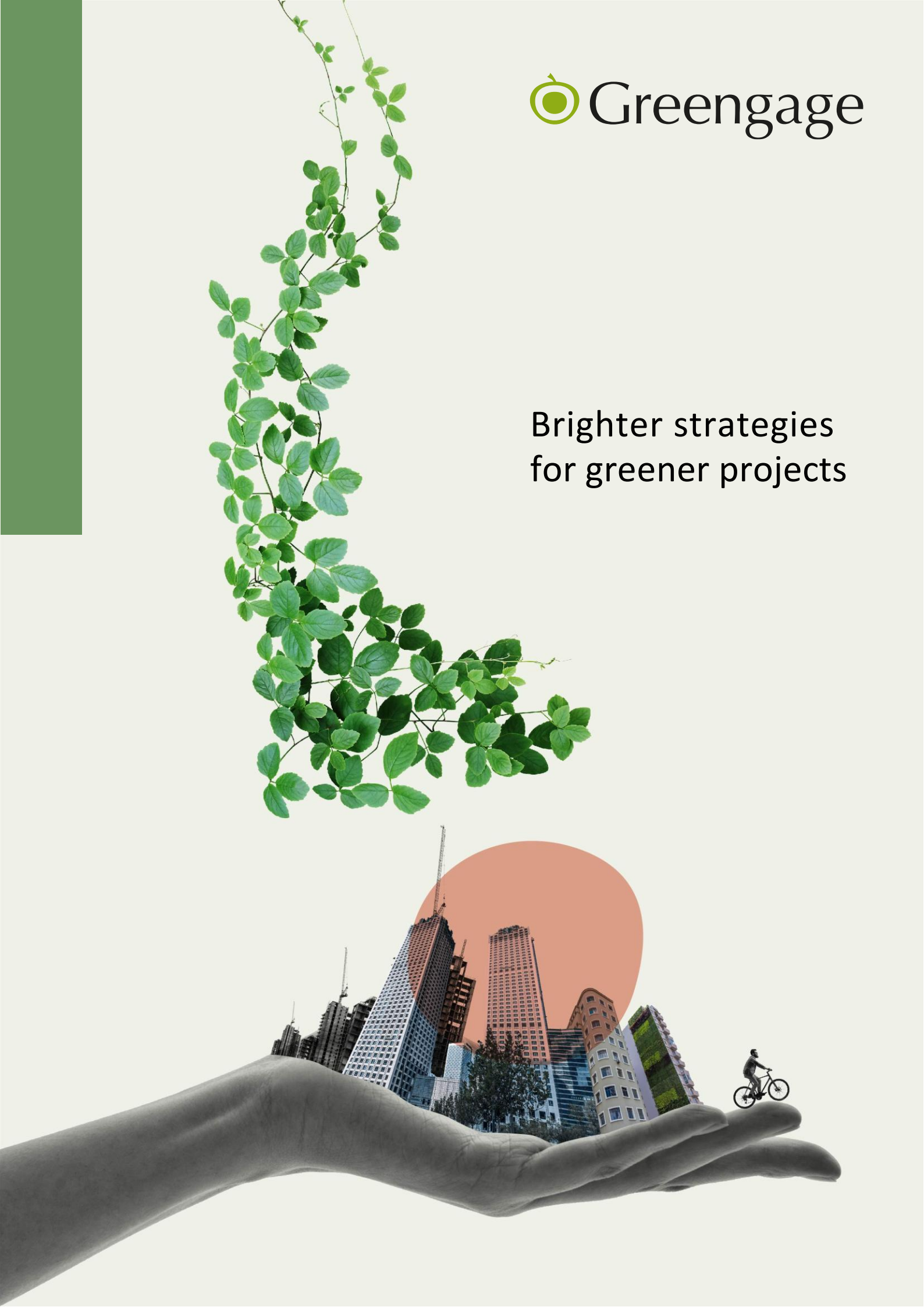




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Client: Cumberland Council
Project: Millom Iron Line
Report: Landscape and Ecological Management Plan

QUALITY ASSURANCE

Issue/Revision:	Draft	Final	Final
Date:	July 2025	December 2025	March 2026
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1.0 EXECUTIVE SUMMARY

Greengage Environmental Ltd (Greengage) was commissioned by Cumberland Council to produce a Landscape and Ecological Management Plan (LEMP) to cover a period of 30 years for Hodbarrow Nature Reserve and a parcel of land immediately north of the nature reserve proposed for development as a Visitor Centre and car park, located on the south-west coast of Cumbria. For the purpose of this report the 'site' refers to the nature reserve and the land proposed for the Visitor Centre and car park, as shown in Appendix A.

The planning application (planning reference: 4/25/2198/0F1) for the site seeks *"Erection of visitor centre with café/shop, group room, staff/volunteer, toilet facilities and vehicle parking; consolidation, repair and installation of interpretive sculpture to Towsey Hole Windmill; refurbishment of existing Tern Island Hide; new bird hides, pathways, gateway features, street furniture, and demarcation of spaces at existing car park; enhancement of wildlife habitats; associated landscaping and drainage infrastructure; and maintenance of byway with restricted vehicular access -The Iron Line Project."*

The planning application is subject to several planning conditions. This LEMP seeks to support the discharge of planning condition 6 which states *"Prior to the commencement of development, a finalised Landscape and Ecological Management Plan (LEMP) must be submitted to and approved in writing by the Local Planning Authority. The development must be carried out in accordance with the approved details at all times thereafter."*

The Hodbarrow Nature Reserve hereafter referred to as 'the nature reserve' including Hodbarrow lagoon is part of the Morecambe Bay and Duddon Estuary Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar site and the Duddon Estuary Site of Special Scientific Interest (SSSI). The SPA, SAC, Ramsar and SSSI are designated for the presence of internationally important coastal habitats (Annex I habitats including fixed coastal dunes with herbaceous vegetation and coastal lagoons) which in turn support internationally and nationally important assemblages of breeding, over-wintering and migratory birds. Other species present include great crested newts *Triturus cristatus*, natterjack toads *Epidalea calamita*, rare and nationally scarce invertebrate species and at least one nationally scarce plant (unspecified on the citation). The Hodbarrow Nature reserve includes four habitat parcels (units) of the Duddon Estuary SSSI ranging from unfavourable to favourable condition, one unit concerns the former Iron Mill, another relates to the Hodbarrow Nature Reserve itself and the remaining two units includes Hodbarrow Lagoon.

The nature reserve extends to 105 hectares (ha) in total and comprises lagoons, grasslands and scrubland across a former iron mine which has been owned and managed by the Royal Society for the Protection of Birds (RSPB) since 1986. The site to which this LEMP applies does not include the Hodbarrow lagoon but does however include an area to the north extending to approximately 2.1 ha comprising hardstanding dense scrub, lowland meadow and calcareous grassland, where the proposed Visitor Centre and car park will be situated. Overall, the site extent to which this LEMP applies is 57.69 ha.

This LEMP has been produced to enable an informed judgement and decision-making. It is intended that an updated, finalised LEMP will be prepared based on upon planning approval and could be secured by condition.

The location of the site, within the Cumberland District, and highly sensitive baseline value (as described in the suite of ecological reports produced to support the planning application), means that there are numerous ecological receptors to consider as part of the construction and

operational stages of the development. Furthermore, there are opportunities to provide biodiversity enhancements that will provide overall benefits for local wildlife.

The purpose of this LEMP is to detail the specifications for created/restored habitats such as other neutral grassland and calcareous grasslands. It also details ecological enhancement features such as creation of natterjack toad habitat and bat boxes, to be incorporated into the scheme. The LEMP associated with the proposed development covers at least 30 years of management for the site and its implementation will positively contribute to enhancing the ecological and wildlife value of the site.

Enhancements are targeted at specific ecological receptors of note (scrub, grasslands, natterjack toads, invertebrates and bats), known to be in the area, reflecting contemporary best practice and objectives of local conservation groups, BAPs and planning policy.

In accordance with the above aims, the purpose of this LEMP is to provide the operators with clear instructions for actions relating to the longevity of the habitats created and enhancement features proposed that will optimise the biodiversity value. In addition, this LEMP includes long-management actions for the successful establishment.

It is recommended that this LEMP should be read in conjunction with the Construction Ecological Management Plan (CEcMP)¹, shadow Habitats Regulations Assessment (sHRA)² and shadow Appropriate Assessment (sAA)³ which has been produced by Greengage in December 2025. The above reports provide the context behind the LEMP.

2.0 INTRODUCTION

Greengage Environmental Ltd (Greengage) was commissioned by Cumberland Council to produce a Draft Landscape and Ecological Management Plan (LEMP) to cover a period of 30 years for Hodbarrow Nature Reserve and a parcel of land immediately north of the nature reserve proposed for development as a Visitor Centre and car park, located on the south-west coast of Cumbria. For the purpose of this report the 'site' refers to the nature reserve and the land proposed for the land proposed for the Visitor Centre and car park, as shown in Appendix A.

The Hodbarrow Nature Reserve (hereafter referred to as 'the nature reserve') extends to 105 hectares (ha) in total and comprises lagoons, grasslands and scrubland across a former iron mine which has been owned and managed by the Royal Society for the Protection of Birds (RSPB) since 1986. The site to which this LEMP applies does not include the Hodbarrow lagoon but does however include an area to the north extending to approximately 2.1 ha comprising hardstanding dense scrub, lowland meadow and calcareous grassland, where the proposed Visitor Centre and car park will be situated. Overall, the site extent to which this LEMP applies is 57.69 ha.

2.1 PROPOSED DEVELOPMENT

This LEMP has been produced to inform a planning application for the site which seeks *“Erection of visitor centre with café/shop, group room, staff/volunteer, toilet facilities and vehicle parking; consolidation, repair and installation of interpretive sculpture to Towsey Hole Windmill; refurbishment of existing Tern Island Hide; new bird hides, pathways, gateway features, street furniture, and demarcation of spaces at existing car park; enhancement of wildlife habitats; associated landscaping and drainage infrastructure; and maintenance of byway with restricted vehicular access -The Iron Line Project.”*

2.2 AIMS AND OBJECTIVES

The planning application is subject to several planning conditions. This LEMP seeks to support the discharge of planning condition 6 which states *“Prior to the commencement of development, a finalised Landscape and Ecological Management Plan (LEMP) must be submitted to and approved in writing by the Local Planning Authority. The development must be carried out in accordance with the approved details at all times thereafter.”*

This LEMP aims to collate the bespoke site-wide ecological design concepts along with actions for the future management regime for the site.

The site's location within the Cumberland District, combined with its highly sensitive ecological baseline as described in the suite of ecological reports supporting the planning application, means that there are numerous ecological receptors to consider, as well as opportunities to deliver biodiversity enhancements that will provide overall benefits for local wildlife.

The purpose of this LEMP is to detail the specifications for habitats to be enhanced such as calcareous grasslands and habitats to be created such as other neutral grassland and mixed scrub. It will also detail ecological enhancement features such as the creation of natterjack toad habitat and bat boxes, to be incorporated into the scheme.

This LEMP will cover at least 30 years of management for the site and positively contribute to enhancing the ecological and wildlife value of the site

Enhancements are targeted at specific ecological receptors of note (natterjack toad *Epidalea calamita*, invertebrates, and bats), known to be in the area, reflecting contemporary best practice and objectives of local conservation groups, BAPs and planning policy.

Where habitat creation/enhancement or management has the potential to impact wildlife/sensitive ecological receptors, suitable timings have been recommended and the supervision of a suitably qualified ecologist.

In accordance with the above aims, the purpose of this specification is to provide the contractors with clear instructions for habitat creation and the incorporation of enhancement features that will optimise the biodiversity value. In addition, this specification includes a long-term management plan for the successful establishment.

2.3 SITE LOCATION AND DESCRIPTION

The planning application boundary extends to 57.91 ha is located on the edge of the Duddon Estuary in south-west Cumbria and encompasses the Hodbarrow Nature Reserve (excluding Hodbarrow Lagoon) and land proposed for the development of a Visitor centre and car park, and is centred on National Grid Reference SD 17718 78724, OS Co-ordinates 317718, 478724.

The nature reserve is part of the Morecambe Bay and Duddon Estuary Special Protection Area (SPA), Morecambe Special Area of Conservation (SAC), Duddon Estuary Ramsar site and the Duddon Estuary Site of Special Scientific Interest (SSSI).

Land immediately to the north of the nature reserve, proposed for development as a Visitor Centre and car park, extends to approximately 2.1 ha and comprises dense scrub, calcareous grassland and an access road which leads to a Household Waste Recycling Centre off-site to the north.

3.0 ECOLOGICAL BACKGROUND

3.1 BASELINE CONDITIONS

Following a review of development proposals, historical survey data, RSPB records and the Phase II survey results, the following ecological features have the potential to be affected by the proposals and these are therefore the focus of the LEMP:

Table 3.1 Receptors of note

Receptor	Details
Designated sites	The nature reserve was identified to be situated within the statutorily designated boundaries of the Duddon Estuary SSSI, the Morecambe Bay and Duddon Estuary SPA, the Morecambe Bay SAC and the Duddon Estuary Ramsar. The proposed Visitor Centre and car park site was identified to lie outside but adjacent to the designated sites boundaries.
Habitats	The NVC was undertaken by Joshua Styles in June 2021 and May 2022 and updated in May 2025. The survey identified that internationally important Annex I habitats are present on site: - The nature reserve and the proposed Visitor Centre and car park site supported semi-natural dry grasslands and scrubland facies on calcareous substrates (H6210); - The nature reserve supported Annex 1 H2130 Fixed coastal dunes with herbaceous vegetation (grey dunes) which is listed as one of the qualifying features for the Morecambe Bay SAC designation; - The Byway Open to All Traffic BOAT supporting Annex 1 H2130 Fixed coastal dunes with herbaceous vegetation (grey dunes) priority and semi-natural dry grasslands and scrubland facies on calcareous substrates (H6210) Several nationally, regionally and locally important habitats were identified to be present on site.
Notable plants	A Phase 3 Notable Plant Survey was also undertaken by Joshua Styles in May 2022. The habitats present on site were identified to support several internationally, nationally, regionally and locally important plants including Irish dandelion <i>Taraxacum aesculosum</i> and pillwort <i>Pilularia globulifera</i> . The May 2025 survey also identified a reasonable population of heath dog violet <i>Viola canina</i> to the south-west of the nature reserve. The BOAT along the new sea wall supported a nationally significant population of seaside centaury <i>Centaureum littorale</i> alongside regionally significant populations of heath dog violet and variegated horsetail <i>Equisetum variegatum</i> .
Invasive species	There have been a number of invasive species identified on site, including cotoneaster <i>Cotoneaster</i> spp, variegated yellow archangel <i>Lamiastrum galeobdolon subsp. argentatum</i> , montbretia <i>Crocasmia x crocosmiiflora</i> , Japanese knotweed <i>Reynoutria japonica</i> and sea buckthorn <i>Hippophae rhamnoides</i> .
Birds	The nature reserve, specifically purpose built limestone slag islands on Hodbarrow lagoon, was identified to support important breeding bird

Receptor	Details
	assemblages such as the breeding colonies of common terns <i>Sterna hirundo</i>, Sandwich terns <i>Thalasseus sandvicensis</i> and little terns <i>Sternula albifrons</i>. The nature reserve, specifically Hodbarrow lagoon, was also confirmed to support important over-wintering and migratory bird assemblages including overwintering redshank <i>Tringa totanus</i>, knot <i>Calidris canutus</i> and passage by black tailed godwit <i>Limosa limosa</i>. Both the nature reserve and the proposed Visitor Centre and car park site were identified to support a variety of nesting birds during spring/summer in the scrub, trees and waterbodies.
Amphibians	Tyrer Ecological Consultants Ltd undertook amphibian surveys in 2021 and 2022. Surveys identified likely absence of natterjack toads and GCN on site. However, a confirmed natterjack breeding pond was identified approximately 400 metres (m) north east from the planning application boundary and 570m north-east of the nearest works associated with maintenance of the BOAT. Male natterjack toads were heard calling off-site c. 20m to the east (95m north-east of the nearest works associated with the maintenance of the BOAT). Data returned from the RSPB natterjack toad monitoring indicated the continued likely absence of adult natterjack toads on the site during 2024. However, during the 2024 monitoring, approximately 5000 tadpoles were recorded on site, which as a precaution, are now assumed to be natterjack tadpoles. In keeping with the previous 2021 and 2022 amphibian survey results, natterjack toad calls were recorded c.20m off-site to the east in April (approximately 8 males) and August 2024 (approximately 4-5 males). The waterbodies onsite were confirmed in 2021 and 2022 to support common amphibians, smooth newt <i>Lissotriton vulgaris</i>, common toad <i>Bufo bufo</i> and common frog <i>Rana temporaria</i>.
Reptiles	Lucy Gibson Consulting and Appletons undertook reptile surveys in 2021 and 2022 which recorded a 'Good' population of common lizard <i>Zootoca vivipara</i> in habitats across the site. One slow-worm <i>Anguis fragilis</i> was recorded within the nature reserve. Common lizard and slow-worm are fairly widespread species in Cumbria.
Invertebrates	The invertebrate surveys were undertaken by in May, June, July 2021 and April and May 2022 by Stenecology. The nature reserve was identified to support at least 159 species of terrestrial invertebrates: 26 species (~16%) are regarded as locally common or locally scarce, three (~2%) are currently accorded Nationally Scarce or Section 41 status, pertaining to <i>Attactagenus plumbeus</i>, <i>Saprinus aeneus</i> and <i>Coenonympha nymphula</i>, and one is classed as data deficient, pertaining to <i>Cernuella virgata</i>. All records were identified in the 2023 Phase II survey report⁴. The nature reserve is considered to be of district (low) importance for invertebrates. The proposed Visitor Centre and car park site supports at least 86 terrestrial invertebrate species, three of which are notable, including: beetle <i>Amara curta</i> Dejean, weevil <i>Orthochaetes setiger</i>, and dingy skipper <i>Erynnis tages</i>.

Bats and hedgehogs *Erinaceus europaeus* are also considered within this LEMP.

3.2 COMPETENCIES

Laura Thomas has an undergraduate degree in Biology (BSc Hons) and a Master's degree in Evolutionary and Behavioural Ecology, holds a Natural England Bat Survey Level 2 Class Licence and is a Associate member of CIEEM. Laura has over seven years' experience in the commercial sector.

Faye Durkin, Head of Nature (North), has a first class BSc (Hons) in Environmental Science and MSc in Environmental Management and Sustainable Development. She is a full member of CIEEM and an Associate member of IEMA. She co-chairs the IEMA Biodiversity and Natural Capital Steering Group and is a member of the IEMA Policy and Practice Committee. She has over 16 years of ecological consultancy experience and is licenced to survey bats and GCN in England and Wales. She has held mitigation licences for bats and GCN and holds a CL31 water vole displacement licence.

Helen Bradshaw, who has reviewed this report, has a degree in Geography (BSc Hons) and 17 year's experience as an ecologist. She spent over a decade as a Local Authority Ecologist and holds class survey licences for both bats and GCN. She has held bat mitigation licences and worked on monitoring schemes for both bats and GCN. She has worked extensively on badger surveying and monitoring as well as delivering badger vaccination for eight years.

Mike Harris, Director, has a Bachelor's degree in Environmental Biology (BSc Hons), a Natural England Great Crested Newt Licence and Dormouse Licence, is a Chartered Environmentalist (CEnv) and Full member of CIEEM. Mike has over 20 years' experience in ecological surveying and has undertaken and managed numerous ecological surveys and assessments.

This report was written by Laura Thomas and reviewed verified by Faye Durkin and Helen Bradshaw and Mike Harris who confirms in writing (see the QA sheet at the front of this report) that the report is in line with the following:

- Represents sound industry practice;
- Reports and recommends correctly, truthfully and objectively;
- Is appropriate given the local site conditions and scope of works proposed; and
- Avoids invalid, biased and exaggerated statements.

3.3 ASSUMPTIONS AND LIMITATIONS

This LEMP is iterative and will be updated as necessary once planning permission is secured, an operator is appointed, and details are formalised.

4.0 ECOLOGICAL OBJECTIVES

4.1 BIODIVERSITY ACTION PLANS (BAP)

In accordance with the aims and objectives of this document a review of the relevant citations for designations, biodiversity action plans and local conservation targets was undertaken. This review, along with the results of the Phase II surveys, is then able to form the context for ecological enhancement at the site.

UK Biodiversity Action Plans (BAPs) have been developed which set priorities for nationally important habitats and species. To support the BAPs, Species/Habitat Statements (otherwise known as Species/Habitat Action Plans) were produced that provide an overview of the status of the species and set out the broad policies that can be developed to conserve them. A list of priority species of conservation importance was also developed.

The UK BAP was succeeded in 2012 by the UK-Post 2012 Biodiversity Framework which informed the creation of the Biodiversity 2020 strategy; England's contribution towards the UK's commitments under the United Nations Convention of Biological Diversity. Subsequently, this has been replaced by the Kunming-Montreal Global Biodiversity Framework⁵ to 2030.

Despite this, the UK BAP priority species lists and conservation objectives still remain valid through integration with local BAPs (which remain valid), and in the form of the Habitats and Species of Principle Importance list (as required under section 41 of the Natural Environment and Rural Communities (NERC) Act).

Local Biodiversity Action Plans (LBAPs) ensure that national action plans (the UK BAP/Biodiversity 2020) are translated into effective action at the local level, and establish targets and actions for locally characteristic species and habitats.

The site is subject to the Cumbria BAP which define key habitats and taxa/species of regional and local conservation interest. Receptors of relevance to this strategy which have accordingly be considered within the scheme design are summarised in Table 4.1.

Table 4.1 Qualifying Species and Habitats and Cumbria BAP Key Habitats and Species of Relevance to this Site

Priority habitats/species	Objectives for this strategy
Terns	- Set out a strategy to mitigate construction (see Construction Ecological Management Plan (CEcMP)¹ and operational impacts on the tern colonies; - Increase awareness of the tern colonies through education opportunities at the land proposed for the Visitor Centre and car park and through signage across the nature reserve; - Cumberland Council and RSPB are negotiating a Heads of Terms agreement detailing how Cumberland Council will resource additional wardening for the reserve.
Gulls	- Set out a strategy to mitigate construction (see CEcMP) and operational impacts on the gull colony; - Increase awareness of the gull colonies through education opportunities at the land proposed for the Visitor Centre and car park and through signage across the nature reserve; - Cumberland Council and RSPB are negotiating a Heads of Terms agreement detailing how Cumberland Council will resource additional wardening for the reserve.
Overwintering birds	- Set out a strategy to mitigate construction (see CEcMP) and operational impacts on the overwintering bird populations; - Increase awareness of the overwintering bird populations through education opportunities at the land proposed for the Visitor Centre and car park and through signage across the site; and - Cumberland Council and RSPB are negotiating a Heads of Terms agreement detailing how Cumberland Council will resource additional wardening for the reserve
Annex I and priority habitats	- Set out a strategy to mitigate construction (see CEcMP) and operational impacts on Annex I and priority habitats; - Increase awareness of the habitats and plants through education opportunities at the land proposed for the Visitor Centre and car park and through signage across the site; - Through the reconfiguration of paths, visitors will be directed away from sensitive habitats; - Through annual scrub clearance of the land proposed for the Visitor Centre and car park, the grassland will be at less risk of succeeding into scrub habitat; - The scheme will ensure invasive species associated with the land proposed for the Visitor Centre and car park are removed annually; and - Set out remedial actions to consider if required.

Priority habitats/species	Objectives for this strategy
Natterjack toads	- Set out a precautionary strategy to mitigate construction (see CEcMP) and operational impacts on any natterjack toads; - Increase awareness of the natterjack toads through education opportunities at the land proposed for the Visitor Centre and car park and through signage across the site; and - Set out enhancements for this site to increase suitability for natterjacks onto site;
Common Toad <i>Bufo bufo</i>	- Set out an amphibian and reptile strategy to mitigate construction and operational impacts on any common toads; - Increase awareness of common toads through education opportunities at the land proposed for the Visitor Centre and car park and through signage across the site; and - Set out enhancements such as incorporation of refugia and hibernacula.
Viviparous (common) lizard <i>Zootoca vivipara</i>	- Set out a precautionary strategy to mitigate construction (see CEcMP) and operational impacts on any reptiles; - Increase awareness of common lizards through education opportunities at the land proposed for the Visitor Centre and car park and through signage across the site.
Slow-worm <i>Anguis fragilis</i>	Objectives the same as common lizard above.

4.2 BIODIVERSITY NET GAIN

The BNGA identified that the development is predicted to deliver 23.94 HU. This is a net gain of 1.52 HU (equivalent to + 6.79% for HU) (ref: 553023lt30Jun25FV04_BNGA). Sections 4.2 and 4.3 provide details of the measures required to achieve this gain.

Cumberland Council have reserved the necessary 0.72 HU with the Environment Bank as RSPB have confirmed that their land cannot be used to achieve 10% BNG.

The development covers the habitat management associated with the land proposed for a Visitor Centre and car park for a minimum of 30 years and therefore this development will ensure the long-term conservation and enhancement of the habitats and species in this area through a sustained commitment to management, the absence of which could risk some of the sensitive habitats due to successional habitat change.

Condition Assessments for habitat types are located in Appendix G.

4.3 HABITAT CREATION

Other Neutral Grassland

Through the breaking up of some of the existing hardstanding currently a layby on the access road to the Household Waste Recycling Centre an additional 0.0358 ha can be used to create other neutral grassland and compensate for the loss of other neutral grassland.

Once broken up the hardstanding material will be kept to create natterjack toad habitat (see Section 6.5 below). The creation success can be sped up and managed to targeted condition through the following steps :

- Creation of firm seed beds of bare ground free from perennial weeds;
- Seeds from the neighbouring habitats will be harvested after flowering;
- Seeds will be sown in early Autumn;
- Management of newly sown grassland through cutting and removal of vegetation.
- It will be monitored to ensure that any invasive species are removed immediately.

4.4 HABITAT ENHANCEMENT

Lowland Calcareous Grassland

The pockets of moderate 'Lowland calcareous grassland' will be enhanced from moderate to good through the annual removal of invasive and nuisance species as well as the reduction of scrub cover to less than 5%.

Scrub

The pockets of 'Mixed scrub' will be enhanced from moderate to good condition through the removal of invasive and nuisance species as well as rotational management to increase age and structural diversity as well as create glades, clearings and rides surrounding the Visitor Centre and car park.

The pocket of 'Bramble scrub' will be enhanced to 'Mixed scrub' through the inclusion of other woody species identified on the site such hawthorn *Crataegus monogyna*, goat willow *Salix*

caprea, grey willow *Salix cinerea*, gorse *Ulex sp.*, broom *Cytisus scoparius* and dog rose *Rosa canina*. It should be monitored to ensure the removal of invasive and nuisance species as well as rotationally managed to increase age and structural diversity as well as create glades, clearings and rides.

5.0 VISITOR CENTRE OPERATIONAL MITIGATION AND MANAGEMENT STRATEGIES

This section describes the mitigation and compensation measures recommended for the operational phase of the development. Ecological receptors where a 'negligible' impact is predicted as set out within the Ecological Impact Assessment (EclA)⁶ and shadow Habitats Regulations Assessment (sHRA)² are not considered within this section. Natterjack toad has been included in the mitigation strategy at the request of Natural England, although it is acknowledged that the adult natterjack toads are yet to be confirmed as present on site.

The operational mitigation strategy should be read in conjunction with the Construction Ecological Management Plan (CEcMP)⁷ and the Habitat Management and Monitoring Plan (HMMP)⁸.

5.1 DRAINAGE STRATEGY

The drainage strategy⁹ sets out that all surface water drainage from the Visitor Centre and car park will be discharged into the Hodbarrow Lagoon and appropriate treatment of discharge is required to remove any contamination before it drains into the Lagoon. Flows from the Visitor Centre and car park have a medium pollution hazard so require two stages of treatment, the proposals include:

- First stage:
 - Pervious paving which filters flows through the pavement surface and attenuate below ground.
 - Filter and fin drains which collect runoff.
- Second stage:
 - Proprietary vortex separators which spin out suspended solids (e.g. silt), metals and oils, such as ACO Quadrceptor and/or Hydro International Downstream Defender.

As identified in the Water Quality Assessment¹⁰, the proposed Sustainable Drainage System treatment train provides mitigation index scores that exceed the hazard indices for total.

All foul water will be treated on site before being pumped to an existing sewer on Mainsgate road.

This drainage strategy will mitigate flood and pollution events on the adjacent designated site.

Management

As set out in the SuDS Operation & Maintenance Manual¹¹, regular inspection and maintenance is required to retain efficiency of the proposed drainage strategy. The manual details that inspection for evidence of poor operation should take place quarterly and 48 hours after storm and the frequency of regular maintenance (check and remove large vegetation growth near pipes) will take place monthly or as required and all remedial actions will be carried out as required.

Maintenance responsibility for all drainage should be placed with Cumberland Council, with the exception of adopted sewers which will remain the responsibility of the water company.

Gully Ladders

Seven grill covered drainage gullies will be located within the car park (see Appendix E for locations of gullies requiring ladders), to facilitate the removal of surface water from this area. The gullies are located on hardstanding around the visitor centre, separated from suitable terrestrial habitat by the boundary wall and/or car park hardstanding and are not along known amphibian migration routes. As such, the likelihood of amphibians being present is extremely low, however, the gullies ladders have been considered as a precaution in the unlikely event that an amphibian does move across the car park.

These gully ladders will ensure amphibians which may accidentally fall into any gully are able to exit, gully ladders will be installed to allow them to escape safely.

Management

The gully ladders will be checked once a week for the first six weeks following installation to confirm proper installation. Following which they will be checked and maintained during the routine monthly drainage channels and gullies maintenance, as per the SuDS Operation & Maintenance Manual¹².

5.2 BUFFERING PROTECTED HABITATS

There is a large expanse of Annex I grassland adjacent to the proposed Visitor Centre and car park site. The Visitor Centre, gabion walls and existing scrub habitat will be retained to provide a physical barrier and filter some of the pollutants from the car park¹³ from this sensitive habitat. Signs will be installed around the carpark to inform visitors the car parks are an engine idle free zone.

Management

The BNGA secures the long term management of these adjacent habitats to remove invasive species and keep scrub encroachment on the grasslands to below 5%. This will be completed on an annual basis and will likely fall within a volunteering package of what Cumberland Council will expect from the operator.

Additionally, the operator will be expected to raise awareness of and promote the conservation of the sensitive habitats identified on site.

5.3 FENCING, FORMALISING PATHS AND WAYFINDINGS

Proposals include fencing off the Annex 1 habitats as well as formalising paths and wayfinding to direct pedestrians away from sensitive habitats adjacent to the visitor centre.

Management

Procurement for management of the Visitor centre and car park has not taken place at this stage. In the absence of an operator at this stage, a Heads of Terms agreement will be in place between RSPB and Cumberland Council Cumberland which sets out the option that Cumberland Council will take responsibility to repair and maintain all infrastructure put in place as part of the Iron Line project or provide a commuted sum to RSPB for them to maintain.

5.4 DOG-WASTE AND LITTER BINS

To manage the impacts of increased dog-waste and litter that could degrade adjacent Annex I and priority habitats, an additional general waste bin and an additional dog waste bin provided at the Visitor Centre and car park.

The Visitor Centre café will aim to limit the selling of single use plastic and take-away options to decrease the likelihood of littering as a result of the café.

Management

The operational management team of the Visitor Centre will be responsible for emptying the bins and will increase frequency of emptying during the busiest times of the year.

Cumberland council and RSPB will have a minimum presence agreement with the operator which will reflect the seasonality of the visitors and will likely involve responsibilities such as picking up any litter identified within the Visitor centre site.

5.5 LIGHTING

Built-In Mitigation

Indirect impacts on nocturnal species such as bats and amphibians would be in the form of additional artificial lighting associated with the land proposed for the Visitor Centre and car park. The land proposed for the Visitor Centre and car park operating hours will close before sunset during the active bat season however it may in some cases be hired out for private functions. Therefore, measures at both the construction and operational phase of the development will include will be designed to avoid light pollution where appropriate, as detailed within Guidance from BCT and Institute of ILP¹⁴:

- Will avoid use of metal halide and fluorescent light sources;
- Use of screens/hoods to make any external lighting as directional as possible, avoiding light spill on any natural features such as the surrounding grassland and scrub;
- Where possible, external wayfinding will avoid use of 360° bollard lighting;
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, will be used. Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt;
- Lighting controls will be in place to minimise the duration lights are illuminated, this could be for example instated through motion sensor lighting or subject to curfews.
- Lighting for security will be infrared only (part of the CCTV installation, so out of the visible spectrum).
- Measures will be taken in internal light placement to reduce risk of light spill from windows and timeclock operation for internal and external lighting ensuring there is no lighting overnight.

This action will minimise disturbance on nocturnal species such as foraging bats and amphibians.

Management

Any future replacement, upgrade, or repair of external lighting must comply with the approved lighting parameters set out in this LEMP.

5.6 ON-GOING HABITAT MANAGEMENT REQUIREMENTS

Overall, the development will aid the habitat management for the next 30 years and as a result, the long-term conservation and enhancement of the habitats and species at site through a sustained commitment to management; the absence of which could risk some of the sensitive habitats due to successional habitat change and uncontrolled recreational access impacts

General horticultural best practice

During the 30-year management of the Visitor centre and car park, horticultural best practice methods will be applied including:

- Biosecurity protocols will be followed;
- Pesticides and herbicides will not be used (only used if required for removal of invasive species); and
- Litter removal.

Scrub Management

Scrub management will be undertaken annually. For manual management of broad habitats of scrub, habitat management should be rotational and so for each scrub pocket 1/3 should be managed each year to create clearings and rides and age diversity. During monitoring invasive species will be noted and removed as per recommendations in the section below.

Habitats where the broad habitat is not heathland and scrub such as the grasslands, the scrub should be kept below 5%. This will involve yearly monitoring and cutting back scrub encroachment.

Invasive and Nuisance Species Management

Several species listed on Schedule 9 species as per the Wildlife and Countryside Act 1981 (as amended) were identified across the site including Montbretia sp., Japanese knotweed, Cotoneaster sp. Including wall Cotoneaster, small-leaved cotoneaster and variegated yellow archangel.

Whilst sea buckthorn is not an invasive species as per Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), it is considered to be an invasive species in the northwest of England. This was found across the site despite efforts from RSPB to eradicate. Additionally, the reserves manager confirmed the presence of *Crassula helmsii* in ponds within the site during 2018-2020. This was a small infestation removed mechanically and monitoring is ongoing in order to ensure the complete eradication of this species in these ponds.

During the yearly monitoring, during the optimal season for botanical identification, invasive and nuisance species associated with the Visitor Centre and car park will be mapped. Additional

species will be noted to be jeopardising other habitat types and their targeted conditions as per the BNGA then these will be noted too.

Specialist contractors will be commissioned to remove and dispose of these species as per best practice guidance¹⁵. Any substantial invasive species growth that could be suitable for nesting birds will be cleared outside of nesting bird season. Where nuisance species are noted and eradication is not a viable option these will be given particular focus on containing the spread whilst reducing the overall area of spread.

5.7 ENHANCEMENTS

Public Engagement

The Visitor Centre will provide improved educational and volunteering opportunities, helping to increase public awareness of the site's sensitive ecology and promote the conservation of its species and habitats. This will be used to provide information on the tern and gull colonies at site as well as the local population of natterjack toad with information about their ecology, identification tips and to give a deeper understanding of the amphibians and reptiles present. The welfare facilities will also make volunteering more accessible in general to help with site and habitat management and monitoring.

To further encourage engagement and citizen science opportunities, sightings boards will be installed by the land proposed for the Visitor Centre and car park. This can be used by visitors and volunteers to record any notable/interesting wildlife sightings. This could prove to be a useful record and monitoring tool, helping to track changes in species records and abundance over time as this LEMP is actioned.

For the easiest and most practical application of sighting boards it is recommended that chalk boards are used.

Plate 5.1 Example sightings board



Management

Cumberland Council, in partnership with RSPB and the future site operator, will develop a volunteering package setting out the actions required to support long-term conservation objectives.

Invertebrates

Two invertebrate habitat panels and solitary beehives will be included in sunny, south-facing areas overlooking the grassland habitat adjacent to the Visitor Centre. Panels will use untreated wood products which provide a range of opportunities for sheltering and nesting solitary bees and other invertebrates. See Appendix E for appropriate locations.

Plate 5.2 Invertebrate features- Bug hotels (left)



5.8 BAT FEATURES

Most species of bats will use bat boxes at various times of year but in particular they are favoured by *Pipistrellus* sp, *Leisler's Nyctalus leislerii*, noctules *Nyctalus noctula* and *Myotis* species. Only *Pipistrellus* sp were identified within the local environmental records . Two bat boxes will be affixed to the Visitor Centre, the use of these bat boxes will increase roosting opportunities for bats in the area. See Appendix E for appropriate locations.

Plate 5.3 Summer roosting box



6.0 NATURE RESERVE OPERATIONAL MITIGATION STRATEGIES

6.1 FORMALISATION OF THE PATHS AND THE BOAT

The majority of the new surfaces to be introduced as part of the Iron Line proposals will be permeable self-binding gravel on paths and the BOAT will not be resurfaced (just scraped and filled) and as such it is not expected that surface run-off rates would be significantly increased.

Paths will be formalised through use of natural and permeable materials on existing routes to increase the site accessibility for all and encourage site visitors to use official paths.

Plate 6.1 Examples of pathway formalisation



Having more formalised paths will reduce trespass onto sensitive habitats such as the Annex I habitat identified on the site which is Fixed coastal dunes with herbaceous vegetation ("grey dunes").

Signage (see below) will also be used to raise awareness about the sensitive habitats and dissuade people from crossing the open grasslands. This is an effective practice often used in ancient woodlands during bluebell season and on other existing RSPB reserves.

The improvement of designated paths will reduce the likelihood of introduction/spread of invasive species onto more sensitive habitats from footfall as visitors will be less likely to wander from designated paths.

Management

It is likely that the upgrades to the path and the BOAT will require minimal management going forward. The maintenance of the BOAT will lie within the responsibility of Cumberland Council whereas the path will continue with RSPB as it is currently.

6.2 PROTECTION OF HABITATS

Removal of the picnic bench

The Annex I habitat Fixed coastal dunes with herbaceous vegetation (grey dunes) is already subject to high levels of trampling from recreational disturbance (see Plate 6.2). It is likely that the removal of the picnic bench will reduce the trampling in this area and educational interpretation to explain the importance of this habitat, fostering behaviour change from visitors, and enable it to recover.

Plate 6.2 'Fixed coastal dunes with herbaceous vegetation (grey dunes) habitat' subject to existing trampling (Photo taken in February 2023)



Management

No management is required following the removal of the picnic bench.

Signage

The proposals will include at least 23 wayfinding, interpretation boards and bollards (text and branding to be agreed with RSPB during the design process) around the site to raise awareness about the important ecology on site as well as guide visitors along designated path networks.

Signage requesting visitors to take their litter and dog waste with them will be the primary mitigation for this behaviour.

Interpretation boards will:

- Highlight key habitats such as the 'Fixed coastal dunes with herbaceous vegetation ("grey dunes")' as well as the species they support;
- Promote the conservation of sensitive areas and habitats;
- Promote the conservation of sensitive species such as the terns and natterjack toads;

- Include instructions to keep dogs on leads and picking up litter and dog waste; and
- Use modern, engaging graphics to raise awareness, encourage interest, and improve understanding and appreciation of the site's species and habitats;

All signage will reinforce messages about taking litter home, picking up dog waste, and keeping dogs under control to support conservation objectives.

Plate 6.3 Examples of interpretation boards



Management

Procurement for management of the Visitor centre and car park has not taken place at this stage. In the absence of an operator at this stage, a Heads of Terms agreement will be in place between RSPB and Cumberland Council Cumberland which sets out the option that Cumberland Council will take responsibility to repair and maintain all infrastructure put in place as part of the Iron Line project or provide a commuted sum to RSPB for them to maintain.

Fencing off habitats

The National Vegetation Classification survey noted Annex I habitats along the BOAT, there is an area of grassland which will be fenced off to prevent desire lines creation across the grassland towards the hide (see Appendix D for location). This fencing will also direct visitors towards the only formalised path to the hide and prevent visitors from wandering onto the sensitive habitats adjacent to the hide.

Management

Procurement for management of the Visitor centre and car park has not taken place at this stage. In the absence of an operator at this stage, a Heads of Terms agreement will be in place between RSPB and Cumberland Council Cumberland which sets out the option that Cumberland Council will take responsibility to repair and maintain all infrastructure put in place as part of the Iron Line project or provide a commuted sum to RSPB for them to maintain.

6.3 RESTRICTION OF VEHICULAR ACCESS ALONG THE BOAT

Through the closure of the BOAT to emergency and maintenance vehicles only, there will be a reduction of cars using the BOAT, parking along the BOAT and parking in the unofficial parking spot (see Plate 6.4 below) site immediately adjacent to the cited Annex I H2130 Fixed coastal

dunes with herbaceous vegetation (grey dunes) habitat. As such this should reduce antisocial activity associated with off-road driving across grassland and dune habitats on the site, reduced fly tipping as well as reduced airborne NOx levels associated with cars.

Plate 6.4 Google satellite image demonstrating existing unauthorised parking on site



Management

Cumberland Council are committed to restricting access to the BOAT. It is understood that the Traffic Regulation Order will be in place ahead of the completion of the improvements to the BOAT. Cumberland Council and RSPB will agree on how the restrictions of vehicular access along the BOAT will be enforced.

6.4 SELF-POLICING

Whilst not measurable, the increased presence of people on site and the creation of the proposed Visitor Centre may also reduce antisocial use of the site, such as taking dogs off lead, fly-tipping, camping and people setting campfires/barbeques. The impact of reduced anti-social use of the site will almost certainly be positive and beneficial for the ecological features that occur on site.

6.5 SPECIES-SPECIFIC ACTIONS

Protection of Breeding birds

Tern colonies

The tern and gull species nest on islands which are surrounded by anti-predation fencing which gives them an additional level of protection against dog predation. The site is an RSPB reserve and there will be an existing level of understanding about the sites importance for birds and signage will be surrounding the site to remind visitors to keep dogs on leads.

Whilst the following mitigation actions focus on the qualifying species, it will avoid/mitigate impacts on all bird species breeding on the lagoon.

Strengthening the bund and fencing

The scheme will fortify and extend the existing bund along the sea wall BOAT as well as narrow the existing path and access drive along the BOAT. Despite an increase in visitors the bund will ensure that this increase will be visibly unnoticeable to the terns. See Appendix D for detailed drawings.

Signage

The scheme will increase signage and education boards to raise awareness of the international importance of the tern colonies on site. This will seek to aid behaviour change and increase the level of respect and understanding of site visitors and is an effective way of reducing disturbance caused by visitors at unmanaged wildlife sites¹⁶.

Wardening

As described above, the increase in visitors will be unnoticeable to the terns following the strengthening of the bund (see Appendix D for plans detailing the strengthening of the bund). Additionally, Cumberland Council and RSPB are negotiating a Heads of Terms agreement detailing how Cumberland Council will resource additional wardening for the reserve.

Gull Colonies

There is an existing viewpoint of the gull colony island approximately 50m from the island which is considered a sufficient distance for viewing the gulls without human disturbance as they successfully nest each year.

Signage

Sign posting will also be used to raise awareness of the international importance of the gull colony on site.

The scheme aims direct people towards a new bird hide located a short distance away (80m) which should reduce the likelihood of disturbance caused by visitors.

Schedule 1 Species of Birds

A barn owl has historically been recorded as nesting in the old sea wall. There is existing anti-social behaviour including people walking and riding bikes along the old sea wall. The impact of reduced anti-social use of the site will be beneficial for this species.

A spoonbill nesting site is located approximately 180m from the nearest existing viewpoint and impacts to this species are unlikely to change. The operator at the Visitor Centre could also raise awareness of these notable Schedule 1 species on site.

Protection of wintering birds

Many of the mitigation actions for operational impacts provided in the breeding bird section above apply to the overwintering birds too. The fortification and extension of the bund will protect the birds from visual disturbance by shielding site visitors. The restriction of vehicular access along the BOAT to emergency and maintenance vehicles only and the reduction in lagoon access points will reduce the behaviours such as anti-social driving of cars/quadbikes that have high disturbance potential.

Notably, proposals also seek to include interpretation and education boards to raise awareness of the international importance of the overwintering bird assemblages and increase the respect and understanding of the "rules" on site.

Natterjack Toads

The potential for increased disturbance and harm from people and dogs will be mitigated through the improvement of designated paths which will limit the opportunities for disturbance. Signage will be used to provide information about their ecology, identification tips and give a deeper understanding of the amphibians and reptiles present.

Installation of Dog-proof Fencing

Proposals seek to fence with dog-proof fencing of existing scrapes/pools, where there is currently no fencing or none planned, which will reduce disturbance from humans and dogs and prevent the leaching of dog flea treatments into the water.

The dog-proof fencing surrounding the scrapes/pools will be locked to prevent visitor access and will allow sufficient space for RSPB maintenance machinery, ensuring the scrub can be managed in order to retain the habitat suitability for natterjacks. Cumberland Council will liaise with RSPB on the specification of the fencing type and design. See Appendix F for location of proposed locations of new fencing (subject to agreement with RSPB).

Management

In the absence of an operator at this stage, a Heads of Terms agreement will be in place between RSPB and Cumberland Council Cumberland which sets out the option that Cumberland Council will take responsibility to repair and maintain all infrastructure put in place as part of the Iron Line project or provide a commuted sum to RSPB for them to maintain.

Enhancements

Creation of hibernacula

At least five natterjack toad hibernacula will be created within the nature reserve. Locations will be agreed with the RSPB and should be positioned near the existing scrapes/pools, avoiding priority and Annex I habitats (see Appendix D).

If no suitable locations are available, limited scrub clearance may be required with approval from RSPB and SSSI approval from Natural England.

Site selection requirements:

- Free-draining, sandy or loose soils.
- Areas not prone to flooding or shading.
- Groundwater conditions suitable for maintaining natural soil moisture (as supported by Soilscares and flood risk mapping).

Ground preparation:

- Scrape back turf or compacted topsoil (approx. 50–120 mm) until slightly damp mineral soil is exposed.
- Ensure underlying soil retains natural moisture and capillary structure.

Hibernacula construction:

- Create hibernacula with cavities 40–60 cm deep, incorporating 10–20 cm internal spaces using broken concrete (cleaned with a jet wash on existing hardstanding prior to use to remove harmful residues and chemicals) from the dismantled Visitor Centre layby and filled in with looser substrate such as site-won light soil or sand.
- Concrete pieces create stable cavities, act as windbreaks and help retain sand.
- Avoid using loose sand piles on the surface, as natterjack toads do not use these for hibernation.

These features will replicate conditions known to support natterjack hibernation, informed by existing habitat examples (e.g., stone walls, slag heaps, dune systems) and expert guidance.

Management

On-going management would require topping up the looser substrate.

It is Cumberland Council's preference that RSPB undertake the minimal management required for this habitat which can be undertaken at the same time as their existing management regime of the adjacent pool/scrapes.

7.0 MANAGEMENT AND MONITORING

This section provides an overview of the relevant management and monitoring features of the ecological enhancements at the site.

The LEMP will follow a clearly defined 30-year timetable that will be used as a reference point for site maintenance, monitoring and any future planting and enhancement works that may be necessary.

The created other neutral grassland is dynamic, and the species composition is anticipated to change over time resulting from the prevailing climatic conditions, natural colonisation, and succession. As a result, some of the actions within the first 5 years will be dependent upon rate of growth or success of initial planting/sowing and enhancements. In general, where measures have not been stated it is due to a non-intervention policy once the features have been established.

This LEMP will also be iterative in the medium to long-term, adapting where additional actions may be identified by RSPB or the future operator. Suggestions can be made to alter the enhancement measures or supplement the planting regime as necessary. Primarily, the Plan will include actions to maintain the ecological objectives for the habitat strategy, which are:

- Optimise biodiversity measured by the range of wildlife benefiting plant species, lichens, mosses and fungi, and invertebrate and bird species using the site, enhancement features;
- Encourage invertebrates through diverse range of floral species and suitable invertebrate niche habitats;
- Encourage species highlighted in the UK and Cumbria BAPs and Red Data Book.

7.1 MONITORING

Post Construction Review

Just before practical completion of the site, a Suitably Qualified Ecologist (SQE) should inspect the ecological enhancements implemented as a result of the recommendations in this strategy.

During Operation

Cumberland Council, RSPB and the future operator will agree a minimum presence agreement which would include actions for the operator to carry out on the Visitor centre and car park and nature reserve.

This should include but will not be limited to litter picking, maintenance reporting and visitor messaging.

All records of notable/protected species will be shared with RSPB and also submitted to Cumbria Biodiversity Data Centre.

It is proposed that existing ecological features on the nature reserve, including species such as natterjack toads and a range of bird populations, will continue to be monitored in line with the current RSPB reserve management arrangements. RSPB will maintain responsibility for these activities, ensuring continuity of established monitoring practices and adherence to best-practice conservation standards.

In addition, Cumberland Council will task the operator with setting up a steering group with RSPB which should set conservation objectives that align with those set out within this document and agreed with RSPB.

Irish Dandelion

Habitat monitoring will align with that set out in the HMMP and should include monitoring the success of the Irish dandelion translocation by an SQE. Should the Irish dandelion translocation fail the following remedial actions are recommended:

- Undertake turf scarification of the donor site area and create small microsites of exposed topsoil;
- Collect ripe seed heads between April and early June from as many other Irish dandelions as identified on-site (for example at grid reference SD 18152 78614)
- Sow as soon as possible after seed collection (optimal time is the late spring) and broadcast seed directly onto bare topsoil;
- If sowing in the early autumn then seeds must be kept dry, cool and shaded until sowing.

Continue monitoring for success.

7.2 ECOLOGICAL CONSTRAINTS TO MANAGEMENT

The features to be implemented will provide potential to support nesting birds and roosting bats. Relevant legislation regarding the protection of nesting birds and bats is located in Appendix B.

Nesting birds

To avoid disturbing, harming or killing any nesting birds or their young, any maintenance and management of scrub or dense vegetation will take place outside of the peak breeding bird season (taken to run from March - August inclusive). If this is not possible an inspection for nesting birds must take place, by an SQE prior to any works taking place.

Bats

To avoid the disturbance of roosting bats, any maintenance and management of bat boxes will only be undertaken by a bat licenced ecologist or after a bat licenced ecologist has confirmed roosting bats to be absent. Works to the bat boxes will be undertaken in either April, September and October which is outside of the maternity season (May to August inclusive) and avoids the winter months (November to March) when bats may be in hibernation.

Reptiles and Amphibians

During scrub encroachment clearance vegetation will be cleared by cutting to 200-300mm in the first instance, followed by clearance to below ankle height a minimum of 24 hours later.

The habitat clearance will be completed during the active reptile and amphibian season (April - October) on dry days when the temperature is over 9°C. The vegetation will be strimmed in one direction only and towards areas of suitable adjacent habitat (such as retained scrub) so that any reptiles and amphibians present can escape to safety without being exposed to predators.

Hedgehogs

In order to minimise the potential for killing or injuring of hedgehogs (and other small to medium sized mammals) management of scrub encroachment will be undertaken in two phases, by cutting to 30cm in the first instance, then to ground level 24-48 hours thereafter. Hedgehog hibernate between November to March, therefore, the ground level clearance will need to take outside of these months when hedgehog are active and can better escape from the path of clearance. Any clearance undertaken between March and August would conflict with the nesting bird season and will be preceded by a nesting bird check by an SQE.

This will be undertaken using hand tools only. If any immobile hedgehogs are found during clearance these will be moved with gloves to an area of retained scrub not subject to clearance.

7.3 TIMESCALES

The management plan will begin as soon as the landscaping of the final phase has been implemented and management will be ongoing for a minimum of 30 years to ensure that the targeted biodiversity net gain condition scores are achieved.

7.4 RESPONSIBILITY

Procurement for management of the site has not taken place at this stage. In the absence of an operator at this stage, a Heads of Terms agreement will be in place between RSPB and Cumberland Council Cumberland which sets out the option that Cumberland Council will take responsibility to repair and maintain all infrastructure put in place as part of the Iron Line project or provide a commuted sum to RSPB for them to maintain.

7.5 MANAGEMENT PLAN

The management actions are summarised in Table 7.1. Creation of habitats as per Section 4.3 will occur in Year 0 following completion of the development with management commencing in Year 1 as per Table 7.1. The table outlines the necessary responsibilities and key objectives for the next 30 years.

Table 7.1 Summary of Management Actions for 30 Years

Years	Landscape and Ecological Management Plan
Pre and During Construction	Actions are set out within the CECMP
Year 1-5 (Spring/Summer)	Management and Monitoring Actions
	In line with Heads of Terms agreement, operator to check Iron Line infrastructure is intact and check for signs of vandalism or wear and tear
	Check ecological features are intact associated with the Visitor Centre.
	Note any invasives within the Visitor centre and car park grasslands and scrub
	Condition assessment of the habitats associated with the Visitor Centre and car park
	Monitor the success of the Irish dandelion population; collect seed from additional specimens if translocation is unsuccessful.
	Engagement with RSPB on steering group on a quarterly basis
	Adhere to minimum presence agreement including litter picking, maintenance reporting and visitor messaging
Years 1-5 (Autumn/Winter)	Management and Monitoring Actions
	Rotational management of the scrub (1/3)
	Cut back scrub encroachment
	Invasive species management
	Litter removal
	Reporting Procedure
	Submission of any biological records obtained to RSPB, Cumbria Biodiversity Data Centre and Natural England
	Remedial Actions
	Review of the effectiveness of maintenance programme and identify any new conservation objectives with RSPB in quarterly steering group
	A review of remedial actions requiring implementation for Qualifying habitats or species
	Litter removal

Years	Landscape and Ecological Management Plan
	- Re-seeding of other neutral grasslands, plug planting of scrub if necessary - Re-seed Irish dandelion to the receptor area - Removal of invasive species/unwanted weeds prior to setting seed - Scrub management - Any management required for habitats to reach their target conditions
Year 7, 9, 11, 13 and 15 Spring/Summer	Management and Monitoring Actions - If target conditions are not achieved the above steps will be repeated annually until target condition is met. - Check ecological features are intact associated with the Visitor Centre. - In line with Heads of Terms agreement, operator to check Iron Line infrastructure is intact and check for signs of vandalism or wear and tear - NVC Survey of the same survey area as the baseline and monitor translocated Irish dandelion populations and other neutral grassland habitat creation - Note any invasives within the Visitor centre and car park grasslands and scrub - Condition assessment of the habitats - Engagement with RSPB on steering group on a quarterly basis - Adhere to minimum presence agreement including litter picking, maintenance reporting and visitor messaging
Year 7, 9, 11, 13 and 15 Autumn/Winter	Management and Monitoring Actions - Rotational management of the scrub (1/3) - Cut back scrub encroachment - Invasive species management Reporting Procedure - Submission of any biological records obtained to RSPB, Cumbria Biodiversity Data Centre and Natural England Remedial Actions - Review of the effectiveness of maintenance programme and identify any new conservation objectives with RSPB in quarterly steering group

Years	Landscape and Ecological Management Plan
	Litter removal
	Re-seeding of grasslands, plug planting of scrub if necessary
	Removal of invasive species/unwanted weeds prior to setting seed
	Scrub management
	Any management required for habitats to reach their target conditions
Years 16-30	Monitoring and Management Actions over Spring/Summer
	Check ecological features are intact and inspect for signs of occupancy and other fauna are using the site for foraging, nesting or perching. Check signs and interpretation boards for vandalism or wear and tear
	Note any invasives within the Visitor centre and car park grasslands and scrub
	Condition assessment of the habitats
	Engagement with RSPB on steering group on a quarterly basis
	Monitoring and Management Actions over Autumn/Winter
	Litter removal
	Re-seeding of grasslands, plug planting of scrub if necessary
	Removal of invasive species/unwanted weeds prior to setting seed
	Scrub management
	Any management required for habitats to reach their target conditions
	Engagement with RSPB on steering group on a quarterly basis

8.0 SUMMARY AND CONCLUSIONS

Greengage was commissioned by Cumberland Council to produce a LEMP to cover a period of 30 years for a site known as Hodbarrow Nature Reserve, Millom on the South-west coast of Cumbria.

This LEMP has been produced to support the discharge of planning condition 6 which states *"Prior to the commencement of development, a finalised Landscape and Ecological Management Plan (LEMP) must be submitted to and approved in writing by the Local Planning Authority. The development must be carried out in accordance with the approved details at all times thereafter."*

The location of the site, within the Cumberland District, and highly sensitive baseline value as described in the suite of ecological reports produced to support the planning application, means that there are numerous ecological receptors to consider as well as opportunities to provide biodiversity enhancements that will provide overall benefits for local wildlife.

The purpose of this report is to detail the bespoke mitigation strategies for ecological receptors as well as the habitat specifications for created habitats such as lowland meadow and calcareous grasslands and provide ecological enhancement features such as creation of natterjack toad habitat and bat boxes, to be incorporated into the scheme. The scheme will cover at least 30 years of management for the site and positively contribute to enhancing the ecological and wildlife value of the site. The scheme will also adhere to the bespoke mitigation strategies set out within the CEMP so there are no Likely Significant Effects (LSEs) or Adverse Effects on Site Integrity (AESI) on the Qualifying features of the designated sites. Additionally, the scheme will meet objectives of planning permission conditions once provided and complement local and regional Biodiversity Action Plans.

Works described in this report will be carried out at specific times throughout the installation process supervised by an ECoW. Enhancements are targeted at specific ecological receptors of note, known to be in the area, reflecting contemporary best practice and objectives of local conservation groups, BAPs and planning policy.

In accordance with the above aims, the purpose of this specification is to provide the contractors with clear instructions for habitat and species protection, habitat creation and the incorporation of enhancement features that will optimise the biodiversity value. In addition, this specification includes a management plan for the successful establishment and long-term management and monitoring of protected and notable habitats and species.

APPENDIX A SITE PLAN

IRON LINE

 Planning Application Boundary

Title: Figure A

Sources: Google Satellite



APPENDIX B DESIGNATIONS

The nature reserve lies within the Morecambe Bay and Duddon Estuary SPA, Morecambe Bay SAC and Duddon Estuary Ramsar and SSSI. The land proposed for the Visitor Centre and car park lies just outside the boundary of these designations.

Morecombe Bay is a large estuary situated on the northwest English coast in Cumbria and Lancashire. The Bay includes the Duddon Estuary which is formed by the River Duddon and the smaller Kirkby Pool as they open into the Irish Sea at the south-west corner of the Lake District. Morecambe Bay contains a mosaic of coastal habitats covering a total of 61538.23 hectares and supports breeding and overwintering bird assemblages of international importance as well as nationally important numbers of natterjack toads *Epidalea calamita* and a rich assemblage of wetland plants and invertebrates.

The SPA and SAC sites are European designated sites referred to as National Site Network (NSN) sites (formally Natura 2000) under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019¹⁷ which aims to:

- Maintain or, where appropriate, restore habitats and species listed in Annexes I and II of the Habitats Directive¹⁸ to a favourable conservation status (FCS); and,
- Contribute to ensuring, in their area of distribution, the survival and reproduction of wild birds and securing compliance with the overarching aims of the Wild Birds Directive¹⁹.

Ramsar sites do not form part of the NSN however the Duddon Estuary Ramsar overlaps the SACs and SPA designations and all Ramsar sites remain protected in the same way as SACs and SPAs. Legislation and Policy of relevance to receptors and sites described in this report are outlined in Appendix B. The reasons for each designation are described below.

It is recommended that this LEMP should be read in conjunction with the Visitor Action Management Plan (VAMP)²⁰ produced by Appletons in April 2025, (Shadow) Habitats Regulations Assessment (sHRA)²¹ and (Shadow) Habitats Regulations Assessment Appropriate Assessment (sAA)²² which have been produced by Greengage in April 2025. The above reports provide the context behind the LEMP.

Morecombe Bay and Duddon Estuary Special Protection Area²³

Qualifying species

The Morecambe Bay and Duddon Estuary SPA qualifies under Article 4.1 of the Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain (GB) populations of the following species listed in Annex I in any season:

Table 8.1 Qualifying species at Morecambe Bay and Duddon Estuary

Species	Season	% of population
Whooper swan <i>Cygnus Cygnus</i>	Non-breeding	1.0% of GB population
Little egret <i>Egretta garzetta</i>	Non-breeding	3.0% of GB population
European golden plover <i>Pluvialis apricaria</i>	Non-breeding	1.0% of GB population (1991)
Bar-tailed Godwit <i>Limosa lapponica</i>	Non-breeding	8.0% of GB population

Species	Season	% of population
Ruff Calidris pugnax	Non-breeding	1.0% of GB population
Mediterranean gull Larus melancephalus	Non-breeding	1.0% of GB population
Little tern Sternula albifrons	Breeding	2.2% of GB population
Sandwich tern Sterna sandvicensis	Breeding	5.7% of GB population (1992)
Common tern Sterna hirundo	Breeding	2.0% of GB population (1991)

The Morecambe Bay and Duddon Estuary SPA qualifies under Article 4.2 of the Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

Table 1.2 Annex 2 Migratory species at Morecambe Bay and Duddon Estuary

Species	Season	% of population
Pink-footed goose Anser brachyrhynchus	Non-breeding	4.5% of biogeographic population
Common shelduck Tadorna tadorna	Non-breeding	2.0% of biogeographic population
Northern pintail Anas acuta	Non-breeding	4.2% of biogeographic population
Eurasian oystercatcher Haematopus ostralegus	Non-breeding	6.8% of biogeographic population
Grey plover Pluvialis squatarola	Non-breeding	1.0% of biogeographic population (1991)
Common ringed plover Charadrius hiaticula	Non-breeding	1.4% of biogeographic population
Eurasian curlew Numenius arquata	Non-breeding	1.5% of biogeographic population
Black-tailed godwit Limosa limosa	Non-breeding	4.0% of biogeographic population
Ruddy turnstone Arenaria interpres	Non-breeding	1.0% of biogeographic population
Red knot Calidris canutus	Non-breeding	7.3% of biogeographic population
Sanderling Calidris alba	Non-breeding	3.0% of biogeographic population (1991)
Dunlin Calidris alpina alpina	Non-breeding	2.0% of biogeographic population
Common redshank Tringa totanus	Non-breeding	4.6% of biogeographic population
Lesser black-backed gull Larus fuscus	Non-breeding	1.7% of biogeographic population

Species	Season	% of population
Lesser black-backed gull <i>Larus fuscus graellsii</i>	Breeding	2.7% of biogeographic population
European herring gull <i>Larus argentatus argenteus</i>	Breeding	1.0% of biogeographic population (1991)

Assemblage qualification

The Morecambe Bay and Duddon Estuary SPA qualifies under Article 4.2 of the Directive (2009/147/EC) as it is used regularly by over 20,000 seabirds in any season.

At time of the 1997 citation of 1997 citation of Morecambe Bay SPA, the area supported 40,672 individual seabirds including: herring gulls *Larus argentatus argenteus*, lesser black-backed gulls *Larus fuscus graellsii*, Sandwich terns, common terns and little terns.

The site qualifies under Article 4.2 of the Directive (2009/147/EC) as it is used regularly by over 20,000 waterbirds in any season. During the period 2009/10 – 2013/14, the site held a five year peak mean value of 266,751 individual birds. The main components of the assemblage include all of the qualifying features listed above, as well as an additional 19 species present in numbers exceeding 1% of the GB total and / or exceeding 2,000 individuals: great white egret *Ardea alba*, Eurasian spoonbill *Platalea leucorodia*, light-bellied brent goose Nearctic origin, Eurasian wigeon *Mareca penelope*, Eurasian teal *Anas crecca*, green-winged teal *Anas carolinensis*, mallard *Anas platyrhynchos*, ring-necked duck *Aythya collaris*, common eider *Somateria mollissima*, common goldeneye *Bucephala clangula*, red-breasted merganser *Mergus serrator*, great cormorant *Phalacrocorax carbo*, northern lapwing *Vanellus vanellus*, little stint *Calidris minuta*, spotted redshank *Tringa erythropus*, common greenshank *Tringa nebularia*, black-headed gull *Chroicocephalus ridibundus*, common (mew) gull *Larus canus* and herring gull.

Morecombe Bay Special Area of Conservation (SAC)²⁴

The site qualifies under Article 6 of the habitats directive (92/43/EEC). The primary reason for its international designation includes the following Annex I habitats and Annex II species:

- Annex I Habitats
 - Estuaries
 - Mudflats and sandflats not covered by seawater at low tide
 - Large shallow inlets and bays
 - Perennial vegetation of stony banks
 - Salicornia and other annuals colonizing mud and sand
 - Atlantic salt meadows (*Glauco-Puccinellietalia maritima*)
 - Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")
 - "Fixed coastal dunes with herbaceous vegetation ("grey dunes")" * Priority feature
 - Humid dune slacks
- Annex II Species
 - Great crested newt *Triturus cristatus*

- The Annex I habitats also present but are not a primary reason for selection of the site include:
- Sandbanks which are slightly covered by sea water all the time;
- Coastal lagoons * Priority feature;
- Reefs;
- Embryonic shifting dunes;
- Atlantic decalcified fixed dunes (Calluno-Ulicetea) * Priority feature;
- Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*).

* Priority natural habitats or species for which UK SACs have been selected are considered to be particular priorities for conservation at a European scale and are subject to special provisions in the Habitats Regulations.

Duddon Estuary Ramsar²⁵

The Duddon Estuary Ramsar is designated under the Convention on the Wetlands of International Importance especially as Waterfowl Habitat 1971 – the Ramsar Convention. Qualification for Ramsar criteria:

- Supports nationally important numbers of the rare natterjack toad, near the north- western edge of its range (an estimated 18-24% of the British population). Supports a rich assemblage of wetland plants and invertebrates- at least one nationally scarce plant including *Epipactis dunensis*, *Limonium humile*, *Centaurium littorale*, *Pyrola rotundifolia*, *Equisetum variegatum*, *Corallorhiza trifida*, *Coincya monensis* ssp. *monensis*. and at least two British Red Data Book invertebrates *Colletes cunicularius*, *Psen littoralis*, *Hypocaccus rugiceps*;
- Supports nationally important numbers of waterfowl during spring and autumn passage;
- Internationally important waterfowl assemblage (greater than 20,000 birds); and,
- Over winter the site regularly supports internationally important populations of Knot *Calidris canutus*, Pintail *Anas acuta*, Redshank *Tringa totanus*.

Duddon Estuary Site of Special Scientific Interest²⁶

The citation includes information expanding on what has been described in relation to NSN designation. Extracts below have been selected from the SSSI citation to provide a broader picture.

"The Duddon Estuary is of international and national importance for wintering wildfowl and waders and provides a vital link in the chain of west coast estuaries used by migrating birds, as well as being of particular importance as one of a series of estuaries on the north-west coast where the majority of the British population of natterjack toads occur."

"The mouth of the estuary forms an extensive flat sand plain, with the sands being very mobile. The mid and upper reaches of the estuary are flanked by saltmarsh and beyond high water are extensive sand dunes on both the north and south sides of the mouth of the estuary. These sand dune systems are particularly important for a diverse range of community types, supporting a number of rare and uncommon plants, as well as a variety of nationally rare and scarce invertebrate species. The past activities of the mining and iron-making industries have created a number of artificial habitats which have become areas of wildlife interest. These include the slag

banks of Askham Pier and Borwick Rails, and the largest coastal lagoon in north-west England at Hodbarrow Lagoon."

Natterjack Toad

The natterjack toad is a nationally rare species in Britain and over 95% of the population is associated with 5 estuaries, the Alt, Ribble, Duddon, Esk and Solway. The Duddon Estuary itself is therefore one of the most important areas in Britain for this species and contains between 18–25% of the U.K. population, which in turn is equivalent to 50% of the Cumbrian natterjack toad population. The toads breed in ephemeral pools associated with a range of habitats including dune slacks, marshy grassland, bare sand and slag banks, and hibernate and forage in the surrounding semi-natural vegetation, artificial habitats and semi-improved pastures. Particular concentrations occur at Millom Ironworks, Sandscale Haws and the stretch of coast between Sandside and Dunnerholme, but the species is evenly distributed over the whole estuary.

Invertebrates:

"As a result of the range of habitats found at North Walney and Sandscale, these two sites are also important for their invertebrate populations, many typical of coastal habitats with a number of rare and nationally scarce species including the digger wasp *Psen littoralis*, the solitary bee *Colletes cunicularis*, water beetles associated with brackish waters *Octhebius marinus* and *O. auriculatus*, and moths including the Shore Wainscot *Mythimna litoralis* and the Portland moth *Ochropleura praecox*."

Duddon Estuary SSSI

The nature reserve (including Hodbarrow lagoon) has three habitat parcels (units) of the Duddon Estuary SSSI. One unit is the nature reserve itself (unit 026) and two of the units are related to the Hodbarrow Lagoon (unit 027 and 028).

Hodbarrow Lagoon (unit 026) was last assessed in 2023 and awarded favourable condition. Natural England assessment states the unit is dominated by semi-mature woodland growth. The state of the unit "is mostly of benefit to the invertebrate assemblages, for which the unit is in good condition with heterogeneous habitat for both assemblages. The freshwater lakes in the unit have suffered from fly tipping with substantial types/scrap metal etc thrown in the water. There is a high level of recreation in the unit, but it doesn't appear to be substantially negatively impacting condition."

Hodbarrow Lagoon (unit 027) was last assessed in 2024 and awarded favourable condition. Natural England assessment states the unit is dominated by the lagoon, with a Sandwich tern breeding colony on the island. The assessment also notes that this unit is critically important for many of the designated bird species. It highlights that recreational disturbance is limited due to the difficult access, however, is of concern from the neighbouring caravan park. It notes that non-breeding bird feature were favourable (with exception to pintail which is unfavourable) but these species have all declined and further investigation is recommended.

Hodbarrow Lagoon (unit 028) was last assessed in 2024 and awarded unfavourable-no change condition. The SSSI unit is dominated by a caravan park, with unsensitive management for nature where excessing fly tipping and burning of waste occurs on protruding land into the lake in the northwest. Combined with this, there is fly tipping into the lake itself. This unit is under extreme pressure from human activities due to large amounts of recreational pressure on the water and land.

APPENDIX C LEGISLATION AND POLICY

C.1 LEGISLATION

Current key legislation relating to ecology includes the Wildlife and Countryside Act 1981 (as amended)²⁷; The Conservation of Habitats and Species Regulations 2019 ('Habitats & Species Regulations')²⁸, The Countryside and Rights of Way Act 2000 (CROW Act)²⁹, and The Natural Environment and Rural Communities Act, 2006³⁰.

The Environment Act, 2021

Under the Environment Act, 2021, as of 12th February 2024 and 2nd April 2024, it is mandatory in England for new developments (with a small number of exceptions) to deliver a minimum 10% biodiversity net gain (BNG), as measured by the Statutory Biodiversity Metric (for the Iron line scheme the 4.0 metric was the relevant metric at the time) or Small Sites Metric (SSM) respectively, secured through planning condition as standard (as per schedule 14 of the Act). Approach to the delivery of BNG must follow the mitigation hierarchy, with avoidance of impact and on-site compensation/gains prioritised, ahead of the use of off-site compensation, or the purchase of statutory credits.

The Act introduces the condition that no development may begin unless a Biodiversity Gain Plan (BGP) has been submitted and approved by the LPA.

The Act also amends requirements of the NERC Act, 2006, adding the need to not just conserve, but enhance biodiversity through planning projects. Furthermore, it introduces the need for the LPA to have regard to relevant local nature recovery strategies and relevant species/protected site conservation strategies, when making their decision.

Under the Act, the enhancements must be maintained for at least 30 years.

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

The Conservation of Habitats & Species Regulations replace The Conservation (Natural Habitats, etc.) Regulations 1994 (as amended)³¹, and transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora ('EU Habitats Directive')³², and Council Directive 79/409/EEC on the Conservation of Wild Birds ('Birds Directive')³³ into UK law (in conjunction with the Wildlife and Countryside Act).

Regulation 43 and 47 respectively of the Conservation of Habitats & Species Regulations makes it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2 (European protected species of animals), or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 5 (European protected species of plant). Development that would contravene the protection afforded to European protected species requires a derogation (in the form of a licence) from the provisions of the Habitats Directive.

Regulation 63 (1) states: 'A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which —

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

(b) is not directly connected with or necessary to the management of that site;
must make an appropriate assessment of the implications for that site in view of that site's conservation objectives.'

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) is the principal mechanism for the legislative protection of wildlife in Great Britain. This legislation is the means by which the Convention on the Conservation of European Wildlife and Natural Habitats³⁴ (the 'Bern Convention') and the Birds Directive and EU Habitats Directive are implemented in Great Britain.

The Countryside and Rights of Way Act 2000

The Wildlife and Countryside Act has been updated by the CROW Act. The CROW Act amends the law relating to nature conservation and protection of wildlife. In relation to threatened species it strengthens the legal protection and adds the word 'reckless' to the offences of damaging, disturbing, or obstructing access to any structure or place a protected species uses for shelter or protection, and disturbing any protected species whilst it is occupying a structure or place it uses for shelter or protection.

The Natural Environment and Rural Communities Act 2006

The Natural Environment and Rural Communities Act 2006 states that every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity. Biodiversity Action Plans provide a framework for prioritising conservation actions for biodiversity.

Section 41 of the Natural Environment and Rural Communities Act requires the Secretary of State to publish a list of species of flora and fauna and habitats considered to be of principal importance for the purpose of conserving biodiversity. The list, a result of the most comprehensive analysis ever undertaken in the UK, currently contains 1,149 species, including for example, hedgehog (*Erinaceus europaeus*), and 65 habitats that were listed as priorities for conservation action under the now defunct UK Biodiversity Action Plan³⁵ (UK BAP). Despite the devolution of the UK BAP and succession of the UK Post-2010 Biodiversity Framework³⁶ (and Biodiversity 2020 strategy³⁷ in England), as a response to the Convention on Biological Diversity's (CBD's) Strategic Plan for Biodiversity 2011-2020³⁸ and EU Biodiversity Strategy (EUBS)³⁹, this list (now referred to as the list of Species and Habitats of Principal Importance in England) will be used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 41 of the Natural Environment and Rural Communities Act 2006 'to have regard' to the conservation of biodiversity in England, when carrying out their normal functions.

Biodiversity Action Plans

Non-statutory Biodiversity Action Plans (BAPs) have been prepared on a local and regional scale throughout the UK over the past 15 years. Such plans provide a mechanism for implementing the government's broad strategy for conserving and enhancing the most endangered ('priority') habitats and species in the UK for the next 20 years. As described above the UK BAP was succeeded in England by Biodiversity 2020 although the list of priority habitats and species remains valid as the list of Species of Principal Importance for Nature Conservation.

Regional and local BAPs are still valid however and continue to be updated and produced.

Detail on the relevant BAPs for this site are provided in the main text of this report.

Legislation Relating to Nesting Birds

Nesting birds, with certain exceptions, are protected from intentional killing, destruction of nests and destruction/taking of eggs under the Wildlife and Countryside Act 1981 (as amended) and the CROW Act. Any clearance of dense vegetation should therefore be undertaken outside of the nesting bird season, taken to run conservatively from March to August (inclusive), unless an ecologist confirms the absence of active nests prior to clearance.

Legislation Relating to Bats

All UK bats and their roosts are protected by law. Since the first legislation was introduced in 1981, which gave strong legal protection to all bat species and their roosts in England, Scotland and Wales, additional legislation and amendments have been implemented throughout the UK.

Six of the 18 British species of bat have Biodiversity Action Plans (BAPs) assigned to them, which highlights the importance of specific habitats to species, details of the threats they face and proposes measures to aid in the reduction of population declines.

Although habitats that are important for bats are not legally protected, care should be taken when dealing with the modification or development of an area if aspects of it are deemed important to bats such as flight corridors and foraging areas.

The Wildlife & Countryside Act 1981 (WCA) was the first legislation to provide protection for all bats and their roosts in England, Scotland and Wales (earlier legislation gave protection to horseshoe bats only.)

All eighteen British bat species are listed in Schedule 5 of the Wildlife and Countryside Act, 1981 and under Annexe IV of the Habitats Directive, 1992 as a European protected species. They are therefore fully protected under Section 9 of the 1981 Act and under Regulation 43 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which transposes the Habitats Directive into UK law. Consequently, it is an offence to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat; and
- Intentionally or recklessly obstruct access to a bat roost.

This legislation applies to all bat life stages.

The implications of the above in relation to the proposals are that where it is necessary during construction to remove trees, buildings or structures in which bats roost, it must first be determined that work is compulsory and if so, appropriate licenses must be obtained from Natural England.

Legislation Relating to Reptiles

All species of reptile native to the UK are protected to some degree under national and/or international legislation, which provides mechanisms to protect the species, their habitats and sites occupied by the species.

Sand lizards and smooth snakes are European protected species and are afforded full protection under Section 9 of the Wildlife and Countryside Act 1981 and Regulation 43 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. However, these species are rare and highly localised. Their occurrence is not considered as relevant in this instance, as the ranges and specialist habitats of these species do not occur at this site.

The remaining widespread species of native reptiles (adder, grass snake, slow worm and viviparous lizard) are protected under part of Section 9(1) and all of Section 9(5) of the Wildlife and Countryside Act 1981. They are protected against intentional killing and injury and against sale, transporting for sale etc. The habitat of these species is not protected. However, in terms of development, disturbing or destroying reptile habitat during the course of development activities while reptiles are present is likely to lead to an offence under the Wildlife and Countryside Act 1981. It is therefore important to identify the presence of these species within a potential development site. If any of these species are confirmed, all reasonable measures must then be taken to ensure the species are removed to avoid the threat of injury or death associated with development activities.

Each species of native reptile has specific habitat requirements but general shared features include a structurally diverse habitat that provides for shelter, basking, foraging and hibernating.

All reptiles are BAP species and as such are also of material consideration in the planning process due to the NPPF.

Legislation Relating to Natterjack Toads

Natterjack Toads are a European Protected Species (EPS) listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2019 (EU Exit) (as amended), and Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), as well as recognised as a species of national conservation importance under section 41 (S.41) of the Natural Environment Rural Communities Act 2006 (NERC Act) - England.

Specifically, the existing legal framework makes it illegal to:

- Intentionally or deliberately capture, injure or kill a Natterjack Toad,
- Damage or destroy a breeding or resting place of a Natterjack Toad, or intentionally or recklessly damage or destroy any structure or place used for shelter or protection,
- Intentionally or recklessly disturb a Natterjack Toad in a place used for shelter or protection, or deliberately disturb Natterjack Toad in such a way as to be likely significant to affect (i) the ability of any significant group to survive, breed, rear or nurture their young, or (ii) the local distribution or abundance,
- Intentionally or recklessly obstruct access to a place used for shelter or protection,
- Possess a Natterjack Toad (alive or dead), or any part of a Natterjack Toad.

Legislation Relating to Natura 2000 Sites and Habitats Directive Annex I/II Species

European Commission Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora ('EU Habitats Directive'), and Council Directive 79/409/EEC on the Conservation of Wild Birds ('Birds Directive') form the cornerstones of nature conservation legislation across EU member states. Priority species requiring protection across Europe are listed in the Annexes of these Directives. Regulation 63(1) of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and Offshore Marine Conservation Regulations, 2007 (as amended) transpose these directives into UK law and set the basis for the designations of protected sites (known as Natura 2000 sites; Special Areas of Conservation under the Habitat Directive and Special Areas of Protection under the Birds Directive) that are of importance for habitats, species or assemblages listed on the directive Annexes. In the UK Ramsar sites are also offered the same level of protection as SPAs and SACs however the Qualifying species for the designation may differ; Ramsar sites being designated specifically as important wetland habitats.

Under article 6(3) of the Habitats Directive, where projects stand to have likely significant effect (in accordance with the European Court of Justice ruling of C-127/02 Waddenzee cockle fishing) upon the integrity of conservation objectives (i.e. conservation status of the Qualifying species or habitats) within the designated sites then the Competent Authority must undertake an Appropriate Assessment.

C.2 PLANNING POLICY

National

National Planning Policy Framework

The National Planning Policy Framework (NPPF) 2024⁴⁰ sets out the Government's planning policies for England, including how plans and decisions are expected to apply a presumption in favour of sustainable development. Chapter 15 of the NPPF focuses on conservation and enhancement of the natural environment, stating plans should 'identify and pursue opportunities for securing measurable net gains for biodiversity'.

It goes on to state: 'if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused'. Alongside this, it acknowledges that planning should be refused where irreplaceable habitats such as ancient woodland are lost.

Regional

Copeland Local Plan 2017-2035 (Preferred Options Draft)⁴¹

Policy DS5PO: Development Principles

In order to achieve sustainable development in the Borough and meet Local Plan objectives, development must, where possible:

Mitigation of and adaption to climate change

- Minimise carbon emissions, maximise energy efficiency and help us to mitigate and adapt to the effects of climate change
- Be located on sites where there is no risk of flooding and where the development does not increase the risk of flooding elsewhere
- Protect, enhance and create new areas of green infrastructure, recognising the important role that the natural environment and healthy ecosystems have to play in the future social and economic, as well as environmental sustainability of Copeland
- Make the most efficient use of land by building at appropriate densities and reusing existing buildings and previously developed land
- Minimise waste, maximise opportunities for recycling and use sustainable construction methods, taking into account circular economy principles
- Be located on sites which minimise the need to travel, with good, safe pedestrian links to services and facilities.

Protection, enhancement and restoration of the Borough's valued natural and cultural assets

Protect and enhance areas, sites, species and features of biodiversity or geodiversity value, important landscapes and the undeveloped coast including valued landscapes which form a setting to the Lake District National Park and areas of Heritage Coast.

- Conserve and enhance the Borough's cultural and heritage assets and their settings
- Provide and enhance recreational opportunities for the Borough's residents and its visitors, protecting existing provision where possible and ensuring that future development meet appropriate standards in terms of quantity and quality
- Protect the Borough's best and most versatile agricultural land from development
- Support the reclamation and redevelopment or restoration of the Borough's vacant or derelict sites, whilst taking account of landscape, biodiversity and historic environment objectives
- Minimise air, ground and water pollution, ensuring that development does not have a negative impact upon water quality (including waterbodies and bathing waters)

Creation and retention of quality places

- Be of high quality in terms of design so that it retains and enhances locally distinctive places and raises aspirations
- Provide or safeguard good levels of residential amenity and security, reducing the fear of crime and minimising the opportunities for crime and anti-social behaviour
- Be supported by the relevant infrastructure, ensuring it can accommodate traffic and access arrangements in ways that make it safe and convenient for pedestrians and cyclists to move around
- Address land contamination with appropriate remediation measures

Healthy Communities

- Adopt dementia-friendly design principles
- Provide opportunities for food growing

- Contribute to the creation of mixed communities, helping to reduce social isolation and create community resilience
- Retain and enhance valuable community facilities (including healthcare, cultural and education facilities)
- Include community energy generation to provide low carbon heat and/or power and address energy poverty
- Enhance local pedestrian links to promote physical activity

Policy DS6PO: Planning Obligation

1. Where it is reasonable, necessary and directly related to the development Copeland Borough Council, through planning obligations (until such time an alternative method is introduced), will secure:

- a) The enhancement of existing or provision of new infrastructure, facilities and services
- b) Where appropriate future maintenance of car parking provision and sustainable transport solutions will be required in perpetuity;
- c) Future maintenance and/or monitoring of other facilities delivered as a result of development for a period of 15 years or as agreed/identified in a specific Development Plan policy;
- d) Future management and monitoring of biodiversity net gain will be required for a period of 30 years

2. The Council will expect planning obligations to be provided on site unless specific circumstances make off-site contributions more appropriate and;

3. When determining the nature and scale of any planning obligations sought, account will be taken of specific site conditions, the Infrastructure Delivery Plan and other material considerations.

Where an applicant considers that the provision of appropriate infrastructure would make the development unviable a viability assessment must be submitted to, and agreed by the Council, as early as possible within the planning application process.

Policy N1PO Conserving and Enhancing Biodiversity and Geodiversity

Potential harmful impacts of any development upon biodiversity and geodiversity should be identified and considered at the earliest stage

Proposals must demonstrate, to the satisfaction of the Council, that the following sequential steps have been undertaken

Avoidance – Biodiversity and geodiversity must be considered when drafting up proposals and any potential harmful effects on biodiversity and geodiversity must be identified along with appropriate measures that will be taken to avoid these effects

Mitigation – Where harmful effects cannot be avoided, they must be appropriately mitigated in order to overcome or reduce negative impacts.

Compensation – Where mitigation is not possible or viable or in cases where residual harm would remain following mitigation, harmful effects should be compensated for. Where this is in the form of compensatory habitat of an area of equivalent or greater biodiversity value should be provided.

Compensation is a last resort and will only be accepted in exceptional circumstances. Where harm remains to a Natura 2000 site, development will only be approved where it can be demonstrated that there are imperative reasons of overriding public interest. In such cases, compensatory measures must ensure the overall coherence of the network of European sites as a whole is protected.

Planning permission will be refused for any development if significant harm cannot be avoided, mitigated or compensated for.

Sustainable construction methods should be used where possible.

Development proposals where the principal objective is to conserve or enhance biodiversity and geodiversity interests will be supported in principle.

Policy N2PO: Biodiversity Net Gain

All development, with the exception of that listed in paragraph 49.8.10 above, must provide a minimum of 10% biodiversity net gain over and above existing site levels. This is in addition to any compensatory habitat provided under Policy N1PO. Net gain should be delivered on site where possible. Where on site provision is not appropriate, provision must be made elsewhere in order of the following preference:

1. Off site in an area identified as a Local Nature Recovery Network;
2. Off site on an alternative suitable site within the Borough
3. Through the purchase of an appropriate amount of national biodiversity units/credits.

Details must be submitted to, and agreed in writing by the Council, before the development can commence.

Sites where net gain is provided (on or off site) must be managed and monitored by the applicant or an appropriate body funded by the applicant for a minimum period of 30 years. Annual monitoring reports detailing the sites condition post-enhancement must be submitted to the Council each year over this period.

Where there is evidence of deliberate neglect or damage to any of the Boroughs protected habitats and species in order to reduce its biodiversity value their deteriorated condition will not be taken into consideration and previous ecological records of the site and/or the ecological potential of the site will be used to decide the acceptability of any development proposals.

Policy N3PO: Local Nature Recovery Networks

The Council will support the identification and implementation of Local Nature Recovery Networks that extend beyond the Boroughs boundaries and provide important linkages for wildlife within Copeland and beyond.

Development which protects or enhances nature recovery networks will be supported in principle.

Policy N6PO: The Undeveloped Coast

The Council will ensure that the landscape character of the undeveloped coast is maintained by conserving the intrinsic qualities, natural beauty and open character of the undeveloped coast from inappropriate development. Inappropriate development includes that which affects views within or towards/from the St Bees Head Heritage Coast.

The following types of development will however be supported:

- Development which supports the management of the undeveloped coast for biodiversity;

- Development which provides or improves safe access to and interpretation of the undeveloped coast for residents and visitors such as appropriate fencing, signage and interpretation boards;
- Energy generating developments that require a coastal location along the undeveloped coast, provided that the potential impacts on biodiversity, landscape and heritage assets are carefully assessed against the benefits. Where negative impacts are likely these must be mitigated against and compensated for.

Policy N7PO: Green Wedges

The Local Plan Proposals Map identifies Green Wedges within the Borough. Development will only be permitted within a Green Wedge in the following circumstances unless the economic, environmental or social benefits of the proposal significantly and demonstrably outweigh any harm:

- where the open character of the Green Wedge and separation between settlements is maintained; and
- where the special characteristics and quality of the landscape are conserved and enhanced.

Policy N8PO: Protected Green Spaces

The Local Plan Proposals Map identifies Protected Green spaces which are of a high quality and/or value.

Development proposals that enhance Protected Green Spaces will be supported in principle.

The loss of such Protected Green Spaces will be resisted unless equivalent replacement provision of the same or better quality is provided within the same settlement.

Proposals to develop other green spaces, including play areas and allotments not identified on the Proposals Map, should also comply with this policy where there is evidence that they are of value to the community.

Policy N9PO: Local Green Spaces

The Local Plan Proposals Map identifies important Local Green Spaces. Development will only be permitted within a Local Green Space in the following circumstances, where the open character of the Space and its community value is not compromised:

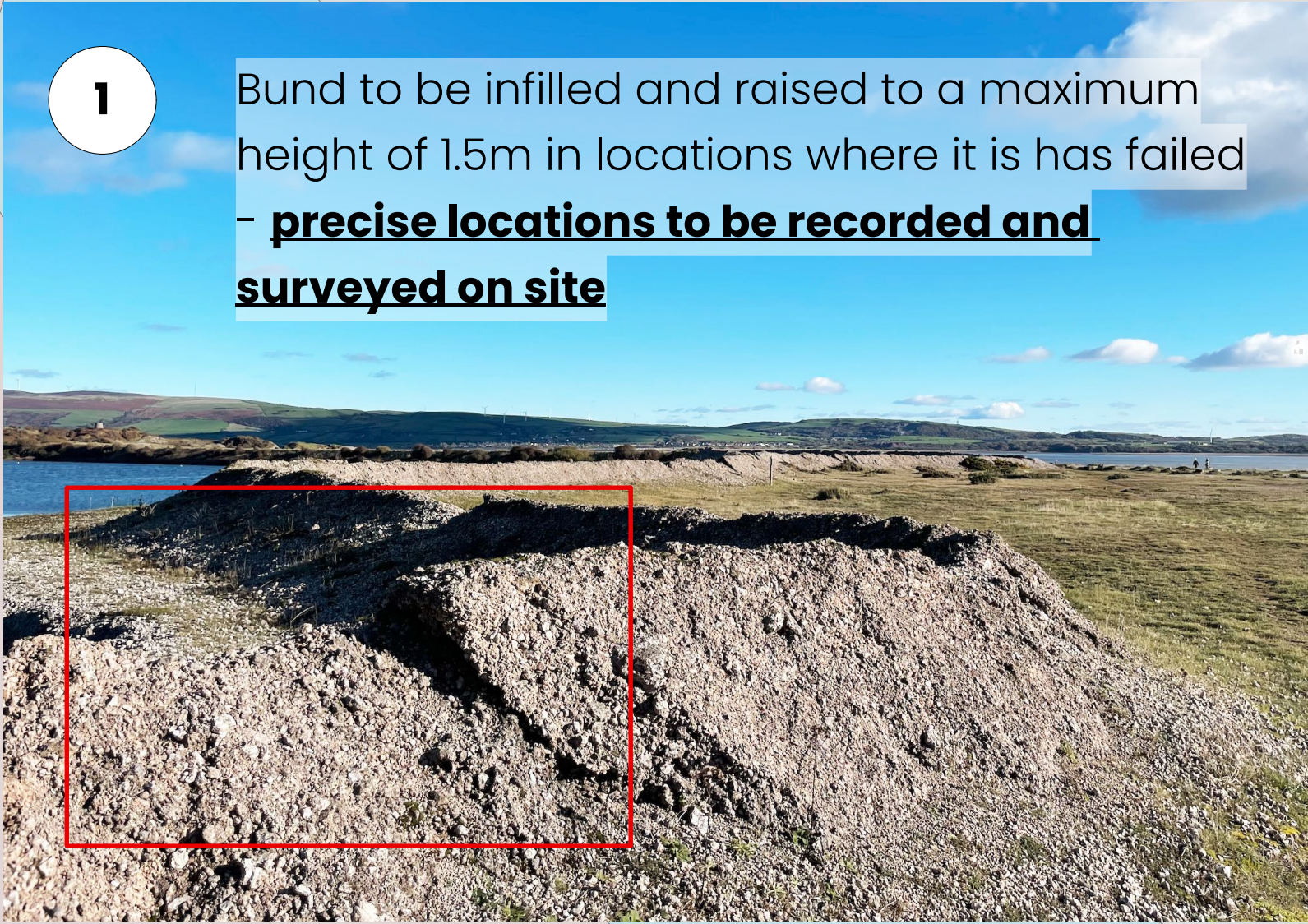
- Proposals which improve access to/from and within the LGS, or
- Proposals which provide opportunities for outdoor sport and recreation, or
- Proposals which allow a wider range of uses to take place within the LGS, or
- Proposals which enhance landscapes and visual amenity, or
- Proposals which provide/enhance habitats.

Development on sites adjacent to Local Green Spaces should provide an attractive frontage, natural surveillance and strong pedestrian connections to the LGS.

APPENDIX D DETAILED DESIGNS OF THE BUND AND FENCING

1

Bund to be infilled and raised to a maximum height of 1.5m in locations where it is has failed
- **precise locations to be recorded and surveyed on site**



11.2 - Quarry

Sea buckthorn to be removed

B3.1 - Unimproved calcareous grassland.

A2.1 - Dense / continuous scrub

S2.0

SE

A-A'

S2.0

SE

SE

0m 10m 25m 50m 100m 150m

NOTES:
1. DO NOT SCALE FROM THIS DRAWING. ALWAYS WORK TO NOTED DIMENSIONS.
2. ALL SETTING-OUT LEVELS AND DIMENSIONS TO BE CHECKED ON SITE PRIOR TO THE INSTALLATION OF MATERIALS AND ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE CONTRACT ADMINISTRATOR IMMEDIATELY.
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THIS DRAWING WAS PLOTTED ON:
08/04/2025

REVISION HISTORY

DATE	REV	ZONE	DESCRIPTION	CHK
03/06/24	P01		Preliminary Issue	MDM
04/04/25	P02		Revised Issue	CE
07/04/25	P03		Issued for planning	MDM

KEY

GENERAL INFORMATION

APPLICATION BOUNDARY

HARDWORKS

- S1.0 - SELF BINDING GRAVEL WITHOUT EDGINGS EXCEPT ON STEEP GRADIENTS (P)**
Location: To primary pedestrian routes
Dims: 15m wide
- S2.0 - STONE TO DUST SURFACE (V)**
Assumed: Existing surface planed - pot holes filled - Type 1 dressing with Grano Dust surface finish
Location: To Byway
Dims: As existing
- S3.0 - TIMBER BOARDWALK (P)**
Location: To stand dune raised walkway
Dims: 18m wide w/ low upstand
- S4.0 - VEHICULAR MACADAM (V)**
Location: Visitor Centre car park / Access Road Trench
Dims: 15m wide trench cover w/ passing places
- S5.0 - VEHICULAR ROUTE (MACADAM) (V)**
Assumed: Some resurfacing as per S4.0 specification
Location: To access road from Mainsgate Road to visitor centre - existing surface made good
Dims: 48m wide
- S6.0 - NATURAL STONE PAVING (P)**
Location: To Towsey Hole Windmill
- S7.0 - INSITU CONCRETE w/ SMOOTH FINISH (P)**
Location: To in ground railway details / Visitor Centre / Hoadbarrow Lighthouse
- S7.1 - INSITU CONCRETE w/ EXPOSED AGGREGATE FINISH (P / V)**
Location: To Visitor Centre / Whiterock Junction
- S8.0 - REINFORCED GRAVEL (P)**
Location: To Visitor Centre car park / Annie Lowther Hide
- S9.0 - RAISED STEEL WALKWAY w TIMBER EDGE (P)**
Location: To Visitor Centre
- SE - SURFACE EXISTING**
Location: As noted

KEY

GENERAL INFORMATION

APPLICATION BOUNDARY

SLAG BUND REMEDIATION WORKS

- SLAG BUND - EXISTING
- SLAG BUND - INCREASED HEIGHT
To a maximum of 1500mm
- SLAG BUND - INFILL



STORY



ORIGINATOR



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Newcastle-upon-Tyne
NE1 1EW

Client

Cumberland Council

Project

The Iron Line
Millom, Cumbria

Drawing Title

GA | Lighthouse & Tern Island Hide - Slag Bund

Created By

MDM

Checked By

CL

Scale

1:500

Sheet Size

A1

Project Number

289

Originator

LYR

Volume

XX-ZZ-DWG-L-1303

Work Stage

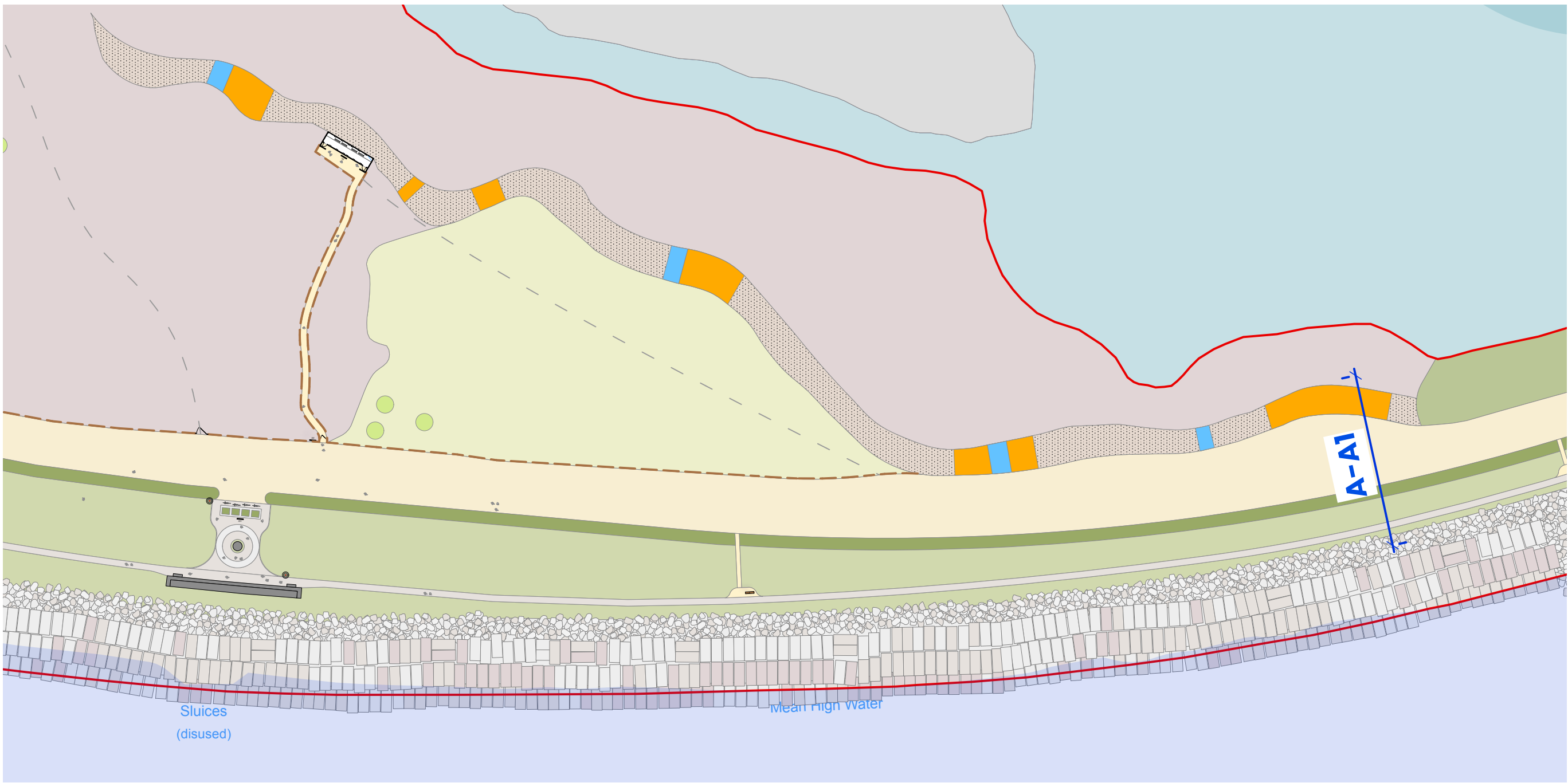
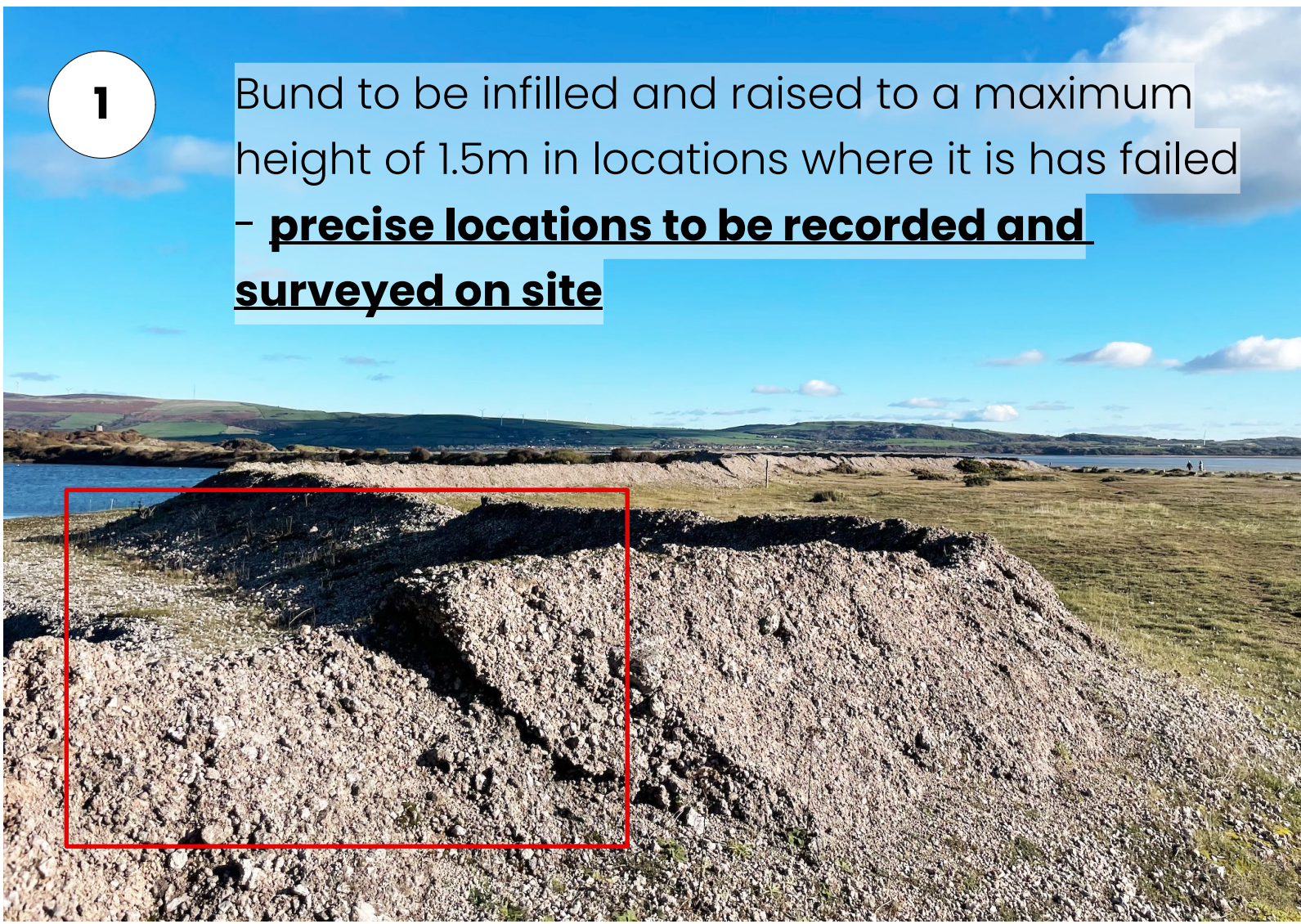
Stage 3

Status

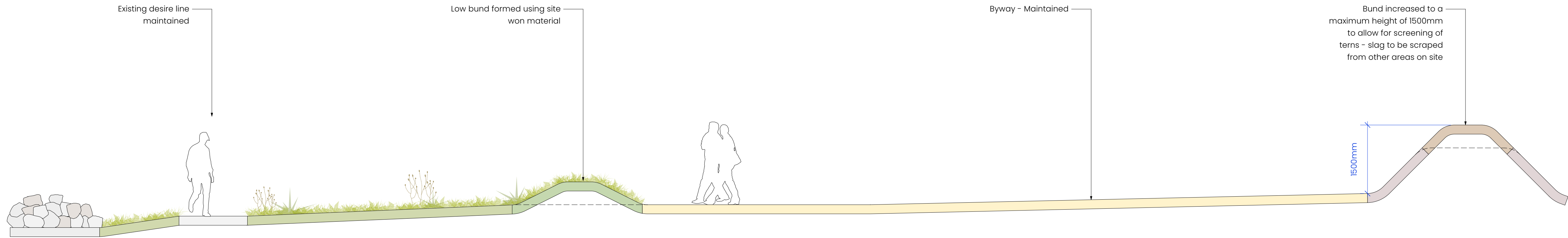
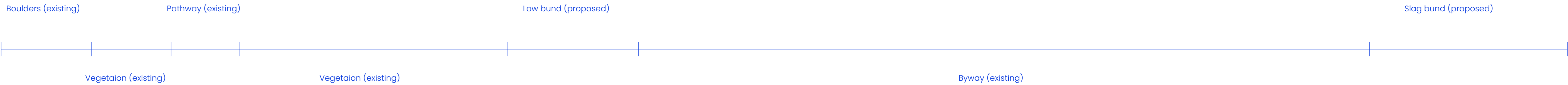
Planning

Revision

P03



D01 Location Map
Scale: 1:100



D02 Section A-A1
Scale: 1:50

NOTES:

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THIS DRAWING WAS PLOTTED ON:
08/04/2025

REVISION HISTORY				
DATE	REV	ZONE	DESCRIPTION	CHK
03/06/24	P01		Preliminary Issue	MDM
04/04/25	P02		Revised Issue	CE
07/04/25	P03		Issued for planning	MDM



ORIGINATOR

W layerstudio 01625 523 157 manchester or newcastle@layerstudio	MANCHESTER 80 Grove Street Wilmslow Cheshire SK9 1DR	NEWCASTLE Studio 39 39 High Bridge Works Newcastle-upon-Tyne NE1 1EW
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Layer.studio

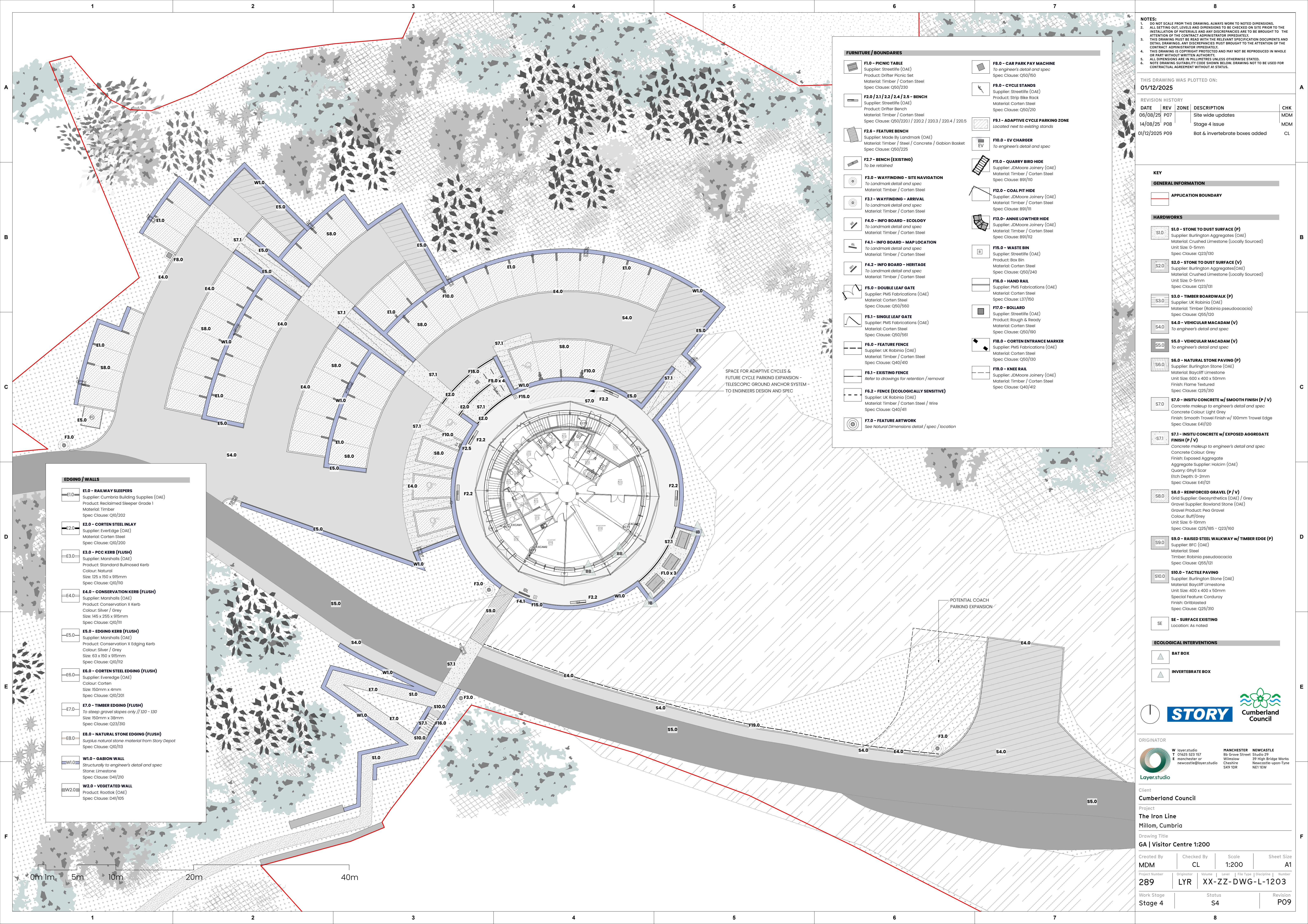
Client
Cumberland Council

Project
The Iron Line
Millom, Cumbria

Drawing Title
S | Sea Wall Cross Section

Created By		Checked By		Scale		Sheet Size	
MDM		CL		As Noted		A1	
Project Number		Originator	Volume	Level	File Type	Discipline	Number
289		LYR	XX-ZZ-DWG-L-1304				
Work Stage			Status			Revision	
Stage 3			Planning			P03	

APPENDIX E VISITOR CENTRE ENHANCEMENTS



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THIS DRAWING WAS PLOTTED ON:
01/12/2025

DATE	REV	ZONE	DESCRIPTION	CHK
06/08/25	P07		Site wide updates	MDM
14/08/25	P08		Stage 4 issue	MDM
01/12/2025	P09		Bat & invertebrate boxes added	CL

KEY

GENERAL INFORMATION

APPLICATION BOUNDARY

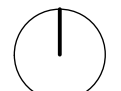
HARDWORKS

- S1.0 - STONE TO DUST SURFACE (P)**
Supplier: Burlington Aggregates (OAE)
Material: Crushed Limestone (Locally Sourced)
Unit Size: 0-5mm
Spec Clause: Q23/130
- S2.0 - STONE TO DUST SURFACE (V)**
Supplier: Burlington Aggregates(OAE)
Material: Crushed Limestone (Locally Sourced)
Unit Size: 0-5mm
Spec Clause: Q23/131
- S3.0 - TIMBER BOARDWALK (P)**
Supplier: UK Robinia (OAE)
Material: Timber (Robinia pseudoacacia)
Spec Clause: Q55/120
- S4.0 - VEHICULAR MACADAM (V)**
To engineer's detail and spec
- S5.0 - VEHICULAR MACADAM (V)**
To engineer's detail and spec
- S6.0 - NATURAL STONE PAVING (P)**
Supplier: Burlington Stone (OAE)
Material: Baycliff Limestone
Unit Size: 600 x 400 x 50mm
Finish: Flame Textured
Spec Clause: Q25/310
- S7.0 - INSITU CONCRETE w/ SMOOTH FINISH (P / V)**
Concrete makeup to engineer's detail and spec
Concrete Colour: Light Grey
Finish: Smooth Trowel Finish w/ 100mm Trowel Edge
Spec Clause: E41/120
- S7.1 - INSITU CONCRETE w/ EXPOSED AGGREGATE FINISH (P / V)**
Concrete makeup to engineer's detail and spec
Concrete Colour: Grey
Finish: Exposed Aggregate
Aggregate Supplier: Holcim (OAE)
Quarry: Ghyll Scar
Etch Depth: 0-2mm
Spec Clause: E41/121
- S8.0 - REINFORCED GRAVEL (P / V)**
Grid Supplier: Geosynthetics (OAE) / Grey
Gravel Supplier: Bowland Stone (OAE)
Gravel Product: Pea Gravel
Colour: Buff/Grey
Unit Size: 6-10mm
Spec Clause: Q25/185 - Q23/160
- S9.0 - RAISED STEEL WALKWAY w/ TIMBER EDGE (P)**
Supplier: BFC (OAE)
Material: Steel
Timber: Robinia pseudoacacia
Spec Clause: Q55/121
- S10.0 - TACTILE PAVING**
Supplier: Burlington Stone (OAE)
Material: Baycliff Limestone
Unit Size: 400 x 400 x 50mm
Special Feature: Corduroy
Finish: Gritblasted
Spec Clause: Q25/310

SE - SURFACE EXISTING
Location: As noted

ECOLOGICAL INTERVENTIONS

- BAT BOX
- INVERTEBRATE BOX



STORY



ORIGINATOR



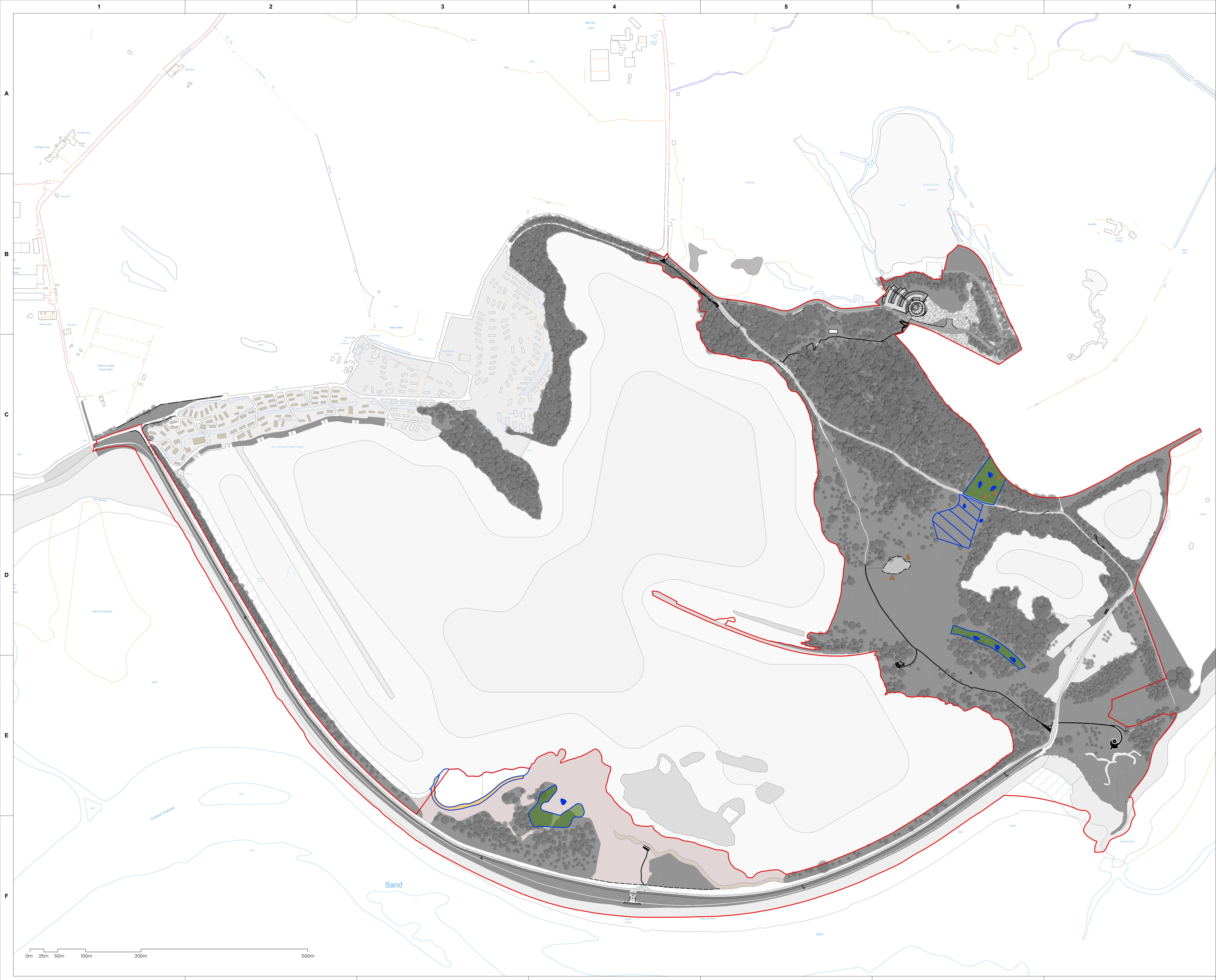
Client
Cumberland Council

Project
The Iron Line
Millom, Cumbria

Drawing Title
GA | Visitor Centre 1:200

Created By	Checked By	Scale	Sheet Size
MDM	CL	1:200	A1
Project Number	Originator	Volume	Level
289	LYR	XX-ZZ-DWG-L-1203	
Work Stage	Status	Revision	
Stage 4	S4	P09	

APPENDIX F ENHANCEMENTS ON THE NATURE RESERVES



- NOTES:
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01/12/2025

REVISION HISTORY				
DATE	REV	ZONE	DESCRIPTION	CHK
04/04/25	P02		Revised Issue	CE
07/04/25	P03		Issued for planning	MDM
01/12/2025	P04		Hibernacula added	CL

KEY

GENERAL INFORMATION

- APPLICATION BOUNDARY

RSPB SRP WORKS

- UNDISTURBED SLAG HABITAT CREATED
- CHANNEL CUT IN SLAG
- POOL CREATION
- BRACKEN CLEARANCE
- BRACKEN CLEARANCE

ECOLOGICAL INTERVENTIONS

- NEWLY CREATED HIBERNACULA
Locations indicative only



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Client
Cumberland Council

Project
The Iron Line
Millom, Cumbria

Drawing Title
GA | RSPB SRP Works

Created By MDM	Checked By CL	Scale 1:3000	Sheet Size A1
Project Number 289	Originator LYR	Level XX-ZZ-DWG-L-1300	Number P04
Work Stage Stage 3	Status Planning	Revision P04	

APPENDIX G CONDITION ASSESSMENTS

Condition Assessments

Mixed Scrub

Table G.1 Mixed Scrub Condition Assessment

Condition Assessment Criteria	
1	Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).
2	There is a good age range - all of the following are present: seedlings, young shrubs and mature shrubs.
3	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition ¹ make up less than 5% of ground cover.
4	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.

Condition Assessment Result	Condition Assessment Score
Passes 5 of 5 criteria	Good (3)
Passes 3 or 4 of 5 criteria	Moderate (2)
Passes 0, 1 or 2 of 5 criteria	Poor (1)
Notes	
Footnote 1 - Species indicative of sub-optimal condition for this habitat type include: tree-of-heaven (<i>Alnus altissima</i>), holm oak (<i>Quercus ilex</i>), turkey oak (<i>Quercus cerris</i>), creeping thistle (<i>Cirsium arvense</i>), common nettle (<i>Urtica dioica</i>), cherry laurel (<i>Prunus laurocerasus</i>), snowberry (<i>Symphoricarpos</i> spp.), buddleia (<i>Buddleja</i> spp.), cotoneaster (<i>Cotoneaster</i> spp.), Spanish bluebell (<i>Hyacinthoides hispanica</i>) (or hybrids).	

Wet Woodland

Table G.2 Woodland Condition Assessment

Condition Assessment Criteria				
	Indicator	Good (3 points)	Moderate (2 points)	Poor (1 point)
1	Age distribution of trees ¹	Three age classes present	Two age classes present	One age class present
2	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland ²	Evidence of significant browsing pressure is present in 40%	Evidence of significant browsing pressure is present in 40% or more of whole woodland

Condition Assessment Criteria				
			or less of whole woodland	
3	Invasive plant species ³	No invasive species present in woodland	Rhododendron or laurel not present, other invasive species < 10% cover	Rhododendron or laurel present, or other invasive species > 10% cover
4	Number of native tree species	Five or more native tree or shrub species found across woodland parcel	Three to four native tree or shrub species found across woodland parcel	None to two native tree or shrub species across woodland parcel
5	Cover of native tree and shrub species	> 80% of canopy trees and >80% of understory shrubs are native	50-80% of canopy trees and 50-80% of understory shrubs are native	< 50% of canopy trees and <50% of understory shrubs are native
6	Open space within woodland ⁴	10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply	21- 40% of woodland has areas of temporary open space	More than 40% of woodland has areas of temporary open space
7	Woodland regeneration ⁵	All three classes present in woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth	One or two classes only present in woodland	No classes or coppice regrowth present in woodland
8	Tree health	Tree mortality less than 10%, no pests or diseases and	11% to 25% mortality and/or crown dieback or low risk pest	Greater than 25% tree mortality and or any high risk pest or disease present

Condition Assessment Criteria				
		no crown dieback	or disease present	
9	Vegetation and ground flora	Ancient woodland flora indicators present	Recognisable NVC plant community present	No recognisable NVC community
10	Woodland vertical structure ⁶	Three or more storeys across all survey plots or a complex woodland	Two storeys across all survey plots	One or less storey across all survey plots
11	Veteran trees ⁷	Two or more veteran trees per hectare	One veteran tree per hectare	No veteran trees present in woodland
12	Amount of deadwood	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Between 25% and 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps
13	Woodland disturbance ⁸	No nutrient enrichment or damaged ground evident	Less than 1 hectare in total of nutrient enrichment across woodland area and/or less than 20% of woodland area has damaged ground	More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground

Condition Assessment Result	Condition Assessment Score
Total score >32 (33 to 39)	Good (3)
Total score 26 to 32	Moderate (2)
Total score <26 (13 to 25)	Poor (1)
Notes	

Condition Assessment Result	Condition Assessment Score
All footnotes below refer to the EWBG woodland condition assessment methodology: EWBG (No date). Assessing your Woodland's Condition [online]. Available from: https://woodlandwildlifetoolkit.sylva.org.uk/assess	
Footnote 1 - See EWBG method INDICATOR 1 for more information. If tree species is not a birch, cherry or Sorbus: 0 – 20 years (Young); 21 - 150 years (Intermediate); and >150 years (Old). A recognisable age class should be a consistent recognisable layer across the woodland or stand being assessed. Presence of a few saplings would not indicate that the woodland has an 'age class' of young trees.	
Footnote 2 - See EWBG method INDICATOR 2 for more information. Browsing pressure is considered to be significant where >20% of vegetation visible within each survey plot shows damage from any type of browsing pressure listed.	
Footnote 3 - See EWBG method INDICATOR 3 for more information. Check for presence of the following invasive non-native species: American skunk cabbage <i>Lysichiton americanus</i>; Himalayan balsam <i>Impatiens glandulifera</i>; Japanese knotweed <i>Fallopia japonica</i>; Cherry Laurel <i>Prunus laurocerasus</i>; Shalloon <i>Gaultheria shallon</i>; Snowberry <i>Symphoricarpos albus</i>; Variegated yellow archangel <i>Lamium galeobdolon</i> subsp. <i>argentatum</i>; and Rhododendron <i>Rhododendron ponticum</i>.	
Footnote 4 - See EWBG method INDICATOR 6 for more information. Open space within woodland in this context is temporary open space in which trees can be expected to regenerate (e.g. glades, rides, footpaths, areas of clear-fell). This differs from permanent open space where tree regeneration is not possible or desirable (e.g. tarmac, buildings, rivers). Area is at least 10m wide with less than 20% covered by shrubs or trees.	
Footnote 5 - See EWBG method INDICATOR 8 for more information. This indicator measures regeneration potential of the woodland by considering three classes: seedlings; saplings; and young trees of 4-7 cm DBH. All three classes would fall in the 'young' category of the 'age distribution of trees' indicator, the regeneration indicator is gathers additional information by considering regeneration potential i.e. if seedlings, saplings and young trees are all present that means natural regeneration processes are happening.	
Footnote 6 - See EWBG method INDICATOR 9 for more information and Table 3 for a list of diseases and pests and their risk level.	
Footnote 7 - This indicator is looking at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer.	
Footnote 8 - See EWBG method INDICATOR 12 for more information. All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:	

Condition Assessment Result	Condition Assessment Score
1. Rot sites associated with wounds which are decaying >400 cm²; 2. Holes and water pockets in the trunk and mature crown >5 cm diameter; 3. Dead branches or stems >15 cm diameter; 4. Any hollowing in the trunk or major limbs; 5. Fruit bodies of fungi known to cause wood decay. Footnote 9 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery or animal poaching; litter.	

Medium & High Distinctiveness Grassland – Neutral Grassland

Table G.3 Medium & High Distinctiveness Grassland Condition Assessment

Condition Assessment Criteria	
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type are consistently present. Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.
B	Sward height is varied (at least 20% of the sward is less than 7cm and at least 20% is more than 7cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ¹ .
D	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%
E	Combined cover of species indicative of sub-optimal condition ² and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) are present, this criterion is automatically failed.
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). Note - this criterion is essential for achieving Good condition for non-acid grassland types only.

Condition Assessment Result	Condition Assessment Score
Acid Grassland Types (Result out of 5 criteria)	
Passes 5 criteria	Good (3)
Passes 3 or 4 criteria	Moderate (2)
Passes 2 or fewer criteria	Poor (1)

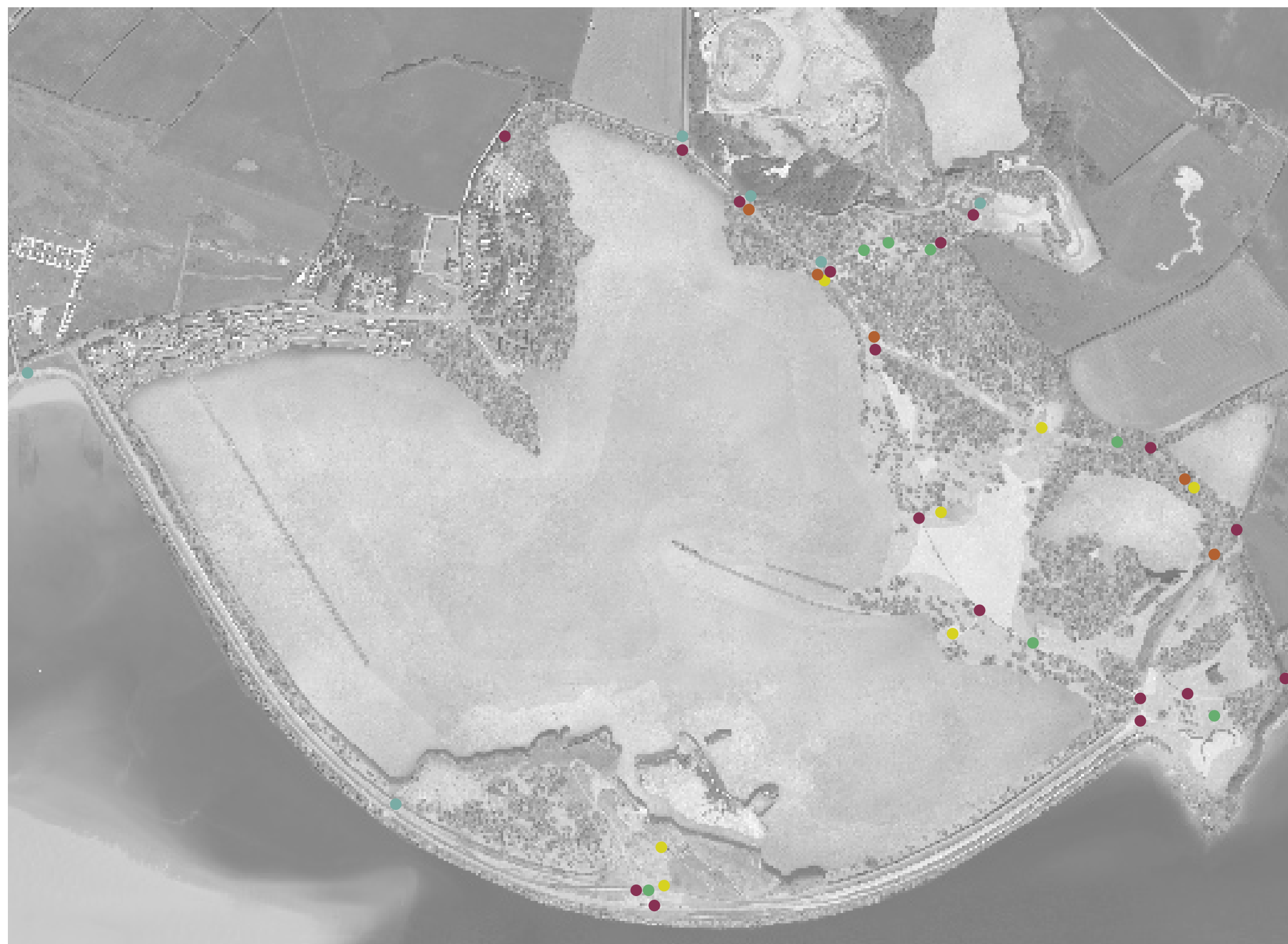
Condition Assessment Result	Condition Assessment Score
Non-Acid Grassland Types (Result out of 6 criteria)	
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)

Footnotes	
Footnote 1	For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.
Footnote 2	Species indicative of sub-optimal condition for this habitat type include: creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i> . There may be additional relevant species local to the region and or site.
Footnote 3	Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement.
Footnote 4	Wildlife and Countryside Act 1981 (as amended).

APPENDIX H SIGNAGE ACROSS THE SITES

7. Enriching the Landscape

Location Plan – Signage



Location of new signage

The plan illustrates the location of new signage, divided into the following:

- **Wayfinding – Arrival**
 Located at the main points of entry, these signs will announce arrival at RSPB Hodbarrow and welcome people to the Iron Line. They will be bespoke and of a scale appropriate to setting and large enough to be seen from a distance to for motorists/ pedestrians.
- **Wayfinding – Site Navigation**
 Positioned to help visitors find their way around Hodbarrow and the Iron Line. To include directional finger posts and route markers.
- **Information – Ecology**
 Located to inform people about wildlife and vegetation on site.
- **Information – Heritage**
 Positioned to highlight points of interest associated with Hodbarrow's mining history and how it influenced the place as it is today.
- **Information – Location**
 Map based "You are Here" type information help visitors track their progression through the site.

In addition to the above there will be signs associated with safety and seasonal site management. Positions will be identified at a later date.

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