



National Grid

TYNE CROSSING GROUND INVESTIGATION WORKS

Report to Inform Habitat Regulations Assessment
- Appropriate Assessment





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Appropriate Assessment

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EXECUTIVE SUMMARY

National Grid Energy Transmission commissioned WSP UK Limited to carry out a Habitats Regulations Assessment - Stage 1 Screening and Stage 2 Report to Inform Appropriate for ground investigation works to inform the NGET Tyne Crossing Scheme

The purpose of the HRA is to assist the Competent Authority, in discharging their duties under the Habitats Directive. National Grid is the Competent Authority for the purposes of the Habitats Regulations in relation to this project.

Northumbria Coast Special Protection Area, Northumbria Coast Ramsar, Durham Coast Special Area of Conservation are within the 10km of the GI Works.

Likely Significant Effects have been ruled out for all impact pathways to the qualifying features of purple sandpiper, and all breeding Arctic tern and little tern for Northumbria Coast SPA & Ramsar, either alone or in-combination with other projects.

Likely Significant Effects from noise and visual disturbance to turnstone, and waterborne pollution to Durham Coast SAC, Northumbria Coast SPA & Northumbria Coast Ramsar cannot be ruled out and were assessed within Stage 2, Appropriate Assessment.

Embedded mitigation including standard pollution prevention and management measures will avoid the risk of accidental damage or damage/degradation through indirect effects of waterborne pollution on Northumbria Coast SPA, Northumbria Coast Ramsar & Durham Coast SAC.

Disturbance to fauna, altering behaviour and affecting breeding/ foraging/ overwintering success (above water noise and visual disturbances) will be mitigated through eco-acoustic panels, relocating of boreholes and natural vegetation screening. Disturbance is therefore anticipated to be negligible. There will be no adverse effects on the integrity of Northumbria Coast SPA & Northumbria Coast Ramsar when considering the GI Works alone, or in-combination with other projects

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1 INTRODUCTION

1.1 OVERVIEW

- 1.1.1. National Grid Energy Transmission (hereafter 'NGET') commissioned WSP UK Limited (hereafter 'WSP') to carry out a Habitats Regulations Assessment - Stage 1 Screening and Stage 2 Report to Inform Appropriate Assessment in October 2025. The report has been produced with regard to the Conservation of Habitats and Species Regulations 2017 in implementing Article 6(3) of the European Community Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) and in relation to Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations') (His Majesty's Stationery Office (HMSO), 2017), for the purpose of supporting ground investigation works for NGET Tyne Crossing.

1.2 PROJECT BACKGROUND

- 1.2.1. WSP have been commissioned by NGET to provide ecological advice and support for a proposed 1.6km long underground electricity transmission cable crossing under the River Tyne between North Tyneside and South Tyneside, hereafter referred to as the "Proposed Scheme". The Proposed Scheme would remove barriers to safe passage of vessels and cargo with heights close to or above the height of the existing overhead transmission line.
- 1.2.2. The subject of the HRA is ground investigation works to inform the NGET Tyne Crossing Scheme (hereafter the 'GI Works', shown in **Appendix A**). The GI Works are planned between November 2025 and January 2026, for both terrestrial and marine locations (described in detail below). The Proposed Scheme would be subject to a separate HRA.

1.3 PURPOSE / SCOPE OF THIS REPORT

- 1.3.1. The purpose of the HRA is to assist the Competent Authority, in discharging their duties under the Habitats Directive (as defined within **Section 1.2**).
- 1.3.2. National Grid is the Competent Authority for the purposes of the Habitats Regulations in relation to this project. The Habitats Regulations require Competent Authorities, before granting consent for a plan or project, to carry out an Appropriate Assessment in circumstances where the plan or project is likely to have a significant effect on a European Site (see **Section 1.4** for definition), either alone or in combination with other plans or projects.
- 1.3.3. The methodology for the HRA process is set out in **Section 1.4** The GI Works are introduced in more detail in **Section 2**, and **Section 3** identifies the relevant International Sites and the potential impact pathways, due to the GI Works, that may cause Likely Significant Effects (LSE) on those International Sites. The HRA Stage 1: Screening of the GI Works is detailed in **Section 6** with consideration of potential effects of the GI Works upon the International Sites, and whether these are likely to be significant. The 'shadow' Statement to inform Appropriate Assessment is detailed in **Section 7**

- 1.3.4. WSP have provided this report solely for the use of the recipient and accepts no liability to any third parties or any other party using or reviewing the report or any part thereof. WSP makes no warranties or guarantees, actual or implied, in relation to this report, or the ultimate commercial, technical, economic, or financial effect on GI Works to which it relates, and bears no responsibility or liability related to its use other than as set out within the scope of the contract under which it was supplied.

1.4 HABITAT REGULATION ASSESSMENT PROCESS

- 1.4.1. The Habitats Regulations transposed the requirements of the European Council Directive 92/43/EEC 'the Habitats Directive' (Council of the European Union (CEU), 1992) into domestic law. The Habitats Regulations apply to plans and projects that may have significant effects on sites designated under the Habitats Directive and 'the Birds Directive' (Directive 2009/147/EC (Council of the European Union and European Parliament, 2009)). Sites designated under the Directives include Special Protection Areas (SPAs) and Special Areas of Conservation (SACs).
- 1.4.2. 'Competent Authorities' must assess plans and projects for their potential to cause LSEs on the relevant designated sites. Should LSEs be identified by the initial screening process it is necessary to further consider the effects by way of an Appropriate Assessment (AA). The AA determines whether the plan or project would lead to adverse effects on the integrity of these site(s). If adverse effects on integrity are identified, the plan or project cannot be permitted without meeting strict additional tests.
- 1.4.3. Overall, this process of assessment is known as HRA, and further details of the applicable legislative context are summarised below.
- 1.4.4. Following the UK's exit from the European Union (EU), The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (HMSO, 2019) were enacted and resulted in amendments to the Habitats Regulations. The Department for Environment, Food and Rural Affairs (Defra) guidance (Defra, 2017) states that SACs and SPAs in the UK no longer form part of the EU's Natura 2000 ecological network. The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (HMSO, 2019) created a National Site Network (NSN) on land and at sea, including both the inshore and offshore marine areas in the UK. The NSN includes:
- existing SACs and SPAs; and
 - new SACs and SPAs designated under these Regulations.
- 1.4.5. Any references to Natura 2000 in the 2017 Regulations and in guidance now refers to the new NSN.
- 1.4.6. Maintaining a coherent network of protected sites with overarching conservation objectives is still required to:
- fulfil the commitment made by government to maintain environmental protections; and
 - continue to meet international legal obligations, such as the Bern Convention, the Oslo and Paris Conventions (OSPAR), Bonn and Ramsar Conventions.

- 1.4.7. It is also a matter of government policy (paragraph 194 of the National Planning Policy Framework (NPPF)) ((Ministry for Housing, Communities and Local Government (MHCLG 2024)) that sites designated under the 1971 Convention on Wetlands of International Importance (commonly known as Ramsar sites), potential SPAs (pSPAs) and possible SACs (pSACs) are also considered in the same way as SACs, SPAs and candidate SACs (cSACs). Lastly, Sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites should be given the same protection.
- 1.4.8. For the purpose of this report, the range of sites identified above are considered under the grouped term 'International Sites'.

STAGES OF HABITAT REGULATIONS ASSESSMENT

- 1.4.9. Guidance on the Habitats Directive ((European Commission 2019) (European Commission 2023) and further updates²) sets out the step wise approach which should be followed to enable Competent Authorities to discharge their duties under the Habitats Directive and provides further clarity on the interpretation of Articles 6 (3) and 6 (4). The process used is usually summarised in four distinct stages of assessment:
- **Stage 1:** Screening: the process which identifies whether effects upon a European Site of a plan or project are likely, either alone or in combination with other plans or projects and considers whether these effects are likely to be significant. Following the European Court of Justice case in *People Over Wind and Sweetman v Coillte Teoranta* (Case 323/17), all Stage 1 assessments must be undertaken without taking into account any proposed mitigation measures intended to reduce or avoid negative impacts of GI Works on International Sites;
 - **Stage 2:** Appropriate Assessment: the detailed consideration of the effect of the plan or project on the integrity of the international site, either alone or in combination with other plans or projects, with respect to the site's conservation objectives and its structure and function;
 - **Stage 3:** Assessment of alternative solutions: this process examines alternative ways of achieving the objectives of the plan or project that reduce or avoid adverse effects on the integrity of the International Sites; and
 - **Stage 4:** Assessment where no alternative solutions exist and where adverse effects remain: an assessment of whether the Works are necessary for Imperative Reasons of Overriding Public Interest (IROPI) and, if so, an assessment of the compensatory measures needed to maintain the overall coherence of the National Site Network.
- 1.4.10. The integrity of a site is defined as the coherence of the site's ecological structure and function, across the whole of its area, which enables it to sustain the habitat, complex of habitats and/or populations of species for which the site has been designated (European Commission, 2000). An adverse effect on integrity is likely to be one which prevents the site from making the same contribution to favourable conservation status as it did at the time of designation.
- 1.4.11. The precautionary principle is applied at all stages of the HRA process. In relation to Stage 1: Screening, this means that both projects or plans where significant effects are considered likely and those where uncertainty exists as to whether significant effects are likely must be subject to Stage 2 (AA) of the HRA process.

- 1.4.12. The Waddenzee case (ECJ, 2004) was brought to the Court of Justice of the European Union (CJEU) under a claim that the Netherlands was in breach of legislation by allowing mechanical cockle fishing in the Wadden Sea. The CJEU judgement in the Waddenzee case stated that *‘where a plan or project has an effect on that site but is not likely to undermine its conservation objectives it cannot be considered likely to have a significant effect on the site concerned.’*
- 1.4.13. As such, where effects of a plan or project may be identified but are in line with the conservation objectives of the European Site, or expected to be positive effects, they are not considered to be Likely Significant Effects for the purposes of the HRA.

1.5 CONSULTATION

- 1.5.1. **Table 1-1** summarises the key biodiversity issues in relation to the International Sites that were discussed with Natural England (via the Discretionary Advice Service (DAS) and how they have been addressed within the HRA. North Tyneside Council and South Tyneside Council have also been consulted with respect to boreholes which lie within Local Wildlife Sites (LWS) which support intertidal mudflat habitat which could support designated features of Northumbria Coast SPA and Ramsar.

Table 1-1 - Summary of consultations

Advice	Addressed in HRA
South Tyneside Council & North Tyneside Council	
WSP emailed South Tyneside Council on 30.10.25 to consult on boreholes with potential to affect the following, but controlled through mitigation detailed within technical notes in Appendix C and Appendix D: • River Tyne - tidal extent Local Wildlife Site (LWS) • Howdon Wetlands (LWS) • Jarrow Slake Mud Flats (LWS) • River Don Salt Marsh (LWS) Email response from the Natural Environment Manager at South Tyneside Council, 30.10.25, “From a South Tyneside LWS point of view, I am satisfied that the information is comprehensive and the risks of adverse impacts on ST LWSs is avoided / minimised through your proposed control measures.” No response to date from North Tyneside Council.	No further action required.
Caroline Jewell (Natural England) email 31/10/2025”	
Caroline Jewell (Natural England) emailed WSP regarding HRA advice for GI works. <i>“Natural England is aware that there is notable bird interest in the Tyne in the tidal tributary (River Don) which runs into the estuary to the south of the location of the borehole BH204 and within the artificial structures of the Port of Tyne, we also note in your email below that surveys have identified turnstone which are a feature of the Northumbria Coast SPA and Ramsar site local to the works. It is Natural England’s view, therefore, that as a feature of a European</i>	Northumbria Coast SPA & Ramsar is subject to this HRA.

Advice	Addressed in HRA
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or Ramsar site could be impacted by the GI works a HRA needs to be undertaken for the proposal.

Furthermore, Natural England's advice is that the HRA should screen the proposal as being likely to have a significant effect on a feature of the sites due to the known presence of a feature and the potential for effects, therefore the HRA should be taken through to the Appropriate assessment stage. "

DAS meeting with Natural England 10/11/2025

Teams meeting between Caroline Jewell (Natural England), WSP and National grid. National Grid gave an overview of the Proposed Scheme and the need for the GI works. WSP provided an overview of the receptors, sites and mitigation that have been considered within the HRA

Natural England advised on the desire for embedded mitigation to be considered within the Appropriate Assessment rather than screening stage.

Natural England raised no immediate concerns regarding the HRA AA but noted that site specialists will need to review the AA and provide statutory consultation.

Natural England advised that it is up to National Grid to decide on whether SSSI is necessary but agreed that current evidence showed it was not.

Standard Pollution Control measures will be excluded from assessment within the Stage 1 screening and included within Stage 2 Appropriate Assessment.

DAS comments following AA draft submission to Tom Charman, Thomas Harper & Caroline Jewell (Natural England) 17/11/2025

Summarised response from Caroline Jewell following submission of draft HRA AA.

"I have received comments back from the responsible officers on the draft HRA AA. In summary, both agree with the conclusion that there will be no adverse effect on site integrity due to the short-term nature of the activity, the availability of alternative habitat for any disturbed birds to displace to and the proposed mitigation measures as set out in the assessment.

We have the following comments on the document provided as part of our Discretionary Advice Service (UDS-A021944):

- 1) We advise that you include a mitigation measure due to the timing of the activity that the GI works are suspended after 5 days of freezing weather and then they can only re-start after there has been 3 days of thaw conditions.*
- 2) Please can you update Table 1-1 for clarity as the comments I made earlier in the week and via email were not part of the DAS contract.*

We suggest that National Grid submit the document ASAP to the protected sites mailbox as per my earlier emails. Please cc me in and Northumbria.hub@naturalengland.org.uk.

Table 1.1 was updated to reflect that comments from Caroline Jewell on 31/10/2025 were not provided under a DAS agreement.

The DAS email concurs with the finding of this HRA AA of no adverse effects on integrity.

Advice regarding thresholds applied to waterbird sensitivity to disturbance, FFL criteria and the application of mitigation measures will be considered within the HRA associated with any future planning application.

Advice	Addressed in HRA
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For future consideration as the scheme develops, we offer this additional DAS advice:

- 1) *We understand that future surveys include the Jarrow Slake area to the south which is welcomed. Our view is that the number of birds along the River Don will have been underestimated from the current surveys due to them being limited to the north bank. As part of the DAS agreement Natural England can provide advice regarding the scope of any proposed surveys to prevent any delays when you are ready to submit.*
- 2) *The HRA notes that habitat is only considered FLL if it is shown to support more than 1% of a designated sites population. It is our advice that if birds from the SPA use an area outside of the SPA for a critical function (e.g. foraging, roosting) then it is functionally linked regardless of the numbers observed via surveys. For detailed assessments you would consider the numbers present, frequency of use, whether important at specific times/weather conditions etc to consider whether it is considered important/significant FLL.*
- 3) *As noted in the call with respect to the use of the IECS toolkit, Natural England acknowledges there is useful information contained within it which can be drawn upon when assessing disturbance impacts on waterbirds. However, we do not agree with the some of the stated thresholds and caution against a reliance on the kit for future assessments. We advise that a method is agreed with Natural England prior to your application to agree an approach.*
- 4) *Cold weather suspensions can be critical to reduce impact on waterbirds. We advise that the suggested mitigation measure above (i.e. suspend works after 5 days of freezing weather and recommence only after 3 days of thaw conditions) should be applied to all future proposals"*

2 GI WORKS

- 2.1.1. This section provides an understanding of the location and description of the elements of the GI Works that could result in LSE on a European Site or land functionally linked to that site. The description must identify the elements of the GI Works that may directly affect a European Site (e.g., land-take), those that may indirectly affect a European Site (e.g., emissions to air) and those that may act in-combination with other plans or projects.

2.2 THE SITE

- 2.2.1. The GI Works would occur within four distinct locations, near to postcodes NE29 6JT (north) and NE32 3DZ (south), with central grid reference NZ 33848 66037:
- North Port of Tyne land (central grid reference NZ 34152 66763);
 - Northumbrian Water land (central grid reference NZ 34017 66321);
 - South Port of Tyne land (central grid reference NZ 34037 65459); and
 - River Tyne (central grid reference NZ 33848 66037).
- 2.2.2. Habitats present on and adjacent to the GI Works include watercourses, lowland mixed deciduous woodland, other broadleaved woodland, mixed scrub, open mosaic brownfield habitat (inclusive of subcommunities such as swamp), intertidal mudflats, intertidal watercourses (River Don and River Tyne), other neutral grassland and developed land sealed surface (inclusive of large areas of the Port of Tyne). The GI Works locations are shown in **Appendix A**. The location of the internationally designated sites in relation to the GI Works are shown in **Appendix B**.

2.3 THE GI WORKS

TERRESTRIAL GI

- 2.3.1. The proposed terrestrial GI activities include the excavation of both boreholes and trial pits (detailed in **Appendix A**). At each borehole location, there will be one borehole and one cone penetration test (CPT). The boreholes will be excavated using a drilling rig similar to a Fraste PL.G multi-purpose rig, which is approximately 4.5m x 2.2m in dimension. The CPT rig used will be a CPT track truck which is approximately 8.7m x 2.55m. The working area for the boreholes and CPT do not extend past the pit. The working area will be enclosed within Heras fencing and may be covered with tracking mats if necessary (depending on weather conditions).
- 2.3.2. A JCB 3CX excavator is likely to be used for the trial pit excavations. The trial pit excavations are larger in size than the boreholes and CPT and measure approximately 3-4m in length and 0.6m in width. The working area for trial pits extends beyond the pit as the soil from the excavation will need to be stockpiled at the side of the pit on a board or plastic sheeting, which will require an area of approximately 4m x 4m.
- 2.3.3. The access track largely utilises pre-existing tracks. Requirements for vegetation clearance such as the removal of overhanging branches are minimal.

- 2.3.4. The proposed GI Works are scheduled to commence in November 2025 and complete in December 2025. The GI works are estimated to take 3-4 days at each location. The terrestrial boreholes will be 8am to 6pm, Monday to Friday (10 hours). With the reduced daylight in November / December, this could be slightly reduced. Noise generation and duration for drilling sub-activities are detailed in **Table 5-1** and discussed under **Section 5.2**

AQUATIC GI

- 2.3.5. The marine boreholes (BH201, BH202, BH203, BH204) will be drilled using rotary percussive drilling with drill pipes positioned around the boreholes. These drill pipes should limit sediment resuspension and keep total suspended solids (TSS) at natural levels. At the boreholes, sample tubes will be pushed down as far as possible before drilling commences to limit the noise created by the drilling activities. It is understood that a 2 – 4 days will be spent at each borehole location, with works planned to commence between November and December and run 24 hours a day for 14 days. It is anticipated that the jack-up rig legs will create some disturbance to the sediment as the rig legs move in to position and penetrate the sediment. Additionally, CPTs will be undertaken to measure the ground resistance at the sites. The marine boreholes will be drilled in turn, i.e. not simultaneously. Above-ground noise generation for drilling sub-activities is discussed under **Section 5.2** in relation to ornithology receptors.

3 IDENTIFICATION OF INTERNATIONAL SITES

3.1 DESIGNATIONS

- 3.1.1. Each International Site is designated as a SAC, classified as an SPA), or listed as a Ramsar Site in respect of specific 'qualifying features'. These 'qualifying features' (habitats, mosaics of habitats, species or assemblage of species, and combinations of these) are the reasons for which the site is to be protected and managed for conservation purposes, due to their significance on an international scale.
- 3.1.2. For SPAs the qualifying features are the birds for which the SPA is classified, under either:
- Article 4(1) rare and vulnerable species, species in danger of extinction or requiring particular attention because of their habitat needs, listed in Annex I of the Birds Directive; or
 - Article 4(2) regularly occurring migratory species (e.g., on passage or over-wintering or an internationally important assemblage of birds) not listed in Annex I.
- 3.1.3. The qualifying features of SACs are the habitats listed in Annex I of the Habitats Directive and the species listed in Annex II of the Directive. The 'qualifying features' of Ramsar Sites are the list of Criteria as set out in the Convention on Wetlands of International Importance (Ramsar Convention).
- 3.1.4. All receptors that are qualifying features of International Sites (or support such features), and which may potentially be affected by the GI Works have been considered within this screening process.

3.2 STUDY AREA

- 3.2.1. International Sites were included for either their physical proximity to the GI Works or linkage by way of mobile fauna that represented qualifying features and/or associated functionally linked habitat that could be of importance to mobile qualifying features.
- 3.2.2. All International Sites featuring qualifying ornithological interests were included if they fell within 10 kilometres (km) of the GI Works. A distance of 10 km was chosen to account for the distance that mobile waterbird species typically move between roosting and feeding sites.
- 3.2.3. This was extended to 20km for sites designated for marine mammals in line with evidence that marine mammals may be disturbed at distances of between 10 and 20km (Sinclair et al, 2023)
- 3.2.4. When considering the effects of the GI Works on International Sites, consideration must be given to the effects on birds using land beyond the boundaries of the SPAs and Ramsars as well as within. Such land can be deemed to be functionally linked to the European Site, for example, turnstone recorded within the survey area, but outside the boundary of Northumbria Coast SPA and Ramsar. Therefore, some habitats beyond the SPA can be considered to be FLL. FLL in this context is defined as:

“Areas of land or sea outside of the boundary of a European site that may be important ecologically in supporting the populations for which the European site has been designated or classified. Occasionally impacts to such habitats can have a significant effect upon the species interest of such sites, where these habitats are considered to be functionally linked to the European site¹” (Natural England 2016).

- 3.2.5. In order to assess the potential LSE of disturbance on qualifying bird species, ornithological baseline data was obtained from desk study and field surveys to ascertain the type and level of use by these species within the site boundary and surrounds (see **Section 4.1**). Published literature on the sensitivity of these species will then be used to assess the effects of disturbance on the qualifying bird populations involved and determine any LSE.

3.3 INTERNATIONAL SITES

- 3.3.1. Northumbria Coast SPA, Northumbria Coast Ramsar, Durham Coast SAC are within the 10km of the GI Works. Their citations are summarised within **Table 3-1**.
- 3.3.2. There are no designated sites within 20km of the Site that are designated for any marine mammals.

Table 3-1 – Internationally designates sites within Study Area

Designated Site name and designation	Designated Features	Location from Red line Boundary
Northumbria Coast Special Protection Area (SPA)	The site qualifies under Article 4 of the Birds Directive (2009/147/EC). The site regularly supports more than 1% of the GB populations of two species listed in Annex I of the EC Birds Directive: • Arctic tern <i>Sterna paradisaea</i> (breeding). 1,549 pairs, 2.92% of the GB population; and • Little tern <i>Sternula albifrons</i> (breeding). 40 pairs, 1.7% of the GB population. The site regularly supports more than 1% of the biogeographical population of two regularly occurring migratory species not listed in Annex I of the EC Birds Directive: • Turnstone <i>Arenaria interpres</i> (non-breeding). 1,739 individuals, 2.6% of biogeographic population; and • Purple sandpiper <i>Calidris maritima</i> (non-breeding). 787 individuals, 1.6% of biogeographic population.	Approximately 3.09 km northeast of the Site.

Northumbria Coast Ramsar

Ramsar criterion 6

Approximately 3.09 km

Designated Site name and designation	Designated Features	Location from Red line Boundary
	The site supports internationally important wintering populations of turnstone <i>Arenaria interpres</i> (2.6 % of the Eastern Atlantic Flyway population) and purple sandpiper <i>Calidris maritima</i> (1.6% of the Eastern Atlantic Flyway population).	northeast of the Site.
Durham Coast Special Area of Conservation (SAC)	Annex I habitats that are a primary reason for selection of this site 1230 Vegetated sea cliffs of the Atlantic and Baltic Coasts The Durham Coast is the only example of vegetated sea cliffs on magnesian limestone exposures in the UK. Rare species of contrasting phytogeographic distributions often grow together forming unusual and species-rich communities of high scientific interest.	Approximately 3.79 km to the east.

4 BIODIVERSITY BASELINE

- 4.1.1. In order to assess the potential effects of disturbance on qualifying bird species, ornithological baseline data was obtained from desk study and field surveys to ascertain the type and level of use by these species within the site boundary and surrounds.

4.2 DATA SOURCES

- 4.2.1. The following information has been used to inform the assessment of potential likely significant effects:
- Ongoing monthly Through-the-tidal-cycle-count (TTTCC) intertidal bird surveys to observe bird activity across a range of tidal states, carried out in September, October and November 2025. Surveys extend up to 500m from the Proposed Scheme; and
 - Environmental Records Information Centre (ERIC) Northeast. Data was requested in November 2024 for all protected and priority species within 3 km of the Proposed Scheme.
 - Habitat surveys
 - GI walkover
- 4.2.2. **Desk study**
- 4.2.3. Data provided by ERIC returned 11,543 records from within 3km of the GI Works, of which 661 were of species listed on Northumbria Coast SPA/Ramsar:
- 170 records of turnstone were returned, of which 62 were counts from the River Don, Jarrow Slake (within the Zol), between 2006 and 2021. Three of these were records in excess of 1% of the SPA/Ramsar designation of 1,739 (17), including a highest count of 20 birds. 48 records were of counts of <10 birds. The highest counts occurred in 2021 (20 on 21 February 21 and 17 on 26 March 2021) and in 2007 (18 on 5 August 2007);
 - 88 records of purple sandpiper, the closest of which was approximately 3km east of the GI Works;
 - 54 records of Arctic tern, two of which were from Jarrow Slake;
 - 114 records of common tern, six of which were from Jarrow Slake and one of which was from Howdon sewage treatment works (adjacent to the northern Site boundary);
 - 17 records of little tern, the closest of which was approximately 3 km east of the GI Works;
 - 144 records of roseate tern, the closest of which was approximately 3 km east of the GI Works; and
 - 74 records of Sandwich tern, one of which was from Howdon sewage treatment works.
- 4.2.4. Of relevance to this assessment are the LWSs which have overlapping designated habitats or species with the International Sites which require assessment within the Habitat Regulations process. These sites are detailed within **Table 4-1** below.

Table 4-1 – Local Wildlife Site descriptions

Name	Description
River Tyne - tidal extent (LWS):	The site has an established colony of kittiwake and wading birds associated with mudflats. It is also one of the most productive sites for salmon (<i>Salmo salar</i>) populations. Migratory route for sea trout (<i>Salmo trutta</i>), otter (<i>Lutra lutra</i>) and harbour seal (<i>Phoca vitulina</i>).
Howdon Wetlands (LWS)	The intertidal area fronting the Northumbrian water works and Howdon wetlands has been identified as an ecologically rich habitat. The site is important for waders, the mudflats and surrounding wetlands have been noted as an important habitat for birds. Some of the birds recorded at the site are on the amber list for UK conservation status including redshank <i>Tringa totanus</i> , turnstone and purple sandpiper.
Jarrow Slake Mud Flats (LWS)	Over 1,000 golden plover <i>Pluvialis apricaria</i> have been recorded, along with good numbers of curlew <i>Numenius arquata</i> , lapwing <i>Vanellus vanellus</i> , dunlin <i>Calidris alpina</i> (100 plus), redshank (300 plus), ringed plover <i>Charadrius hiaticula</i> and a variety of gull species. Of particular note is a flock of up to 18 turnstones, which is present throughout most of the year. Knot <i>Calidris canutus</i> , bar tailed godwit <i>Limosa lapponica</i> , and spotted redshank <i>Tringa erythropus</i> have also been recorded. Cormorants roost on the old staithes nearby. In summer the area is also used by Arctic, common and Sandwich terns. Sites qualify as a Local Wildlife Site if they contain significant areas of one or more priority habitats as defined in the Durham Biodiversity Action Plan. Jarrow Slake qualifies because it has more than 1 hectare of mudflat. The definition of mudflat is provided by the DEFRA Higher Level Stewardship Farm Improvement. It is described as 'the unvegetated part of inter-tidal habitats' which 'consist of fine sediment which is usually a valuable resource for wildlife' with 'evidence of invertebrate communities (lugworm casts visible, feeding birds present)
River Don Salt Marsh (LWS):	Mud dwelling invertebrates are conspicuous at low tide and their presence contributes to the importance of the site as a winter feeding and roost site for birds – attracting a wide range of species. Golden plover have been recorded, along with good numbers of curlew, lapwing, dunlin (100 plus), redshank (300 plus), ringed plover and a variety of gull species. Of particular note is a flock of up to 18 turnstones, which is present throughout most of the year. Knot, bar tailed godwit, and spotted redshank have also been recorded. Kingfisher are regularly seen. River Don Saltmarsh is the only remaining saltmarsh of significance in South Tyneside. The site, together with the adjacent Jarrow Slake, is also the largest and most important area of inter-tidal mud in the borough. Its value is increased by the presence of other smaller areas of comparable habitat nearby along the River Tyne corridor. Sites qualify as a Local Wildlife Site if they contain significant areas of one or more priority habitats as defined in the Durham Biodiversity Action Plan. River Don Saltmarsh qualifies because it: a) has more than 1 hectare of mudflat.

4.3 FIELD SURVEYS

BIRD SURVEYS

- 4.3.1. Fifteen species of bird were recorded in September, October and November 2025 during the TTTCC surveys within 500m of the site. These are presented within **Appendix E. Table 4-2** summarises the peak counts from TTTCC surveys. One recorded species is listed as a qualifying species on the Northumbria Coast Ramsar/SPA. Turnstone were recorded on six of the counts:

- count of 1 at High Tide (HT) + 1 in September;

- count of 5 at Low Tide (LT) in October; and
- counts of 8 (LT), 2 (LT+4), 5 (LT+5), & 7 (LT+6).

Table 4-2 - Through-the-tidal-cycle-count (TTTCC) Intertidal Bird Survey Results

Species	September Peak counts	October peak counts	November peak counts
Black-headed gull	87 (HT+2)	67 (LT+5)	111 (LT+6)
Cormorant	6 (HT+1)	2 (LT+2)	20 (LT+6)
Common sandpiper	1 (HT+4)	0	0
Curlew	5 (HT)	3 (LT+1)	2 (LT+2)
Eider	0	0	7 (LT+2)
Great black-backed gull	2 (HT+1)	0	3 (LT+6)
Grey heron	7 (HT+2)	3 (LT+1)	2 (LT+1)
Herring gull	33 (HT+5)	16 (LT+1)	67 (LT+3)
Mallard	7 (HT+1)	15 (LT)	3 (LT+6)
Moorhen	4 (HT+1)	0	2 (LT+3)
Mute swan	0	1 (LT)	0
Redshank	47 (HT+4)	57 (LT+1)	97 (LT+5)
Teal	19 (HT)	65 (LT+1)	40 (LT)
Turnstone	1 (HT+1)	5 (LT)	8 (LT)
Wigeon	4 (HT+2)	0	0

HABITAT SURVEYS AND GI WALKOVER

4.3.65. Habitat surveys were undertaken between May 2025 and October 2025 and are detailed with respect to the GI Works in **Appendix C**. Habitats present within 50m of GI Works included: open mosaic brownfield habitat, mixed scrub, ponds, other broadleaved woodland, lowland mixed deciduous woodland, other neutral grassland, developed land sealed surface, artificial unvegetated, intertidal watercourses (River Don and River Tyne) and linear strips of swamp, reedbed and saltmarsh. The following GI Works are located greater than 50m from habitat suitable for turnstone, the only designated feature of the Northumberland Coast SPA considered likely to be present within the GI Works Site based on desk study and field study:

- BH101/CPT101
- BH102/CPT102
- BH103/CPT103
- TP101
- TP102
- TP103

- BH104
- BH105
- BH106
- BH202
- BH203
- BH303
- BH305
- BH306
- TP301
- TP302
- TP305
- TP306
- BH307_CPT301

4.4 FUNCTIONALLY LINKED LAND

- 4.4.1. In the context of functionally linked land, regular usage has been defined as an *area that regularly supports at least 1% of the qualifying population*. Regular usage is defined as when a threshold is met in two thirds of the season for which adequate data are available.
- 4.4.2. Desk study data returned 63 records of turnstone from Jarrow Slake. The citation for Jarrow Slake Mud Flats LWS notes a flock of “up to 18 turnstones” but only three of the desk study records were counts of this size, which would exceed 1% of the SPA/Ramsar population for turnstone.
- 4.4.3. No evidence exists from the desk study data to suggest that the site regularly supports 1% of the qualifying population of turnstone.
- 4.4.4. Field surveys undertaken thus far recorded a peak count of eight birds, equivalent to 0.46% of the SPA & Ramsar population.
- 4.4.5. Desk study data and field survey data does not provide evidence that the habitat within the Zol is FLL connected to Northumbria Coast SPA or Ramsar. However, as intertidal surveys are ongoing (to be concluded in April 2026), the precautionary principle has been applied and the habitat within the Zol will be considered as potentially FLL for the purposes of this assessment.

4.5 LIMITATIONS

- 4.5.1. Field surveys have only been undertaken across half of a wintering period but as per the BTO reporting rate for Great Britain and Northumberland, it is not anticipated that there will be an increase in numbers between December and March.
- 4.5.2. Field surveys have been undertaken from a single Vantage Point on the north side of the River Tyne. Further surveys from November will include surveys from a second Vantage Point adjacent to Jarrow Slake.

5 IMPACT PATHWAYS

- 5.1.1. This step identifies the mechanisms by which the GI Works could affect International Sites, either through direct or indirect pathways. The identified impact pathways and the associated Zones of Influence (Zoi) are summarised in **Table 5-2**.

5.2 TERRESTRIAL NOISE AND VISUAL DISTURBANCE

- 5.2.1. The production of aural and visual stimuli due to noise, vibration, movement of construction vehicles and operatives has the potential to result in disturbance/displacement of birds from SPA/Ramsar Sites and/or functionally linked land (if present). This could result in the reduction of energy intake and/or an increase in energy expenditure leading to a reduction in survival or productivity rates.
- 5.2.2. In line with based on information reported on disturbance in the literature (e.g., Cutts, Phelps & Burdon 2009⁹, Ruddock & Whitfield 2007¹⁰), impacts on birds from visual disturbance will be limited to 275m. This is a precautionary distance taken from the alert distance for unhabituated birds.
- 5.2.3. The unmitigated noise generated during the GI works from the rigs proposed to be used are provided within **Table 5-1**. The maximum LAeq generated noise at source is 107dB(A) to 111dB(A), generated cumulatively for ~1.5 hours per location per day (dynamic and Standard Penetration Test (SPT) testing). The ground conditions and testing frequency may cause variation either side of 1.5 hours. However, each instance of noise at those levels will likely last a few minutes at a time, e.g. an SPT could be done in one drop of the hammer and soft ground conditions would mean that a dynamic sampling run is done in seconds.
- 5.2.4. Using standard distance decay rates for noise, disturbance would only induce moderate or high-level behavioural responses up to ~42m (Cutts, Hemingway & Spencer, 2013). A precautionary disturbance distance of 50m has been applied.

Table 5-1 – Noise generated at source from terrestrial GI from proposed rigs to be used

	NRA01 205 Rig LAeq (dB(A))	NRA01 601 Rig LAeq (dB(A))	NRA01 P60 v02 (dB(A))	NRA01 Pioneer Rig P2 LAeq (dB(A))	NRA01a Pioneer Rig P3 LAeq (dB(A))	Maximum LAeq (dB(A))	Time duration hours
Dynamic sampling	110	111	107	107	107	111	0.5
SPT testing	102	107	103	102	107	107	1
Engine high LAeq	82	83	89	85	89	89	2
Engine medium	76	81	84	71	83	84	1.5

	NRA01 205 Rig LAeq (dB(A))	NRA01 601 Rig LAeq (dB(A))	NRA01 P60 v02 (dB(A))	NRA01 Pioneer Rig P2 LAeq (dB(A))	NRA01a Pioneer Rig P3 LAeq (dB(A))	Maximum LAeq (dB(A))	Time duration hours
Engine low	72	77	81	74	77	81	3

5.3 TERRESTRIAL WATERBORNE POLLUTION

- 5.3.1. The production of waterborne pollution moving from the project and into the designated sites may cause impacts to designation features of the European sites. This could damage freshwater environments from a decrease in water quality, resulting in effects on habitats and/or species. Impacts would be limited to within 50m of the GI Works. This geographic parameter is based on professional judgement following a review of the Environment Agency Pollution Prevention Guidance PPG5 (Environment Agency, 2007) (which suggests control of impacts can be managed within 50m). This also has the potential to impact watercourses hydrologically linked to watercourses within this 50m radius.

5.4 MARINE POLLUTION

- 5.4.1. Excavation of the bore holes within the river will disturb riverbed sediments, releasing sediments into the water column which can temporarily impact water quality within the vicinity of the excavations. Excavation may also mobilise heavy metals or other pollutants trapped in the sediments, with a potential impact on water quality.

6 SCREENING ASSESSMENT

6.1 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS ALONE

- 6.1.1. This section is a record of the screening for each potential impact and the qualifying features that could be sensitive to that risk for the GI Works alone. The features may be grouped if they will be affected in the same way and the screening is the same for each feature. If appropriate, the assessment may be considered at a site level, rather than feature by feature.
- 6.1.2. Potential impacts have been identified in **Table 6-1** and presents an Assessment of Likely Significant Effects for the GI works alone.

Table 6-1 – Assessment of Likely Significant Effects

Impact Pathway	LSE (Y/N)	Designated site/feature assessed and rationale for LSE Inclusion or being screened out
Terrestrial Noise and Visual Disturbance		
Increase in noise levels and visual stimuli due to the Proposed Works.	Y	<u>Northumbria Coast SPA & Ramsar - Non-breeding birds (turnstone)</u> Impacts on turnstone from visual disturbance will be limited to 47m. This is a precautionary distance taken from the alert distance for unhabituated birds (Cutts, Hemingway & Spencer, 2013). Potential FLL for turnstone exists within 50m of the following eight boreholes: • BH107 • BH108 • BH201 • BH204 • BH301 • BH302 • BH304 Short-term monitoring at the Jarrow Slake area measured background noise levels to be between 50-52 L_{Aeq} dB, 72-76 L_{Amax}, and long-term monitoring at north Port of Tyne is 45 L_{Aeq} dB, 56-74 L_{Amax} (WSP, 2025c). The use of machinery for the GI Works will amount to >3dB from baseline and whilst turnstone are a low sensitivity species that are extremely tolerant of moderate and high level visual disturbance ((Cutts, Hemingway & Spencer, 2013), there is potential for disturbance as there is suitable habitat for feeding and/or roosting turnstone within 50m. Therefore, LSE cannot be ruled out from the GI Works on turnstone with respect to boreholes: BH107, BH108, BH201, BH204, BH301, BH302, and BH304.
	N	<u>Northumbria Coast SPA & Ramsar - Non-breeding birds (purple sandpiper)</u> Impacts upon purple sandpiper are not considered likely due to the lack of desk study records from within the ZoI, as well as a lack of field survey records from the intertidal surveys undertaken thus far.

Impact Pathway	LSE (Y/N)	Designated site/feature assessed and rationale for LSE Inclusion or being screened out
		The habitat within the ZoI is also considered unsuitable due to the distance from exposed rocky shorelines which this species favours. Likely Significant Effects (LSE) on this qualifying feature are therefore ruled out.

N

Northumbria Coast SPA & Ramsar - breeding arctic and little tern

There is no potential for breeding species associated with Northumbria Coast SPA or Ramsar to be impacted by noise or visual disturbance as the works are taking place wholly outside of the breeding season for all species.

LSE on these qualifying features are therefore ruled out.

Terrestrial waterborne pollution

The production of waterborne pollution could damage freshwater environments from a decrease in water quality, resulting in effects on habitats and/or species.

Y

Northumbria Coast SPA & Ramsar

Waterborne pollution would be limited to watercourses within 50m of each location. This also has the potential to impact watercourses hydrologically linked to watercourses within this 50m radius.

Whilst Northumbria Coast SPA & Ramsar is >3km from the GI Works and any waterborne pollutants would have dissipated at this distance, LSE on these designated sites from this impact pathway cannot be ruled out.

Y

Durham Coast SAC

Waterborne pollution would be limited to watercourses within 50m of each location. This also has the potential to impact watercourses hydrologically linked to watercourses within this 50m radius.

Whilst The Durham Coast SAC is >3km from the GI Works and any waterborne pollutants would have dissipated at this distance, LSE on this designated site from this impact pathway cannot be ruled out.

Marine Pollution

N

Durham Coast SAC

The Environmental Management Plan (Doc Ref: 274733_EMP | Issue 2) details that sediment plumes at the seabed are minimised by the installation of conductor/riser casing. Given the short duration of the GI works (estimated at just 3 to 4 days per location), and likely relative high background turbidity levels, no significant impact on water quality, and by extension aquatic ecology, is anticipated.

Any temporary disturbance is expected to dissipate rapidly, with conditions returning to baseline levels shortly after completion. Durham Coast SAC is >3km from the GI Works and any waterborne pollutants would have dissipated to negligible levels at this distance.

LSE on this designated sites from this impact pathway is therefore ruled out

Impact Pathway	LSE (Y/N)	Designated site/feature assessed and rationale for LSE Inclusion or being screened out
	N	<u>Northumbria Coast SPA & Ramsar</u> The Environmental Management Plan (Doc Ref: 274733_EMP Issue 2) details that sediment plumes at the seabed are minimised by the installation of conductor/riser casing. Given the short duration of the GI works (estimated at just 3 to 4 days per location), and likely relative high background turbidity levels, no significant impact on water quality, and by extension aquatic ecology, is anticipated. Any temporary disturbance is expected to dissipate rapidly, with conditions returning to baseline levels shortly after completion. Northumberland Coast SPA & Ramsar is >3km from the GI Works and any waterborne pollutants would have dissipated to negligible levels at this distance. LSE on these designated sites from this impact pathway are therefore ruled out.

6.2 POTENTIAL IN-COMBINATION EFFECTS

- 6.2.1. The Stage 1 screening considers the impacts of the GI Works 'in-combination' with other projects or plans, with respect to Northumbria Coast SPA, Northumbria Coast Ramsar and Durham Coast SAC structure and function and their conservation objectives in relation to the impact pathways where LSE have been identified.
- 6.2.2. As part of the HRA screening process, information on other projects and plans (that have been subject to a HRA in relation to the European designated sites being assessed) is required to allow an assessment of any 'in-combination' effects of the Proposed Project with other schemes that may affect the European sites.
- 6.2.3. Only those qualifying features and European sites where it can be demonstrated that there is no likelihood of an LSE occurring have been screened out.
- 6.2.4. The types of projects and plans assessed for in-combination effects are:
- Projects that are under installation;
 - Permitted application(s) not yet implemented;
 - Submitted application(s) not yet determined; and
 - All refusals subject to appeal procedures not yet determined.
- 6.2.5. A search of Nationally Significant Infrastructure Projects (England), Newcastle City Council, North Tyneside Council, South Tyneside Council and Northumberland County Council has been undertaken to identify projects with the potential to have in-combination effects on the European sites. This includes:
- applications for a new permission;
 - applications to change an existing permission;
 - granted permissions that have not begun or been completed;
 - granted permissions that need renewing; and
 - plans that have been drafted but not yet adopted.

- 6.2.6. No such plans or projects have been identified to date but WSP are aware of Northumbria Water Limited's ongoing construction at Howdon Sewage Treatment Works. No publicly accessible planning application is available to view but works adjacent to the GI Works will not run concurrently with construction activities by NWL, by agreement with the NWL contractor. As such, there will be no in-combination effects.

6.3 SUMMARY

- 6.3.1. Likely Significant Effects have been ruled out for all impact pathways to qualifying features of purple sandpiper, and all breeding Arctic tern and little tern for Northumbria Coast SPA & Ramsar, either alone or in-combination with other projects.
- 6.3.2. Likely Significant Effects from noise and visual disturbance to turnstone, and waterborne pollution to Durham Coast SAC, Northumbria Coast SPA & Northumbria Coast Ramsar cannot be ruled out and will be assessed within Stage 2, Appropriate Assessment.

7 APPROPRIATE ASSESSMENT

7.1 NORTHUMBRIA COAST SPA & NORTHUMBRIA COAST RAMSAR

Terrestrial Noise and visual disturbance

- 7.1.1. Without mitigation, there is the potential for disturbance to turnstone, a qualifying bird species of Northumbria Coast SPA & Ramsar sites, which have been recorded in numbers exceeding 1% of the SPA designated population on three occasions at Jarrow Slake.
- 7.1.2. Whilst desk study data and field survey data does not indicate that the habitat within the Zol is FLL, as intertidal surveys are ongoing (to be concluded in April 2026), the precautionary principle has been applied and the habitat within the Zol will be considered as potentially FLL for the purposes of this assessment.
- 7.1.3. Impacts from the GI Works are possible from borehole locations BH107, BH108, BH201, BH204, BH301, BH302 and BH304. The following measures will be implemented to avoid and minimise the risk of disturbance to these species when they are using habitats potentially functionally linked land surrounding them for foraging, resting or roosting.
- 7.1.4. Eco-acoustic panels (Echo Acoustic Quilt H8) will be installed around rigs used at BH107, BH108, BH201, BH204, BH301, BH302 and BH304. The acoustic panels will reduce the at source maximum noise from 111dB(A) to 74 dB(A). Whilst turnstone are not very sensitive to noise stimuli and noise up to 75dB *appears acceptable at the bird*, all noise above 60dB should be considered (Cutts, Hemingway & Spencer, 2013). Using standard distance decay rates for noise, noise would decay to below 60dB at 5m and therefore disturbance would only be significant within 5m of each location with this mitigation measure.
- 7.1.5. In addition to this, BH301, BH302 and BH304 are naturally screened by at least 25m of vegetation at each location. This will reduce visual disturbance to negligible levels.
- 7.1.6. BH107 will be moved 16m from the currently proposed location to minimise impacts from noise and visual disturbance and will be 31m from the River Tyne – tidal extent LWS. The habitat within beyond 31m and within 50m of this borehole location is poorly suited to foraging and/or roosting turnstone as it is open mudflat rather than a rocky foreshore. As a low sensitivity species, turnstone show high tolerance. Whilst unhabituated turnstone have an alert distance of 47m, they typically *allow(ing) approach to works to within 10m before reacting* (Cutts, Hemingway & Spencer, 2013). As such, it is not anticipated that there will be any impacts from visual disturbance as this is a highly disturbed area adjacent to an active Sewage Treatment Works and Port of Tyne operations.

Waterborne Pollution

- 7.1.7. Standard pollution prevention and management measures will avoid the risk of accidental damage or damage/degradation through indirect effects of pollution. A Construction Environmental Management Plan (CEMP) has been produced to manage risks and includes control measures such as use of plant nappies for static machinery and spill kits and drip trays during refuelling.

Assessment of effects – Northumbria Coast SPA & Northumbria Coast Ramsar

- 7.1.8. The relocation of BH107 and acoustic barriers to be used at BH107, BH108, BH201, BH204, BH301, BH302, and BH304 will minimise the risk of disturbance to turnstone, a designated feature of the International Sites. Disturbance is not predicted. Works at each location limited to 4 days and maximum noise disturbance during dynamic and SPT sampling taking place over only 1.5 hours per location.
- 7.1.9. It is therefore concluded that adverse effects on the integrity of Northumbria Coast SPA and Northumbria Coast Ramsar will not occur when considering the GI Works alone.

7.2 DURHAM COAST SAC

Waterborne Pollution

- 7.2.1. Standard pollution prevention and management measures will avoid the risk of accidental damage or damage/degradation through indirect effects of pollution. A Construction Environmental Management Plan (CEMP) will be produced to manage risks and include control measures such as use of plant nappies for static machinery and spill kits and drip trays during refuelling.

ASSESSMENT OF EFFECTS – DURHAM COAST SAC

- 7.2.2. The measures described above would ensure that adverse effects on the integrity of Durham Coast SAC are avoided when considering the Proposed Project alone.

7.3 CONCLUSION

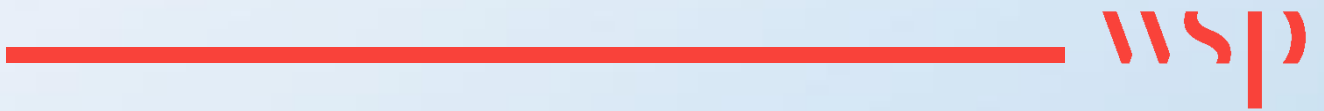
- 7.3.1. Likely Significant Effects were ruled out at Screening Stage for all impact pathways to the qualifying features of wintering purple sandpiper, and breeding birds arctic and little tern for Northumbria Coast SPA & Ramsar.
- 7.3.2. Likely Significant Effects from noise and visual disturbance to turnstone, and waterborne pollution to Durham Coast SAC, Northumbria Coast SPA & Northumbria Coast Ramsar could not be ruled out and were assessed within Stage 2, Appropriate Assessment.
- 7.3.3. Embedded mitigation including standard pollution prevention and management measures will avoid the risk of accidental damage or damage/degradation through indirect effects of waterborne pollution on Northumbria Coast SPA, Northumbria Coast Ramsar & Durham Coast SAC.
- 7.3.4. Disturbance to fauna, altering behaviour and affecting breeding/ foraging/ overwintering success (above water noise and visual disturbances) will be mitigated through eco-acoustic panels, relocating of boreholes and natural vegetation screening. Disturbance is therefore anticipated to be negligible.
- 7.3.5. There will be no adverse effects on the integrity of Northumbria Coast SPA & Northumbria Coast Ramsar when considering the GI Works alone, or in-combination with other projects.

REFERENCES

- Cutts, N., Phelps, A. & Burdon, D. (2009). Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance. Report to Humber INCA. Institute of Estuarine and Coastal Studies, University of Hull.
- N Cutts K Hemingway & J Spencer (2013) Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning & Construction Projects. Institute of Estuarine & Coastal Studies (IECS) University of Hull
- Environment Agency (2007). Pollution Prevention Guidelines: Works and maintenance in or near water: PPG5, Environment Agency, October 2007. <https://webarchive.nationalarchives.gov.uk/ukgwa/20140328090931/http://www.environment-agency.gov.uk/business/topics/pollution/39083.aspx>
- European Commission (2022), Directorate-General for Environment, Guidance document on assessment of plans and projects in relation to Natura 2000 sites – A summary, Publications Office of the European Union, 2022, <https://data.europa.eu/doi/10.2779/086397>.
- European Commission (2019), Directorate-General for Environment, Managing Natura 2000 sites – The provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC, Publications Office, 2019, <https://data.europa.eu/doi/10.2779/02245>.
- European Court of Justice (2004). case C-127/02 dated 7th September 2004, usually referred to as ‘the Waddenzee ruling’
- HMSO (2017). Conservation of Habitats and Species Regulations 2017 (as amended). HMSO, London.
- MHCLG (2024). Ministry of Housing, Communities & Local Government. National Planning Policy Framework. December 2024
- Natural England. (2016). Functional linkage: How areas that are functionally linked to European sites have been considered when they may be affected by plans and projects - a review of authoritative decisions. Natural England Commissioned Report NECR207, first published 29 February 2016.
- Ruddock, M. & Whitfield, D. P. (2007). A Review of Disturbance Distances in Selected Bird Species. A report from Natural Research (Projects) Ltd to Scottish Natural Heritage. <http://www.snh.org.uk/pdfs/strategy/renewables/birdsd.pdf>.
- Sinclair, R.R., Kazer, S., Ryder, M., New, P. & Verfuss, (2023) U.K. Review and recommendations on assessment of noise disturbance for marine mammals. Natural Resource Wales (NRW) Evidence Report No. 529. <https://naturalresourceswales.gov.uk/media/696882/review-and-recommendations-on-assessment-of-noise-disturbance-for-marine-mammals-final.pdf>
- WSP (2025c). Technical Note Tyne Crossing Stage 4.3 Operational Noise

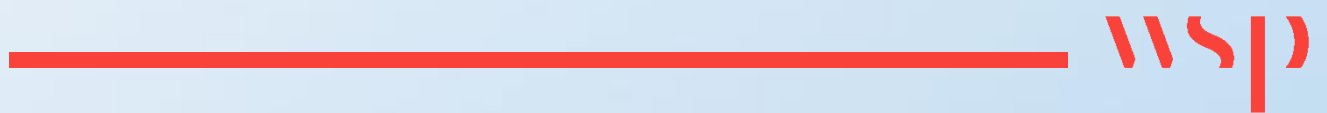
Appendix A

GROUND INVESTIGATION WORKS



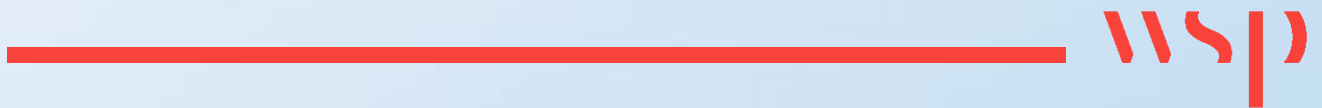
Appendix B

STATUTORY SITES LOCATIONS



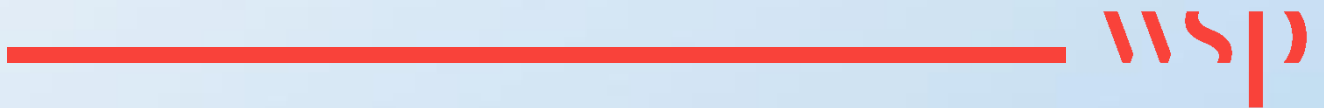
Appendix C

TERRESTRIAL GROUND INVESTIGATION WORKS TECHNICAL NOTE (WSP, 2025A)



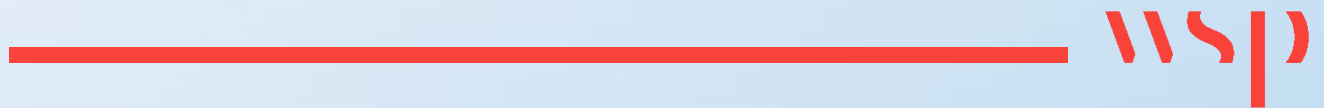
Appendix D

**QUATIC GROUND INVESTIGATION
WORKS TECHNICAL NOTE (WSP,
2025B)**



Appendix E

INTERTIDAL BIRD SURVEY RESULTS AND HRA SCREENING MAPS



Appendix F

SITE PHOTOGRAPHS

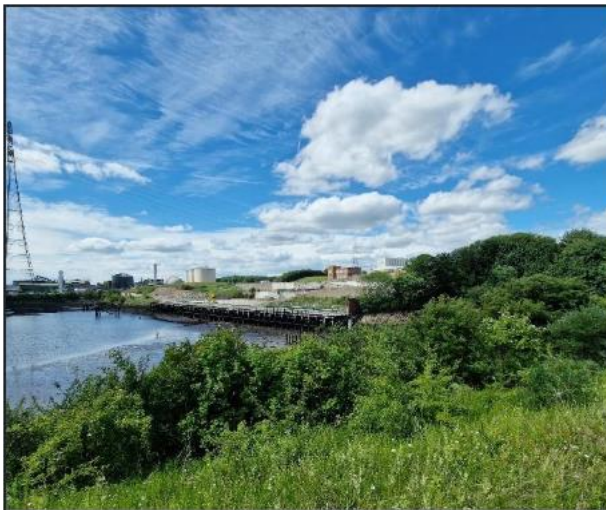




Photograph F-1 - BH106 adjacent to high metal fence and woodland/scrub



Photograph F-2 - BH107 view of construction area, showing a 3-4m high wall retaining wall to the east



Photograph F-3 - BH107 in background right hand-side of the photograph, showing the pier and construction site elevated above the mudflats



Photograph F-4 - BH107 with in-situ silt fence associated with existing construction zone



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