

Lancashire Local Flood Risk Management Strategy Habitat Regulations Assessment Final January 2014 (Amended September 2021)



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Blackpool Council

Lancashire
County
Council



Blackburn with
Darwen Council

Document control sheet

BPP 04 F8

Version 15; March 2013

Project

Lancashire Local Strategy

Client

Lancashire County Council (Amended Blackpool Council 2021)

Project No:


B1759000


Document title:

Habitats Regulations Assessment Screening Determination for the Lancashire Local Flood Risk Strategy

Ref. No:

2014-01-06_B1759000_Doc_HabitatRegulationsAssessment_D01_Final.doc

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DATE	14/11/2013	Document status Draft for Comment	

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DATE	06/01/14	Document status Final	

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1. Introduction

This report has been produced as a Habitat Regulations Assessment Screening determination which will be submitted to Natural England as a Stage 1 Screening (Assessment of Significant Likely Effects) in accordance with the Conservation of Habitats and Species Regulations 2010 (amended) (henceforth referred to as the Habitat Regulations 2010 (amended)).

The purpose of this assessment is to identify if any of the objectives within the joint Lancashire, Blackpool, and Blackburn with Darwen draft Flood Risk Management Strategy (LFRMS) are likely to have a significant effect on a European Site (either alone or in combination with other plans or projects).

1.1 Background to the Local Strategy

In order to manage flood risk, Lancashire County Council, Blackpool Council, and Blackburn with Darwen are required to produce a Local Flood Risk Management Strategy (LFRMS). The Flood and Water Management Act 2010 (FWMA) has made local authorities responsible for assessing and managing flooding from local sources within their boundaries. Local sources are essentially flooding from small 'ordinary' watercourses, surface water (rainfall runoff) and groundwater.

Aims and Objectives

The Strategy sets out the approach Lancashire County Council, Blackpool Council, and Blackburn with Darwen will use to improve local flood risk management in Lancashire. Implementing this Strategy aims to:

- Reduce the likelihood and consequences of flooding, particularly from surface water, groundwater and Ordinary Watercourses;
- Support economic growth and improvements in the social and natural environment;
- Clarify the roles of the various Partners involved in local flood risk management and improve co-operative working, including across political boundaries;
- Improve communication of clear information regarding local flood risk and appropriate responses, thereby enabling the public and others to take action;
- Identify what measures are required to better manage flooding, including actual works and studies to better understand the risk and appropriate responses; and,
- Facilitate a strategic plan to fund further works and/or studies in priority areas.

The strategy details a series of objectives ('what will be done') and general measures ('how we will do it') to improve sustainable management of flood risk. The 59 objectives were grouped into the following six key themes:

1. Deliver Effective Flood Risk Management Locally
2. Understand our Local Risks and Challenges
3. Support Sustainable Flood Resilient Development

4. Improve Engagement with our Flood Family
5. Maximise Investment Opportunities to better protect our Businesses and Communities
6. Contribute towards a Climate Resilient Lancashire

“Measures” to be proposed will be procedures and general approaches to how flood risk will be managed across Lancashire, including how Lancashire County Council and its partner organisations can work together to investigate and manage flooding issues now and in the future. This may include the need for individual surface water management plans in any ‘high risk’ areas, plus the identification of other areas and neighbourhoods that may need attention.

Measures will not include specific development projects or specific types of development project), except potentially where this is the only recourse for managing a specific type or location of flood risk. Measures are likely to include very broad types of project (e.g. Sustainable Drainage Systems – SuDS).

Table 1 Objectives to improve Flood Risk Management grouped into six key themes.

Key Themes	Objectives
Delivering Effective Flood Risk Management Locally	<p>1.1 Maintain, apply and monitor the Lancashire Local Flood Risk Management (LFRM) Strategy 2021 – 2027</p> <p>1.2 Review and revise existing Section 19 Flood Investigation Report Policy, incorporating lessons learnt since 2010.</p> <p>1.3 Review and revise Consenting and Enforcement policy for regulating Ordinary Watercourses.</p> <p>1.4 Work proactively with Local Planning Authorities to ensure effective local policies are in place for managing flood risk and coastal erosion through the Land and Marine Planning Processes</p> <p>1.5 Address the need for a Highway Drainage Connection Policy</p> <p>1.6 Consider the need for a ‘Designation of Flood Risk Features’ Policy</p> <p>1.7 Deliver LLFA actions and engage with the delivery of actions that require partnership working contained within the National FCERM Strategy Action Plan.</p> <p>1.8 Undertake a mid-term review of the Strategy.</p>
Understanding our Local Risks and Challenges	<p>2.1 Deliver any outstanding Surface Water Management Plans (SWMP), and identify further studies needed.</p> <p>2.2 Bid for funding to install groundwater monitoring equipment to improve our understanding of groundwater flooding in targeted areas in Lancashire.</p> <p>2.3 Bid for funding to map all ordinary watercourses in Lancashire, and feed this mapping and any modelling into national maps to improve all risk management authority understanding of local ordinary watercourse networks</p> <p>2.3 Bid for funding to improve understanding of opportunities for natural flood management and strategic surface water management across Lancashire through sustainable drainage retrofit.</p> <p>2.4 Continue to populate the Flood Risk Asset Register and Record and utilise this data in managing local flood risks.</p> <p>2.5 Spatially map all historic and new known flooding incidents across Lancashire since 2013 and categorise accordingly e.g. internal / external, property / business etc.</p>

Key Themes	Objectives
	<p>2.6 Support development of an ‘all source’ flooding map for the North West, to place all sources of flood risk on an equal footing. This could be achieved through Drainage and Wastewater Management Plan (DWMP)</p> <p>2.7 Consider how Council processes can be improved to make it easier to gather information from residents and businesses which are affected / have been flooded from local sources (i.e. from ordinary watercourses, from surface water, from groundwater).</p> <p>2.8 Benchmark LLFA datasets to ensure all available data is utilised in understand risks.</p>
Supporting Sustainable Flood Resilient Development	<p>3.1 Support and provide input to Local Planning Authorities during plan making to ensure evidence base documents, policies and guidance are suitable and take account of best practice, climate change, biodiversity net gain and amenity aspirations.</p> <p>3.2 Work with Local Planning Authorities to encourage adoption of the SuDS Pro-forma through their Local Planning Validation Checklist for ‘Major’ development.</p> <p>3.3 Be represented on the North West RFCC’s Planning Sub-Group to ensure Lancashire is contributing to and learning from best practice across the region and nationally in relation to planning, development and SuDS.</p> <p>3.4 Establish a process which ensures ‘as built’ SuDS assets are validated and captured in Flood Risk Asset Registers.</p> <p>3.5 Support the development of a natural capital accounting / biodiversity net gain approach for Lancashire, ensuring flood and coastal matters can be valued.</p> <p>3.6 Explore the feasibility of developing a Lancashire-wide ‘SuDS Suitability’ guide, based on mapping of ground conditions and integrated with other agendas such as the Lancashire Ecological Network and blue-green infrastructure network.</p> <p>3.7 Encourage all flood risk management authorities in Lancashire to become members of the Association of SuDS Authorities (ASA).</p> <p>3.8 Where appropriate, recommend to Local Planning Authorities that developers provide a contribution (£106 / CIL monies) to FCERM schemes that provide benefits to better protecting the development / community from flood risks prior to the grant of planning permission.</p> <p>3.9 Produce ‘LLFA Standing Advice for Minor Planning Applications’ to enable Local Planning Authorities to assess minor planning applications in relation to local flood risks without direct LLFA consultation in most circumstances.</p>
Supporting Sustainable Flood Resilient Development	<p>4.1 Improve the ‘The Lancashire Partnership’ webpage on The Flood Hub, including by setting out who our flood family is.</p> <p>4.2 Update Local Authority ‘flooding’ webpages and ensure they link to The Flood Hub to support community awareness, engagement and resilience.</p> <p>4.3 Continue to support maintenance and development of The Flood Hub, including the launch of a new material.</p> <p>4.4 Ensure Flood Action Groups (FLAGS) in Lancashire who consent to their ‘get in touch’ details being shared on The Flood Hub are published on the map and on the Partnership webpage.</p> <p>4.5 Work better together to deliver more effective, targeted and partner focused asset maintenance regime for those assets owned by flood risk management authorities.</p> <p>4.6 Continue to attend and work proactively with Catchment Partnerships to identify local opportunities to work together to co-fund and co-deliver natural flood management and other schemes within the community and private landownership.</p>

Key Themes	Objectives
	<p>4.7 Develop a Communication and Engagement Plan showing clear lines of communication and reporting, within and amongst flood risk management authorities, wider partners and the people of Lancashire. This will include proactive communications and responsive communication to, for example, flood/weather alerts. This should also include a progress for how good practice is captured from across Lancashire, including from Catchment Partnership and wider partners, and shared appropriately with our flood family and the people of Lancashire</p> <p>4.8 Ensure Lancashire is represented at every North West Regional Flood and Coastal Committee's (RFCC) and its sub-groups as formed, to ensure we are working effectively with regional partners, sharing best practice and influencing any decisions or recommendations made to the RFCC and sub-regional FCERM Partnerships.</p> <p>4.9 Ensure all flood risk management authorities are proactively engaged with the Lancashire Resilience Forum (LRF) to continually improve our multi-agency and operational responses to flooding incidents.</p> <p>4.10 Include separate Highway Authority and infrastructure provider representation on the Lancashire FCERM Partnership, at relevant levels, as appropriate, to ensure highway and other infrastructure flood risks are also captured.</p> <p>4.11 Promote the educational resources provided on The Flood Hub and United Utilities SuDS for Schools programme via Local Authority Schools Portal / Educational Leads</p>
<p>Maximising Investment Opportunities to Better Protect our Businesses and Communities</p>	<p>5.1 Deliver schemes within the Investment Programme 2021 – 2027 to time and cost, including meeting partnership funding and efficiency requirements of grant funding.</p> <p>5.2 Proactively monitor the delivery of the programme at every level of the Lancashire FCERM Partnership and hold delivery leads accountable, and ensure this is consistent with best practice established from across the region and/or other RFCC areas.</p> <p>5.3 Share the programme with partners at all levels and with Catchment Partnerships to identify any collaboration opportunities.</p> <p>5.4 Continue to identify opportunities / need for investment in flood risk management infrastructure and ensure these are captured in the Investment Programme 2021 – 2027 at the earliest opportunity to secure an allocation, where viable.</p> <p>5.5 Develop a 'funding catalogue' of all potential sources of funding from public, private, voluntary and other sectors. Explore opportunities to collate this for the region, working with other Project Advisors to achieve this</p> <p>5.6 Establish a process for the Partnership which facilitates quick allocation, approval and delivery of 'Quick Win' funding allocated annually to the Partnership. This includes governance and a re-allocation of funding if not spent as agreed.</p> <p>5.7 Influence national thinking on flood insurance and grants for those affected by flooding to encourage a consistent approach from government rather than on a storm basis.</p> <p>5.8 Where opportunities arise and where appropriate to do so, make government aware of funding challenges experienced in Lancashire, relating to funding duties of flood risk management authorities and investment in areas at risk of local flooding.</p> <p>5.9 Ensure The Flood Hub is updated with flood risk schemes in progress and completed on a periodic basis</p>

Key Themes	Objectives
Contributing Towards a Sustainable, Climate Resilient Lancashire	<p>6.1 Work with climate change action groups set up following Local Authority declaration of a climate emergency to ensure actions to address flood risk and coastal erosion are incorporated within climate change action plans.</p> <p>6.2 Ensure a climate change allowance is incorporated into all proposed new sustainable drainage systems on developments consistent with national and/or local planning requirements and published guidance.</p> <p>6.3 Investigate the feasibility of retrofitting SuDS in schools and other local authority owned buildings across Lancashire to improve their resilience and provide an educational resource.</p> <p>6.4 Explore the feasibility of delivering a series of ‘water resilient parks’ in council owned parks across Lancashire to retrofit SuDS and natural flood management measures to contribute towards surface water storage where evidence shows this would be beneficial and financially viable.</p> <p>6.5 In contributing towards a climate resilient highway network and economy, consider how Highway Authorities in Lancashire could adopt SuDS components under the Highways Act 1980. Work with United Utilities to share learning following introduction of the Design and Construction Guide (DCG) for Sewers.</p> <p>6.6 Support Local Planning Authorities in undertaking a climate change review of Planning Policy and the Use and Management of Water in Lancashire to identify actions they can take to better manage flood risks presented by development and urban creep</p> <p>6.7 Work with The Flood Hub and partner flood risk management authorities to promote property flood resilience measures and land flood resilience measures, and signpost to reputable suppliers if this is possible.</p>

1.2 Purpose of the Assessment

This report will be submitted to Natural England as a Stage 1 Screening (Assessment of Significant Likely Effects) Habitat Regulations Assessment (HRA), in accordance with the Habitat Regulations 2010 (amended).

The core HRA requirements of the Habitats Directive are given in Article 6 (3):

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site’s conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after have ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.”

In this document and in accordance with the Habitats Directive and the Habitat Regulations 2010 (amended), the following designations fall within the definition of a European Site:

- Special Protection Areas (SPAs), and potential SPAs (pSPAs);
- Special Areas of Conservation (SACs), and candidate or possible SACs (cSACs or pSACs);
- Ramsar sites (and potential Ramsar sites); and
- Sites of Community Importance (SCIs).

The purpose of this assessment is to determine whether any of the proposed objectives, are likely to have a significant effect on a European Site either within the Lancashire County Council boundary or up to 20km from the boundary. This 20km spatial scope has been adopted as it is considered highly unlikely that the objectives of the Plan would extend beyond this limit. If the Screening stage was to identify that a significant effect were likely, then a full Appropriate Assessment (Habitats Directive Article 6(4)) would be required.

A drawing showing the Lancashire County boundary, 20km HRA Screening extent and the location and extent of European sites is shown in a Figure, provided in Appendix A of this report. Appendix B includes a table which lists the European Sites that the objectives have been screened against. This table includes details of each site’s qualifying features, nature conservation objectives and their vulnerabilities. The assessment also takes account of other projects and plans with potential “in-combination” effects.

This report will need to be issued formally to Natural England for their review and comment.

2. HRA Assessment

2.1 Methodology

Although the Habitats Directive and Regulations do not specify how the assessment should be undertaken the following documents and websites have been used to inform the preparation of this HRA Stage 1:

- The DCLG draft guidance document Planning for the Protection of European Sites: Appropriate Assessment Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC (DCLG 2006);
- Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EU 2001a);
- The Appropriate Assessment of Spatial Plans in England: a guide to why, when and how to do it (RSPB: Dodd et al. 2007);
- The Environment Agency Habitat Directive Risks Tool available from <http://www.environment-agency.gov.uk/business/topics/permitting/143519.aspx> [accessed 06/11/13];
- Lancashire Local Flood Risk Management Strategy (Consultation Draft) (September, 2013)
- Lancashire Local Flood Risk Management Strategy Draft Strategic Environmental Assessment Scoping Report (April, 2021)
- Environment Agency Flood Risk Maps available from <http://www.environment-agency.gov.uk/homeandleisure/37837.aspx> [accessed 07/11/13]
- Magic Interactive Mapping available from <http://www.magic.gov.uk/> [accessed 07/11/13].

2.2 Stages involved in the HRA Assessment

The whole process is termed Habitat Regulation Assessment (HRA) and comprises the following stages.

1. HRA Stage 1:

Likely significant effects (screening): Identifies whether a plan or project is likely to have a significant effect on a European site;

2. HRA Stage 2:

Ascertaining the effect on site integrity by assessing the effects of the plan or project on the conservation objectives of any European Site that is “screened in” during HRA Stage 1; and,

3. HRA Stage 3:

Mitigation measures and alternative solutions are required where adverse effects are identified at HRA Stage 2. The plan or project should be altered so that all adverse effects are either removed or deleted.

This Screening Report sets out the following:

- A description of the key objectives and measures (where available) that form part of the Lancashire Local Flood Risk Management Strategy.
- A list of the European sites to be included in the assessment linked to a drawing which shows their location (Appendix A).
- Describes the qualifying features of each European Site included in the assessment, the sites’ nature conservation objectives (if available) and its sensitivities/vulnerabilities (refer to Appendix B).
- Identification of possible “source - pathway - receptor” impacts and assessment of whether the effects are likely to be significant¹.

The locations of European Sites in relation to the Lancashire boundary were determined using data downloaded from the MAGIC website (www.magic.co.uk).

As HRA focuses upon the “implications for the site in view of the site’s conservation objectives” (EC 1992a, Article 6(3)), the reasons for the designation of European sites must be understood. This has been identified by desk top review. A high standard of proof is required at the HRA screening stage and as such only objective and robust evidence has been used in the assessment.

The potential pathways of air, water, ground and direct disturbance pathways have been reviewed for each of the Lancashire County Council objectives. The potential for these pathways and identified impacts to result in a likely significant effect on a European site has been assessed.

2.3 European Sites Assessed

The list of sites to be assessed as part of this HRA is split between those located within the Lancashire CC boundary (seven sites) and those up to 20km from the boundary (twenty sites). Each of the sites are listed below, the location is shown in Appendix A and detailed further in Appendix B. This comprises a “long” list of all sites located within the spatial scope of this HRA.

Within the Lancashire County Council boundary:

- Ribble & Alt Estuaries (SPA/Ramsar) (Site 1 within Appendix A)
- South Pennine Moors (SPA/SAC) (Site 2 within Appendix A)
- North Pennine Moors (SAC and SPA) (Site 3 within Appendix A)
- North Pennine Dales Meadows (SAC) (Site 4 within Appendix A)
- Duddon Estuary (SPA/Ramsar) (Site 5 within Appendix A)
- Bowland Fells (SPA) (Site 6 within Appendix A)
- Martin Mere (Ramsar/SPA) (Site 7 within Appendix A)

Outside the Lancashire County Council boundary but within 20km of the boundary:

- Dee Estuary (SAC/SPA/Ramsar) (Site 8 within Appendix A)
- Manchester Mosses (SAC) (Site 9 within Appendix A)
- Craven Limestone Complex (SAC) (Site 10 within Appendix A)
- Calf Hill and Cragg Woods (SAC) (Site 11 within Appendix A)
- Morecambe Bay (SAC/ SPA and Ramsar) (Site 12 within Appendix A)
- Morecambe Bay Pavements (SAC) (Site 13 within Appendix A)
- Ingleborough Complex (SAC) (Site 14 within Appendix A)
- Subberthwaite, Blawith & Torver Low Commons (SAC) (Site 15 within Appendix A)
- River Kent (SAC) (Site 16 within Appendix A)
- Rochdale Canal (SAC) (Site 17 within Appendix A)
- Roudsea Wood & Mosses (SAC) (Site 18 within Appendix A)
- Sefton Coast (SAC) (Site 19 within Appendix A)

1 “any effect that may reasonably be predicted as a consequence of a plan or project that may affect the conservation objectives of the features for which the site was designated, but excluding trivial or inconsequential effects.” (Habitat Regulations Note 3, English Nature 1999),
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- Witherslack Mosses (SAC) (Site 20 within Appendix A)
- Yewbarrow Woods (SAC) (Site 21 within Appendix A)
- Asby Complex (SAC) (Site 22 within Appendix A)
- River Eden (SAC) (Site 23 within Appendix A)
- Mersey Estuary (SPA/Ramsar) (Site 24 within Appendix A)
- Mersey Narrows & North Wirral Foreshore (SPA/Ramsar) (Site 25 within Appendix A)
- Leighton Moss (SPA/Ramsar) (Site 26 within Appendix A)
- Malham Tarn (Ramsar) (Site 27 within Appendix A)
- Shell Flat and Lune Deep (SAC) (Site 28 within Appendix A)
- Liverpool Bay (SPA) (Site 29 within Appendix A).

2.4 Likely Significant Effects

The objectives and measures outlined in the LFRMS are policy level and have not been assigned a spatial location, other than they will be implemented within the boundary of Lancashire. Generally, the listed objectives and measures are considered positive for the environment and therefore are considered to have a positive impact on European sites in the area. It is assumed (although not exclusively) that this positive impact will be most prevalent for European sites surrounding high risk flood areas such as river systems and coastal zones.

There are opportunities to also reference ecosystem services and the presence of European sites in the objectives that sit under theme relating to Delivering Effective Flood Risk Management Locally and Maximising Investment Opportunities to Better Protect our Businesses and Communities. Objectives under the theme Understanding our Local Risks and Challenges there are also opportunities to have access to up-to-date environmental information to inform decision making on flood-risk schemes.

2.5 Screening

A summary of the source of environmental impacts assessed as arising from the LFRMS themes is identified in Table 1 below.

A further consideration of key objectives under these themes is summarised in Appendix C showing how the European sites may be affected by implementing the source-pathway-receptor model. This requires all elements to be present to result in a likely significant effect on any given European site. At this stage, not all objectives of the 2021 LFRMS have been reviewed.

Table 1 Summary of environmental impacts assessed as arising from each of the LFRMS themes

Theme	Implications for European Sites
Deliver Effective Flood Risk Management Locally	None – Coordinating partnership working including processes and procedures within the council particularly roles and responsibilities.
Understand our Local Risks and Challenges	None – Commissioning plans or studies such as Surface Water Management Plans (SWMPs) and keeping up to date with flood risk information and awareness raising
Support Sustainable Flood Resilient Development	Objectives under this theme encourages developers to think about climate change, flood risk and water quality which would have an indirect beneficial impact on surrounding sites. It also promotes water sensitive urban design at the Master planning stage and establishes policy for LLFA consultation on planning applications which could result in positive impacts on European Sites. These objectives will most likely have a beneficial impact the Ribble & Alt Estuaries (SPA/Ramsar); North Pennine Dales Meadows (SAC); Martin Mere (SPA/Ramsar); Dee Estuary (SAC/SPA/Ramsar); Calf Hill & Cragg Woods (SAC); Morecambe Bay (SAC/SPA/Ramsar); River Kent (SAC); Sefton Coast (SAC); River Eden (SAC); Mersey Estuary (SPA/Ramsar); Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar); Leighton Moss (SPA/Ramsar); Malham Tarn (Ramsar) and Liverpool Bay (SPA)
Improve Engagement with our Flood Family	None – develop community awareness/understanding of flooding
Maximise Investment Opportunities to better protect our Businesses and Communities	Objectives under this theme will likely increase investment with more schemes going ahead. These objectives will most likely have a beneficial impact on European Sites such as Ribble & Alt Estuaries (SPA/Ramsar); North Pennine Dales Meadows (SAC); Martin Mere (SPA/Ramsar); Dee Estuary (SAC/SPA/Ramsar); Calf Hill & Cragg Woods (SAC); Morecambe Bay (SAC/SPA/Ramsar); River Kent (SAC); Sefton Coast (SAC); River Eden (SAC); Mersey Estuary (SPA/Ramsar); Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar); Leighton Moss (SPA/Ramsar); Malham Tarn (Ramsar) and Liverpool Bay (SPA).
Contribute towards a Climate Resilient Lancashire	Objectives under this theme encourages all stakeholders to think about climate change and flood risk. These objectives will most likely have an indirect beneficial impact on surrounding sites, potentially the Ribble & Alt Estuaries (SPA/Ramsar); North Pennine Dales Meadows (SAC); Martin Mere (SPA/Ramsar); Dee Estuary (SAC/SPA/Ramsar); Calf Hill & Cragg Woods (SAC); Morecambe Bay (SAC/SPA/Ramsar); River Kent (SAC); Sefton Coast (SAC); River Eden (SAC); Mersey Estuary (SPA/Ramsar); Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar); Leighton Moss (SPA/Ramsar); Malham Tarn (Ramsar) and Liverpool Bay (SPA)

3. HRA Screening Conclusion

The HRA screening has been completed in accordance with current best practice and the following conclusions have been reached for the objectives:

Of the key objectives assessed, number are considered likely to result in an impact (positive) on a European site(s) which promote flood risk management work, would improve water quality and reduce flood risk within some of the European sites.

None of the key objectives assessed are likely to result in an adverse effect on any given European site as these relate to roles and responsibilities, funding and logistics and not the assessment of risk or the identification of the Flood Risk Management option to assess. At this strategic stage, there is no locational data to allow a definitive outcome for individual European sites, however, for the purposes of this HRA, the sites most likely to experience a positive impact have been highlighted in Appendix B as they are located close to river systems, wetlands or coastal areas.

The LFRMS objectives listed have the potential to increase the number of flood risk management schemes and encourage sustainable systems in appropriate locations with a positive outcome for European designations. It is not possible to assess where flood risk management schemes would be introduced but if they were proposed within or near to a European site they would be subject to a separate HRA screening at the project level. Therefore any impacts that arise from the objectives would be considered on their individual merit if close to a European site.

As all the objectives are considered to be positive, the assessment has assumed all the impacts will also be positive. At this stage it is not possible to determine what the full measures and action plan will be that come out of the objectives therefore at this stage they are assumed to be positive. If for example, maintenance is not carried out correctly or development increases flood risk in some areas, then there is potential for negative impacts but this is not possible to assess at this stage. When at the scheme level there may be potential for negative impacts, these should be assessed as part of the project level HRA, if required.

Overall it is considered that there would be a positive impact on the European sites screened as part of this HRA, with particular improvements likely to be experienced at the following sites by nature of their qualifying habitats and/or species. The scale of improvement could only be quantified at the project level when locational and scheme information would be available:

- Ribble & Alt Estuaries (SPA/Ramsar)
- North Pennine Dales Meadows (SAC);
- Martin Mere (SPA/Ramsar);
- Dee Estuary (SAC/SPA/Ramsar);
- Calf Hill & Cragg Woods (SAC);
- Morecambe Bay (SAC/SPA/Ramsar);
- River Kent (SAC);
- River Eden (SAC);
- Mersey Estuary (SPA/Ramsar);
- Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar);
- Leighton Moss (SPA/Ramsar);
- Malham Tarn (Ramsar); and,
- Liverpool Bay (SPA).

No in-combination effects, with other projects and plans, have been identified. All strategic plans either produced by Lancashire County Council or the Environment Agency (particularly flood risk management projects/plans) will be or have been subject to a separate HRA. For example, the Lancashire County Council Core Strategy was subject to a Habitat Regulations Assessment which is included within the Final Sustainability Report (November 2007). In addition, planning policies set out in the Lancashire County Council boundary have been written to avoid an adverse effect on individual European Sites.

It is not anticipated that there will be any direct impacts by land take or damage to any European Site by construction or operational activities associated with the LFRMS objectives.

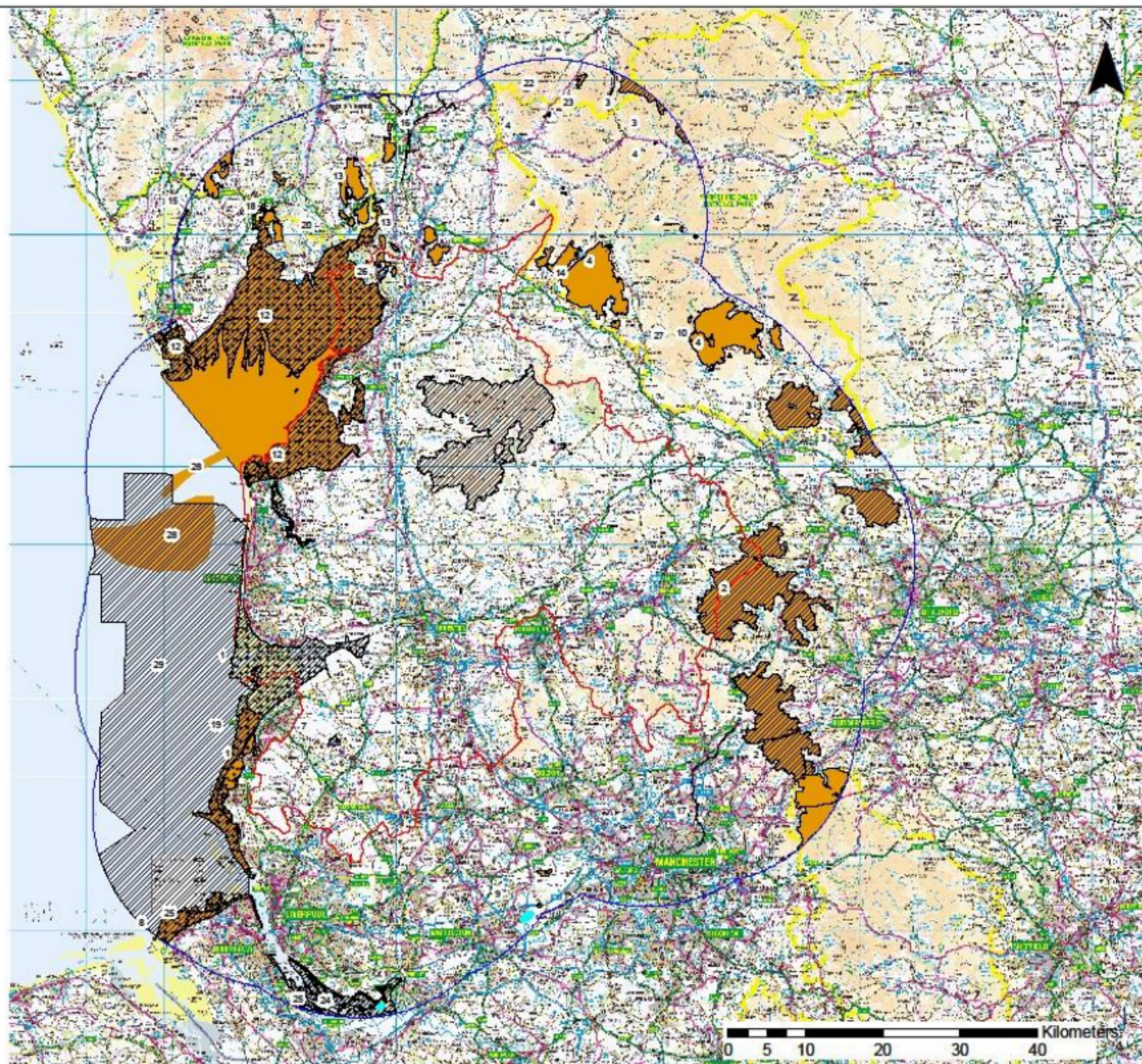
Furthermore, there are no indirect or significant pathways by which impacts either alone or “in-combination” with other plans or policies are likely to result in significant effects on the integrity of any European Site within Lancashire County Council boundary and/or 20km from the boundary.

In accordance with the Habitat Regulations 2010 (as amended), the Draft Screening Report needs to be issued to NE, for comment.

For the above reasons, we consider that an Appropriate Assessment is not required as part of the SEA submission.

Appendix A

Location of the Natura 2000 sites subject to HRA Screening



Legend

- Lancashire County Extent
- 20km Extent from LCC Boundary
- Special Protected Area
- Ramsar
- Special Areas of Conservation

NATURA 2000 SITES

1. Ribble and Alt Estuaries SPA/Ramsar
2. South Pennine Moor SAC and South Pennine Moor Phase 1 SPA
3. North Pennine Moor SAC and SPA
4. North Pennine Dales Meadow SAC
5. Duddon Estuary SPA and Ramsar
6. Bowland Fells SPA
7. Martin Mere SPA and Ramsar
8. Dee Estuary SAC, SPA and Ramsar
9. Manchester Mosses SAC
10. Craven Limestone Complex SAC
11. Calf Hill and Craggy Woods SAC
12. Morecombe Bay SAC, SPA and Ramsar
13. Morecombe Bay Ravennants SAC
14. Ingleborough Complex SAC
15. Subberthwaite, Blawith and Torver Low Commons SAC
16. River Kent SAC
17. Rochdale Canal SAC
18. Roudsea Wood and Mosses SAC
19. Salford Coast SAC
20. Witherslack Mosses SAC
21. Yewbarrow Woods SAC
22. Asby Complex SAC
23. River Eden SAC
24. Mersey Estuary SPA and Ramsar
25. Mersey Narrows and North Wirral Foreshore pSPA and Ramsar
26. Leighton Moss SPA and Ramsar
27. Malham Tarn Ramsar
28. Shell Flats and Lune Deep SAC
29. Liverpool Bay SPA

1	JAN 14	Nature Sites 20 & 25 edited	CS	DC	SB	DD
0	OCT 13	Initial Issue	CS	DC	SB	DD
Rev.	Date	Purpose of revision	Drawn	Checked	Rev'd	App'd

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Project
 HABITAT REGULATION ASSESSMENT SCREENING
 DETERMINATION FOR
 LANCASHIRE COUNTY COUNCIL LOCAL FLOOD RISK
 MANAGEMENT STRATEGY

Drawing Title
**FIGURE 1:
 THE LOCATION OF NATURA 2000 SITES
 SUBJECT TO HRA SCREENING**

Drawing Status
FOR ISSUE

Scale @ A3
 See Drawing
DO NOT SCALE

Job No.
 B1759000

Drawing No.
 B1759000/HRA SCREENING DETERMINATION
 FOR LCC LFRMS/FIGURE 1

This drawing is not to be used in whole or in part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.

Appendix B

European Site Assessment and Screening Tables

Table 2: Key designation criteria for the Natura 2000 sites located within 20km of Lancashire boundary

The sites highlighted in yellow are considered to be more susceptible to a positive change due to the implementation of the LFRMS given their proximity to rivers, coastlines and wetland areas and giving consideration to the Environment Agency Flood Risk Maps.

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
Ribble & Alt Estuaries (SPA/Ramsar)	<p>Annex I birds present, Bewick's swan - non-breeding (<i>Cygnus columbianus bewickii</i>); Whooper swan - non-breeding (<i>Cygnus Cygnus</i>); Pink-footed goose - non-breeding (<i>Anser brachyrhynchus</i>); Common shelduck - non-breeding (<i>Tadorna tadorna</i>); Eurasian wigeon - non-breeding (<i>Anas Penelope</i>); Eurasian teal (non-breeding) <i>Anas crecca</i>; Northern pintail (non-breeding) <i>Anas acuta</i>; Eurasian oystercatcher (non-breeding) <i>Haematopus ostralegus</i>; Ringed plover (non-breeding) <i>Charadrius hiaticula</i>; European golden plover (non-breeding) <i>Pluvialis apricaria</i>; Grey plover (non-breeding) <i>Pluvialis squatarola</i>; Red knot (non-breeding) <i>Calidris canutus</i>; Sanderling (non-breeding) <i>Calidris alba</i>; Dunlin (non-breeding) <i>Calidris alpina alipina</i>; Ruff (Breeding) <i>Philomachus pugnax</i>; Black-tailed godwit (non-breeding) <i>Limosa limosa islandica</i>; Bar-tailed godwit (non-breeding) <i>Limosa lapponica</i>; Common redshank (non-breeding) <i>Tringa tetanus</i>; Lesser black-backed gull (breeding) <i>Larus fuscus</i>; Common tern (breeding) <i>Sterna hirundo</i>; Waterbird assemblage and Seabird assemblage.</p> <p>Ramsar - Natterjack toads <i>Bufo calamita</i>. Lesser black-backed gull , <i>Larus fuscus graellsii</i>, Ringed plover , <i>Charadrius hiaticula</i>, Grey plover, <i>Pluvialis squatarola</i>, Red knot, <i>Calidris canutus islandica</i>, Sanderling, <i>Calidris alba</i>, Dunlin, <i>Calidris alpina alpina</i>, Black-tailed godwit, <i>Limosa limosa islandica</i>, Common redshank , <i>Tringa totanus totanus</i>, Tundra swan, <i>Cygnus columbianus bewickii</i>, Whooper swan, <i>Cygnus cygnus</i>, Pink-footed goose, <i>Anser brachyrhynchus</i>, Common shelduck, <i>Tadorna tadorna</i>, Eurasian wigeon, <i>Anas penelope</i>, Eurasian teal, <i>Anas crecca</i>, Northern pintail, <i>Anas acuta</i>, Eurasian oystercatcher, <i>Haematopus ostralegus ostralegus</i>, Bar-tailed godwit, <i>Limosa lapponica lapponica</i>.</p>	<p>The site, in places is subject to pressure from:</p> <ul style="list-style-type: none"> • recreation, • built development (including coastal defence), • wildfowling and industry, including sand-winning. <p>Wider land management issues are being developed via the neighbouring Ribble and Mersey Estuary Strategies. The issues of grazing pressure. Along the Flyde coast there are issues with water quality.</p>	<p>Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive. Subject to natural change, to maintain or restore:</p> <p>The extent and distribution of the habitats of the qualifying features;</p> <p>the qualifying features;</p> <p>habitats of the qualifying features rely;</p> <p><input type="checkbox"/> The populations of the qualifying features;</p> <p><input type="checkbox"/> The distribution of the qualifying features within the site.</p>

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
<p>South Pennine Moors SAC and South Pennine Moors Phase 1 SPA</p> <p>SAC occupies 64,983.1ha</p> <p>SPA occupies: 45,301.5ha</p>	<p>SAC – Annex I and Annex II habitats present; Annex I; European dry heath, blanket bog, old sessile oak woods with ilex and blechnum.</p> <p>Annex II; North Atlantic wet heaths with <i>Erica tetralix</i> and transition mires and quaking bogs.</p> <p>SPA – the site is designated because of its importance as a breeding site for a number of upland species;</p> <ul style="list-style-type: none"> • Birds of prey e.g. merlin (>30 pairs), short-eared owl (> 22 pairs) and peregrine. • Waders e.g. golden plover (>435 pairs). 	<p>Key pressures to bird species are:</p> <ul style="list-style-type: none"> • Habitat loss to development. • Damage of moorland due to recreational activities, including increased erosion of peatland and robbing of bird's nests. • Drainage of peatland. <p>- Burning, over-grazing and re-seeding of moorland.</p> <p>Key pressures to habitats are:</p> <ul style="list-style-type: none"> • large populations of people in the area use the area for recreational activities (trampling). • Agricultural pressures (burning for grouse management) • Invasive non-native plant species • Atmospheric pollution affecting woodland, bog and heath habitats 	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; <input type="checkbox"/> The populations of qualifying species; <input type="checkbox"/> The distribution of qualifying species within the site.
<p>North Pennine Moor SAC and SPA</p>	<p>SAC - Annex I and Annex II habitats present; Annex I; H4010. Northern Atlantic wet heaths with <i>Erica tetralix</i>; Wet heathland with cross-leaved heath H4030. European dry heaths H5130. <i>Juniperus communis</i> formations on heaths or calcareous grasslands; Juniper on heaths or calcareous grasslands H6130. Calaminarian grasslands of the <i>Violetalia calaminariae</i>; Grasslands on soils rich in heavy metals H6150. Siliceous alpine and boreal grasslands;</p>	<p>Key pressures include:</p> <ul style="list-style-type: none"> • Excessive livestock grazing • Drainage of wet areas disrupting the hydrology and causing erosion • over-intensive and inappropriate burning is damaging to heath and blanket bog • Acid and nitrogen deposition continues to have damaging 	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p>

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
	<p>Montane acid grasslands H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>); Dry grasslands and scrublands on chalk or limestone H7130. Blanket bogs H7220. Petrifying springs with tufa formation (<i>Cratoneurion</i>); Hard-water springs depositing lime H7230. Alkaline fens; Calcium-rich springwater-fed fens H8110. Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>); Acidic scree H8210. Calcareous rocky slopes with chasmophytic vegetation; Plants in crevices in base-rich rocks H8220. Siliceous rocky slopes with chasmophytic vegetation; Plants in crevices on acid rocks H91A0. Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles; Western acidic oak woodland Annex II; S1528. <i>Saxifraga hirculus</i>; Marsh saxifrage SPA - A082 <i>Circus cyaneus</i>; Hen harrier (Breeding) A098 <i>Falco columbarius</i>; Merlin (Breeding) A103 <i>Falco peregrinus</i>; Peregrine falcon (Breeding) A140 <i>Pluvialis apricaria</i>; European golden plover (Breeding)</p>	effects on the site.	<p><input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species;</p> <p><input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species;</p> <p><input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;</p> <p><input type="checkbox"/> The populations of qualifying species;</p> <p><input type="checkbox"/> The distribution of qualifying species within the site.</p>
North Pennine Dales Meadows SAC	<p>Annex I habitats present: H6410. <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>); Purple moor-grass meadows H6520. Mountain hay meadows</p>	These grasslands are dependent upon traditional agricultural management, with hay-cutting and no or minimal use of agrochemicals. Such management is no longer economic. Management agreements and ESA payments are being used to promote the continuation of traditional management. The refining of	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features. Subject to natural change, to maintain or restore:</p> <p><input type="checkbox"/> The extent and distribution of qualifying</p>

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
		the prescriptions underpinning these schemes in the light of the findings of monitoring programmes is an important, continuing, part of delivering favourable condition.	<p>natural habitats and habitats of qualifying species;</p> <p>The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species;</p> <p><input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;</p> <p><input type="checkbox"/> The populations of qualifying species;</p> <p>The distribution of qualifying species within the site.</p>
Duddon Estuary SPA and Ramsar	<p>SPA - A054 <i>Anas acuta</i>; Northern pintail (Non-breeding)</p> <p>A143 <i>Calidris canutus</i>; Red knot (Non-breeding)</p> <p>A162 <i>Tringa totanus</i>; Common redshank (Non-breeding)</p> <p>A191 <i>Sterna sandvicensis</i>; Sandwich tern (Breeding)</p> <p>Waterbird assemblage</p> <p>A137 <i>Charadrius hiaticula</i>; Ringed plover (Non-breeding)</p> <p>A144 <i>Calidris alba</i>; Sanderling (Non-breeding)</p> <p>Ramsar – Natterjack toad <i>Bufo calamita</i>, Northern pintail, <i>Anas acuta</i>, Red knot, <i>Calidris canutus islandica</i>, Common redshank, <i>Tringa totanus tetanus</i>.</p>	<p>Vulnerability of habitats is linked to changes in the physical environment. For example:</p> <ul style="list-style-type: none"> • The intertidal zone is being threatened by coastal squeeze as a result of land claim and coastal defence works as well as sea level rise and storm surges. • Saltmarshes are grazed by agricultural stock. • Waterfowl wintering on estuaries are vulnerable to loss of feeding areas through disturbance, land claim and development. • Recreational pressure and bait digging. • various developments for housing, amenity and industry adjacent to the site 	<p>Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive.</p> <p>Subject to natural change, to maintain or restore:</p> <p>The extent and distribution of the habitats of the qualifying features;</p> <p>The structure and function of the habitats of the qualifying features;</p> <p><input type="checkbox"/> The supporting processes on which the habitats of the qualifying features rely;</p> <p><input type="checkbox"/> The populations of the qualifying features;</p> <p><input type="checkbox"/> The distribution of the qualifying features within the site.</p>

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
Bowland Fells SPA	A082 <i>Circus cyaneus</i> ; Hen harrier (Breeding) A098 <i>Falco columbarius</i> ; Merlin (Breeding) A183 <i>Larus fuscus</i> ; Lesser black-backed gull (Breeding)	The expansive blanket bog and heather dominated moorland provides suitable habitat for a diverse range of upland breeding birds. Favourable nature conservation status of the site depends on appropriate levels of sheep grazing, sympathetic moorland burning practice, sensitive water catchment land management practices and on going species protection.	Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive. Subject to natural change, to maintain or restore: <input type="checkbox"/> The extent and distribution of the habitats of the qualifying features; <input type="checkbox"/> The structure and function of the habitats of the qualifying features; <input type="checkbox"/> The supporting processes on which the habitats of the qualifying features rely; <input type="checkbox"/> The populations of the qualifying features; <input type="checkbox"/> The distribution of the qualifying features within the site.
Martin Mere SPA and Ramsar	SPA - A037 <i>Cygnus columbianus bewickii</i> ; Bewicks swan (Non-breeding) A038 <i>Cygnus cygnus</i> ; Whooper swan (Non-breeding) A040 <i>Anser brachyrhynchus</i> ; Pink-footed goose (Non-breeding) A052 <i>Anas crecca</i> ; Eurasian teal (Non-breeding) A054 <i>Anas acuta</i> ; Northern pintail (Non-breeding) Waterbird assemblage Ramsar - Pink-footed goose, <i>Anser brachyrhynchus</i> , Tundra swan, <i>Cygnus columbianus bewickii</i> , Whooper swan, <i>Cygnus cygnus</i> , Eurasian wigeon, <i>Anas penelope</i> , Northern pintail, <i>Anas acuta</i> .	The refuge is vulnerable to: • water levels being adversely affected water abstraction for agriculture. • changes in farming practice. Grazing management is largely dependent upon cattle from surrounding farms. • Nutrients brought in with the water supply from the surrounding arable farmland and inadequate sewage treatment adds considerably to the large deposits of guano from wintering waterfowl. This results in the refuge being	Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive. Subject to natural change, to maintain or restore: The extent and distribution of the habitats of the qualifying features; The structure and function of the habitats of the qualifying features; <input type="checkbox"/> The supporting processes on which the

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
		<p>highly eutrophic with extremely poor water quality conditions and creates the possible risk of water borne diseases which could affect waterfowl, although no such outbreaks have been recorded. Water quality issues have started to be addressed by WWT with the creation of reedbed water filtration systems and a series of settlement lagoons helps to reduce suspended solids of effluent water arising from waterfowl areas.</p> <p>Regular herbicide control of trifid burr marigold is necessary in order to prevent this plant from invading lake/scape margins to the detriment of bird populations.</p>	<p>habitats of the qualifying features rely;</p> <p><input type="checkbox"/> The populations of the qualifying features;</p> <p><input type="checkbox"/> The distribution of the qualifying features within the site.</p>
Dee Estuary SAC, SPA and Ramsar	<p>SAC – Annex I and II habitats include:</p> <p>Annex 1; 1140 Mudflats and sandflats not covered by seawater at low tide</p> <p>1310 Salicornia and other annuals colonizing mud and sand</p> <p>1330 Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)</p> <p>1130 Estuaries</p> <p>1210 Annual vegetation of drift lines</p> <p>1230 Vegetated sea cliffs of the Atlantic and Baltic Coasts</p> <p>2110 Embryonic shifting dunes</p> <p>2120 “Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (‘white dunes’)</p> <p>2130 Fixed coastal dunes with herbaceous vegetation (‘greydunes’)</p> <p>2190 Humid dune slacks</p>	<p>The majority of the site is in the ownership and sympathetic management of public bodies and voluntary conservation organisations. Unlike most western estuaries, sizeable areas of the Dee saltmarshes remain ungrazed and therefore plant species that are susceptible to grazing are widespread. This distinctive flora would therefore be sensitive to increase in grazing pressure. The intertidal and subtidal habitats of the estuary are broadly subject to natural successional change and the</p>	

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
	<p>Annex II; 1095 Sea lamprey <i>Petromyzon marinus</i> 1099 River lamprey <i>Lampetra fluviatilis</i> 1395 Petralwort <i>Petalophyllum ralfsii</i></p> <p>SPA - A048 <i>Tadorna tadorna</i>; Common shelduck (Non-breeding) A052 <i>Anas crecca</i>; Eurasian teal (Non-breeding) A054 <i>Anas acuta</i>; Northern pintail (Non-breeding) A130 <i>Haematopus ostralegus</i>; Eurasian oystercatcher (Non-breeding) A141 <i>Pluvialis squatarola</i>; Grey plover (Non-breeding) A143 <i>Calidris canutus</i>; Red knot (Non-breeding) A149 <i>Calidris alpina alpina</i>; Dunlin (Non-breeding) A156 <i>Limosa limosa islandica</i>; Black-tailed godwit (Non-breeding) A157 <i>Limosa lapponica</i>; Bar-tailed godwit (Non-breeding) A160 <i>Numenius arquata</i>; Eurasian curlew (Non-breeding) A162 <i>Tringa totanus</i>; Common redshank (Non-breeding) A191 <i>Sterna sandvicensis</i>; Sandwich tern (Non-breeding) A193 <i>Sterna hirundo</i>; Common tern (Breeding) A195 <i>Sterna albifrons</i>; Little tern (Breeding) Waterbird assemblage</p> <p>Ramsar – Annex 1 features present on the pSAC as detailed above. In addition, Redshank, <i>Tringa totanus</i>, Teal, <i>Anas crecca</i>, Shelduck, <i>Tadorna tadorna</i>, Oystercatcher, <i>Haematopus ostralegus</i>, Curlew, <i>Numenius arquata</i>, Pintail, <i>Anas acuta</i>, Grey plover, <i>Pluvialis squatarola</i>, Knot, <i>Calidris canutus islandica</i>, Dunlin, <i>Calidris alpina alpina</i> Black-tailed godwit, <i>Limosa limosa islandica</i>, Bar-tailed godwit, <i>Limosa lapponica</i>,</p>	<p>Dee Estuary continues to show annual net sediment accretion. Saltmarshes on the English side of the estuary continue to accrete overall whilst on the Welsh shoreline the main river channel has moved onshore leading to localised erosion of the saltmarshes</p> <p>Threats to the estuary's conservation come from its industrialised shorelines on the Welsh side and the impact of adjacent historic industrial use including waste disposal from former manufacturing industry such as chemical and steel manufacture.</p> <p>Contemporary issues relate to dock development and navigational dredging, coastal defence works and their impact on coastal process, regulation of fisheries, and the recreational use of intertidal, sand dunes and saltmarshes. The statutory agencies are working with landowners and regulatory bodies towards the further remediation of historic threats and the reconciliation of conservation management with human and commercial pressures.</p>	

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
	Redshank, <i>Tringa tetanus</i> .		
<p>Manchester Mosses SAC</p> <p>Warrington</p> <p>Comprises the following SSSIs:</p> <ul style="list-style-type: none"> - Astley & Bedford Mosses - Holcroft Moss - Risley Moss <p>172.81ha</p>	<p>Sphagnum bog</p> <p>Annex I habitat: Degraded raised bog still capable of natural regeneration.</p>	<p>Mossland which historically covered a large part of Greater Manchester and the Mersey Basin has been lost to agriculture, industry and other development. The 3 SSSIs are some of the few degraded raised bogs left.</p> <p>Key pressures:</p> <ul style="list-style-type: none"> • Drainage of surrounding agricultural land and water extraction for local industry leading to drying out of mosses and subsequent natural succession which in turn lowers groundwater levels. • Loss of Sphagnum species due to drying out of peat and industrial pollution (air pollution from heavy industry). • Peat extraction (legal / illegal). • Damage to peat land due to recreational activities. • Fly tipping. • Afforestation as a result of natural succession 	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; <input type="checkbox"/> The populations of qualifying species; <input type="checkbox"/> The distribution of qualifying species within the site.
Craven Limestone Complex SAC	<p>H3140. Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.; Calcium-rich nutrient-poor lakes, lochs and pools</p> <p>H6130. Calaminarian grasslands of the <i>Violetalia calaminariae</i>; Grasslands on soils rich in heavy</p>	<ul style="list-style-type: none"> • Heavy livestock or rabbit grazing has been damaging and the Wildlife Enhancement Scheme and other forms of agri-environmental agreement 	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full</p>

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
	<p>metals</p> <p>H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>); Dry grasslands and scrublands on chalk or limestone</p> <p>H6410. <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>); Purple moor-grass meadows</p> <p>H7110. Active raised bogs*</p> <p>H7220. Petrifying springs with tufa formation (<i>Cratoneurion</i>); Hard-water springs depositing lime</p> <p>H7230. Alkaline fens; Calcium-rich springwater-fed fens</p> <p>H8240. Limestone pavements</p> <p>H9180. <i>Tilio-Acerion</i> forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes.</p> <p>S1092. <i>Austropotamobius pallipes</i>; White-clawed (or Atlantic stream) crayfish</p> <p>S1163. <i>Cottus gobio</i>; Bullhead</p> <p>S1902. <i>Cypripedium calceolus</i>; Lady's-slipper orchid</p>	<p>are being used, successfully, to promote appropriate management.</p> <ul style="list-style-type: none"> • Removal of limestone pavement for sale as rockery stone and limestone quarrying • The raised bog has suffered some past drainage but the hydrology has been made secure and the site is carefully managed. • Malham Tarn is vulnerable to nutrient enrichment in the catchment and action has been taken to minimise such inputs. 	<p>contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; <input type="checkbox"/> The populations of qualifying species; <input type="checkbox"/> The distribution of qualifying species within the site.
Calf Hill and Cragg Woods SAC	<p>H91A0. Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles; Western acidic oak woodland</p> <p>H91E0. Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>); Alder woodland on floodplains.</p>	<p>Currently there is limited intervention in land-use/management terms. There is also no immediate need for woodland management in order to safeguard the interest of the site.</p> <ul style="list-style-type: none"> • Some grazing is considered desirable (to help maintain the diversity of the ground flora) but it would be beneficial to be able to exclude sheep altogether for certain times of the year, or altogether for a limited period in order to encourage natural 	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species; <p>The structure and function (including typical</p>

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
		<p>regeneration.</p> <ul style="list-style-type: none"> • In addition, since the canopy of the oak woodland is fairly dense and natural regeneration is quite limited, it would be desirable over the long-term to instigate small-scale selective fellings/ silvicultural thinning, whilst felling a small stand of planted larch/pine (<0.5 ha) and replacing it with oak/birch. 	<p>species) of qualifying natural habitats and habitats of qualifying species;</p> <p><input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;</p> <p><input type="checkbox"/> The populations of qualifying species;</p> <p>The distribution of qualifying species within the site.</p>
Morecambe Bay SAC, SPA and Ramsar	<p>SAC –</p> <p>H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks</p> <p>H1130. Estuaries</p> <p>H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats</p> <p>H1150. Coastal lagoons</p> <p>H1160. Large shallow inlets and bays</p> <p>H1170. Reefs</p> <p>H1220. Perennial vegetation of stony banks; Coastal shingle vegetation outside the reach of waves</p> <p>H1310. <i>Salicornia</i> and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand</p> <p>H1330. Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>)</p> <p>H2110. Embryonic shifting dunes</p> <p>H2120. Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes"); Shifting dunes with marram</p> <p>H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland*</p> <p>H2150. Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>); Coastal dune heathland*</p> <p>H2170. Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>); Dunes with creeping willow</p>	<ul style="list-style-type: none"> • Coastal protection and flood defence works. • Saltmarsh is traditionally grazed and is generally in favourable condition for its bird interest. • Positive management is being secured through NGO reserve management plans, English Nature's Site Management Statements and Coastal Wildlife Enhancement Scheme, the European Marine Site Management Schemes for the Duddon Estuary and Morecambe Bay, and the Duddon Estuary and Morecambe Bay Partnerships. These aim for sustainable use of the site, taking account of other potential threats including commercial fisheries, aggregate extraction, gas exploration, recreation and 	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <p><input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species;</p> <p><input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species;</p> <p><input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;</p> <p><input type="checkbox"/> The populations of qualifying species;</p> <p><input type="checkbox"/> The distribution of qualifying species within</p>

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	<p>H2190. Humid dune slacks S1166. <i>Triturus cristatus</i>; Great crested newt SPA – A040 <i>Anser brachyrhynchus</i>; Pink-footed goose (Non-breeding) A048 <i>Tadorna tadorna</i>; Common shelduck (Non-breeding) A054 <i>Anas acuta</i>; Northern pintail (Non-breeding) A063 <i>Somateria mollissima</i>; Common eider (Breeding) A130 <i>Haematopus ostralegus</i>; Eurasian oystercatcher (Non-breeding) A137 <i>Charadrius hiaticula</i>; Ringed plover (Non-breeding) A140 <i>Pluvialis apricaria</i>; European golden plover (Non-breeding) A141 <i>Pluvialis squatarola</i>; Grey plover (Non-breeding) A143 <i>Calidris canutus</i>; Red knot (Non-breeding) A149 <i>Calidris alpina alpina</i>; Dunlin (Non-breeding) A157 <i>Limosa lapponica</i>; Bar-tailed godwit (Non-breeding) A160 <i>Numenius arquata</i>; Eurasian curlew (Non-breeding) A162 <i>Tringa totanus</i>; Common redshank (Non-breeding) A169 <i>Arenaria interpres</i>; Ruddy turnstone (Non-breeding) A183 <i>Larus fuscus</i>; Lesser black-backed gull (Breeding) A184 <i>Larus argentatus</i>; Herring gull (Breeding) A191 <i>Sterna sandvicensis</i>; Sandwich tern (Breeding) A193 <i>Sterna hirundo</i>; Common tern (Breeding) A195 <i>Sterna albifrons</i>; Little tern (Breeding) Waterbird assemblage A144 <i>Calidris alba</i>; Sanderling (Non-breeding) Seabird assemblage Ramsar - Passage ringed plover <i>Charadrius</i></p>	<p>other activities. Along the Flyde coast there are issues with water quality.</p>	<p>the site.</p>

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	<p><i>hiaticula</i>; Lesser black-backed gull, <i>Larus fuscus graellsii</i>; Herring gull, <i>Larus argentatus argentatus</i>; Sandwich tern, <i>Sterna (Thalasseus) sandvicensis sandvicensis</i>; Great cormorant, <i>Phalacrocorax carbo carbo</i>; Common shelduck, <i>Tadorna tadorna</i>; Northern pintail, <i>Anas acuta</i>; Common eider, <i>Somateria mollissima Mollissima</i>; urasian oystercatcher, <i>Haematopus ostralegus Ostralegus</i>; Grey plover, <i>Pluvialis squatarola</i>; Sanderling, <i>Calidris alba</i>; Eurasian curlew, <i>Numenius arquata arquata</i>; Common redshank, <i>Tringa totanus tetanus</i>; Ruddy turnstone, <i>Arenaria interpres interpres</i>; Great crested grebe, <i>Podiceps cristatus Cristatus</i>; Pink-footed goose, <i>Anser brachyrhynchus</i>; Eurasian wigeon, <i>Anas Penelope</i>; Common goldeneye, <i>Bucephala clangula Clangula</i>; Red-breasted merganser, <i>Mergus serrator</i>; European golden plover, <i>Pluvialis apricaria Apricaria</i>; Northern lapwing, <i>Vanellus vanellus</i>; Dunlin, <i>Calidris alpina alpina</i>; Bar-tailed godwit, <i>Limosa lapponica lapponica</i>.</p>		

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
Morecambe Bay Pavements SAC	<p>H3140. Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.; Calcium-rich nutrient-poor lakes, lochs and pools</p> <p>H4030. European dry heaths</p> <p>H5130. <i>Juniperus communis</i> formations on heaths or calcareous grasslands</p> <p>H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>); Dry grasslands and scrublands on chalk or limestone</p> <p>H7210. Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>; Calcium-rich fen dominated by great fen sedge (saw sedge)</p> <p>H8240. Limestone pavements</p> <p>H9180. <i>Tilio-Acerion</i> forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes</p> <p>H91A0. Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles; Western acidic oak woodland</p> <p>H91J0. <i>Taxus baccata</i> woods of the British Isles; Yew-dominated woodland</p> <p>S1014. <i>Vertigo angustior</i>; Narrow-mouthed whorl snail</p>	<p>The cSAC is subject to a number of problems related to the decline of traditional management practices. • The under-grazing of grasslands and decline of traditional cattle grazing is leading to the loss of sward diversity and scrub encroachment problems. Localised overgrazing (sheep-dominated) has impoverished the pavement flora on one of the component sites.</p> <p>• A decline of traditional coppice management has reduced the interest of some of the woodland sites. The planting of non-native conifer crops on some of the sites has led to localised declines in condition.</p>	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; <input type="checkbox"/> The populations of qualifying species; <input type="checkbox"/> The distribution of qualifying species within the site.
Ingleborough Complex SAC	<p>H5130. <i>Juniperus communis</i> formations on heaths or calcareous grasslands; Juniper on heaths or calcareous grasslands</p> <p>H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>); Dry grasslands and scrublands on chalk or limestone</p> <p>H6410. <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>); Purple moor-grass meadows</p> <p>H7130. Blanket bogs</p>	<p>Heavy livestock or rabbit grazing has been damaging</p> <p>Removal of limestone pavement for sale as rockery stone and limestone quarrying have both caused problems in the past and are now addressed through Limestone Pavement Orders.</p>	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p>

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
	<p>H7220. Petrifying springs with tufa formation (<i>Cratoneurion</i>); Hard-water springs depositing lime</p> <p>H7230. Alkaline fens; Calcium-rich springwater-fed fens</p> <p>H8210. Calcareous rocky slopes with chasmophytic vegetation; Plants in crevices in base-rich rocks</p> <p>H8240. Limestone pavements</p> <p>H9180. <i>Tilio-Acerion</i> forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes</p>		<p><input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species;</p> <p><input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species;</p> <p><input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;</p> <p><input type="checkbox"/> The populations of qualifying species;</p> <p><input type="checkbox"/> The distribution of qualifying species within the site.</p>
Subberthwaite, Blawith & Torver Low Commons SAC	<p>H7140. Transition mires and quaking bogs; Very wet mires often identified by an unstable 'quaking' surface</p> <p>H7150. Depressions on peat substrates of the <i>Rhynchosporion</i></p>	<p>This site comprises a complex mosaic of over 200 discrete mires set within an agriculturally unimproved landscape. The mires are at or near favourable condition and would only be threatened by intensification of land-use on the surrounding commons or by interference with the site hydrology. There is a good liaison with a commoners association over part of the site. Lowland heath is not listed as a SAC feature on the site because of its degraded, unfavourable condition. Heathland may be inhibited from recovery by the livestock management regime but at current livestock levels this is not believed to be affecting the</p>	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <p><input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species;</p> <p><input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species;</p> <p><input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely;</p>

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
		mire interest.	<input type="checkbox"/> The populations of qualifying species; <input type="checkbox"/> The distribution of qualifying species within the site.
River Kent SAC	H3260. Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation; Rivers with floating vegetation often dominated by water-crowfoot S1029. <i>Margaritifera margaritifera</i> ; Freshwater pearl mussel S1092. <i>Austropotamobius pallipes</i> ; White-clawed (or Atlantic stream) crayfish S1163. <i>Cottus gobio</i> ; Bullhead	The maintenance of breeding and nursery areas for the species on this site depends on the habitat quality of streams and their margins. Some areas of the site suffer from poor habitat quality. The intention is to address this through implementation of habitat improvement schemes. The impact of point-discharges on water quality will be reviewed and action proposed where necessary. A particular problem on this site and affecting white-clawed crayfish is incidents of pyrethroid sheep-dip pollution of watercourses. These are currently under investigation. The dwindling population of freshwater pearl mussels needs to be investigated in relation to the factors affecting its recruitment and structure. A management plan will be developed for the part of the catchment supporting this species.	Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features. Subject to natural change, to maintain or restore: <input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species; The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; <input type="checkbox"/> The populations of qualifying species; The distribution of qualifying species within the site.

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
<p>Rochdale Canal SAC (includes Rochdale SSSI)</p> <p>25.73ha</p>	<p>The canal supports a significant population of the Annex II species, floating water plantain (<i>Luronium natans</i>). The canal also supports a diverse community of plants such as many pondweed species (<i>Potamogeton</i> spp).</p>	<p>The canal stretches 20km through urban and industrial landscapes and has been fully restored. It is under pressures from the following:</p> <ul style="list-style-type: none"> • Future impacts potentially caused by boat movements • Possible disturbance impacts resulting from increased human pressure. 	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; <input type="checkbox"/> The populations of qualifying species; <input type="checkbox"/> The distribution of qualifying species within the site.

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
Roudsea Wood and Mosses SAC	<p>H7110. Active raised bogs</p> <p>H7120. Degraded raised bogs still capable of natural regeneration</p> <p>H9180. <i>Tilio-Acerion</i> forests of slopes, screes and ravines; Mixed woodland on base-rich soils associated with rocky slopes</p> <p>H91J0. <i>Taxus baccata</i> woods of the British Isles; Yew-dominated woodland</p>	<p>In the latter part of the 20th century, coppicing of the woodland ceased and lower water tables on the bogs, caused by drainage for peat-cutting, had allowed scrub to spread across them. Most of the site is now managed as a National Nature Reserve. Woodland management is carried out and much scrub has been cleared from Deer Dike Moss and ditches blocked to allow regeneration of the bog vegetation. Management of the southern bog, recently added to the National Nature Reserve, has been addressed in the management plan.</p>	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; <input type="checkbox"/> The populations of qualifying species; <input type="checkbox"/> The distribution of qualifying species within the site.

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
Sefton Coast SAC	<p>H2110. Embryonic shifting dunes</p> <p>H2120. Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes"); Shifting dunes with marram</p> <p>H2130. Fixed dunes with herbaceous vegetation ("grey dunes"); Dune grassland*</p> <p>H2150. Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>); Coastal dune heathland*</p> <p>H2170. Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>); Dunes with creeping willow</p> <p>H2190. Humid dune slacks</p> <p>S1166. <i>Triturus cristatus</i>; Great crested newt</p> <p>S1395. <i>Petalophyllum ralfsii</i>; Petalwort</p>	<ul style="list-style-type: none"> • The extensive sand dunes and intertidal areas attract large numbers of summer tourists. This impact is addressed in Sefton Metropolitan Borough Council's Beach Management Plan. • Concerns have been raised regarding water abstraction on the coast. • The coniferous plantations are also a source of debate, with a balance needed between restoration of dune habitats and public enjoyment of the woodlands. 	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; <input type="checkbox"/> The populations of qualifying species; <input type="checkbox"/> The distribution of qualifying species within the site.

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
Witherslack Mosses SAC	H7110. Active raised bogs H7120. Degraded raised bogs still capable of natural regeneration	Past drainage for peat extraction and forestry has lowered the water table and allowed scrub to spread across the mosses. A programme of restoration works is in place on two of the mosses, and a management plan has been completed for major works on the third.	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; <input type="checkbox"/> The populations of qualifying species; <input type="checkbox"/> The distribution of qualifying species within the site.

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
Yewbarrow Woods SAC	<p>H5130. <i>Juniperus communis</i> formations on heaths or calcareous grasslands; Juniper on heaths or calcareous grasslands</p> <p>H91A0. Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles; Western acidic oak woodland</p> <p>H91J0. <i>Taxus baccata</i> woods of the British Isles; Yew-dominated woodland</p>	<p>Although lack of regeneration at Yewbarrow is a problem resulting from browsing by deer, woodland grants have been given in recent years to encourage regeneration of native trees, together with funding for stockproof fencing. Estimates of areas covered by yew, juniper and heath will be checked the next time the site is surveyed.</p>	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; <input type="checkbox"/> The populations of qualifying species; <input type="checkbox"/> The distribution of qualifying species within the site.

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
Asby Complex SAC	<p>H3140. Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.; Calcium-rich nutrient-poor lakes, lochs and pools</p> <p>H4030. European dry heaths</p> <p>H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>); Dry grasslands and scrublands on chalk or limestone</p> <p>H6410. <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>); Purple moor-grass meadows</p> <p>H7210. Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>; Calcium-rich fen dominated by great fen sedge (saw sedge)</p> <p>H7220. Petrifying springs with tufa formation (<i>Cratoneurion</i>); Hard-water springs depositing lime</p> <p>H7230. Alkaline fens; Calcium-rich springwater-fed fens</p> <p>H8240. Limestone pavements</p> <p>S1013. <i>Vertigo geyeri</i>; Geyer's whorl snail</p> <p>S1393. <i>Drepanocladus (Hamatocaulis) vernicosus</i>; Slender green feather-moss</p>	<ul style="list-style-type: none"> • Limestone pavements have been extensively damaged in the past for supply of decorative rockery stone. Unauthorised damage still continues as a minor and local problem. • Asby Complex suffers from overgrazing. The limestone pavement flora and the dry heathland are particularly affected, though the fen and spring habitats appear tolerant of the grazing levels. • There has been some agricultural pressure on the fen and tufa springs but damage from drainage and fertiliser application is being addressed through management agreements. 	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; <input type="checkbox"/> The populations of qualifying species; <input type="checkbox"/> The distribution of qualifying species within the site.

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
River Eden SAC	<p>H3130. Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i>; Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels</p> <p>H3260. Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation; Rivers with floating vegetation often dominated by water-crowfoot</p> <p>H91E0. Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>); Alder woodland on floodplains</p> <p>S1092. <i>Austropotamobius pallipes</i>; White-clawed (or Atlantic stream) crayfish</p> <p>S1095. <i>Petromyzon marinus</i>; Sea lamprey</p> <p>S1096. <i>Lampetra planeri</i>; Brook lamprey</p> <p>S1099. <i>Lampetra fluviatilis</i>; River lamprey</p> <p>S1106. <i>Salmo salar</i>; Atlantic salmon</p> <p>S1163. <i>Cottus gobio</i>; Bullhead</p> <p>S1355. <i>Lutra lutra</i>; Otter</p>	<ul style="list-style-type: none"> • Many of the streams within the site suffer from overgrazing of riverbanks and nutrient run-off. • The water-crowfoot communities as well as the species are sensitive to water quality, particularly eutrophication. • Practices associated with sheep-dipping pose a potential threat at this site, and are currently under investigation. • Much of the alluvial forest cover is fragmented and/or in poor condition. 	<p>Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The extent and distribution of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species; <input type="checkbox"/> The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; <input type="checkbox"/> The populations of qualifying species; <input type="checkbox"/> The distribution of qualifying species within the site.

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
Mersey Estuary SPA and Ramsar	<p>A048 <i>Tadorna tadorna</i>; Common shelduck (Non-breeding) A052 <i>Anas crecca</i>; Eurasian teal (Non-breeding) A054 <i>Anas acuta</i>; Northern pintail (Non-breeding) A140 <i>Pluvialis apricaria</i>; European golden plover (Non-breeding) A149 <i>Calidris alpina alpina</i>; Dunlin (Non-breeding) A156 <i>Limosa limosa islandica</i>; Black-tailed godwit (Non-breeding) A162 <i>Tringa totanus</i>; Common redshank (Non-breeding) Waterbird assemblage</p> <p>Ramsar - Common shelduck, <i>Tadorna tadorna</i>; Black-tailed godwit, <i>Limosa limosa islandica</i>; Common redshank, <i>Tringa totanus totanus</i>; Eurasian teal, <i>Anas crecca</i>; Northern pintail, <i>Anas acuta</i>; Dunlin, <i>Calidris alpina alpina</i>.</p>	<p>Wintering bird numbers and associated intertidal flats are robust to day-to-day change. Nevertheless, the estuary is subject to multiple uses; it is heavily industrialised, a substantial urban conurbation, has multiple transport requirements and increasing recreational activities. The site is vulnerable to physical loss through land-claim and development, physical damage caused by navigation capital and maintenance dredging, agricultural requirements, non-physical loss, toxic and non-toxic contamination and biological disturbance by wildfowling.</p>	<p>Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive. Subject to natural change, to maintain or restore:</p> <p>The extent and distribution of the habitats of the qualifying features;</p> <p>the qualifying features;</p> <p>habitats of the qualifying features rely;</p> <p><input type="checkbox"/> The populations of the qualifying features;</p> <p><input type="checkbox"/> The distribution of the qualifying features within the site.</p>
Mersey Narrows & North Wirral Foreshore pSPA and Ramsar	<p>Annex 1: Bar-tailed Godwit <i>Limosa lapponica</i> Common Tern <i>Sterna hirundo</i> Little Gull <i>Hydrocoloeus minutus</i> Knot <i>Calidris canutus islandica</i></p> <p>Ramsar - regularly supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions Knot <i>Calidris canutus</i>; Bar-tailed Godwit <i>Limosa lapponica</i>; Little Gull <i>Hydrocoloeus minutes</i>; Common Tern <i>sterna hirundo</i>.</p>		

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
Leighton Moss SPA and Ramsar	<p>A021 <i>Botaurus stellaris</i>; Great bittern (Breeding) A021 <i>Botaurus stellaris</i>; Great bittern (Non-breeding) A081 <i>Circus aeruginosus</i>; Eurasian marsh harrier (Breeding)</p> <p>Ramsar - Large reedbed habitat characteristic of the biogeographically region. The reedbeds are of particular importance as a northern outpost for breeding populations of great bittern <i>Botaurus stellaris</i>, Eurasian marsh harrier <i>Circus aeruginosus</i> and bearded tit <i>Panurus biarmicus</i>. Species occurring in nationally important numbers outside the breeding season include northern shoveler <i>Anas clypeata</i> and water rail <i>Rallus aquaticus</i>.</p>	<p>Leighton Moss is the largest reedbed in North West England and is vulnerable to changes in water quality and water levels.</p> <p>The decline of booming bitterns on the site, reflecting a national trend, has been halted through detailed research and improved management of the site.</p> <p>The Moss is also susceptible to saline intrusion upstream of its tidal sluice from Morecambe Bay.</p>	<p>Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive.</p> <p>Subject to natural change, to maintain or restore:</p> <ul style="list-style-type: none"> ■ The extent and distribution of the habitats of the qualifying features; ■ The structure and function of the habitats of the qualifying features; □ The supporting processes on which the habitats of the qualifying features rely; □ The populations of the qualifying features; □ The distribution of the qualifying features within the site.
Malham Tarn Ramsar	<p>Contains the highest marl lake in Britain, along with acidophilous bog, calcareous fen and soligenous mire.</p> <p>Supports the nationally rare alpine bartisia <i>Bartsia alpina</i> and narrow small reed <i>Calamagrostis stricta</i> and seven nationally scarce species. Supports five listed British Red Data Book invertebrates including the caddis fly <i>Agrypnia crassicornis</i>.</p>		

Site name	Qualifying Features	Vulnerability and Pressures	Conservation Objectives
Shell Flat and Lune Deep SAC	1110 Sandbanks which are slightly covered by sea water at all time 1170 Reefs	Operations likely to affect the habitats are: i) Physical loss by smothering; ii) Physical damage by siltation or abrasion; iii) Toxic contamination by introduction of synthetic or non-synthetic compounds; iv) Non-toxic contamination from changes in nutrient loading, organic loading, or changes in turbidity; v) Changes in salinity; vi) Biological disturbance by Introduction of microbial pathogens, introduction of non-native species and translocation, or selective extraction of species.	<input type="checkbox"/> Subject to natural change, maintain the sandbanks slightly covered by seawater all the time in favourable condition. <input type="checkbox"/> Subject to natural change, maintain the reefs in favourable condition.
Liverpool Bay SPA	A001 <i>Gavia Stellata</i> A065 <i>Melanitta nigra</i>	<ul style="list-style-type: none"> • Commercial/Recreational fishing • Dredging • Off shore renewable energy industry • Marine tourism and leisure activities including marina developments. • Along the Flyde coast there are issues with water quality. 	<input type="checkbox"/> Subject to natural change, maintain or enhance the red-throated diver population and its supporting habitats in favourable condition. <input type="checkbox"/> Subject to natural change, maintain or enhance the common scoter population and its supporting habitats in favourable condition <input type="checkbox"/> Subject to natural change, maintain or enhance the waterbird assemblage and its supporting habitats in favourable condition.

Appendix C

Detailed Assessment of Each Objective

Table 3: Implications of key objectives for European Sites

Objective	Noise/ Vibration Impacts	Air Quality Impacts	Water Quality Impacts	General disturbance
4.1 to 4.11	No significant change	No significant change	No significant change	No significant change
1.3 1.7	No significant change	No significant change	No significant change	No significant change
1.1	No significant change	No significant change	No significant change	No significant change
2.1 2.3	No significant change	No significant change	No significant change	No significant change
2.5 2.6	No significant change	No significant change	No significant change	No significant change
2.4 2.5	No significant change	No significant change	No significant change	No significant change
6.2 6.5 6.6	No significant change	No significant change	No significant change	Potential indirect positive impact from incorporating climate change and flood risk into planning and development proposals could benefit European sites such as the Ribble & Alt Estuaries (SPA/Ramsar); North Pennine Dales Meadows (SAC); Martin Mere (SPA/Ramsar); Dee Estuary (SAC/SPA/Ramsar); Calf Hill & Cragg Woods (SAC); Morecambe Bay (SAC/SPA/Ramsar); River Kent (SAC); Sefton Coast (SAC); River Eden (SAC); Mersey Estuary (SPA/Ramsar); Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar); Leighton Moss (SPA/Ramsar), Malham Tarn (Ramsar) and Liverpool Bay (SPA).
5.5	No significant change	No significant change	No significant change	No significant change
5.1 5.4	No significant change	No significant change	Greater funding of FRM works increased number of schemes which could improve water quality of European sites such as the Ribble & Alt Estuaries (SPA/Ramsar);	Greater funding of FRM works increased number of schemes potential for a scheme within the Ribble & Alt Estuaries (SPA/Ramsar); North Pennine Dales Meadows (SAC); Martin Mere (SPA/Ramsar); Dee Estuary (SAC/SPA/Ramsar); Calf Hill &

Objective	Noise/ Vibration Impacts	Air Quality Impacts	Water Quality Impacts	General disturbance
			North Pennine Dales Meadows (SAC); Martin Mere (SPA/Ramsar); Dee Estuary (SAC/SPA/Ramsar); Calf Hill & Cragg Woods (SAC); Morecambe Bay (SAC/SPA/Ramsar); River Kent (SAC); Sefton Coast (SAC); River Eden (SAC); Mersey Estuary (SPA/Ramsar); Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar); Leighton Moss (SPA/Ramsar); Malham Tarn (Ramsar) and Liverpool Bay (SPA) if a scheme was developed nearby.	Cragg Woods (SAC); Morecambe Bay (SAC/SPA/Ramsar); River Kent (SAC); Sefton Coast (SAC); River Eden (SAC); Mersey Estuary (SPA/Ramsar); Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar); Leighton Moss (SPA/Ramsar); Malham Tarn (Ramsar) and Liverpool Bay (SPA) indirectly. If there are an increased number of schemes there could be an impact on the sites detailed above if not assessed sufficiently for impacts on ecology as part of the project level HRA. Schemes could potentially affect water levels positively or negatively in other watercourses and could impact on ecology within those habitats which would be assessed with locational data at the project level.
1.7 4.5 4.6	No significant change	No significant change	No significant change	No significant change
2.8	No significant change	No significant change	No significant change	No significant change
4.4 4.7	No significant change	No significant change	No significant change	No significant change
3.1 3.2	No significant change	No significant change	Potential for improved water quality (for example through controlled drainage development under Schedule 3 of the Flood Water Management Act which requires developments to obtain SuDs Approval Board approval) in the Ribble & Alt Estuaries (SPA/Ramsar); North Pennine Dales Meadows (SAC); Martin Mere (SPA/Ramsar); Dee Estuary (SAC/SPA/Ramsar); Calf Hill & Cragg Woods (SAC); Morecambe Bay (SAC/SPA/Ramsar); River Kent (SAC); Sefton Coast (SAC); River Eden (SAC); Mersey Estuary (SPA/Ramsar); Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar) Leighton Moss (SPA/Ramsar), Malham Tarn (Ramsar) or Liverpool Bay (SPA) if scheme nearby.	Potentially less chance of flooding in Ribble & Alt Estuaries (SPA/Ramsar); North Pennine Dales Meadows (SAC); Martin Mere (SPA/Ramsar); Dee Estuary (SAC/SPA/Ramsar); Calf Hill & Cragg Woods (SAC); Morecambe Bay (SAC/SPA/Ramsar); River Kent (SAC); Sefton Coast (SAC); River Eden (SAC); Mersey Estuary (SPA/Ramsar); Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar) Leighton Moss (SPA/Ramsar), Malham Tarn (Ramsar) or Liverpool Bay (SPA) if scheme nearby.

Objective	Noise/ Vibration Impacts	Air Quality Impacts	Water Quality Impacts	General disturbance
			(SPA/Ramsar); Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar); Leighton Moss (SPA/Ramsar); Malham Tarn (Ramsar) and Liverpool Bay (SPA) if development is nearby.	
3.2 3.4 3.6	No significant change	No significant change	Increased use and statutory regulation of SuDs in European sites such as Ribble & Alt Estuaries (SPA/Ramsar); North Pennine Dales Meadows (SAC); Martin Mere (SPA/Ramsar); Dee Estuary (SAC/SPA/Ramsar); Calf Hill & Cragg Woods (SAC); Morecambe Bay (SAC/SPA/Ramsar); River Kent (SAC); Sefton Coast (SAC); River Eden (SAC); Mersey Estuary (SPA/Ramsar); Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar); Leighton Moss (SPA/Ramsar) and Malham Tarn (Ramsar) would reduce flood risk and improve water quality.	Increased use and statutory regulation of SuDs in European sites such as Ribble & Alt Estuaries (SPA/Ramsar); North Pennine Dales Meadows (SAC); Martin Mere (SPA/Ramsar); Dee Estuary (SAC/SPA/Ramsar); Calf Hill & Cragg Woods (SAC); Morecambe Bay (SAC/SPA/Ramsar); River Kent (SAC); Sefton Coast (SAC); River Eden (SAC); Mersey Estuary (SPA/Ramsar); Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar); Leighton Moss (SPA/Ramsar) and Malham Tarn (Ramsar) would reduce flood risk and improve water quality.
2.4	No significant change	No significant change	No significant change	No significant change
4.5 4.6	No significant change	No significant change	Potential positive impact if increased maintenance of assets with a flood risk management function within the Ribble & Alt Estuaries (SPA/Ramsar); North Pennine Dales Meadows (SAC); Martin Mere (SPA/Ramsar); Dee Estuary (SAC/SPA/Ramsar); Calf Hill & Cragg Woods (SAC); Morecambe Bay (SAC/SPA/Ramsar); River Kent (SAC); Sefton Coast (SAC); River Eden (SAC); Mersey Estuary (SPA/Ramsar); Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar); Leighton Moss (SPA/Ramsar); Malham Tarn (Ramsar)	Potential increased maintenance of assets with a flood risk management function within the Ribble & Alt Estuaries (SPA/Ramsar); North Pennine Dales Meadows (SAC); Martin Mere (SPA/Ramsar); Dee Estuary (SAC/SPA/Ramsar); Calf Hill & Cragg Woods (SAC); Morecambe Bay (SAC/SPA/Ramsar); River Kent (SAC); Sefton Coast (SAC); River Eden (SAC); Mersey Estuary (SPA/Ramsar); Mersey Narrows & North Wirral Foreshore (pSPA/Ramsar); Leighton Moss (SPA/Ramsar); Malham Tarn (Ramsar) and Liverpool Bay (SPA).

Objective	Noise/ Vibration Impacts	Air Quality Impacts	Water Quality Impacts	General disturbance
			and Liverpool Bay (SPA) this could improve water quality and reduce flood risk.	

