. | The proposed allocated sites all fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site, including soil restoration or other management prescriptions which may impact nutrient cycling, water quality or hydrology. | • None required – no impacts identified. | N/A |
| | Air, water quality and hydrology - This habitat is considered sensitive to changes in air quality and supported by surface and/or ground water.<br>Exceedance of critical air pollutant values may modify the chemical status of the habitat substrate while changes to the quality and quantity of water supply (notably at sensitive times of year) may result in the accelerating or damaging plant growth, altering vegetation structure and composition and causing the loss of sensitive typical species associated with the Habitats Site. | Given the distance between the proposed allocated sites and the Habitats Site impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • See Air Pollution impacts, above. | No adverse effect on the integrity of the qualifying feature. |
| **H7140 Transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking` surface** | Public access/disturbance – an increase in the numbers of visitors has potential to damage/destroy/degrade this habitat through direct impacts from increased footfall/footpath use and/or creation of new tracks/trails through the habitat and inconsiderate parking as a result of increased vehicle numbers and indirect impacts from littering. The remoteness of some areas of the SAC means they are less likely to be visited by high numbers of visitors and impacts are more likely to result within those areas in closer proximity to car parking/rest facilities and main trails. | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 1 km from the Habitats Site.<br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) given the relatively small size and location of these areas impacts will not have an adverse effect on the integrity of the qualifying feature. | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development | No adverse effect on the integrity of the qualifying feature. |
| | Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal cycles can damage notified features and affect bird nesting activity, which in turn could affect the population viability of the species. | | | |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | | | within the Plan area to fund the above. | |
| | Wildfire/arson - Increase likelihood of fires from BBQ use, careless disposal of cigarettes during dry weather periods or deliberate fire starting are also more likely within areas in closer proximity to car parking/rest facilities and main trails, with fires having potential to impact across significant areas where the conditions are suitable. Fire damage may result in damage/destruction of vegetation structure, species composition and the long-term loss of habitat.<br><br>Some studies indicate that fire may increase opportunity for early colonising species, increasing species variance though there is considerable variability across sites dependant on the vegetation type and structure, local environmental and site conditions, and existing management regime. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the Habitats Site and potential increased risk of fires. | • Provision of alternative green space<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | No adverse effect on the integrity of the qualifying feature. |
| | Air Pollution: impact of atmospheric nitrogen deposition, incorporating increased vehicles numbers - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily.<br><br>Nitrogen deposition is as a result of air pollution, with a significant contributor being increased vehicle movement in the area. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br><br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System5. | No adverse effect on the integrity of the qualifying feature. |
| | Conservation Objectives - H7140 Transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking` surface | | | |
| | Extent and spatial distribution – A reduction in the extent and spatial distribution of the qualifying feature within the Habitats Site would predominantly result where development was taking place in the Habitats Site and would result in direct land take.<br><br>Some measurable reduction or contraction in area, range or geographic spread of the qualifying feature could also be the result of a significant impact (or significant in-combination | Transition mires and quaking bogs has only been recorded within a small section of Leek Moors SSSI (to the east of Macclesfield, over 30 km from the SCC boundary) therefore, they will not experience any reduction or contraction in its range/geographic spread as a result of the development of the proposed allocated sites as there will be no encroachment inside (or within proximity) of the Habitats Site.<br><br>None of the 'potential impacts' assessed for this qualifying feature will | • None required – no impacts identified. | N/A |

[5] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| | impacts) from those 'potential impacts' highlighted above. | have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | | |
| | Structure and function of vegetation – Maintenance of the structure and function of the qualifying feature may be impacted by damage/destruction/degradation of the habitat as a result of 'potential impacts' identified above. | Impacts to vegetation community structure and functionality (including transitional areas, community/vegetation composition, connectivity, adaptation and resilience) will not result from proposed allocated sites due to those reasons discussed above, including the rarity of this habitat type. | • None required – no impacts identified. | N/A |
| | Conservation measures including nutrient cycling – Active maintenance and restoration using appropriate management measures is required to maintain and restore the structure, functions and supporting processes associated with the qualifying feature. | The submitted plan plus the proposed additional site allocations development areas fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site, including soil restoration or other management prescriptions which may impact nutrient cycling, water quality or hydrology. | • None required – no impacts identified. | N/A |
| | Air, water quality and hydrology - This habitat is considered sensitive to changes in air quality and water chemistry.<br>Atmospheric pollutants may modify the chemical status of the habitat substrate and result in accelerating or damaging plant growth, notably lichens, bryophytes and mosses, altering vegetation structure and composition and causing the loss of sensitive species associated with this habitat type. | Given the distance between the proposed allocated sites and the transition mires and quaking bogs, impacts to air quality from development sites will not have an adverse effect on the integrity of the Habitats Site. | • None required – no impacts identified. | N/A |

**Table A2. Submitted Draft Sheffield Plan and Proposed Additional Site Allocations - Impacts on Peak District Dales SAC with mitigation recommendations**

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| **H4030 European dry heaths** | Public access/disturbance – an increase in the numbers of visitors has potential to damage/destroy/degrade this habitat through direct impacts from increased footfall/footpath use and/or creation of new tracks/trails through the habitat and inconsiderate parking as a result of increased vehicle numbers and indirect impacts from littering. The remoteness of some areas of the SAC means they are less likely to be visited by high numbers of visitors and impacts are more likely to result within those areas in closer proximity to car parking/rest facilities and main trails.<br><br>Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal cycles can damage notified features and affect bird nesting activity, which in turn could affect the population viability of the species. | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 8.6 km from the Habitats Site.<br><br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | No adverse effect on the integrity of the qualifying feature. |
| | Air Pollution: impact of atmospheric nitrogen deposition, incorporating increased vehicles numbers - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily.<br><br>Nitrogen deposition is as a result of air pollution, with a significant contributor being increased vehicle movement in the area. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br><br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System[1].. | No adverse effect on the integrity of the qualifying feature. |
| | Climate change – Changes required for habitats and ecological systems to adapt and be resilient to wider environmental changes, e.g. precipitation and temperature, which are likely to affect the | The Peak District Dales SAC has been identified by Natural England as being in the top 10% of potential climate change refugia sites within England. These are areas which offer conditions for species to survive | • Industry standard mitigation to be implemented at the project stage, to include ensuring new development includes an assessment of energy efficiency, potential pollution sources and mitigation for all | No adverse effect on the integrity of the |

[1] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| | extent, distribution, composition and functioning of a qualifying feature.<br><br>Vulnerability is likely to lead to a decline in the habitat, subsequently leaving vulnerable to disease, succession, invasive plants etc. | longer under extreme climate scenarios, and so the resilience of the SAC is of greater national significance.<br><br>The development of the proposed allocated sites is unlikely to result in a significant impact to climate change independently but good practice and relevant SCC policies regarding the environment and energy efficiency will be followed when assessing proposed developments for each of the sites to address any site specific issues as they arise. | stages of the development. | qualifying feature. |
| | Conservation Objectives - H4030 European dry heaths | | | |
| | <u>Extent and spatial distribution</u> – A reduction in the extent and spatial distribution of the qualifying feature within the Habitats Site would predominantly result where development was taking place in the Habitats Site and would result in direct land take.<br><br>Some measurable reduction or contraction in area, range or geographic spread of the qualifying feature could also be the result of a significant impact (or significant in-combination impacts) from those 'potential impacts' highlighted above. | The extent and spatial distribution of European dry heaths within the Habitats Site will not experience any measurable reduction or contraction in its range/geographic spread as a result of the development of proposed allocated sites as there will be no encroachment into the Habitats Site. The closest proposed allocated site is located 8.6 km from the Habitats Site boundary, therefore, no impacts are likely to result.<br><br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| | <u>Structure and function of vegetation</u> – Maintenance of the structure and function of the qualifying feature may be impacted by damage/destruction/degradation of the habitat as a result of 'potential impacts' identified above. | Impacts to vegetation community structure and functionality (including transitional areas, community/vegetation composition, connectivity, adaptation and resilience) are unlikely to result from proposed allocated sites due to those reasons discussed above. | • None required – no impacts identified. | N/A |
| | <u>Conservation measures including nutrient cycling</u> – Active maintenance and restoration using appropriate management measures is required to maintain and restore the structure, functions and supporting processes associated with the qualifying feature. | The submitted plan plus the proposed additional site allocations all fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site, including soil restoration or other management prescriptions which may impact nutrient cycling, water quality or hydrology. | • None required – no impacts identified. | N/A |
| | <u>Air quality</u> - This habitat is considered sensitive to changes in air quality and supported by surface and/or ground water.<br><br>Exceedance of critical air pollutant values may modify the chemical status of the habitat substrate while changes to the quality and quantity of water supply (notably at sensitive times of year) may result in the accelerating or damaging plant growth, altering vegetation structure and composition and causing the loss of sensitive typical species associated with the Habitats Site. | Given the distance between proposed allocated sites and the Habitats Site impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • See Air Pollution impacts, above. | No adverse effect on the integrity of the qualifying feature. |
| H6130 Calaminarian | <u>Public access/disturbance</u> – an increase in the numbers of visitors has potential to damage/destroy/degrade this habitat through | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield | • Provision of alternative green space | No adverse effect on the integrity of the |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| grasslands of the *Violetalia calaminariae*; Grasslands on soils rich in heavy metals | direct impacts from increased footfall/footpath use and/or creation of new tracks/trails through the habitat and inconsiderate parking as a result of increased vehicle numbers and indirect impacts from littering. The remoteness of some areas of the SAC means they are less likely to be visited by high numbers of visitors and impacts are more likely to result within those areas in closer proximity to car parking/rest facilities and main trails.<br><br>Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal cycles can damage notified features and affect bird nesting activity, which in turn could affect the population viability of the species. | sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 8.6 km from the Habitats Site.<br><br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | qualifying feature. |
| | Air Pollution: impact of atmospheric nitrogen deposition, incorporating increased vehicles numbers - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily.<br><br>Nitrogen deposition is as a result of air pollution, with a significant contributor being increased vehicle movement in the area. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br><br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System[2]. | No adverse effect on the integrity of the qualifying feature. |
| | Climate change – Changes required for habitats and ecological systems to adapt and be resilient to wider environmental changes, e.g. precipitation and temperature, which are likely to affect the extent, distribution, composition and functioning of a qualifying feature.<br><br>Vulnerability is likely to lead to a decline in the habitat, | The Peak District Dales SAC has been identified by Natural England as being in the top 10% of potential climate change refugia sites within England. These are areas which offer conditions for species to survive longer under extreme climate scenarios, and so the resilience of the SAC is of greater national significance.<br><br>The development of proposed allocated sites is unlikely to result in a | • Industry standard mitigation to be implemented at the project stage, to include ensuring new development includes an assessment of energy efficiency, potential pollution sources and mitigation for all stages of the development. | No adverse effect on the integrity of the qualifying feature. |

[2] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| | subsequently leaving vulnerable to disease, succession, invasive plants etc. | significant impact to climate change independently but good practice and relevant SCC policies regarding the environment and energy efficiency will be followed when assessing proposed developments for each of the sites to address any site specific issues as they arise. | | |
| | Conservation Objectives - H6130 Calaminarian grasslands of the *Violetalia calaminariae*; Grasslands on soils rich in heavy metals | | | |
| | Extent and spatial distribution – A reduction in the extent and spatial distribution of the qualifying feature within the Habitats Site would predominantly result where development was taking place in the Habitats Site and would result in direct land take.<br>Some measurable reduction or contraction in area, range or geographic spread of the qualifying feature could also be the result of a significant impact (or significant in-combination impacts) from those 'potential impacts' highlighted above. | The extent and spatial distribution of grasslands within the Habitats Site will not experience any measurable reduction or contraction in its range/geographic spread as a result of the development of proposed allocated sites as there will be no encroachment into the Habitats Site. The closest proposed allocated site is located 8.6 km from the Habitats Site boundary, therefore, no impacts are likely to result.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| | Structure and function of vegetation – Maintenance of the structure and function of the qualifying feature may be impacted by damage/destruction/degradation of the habitat as a result of 'potential impacts' identified above. | Impacts to vegetation community structure and functionality (including transitional areas, community/vegetation composition, connectivity, adaptation and resilience) are unlikely to result from proposed allocated sites due to those reasons discussed above. | • None required – no impacts identified. | N/A |
| | Conservation measures including nutrient cycling – Active maintenance and restoration using appropriate management measures is required to maintain and restore the structure, functions and supporting processes associated with the qualifying feature. | Proposed allocated sites fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site, including soil restoration or other management prescriptions which may impact nutrient cycling, water quality or hydrology. | • None required – no impacts identified. | N/A |
| | Air quality - This habitat is considered sensitive to changes in air quality and supported by surface and/or ground water.<br>Exceedance of critical air pollutant values may modify the chemical status of the habitat substrate while changes to the quality and quantity of water supply (notably at sensitive times of year) may result in the accelerating or damaging plant growth, altering vegetation structure and composition and causing the loss of sensitive typical species associated with the Habitats Site. | Given the distance between the proposed allocated sites and the Habitats Site impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System[3]. | No adverse effect on the integrity of the qualifying feature. |
| **H6210 Semi-natural dry grasslands and scrubland facies on calcareous** | Public access/disturbance – an increase in the numbers of visitors has potential to damage/destroy/degrade this habitat through direct impacts from increased footfall/footpath use and/or creation of new tracks/trails through the habitat and inconsiderate parking as a result of increased vehicle numbers and indirect impacts from | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground | No adverse effect on the integrity of the qualifying feature. |

[3] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
|---|---|---|---|---|
| **substrates (*Festuco-Brometalia*) (* important orchid sites); Dry grasslands and scrublands on chalk or limestone** | littering. The remoteness of some areas of the SAC means they are less likely to be visited by high numbers of visitors and impacts are more likely to result within those areas in closer proximity to car parking/rest facilities and main trails.<br><br>Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal cycles can damage notified features and affect bird nesting activity, which in turn could affect the population viability of the species. | located approximately 8.6 km from the Habitats Site.<br><br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | |
| | Air Pollution: impact of atmospheric nitrogen deposition, incorporating increased vehicles numbers - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily.<br><br>Nitrogen deposition is as a result of air pollution, with a significant contributor being increased vehicle movement in the area. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br><br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System[4]. | No adverse effect on the integrity of the qualifying feature. |
| | Climate change – Changes required for habitats and ecological systems to adapt and be resilient to wider environmental changes, e.g. precipitation and temperature, which are likely to affect the extent, distribution, composition and functioning of a qualifying feature.<br><br>Vulnerability is likely to lead to a decline in the habitat, subsequently leaving vulnerable to disease, succession, invasive plants etc. | The Peak District Dales SAC has been identified by Natural England as being in the top 10% of potential climate change refugia sites within England. These are areas which offer conditions for species to survive longer under extreme climate scenarios, and so the resilience of the SAC is of greater national significance.<br><br>The development of the proposed allocated sites is unlikely to result in a significant impact to climate change independently but good practice and relevant SCC policies regarding the environment and energy | • Industry standard mitigation to be implemented at the project stage, to include ensuring new development includes an assessment of energy efficiency, potential pollution sources and mitigation for all stages of the development. | No adverse effect on the integrity of the qualifying feature. |

[4] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | | efficiency will be followed when assessing proposed developments for each of the sites to address any site specific issues as they arise. | | |
| | Conservation Objectives - H6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites); Dry grasslands and scrublands on chalk or limestone | | | |
| | Extent and spatial distribution – A reduction in the extent and spatial distribution of the qualifying feature within the Habitats Site would predominantly result where development was taking place in the Habitats Site and would result in direct land take.<br>Some measurable reduction or contraction in area, range or geographic spread of the qualifying feature could also be the result of a significant impact (or significant in-combination impacts) from those 'potential impacts' highlighted above. | The extent and spatial distribution of grasslands within the Habitats Site will not experience any measurable core reduction or contraction in its range/geographic spread as a result of the development of proposed allocated sites as there will be no encroachment into the Habitats Site. The closest proposed allocated site is located 8.6 km from the Habitats Site boundary, therefore, no impacts are likely to result.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| | Structure and function of vegetation – Maintenance of the structure and function of the qualifying feature may be impacted by damage/destruction/degradation of the habitat as a result of 'potential impacts' identified above. | Impacts to vegetation community structure and functionality (including transitional areas, community/vegetation composition, connectivity, adaptation and resilience) are unlikely to result from proposed allocated sites due to those reasons discussed above. | • None required – no impacts identified. | N/A |
| | Conservation measures – Active maintenance and restoration using appropriate management measures is required to maintain and restore the structure, functions and supporting processes associated with the qualifying feature. | The proposed allocated sites all fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site, including soil restoration or other management prescriptions which may impact nutrient cycling, water quality or hydrology. | • None required – no impacts identified. | N/A |
| | Air quality - This habitat is considered sensitive to changes in air quality and supported by surface and/or ground water.<br>Exceedance of critical air pollutant values may modify the chemical status of the habitat substrate while changes to the quality and quantity of water supply (notably at sensitive times of year) may result in the accelerating or damaging plant growth, altering vegetation structure and composition and causing the loss of sensitive typical species associated with the Habitats Site. | Given the distance between the proposed allocated sites and the Habitats Site impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • See Air Pollution impacts, above. | No adverse effect on the integrity of the qualifying feature. |
| **H7230 Alkaline fens; Calcium-rich spring water-fed fens** | Public access/disturbance – an increase in the numbers of visitors has potential to damage/destroy/degrade this habitat through direct impacts from increased footfall/footpath use and/or creation of new tracks/trails through the habitat and inconsiderate parking as a result of increased vehicle numbers and indirect impacts from littering. The remoteness of some areas of the SAC means they | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 8.6 km from the Habitats Site. | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management | No adverse effect on the integrity of the qualifying feature. |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | are less likely to be visited by high numbers of visitors and impacts are more likely to result within those areas in closer proximity to car parking/rest facilities and main trails.<br><br>Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal cycles can damage notified features and affect bird nesting activity, which in turn could affect the population viability of the species. | While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | |
| | Air Pollution: impact of atmospheric nitrogen deposition, incorporating increased vehicles numbers - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily.<br><br>Nitrogen deposition is as a result of air pollution, with a significant contributor being increased vehicle movement in the area. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br><br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System[5]. | No adverse effect on the integrity of the qualifying feature. |
| | Climate change – Changes required for habitats and ecological systems to adapt and be resilient to wider environmental changes, e.g. precipitation and temperature, which are likely to affect the extent, distribution, composition and functioning of a qualifying feature.<br><br>Vulnerability is likely to lead to a decline in the habitat, subsequently leaving vulnerable to disease, succession, invasive plants etc. | The Peak District Dales SAC has been identified by Natural England as being in the top 10% of potential climate change refugia sites within England. These are areas which offer conditions for species to survive longer under extreme climate scenarios, and so the resilience of the SAC is of greater national significance.<br><br>The development of the proposed site allocations is unlikely to result in a significant impact to climate change independently but good practice and relevant SCC policies regarding the environment and energy efficiency will be followed when assessing proposed developments for each of the sites to address any site specific issues | • Industry standard mitigation to be implemented at the project stage, to include ensuring new development includes an assessment of energy efficiency, potential pollution sources and mitigation for all stages of the development. | No adverse effect on the integrity of the qualifying feature. |

[5] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | | as they arise. | | |
| | Conservation Objectives - H7230 Alkaline fens; Calcium-rich spring water-fed fens | | | |
| | Extent and spatial distribution – A reduction in the extent and spatial distribution of the qualifying feature within the Habitats Site would predominantly result where development was taking place in the Habitats Site and would result in direct land take.<br>Some measurable reduction or contraction in area, range or geographic spread of the qualifying feature could also be the result of a significant impact (or significant in-combination impacts) from those 'potential impacts' highlighted above. | Alkaline fens; Calcium-rich spring water-fed fens has only been recorded within a small section of Monks Dale (over 19 km to the south west of the SCC boundary) therefore, they will not experience any reduction or contraction in its range/geographic spread as a result of the development of the proposed allocated sites as there will be no encroachment inside (or within proximity) of the Habitats Site.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| | Structure and function of vegetation – Maintenance of the structure and function of the qualifying feature may be impacted by damage/destruction/degradation of the habitat as a result of 'potential impacts' identified above. | Impacts to vegetation community structure and functionality (including transitional areas, community/vegetation composition, connectivity, adaptation and resilience) are unlikely to result from proposed allocated sites due to those reasons discussed above. | • None required – no impacts identified. | N/A |
| | Conservation measures – Active maintenance and restoration using appropriate management measures is required to maintain and restore the structure, functions and supporting processes associated with the qualifying feature. | The proposed allocated sites fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site, including soil restoration or other management prescriptions which may impact nutrient cycling, water quality or hydrology. | • None required – no impacts identified. | N/A |
| | Air quality - This habitat is considered sensitive to changes in air quality and supported by surface and/or ground water.<br>Exceedance of critical air pollutant values may modify the chemical status of the habitat substrate while changes to the quality and quantity of water supply (notably at sensitive times of year) may result in the accelerating or damaging plant growth, altering vegetation structure and composition and causing the loss of sensitive typical species associated with the Habitats Site. | Given the distance between the proposed allocated sites and the Habitats Site impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • See Air Pollution impacts, above. | No adverse effect on the integrity of the qualifying feature. |
| **H8120 Calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii*); Base-rich scree** | Public access/disturbance – an increase in the numbers of visitors has potential to damage/destroy/degrade this habitat through direct impacts from increased footfall/footpath use and/or creation of new tracks/trails through the habitat and inconsiderate parking as a result of increased vehicle numbers and indirect impacts from littering. The remoteness of some areas of the SAC means they are less likely to be visited by high numbers of visitors and impacts are more likely to result within those areas in closer proximity to car parking/rest facilities and main trails. | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 8.6 km from the Habitats Site.<br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District National Park Authority will adequately reduce the effects and therefore, | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards) | No adverse effect on the integrity of the qualifying feature. |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal cycles can damage notified features and affect bird nesting activity, which in turn could affect the population viability of the species. | recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | |
| | Air Pollution: impact of atmospheric nitrogen deposition, incorporating increased vehicles numbers - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily.<br>Nitrogen deposition is as a result of air pollution, with a significant contributor being increased vehicle movement in the area. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System[6]. | No adverse effect on the integrity of the qualifying feature. |
| | Climate change – Changes required for habitats and ecological systems to adapt and be resilient to wider environmental changes, e.g. precipitation and temperature, which are likely to affect the extent, distribution, composition and functioning of a qualifying feature.<br>Vulnerability is likely to lead to a decline in the habitat, subsequently leaving vulnerable to disease, succession, invasive plants etc. | The Peak District Dales SAC has been identified by Natural England as being in the top 10% of potential climate change refugia sites within England. These are areas which offer conditions for species to survive longer under extreme climate scenarios, and so the resilience of the SAC is of greater national significance.<br>The development of the proposed allocated sites is unlikely to result in a significant impact to climate change independently but good practice and relevant SCC policies regarding the environment and energy efficiency will be followed when assessing proposed developments for each of the sites to address any site specific issues as they arise. | • Industry standard mitigation to be implemented at the project stage, to include ensuring new development includes an assessment of energy efficiency, potential pollution sources and mitigation for all stages of the development. | No adverse effect on the integrity of the qualifying feature. |
| | Conservation Objectives - H8120 Calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii*); Base-rich scree | | | |
| | Extent and spatial distribution – A reduction in the extent and | The extent and spatial distribution of base-rich scree within the | • None required – no impacts identified. | N/A |

[6] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | spatial distribution of the qualifying feature within the Habitats Site would predominantly result where development was taking place in the Habitats Site and would result in direct land take.<br><br>Some measurable reduction or contraction in area, range or geographic spread of the qualifying feature could also be the result of a significant impact (or significant in-combination impacts) from those 'potential impacts' highlighted above. | Habitats Site will not experience any measurable core reduction or contraction in its range/geographic spread as a result of the development of proposed allocated sites as there will be no encroachment into the Habitats Site. The closest allocated site is located 8.6 km from the Habitats Site boundary, therefore, no impacts are likely to result.<br><br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | | |
| | Structure and function of vegetation – Maintenance of the structure and function of the qualifying feature may be impacted by damage/destruction/degradation of the habitat as a result of 'potential impacts' identified above. | Impacts to vegetation community structure and functionality (including transitional areas, community/vegetation composition, connectivity, adaptation and resilience) are unlikely to result from proposed allocated sites due to those reasons discussed above. | • None required – no impacts identified. | N/A |
| | Conservation measures – Active maintenance and restoration using appropriate management measures is required to maintain and restore the structure, functions and supporting processes associated with the qualifying feature. | All proposed allocated sites fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site, including soil restoration or other management prescriptions which may impact nutrient cycling, water quality or hydrology. | • None required – no impacts identified. | N/A |
| | Air quality - This habitat is considered sensitive to changes in air quality and supported by surface and/or ground water.<br><br>Exceedance of critical air pollutant values may modify the chemical status of the habitat substrate while changes to the quality and quantity of water supply (notably at sensitive times of year) may result in the accelerating or damaging plant growth, altering vegetation structure and composition and causing the loss of sensitive typical species associated with the Habitats Site. | Given the distance between the proposed allocated sites and the Habitats Site impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • See Air Pollution impacts, above. | No adverse effect on the integrity of the qualifying feature. |
| **H8210 Calcareous rocky slopes with chasmophytic vegetation; Plants in crevices in base-rich rocks** | Public access/disturbance – an increase in the numbers of visitors has potential to damage/destroy/degrade this habitat through direct impacts from increased footfall/footpath use and/or creation of new tracks/trails through the habitat and inconsiderate parking as a result of increased vehicle numbers and indirect impacts from littering. The remoteness of some areas of the SAC means they are less likely to be visited by high numbers of visitors and impacts are more likely to result within those areas in closer proximity to car parking/rest facilities and main trails. | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 8.6 km from the Habitats Site.<br><br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers | No adverse effect on the integrity of the qualifying feature. |
| | Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal cycles can damage notified features and affect bird nesting activity, which | | | |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | in turn could affect the population viability of the species. | | (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | |
| | Air Pollution: impact of atmospheric nitrogen deposition, incorporating increased vehicles numbers - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will shade/out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily.<br>Nitrogen deposition is as a result of air pollution, with a significant contributor being increased vehicle movement in the area. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System[7]. | No adverse effect on the integrity of the qualifying feature. |
| | Climate change – Changes required for habitats and ecological systems to adapt and be resilient to wider environmental changes, e.g. precipitation and temperature, which are likely to affect the extent, distribution, composition and functioning of a qualifying feature.<br>Vulnerability is likely to lead to a decline in the habitat, subsequently leaving vulnerable to disease, succession, invasive plants etc. | The Peak District Dales SAC has been identified by Natural England as being in the top 10% of potential climate change refugia sites within England. These are areas which offer conditions for species to survive longer under extreme climate scenarios, and so the resilience of the SAC is of greater national significance.<br>The development of proposed allocated sites is unlikely to result in a significant impact to climate change independently but good practice and relevant SCC policies regarding the environment and energy efficiency will be followed when assessing proposed developments for each of the sites to address any site specific issues as they arise. | • Industry standard mitigation to be implemented at the project stage, to include ensuring new development includes an assessment of energy efficiency, potential pollution sources and mitigation for all stages of the development. | No adverse effect on the integrity of the qualifying feature. |
| | Conservation Objectives - H8210 Calcareous rocky slopes with chasmophytic vegetation; Plants in crevices in base-rich rocks | | | |
| | Extent and spatial distribution – A reduction in the extent and spatial distribution of the qualifying feature within the Habitats Site would predominantly result where development was taking place in the Habitats Site and would result in direct land take. | The extent and spatial distribution of base-rich scree within the Habitats Site will not experience any measurable core reduction or contraction in its range/geographic spread as a result of the development of proposed allocated sites as there will be no encroachment into the Habitats Site. The closest proposed allocated | • None required – no impacts identified. | N/A |

[7] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | Some measurable reduction or contraction in area, range or geographic spread of the qualifying feature could also be the result of a significant impact (or significant in-combination impacts) from those 'potential impacts' highlighted above. | site is located 8.6 km from the Habitats Site boundary, therefore, no impacts are likely to result.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | | |
| | Structure and function of vegetation – Maintenance of the structure and function of the qualifying feature may be impacted by damage/destruction/degradation of the habitat as a result of 'potential impacts' identified above. | Impacts to vegetation community structure and functionality (including transitional areas, community/vegetation composition, connectivity, adaptation and resilience) are unlikely to result from proposed allocated sites due to those reasons discussed above. | • None required – no impacts identified. | N/A |
| | Conservation measures – Active maintenance and restoration using appropriate management measures is required to maintain and restore the structure, functions and supporting processes associated with the qualifying feature. | The proposed allocated sites fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site, including soil restoration or other management prescriptions which may impact nutrient cycling, water quality or hydrology. | • None required – no impacts identified. | N/A |
| | Air quality - This habitat is considered sensitive to changes in air quality and supported by surface and/or ground water.<br>Exceedance of critical air pollutant values may modify the chemical status of the habitat substrate while changes to the quality and quantity of water supply (notably at sensitive times of year) may result in the accelerating or damaging plant growth, altering vegetation structure and composition and causing the loss of sensitive typical species associated with the Habitats Site. | Given the distance between the proposed allocated sites and the Habitats Site impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • See Air Pollution impacts, above. | No adverse effect on the integrity of the qualifying feature. |
| **H9180 Tilio-Acerion forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes*** | Public access/disturbance – an increase in the numbers of visitors has potential to damage/destroy/degrade this habitat through direct impacts from increased footfall/footpath use and/or creation of new tracks/trails through the habitat and inconsiderate parking as a result of increased vehicle numbers and indirect impacts from littering. The remoteness of some areas of the SAC means they are less likely to be visited by high numbers of visitors and impacts are more likely to result within those areas in closer proximity to car parking/rest facilities and main trails.<br>Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal cycles can damage notified features and affect bird nesting activity, which in turn could affect the population viability of the species. | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 8.6 km from the Habitats Site.<br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas | No adverse effect on the integrity of the qualifying feature. |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | | | • Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | |
| | Air Pollution: impact of atmospheric nitrogen deposition, incorporating increased vehicles numbers - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will shade/out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily.<br>Nitrogen deposition is as a result of air pollution, with a significant contributor being increased vehicle movement in the area. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System[8]. | No adverse effect on the integrity of the qualifying feature. |
| | Climate change – Changes required for habitats and ecological systems to adapt and be resilient to wider environmental changes, e.g. precipitation and temperature, which are likely to affect the extent, distribution, composition and functioning of a qualifying feature.<br>Vulnerability is likely to lead to a decline in the habitat, subsequently leaving vulnerable to disease, succession, invasive plants etc. | The Peak District Dales SAC has been identified by Natural England as being in the top 10% of potential climate change refugia sites within England. These are areas which offer conditions for species to survive longer under extreme climate scenarios, and so the resilience of the SAC is of greater national significance.<br>The development of proposed allocated sites is unlikely to result in a significant impact to climate change independently but good practice and relevant SCC policies regarding the environment and energy efficiency will be followed when assessing proposed developments for each of the sites to address any site specific issues as they arise. | • Industry standard mitigation to be implemented at the project stage, to include ensuring new development includes an assessment of energy efficiency, potential pollution sources and mitigation for all stages of the development. | No adverse effect on the integrity of the qualifying feature. |
| | Conservation Objectives - H9180 Tilio-Acerion forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes* | | | |
| | Extent and spatial distribution – A reduction in the extent and spatial distribution of the qualifying feature within the Habitats Site would predominantly result where development was taking place in the Habitats Site and would result in direct land take.<br>Some measurable reduction or contraction in area, range or geographic spread of the qualifying feature could also be the result of a significant impact (or significant in-combination impacts) from those 'potential impacts' highlighted above. | The extent and spatial distribution of base-rich scree within the Habitats Site will not experience any measurable core reduction or contraction in its range/geographic spread as a result of the development of proposed allocated sites as there will be no encroachment into the Habitats Site. The closest proposed allocated site is located 8.6 km from the Habitats Site boundary, therefore, no impacts are likely to result.<br>None of the 'potential impacts' assessed for this qualifying feature will | • None required – no impacts identified. | N/A |

[8] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | | have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | | |
| | Structure and function of vegetation – Maintenance of the structure and function of the qualifying feature may be impacted by damage/destruction/degradation of the habitat as a result of 'potential impacts' identified above. This includes compaction of root zones of mature or ancient trees which could result from increased activity (e.g. walkers, vehicles etc.). | Impacts to vegetation community structure and functionality (including transitional areas, community/vegetation composition, connectivity, adaptation and resilience) will not result from proposed allocated sites due to those reasons discussed above. | • None required – no impacts identified. | N/A |
| | Conservation measures – Active maintenance and restoration using appropriate management measures is required to maintain and restore the structure, functions and supporting processes associated with the qualifying feature. | The proposed allocated sites fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site, including soil restoration or other management prescriptions which may impact nutrient cycling, water quality or hydrology. | • None required – no impacts identified. | N/A |
| | Air quality - This habitat is considered sensitive to changes in air quality and supported by surface and/or ground water.<br>Exceedance of critical air pollutant values may modify the chemical status of the habitat substrate while changes to the quality and quantity of water supply (notably at sensitive times of year) may result in the accelerating or damaging plant growth, altering vegetation structure and composition and causing the loss of sensitive typical species associated with the Habitats Site. | Given the distance between the allocated sites and the Habitats Site, impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • Provide viable, long term alternative travel options for visitors to the designated site.<br>• Introduce management prescriptions which effectively reduce denitrification and leaching.<br>• Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System - more than 1000 Annual Average Daily Traffic (AADT) is considered significant in regard to nitrogen deposition from traffic emissions, therefore, restrict increases to below 1000. This assessment would have to ensure fair allocation of traffic/ vehicle numbers was allocated to each residential/employment site.<br>• Condition the installation of electric vehicle charging points in new developments in accordance with the Parking Guidelines in the Sheffield Plan to reduce dependency of fuel burning vehicles with higher levels of emissions. | No adverse effect on the integrity of the qualifying feature. |
| **S1092 White-clawed (or Atlantic stream) crayfish *Austropotamobi*** | Water pollution/quality - Good water quality is essential for the qualifying feature to ensure sufficient availability of prey items, e.g. worms, insect larvae, snails, small fish, macrophytes and algae. For features which are dependent on aquatic/wetland habitats maintaining the quality and quantity of surface and/or ground water is critical, especially at certain times of year, as poor water quality | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary, reducing the likelihood of impacts to watercourses in the SAC. Impacts to water quality should be assessed on a site by site basis at the planning stage, as the allocated sites come forward for development. | • Industry standard mitigation to be implemented at the project stage, to include ensuring new development includes an assessment of potential water pollution pathways and mitigation for all stages of the development. | No adverse effect on the integrity of the qualifying feature. |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| ***us pallipes*** | and inadequate quantities can adversely affect the structure and function of the supporting habitat type.<br><br>Native crayfish are particularly susceptible to pollution incidents, and the transfer of diseases from other sources. | | | |
| | Inappropriate weirs dams and other structure or water levels – Construction of weirs, dams or other structures within the catchment could reduce the range of white-clawed crayfish (where constructed in proximity to a string population) or result in damage to individuals and changes to the river morphology (including shoreline refugia, bank sides, in-channel woody debris, aquatic/marginal plants, river bed substrate etc.). These features provide an essential component for refuging, spawning and foraging white-clawed crayfish.<br><br>Construction activities associated with weirs, dams and other structures may also lead to the inadvertent introduction of pollution, disease or invasive species (see adjacent rows for further information). | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary, therefore will not impact upon the range of white-clawed crayfish within the Habitats Site. | • Industry standard mitigation to be implemented at the project stage, to include ensuring new development includes an assessment of potential impacts to watercourses which may impact river morphology.<br><br>• All working in watercourses must be carried out in consultation with the relevant Environment Agency Fisheries, Biodiversity and Geomorphology (FBG) team. | No adverse effect on the integrity of the qualifying feature. |
| | Disease – White-clawed crayfish are extremely susceptible to crayfish plague *Aphanomyces astaci*, a fungal infection carried by non-native crayfish species, which has resulted in the severe decline of white-clawed crayfish from watercourses in Britain. The plague spores spread readily between animals in infected watercourses and can be spread by human activities (in wet/damp equipment/clothing) between watercourses, e.g. fishing, canoeing, wild swimming etc. | The submitted plan plus the proposed additional site allocations will result in an increase in the number and proximity of people to the Habitats Sites, potentially increasing the likelihood of the introduction or spread of disease (specifically crayfish plague) as a result. Despite this, any increase in the number of people attending the SAC is not considered to be significant. | • Monitor disease incidents and occurrences within similar habitats in the vicinity, nationally and internationally.<br><br>• Monitor the long and short term heath of white-clawed crayfish populations and presence of invasive non-native crayfish species in order to identify early pathways/signs of disease.<br><br>• Have action plans in place which identify potential disease risks, how to shut down/reduce potential contamination pathways and how to respond should the disease be identified within the site at any time, e.g. by isolating contaminated areas.<br><br>• Provide information boards detailing the importance of staying out of watercourses, following the 'check, clean, dry' procedure for equipment and clothing used in watercourses etc. | No adverse effect on the integrity of the qualifying feature. |
| | Invasive Species – Invasive non-native crayfish species have successfully adapted to British watercourses. By far the most widespread being the American signal crayfish *Pacifastacus leniusculus*, with other species associated more with the south of the country and London catchments. Non-native species are often larger, more aggressive and outcompete white-clawed crayfish in their own range, in addition to carrying the crayfish plague – deadly to white-clawed crayfish. | The submitted plan plus the proposed additional site allocations will result in an increase in the number and proximity of people to the Habitats Sites though any increased likelihood of the introduction or spread of invasive non-native species as a result is not considered to be significant. | • Monitor the status of invasive species within similar habitats in the vicinity, nationally and internationally.<br><br>• Monitor habitats and indicator species in order to identify early signs of invasive infiltration. Promote citizen science to monitor for high risk species and provide information on identification and ways to reduce introduction of invasive species.<br><br>• Have action plans in place which identify potential risks, from invasive species, how to shut down/reduce potential contamination pathways and how to respond should they be identified within the | No adverse effect on the integrity of the qualifying feature. |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | | | site, e.g. by isolating and treating contaminated areas.<br>• Provide information boards detailing the importance of not introducing or removing plant/animals found on site, e.g. signal crayfish. | |
| | Air Pollution: Impact of atmospheric nitrogen deposition – Air pollution may lead to the deposition of nitrogen and changes to the water pH, oxygen/calcium levels or quality – all of which native crayfish are reliant on to support their delicate lifecycle. | Given the distance between proposed allocated sites and the Habitats Site impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • Provide viable, long term alternative travel options for visitors to the designated site.<br>• Introduce management prescriptions which effectively reduce denitrification and leaching.<br>• Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System - more than 1000 Annual Average Daily Traffic (AADT) is considered significant in regard to nitrogen deposition from traffic emissions, therefore, restrict increases to below 1000. This assessment would have to ensure fair allocation of traffic/ vehicle numbers was allocated to each residential/employment site.<br>• Condition the installation of electric vehicle charging points in new developments in accordance with the Parking Guidelines in the Sheffield Plan to reduce dependency of fuel burning vehicles with higher levels of emissions. | No adverse effect on the integrity of the qualifying feature. |
| | Direct impact from 3rd party - A natural channel morphology provides a diversity of water depths, velocities, substrate types, refuge and feeding opportunities for white-clawed crayfish, therefore, intervention which may affect these features would result in a negative impact to the qualifying feature. | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary, therefore, no impacts are likely to result.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| | Conservation Objectives - S1092 White-clawed (or Atlantic stream) crayfish | | | |
| | Population health – In order for white-crayfish to maintain a healthy population non-native crayfish species should be reduced and eradicated, so that the impacts of competition, predation and the transference of disease are lessened. | The submitted plan plus the proposed additional site allocations will result in an increase in the number and proximity of people to the Habitats Sites though any increased likelihood of the introduction or spread of invasive non-native species and as a result is not considered to be significant. However it could potentially increase the likelihood of the introduction or spread of disease (specifically crayfish plague) as a result though this is considered to be of low risk. | • Monitor the status of invasive species within similar habitats in the vicinity, nationally and internationally.<br>• Monitor habitats and indicator species in order to identify early signs of invasive infiltration. Promote citizen science to monitor for high risk species and provide information on identification and ways to reduce introduction of invasive species.<br>• Have action plans in place which identify potential risks, from | No adverse effect on the integrity of the qualifying feature. |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | | | invasive species, how to shut down/reduce potential contamination pathways and how to respond should they be identified within the site, e.g. by isolating and treating contaminated areas.<br>• Provide information boards detailing the importance of not introducing or removing animals found on site, e.g. signal crayfish. | |
| | Maintaining river structure and function and supporting off-site habitat – Retention and enhancement of the river corridor habitat (including the river bed, banks, shoreline etc.), water quality, flow, turbidity, health (e.g. mineral and oxygen levels, pollution events etc.) and connectivity are essential for the long term survival of white-clawed crayfish, including their ability to adapt and evolve into the wider system. | The value and function of the watercourses supporting white-clawed crayfish are heavily dependent on direct site management of the river corridors and catchments themselves.<br>Watercourses supporting white-clawed crayfish within the Peak District Dales SAC are located 8.6 km from the SCC boundary and outside of the SCC catchments. Therefore, development within the SCC boundary will not impact these watercourses, directly or indirectly, In addition, where white-clawed crayfish populations within the Peak District Dales SAC boundary are dependent on watercourses that lie outside of the Habitats Site, e.g. headwater areas and tributaries that may be used for spawning and juvenile development and be critical for sustaining populations in the SAC further downstream, there will also be no impacts.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| **S1096 Brook lamprey *Lampetra planeri*** | Water pollution/quality - Good water quality is essential for the qualifying feature to ensure good population health. Both agricultural pollution as well as urban discharges that are released into watercourses have the potential to increase eutrophication, affecting spawning grounds, have the potential to deoxygenate the water leading to toxic effects for the fish and affect fertility in the species. | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary and outside of the SCC catchments, reducing the likelihood of impacts to watercourses in the SAC. | • None required – no impacts identified. | N/A |
| | Inappropriate weirs dams and other structure or water levels – Construction of weirs, dams or other structures within the catchment could reduce the range of brook lamprey (where constructed in proximity to a strong population) or result in damage to individuals and changes to the river hydrology (including higher levels of sedimentation, deoxygenation and general pollution levels etc.). Hydrology is essential for allowing brook lamprey eggs to develop and support the population levels.<br>Construction activities associated with weirs, dams and other structures may also lead to the inadvertent introduction of pollution, disease or invasive species (see adjacent rows for further | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary and outside of the SCC catchments, reducing the likelihood of impacts to watercourses in the SAC. | • None required – no impacts identified. | N/A |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | information). | | | |
| | Invasive Species – Invasive non-native species may outcompete native species or introduce disease. | The submitted plan plus the proposed additional site allocations will result in an increase in the number and proximity of people to the Habitats Sites though any increased likelihood of the introduction or spread of invasive non-native species as a result is not considered to be significant. | • Monitor the status of invasive species within similar habitats in the vicinity, nationally and internationally.<br>• Monitor habitats and indicator species in order to identify early signs of invasive infiltration. Promote citizen science to monitor for high risk species and provide information on identification and ways to reduce introduction of invasive species.<br>• Have action plans in place which identify potential risks, from invasive species, how to shut down/reduce potential contamination pathways and how to respond should they be identified within the site, e.g. by isolating and treating contaminated areas. | No adverse effect on the integrity of the qualifying feature. |
| | Air Pollution: Impact of atmospheric nitrogen deposition – Air pollution may lead to the deposition of nitrogen and changes to the water pH, oxygen/calcium levels or quality – all of which native fish species lifecycles are sensitive to. | Given the distance between the proposed allocated sites and the Habitats Site impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • Provide viable, long term alternative travel options for visitors to the designated site.<br>• Introduce management prescriptions which effectively reduce denitrification and leaching.<br>• Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System - more than 1000 Annual Average Daily Traffic (AADT) is considered significant in regard to nitrogen deposition from traffic emissions, therefore, restrict increases to below 1000. This assessment would have to ensure fair allocation of traffic/ vehicle numbers was allocated to each residential/employment site.<br>• Condition the installation of electric vehicle charging points in new developments in accordance with the Parking Guidelines in the Sheffield Plan to reduce dependency of fuel burning vehicles with higher levels of emissions. | No adverse effect on the integrity of the qualifying feature. |
| | Direct impact from 3rd party - A natural channel morphology provides a diversity of water depths, velocities, substrate types, refuge and feeding opportunities for native fish species, therefore, intervention which may affect these features would result in a negative impact to the qualifying feature. | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary, therefore, no impacts are likely to result.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| | Conservation Objectives - S1096 Brook lamprey | | | |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | Population densities/abundance – Changes to the population (including juveniles) density or abundance may impact upon the viability of the population of the feature and result in a detrimental effect on the Favourable Conservation Status across its natural range in the UK. | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary and outside of the SCC catchments, reducing the likelihood of impacts to watercourses in the SAC.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| | Extent and distribution of supporting habitat - A contraction in the range or geographic spread of the qualifying feature across the site will reduce its overall area, the local diversity and variations in the structure and composition of the Habitats Site, and may undermine resilience of the species to adapt to future environmental changes. Contraction may also reduce and break up the continuity of a population within a site, impacting how well the species is able to occupy and use a habitat and its ability to adapt to environmental changes.<br>Disruption to connectivity may prevent up/down stream colonisation by species, reduce genetic interactions, impacting breeding success, population and distribution. | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary and outside of the SCC catchments, reducing the likelihood of impacts to watercourses in the SAC.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| | Supporting river structure, function and processes – maintaining/managing and restoring favourable habitat characteristics, including vegetation, watercourse profiles, biotopes, connectivity, flow, presence of stocked fish/invasive non-native species, nutrient regime etc. will ensure optimal habitat for the qualifying feature, therefore, safeguarding the population and increasing its robustness to environmental change. | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary and outside of the SCC catchments, reducing the likelihood of impacts to watercourses in the SAC. Management of habitats inside the SAC are considered to be outside of the control of SCC and therefore have not been considered further.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| **S1163 Bullhead *Cottus gobio*** | Water pollution/quality - Good water quality is essential for the qualifying feature to ensure good population health. Both agricultural pollution as well as urban discharges that are released into watercourses have the potential to increase eutrophication, affecting spawning grounds, have the potential to deoxygenate the water leading to toxic effects for the fish and affect fertility in the species. | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary and outside of the SCC catchments, reducing the likelihood of impacts to watercourses in the SAC. | • None required – no impacts identified. | N/A |
| | Inappropriate weirs dams and other structure or water levels – Construction of weirs, dams or other structures within the catchment could reduce the range of brook lamprey (where constructed in proximity to a strong population) or result in damage to individuals and changes to the river hydrology (including higher | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary and outside of the SCC catchments, reducing the likelihood of impacts to watercourses in the SAC. | • None required – no impacts identified. | N/A |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | levels of sedimentation, deoxygenation and general pollution levels etc.). Hydrology is essential for allowing brook lamprey eggs to develop and support the population levels.<br><br>Construction activities associated with weirs, dams and other structures may also lead to the inadvertent introduction of pollution, disease or invasive species (see adjacent rows for further information). | | | |
| | Invasive Species – Invasive non-native species may outcompete native species or introduce disease. | The submitted plan plus the proposed additional site allocations will result in an increase in the number and proximity of people to the Habitats Sites though any increased likelihood of the introduction or spread of invasive non-native species as a result is not considered to be significant. | • Monitor the status of invasive species within similar habitats in the vicinity, nationally and internationally.<br>• Monitor habitats and indicator species in order to identify early signs of invasive infiltration. Promote citizen science to monitor for high risk species and provide information on identification and ways to reduce introduction of invasive species.<br>• Have action plans in place which identify potential risks, from invasive species, how to shut down/reduce potential contamination pathways and how to respond should they be identified within the site, e.g. by isolating and treating contaminated areas. | No adverse effect on the integrity of the qualifying feature. |
| | Air Pollution: Impact of atmospheric nitrogen deposition – Air pollution may lead to the deposition of nitrogen and changes to the water pH, oxygen/calcium levels or quality – all of which native fish species lifecycles are sensitive to. | Given the distance between the proposed allocated sites and the Habitats Site impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • Provide viable, long term alternative travel options for visitors to the designated site.<br>• Introduce management prescriptions which effectively reduce denitrification and leaching.<br>• Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System - more than 1000 Annual Average Daily Traffic (AADT) is considered significant in regard to nitrogen deposition from traffic emissions, therefore, restrict increases to below 1000. This assessment would have to ensure fair allocation of traffic/ vehicle numbers was allocated to each residential/employment site.<br>• Condition the installation of electric vehicle charging points in new developments in accordance with the Parking Guidelines in the Sheffield Plan to reduce dependency of fuel burning vehicles with higher levels of emissions. | No adverse effect on the integrity of the qualifying feature. |
| | Direct impact from 3rd party - A natural channel morphology | The closest proposed allocated site is located 8.6 km from the Habitats | • None required – no impacts identified. | N/A |

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| | provides a diversity of water depths, velocities, substrate types, refuge and feeding opportunities for native fish species, therefore, intervention which may affect these features would result in a negative impact to the qualifying feature. | Site boundary, therefore, no impacts are likely to result.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | | |
| | Conservation Objectives - S1163 Bullhead | | | |
| | Population densities/abundance – Changes to the population (including juveniles) density or abundance may impact upon the viability of the population of the feature and result in a detrimental effect on the Favourable Conservation Status across its natural range in the UK. | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary and outside of the SCC catchments, reducing the likelihood of impacts to watercourses in the SAC.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| | Extent and distribution of supporting habitat - A contraction in the range or geographic spread of the qualifying feature across the site will reduce its overall area, the local diversity and variations in the structure and composition of the Habitats Site, and may undermine resilience of the species to adapt to future environmental changes. Contraction may also reduce and break up the continuity of a population within a site, impacting how well the species is able to occupy and use a habitat and its ability to adapt to environmental changes.<br>Disruption to connectivity may prevent up/down stream colonisation by species, reduce genetic interactions, impacting breeding success, population and distribution. | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary and outside of the SCC catchments, reducing the likelihood of impacts to watercourses in the SAC.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |
| | Supporting river structure, function and processes – maintaining/managing and restoring favourable habitat characteristics, including vegetation, watercourse profiles, biotopes, connectivity, flow, presence of stocked fish/invasive non-native species, nutrient regime etc. will ensure optimal habitat for the qualifying feature, therefore, safeguarding the population and increasing its robustness to environmental change. | The closest proposed allocated site is located 8.6 km from the Habitats Site boundary and outside of the SCC catchments, reducing the likelihood of impacts to watercourses in the SAC. Management of habitats inside the SAC are considered to be outside of the control of SCC and therefore have not been considered further.<br>None of the 'potential impacts' assessed for this qualifying feature will have an adverse effect on the integrity of the Habitats Site and so impacts are not considered further. | • None required – no impacts identified. | N/A |

**Table A3. Submitted Draft Sheffield Plan and Proposed Additional Site Allocations - Impacts on Peak District Moors (Pennine Moors Phase 1) SPA with mitigation recommendations**

| Qualifying Feature | Potential Impact Identified | Considerations before Mitigation | PEU Mitigation Measures | Remaining Impact after Mitigation |
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| **A098 Merlin *Falco columbarius* (breeding)** | Air pollution: impact of atmospheric nitrogen deposition - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily. This would threaten the vegetation structure and function of habitats that the merlin relies on. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System[1]. | No adverse effect on the integrity of the qualifying feature. |
| | Wildfire/Arson - Increase likelihood of fires from BBQ use, careless disposal of cigarettes during dry weather periods or deliberate fire starting are also more likely within areas in closer proximity to car parking/rest facilities and main trails, with fires having potential to impact across significant areas where the conditions are suitable.<br>Fire damage may result in damage/destruction of vegetation structure, species composition and the long-term loss of habitat. This would affect the species ability to successfully nest (as mature-degenerate heather in large blocks is needed) and forage (as prey species will utilise surrounding habitat). | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the Habitats Site and potential increased risk of fires. | • Provision of alternative green space<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | No adverse effect on the integrity of the qualifying feature. |
| | Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal cycles can damage notified features and affect bird nesting activity, which in turn could affect the population viability of the species. | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 1 km from the Habitats Site.<br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards) | No adverse effect on the integrity of the qualifying feature. |

[1] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

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| | | National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | |
| | <u>Changes in species distribution</u> – Changes in the species distribution across the SPA are occurring due to a variety of factors, such as air pollution, erosion, current land management, erosion and the effects of climate change. The changes are not currently understood fully, but there are changes occurring including a decrease in breeding numbers and shifts to new breeding areas. | Air pollution and possible factors of erosion such as wildfires/arson and vehicle use on the SPA are addressed above.<br>Current land management practices on the SPA are considered to be outside of the control of SCC and the remit of this appropriate assessment.<br>With regards to climate change the Peak District has been identified by Natural England as being in the top 10% of potential climate change refugia sites within England. These are areas which offer conditions for species to survive longer under extreme climate scenarios, and so the resilience of the SAC is of greater national significance. The development of the proposed allocated sites is unlikely to result in a significant impact to climate change independently but good practice and relevant SCC policies regarding the environment and energy efficiency should be followed when assessing proposed developments for each of the sites.[2] | • See PEU Mitigation Measures for air pollution, wildfire/arson and vehicle use above.<br>• Industry standard mitigation to be implemented at the project stage, to include ensuring new development includes an assessment of energy efficiency, potential pollution sources and mitigation for all stages of the development. | No adverse effect on the integrity of the qualifying feature. |
| | <u>Planning permission: General</u> – Local development frameworks, infrastructure projects and planning permissions can cumulatively fragment the SPA and slow the chances of creating a landscape scale delivery of a resilient SPA. Fragmenting the landscape will change the species distribution, and behaviours which could affect the population viability. | It should be noted that SCC are not noted as a delivery partner in the Natural England Site Improvement Plan: South Pennine Moors[3] with regards to this potential impact which has been identified. It is understood that the Site Improvement Plan also relates to the South Pennine Moors SAC which does lie within the LPAs that have been identified as delivery partners. As such it is considered that this potential impact relates to planning permission within the Habitat Site and potential habitat fragmentation within the Habitat Site and not outside of the Habitat Site. It is therefore not considered to be of primary | • None required – no impacts identified. | N/A |

[2] SUGGITT et al (2014) *'Climate change refugia for the flora and fauna of England.'* Natural England Commissioned Reports, Number 162.
[3] Natural England (2014) '*Planning for the Future Improvement Programme for England's Natura 2000 Sites (IPENS) Site Improvement Plan South Pennine Moors'*

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| | | concern to SCC with respect to this potential impact. | | |
| | Conservation Objectives - A098 Merlin *Falco columbarius* (breeding) | | | |
| | Air quality – The structure and function of the habitats that the merlin relies on is sensitive to air quality changes. If air pollutants exceed critical values, then the chemical status of the habitat substrate may change, affecting growth, structure and composition, which in turn will affect the nesting, sheltering and foraging abilities of the merlin. | Given the distance between the proposed allocated sites and the Habitats Site impacts to air quality from residential and employment development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • See Air Pollution impacts, above. | No adverse effect on the integrity of the qualifying feature. |
| | Conservation measures - Active maintenance and restoration using appropriate management measures in sensitive ways is required to maintain and restore the structure and function of the habitat that the merlin relies on, without disturbing the birds breeding schedule. | The proposed allocated sites fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site. | • None required – no impacts identified. | N/A |
| | Food availability within supporting habitat – In order to sustain a population, abundant food availability is necessary. Food availability can determine the survival of the species, adult fitness and therefore successful breeding of the species. Food availability can be affected by inappropriate management and direct or indirect impacts which might cause a change to the distribution and abundance of prey.<br><br>Merlin's will mostly feed on small birds caught in the open country. However, they will also utilise small mammals and invertebrates where available. In order to catch prey, the merlin will perch in an elevated position to locate the prey and then catch it in the air close to or on the ground. | The proposed allocated sites fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site which may impact prey.<br><br>However, there is the potential for habitat outside of the Habitats Site boundary that may support the merlin's prey. | • Ensure new development includes an assessment of potential ecological features, particularly those that might support merlin, within either a Preliminary Ecological Appraisal (PEA), breeding bird survey assessment or individual HRA. If the development area contains suitable habitat, SCC should assess the need for further survey and need for further mitigation. | No adverse effect on the integrity of the qualifying feature. |
| | Landscape and vegetation structure – Merlin prefer large areas of open terrain, which are free from obstructions in and around the nesting, roosting and feeding areas. This is to be able to detect predators and observe displaying behaviour. An open landscape is also needed with any supporting habitat outside of the SPA.<br><br>The vegetation characteristics within the open landscape are also important to enable successful nesting, rearing, and roosting. Merlin require mature heather blocks and surrounding habitats which prey use require scattered scrub/trees, bracken and rush-beds. | The closest proposed allocated site is located 1 km from the Habitats Site boundary and therefore no changes to the landscape and vegetation structure within the SPA boundary are anticipated from the allocated sites.<br><br>However, there is the potential for habitat outside of the Habitats Site boundary that may support the merlin and therefore the proposed allocated sites may contribute to the landscape that merlin require. | • Ensure new development includes an assessment of potential ecological features, particularly those that might support merlin, within either a Preliminary Ecological Appraisal (PEA), breeding bird survey assessment or individual HRA. If the development area contains suitable habitat, SCC should assess the need for further survey and need for further mitigation. | No adverse effect on the integrity of the qualifying feature. |
| | Disturbance - An increase in the numbers of visitors has potential to disturb birds, particularly those that are breeding. The merlin will change its behaviour if threatened, related to feeding and nesting, which will in turn affect the long-term viability of the population. The merlin's energy expenditure can increase due to increased flight, abandonment of nest site and desertion of supporting habitat. Disturbance would inadvertently reduce the availability of suitable habitat as the birds will become displaced, and territories will reduce. Disturbance can come from creating noise, light, vibration, trampling, presence of people and animals.<br><br>The remoteness of some areas of the SPA means they are less likely to be visited | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 1 km from the Habitats Site.<br><br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards) | No adverse effect on the integrity of the qualifying feature. |

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| | by high numbers of visitors and impacts are more likely to result within those areas in closer proximity to car parking/rest facilities and main trails which will help to minimise the zone of disturbance. | National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | |
| | Predation – Breeding productivity can be impacted by the predation of eggs, chick, juveniles and adult birds. It can also be impacted by significant disturbance at the breeding phase, where disturbance can make birds leave nest sites therefore leaving them vulnerable to predators. If predators are near to the species this will influence their behaviour, e.g. abandonment of nest sites, reduction in feeding at the nest site. | Predation can be caused by disturbance or changes in habitats used by the species. As discussed above the proposed allocated sites could result in higher levels of disturbance and changes to potential off-site habitats. | • Refer to mitigation measures discussed in relation to Landscape and vegetation structure and disturbance above. | No adverse effect on the integrity of the qualifying feature. |
| | Adaption and resilience – Resilience is the ability of an ecological system to cope with, and adapt to, environmental stress and change but still retaining the structure and function of itself. Environmental changes may come from sea level changes, changes in precipitation and temperature, any environmental factor that are likely to affect the extent, distribution, composition and function of a feature within the SPA. As such the habitats that the qualifying species is supported by need to be resilient to environmental changes in order to allow the species maintain its population. | The Peak District has been identified by Natural England as being in the top 10% of potential climate change refugia sites within England. These are areas which offer conditions for species to survive longer under extreme climate scenarios, and so the resilience of the SAC is of greater national significance. The development of the proposed allocated sites is unlikely to result in a significant impact to climate change independently but good practice and relevant SCC policies regarding the environment and energy efficiency should be followed when assessing proposed developments for each of the sites.[4] | • Industry standard mitigation to be implemented at the project stage, to include ensuring new development includes an assessment of energy efficiency, potential pollution sources and mitigation for all stages of the development. | No adverse effect on the integrity of the qualifying feature. |
| A140 Golden Plover *Pluvialis apricaria* (breeding) | Air pollution: impact of atmospheric nitrogen deposition - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily. This would threaten the vegetation structure and function of habitats that the golden plover relies on. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System[5]. | No adverse effect on the integrity of the qualifying feature. |

[4] SUGGITT et al (2014) *'Climate change refugia for the flora and fauna of England.'* Natural England Commissioned Reports, Number 162.
[5] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

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| | | Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | | |
| | Wildfire/ Arson - Increase likelihood of fires from BBQ use, careless disposal of cigarettes during dry weather periods or deliberate fire starting are also more likely within areas in closer proximity to car parking/rest facilities and main trails, with fires having potential to impact across significant areas where the conditions are suitable. Fire damage may result in damage/destruction of vegetation structure, species composition and the long-term loss of habitat. This would affect the species ability to successfully nest/forage and shelter as golden plover require a mosaic of habitats in a variation of low to medium growing vegetation to shelter and nest and their prey (invertebrates) relies on a variation in habitat types in the area which wildfire/arson would threaten. | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the Habitats Site and potential increased risk of fires. | • Provision of alternative green space<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | No adverse effect on the integrity of the qualifying feature. |
| | Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal cycles can damage notified features and affect bird nesting activity, which in turn could affect the population viability of the species. | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 1 km from the Habitats Site.<br><br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional p from residential development within the Plan area to fund the above. | No adverse effect on the integrity of the qualifying feature. |

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| | Planning permission: general – Local development frameworks, infrastructure projects and planning permissions can cumulatively fragment the SPA and slow the chances of creating a landscape scale delivery of a resilient SPA. Fragmenting the landscape will change the species distribution, and behaviours which could affect the population viability. | It should be noted that SCC are not noted as a delivery partner in the Natural England Site Improvement Plan: South Pennine Moors[6] with regards to this potential impact which has been identified. It is understood that the Site Improvement Plan also relates to the South Pennine Moors SAC which does lie within the LPAs that have been identified as delivery partners. As such it is considered that this potential impact relates to planning permission within the Habitat Site and potential habitat fragmentation within the Habitat Site and not outside of the Habitat Site. It is therefore not considered to be of primary concern to SCC with respect to this potential impact. | • None required – no impacts identified. | N/A |
| | Conservation Objectives - A140 Golden Plover *Pluvialis apricaria* (breeding) | | | |
| | Habitat connectivity – In order for golden plover to maintain adult fitness and survival rates as well as successfully breed, they should have the ability to move safely and successfully to and from nesting, feeding and roosting areas. This includes habitats outside of the SPA. | The closest proposed allocated site is located 1 km from the Habitats Site boundary and therefore no changes to the habitat connectivity within the SPA boundary are anticipated from the allocated sites.<br><br>However, there is the potential for habitat outside of the Habitats Site boundary that may support the golden plover and therefore the proposed allocated sites may contribute to the habitat connectivity that golden plover require. | • Ensure new development includes an assessment of potential ecological features, particularly those that might support golden plover, within either a Preliminary Ecological Appraisal (PEA), breeding bird survey assessment or individual HRA. If the development area contains suitable habitat, SCC should assess the need for further survey and need for further mitigation. | No adverse effect on the integrity of the qualifying feature. |
| | Conservation measures - Active maintenance and restoration using appropriate management measures in sensitive ways is required to maintain and restore the structure and function of the habitat that the golden plover relies on i.e. blanket bog, without disturbing the birds breeding schedule. This will need to occur outside of the SPA boundary as well to ensure feeding grounds are also covered. | The proposed allocated sites fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site. | • None required – no impacts identified. | N/A |
| | Food availability within supporting habitat – In order to sustain a population, abundant food availability is necessary. Food availability can determine the survival of the species, adult fitness and therefore successful breeding of the species. Food availability can be affected by inappropriate management and direct or indirect impacts which might cause a change to the distribution and abundance of prey.<br><br>Golden plover will mostly feed on invertebrates which occur on marginal or low-intensity grassland and marshy areas. Moorland nesting habitat can also be important feeding grounds in the summer. Golden plover will feed in adjacent grasslands within 4 km of the moorlands they use when nesting. | The proposed allocated sites fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site which may impact prey.<br><br>However, there is the potential for habitat outside of the Habitats Site boundary that may support the golden plover's prey. | • Ensure new development includes an assessment of potential ecological features, particularly those that might support golden plover, within either a Preliminary Ecological Appraisal (PEA), breeding bird survey assessment or individual HRA. If the development area contains suitable habitat, SCC should assess the need for further survey and need for further mitigation. | No adverse effect on the integrity of the qualifying feature. |
| | Air, water quality and hydrology - The structure and function of the habitats that the golden plover depends on is sensitive to air, water quality and hydrology changes. | Given the distance between the proposed allocated sites and the Habitats Site, impacts to air quality from residential and employment development sites are not currently considered likely | • See Air Pollution impacts, above. | No adverse effect on the integrity of the qualifying feature. |

[6] Natural England (2014) '*Planning for the Future Improvement Programme for England's Natura 2000 Sites (IPENS) Site Improvement Plan South Pennine Moors*'

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| | Exceedance of critical air pollutant values may modify the chemical status of the habitat substrate while changes to the quality and quantity of water supply (notably at sensitive times of year) may result in the accelerating or damaging plant growth, altering vegetation structure and composition and affecting the nesting, sheltering and foraging ability of the golden plover. | to have an adverse effect on the integrity of the Habitats Site. | | |
| | Landscape and vegetation structure – golden plover prefer large areas of open terrain, which are free from obstructions in and around the nesting, roosting and feeding areas. This is to be able to detect predators and observe displaying behaviour. An open landscape is also needed with any supporting habitat outside of the SPA.<br><br>The vegetation characteristics within the open landscape are also important to enable successful nesting, rearing, and roosting. Golden plover require open bog habitat and wet conditions with low uneven vegetation with extensive views at ground level. | The closest proposed allocated site is located 1 km from the Habitats Site boundary and therefore no changes to the landscape and vegetation structure within the SPA boundary are anticipated from proposed allocated sites.<br><br>However, there is the potential for habitat outside of the Habitats Site boundary that may support the golden plover and therefore the proposed allocated sites may contribute to the landscape that golden plover require. | • Ensure new development includes an assessment of potential ecological features, particularly those that might support golden plover, within either a Preliminary Ecological Appraisal (PEA), breeding bird survey assessment or individual HRA. If the development area contains suitable habitat, SCC should assess the need for further survey and need for further mitigation. | No adverse effect on the integrity of the qualifying feature. |
| | Disturbance - An increase in the numbers of visitors has potential to disturb birds, particularly those that are breeding. The golden plover will change its behaviour if threatened, related to feeding and nesting, which will in turn affect the long-term viability of the population. The golden plover's energy expenditure can increase due to increased flight, abandonment of nest site and desertion of supporting habitat. Disturbance would inadvertently reduce the availability of suitable habitat as the birds will become displaced, and territories will reduce. Disturbance can come from vehicle use, creating noise, light, vibration, trampling, presence of people and animals.<br><br>The remoteness of some areas of the SPA means they are less likely to be visited by high numbers of visitors and impacts are more likely to result within those areas in closer proximity to car parking/rest facilities and main trails which will help to minimise the zone of disturbance. | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 1 km from the Habitats Site.<br><br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse effect on the integrity of the qualifying feature. | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | No adverse effect on the integrity of the qualifying feature. |
| | Predation – Breeding productivity can be impacted by the predation of eggs, chick, juveniles and adult birds. It can also be impacted by significant disturbance at the breeding phase, where disturbance can make birds leave nest sites therefore leaving them vulnerable to predators. If predators are near to the species this will influence their behaviour, e.g. abandonment of nest sites, reduction in feeding at | Predation can be caused by disturbance or changes in habitats used by the species. As discussed above the proposed allocated sites could result in higher levels of disturbance and changes to potential off-site habitats. | • Refer to mitigation measures discussed in relation to Landscape and vegetation structure and disturbance above. | No adverse effect on the integrity of the qualifying feature. |

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| | the nest site. | | | |
| A222 Short-eared Owl *Asio flammeus* (breeding) | Air pollution: impact of atmospheric nitrogen deposition - Nitrogen deposits that produce an excess of rich nutrients ultimately cause dense plant growth and promote species which will out compete the typical vegetation associated with this habitat. Reductions in the abundance of the bryophyte and lichens, species which are sensitive to soil and water nutrient levels, will result in changes in vegetation structure and enhanced litter accumulation. Reduction in moss cover may also lead to soil erosion or allow successional habitats to colonise more readily. This would threaten the vegetation structure and function of habitats that the short-eared owl relies on. | The submitted plan plus the proposed additional site allocations will result in a very minor increase in the number and proximity of people and vehicle use to the Habitats Site. Nitrogen deposition is more associated with major roads than from development, though impacts from certain types of development has the potential to result in direct impacts on air quality, including emissions of nitrogen compounds. Emissions as a result of the construction process during site development is currently unknown.<br><br>Traffic modelling has demonstrated that the Plan alone or in-combination with other local plans will not result in an increase in road traffic above the threshold for air quality impacts as advised by Natural England. Therefore, impacts will not have an adverse effect on the integrity of the Habitats Site. | • Industry standard mitigation to be implemented at the project stage in accordance with the thresholds set out in Policy ES5 of the Sheffield Plan, to include ensuring new development includes an assessment of potential air pollution sources and mitigation for all stages of the development. Pollutants should not exceed the Nitrogen critical loads above the level of that defined for the Habitats Site/habitat type by the Air Pollution Information System[7]. | No adverse effect on the integrity of the qualifying feature. |
| | Wildfire/ Arson - Increase likelihood of fires from BBQ use, careless disposal of cigarettes during dry weather periods or deliberate fire starting are also more likely within areas in closer proximity to car parking/rest facilities and main trails, with fires having potential to impact across significant areas where the conditions are suitable. Fire damage may result in damage/destruction of vegetation structure, species composition and the long-term loss of habitat. This would affect the species ability to successfully nest/forage/shelter as tall vegetation (tall heather, grasses, rushes) is required to be distributed evenly through the landscape and wildfires/arson would disrupt the distribution of the vegetation. | The submitted plan plus the proposed additional site allocations will result in a small increase in the number and proximity of people to the Habitats Site and potential increased risk of fires. | • Provide information boards detailing the level of risk of fire at any given time on the site, the importance of protecting habitats. Provide information on the legal repercussions of setting fires.<br>• Provide allocated areas for BBQ including sand buckets/fire extinguishers (where appropriate). Introduce penalties for people using BBQs outside allocated areas to discourage this behaviour.<br>• Recruit volunteer fire wardens to educate/engage members of the public and monitor areas of higher risk of fire during the busiest periods | No adverse effect on the integrity of the qualifying feature. |
| | Vehicles – Smaller recreational vehicles that can be driven on to the SPA, such as motorbikes, quadbikes, 4x4s and pedal cycles can damage notified features and affect bird nesting activity, which in turn could affect the population viability of the species. | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 1 km from the Habitats Site.<br><br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) given the relatively small size and location of these areas impacts will not have an adverse effect on the integrity of the qualifying feature. | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information<br>• Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of | No adverse effect on the integrity of the qualifying feature. |

[7] Air Pollution Information System (APIS) website https://www.apis.ac.uk/, accessed September 2022.

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| | | | penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above | |
| | Changes in species distribution – Changes in the species distribution across the SPA are occurring due to a variety of factors, such as air pollution, erosion, current land management, erosion and the effects of climate change. The changes are not currently understood fully, but there are changes occurring including a decrease in breeding numbers and shifts to new breeding areas. | Air pollution and possible factors of erosion such as wildfires/arson and vehicle use on the SPA are addressed above.<br>Current land management practices on the SPA are considered to be outside of the control of SCC and the remit of this appropriate assessment.<br>With regards to climate change the Peak District has been identified by Natural England as being in the top 10% of potential climate change refugia sites within England. These are areas which offer conditions for species to survive longer under extreme climate scenarios, and so the resilience of the SAC is of greater national significance. The development of proposed allocated sites is unlikely to result in a significant impact to climate change independently but good practice and relevant SCC policies regarding the environment and energy efficiency should be followed when assessing proposed developments for each of the sites.[8] | • See PEU Mitigation Measures for air pollution, wildfire/arson and vehicle use above.<br>• Industry standard mitigation to be implemented at the project stage, to include ensuring new development includes an assessment of energy efficiency, potential pollution sources and mitigation for all stages of the development. | No adverse effect on the integrity of the qualifying feature. |
| | Planning permission: general – Local development frameworks, infrastructure projects and planning permissions can cumulatively fragment the SPA and slow the chances of creating a landscape scale delivery of a resilient SPA. Fragmenting the landscape will change the species distribution, and behaviours which could affect the population viability. | It should be noted that SCC are not noted as a delivery partner in the Natural England Site Improvement Plan: South Pennine Moors[9] with regards to this potential impact which has been identified. It is understood that the Site Improvement Plan also relates to the South Pennine Moors SAC which does lie within the LPAs that have been identified as delivery partners. As such it is considered that this potential impact relates to planning permission within the Habitat Site and potential habitat fragmentation within the Habitat Site and not outside of the Habitat Site. It is therefore not considered to be of primary concern to SCC with respect to this potential impact. | • None required – no impacts identified. | N/A |
| | Conservation Objectives - A222 Short-eared Owl *Asio flammeus* (breeding) | | | |

[8] SUGGITT et al (2014) *'Climate change refugia for the flora and fauna of England.'* Natural England Commissioned Reports, Number 162.
[9] Natural England (2014) '*Planning for the Future Improvement Programme for England's Natura 2000 Sites (IPENS) Site Improvement Plan South Pennine Moors'*

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| | Air, water quality and hydrology - The structure and function of the habitats that the short-eared owl depends on is sensitive to air, water quality and hydrology changes.<br><br>Exceedance of critical air pollutant values may modify the chemical status of the habitat substrate while changes to the quality and quantity of water supply (notably at sensitive times of year) may result in the accelerating or damaging plant growth, altering vegetation structure and composition and affecting the nesting, sheltering and foraging ability of the short-eared owl. | Given the distance between proposed allocated sites and the Habitats Site impacts to air quality from residential development sites are not currently considered likely to have an adverse effect on the integrity of the Habitats Site. | • See Air Pollution impacts, above. | No adverse effect on the integrity of the qualifying feature. |
| | Conservation measures - Active maintenance and restoration using appropriate management measures in sensitive ways is required to maintain and restore the structure and function of the habitat that the short-eared owl relies on, without disturbing the birds breeding schedule. This will need to occur outside of the SPA boundary as well. | The proposed allocated sites fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site. | • None required – no impacts identified. | N/A |
| | Food availability within supporting habitat – In order to sustain a population, abundant food availability is necessary. Food availability can determine the survival of the species, adult fitness and therefore successful breeding of the species. Food availability can be affected by inappropriate management and direct or indirect impacts which might cause a change to the distribution and abundance of prey.<br><br>Short-eared owls will prey on vole populations which require extensive, low nutrient and naturally vegetated open ground. However, will also prey on other small mammals and occasionally small birds. | The proposed allocated sites fall within SCC boundary, therefore will not have any influence upon the conservation management techniques employed on the Habitats Site which may impact prey.<br><br>However, there is the potential for habitat outside of the Habitats Site boundary that may support the short-eared owl's prey. | • Ensure new development includes an assessment of potential ecological features, particularly those that might support short-eared owl, within either a Preliminary Ecological Appraisal (PEA), breeding bird survey assessment or individual HRA. If the development area contains suitable habitat, SCC should assess the need for further survey and need for further mitigation. | No adverse effect on the integrity of the qualifying feature. |
| | Landscape and vegetation structure – Short-eared owls prefer large areas of open terrain, which are free from obstructions in and around the nesting, roosting and feeding areas. This is to be able to detect predators and observe displaying behaviour. An open landscape is also needed with any supporting habitat outside of the SPA.<br><br>The vegetation characteristics within the open landscape are also important to enable successful nesting, rearing, and roosting. Short-eared owls require long vegetation (tall heather, rushes and grasses) to provide cover. | The closest proposed allocated site is located 1 km from the Habitats Site boundary and therefore no changes to the landscape and vegetation structure within the SPA boundary are anticipated from the proposed allocated sites.<br><br>However, there is the potential for habitat outside of the Habitats Site boundary that may support the short-eared owl and therefore the proposed allocated sites may contribute to the landscape that short-eared owl require. | • Ensure new development includes an assessment of potential ecological features, particularly those that might support short-eared owl, within either a Preliminary Ecological Appraisal (PEA), breeding bird survey assessment or individual HRA. If the development area contains suitable habitat, SCC should assess the need for further survey and need for further mitigation. | No adverse effect on the integrity of the qualifying feature. |
| | Disturbance - An increase in the numbers of visitors has potential to disturb birds, particularly those that are breeding. The short-eared owl will change its behaviour if threatened, related to feeding and nesting, which will in turn affect the long-term viability of the population. The short-eared owl's energy expenditure can increase due to increased flight, abandonment of nest site and desertion of supporting habitat. Disturbance would inadvertently reduce the availability of suitable habitat as the birds will become displaced, and territories will reduce. Disturbance can come from creating noise, light, vibration, trampling, presence of people and animals.<br><br>The remoteness of some areas of the SPA means they are less likely to be visited by high numbers of visitors and impacts are more likely to result within those areas | The submitted plan plus the proposed additional site allocations will accommodate 38,012 homes, including 3,539 units on greenfield sites in Green Belt. 237.2ha of land for employment would be provided including 67.35ha of Green Belt land. The closest sites are located approximately 1 km from the Habitats Site.<br><br>While development of these areas will result in some increased pressures to the Habitats Site, from a higher level of activity (people and vehicles) the mitigation agreed with Peak District National Park Authority will adequately reduce the effects and therefore, recreational pressure increase will not have an adverse | • Provision of alternative green space<br>• Moorland path restoration and maintenance<br>• Increased ranger presence on the ground<br>• Strategic Fire Management<br>• Sustainable transport options<br>• Signage and information boards (including Fire Information Boards)<br>• Provision of off-site information | No adverse effect on the integrity of the qualifying feature. |

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| | in closer proximity to car parking/rest facilities and main trails which will help to minimise the zone of disturbance. | effect on the integrity of the qualifying feature. | • Management of car parking<br>• Allocated areas for BBQ, including sand buckets/fire extinguishers (where appropriate), introduction of penalties for people using BBQs outside allocated areas<br>• Monitoring plant disease and isolating contaminated areas<br>• Monitoring and controlling invasive species<br>• Provision of dog waste and litter bins<br>• Proportional developer contribution from residential development within the Plan area to fund the above. | |
| | Predation – Breeding productivity can be impacted by the predation of eggs, chick, juveniles and adult birds. It can also be impacted by significant disturbance at the breeding phase, where disturbance can make birds leave nest sites therefore leaving them vulnerable to predators. If predators are near to the species this will influence their behaviour, e.g. abandonment of nest sites, reduction in feeding at the nest site. | Predation can be caused by disturbance or changes in habitats used by the species. As discussed above the proposed allocated sites could result in higher levels of disturbance and changes to potential off-site habitats. | • Refer to mitigation measures discussed in relation to Landscape and vegetation structure and disturbance above. | No adverse effect on the integrity of the qualifying feature. |
| | Adaption and resilience – Resilience is the ability of an ecological system to cope with, and adapt to, environmental stress and change but still retaining the structure and function of itself. Environmental changes may come from sea level changes, changes in precipitation and temperature, any environmental factor that are likely to affect the extent, distribution, composition and function of a feature within the SPA. As such the habitats that the qualifying species is supported by need to be resilient to environmental changes in order to allow the species maintain its population. | The Peak District has been identified by Natural England as being in the top 10% of potential climate change refugia sites within England. These are areas which offer conditions for species to survive longer under extreme climate scenarios, and so the resilience of the SAC is of greater national significance. The development of proposed allocated sites is unlikely to result in a significant impact to climate change independently but good practice and relevant SCC policies regarding the environment and energy efficiency should be followed when assessing proposed developments for each of the sites.[10] | • Industry standard mitigation to be implemented at the project stage, to include ensuring new development includes an assessment of energy efficiency, potential pollution sources and mitigation for all stages of the development. | No adverse effect on the integrity of the qualifying feature. |

[10] SUGGITT et al (2014) *'Climate change refugia for the flora and fauna of England.'* Natural England Commissioned Reports, Number 162.