



Initial report to inform the Habitats Regulations Assessment of the Sunderland Allocations and Designations Plan

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Summary

Habitats Regulations Assessment (HRA) is the step by step process of ensuring that a plan or project being undertaken by, or permitted by, a public body will not adversely affect the ecological integrity of key wildlife sites, referred to as European sites. European legislation, which is transposed into domestic legislation and policy, affords European sites the highest levels of protection.

This report accompanies the Sunderland Allocations and Designations Draft Plan at the Regulation 18 stage. A complete HRA will be finalised alongside the submission version of the Plan and therefore at this earlier stage the report provides an initial screening and consideration of appropriate assessment topics, in particular highlighting where further information or evidence will be necessary to inform the next iteration of the HRA.

The initial screening has highlighted likely significant effects alone in relation to:

- Recreational pressure (Durham Coast SAC, Northumbria Coast SPA/Ramsar);
- Disturbance and increased mortality from wind turbines (Northumbria Coast SPA/Ramsar); Hydrological issues (Durham Coast SAC, Northumbria Coast SPA/Ramsar); and
- Air quality (Durham Coast SAC, Northumbria Coast SPA/Ramsar).

These topics are therefore ones where appropriate assessment will be required. We identify that prior to submission, the following are required:

- Mitigation for recreation impacts to the Durham Coast SAC and Northumbria Coast SPA/Ramsar needs to be cross-referenced in policy;
- The indicative map accompanying policy WWE11: Wind Energy should be reviewed and risks for the European sites highlighted to ensure project level HRA for some locations;
- Checks with the statutory agencies are made in relation to hydrological issues, especially with respect to the Durham Coast SAC.
- Natural England's advice on air quality impacts for the Durham Coast SAC is sought, further traffic modelling and air quality modelling may be necessary.

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1. Introduction

Context

- 1.1 This report provides the initial work to inform the Habitats Regulations Assessment (HRA) of the Sunderland Allocations and Designations Draft Plan.
- 1.2 The Sunderland Allocations and Designations Draft Plan represents the third and final part of the adopted development plan for the City and should be read alongside the policies within the adopted CSDP (CSDP) and International Advanced Manufacturing Park Area Action Plan (IAMP AAP).
- 1.3 The HRA will be updated with each version of the plan, this report accompanies the draft plan at the 'Regulation 18' stage, and is based on a version of the plan provided to Footprint Ecology in October 2020. The HRA will be updated and further expanded to accompany a revised Draft of the Plan (Regulation 19) in 2021, prior to the submission of the Plan for Examination in Public.

Habitats Regulations Assessment process

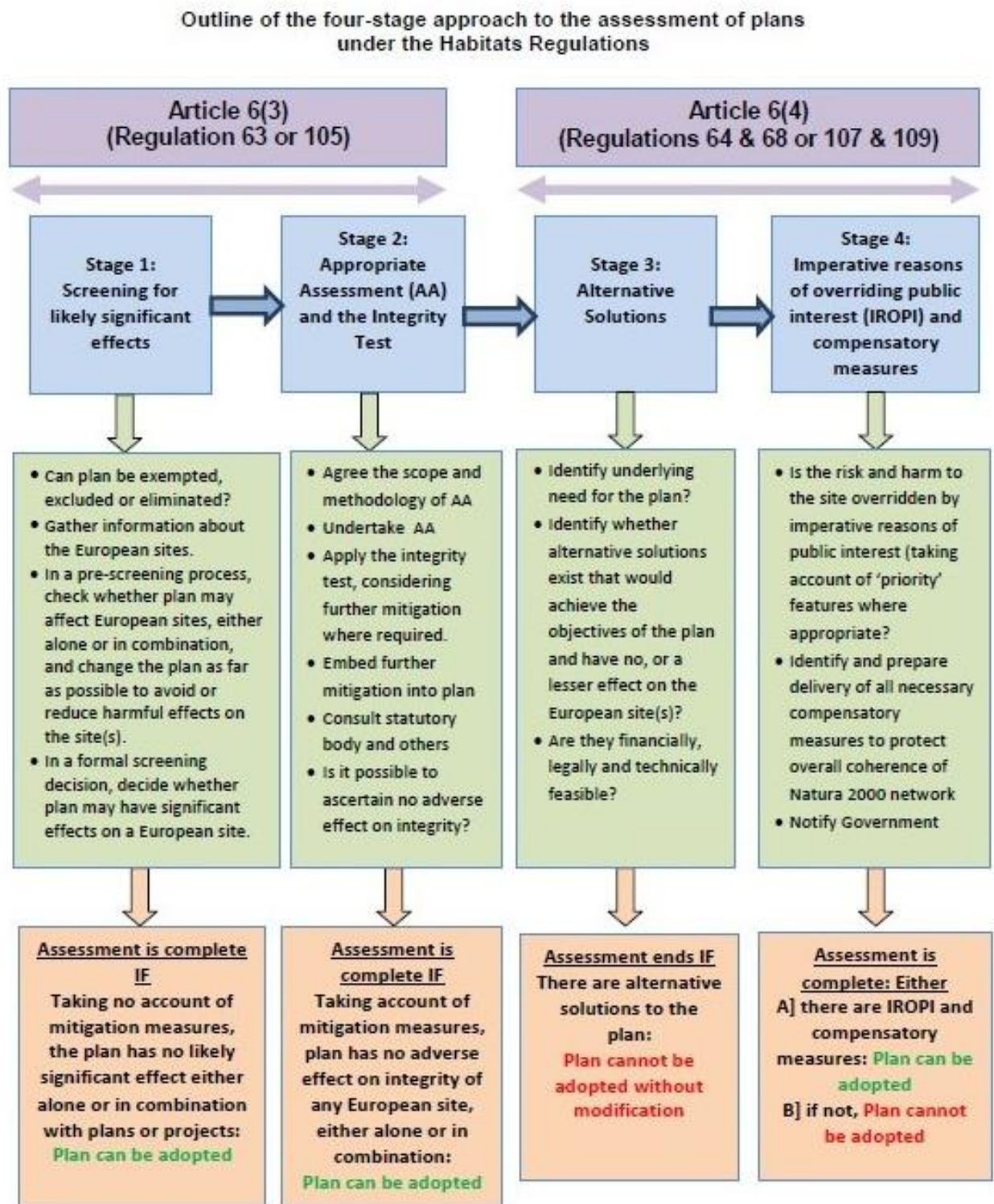
- 1.4 The designation, protection and restoration of European wildlife sites is embedded in the Conservation of Habitats and Species Regulations 2017, as amended, which are commonly referred to as the 'Habitats Regulations.' The most recent version of the Habitats Regulations does not affect the principles of European site assessment as defined by the previous Regulations, and which forms the focus of this report. Regulation numbers have changed from the 2010 Regulations. A further update was made in 2018.
- 1.5 The 2017 Habitat Regulations remain in force without any of the amendments relating to Brexit made by The Conservation of Habitats and Species (Amendment) (EU exit) Regulations 2019. These Brexit-related changes are suspended until Implementation Period completion day and confirm that these provisions will be retained, in the short term at least.
- 1.6 The Habitats Regulations are in place to transpose European legislation set out within the Habitats Directive (Council Directive 92/43/EEC), which affords protection to plants, animals and habitats that are rare or vulnerable in a European context, and the Birds Directive (Council Directive 2009/147/EC), which originally came into force in 1979, and which protects rare and vulnerable birds and their habitats. These key pieces of European legislation seek to protect, conserve and restore habitats and species that are of utmost conservation importance and concern across Europe.

European sites

- 1.7 The European Directives operate on the basis that sites are in place to serve as an ecologically functioning network, and ultimately it is the preservation of that network as a whole that is the overall aim of the European Directives. The network is often referred to as the Natura 2000 Network or 'N2K.'
- 1.8 N2K sites include Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) classified under the Birds Directive. The suite of sites includes those in the marine environment as well as terrestrial, freshwater and coastal sites. These N2K sites have the benefit of the highest level of legislative protection for biodiversity. Member states have specific duties in terms of avoiding deterioration of habitats and species for which sites are designated or classified, and stringent tests have to be met before plans and projects can be permitted, with a precautionary approach embedded in the legislation (i.e. it is necessary to demonstrate that impacts will not occur, rather than they will). The overarching objective is to maintain sites and their interest features in an ecologically robust and viable state, able to sustain and thrive into the long term, with adequate resilience against natural influences. Where sites are not achieving their potential, the focus should be on restoration.
- 1.9 The UK is also a contracting party to the Ramsar Convention, which is a global convention to protect wetlands of international importance, especially those wetlands utilised as waterfowl habitat. In order to ensure compliance with the requirements of the Convention, the UK Government expects all competent authorities to treat listed Ramsar sites as if they are part of the suite of designated European sites, as a matter of government policy, as set out in paragraph 176 of the National Planning Policy Framework. Most Ramsar sites are also a SPA or SAC, but, importantly, the Ramsar features and boundary lines may vary from those for which the site is designated as a SPA or SAC.
- 1.10 The NPPF requires decision makers to apply the same protection and process to Ramsar sites as that set out in legislation for European sites. Formally proposed sites, i.e. sites proposed for European designation (potential SPAs, candidate SACs and Sites of Community Importance) and going through the designation process, and those providing formal compensation for losses to European sites, are also given the same protection.
- 1.11 This report refers to all the above sites as 'European sites' for assessment purposes, as the legislation is applied to all such sites, either directly or as a result of policy.

Process

- 1.12 The step by step process of HRA is summarised in Figure 1.
- 1.13 Within the Habitats Regulations, local planning authorities, as public bodies, are given specific duties as 'competent authorities' with regard to the protection of sites designated or classified for their species and habitats of European importance. Competent authorities are any public body or individual holding public office with a statutory remit and function, and the requirements of the legislation apply where the competent authority is undertaking or implementing a plan or project, or authorising others to do so. Regulation 63 of the Habitats Regulations sets out the HRA process for plans and projects, which includes development proposals for which planning permission is sought. Additionally, Regulation 105 specifically sets out the process for assessing emerging land use plans.



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Figure 1: Outline of the assessment of plans under the Habitat Regulations

- 1.14 Throughout all stages, there is a continual consideration of the options available to avoid and mitigate any identified potential impacts. A competent authority may consider that there is a need to undertake further levels of evidence gathering and assessment in order to have certainty, and this is the Appropriate Assessment stage. At this point the competent authority may identify the need to add to or modify the project in order to adequately protect the European site, and these mitigation measures may be added through the imposition of particular restrictions and conditions.
- 1.15 For plans, the stages of HRA are often quite fluid, with the plan normally being prepared by the competent authority itself. This gives the competent authority the opportunity to repeatedly explore options to prevent impacts, refine the plan and rescreen it to demonstrate that all potential risks to European sites have been successfully dealt with.
- 1.16 When preparing a plan, a competent authority may therefore go through a continued assessment as the plan develops, enabling the assessment to inform the development of the plan. For example, a competent authority may choose to pursue an amended or different option where impacts can be avoided, rather than continue to assess an option that has the potential to significantly affect European site interest features.
- 1.17 After completing an assessment, a competent authority should only approve a project or give effect to a plan where it can be ascertained that there will not be an adverse effect on the integrity of the European site(s) in question. In order to reach this conclusion, the competent authority may have made changes to the plan, or modified the project with restrictions or conditions, in light of their Appropriate Assessment findings.
- 1.18 Where adverse effects cannot be ruled out, there are further exceptional tests set out in Regulation 64 for plans and projects and in Regulation 107 specifically for land use plans. Exceptionally, a plan or project could be taken forward for imperative reasons of overriding public interest where adverse effects cannot be ruled out and there are no alternative solutions. It should be noted that meeting these tests is a rare occurrence and ordinarily, competent authorities seek to ensure that a plan or project is fully mitigated for, or it does not proceed.
- 1.19 In such circumstances where a competent authority considers that a plan or project should proceed under Regulations 64 or 107, they must notify the relevant Secretary of State. Normally, planning decisions and competent authority duties are then transferred, becoming the responsibility of the Secretary of State, unless, on considering the information, the planning authority is directed by the Secretary of State to make their own decision on the plan or project at the local level. The decision maker, whether the Secretary of State or

the planning authority, should give full consideration to any proposed 'overriding reasons' for which a plan or project should proceed despite being unable to rule out adverse effects on European site interest features, and ensure that those reasons are in the public interest and are such that they override the potential harm. The decision maker will also need to secure any necessary compensatory measures to ensure the continued overall coherence of the European site network if such a plan or project is allowed to proceed.

Definitions, references to case law and guidance

- 1.20 The principles of case-law, government policy and best practice in HRAs are set out in the HRA Handbook (Tyldesley, Chapman, & Machin, 2020), to which Footprint Ecology subscribes. We also follow government guidance on the use of Habitats Regulations Assessment¹.
- 1.21 Drawing on the Handbook, other relevant guidance and case law, we clarify the following terms used in the flow chart (Figure 1):
- 1.22 In Stage 1, A '**likely significant effect**' following Waddenzee², is a 'possible significant effect; one whose occurrence cannot be excluded on the basis of objective information'. It is a low threshold and simply means that there is a risk or doubt regarding such an effect. The screening stage is a preliminary examination, sometimes described as a coarse filter, or following Waddenzee, '*a trigger in order to determine whether an appropriate assessment must be undertaken*'. There should however be credible evidence to show that there is a real rather than a hypothetical risk of effects that could undermine a site's conservation objectives. This was amplified in the Bagmoor Wind³ case where '*if the absence of risk... can only be demonstrated after a detailed investigation, or expert opinion, [then] the authority must move from preliminary examination to appropriate assessment*'.
- 1.23 Following the People Over Wind judgement⁴, when making screening decisions for the purposes of deciding whether an appropriate assessment is required, competent authorities cannot take into account any mitigation measures. The

¹ <https://www.gov.uk/guidance/appropriate-assessment>

² Waddenzee: European Courts C-127/02 Waddenzee 7th September 2004, reference for a preliminary ruling from the Raad van State.

³ Bagmoor Wind: UK courts Bagmoor Wind v The Scottish Ministers, Court of Session [2012] CSIH 93

⁴ People Over Wind: European Court Case C-323/17 People Over Wind & Peter Sweetman v Coillte Teoranta 12 April 2018

implications are considered in more detail in the initial screening section of this report.

- 1.24 Stage 2 involves the **appropriate assessment and integrity test**. Here a plan can only be adopted if the competent authority can demonstrate that it will not adversely affect the integrity of the European site. This is a precautionary approach and means it is necessary to show the absence of harm.
- 1.25 Following Champion⁵ '**appropriate**' is not a technical term but simply indicates that the assessment needs to be appropriate to the task in hand.
- 1.26 The **integrity** of a European site has been described as '*coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified*⁶'. An alternative definition, after Sweetman⁷, is '*the lasting preservation of the constitutive characteristics of the site*'.
- 1.27 In terms of the burden of proof, the HRA of development plans was first made a requirement in the UK following a ruling by the European Court of Justice in EC v UK⁸. However, the judgement⁹ recognised that any assessment had to reflect the actual stage in the strategic planning process and the level of evidence that might or might not be available. This was given expression in the High Court (Feeney)¹⁰ which stated: "*Each ... assessment ... cannot do more than the level of detail of the strategy at that stage permits*".
- 1.28 The need to consider possible **in-combination** effects arises at stage 1 – the screening and also at stage 2 – the appropriate assessment and integrity test. The effects of the plan in-combination with other plans or projects are the cumulative effects which will or might arise from the addition of the effects of other relevant plans or projects alongside the plan under consideration. If during the stage 1 screening it is found the subject plan would have no likely effect alone, but might have such an effect in-combination then the appropriate assessment at stage 2 will proceed to consider cumulative effects. Where a plan is screened as having a likely significant effect alone, the appropriate assessment should initially concentrate on its effects alone.

⁵ Champion: UK Supreme Court [2015] UKSC 52 22nd July 2015

⁶ Para 20 of the ODPM Circ. 06/2005

⁷ Sweetman: European Court C – 258/11 Sweetman 11th April 2013, reference for a preliminary ruling from the Supreme Court of Ireland

⁸ Commission v UK (C-6/04) [2005] ECR I-9017

⁹ Commission of the European Communities v UK Opinion of Advocate General Kokott

¹⁰ Feeney: Feeney v Oxford City Council [2011] EWHC 2699 (Admin) . 24th October 2011

2. European sites in and around Sunderland

Introduction

2.1 In this section of the report we collate information on the European sites in and around Sunderland City.

Overview of European sites

2.2 Using 20km from the City boundary as an initial area of search (20km being the maximum extent that policies could reasonably be considered to generate measurable effects), European sites are listed in Table 1 and also shown on Maps 1-3.

Table 1: European sites within Sunderland or where part of the European site is within a 20km radius of the City boundary

SACs	SPAs	Ramsar
Castle Eden Dene	Northumberland Marine	Northumbria Coast
Durham Coast	Northumbria Coast	Teesmouth and Cleveland Coast
Thrislington	Teesmouth and Cleveland Coast	

2.3 Context for the European sites in terms of the general conservation objectives are summarised in Appendix 1. Relevant information on each European site and their qualifying features are provided in Appendix 2, which also provides links to the conservation objectives for each site.

2.4 Among the varied European sites, Durham Coast and Northumbria Coast are core to this assessment.

Durham Coast

2.5 The Durham Coast SAC covers large stretches of the coastline between South Shields and Blackhall Rocks, including about a third of the Sunderland coastline. It is important due to its vegetated sea cliffs on magnesian limestone which are unique in the British Isles. The vegetation includes a mix of maritime-influenced, calcareous and species-rich-neutral grasslands, tall-herb fen, seepage flushes and wind-pruned scrub.

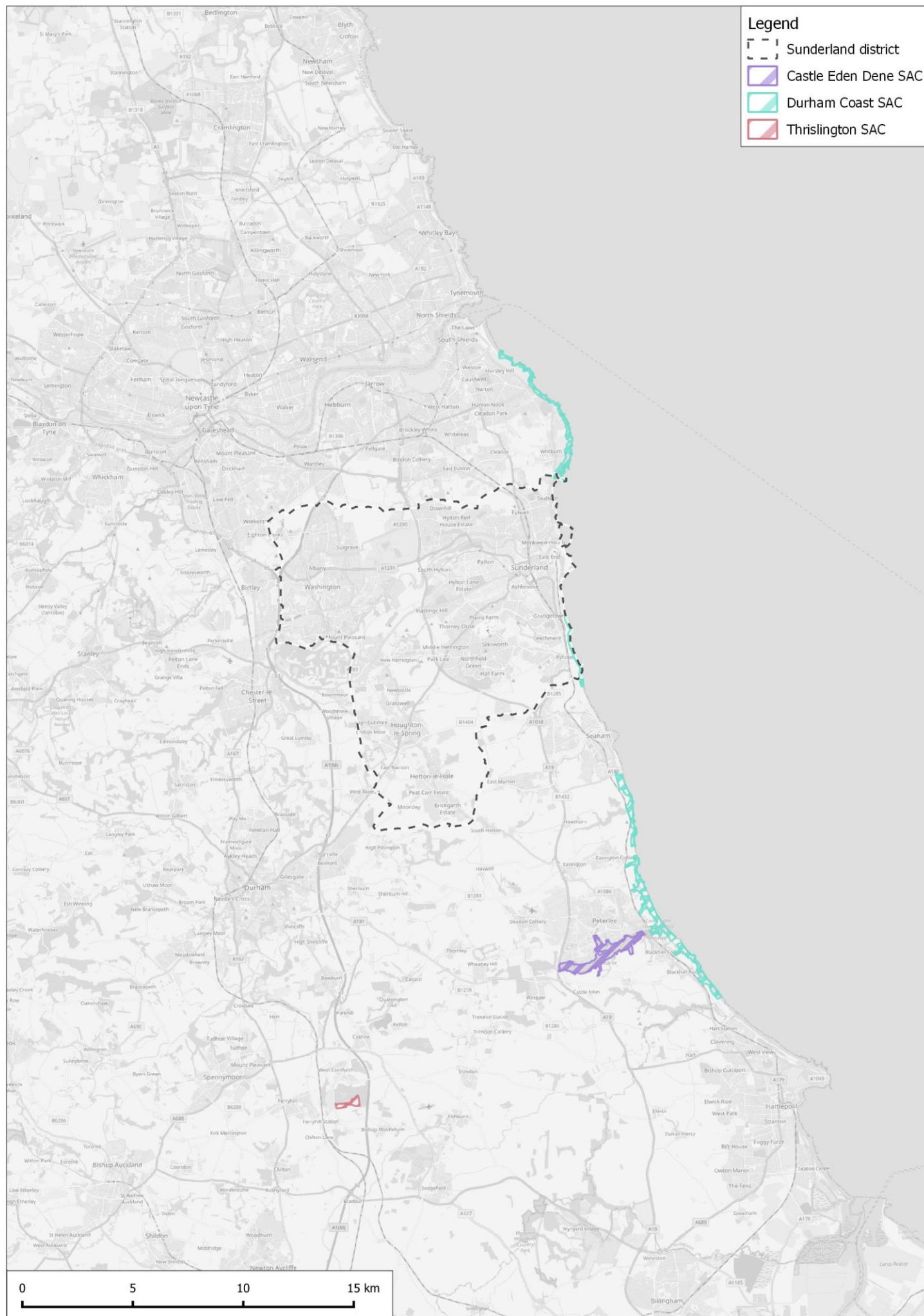
2.6 Historically, colliery spoil was deposited at the base of the cliffs, which has disrupted the natural processes such as erosion and salt spray that make this area unique. It is also threatened by scrub encroachment and non-native invasive species such as Himalayan Balsam.

- 2.7 In parts of the SAC, nutrient enrichment is changing the vegetation. This is caused by fertiliser run-off from arable land and also dog fouling. Illegal use of motorbikes, quadbikes and 4x4s is also an issue in certain areas along the coast, which is leading to erosion and damage to vegetation.

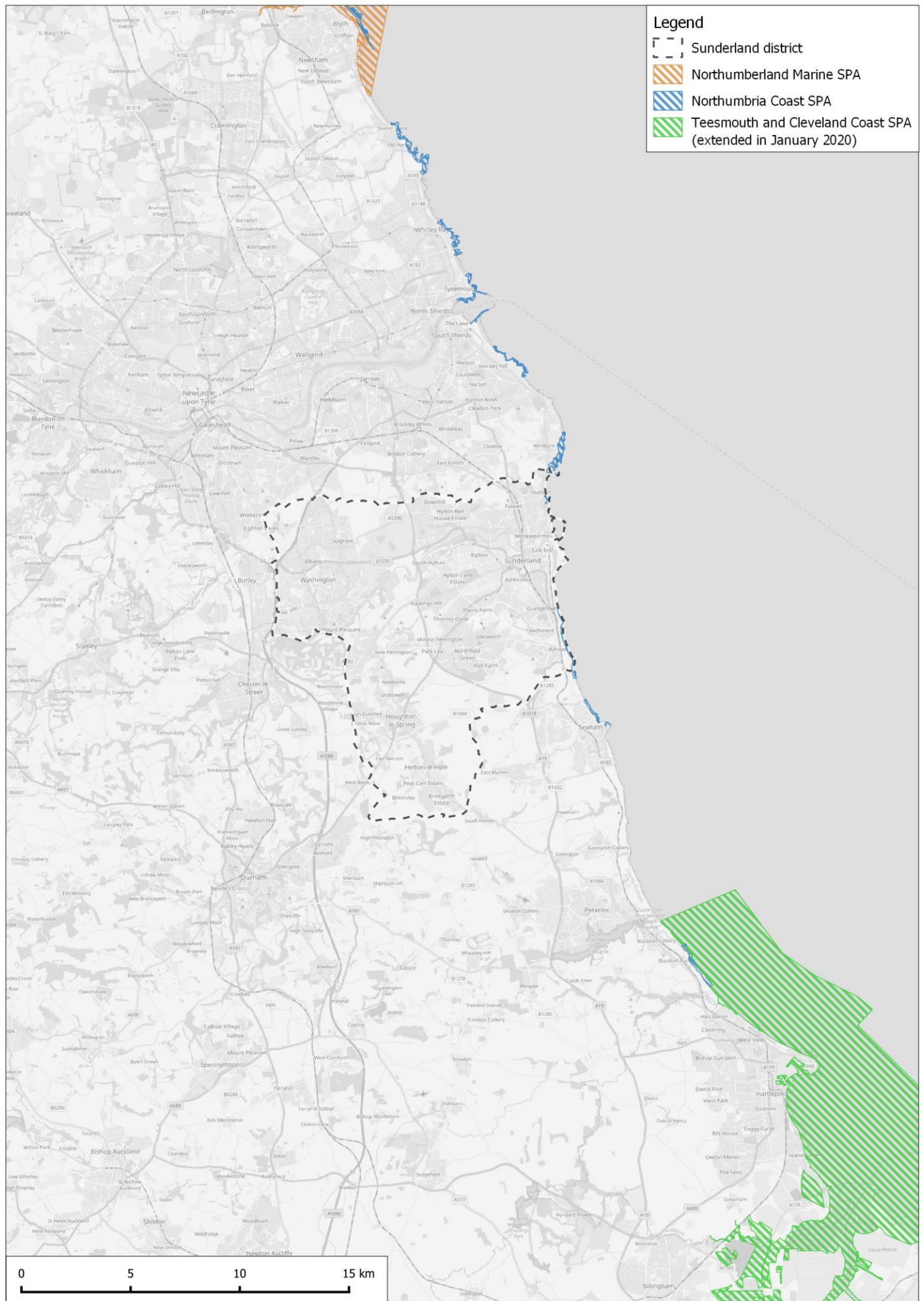
Northumbria Coast

- 2.8 The Northumbria Coast SPA and Northumbria Coast Ramsar site cover several sections of rocky foreshore between Spittal in Northumberland and Blackhall Rocks in County Durham. These two sites overlap with part of the Durham Coast SAC. The rocky shore includes cliffs, crags/ledges, intertidal rock, open coast and pools. The site also includes a small, sandy beach and artificial piers.
- 2.9 This area supports internationally important populations of over-wintering Purple Sandpiper and Turnstone, which feed on marine invertebrates found on the rocky shore and amongst seaweed. Parts of three piers are used as roosting sites.
- 2.10 A breeding colony of Little Terns and Arctic Terns is situated in the northern part of the SPA/Ramsar, at the mouth of the Long Nanny burn in Beadnell Bay and Little Terns also breed to the south, in Durham at Crimdon Dene. These birds are very vulnerable to human disturbance, as well as predation and high tides. Over the summer, a team of wardens is based at Long Nanny to protect and closely monitor the tern colony.

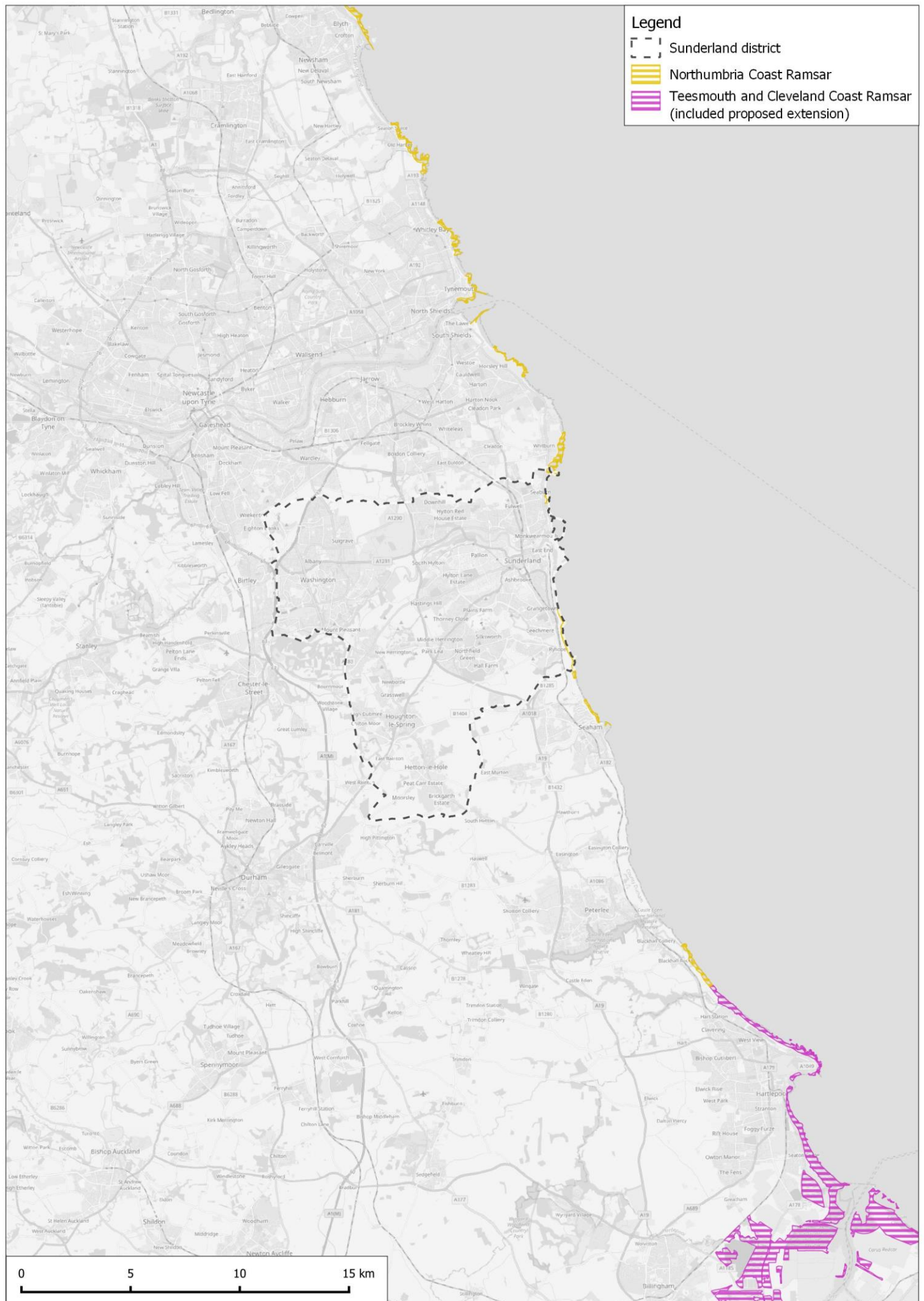
Map 1: SACs within 20km of Sunderland district



Map 2: SPAs within 20km of Sunderland district



Map 3: Ramsar sites within 20km of Sunderland district



3. Previous HRAs or relevant HRA work

Core Strategy Development Plan (CSDP)

- 3.1 The Sunderland Allocations and Designations Draft Plan sets out site-specific policies for development, protection, and conservation of land in order to deliver the overall strategy set out within the CSDP. The CSDP sets out the overarching strategy for change and growth, including strategic policies, strategic allocations and detailed development management policies. The CSDP was adopted in January 2020. The HRA (BSG Ecology, 2019) undertaken for the CSDP is therefore relevant as this assessed the overall quantum of growth (13,410 net new homes, 95ha employment land, 45,400m² retail development).
- 3.2 While the Sunderland Allocations and Designations Draft Plan requires a standalone HRA, the HRA for the CSDP is relevant and provides context, background and assessment work that this HRA refers back to, cross-references and builds on.
- 3.3 The CSDP HRA considered the following potential impact pathways:
- Increased recreational pressure, including disturbance;
 - Increased urbanisation, including invasive species and predation from domestic animals;
 - Exacerbation of coastal squeeze due to increased requirement for maintenance of sea defences;
 - Changes in water quality;
 - Changes in air quality.
- 3.4 Castle Eden Dene SAC, Thrislington SAC, Teesmouth and Cleveland SPA/Ramsar were scoped out of the assessment as it was concluded that these European sites could not be affected by the Core Strategy's provisions due to the geographical distances involved and the absence of potential links or pathways (see BSG Ecology, 2019 for details).
- 3.5 Likely significant effects for the CSDP alone were identified for the Northumbria Coast SPA/Ramsar (Turnstone and Purple Sandpiper) from recreation. The HRA applied a distance of 6km, based on visitor data, to identify where growth would trigger likely significant effects. Mitigation measures were set out that allowed a conclusion of no adverse effects on integrity to be ruled out.

4. Initial screening of the Sunderland Allocations and Designations Draft Plan for Likely Significant Effects

- 4.1 This section documents the screening stage of HRA (stage 1 of the 4 stage process), where the plan is screened for likely significant effects.
- 4.2 The screening for likely significant effects of a plan involves checking all aspects of the plan and identifying any areas of potential concern, which are then examined in more detail in the appropriate assessment (stage 2) of HRA. The check for likely significant effects provides a provisional screening of the plan. It is undertaken to enable the plan maker as competent authority to do two things: narrow down the elements of the plan that may pose a risk to European sites to highlight those options that are likely to be harmful; and where an option poses a risk but is a desired element of the plan, the screening exercise identifies where further assessment is necessary in order to determine the nature and magnitude of potential impacts on European sites and what could be done to eliminate those risks. Further assessment and evidence gathering after early screening may include, for example, the commissioning of additional survey work, modelling, researching scientific literature or setting out justifications in accordance with expert opinion.

What constitutes a likely significant effect?

- 4.3 At the screening stage of HRA, there is the opportunity to identify changes to the plan that could be made to avoid risks to European sites, and this is particularly relevant at this stage in the plan making as issues can be identified up front and resolved with later iterations of the plan.
- 4.4 Where the screening identifies risks that cannot be avoided with simple clarifications, corrections or instructions for project level HRA, a more detailed assessment is undertaken to gather more information about the likely significant effects and give the necessary scrutiny to potential mitigation measures. This is the appropriate assessment stage of HRA.
- 4.5 A likely significant effect could be concluded on the basis of clear evidence of risk to European site interest, or there could be a scientific and plausible justification for concluding that a risk is present, even in the absence of direct evidence. The latter is a precautionary approach, which is one of the foundations of the high-level of protection pursued by EU policy on the environment, in

accordance with the EU Treaty¹¹. The precautionary principle should be applied at all stages in the HRA process and follows the principles established in case law relating to the use of such a principle in applying the European Directives and domestic Habitats Regulations. In particular, the European Court in the 'Waddenzee' case¹² refers to "*no reasonable scientific doubt*" and in the 'Sweetman' case¹³ the Advocate General identified that a positive conclusion on screening for likely significant effects relates to where there "*is a possibility of there being a significant effect*".

- 4.6 The screening in this report looks at policies and options prior to any avoidance, reduction/mitigation measures in line with People Over Wind¹⁴. Mitigation potential can only be considered at Appropriate Assessment stage. People Over Wind clarified the need to carefully explain actions taken at each HRA stage, particularly at the screening for likely significant effects stage. The Judgment highlights the need for clear distinction between the stages of HRA, and good practice in recognising the function of each. The screening for likely significant effects stage should function as a screening or checking stage (regardless of avoidance, reduction/mitigation measures), to determine whether further assessment is required. Assessing the nature and extent of potential impacts on European site interest features, and the robustness of mitigation options, should be done at the appropriate assessment stage.
- 4.7 The screening of this version of the plan is based on the Draft Plan. A re-screen of the plan at later stages will also be made, and this will make a record of any amendments to the plan made by the Council in response to this report. The submission version of the HRA is the point at which the appropriate assessment of all risks identified as requiring further assessment in the screening table will be prepared. The HRA will then potentially require further updates, either to inform the Examination in Public and/or on any proposed modifications which arise during the Examination of the plan, prior to adoption. This ensures that the final adopted plan has an up to date HRA report.

Identifying impact pathways

- 4.8 Drawing on our list of all European sites within 20km of the City boundary, previous HRA work and the locations that are the focus for the Local Plan, we

¹¹ Article 191 of the Treaty on the Functioning of the EU. Previously Article 174 of the Treaty of the EC.

¹² Waddenzee: European Court of Justice case C - 127/02

¹³ Sweetman: European Court of Justice case C - 258/11

¹⁴ People Over Wind: European Court Case C-323/17 People Over Wind & Peter Sweetman v Coillte Teoranta 12 April 2018

can identify the following potential impact pathways (i.e. credible risks) to European sites:

- Increased **recreational pressure** which could undermine conservation objectives through disturbance, spread of invasive species, trampling, dog fouling and increased fire risk (e.g. from barbeques);
- Increased **urbanisation**, for example involving predation from cats and fly tipping;
- **Disturbance and increased mortality from wind turbines;**
- **Exacerbation of coastal squeeze** due to increased requirement for maintenance of sea defences;
- **Hydrological impacts**, involving changes in water quality or quantity;
- Changes in **air quality**, for example through increased traffic.

4.9 These pathways are simple umbrella headings, each encompassing a range of issues and together they represent the potential ways in which development within the plan could pose risks to European sites. It should be noted that these represent a slight departure in terminology from the CSDP HRA, for example invasive species we treat under the broad heading of recreation impacts rather than urbanisation.

Identifying European sites potentially at risk

4.10 European sites within a 20km radius of the City boundary are listed in previous sections and shown in Maps 1-3. Map 4 shows key elements of the Plan alongside the European sites.

4.11 Reviewing this list, we can focus on those that are relevant to the screening (see Table 2). Many of the European sites are well away from the City boundary and there is no plausible mechanism by which the Plan could have an impact. These are shaded grey in the table.

4.12 We have eliminated the Castle Eden Dene SAC, Thrislington SAC, Northumbria Marine SPA, Teesmouth and Cleveland SPA/Ramsar as there are no credible pathways by which impacts could occur on these sites, given the distances involved.

4.13 Furthermore, in line with the CSDP HRA, Little Tern is scoped out due to the locations of the nesting sites at Beadnell and Crimdon being very distant and there being a lack of potential breeding habitat close to Sunderland. There is therefore no credible risk for this species.

Map 4: Housing allocations and European sites

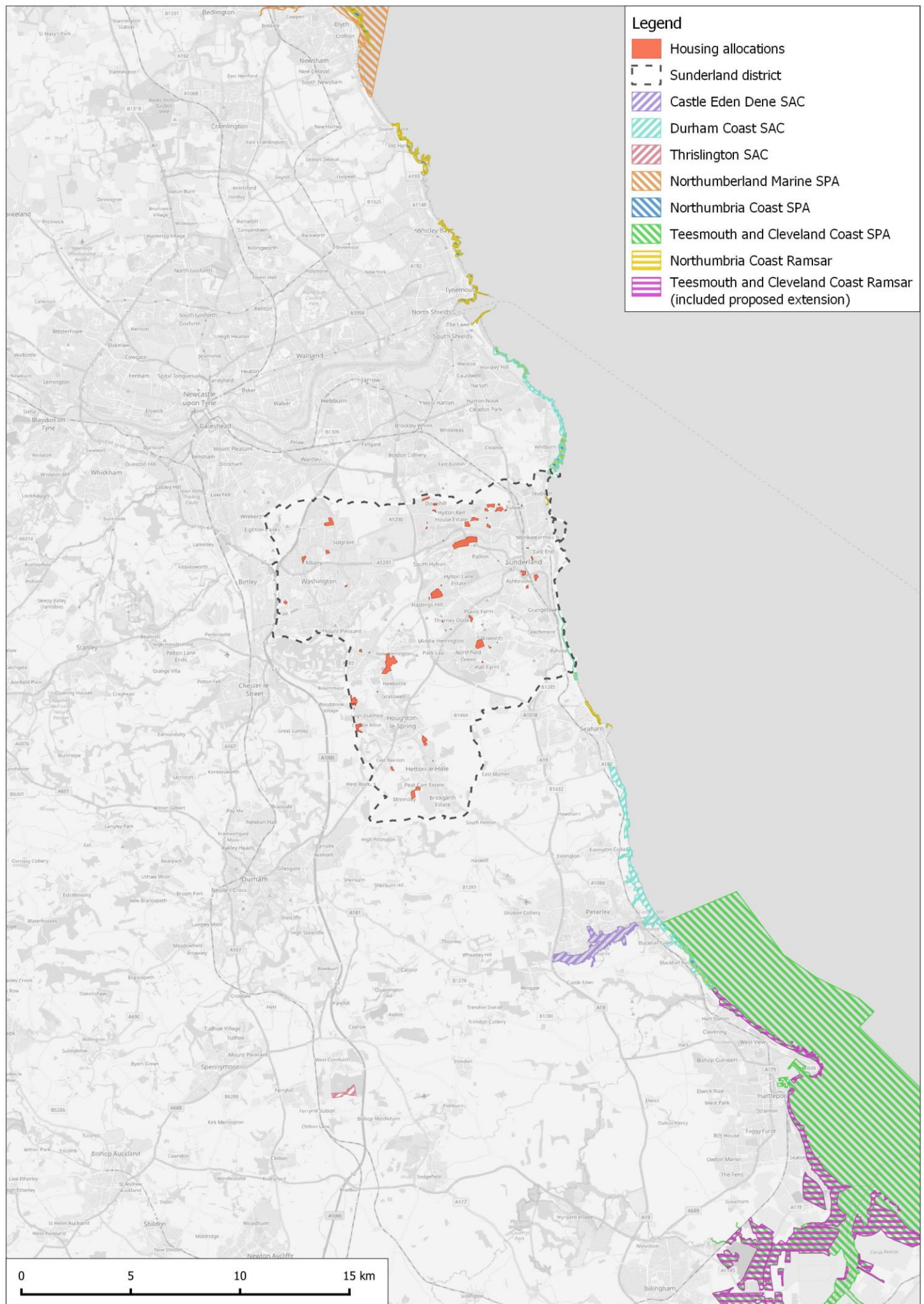


Table 2: Summary of European sites within 20km, potentially relevant impact pathways for those sites and those that can be eliminated from further consideration (grey shading). Those sites with no figure in the distance column fall within or partly within the Sunderland City boundary.

European site	Distance (km) from City boundary	Recreational pressure	Urbanisation	Disturbance & increased mortality from wind turbines	Exacerbation of coastal squeeze	Hydrological impacts	Air quality	Reasons for elimination from rest of HRA
<u>SACs</u>								
Castle Eden Dene SAC	7.5							Distance. Interest is woodland habitat. There are two roads within relative proximity but CSDP HRA identified no credible risk in terms of air quality given distance and location.
Durham Coast SAC	-	✓	✓		✓	✓	✓	
Thrislington SAC	12.0							Distance. No credible pathways.
<u>SPAs</u>								
Northumberland Marine SPA	18.3							Distance. Marine site with no credible pathways.
Northumbria Coast SPA	-	✓	✓	✓	✓	✓	✓	
Teesmouth and Cleveland Coast SPA	10.1							Distance. No credible pathways.
<u>Ramsar sites</u>								
Northumbria Coast Ramsar	-	✓			✓	✓	✓	
Teesmouth and Cleveland Coast Ramsar	13.7							Distance. No credible pathways.

Initial screening conclusions

- 4.14 The screening for likely significant effects within Table 3 below provides the screening assessment for the Sunderland Allocations and Designations Draft Plan. The screening covers the whole plan. Where risks are highlighted and there is a possibility of significant effects on European sites, further and more detailed assessment is required. Inevitably there will be precaution in screening elements of the plan, as the purpose of screening for likely significant effects is to identify where there is either no possibility of an effect, or where there are uncertainties.
- 4.15 The initial screening has identified a number of policies where there are risks for European sites and likely significant effects are possible from the plan alone:
- SP12 Allocations and Designations Development Strategy: likely significant effects from recreational pressure, water quality and air quality for the Durham Coast SAC and the Northumbria Coast SPA/Ramsar.
 - SS8 Riverside Sunderland: likely significant effects from recreational pressure, water quality and air quality for the Durham Coast SAC and the Northumbria Coast SPA/Ramsar.
 - SS9 Washington Meadows.: likely significant effects from water quality and air quality for the Durham Coast SAC and the Northumbria Coast SPA/Ramsar.
 - H8 Housing Allocations (and Appendix 1): likely significant effects from recreational pressure, water quality and air quality for the Durham Coast SAC and the Northumbria Coast SPA/Ramsar.
 - WWE11: Wind Energy Development (and Appendix 2): likely significant effects from disturbance and increased mortality from wind turbines and the Northumbria Coast SPA/Ramsar.
- 4.16 As a result of the screening urban effects can be discounted as while a feasible impact, none of the policies or plan content relates to development directly adjacent to European sites where there is a credible risk from fly tipping, garden waste or cat predation. This finding concurs with the CSDP HRA where urban effects were also ultimately screened out.
- 4.17 As a result of the screening, issues relating to coastal squeeze can also be discounted. Coastal squeeze was taken forward in the Core Strategy HRA to stage 2 and the appropriate assessment, and ultimately adverse effects on integrity were ruled out as existing housing and associated infrastructure already defined the extent of the urban area, and hence the location at which action was thought likely to be required to prevent the loss or damage of these assets. Consequently, any future development as a result of the Core Strategy was not considered likely to affect coastal defence policy in the long term. Our

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screening of the policies in the Sunderland Allocations and Designations Draft Plan highlights no development that would change this conclusion.

Table 3: Initial screening of the Sunderland Allocations and Designations Draft Plan for likely significant effects. Grey shading and bold text indicate section headings. Blue shading reflects initial findings of likely significant effects (LSE).

Plan section or policy	Description	Initial LSE screening	Potential risks	Comments
SP12 Allocations and Designations Development Strategy	Supports the strategy set out in the CSDP and provides overview of the Allocations and Development Plan including allocation of 58 sites for residential development, focuses regeneration to NE Washington, allocates the former Houghton Colliery site, allocates sites for wind energy and other detail (mostly relating to safeguarding and protecting environment, heritage etc.)	LSE	Durham Coast SAC, and Northumbria Coast SPA/Ramsar: impacts alone from recreation pressure, hydrological impacts and air quality	Policy simply provides overview but includes quantum of growth in terms of number of sites and specific allocations. Housing sites together potentially could accommodate 4,246 dwellings during the plan period.
SS8 Riverside Sunderland	Residential-led mixed use development, around 1,000 dwellings	LSE	Durham Coast SAC, and Northumbria Coast SPA/Ramsar: impacts alone from recreation pressure, hydrological impacts and air quality	Around 3.5km from Northumbria Coast SPA/Ramsar and 4.3km from the Durham Coast SAC.
SS9 Washington Meadows	Residential allocation of 1,500 homes	LSE	Durham Coast SAC, and Northumbria Coast SPA/Ramsar: impacts alone from hydrological impacts and air quality	Beyond 7.2 from the coast and therefore no LSE from recreation impacts.
H8 Housing Allocations	4,246 dwellings within the plan period.	LSE	Durham Coast SAC, and Northumbria Coast SPA/Ramsar:	Impacts from the cumulating effect of H8 allocations together

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Plan section or policy	Description	Initial LSE screening	Potential risks	Comments
			impacts alone from recreation pressure, hydrological impacts and air quality	
VC7 Former Houghton Colliery Site	Allocates the site of the former Houghton Colliery, for the development of main town centre uses (Use Class E).	No LSE		Policy relates to retail and business use. Site is distant from any European site in the south-west of the Plan area.
BH10 Conservation Areas	Designates 12 Conservation Areas	No LSE		Protective policy relating to historic environment.
BH11 Scheduled Ancient Monuments	Refers to Scheduled Ancient Monuments and confirms their protection, cross-references to Policies map.	No LSE		Protective policy relating to historic environment.
NE13 Regionally and Locally protected Wildlife and Geodiversity sites	Confirms these as locally protected sites and shown on the Policies map.	No LSE		Protective policy for range of wildlife sites. European sites and SSSIs are referred to in supporting text and mapped.
NE14 Wildlife Network	Designates land which is part of the Wildlife Network and this is shown on the Policies Map.	No LSE		Positive policy ensuring protection for wildlife sites and wider network of habitat extending beyond European sites.
NE15 Greenspace	Designates land for Greenspace and this is shown on the Policies Map.	No LSE		Environmentally positive policy protecting greenspace sites for recreation.
NE16 Views of the City	Protects key local views and vistas, which are shown on the Policies map.	No LSE		Protective policy relating to views.
NE17 Burial sites	Protects Burial sites and proposed extension areas, which are shown on the Policies map, from development	No LSE		Protective policy relating to burial sites, no risks.

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Plan section or policy	Description	Initial LSE screening	Potential risks	Comments
WWE11: Wind Energy Development	Indicates areas where wind energy deemed suitable and supports repowering of existing turbines and onshore infrastructure that supports offshore windfarms.	LSE	Northumbria Coast SPA/Ramsar: impacts alone from disturbance & increased mortality from wind turbines	Policy a general policy that does not propose specific development, but rather maps indicative areas where proposals will be supported. Identified as LSE on a precautionary basis as the map in Appendix 2 identifies coastal areas (outside but close to the SPA) as suitable for large turbines.
ST4: Safeguarding land for potential future Metro and rail expansion	Safeguards land for potential future Metro and rail expansion	No LSE		Proposes no specific development simply safeguards sites and those sites as mapped outside European sites.
ST 5: Park & Ride	Safeguards land for park and ride facilities in the following locations to support schemes for Metro and rail reintroduction	No LSE		Proposes no specific development simply safeguards sites and those sites as mapped outside European sites.
M5: Eppleton Quarry	Safeguards development of Mineral Operations at Eppleton Quarry and identifies that restoration of the Quarry should be undertaken in accordance with the approved restoration plan.	No LSE		Quarry is well away from European sites.
Monitoring Framework	Sets out monitoring to measure and determine the effectiveness of the Plan	No LSE		
Appendix 1 Site specific housing policy requirements	Lists requirements for each allocation listed in H8	LSE		Relates to H8 and risks addressed under the LSE identified for that policy.

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Plan section or policy	Description	Initial LSE screening	Potential risks	Comments
Appendix 2: Indicative areas for wind turbines	Appendix provides map that relates to WWE11	LSE		Relates to WWE11 and risks addressed under the LSE identified for that policy.

5. **Appropriate assessment section: overview**

- 5.1 The initial screening has flagged key topics for more in-depth consideration within an appropriate assessment. It is at the submission version of the plan that the appropriate assessment sections will be finalised and in this report, at the Draft Plan stage, we provide some initial review of available information to advise on the scope of the appropriate assessment and inform the evidence that will need to be gathered as the plan progresses. These impact pathways will need to be assessed in more detail within the appropriate assessment prepared at the next plan version.
- 5.2 Once a likely significant effect has been identified, the purpose of the appropriate assessment is to examine evidence and information in more detail to establish the nature and extent of the predicted impacts, in order to answer the question as to whether such impacts could lead to adverse effects on European site integrity.
- 5.3 Appropriate assessments at the plan stage are often undertaken with enough evidence to give confidence in potential mitigation options, and then project level HRAs remain critical in determining the detail of such mitigation.
- 5.4 The 'precautionary principle' is described in the screening section. It is an accepted principle that is embedded within the wording of the legislation, and latterly within case decisions, both European and domestic. Essentially, the appropriate assessment stage, in accordance with the Habitats Regulations, is an assessment that enables a competent authority to only give effect to a plan or authorise/undertake a project after having ascertained that it will not adversely affect the integrity of the European site. Fundamentally this therefore means that in the absence of certainty, the plan or project should not normally proceed.

6. Appropriate assessment topic: recreational pressure

6.1 Screening identified likely significant effects for the following policies alone for the Durham Coast SAC and the Northumbria Coast SPA/Ramsar:

- SP12 Allocations and Designations Development Strategy.
- SS8 Riverside Sunderland.
- H8 Housing Allocations (and Appendix 1).

Impacts of recreation and the European site interest

Recreation and disturbance to birds

6.2 The Northumbria Coast SPA qualifies for two species of wintering waterbirds (as well as the terns), Turnstone and Purple Sandpiper.

6.3 Disturbance to wintering and passage waterfowl can result in:

- A reduction in the time spent feeding due to repeated flushing/increased vigilance (Bright, Reynolds, Innes, & Waas, 2003; Fitzpatrick & Bouchez, 1998; Stillman & Goss-Custard, 2002; Thomas, Kvitek, & Bretz, 2003; Yasué, 2005)
- Increased energetic costs (Nolet, Bevan, Klaassen, Langevoord, & Van der Heijden, 2002; Stock & Hofeditz, 1997)
- Avoidance of areas of otherwise suitable habitat, potentially using poorer quality feeding/roosting sites instead (N. H. K. Burton, Armitage, Musgrove, & Rehfish, 2002; N. H. Burton, Rehfish, & Clark, 2002; Cryer, Linley, Ward, Stratford, & Randerson, 1987; Gill, 1996)
- Increased stress (Regel & Putz, 1997; Thiel, Jenni-Eiermann, Palme, & Jenni, 2011; Walker, Dee Boersma, & Wingfield, 2006; Weimerskirch et al., 2002)

6.4 Disturbance has been identified by Natural England as a generic issue across many European Marine Sites (see Coyle & Wiggins, 2010), and can be an issue for a range of species. Disturbance can result from a range of different activities or events taking place on or around the shore. Activities on the intertidal or the water are more likely to result in a behavioural response from birds present, as are those involving dogs, particularly dogs off-lead (Liley & Fearnley, 2012; e.g. Liley, Stillman, & Fearnley, 2010). In the work across North-west estuary sites undertaken by Liley *et al.* (2017), dog walking was the cause of 77% of major

flight events¹⁵ observed and 89% of the birds flushed. At roost sites, the large number of birds present means that single recreation events can affect a large number of birds.

- 6.5 Both Turnstone and Purple Sandpiper are associated with rocky habitats and also built-structures such as stone piers (and also sometimes areas of seaweed washed up on beaches), which potentially are less accessible to people, for example they can feed on rocky areas at the base of cliffs and utilise islands etc. that are not necessarily easily accessible to people. However, there have been declines in Turnstone and Purple Sandpiper along the Northumbria Coast, which have been picked up through the long-term Wetland Bird Surveys (WeBS), (Cook, Barimore, Holt, Read, & Austin, 2013). These declines appear to span relatively long time periods. The trends appear to differ in different parts of the SPA and there is evidence that the less disturbed, more northern parts have seen some recovery (Percival, Percival, Lowe, & Cadwallender, 2017). A recent study on Turnstones on the Northumbria Coast (Whittingham et al., 2019) found that Turnstone density was higher, and the population declines less, in areas on or close to offshore refuges than on mainland sites subject to greater levels of human disturbance. The inference was that the refuges, which were off-shore islands with little or no public access, may increase habitat quality by providing undisturbed roost sites and to an extent buffer population declines. The study covered 19 sites along the Northumbria Coast, 2 of which were undisturbed areas (offshore refuges) and 17 were mainland sites subject to high levels of disturbance.

Recreation and impacts to the SAC

- 6.6 There are a range of ways recreation can impact vegetated sea cliffs, a qualifying feature of the SAC. The issues are however likely to be localised due to the steep and inaccessible nature of the cliffs. The botanical interest is on the more unstable and eroding parts of the cliff and these are dangerous to access. As such some of the key areas are likely to be protected from heavy wear and recreational pressure, with most users following paths just inland from the cliffs where the ground is stabilised and safe. The cliffs are dynamic and – at least for those areas where wave action can reach the base – the areas that are important will change over time. The cliff edge will also retreat inland. As such, the issues are likely to also change and areas that are apparently robust at the moment may become more vulnerable over time.

¹⁵ A major flight event was defined as one where the birds took flight and were displaced more than 50m.

- 6.7 Dog fouling is a widely recognised issue in low-nutrient semi-natural systems (Groome, Denton, & Smith, 2018; Taylor, Anderson, Taylor, Longden, & Fisher, 2005). The resulting increase in nitrogen and phosphorus changes vegetation communities, encouraging bulky competitive species at the expense of less vigorous species adapted to low-nutrient situations. A change from typical species to rank species-poor grassland communities is a common sight along and on the margins of paths and tracks and around many car parks.
- 6.8 Urination is also an issue. This can result in the loss of lower plant communities at spots that are repeatedly utilised, such as trees, rocks etc. Contamination may also result from persistent veterinary compounds that are transferred into the aquatic environment by dogs splashing through any water bodies, such as streams. These may include worming treatments and external parasite treatments (Denton & Groome, 2017; Groome et al., 2018).
- 6.9 Trampling can directly damage plants, lead to loss of vegetation and/or a change in plant species composition and cause compaction or poaching of the substrate, with implications for plant species composition. The level of trampling that will cause damage depends on a variety of factors including soil type and moisture content, aspect and slope, season, microclimate, behaviour of walkers etc (e.g. walking up or down the slope) and the vegetation type (see Liley *et al.* 2010 for a review). Due to this range of factors, it is difficult to predict thresholds at which significant vegetation change will occur.
- 6.10 In suppressing plant growth and creating bare ground, trampling can also result in conditions suitable for some scarce plants and invertebrates. There is therefore a difficult balance to achieve between sufficient trampling to create and maintain bare ground, and excessive wear that continually disturbs the substrate and damages or destroys any colonising species.
- 6.11 Soil compaction and erosion issues are not only related to footfall (see Liddle, 1997 for review). Bicycles can damage soils and vegetation more than foot passage for example (Martin, Butler, & Klier, 2018). The illicit use of vehicles, such as 4x4s and quad bikes is likely to be especially damaging.
- 6.12 Fire incidence can be linked to barbeques, camp-fires and arson, and fire incidence on semi-natural habitats is linked to the amount of housing nearby, with areas with more development tending to have more fires (Kirby & Tantram, 1999).
- 6.13 While fires are unlikely to spread far or cause catastrophic damage along the cliffs, even small patches of burnt vegetation can be damaging, for example from disposable barbeques rested on the ground. With climate change, the risk

of more extreme weather and prolonged dry spells, fires are likely to be of more concern and risk.

- 6.14 The spread of non-native species can be associated with recreation use, and studies have shown people can be vectors for seeds over many kilometres (Wichmann et al., 2009). Non-native species can also be spread by dumping of garden waste (which can occur in proximity to housing) and even from deliberate planting.

Table 4: Ways in which recreation impacts could impact on qualifying features (relevant to the Northumbria Coast SPA/Ramsar and the Durham Coast SAC) potentially vulnerable to recreational pressure. Relevant months describe when the impact can occur. In source/evidence column “SIP” refers to relevant site improvement plan produced by Natural England. Only those species relevant to Sunderland included.

Interest feature	Relevant months	Source/evidence	Notes
H1230 Vegetated sea cliffs of the Atlantic and Baltic Coasts	All year	SIP; Lowen <i>et al.</i> (2008).	Excessive eutrophication leading to coarse species locally outcompeting characteristic species.
H1230 Vegetated sea cliffs of the Atlantic and Baltic Coasts	All year	SIP; Lowen <i>et al.</i> (2008).	Damage from footfall and also motorbikes/illegal vehicles. Some cliff areas will be inaccessible.
H1230 Vegetated sea cliffs of the Atlantic and Baltic Coasts	All year	SIP, Thuiller <i>et al.</i> (2005); Wichmann <i>et al.</i> (2009)	There are already a number of garden plants that have become established. Risks from deliberate introductions and accidental spread on clothing/footwear/pets.
H1230 Vegetated sea cliffs of the Atlantic and Baltic Coasts	All year	Whitehouse (2007); Lowen <i>et al.</i> (2008).	Risk of inappropriate interventions such as path surfacing, stabilising substrate, drainage etc. where demand for access.
H1230 Vegetated sea cliffs of the Atlantic and Baltic Coasts	All year	Oates (1999)	The ability to achieve relevant conservation management may be compromised in areas with high access. This can be a particular issue around cliffs on an eroding coast where a limited strip of land is available.
H1230 Vegetated sea cliffs of the Atlantic and Baltic Coasts	All year, but particularly growing season (around April-August)	Lowen <i>et al.</i> (2008).	Localised damage to vegetation and soil, e.g. from use of disposable BBQs.
Purple Sandpiper and Turnstone	September - March	Many, e.g. Ross <i>et al.</i> (2012); Stillman <i>et al.</i> (Stillman <i>et al.</i> , 2012). Issue is cited in SIP but not for Purple Sandpiper.	Impacts will vary according to weather, prey availability and prey distribution. Activities on the intertidal or around roost sites most relevant.

Recreational use of the coast and visitor survey data

- 6.15 Visitor surveys, covering multiple parts of the Northumbria Coast include:
- Surveys between November 2014 and April 2015, to support the HRA work (Bluegrass, 2015);
 - Further surveys between January – March 2016, involving 633 interviews (Bluegrass, 2016);
 - Surveys in 2019-20 (1,557 interviews covering the winter and spring periods, report not finalised).
- 6.16 The main activity is dog walking (66% of interviewees in 2015; 65% in 2016, 44% (spring and 53% (winter) in 2019-20). Many (63% in 2016) travel by car and visits are often short (for example 76% spent less than an hour on the beach/shoreline in 2016). Interviewees often visited regularly (e.g. 45% of dog walkers visited most days in 2016). It is clear that the coastline therefore provides an important greenspace, providing for the recreation needs of many local residents. Visitors are typically local, for example 75% coming from within 6 miles in the 2016 survey. The results from the 2019-20 survey suggest a slightly different area, with 75% of interviewees originating within 7.2km. The 75th percentile has become a standard metric for defining a zone of influence for recreation, as it represents the area from which most visitor originate. As the most recent visitor data (and representing a large sample size) this is the best available evidence and is used in the mitigation strategy to define the zone of influence.
- 6.17 There is little information on overall visitor numbers. Exeter University's ORVaL tool (Day & Smith, 2018), which is based on models developed at a national scale rather than actual data collected in the field, estimates that residents of Sunderland make 16,104,120 visits to green spaces per year. The models estimate around 2,385,224 visits per annum to the coastal European sites within Sunderland.

Conservation objectives

- 6.18 The supplementary conservation advice for the Northumbria Coast SPA¹⁶ identifies that human disturbance may be impacting on both wader species and includes targets relating to disturbance caused by human activity for both Turnstone and Purple Sandpiper. These targets restrict the frequency, duration and/or intensity of disturbance affecting roosting, foraging, feeding moulting and/or loafing birds so that they are not significantly disturbed. The advice also notes that further investigation is required.

¹⁶ See [relevant page on Natural England website](#)

- 6.19 The supplementary conservation advice for the Durham Coast SAC¹⁷ identifies recreation issues in relation to attributes on the structure and function (vegetation: undesirable species). The target relates to restoration to acceptable levels of undesirable species and the notes highlight that issues such as eutrophication and disturbance (e.g. from fire) are issues.

Implications for the Sunderland Allocations and Designations Draft Plan

- 6.20 There are clearly risks from recreation use to both the Durham Coast SAC and the Northumbria Coast SPA/Ramsar. These risks were identified in the CSDP HRA which identified mitigation requirements. The CSDP Policy NE2 provides protection for European sites, ensuring that *“development that would have an impact on the integrity of European designated sites that cannot be avoided or adequately mitigated will not be permitted other than in exceptional circumstances”*. Supporting text¹⁸ refers to mitigation measures including a combination of Strategic Access Management and Monitoring (SAMM) and the provision of Suitable Alternative Natural Greenspace (SANG).
- 6.21 Natural England has advised on the need for mitigation to prevent adverse effects on the Durham Coast SAC and Northumbria Coast SPA/Ramsar site.
- 6.22 Neither the CSDP nor the Sunderland Allocations and Designations Draft Plan contain explicit policy or information on the levels of mitigation required or how SAMM and SANG will be delivered.
- 6.23 The CSDP HRA and supporting documents did however set out how mitigation would be provided for sites within 6km of the coast and allocated through that Plan. Following from the CSDP HRA a strategic approach to mitigation has been established and there is therefore a strategy to securing mitigation in place. An updated version of the mitigation strategy has been produced alongside this HRA, and this uses the zone of influence of 7.2km, based on the most recent visitor survey data. The 57 allocations are listed in Appendix 3 with the respective distances to the European sites, those within 7.2km are shaded. The strategy provides a positive approach to resolving impacts from recreation and has been prepared well in advance to ensure mitigation is secured. The strategy sets out mitigation that resolves the cumulative impacts from growth within the zone and as it is produced for consultation alongside the Draft Plan there is scope for further amendments to the strategy – if necessary – prior to the plan being finalised. The mitigation strategy needs to be clearly cross-referenced within future iterations of the Plan to provide the necessary certainty that mitigation can be secured and is effective, reliable, timely, guaranteed to be delivered and as long-term

¹⁷ See [relevant page on Natural England website](#)

¹⁸ Para 10.9 of the CSDP

as needed to achieve the objectives. This will ensure that adverse effects on integrity can be ruled out for the plan alone or in-combination.

7. Appropriate assessment topic: disturbance and increased mortality from wind turbines

7.1 Screening identified likely significant effects for the following policies alone:

- WWE11: Wind Energy Development

Overview of potential issues

7.2 While wind turbines are potentially environmentally positive developments that are likely to bring benefits in terms of renewable energy and climate-change targets, there can be issues for bird species where turbines are in the wrong place. Drewitt & Langston (2006) describe four main effects:

- Collision, i.e. direct mortality from birds hitting turbines;
- Displacement due to disturbance, i.e. birds avoiding areas near turbines;
- Barrier effects such that birds are prevented from passing particular areas; and
- Habitat loss whereby areas of otherwise suitable habitat are lost.

7.3 The Sunderland Allocations and Designations Draft Plan does not propose any specific quantum of wind turbine development nor specify particular locations, as such the screening for likely significant effects is precautionary. Instead the policy identifies indicative areas considered to be suitable for new wind turbine development and these are mapped in Appendix 2. Designation of these area is subject to planning impacts identified by the community being fully addressed and proposals receiving their support.

7.4 The indicative areas have been mapped in a wind capacity study and this has excluded designated sites, however coastal areas are still included, for example around Sunderland Harbour. While outside the Northumbria Coast SPA, this area supports important numbers of Turnstone and Purple Sandpiper in the winter (Arcus, 2015) and these are likely to be functionally-linked to the SPA population. Studies of waders have shown a marked avoidance of wind turbines and impacts from collisions (Everaert, 2014; Pearce-Higgins, Stephen, Douse, & Langston, 2012; Sansom, Pearce-Higgins, & Douglas, 2016).

7.5 The supplementary conservation advice for the Northumbria Coast SPA includes the following targets (for both Turnstone and Purple Sandpiper):

- Maintain safe passage of birds moving between roosting and feeding areas
- Maintain the area of open and unobstructed terrain around roosting and feeding sites

Implications for the Sunderland Allocations and Designations Draft Plan

- 7.6 As such there are clear risks from wind turbines at selected locations and the potential for the conservation objectives to be undermined. The CSDP Policy NE2 provides protection for European sites, ensuring that “development that would have an impact on the integrity of European designated sites that cannot be avoided or adequately mitigated will not be permitted other than in exceptional circumstances”. Nonetheless, there are potentially insufficient safeguards to stop potentially vulnerable locations being promoted for siting of wind turbines.
- 7.7 This is not to say that the mapped indicative areas are all entirely unsuitable. Monitoring of the effect of wind turbines at Blyth Harbour (Still, Little, & Lawrence, 1996) recorded relatively few (31) bird casualties, indicating that turbines may be suitable at certain locations. Various design options can help minimise impacts, for example by turning off the turbines in particular weather conditions and actions to make turbines more visible for birds (Hüppop, Dierschke, Exo, Fredrich, & Hill, 2006). There is evidence that tower height has relatively little effect on bird collisions (Barclay, Baerwald, & Gruver, 2007), suggesting that fewer large turbines may be better than lots of smaller ones.
- 7.8 As such for the submission version of the Sunderland Allocations and Designations Draft Plan it will be possible to resolve any issues, through updates to the map to ensure any sites with risks to European sites are removed, or for the plan wording to be amended to identify concerns with the Northumbria Coast SPA/Ramsar and to highlight the need for project level HRA work to be undertaken. Such changes should be sufficient to enable future iterations of the HRA to conclude adverse effects can be ruled out.

8. Appropriate assessment topic: hydrological issues

8.1 Screening identified likely significant effects for the following policies alone for the Durham Coast SAC and the Northumbria Coast SPA/Ramsar:

- SP12 Allocations and Designations Development Strategy.
- SS8 Riverside Sunderland.
- SS9 Washington Meadows.
- H8 Housing Allocations (and Appendix 1).

Introduction

8.2 Run-off, outflow from sewage treatments and overflow from septic tanks can result in increased nutrient loads and contamination of water courses. This can have consequences for European sites which contain wetland or aquatic features, as the pollution will affect the ability of the site to support the given interest.

8.3 Furthermore, abstraction and land management can influence water flow and quantity, resulting in reduced water availability at certain periods or changes in the flow. This can exacerbate issues relating to water quality.

8.4 These impact pathways can be specific to particular parts of European sites or particular development locations, and are also relevant to the overall quantum of development.

Water supply

8.5 It is the role of the Environment Agency to make sure that abstraction is sustainable and does not damage the environment. Water abstraction is managed through a licensing system originally introduced by the Water Resources Act 1963.

8.6 The Environment Agency is the competent authority for the Water Framework Directive and it oversees the publication of River Basin Management Plans which are a requirement of the Directive. These plans set out how the management of water bodies will be undertaken, the roles of relevant bodies and the steps undertaken to ensure environmental targets are met.

8.7 The first River Basin Management Plans were produced in 2009 and then updated in 2015. In the more recent second cycle river basin management plans the Environment Agency has committed to ensure abstraction licensing strategies and actions fully incorporate all environmental objectives and align with River Basin Management Plans. The Agency will assess all licence applications and only issue licences that adequately protect and improve the environment. They will only grant replacement licences where the abstraction is environmentally sustainable and abstractors can demonstrate

they have a continued need for the water, and that they will use it efficiently. In addition, for existing licences, the Agency will prioritise actions to protect and improve Natura 2000 sites and address the most seriously damaging abstractions during this plan period. All abstractors in surface water and groundwater bodies where serious damage is occurring, or could occur without action, should expect that their licences will be constrained over the next 6 years.

- 8.8 The Northumbria Water Resources Management Plan¹⁹ predicts demand for water and issues around supply. The plan allows for a 23% population increase over a 40 year, deriving forecasts to cover the period from 2020 through to 2060. The Plan identifies that there is an efficient, sustainable secure supply of water over the given period.
- 8.9 Natural England's site improvement plan²⁰ for the Durham Coast SAC does not identify any issues relating to water supply. The supplementary conservation objectives for the Durham Coast SAC set a target relating to a site, unit and/or catchment level, to restore natural hydrological processes to provide the conditions necessary to sustain the H1230 (the vegetated sea-cliffs) feature within the site. Supporting text describes how defining and maintaining the appropriate hydrological regime is a key step in moving towards achieving the conservation objectives for this site and sustaining this feature. Changes in source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present. It goes on to identify that further site-specific investigations may be required to fully inform conservation measures and/or the likelihood of impacts. There are a number of small wetlands within the SAC, but no detailed work has been done on their hydrology and so the water supply mechanisms are not known. Given this uncertainty, Natural England have set a restore target because it is likely that some wetlands have been affected by local agricultural drainage.
- 8.10 The site improvement plan for the Northumbria Coast SPA²¹ does not identify water supply as a current issue or threat for the SPA. The supplementary conservation advice does not set a target relating to water supply for the site.

Water quality

- 8.11 Wastewater or sewage is very damaging to water bodies as it can contain large amounts of nutrients (such as phosphorus and nitrates), ammonia, bacteria, harmful chemicals and other damaging substances. Issues arise where sewage treatment technology to remove enough of the phosphorus and harmful chemicals doesn't exist, where leakages occur from privately owned septic tanks and, in wet weather, storm

¹⁹ <https://www.nwg.co.uk/responsibility/environment/wrmp/current-wrmp-2015-2020/>

²⁰ See [relevant page on Natural England website](#)

²¹ See [relevant page on Natural England website](#)

overflows can discharge untreated sewage. Increases in housing increase pressure on the sewage network and the volume of wastewater.

- 8.12 River Basin Management Plans provide the framework for protecting and enhancing the water environment. The relevant plan for Northumbria²² sets out statutory objectives for protected areas and a programme of measures to achieve those objectives. The plan (and supporting information) identifies the Northumbria Coast SPA and the Durham Coast SAC as both meeting environmental objectives in relation to water issues.
- 8.13 Natural England's site improvement plan for the Durham Coast identifies fertilizer use and run-off from agricultural land as a current threat, but otherwise highlights no issues relating to water quality. The supplementary conservation advice for the SAC does set a target for water quality, such that, where the feature is dependent on surface water and/or groundwater, to restore water quality and quantity to a standard which provides the necessary conditions to support the H1230 feature. The supporting notes indicate that the need to restore is because vegetation change in some wetlands suggest that they are suffering from nutrient enrichment, and run-off is likely to be a cause.
- 8.14 The relevant site improvement plan that covers the Northumbria Coast SPA highlights water pollution as a current pressure but not for the Northumbria Coast SPA, but rather the other SPA sites nearby that are covered within the same plan (namely Lindisfarne SPA, Berwickshire & North Northumberland Coast SAC and the Tweed SAC).
- 8.15 The supplementary conservation objectives for the Northumbria Coast SPA set various targets relating to water quality. These include maintaining current levels of turbidity, nutrients and dissolved oxygen and reducing the levels of contaminants (tributyl tin).

Implications for the Sunderland Allocations and Designations Draft Plan

- 8.16 Available information indicates that agricultural run-off and drainage is a current cause for concern relating to the Durham Coast SAC. Given the distribution of development in the Sunderland Allocations and Designations Draft Plan it would seem housing growth and other development is unlikely to lead to any further deterioration in water quality or supply. We suggest further checks with the Environment Agency and Natural England should be made prior to the submission version of the plan.

²² <https://www.gov.uk/government/publications/northumbria-river-basin-district-river-basin-management-plan>

- 8.17 For the Northumbria Coast SPA/Ramsar checks should also be made with the relevant statutory bodies, but it would seem that water availability and water quality in relation to impacts from development have not been identified as a cause for concern.

9. Appropriate assessment topic: air quality

9.1 Screening identified likely significant effects for the following policies alone for the Durham Coast SAC and the Northumbria Coast SPA/Ramsar:

- SP12 Allocations and Designations Development Strategy.
- SS8 Riverside Sunderland.
- SS9 Washington Meadows..
- H8 Housing Allocations (and Appendix 1).

Introduction

9.2 Increased growth within Local Plans is of relevance to HRAs where increased traffic volumes as a result of new growth will occur in close proximity to European sites hosting habitats that are sensitive to reduced air quality.

9.3 Historically, HRA consideration of air quality from traffic emissions has predominantly relied upon the advice given within the Design Manual for Roads and Bridges (DMRB)²³, a Highways England publication that provides the national standards for road and bridge design, construction and operation, including assessment of impacts.

9.4 A recent and highly relevant judgment from the domestic courts, known as ‘the Wealden Judgment’, together with a number of European cases and a range of new evidence, advice and guidance to inform HRA assessments in relation to air quality, provides clear reasons for ensuring that this HRA is prepared with full regard for current information, whilst still having regard for the DMRB advice.

Summary of atmospheric pollution

9.5 Atmospheric pollutants of concern to sensitive habitats that are derived from vehicles include oxides of nitrogen (NO_x), ammonia (NH₃) and the consequential deposition of nitrogen (N) and acid, which can then lead to changes in species composition and mortality.

9.6 It is known that traffic emissions lead to an increase in N, and that this presents a major concern for sensitive habitats. Critical thresholds, beyond which plant communities may change in response to pollutants, have been developed for a range of habitat types, and are available from the Air Pollution Information Service (APIS). This database is funded and provided by the Centre for Ecology and Hydrology and the UK pollution and conservation agencies including Natural Resources Wales (NRW), the

²³ See LA 105 air quality, issued Nov 2019

Environment Agency, Northern Ireland Environment Agency, Natural England, the Joint Nature Conservation Committee (JNCC), Scotland and Northern Ireland Forum for Environmental Research (SNIFFER), the Scottish Environment Protection Agency (SEPA), and Scottish Natural Heritage (SNH).

- 9.7 APIS holds data and threshold information specifically in relation to habitat sensitivity rather than human health. Summary information of relevance is given in Table 5.

Table 5: Summary of key air pollutants

Pollutant	Source	National trend	Impact
NO _x	Combustion, mainly vehicles and power stations	Decline (55% since 1986)	Mainly through N deposition, but also gaseous NO _x close to source. Synergy with SO ₂
NH ₃	Natural and anthropogenic; main source is agriculture	Smaller decline which has now flattened	Direct toxicity and N- accumulation

- 9.8 The main impacts of NO_x and NH₃ are through N deposition and acidification. N deposition can lead to an increase in N loving species at the expense of other species; an increased risk of frost damage in spring, increased sensitivity to drought; increased incidence of pest and pathogen attack and direct damage to sensitive species. The impacts of acid deposition are often indirect, resulting from a change of pH in soils and water. Chemical changes lead to nutrient deficiencies, release of toxins and changes in microbial N transformations.
- 9.9 The implications of the Sunderland Allocations and Designations Draft Plan in relation to air quality need to be assessed against background trends and the trajectory of vehicle emission improvements. Assessment of improvements in vehicular technology and in particular Euro6/VI standards that all vehicles are currently being manufactured to, may outweigh impacts from new development. The improvements may be offset by additional development, but future background levels of Nitrogen are expected to decline with Government clean air strategies and the phasing out of petrol and diesel cars.

Recent case decisions and guidance

- 9.10 The Sunderland Allocations and Designations Draft Plan will be assessed with the benefit of a number of recent case decisions that provide an interpretation of the application of the Habitats Regulations and its parent European Directives in relation to air pollution. These are discussed here to highlight their relevance to appropriate assessment.

Guidance on assessing air quality impacts for designated sites

- 9.11 The Design Manual for Roads and Bridges (DMRB) has been the standard source of guidance for considering traffic generated air quality impacts. The latest DMRB has a specific section (LA105) on air quality, and this highlights the potential for impacts on sensitive habitats within 200m of a road, and the need for further assessment where changes to the road network or traffic volumes might increase daily traffic flows by 1,000 Average Annual Daily Traffic (AADT) or more. This is a simple measurement of change, using the total volume of traffic on a road and dividing it by 365 days to give a daily average.
- 9.12 Natural England and its partner UK statutory nature conservation bodies have a specialist air quality technical group known as the Air Quality Technical Advisory Group (AQTAG). This group regularly meets to discuss key issues in relation to air quality concerns for designated sites and will occasionally issue formal advice notes on key topics. AQTAG21 is an advice note that includes reference to a 1% threshold to be used in air quality assessments. This threshold has been consistently used by the statutory nature conservation bodies over a number of years to indicate where an increase in atmospheric pollutant might be deemed significant. The AQTAG21 refers to a 1% threshold in terms of the relevant critical load for the habitat type. Where the pollutant contribution is less than 1% of the critical load, it is deemed to be inconsequential (de minimis) and does not warrant further consideration for likely significant effects.
- 9.13 The Institute of Air Quality Management published guidance in June 2019 entitled 'A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites'.
- 9.14 This guidance contains detailed and relevant advice in relation to the assessment of traffic generated air quality impacts and highlights the 1% threshold as a widely used threshold, below which fluctuations are not likely to be discernible from background fluctuations/measurements, and above which a need for further assessment is identified but does not automatically imply damage will occur.

The Wealden Judgment

- 9.15 Use of the DMRB and AQTAG21 for the purposes of assessing air quality within a plan level HRA was scrutinised through a High Court Judgment²⁴ whereby Wealden District Council challenged the HRA conclusions of the Joint Core Strategy (JCS) for Lewes District and South Downs National Park. Whilst the HRA had made conclusions of no

²⁴ *Wealden v SSCLG (2017)*

likely significant effect on the basis of growth within the JCS alone, the High Court found that the HRA had failed to consider the combined effect of growth within multiple Local Plans in the vicinity of Ashdown Forest, thus necessitating an appropriate assessment. Natural England's advice given at the time deemed both the DMRB 1000AADT and the 1% of the critical load to be thresholds below which further assessment was not required. The Judgment relies on the caveat set out within AQTAG21, which advises that if there was to be a concentration of plans or projects in the same area, at the same time, then there may be cause for case specific assessment and the 1% threshold may not automatically apply.

- 9.16 In light of this case it is important therefore for any HRA to refer to a range of evidence and advice when considering air quality impacts and the DMRB thresholds, the AQTAG21 advice and the findings of the High Court in the Wealden case should be considered together, alongside any other relevant research and evidence.

European Court - Joined Cases C-293/17 and C-294/17

- 9.17 Coöperatie Mobilisation (Joined Cases C-293/17 and C-294/17) are now being generally referred to as "the Dutch Case" for nitrogen deposition. This Netherlands co-joined case brought before the European Court is an important recent case in the interpretation of the European Directives for plans and projects with potential air pollution impacts. The case focusses on agricultural derived nitrogen deposition, and essentially questions whether it is appropriate to rely on strategic measures to alleviate air pollution that may create capacity for individual projects to be approved despite their individual contribution of additional pollutants.
- 9.18 The European Court Judgment focusses on the fact that where a European site is already deteriorating, projects that then worsen the situation should not be approved, unless there are clear and definitive measures underway to restore the situation and maintain favourable conservation status. The Netherlands Government has an approach that relies upon a programme of nitrogen reduction measures. What is key to the assessment of traffic increases relating to Local Plans, and indeed the assessment of any other potential impacts at the plan level, is that the European Court was clear that measures should not be relied upon if they are uncertain, have not yet been carried out, are not certain to take place, or have poor scientific basis.
- 9.19 The case therefore highlights the need to have certainty in any measures being relied upon to allow a conclusion of no adverse effects where they are expected but not yet completed. Importantly, any such measures need to be scientifically certain and secured (in terms of responsibility, finances, practical delivery etc.), rather than just forecasts.

Natural England Guidance

- 9.20 With growing interest from competent authorities in the correct approach to assessing air quality impacts following recent court cases, Natural England has been assisting local planning authorities across the country with advice on what should be considered within an HRA. Natural England has a number of research reports available within its publications webpage.
- 9.21 Caporn et al (2016) highlights that the majority of designated sites in the UK are currently exceeding their critical loads for N deposition, and this is leading to significant changes in these sensitive habitats as a consequence. There are particular concerns in relation to lower plants, which are highly sensitive to N deposition.
- 9.22 Although habitat responses to N deposition are not fully understood, it is apparent that the relationship between increased pollutants and habitat deterioration (declines in species richness and species composition) is not linear. Critical loads identify a point at which significant vegetation change is likely to occur, but changes do not continue on a linear basis beyond the critical threshold.
- 9.23 Natural England's (2018) guidance on their approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations makes it clear that it is for the competent authority, not Natural England, to acquire enough evidence to support its HRA conclusions. Helpfully, the document highlights that the 1% threshold can be used to establish whether further assessment is necessary, but should not be used to determine whether an adverse effect can or cannot be ruled out.
- 9.24 Importantly, this document indicates that traffic management measures and habitat management measures or interventions that limit the dispersal of traffic emissions might constitute mitigation measures. It is concluded that whilst these measures alone do not enable a conclusion of no adverse effect as the extent of their effectiveness is not yet quantified, they can be considered as additional measures that positively support such a conclusion.

Roads and European sites around Sunderland

- 9.25 In Map 5 we show European sites and any roads that are within 200m of European sites. Roads within 200m of European sites are coloured to indicate the road class, with A roads shown as thick pink lines, B roads in green and unclassified roads in orange.
- 9.26 From this map, the A roads close to European sites and the City boundary are:
- From north to south, the A193, A183, A1300, A1018, A182, A1086 are all close to either the Northumbria Coast SPA/Ramsar or the Durham Coast SAC.

- The A19 and A1086 pass very close to the western and eastern edges respectively of the Castle Eden Dene SAC.
- The A1049, A179 and A178 are close to the Teesmouth and Cleveland Coast SPA/Ramsar.

Current information for the relevant European sites

- 9.27 For the Durham Cliffs SAC, the qualifying feature is the Vegetated sea cliffs of the Atlantic and Baltic Coasts (H1230). Air quality is not identified as a current pressure or future threat in the site improvement plan. The supplementary conservation advice sets a target to restore as necessary the concentrations and depositions of air pollutant to or below the site relevant Critical Load or Level values given for the feature on the Air Pollution Information System (APIS²⁵). This is further qualified in the notes which state that *"Critical loads/levels are not defined on APIS for the SAC. Critical loads/levels for relevant features of Durham Coast SSSI was used instead (neutral grassland; calcareous grassland; fen, marsh and swamp). Restore target selected because critical loads for nitrogen and acid deposition for some features are currently being exceeded."*
- 9.28 APIS gives the following information for the site:
- Nutrient Nitrogen: habitat is sensitive to Nitrogen but no critical load estimate available. Deposition values range from 8.6-10.7 kg N/ha/yr with an average of 8.6 kg N/ha/yr.
 - Acidity: habitat not sensitive to acidification.
 - Ammonia: site specific advice should be sought; there are no lichens or bryophytes present. Concentrations range from 0.81-1.57 µg NH₃/m³ with an average of 1.35 µg NH₃/m³.
 - NO_x: site specific advice should be sought; critical levels (set for all vegetation) are 30 µg NO_x/m³ annual mean, 75 µg NO_x/m³ 24-hour mean. Concentrations range from 9.39 – 28.02 µg NO_x/m³ with an average of 12.68 µg NO_x/m³.
 - SO₂: site specific advice should be sought; there are no lichens present; critical levels (set for all vegetation) are 10-20 µg SO₂/m³ annual mean. Concentrations range from 0.91 – 1.67 µg SO₂/m³ with an average of 0.91 µg SO₂/m³.
- 9.29 For the Northumbria Coast SPA, air quality is also not cited as a current pressure or future threat in the site improvement plan. The supplementary conservation advice sets a target for both Purple Sandpiper and for Turnstone to maintain concentrations and depositions of air pollutant to or below the site relevant Critical Load or Level values given for the feature on the Air Pollution Information System (APIS²⁶).
- 9.30 APIS gives the following information for the site:
- Nutrient Nitrogen: littoral rock (the main feeding habitat for both wader species) is identified as not sensitive to Nitrogen deposition.

²⁵ <http://www.apis.ac.uk/>

²⁶ <http://www.apis.ac.uk/>

- Acidity: littoral rock is identified as not sensitive to acidification.
- Ammonia: Critical levels are reported as 3 (2-4 µg NH₃/m³) and APIS reports no expected negative impacts from Ammonia for Purple Sandpiper or Turnstone, and rather that there is a potential for positive impacts on the food supply.
- NO_x: APIS identifies that littoral rock is not sensitive to NO_x.
- SO₂: APIS identifies that littoral rock is not sensitive to SO₂.

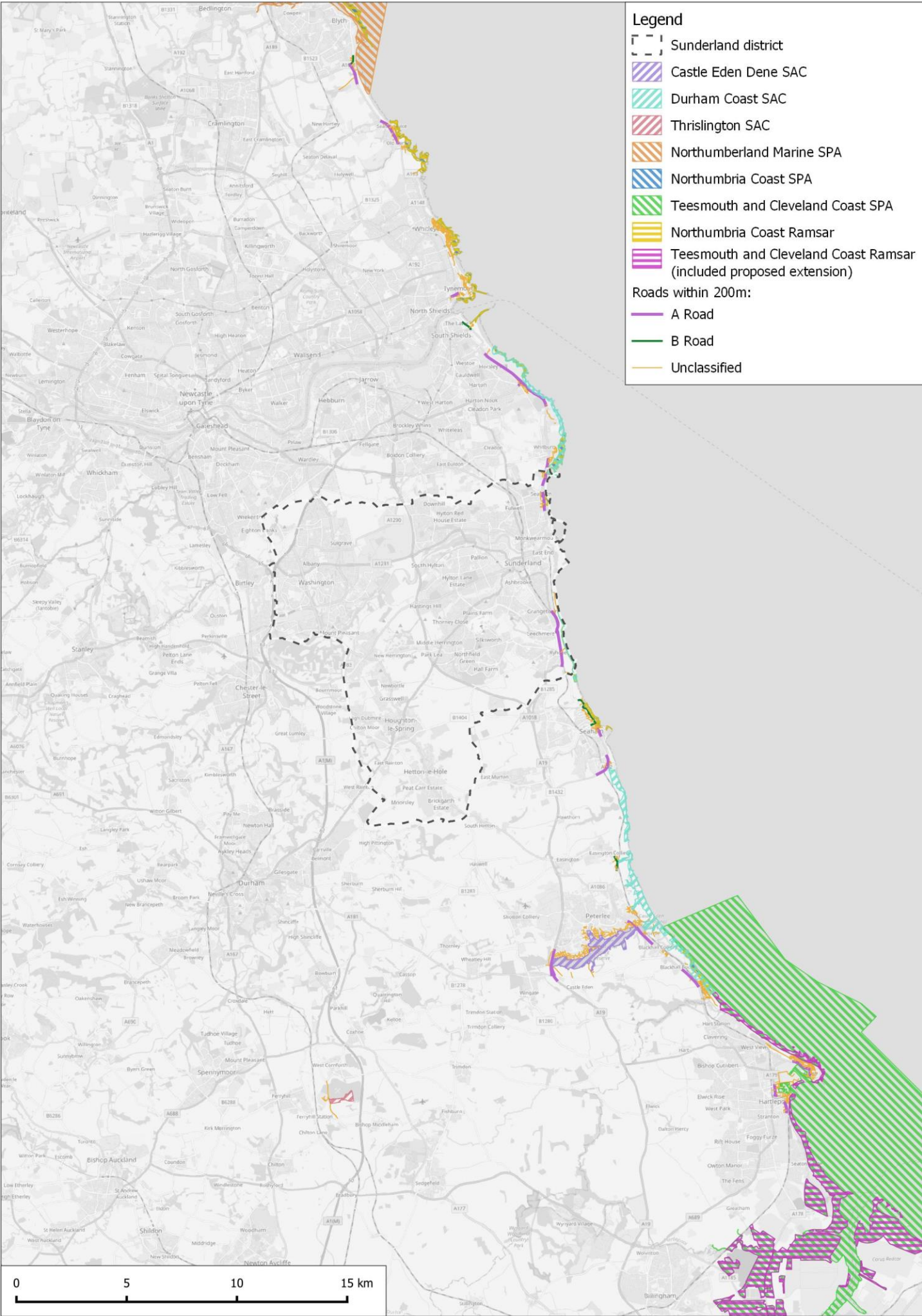
Potential changes in traffic

- 9.31 Traffic modelling for Sunderland (Capita, 2020) provides information for all road sections and presents data on the ratio of traffic flows to capacity at relevant junctions. The modelling predicts the impacts of additional traffic growth as a result of the introduction of developments as planned in the Local Plan. It includes schemes which the Infrastructure Delivery Plan identifies as 'essential' to the delivery of the Local Plan and other schemes which the council is confident will be completed within the plan period. The report highlights that the change is low and that all junctions close to designated sites would remain within their design capacity.
- 9.32 The Capita report does not take into account the in-combination effects of traffic from neighbouring authorities and therefore the in-combination effects of growth. Nonetheless, it is useful in highlighting very low ratios of traffic flows to capacity on the relevant road sections and therefore suggesting risks are low. This would make sense given the location of the road sections of concern with respect to the locations for housing growth.

Implications for the Sunderland Allocations and Designations Draft Plan

- 9.33 Risks relate to the Durham Coast SAC and there is some uncertainty as to the site-specific critical loads and how air quality impacts should be assessed. The advice of Natural England is necessary to confirm the extent to which air quality is a concern at the site and how the assessment should proceed. We have identified road sections that fall within 200m of the SAC and traffic predictions that are available potentially indicate little likely change in traffic flows as a result of growth in the Sunderland Local Plan. Further traffic information may be required and air quality modelling may also be necessary in order to allow more detailed assessment with the next version of the plan.

Map 5: Roads and European sites



10. Conclusions

- 10.1 This HRA report has been produced to accompany the Sunderland Allocations and Designations Draft Plan ('Regulation 18' stage). This HRA report will be updated alongside the next iteration of the Plan and as such in this report we highlight where further information or evidence will be necessary to inform the next iteration of the HRA.
- 10.2 The initial screening has highlighted likely significant effects alone in relation to: recreational pressure (Durham Coast SAC, Northumbria Coast SPA/Ramsar), disturbance and increased mortality from wind turbines (Northumbria Coast SPA/Ramsar), hydrological issues (Durham Coast SAC, Northumbria Coast SPA/Ramsar) and air quality (Durham Coast SAC, Northumbria Coast SPA/Ramsar).
- 10.3 These topics are therefore ones where appropriate assessment will be necessary. In considering the scope of such assessment we identify the following key considerations:

Recreational pressure

- 10.4 An updated mitigation strategy has been produced to accompany this HRA and this will be further updated with the next version of the Plan. Mitigation needs to be secured for the longer term and clearly cross-referenced within the Plan at submission. This will ensure that, at submission, the HRA can demonstrate that adverse effects on integrity can be ruled out – alone and in-combination – for the growth proposed.

Wind turbines

- 10.5 Policy WWE11 maps indicative areas where wind turbines will be supported, subject to planning impacts identified by the community being fully addressed. This indicative map includes coastal areas that support the bird interest of the Northumbria Coast SPA/Ramsar. As such any turbines proposed in these areas will require HRA.
- 10.6 The policy does not actually set a quantum of growth or specifically allocate the locations and as such any need for appropriate assessment is precautionary. Relatively simple changes to future iterations of the plan would ensure that a conclusion of no adverse effects on integrity alone or in combination could be reached. Such changes could be that any sites with risks to European sites are removed from the map, or for the plan wording to be amended to identify concerns with the Northumbria Coast SPA/Ramsar and to highlight the need for project level HRA work to be undertaken.

Hydrological issues

- 10.7 Available information indicates that agricultural run-off and drainage is a current cause for concern relating to the Durham Coast SAC. Given the distribution of development in the Sunderland Allocations and Designations Draft Plan it would seem housing growth and other development is unlikely to lead to any further deterioration in water quality or supply. We suggest further checks with the Environment Agency and Natural England should be made prior to the submission version of the plan.
- 10.8 For the Northumbria Coast SPA/Ramsar checks should also be made with the relevant statutory bodies but it would seem that water availability and water quality in relation to impacts from development have not been identified as a cause for concern.

Air quality

- 10.9 The advice of Natural England is necessary to confirm the extent to which air quality is a concern for the Durham Coast SAC and how the assessment should proceed. We have identified road sections that fall within 200m of the SAC and traffic predictions that are available potentially indicate little likely change in traffic flows as a result of growth in the Sunderland Local Plan. Depending on Natural England's advice, further traffic information may be required and air quality modelling may also be necessary in order to allow more detailed assessment with the next version of the plan.

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Appendix 1: European Site Conservation Objectives

As required by the Directives, 'Conservation Objectives' have been established by Natural England, which should define the required ecologically robust state for each European site interest feature. All sites should be meeting their conservation objectives. When being fully met, each site will be adequately contributing to the overall favourable conservation status of the species or habitat interest feature across its natural range. Where conservation objectives are not being met at a site level, and the interest feature is therefore not contributing to overall favourable conservation status of the species or habitat, plans should be in place for adequate restoration.

Conservation objectives inform any HRA of a plan or project, by identifying what the interest features for the site should be achieving, and what impacts may be significant for the site in terms of undermining the site's ability to meet its conservation objectives

In 2012, Natural England issued a set of generic European site Conservation Objectives, which should be applied to each interest feature of each European site. The list of generic Conservation Objectives for each European site includes an overarching objective, followed by a list of attributes that are essential for the achievement of the overarching objective. Whilst the generic objectives currently issued are standardised, they are to be applied to each interest feature of each European site, and the application and achievement of those objectives will therefore be site specific and dependant on the nature and characteristics of the site.

In addition to the generic objectives, there is more detailed, supplementary site-specific information to underpin these generic objectives. This provides much more site-specific information, and this detail plays a fundamental role in informing HRA, and gives greater clarity to what might constitute an adverse effect on a site interest feature. Links in Appendix 2 provide access to both generic conservation objectives and the supplementary advice for each European site.

For SPAs the overarching objective is to:

'Avoid the deterioration of the habitats of 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.'

This is achieved by, subject to natural change, maintaining and restoring:

- 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.

For SACs the overarching objective is to:

'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.'

This is achieved by, subject to natural change, maintaining and restoring:

- The extent and distribution of the qualifying natural habitats and habitats of qualifying species.
- The structure and function (including typical species) of qualifying natural habitats and habitats of qualifying species.
- The supporting processes on which qualifying natural habitats and habitats of qualifying species rely.
- The populations of qualifying species.
- The distribution of qualifying species within the site.

Appendix 2: Conservation Interest of European Sites

Links in the table cross-reference to the Natural England website and the relevant page with the site's conservation objectives. In the qualifying features column, for SPAs NB denotes non-breeding and B breeding features. For SACs, # denotes features for which the UK has a special responsibility. The descriptive text is adapted from Natural England's site improvement plan (and we have omitted descriptions for the Ramsar sites as in all cases the site overlaps with an SAC/SPA). For Ramsar sites, the qualifying features and description are drawn from the Ramsar spreadsheet on the JNCC website²⁷, and the link cross-references to the Ramsar site information page.

European site	Qualifying features	Description
Castle Eden Dene SAC	H91J0 <i>Taxus baccata</i> woods of the British Isles	Castle Eden Dene represents the most extensive northerly native occurrence of Yew <i>Taxus baccata</i> woods in the UK. Extensive yew groves are found in association with Ash-Elm <i>Fraxinus-Ulmus</i> woodland and it is the only site selected for yew woodland on magnesian limestone in north-east England.
Durham Coast SAC	H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts	Durham Coast SAC is the only example of vegetated sea cliffs on magnesian limestone exposures in the UK. These cliffs extend along the North Sea coast for over 20 km from South Shields southwards to Blackhall Rocks. Their vegetation is unique in the British Isles and consists of a complex mosaic of paramaritime, mesotrophic and calcicolous grasslands, tall-herb fen, seepage flushes and wind-pruned scrub. Within these habitats rare species of contrasting phytogeographic distributions often grow together forming unusual and species-rich communities of high scientific interest. The communities present on the sea cliffs are largely maintained by natural processes including exposure to sea spray, erosion and slippage of the soft

²⁷ <http://archive.jncc.gov.uk/default.aspx?page=2392>

H R A o f S u n d e r l a n d A l l o c a t i o n s & D e s i g n a t i o n P l a n

European site	Qualifying features	Description
		magnesian limestone bedrock and overlying glacial drifts, as well as localised flushing by calcareous water.
Northumberland Marine SPA	A191 <i>Sterna sandvicensis</i> ; Sandwich tern (Breeding) A192 <i>Sterna dougallii</i> ; Roseate tern (Breeding) A193 <i>Sterna hirundo</i> ; Common tern (Breeding) A194 <i>Sterna paradisaea</i> ; Arctic tern (Breeding) A195 <i>Sternula albifrons</i> ; Little tern (Breeding) A199 <i>Uria aalge</i> ; Common guillemot (Breeding) A204 <i>Fratercula arctica</i> ; Atlantic puffin (Breeding) Seabird assemblage	Northumberland Marine SPA is located on the Northumberland coast between Blyth and Berwick-Upon-Tweed. The coastal parts of the site consist of sandy bays separated by rocky headlands backed by dunes or soft and hard cliffs. There are extensive areas of inter-tidal rocky reef, long sandy beaches at Beadnell, Embleton and Druridge Bay and extensive sand and mud flats at Budle Bay and Fenham Flats at Lindisfarne. Discrete areas of intertidal mudflats and estuarine channels are also included where the site extends into the Aln, Coquet, Wansbeck and Blyth estuaries. The open coast habitats extend into the subtidal zone, where large shallow inlets and bays and extensive rocky reefs are present. Further offshore, soft sediments predominate.
Northumbria Coast Ramsar	Little tern, <i>Sternula albifrons</i> - Breeding Purple sandpiper, <i>Calidris maritima</i> - Wintering Turnstone, <i>Arenaria interpres</i> - Wintering	The Northumbria Coast Ramsar site comprises several discrete sections of rocky foreshore between Spittal, in the north of Northumberland, and an area just south of Blackhall Rocks in County Durham. These stretches of coast regularly support nationally important numbers of purple sandpiper and high concentrations of turnstone. The Ramsar site also includes an area of sandy beach at Low Newton, which supports a nationally important breeding colony of little tern, and parts of three artificial pier structures which form important roost sites for purple sandpiper.
Northumbria Coast SPA	A148 <i>Calidris maritima</i> ; Purple sandpiper (Non-breeding) A169 <i>Arenaria interpres</i> ; Ruddy turnstone (Non-breeding) A194 <i>Sterna paradisaea</i> ; Arctic tern (Breeding) A195 <i>Sternula albifrons</i> ; Little tern (Breeding)	The Northumbria Coast SPA includes much of the coastline between the Tweed and Tees Estuaries in north-east England. The site consists of mainly discrete sections of rocky shore with associated boulder and cobble beaches. The SPA also includes parts of three artificial pier structures and a small section of sandy beach. In summer, the site supports important numbers of breeding Little Tern <i>Sternula albifrons</i> , whilst in winter the mixture of rocky and sandy shore supports large number of Turnstone <i>Arenaria interpres</i> and Purple Sandpiper <i>Calidris maritima</i> .

H R A o f S u n d e r l a n d A l l o c a t i o n s & D e s i g n a t i o n P l a n

European site	Qualifying features	Description
Teesmouth and Cleveland Coast Ramsar	Knot, <i>Calidris canutus islandica</i> - Wintering Redshank, <i>Tringa totanus</i> - Passage Sandwich tern, <i>Thalasseus sandvicensis</i> - Passage Waterbird assemblage - Wintering	Medium-large site encompassing a range of habitats (sand and mudflats, rocky shore, saltmarsh, freshwater marsh and sand dunes) on and around an estuary which has been much-modified by human activities. Together these habitats support internationally important numbers of waterbirds.
Teesmouth and Cleveland Coast SPA	A132 <i>Recurvirostra avosetta</i> ; Pied avocet (Breeding) A143 <i>Calidris canutus</i> ; Red knot (Non-breeding) A151 <i>Calidris pugnax</i> ; Ruff (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>Sternula albifrons</i> ; Little tern (Breeding) Waterbird assemblage	Teesmouth and Cleveland Coast SPA is located on the coast of north-east England. It includes a range of coastal habitats – sand- and mud-flats, rocky shore, saltmarsh, freshwater marsh and sand dunes – on and around an estuary which has been considerably modified by human activities. Together these habitats provide feeding and roosting opportunities for important numbers of waterbirds in winter and during passage periods. In summer Little Tern <i>Sternula albifrons</i> breed on beaches within the site, while Sandwich Tern <i>Sterna sandvicensis</i> are abundant on passage.
Thrislington SAC	H6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>), (note that this includes the priority feature "important orchid rich sites")	Thrislington SAC, a former quarry, contains one of the most important stands of lowland calcareous grassland on magnesian limestone substrate in Britain. The qualifying feature of the SAC is semi-natural dry grasslands and scrubland facies on calcareous substrates <i>Festuco-Brometalia</i> and an important orchid site. Thrislington contains the largest of the few remaining stands of CG8 <i>Sesleria caerulea</i> - <i>Scabiosa columbaria</i> grassland which exists only in the north east of England, and although a relatively small SAC at 22.72 ha, its importance is due to the fragmented locations of remaining grassland sites of this nature.

Appendix 3: Allocations and distances from the Northumbrian Coast SPA/Ramsar and Durham Coast SAC

This appendix lists all the allocations and the respective distances to the Durham Coast SAC and Northumbria Coast SPA/Ramsar. Distances are the nearest point of the allocation boundary to the nearest point on the European site boundary. Cells shaded in grey are those with values below 7.2km.

Site_Name	Site Ref	Durham Coast SAC distance (m)	Northumbria Coast SPA/Ramsar distance (m)
Site of former Eagle PH, Portsmouth Road	54	5,456	5,456
Land at Hylton Lane/ Blaydon Ave	79	5,511	5,289
Former Groves site, Woodbine Terrace, Pallion	85	4,350	3,487
Southwick Primary School	91	3,544	2,726
Recreation Field, North Moor Lane, Farringdon	93	3,932	3,932
Former Ayton Village School, Goldcrest Road	98	12,406	12,406
Carley Hill School, Emsworth Road	104	2,587	1,959
Phases1-6, Chester Road	107	5,349	5,349
Land at Black Boy Road, Fencehouses	128	9,928	9,928
Land at of Amberley Street and Harrogate Street	163	1,724	1,724
Land at Fulwell Quarry, north of Emsworth Road, Sunderland	175	2,790	2,332
Former Usworth Comprehensive School	177	10,061	9,754
Ashburne House, Ryhope Road	183	1,737	1,737
Land at Lambton Lane, Fencehouses	194	9,821	9,821
Land to the east of former Broomhill Estate, Hetton	197	7,283	7,283
Emsworth Square	242	2,871	2,255
Eastbourne Square, Carley Hill	243	2,604	2,092
Washington Football Club, Spout Lane, Washington	258	10,603	10,131
Land at Philadelphia Complex	330A	7,628	7,628
Land at Mill Hill, Silksworth Road	342	3,602	3,602
Bonner's Field Industrial units, Bonnersfield Road	362	3,162	2,116
Land at Ennerdale Street, Low Moorsley	388	8,918	8,790
Quarry House Lane, East Rainton	421	9,255	9,255
Land at Cricklewood Road	439	6,018	5,515
Cragdale Gardens, Low Moorsley	440	8,614	8,482
Land at Penshaw House	448	9,175	9,175
Thornbeck College Site	467B	2,504	1,820
Land at Chapel Street / Edward Street	494	7,457	7,436

Site_Name	Site Ref	Durham Coast SAC distance (m)	Northumbria Coast SPA/Ramsar distance (m)
Vane Arms, Silksworth	502	2,975	2,975
Havannah Road/ Moorway, Albany	538	11,695	11,239
Hetton Downs Phase 3	540	7,372	7,372
Hylton Skills Campus	563	3,783	3,156
Pheonix Tower Business Park	565	4,229	3,585
Fulwell Fire Station	568	1,843	1,085
Old Mill Road Greenspace	652	3,199	2,641
Land to the South of Redburn Row, Chilton Moor	654/180	10,003	10,003
Sunniside Central Area, Villiers Street	659	2,595	2,452
Stanley Terrace, Chester Road, Shiney Row	695	8,824	8,824
Land adjacent to Beehive PH, Blind Lane	702	8,796	8,796
Warm up Wearside, Westbourne Road	703	3,195	3,195
Former Fence Houses Comrades Club, Station Avenue North	704	10,047	10,047
Land fronting Chiswick Road	708	5,932	5,481
Land at Oswald Terrace South, Castletown	710	5,638	4,942
Land at Kidderminster Road	711	5,387	5,023
Tasman Road, Thorney Close	716	4,968	4,968
Theme Road, Thorney Close	717	5,214	5,214
Tadcaster Road, Thorney Close	718	5,302	5,302
Sunderland Civic Centre	731	2,249	2,249
Avenue Vivien and Rose Avenue, Fencehouses	732	9,927	9,927
The Inn Place, Knollside Close	733	3,798	3,798
1 Roker Terrace and Side House, St George's Terrace	735	1,992	658
Site of 1 to 12 Elmwood Square	738	3,430	2,757
6 Athenaeum Street and upper floors 25-26 Fawcett Street	739	2,642	2,642
Prestbury Road, Pennywell	744	5,928	5,928
Keighley Avenue	745	5,243	4,954
Willow Close	746	9,732	9,732
Silksworth Housing Office	747	3,299	3,299