



Environment, Roads & Facilities

Flood Risk & Infrastructure

Llanfairfechan Coastal Defences

Habitats Regulations Assessment

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D. Wintering Bird Report

Executive summary

The Llanfairfechan Coastal Defence Scheme (“the Scheme”) will provide coastal defence improvements to the Llanfairfechan waterfront area, Conwy, North Wales. This Habitats Regulations Assessment (HRA) is being produced for the works due to their potential impacts upon the National Site Network (NSN).

This report outlines the HRA Stage 1 (Screening Assessment) and, where appropriate, the Stage 2 (Appropriate Assessment) in relation to sites that form part of the NSN.

Findings of No Significant Effects were concluded for Y Fenai a Bae Conwy / Menai Strait and Conwy Bay Special Area of Conservation (SAC) and Morwenoliaid Ynys Môn/ Anglesey Terns Special Protection Area (SPA) following the HRA Stage 1 screening.

The Stage 1 screening identified that likely Significant Effects (LSE) could occur on the qualifying features of the Traeth Lafan / Lavan Sands, Conway Bay SPA, Liverpool Bay / Bae Lerpwl (Wales) SPA and Ynys Seiriol / Puffin Island SPA, and highlighted that mitigation may be required to avoid and reduce potential or uncertain impacts to the sites and their qualifying features.

The potential impact pathways identified within the HRA Stage 1 Screening were:

- Noise and visual disturbance to waterbird species associated with the SPAs; and
- Water quality impact to functionally linked habitats of waterbird species associated with the SPAs.

There is the potential that, if left unmitigated, adverse effects on the integrity of these sites would occur.

The HRA Stage 2 Appropriate Assessment concluded that following the implementation of mitigation, there will be no adverse effects on the qualifying features of the Traeth Lafan / Lavan Sands, Conway Bay SPA, Liverpool Bay / Bae Lerpwl (Wales) SPA and Ynys Seiriol / Puffin Island SPA.

The proportion of the sites affected and the very small percentage of qualifying features which may be subject to disturbance will not result in significant displacement of the qualifying features as there are large areas of similar suitable habitat outside the zone of influence of the works to which birds would be temporarily displaced during daylight hours, even in the absence of mitigation. Though the following mitigation will be implemented:

- All works will be undertaken during daylight hours to avoid the need for artificial lighting;
- An ecological watching brief will be implemented for the works, with set procedures such as:
 - Pause/restart and stop or reschedule works should adverse effects be observed, or if large numbers of birds are present and likely to be sensitive to the works (particularly around the mouth of the Afon Ddu;
 - Starting works in an area with low numbers of birds to allow time for them to habituate; and
 - Minimising the number of personnel on the foreshore.
- Toolbox talks given to all workers to advise on how best to minimise disturbance.

It is not possible to avoid the over-wintering bird period due to funding constraints and to avoid the busy holiday seasons to minimise disruption to local residents and businesses.

Mitigation to prevent a reduction in water quality from pollution events in the marine environment comprise:

- Land-based works to raise the height of the seawall will not be undertaken when the water is within 20m of the base of the seawall on the incoming tide and will not be able to re-commence until the water is at least 5m from the base of the seawall on the outgoing tide.

Along with a series of recommendations to be incorporated into the Construction Environmental Management Plan (CEMP).

Should the scope of works change, further consideration of the impacts of the works upon Habitats Sites may be required.

1 Introduction

1.1 Purpose of this document

Conwy County Borough Council (CCBC) have produced this Habitats Regulations Assessment (HRA) to support the marine licence application for the proposed Llanfairfechan Coastal Defences (hereafter referred to as 'the Scheme').

1.2 Project background

The sea defences at Llanfairfechan extend for approximately 1.8km around the coastline, comprising several forms of construction, using masonry, mass concrete and rock armour. The defences under consideration extend north-east to south-west from Shore Road East to the Afon Ddu (Llanfairfechan) and provide some protection to the promenade and town. However they are subject to overtopping during storm events and with climate change, the frequency and severity of these events is anticipated to increase. A section of the sea wall was breached during a storm in October 2021 with further damage to the frontage occurring in November and December that year. Storm Pierrick in April 2024 resulted in a flooding event across the entire Llanfairfechan frontage, including flooding of the properties lining the promenade. As a result, there is a need to improve the coastal defences along the frontage.

1.3 Site location

Llanfairfechan is a seaside town in North Wales, within the administrative area of CCBC. The A55 trunk road passes through the town, running parallel to the London-Holyhead railway, both of which separate the main town from the waterfront. The Scheme extends from the mouth of the Afon Ddu (Llanfairfechan) to the west, to the eastern extent of the promenade. The beach predominantly comprises sand and shingle with regular wooden groynes. A slipway is located in the centre of the Scheme area along with four pedestrian accesses through the sea wall, these are fitted with storm boards and a flood gate over winter periods. A pedestrian promenade and cycleway run along the length of the sea wall and are backed by the Promenade road to the eastern end of the Scheme. In the central section of the Scheme area, the promenade is separated from the road by amenity grassland and boat storage and to the western end, a car park and café. Residential houses, guest houses, a garden, playground and cafes line the vehicular promenade.

The Scheme itself focusses on the sea wall which separates the promenade from the beach. Though the existing sea wall is in relatively good condition, some sections require maintenance works which will also be undertaken as part of the Scheme.

The national grid references for the western and eastern Scheme boundaries are approximately (SH 67834 75452) and (SH 68544 75570) respectively (see Red Line Boundary Plan, ERCF2305N PLAN 009, Appendix A).

1.4 Scheme description

1.4.1 Coastal defence works

The proposed scope of work (see Design Drawings ERCF2305N PLAN 010 Proposed Sections, ERCF2305N PLAN 011 Proposed Sections, ERCF2305N PLAN 012 Proposed Elevations and ERCF2305N PLAN 013 Proposed Elevations in Appendix A) comprises repairs to, and increasing the height of, 725m of the existing sea wall by approximately 500mm using concrete. The main design consists of a cantilever retaining wall constructed from the promenade on the

landward side of the existing sea wall, however approximately 140m will need to be constructed from the seaward side (from the promenade path on the seaward side of the wall).

This 140m length is to be constructed in front of the junction of the Promenade highway with Shore Road East and a private property. The design will consist of a 1.5m excavation in the existing promenade on the seaward side. The works in this location are approx. 3.0m above mean High Water Spring (MHWS) and approx. 2.5m from the foreshore, meaning the works will have minimal intrusion on the beach in this area.

The Scheme is currently at the outline design stage and the methodology is yet to be formally established, however it is anticipated that works will comprise the following:

- Temporary scaffolding (if required) - for re-pointing works alone, to be lifted from the promenade side of the sea wall onto the beach and which will be removed between tides (the intertidal area will be accessed by personnel on foot for construction of the scaffolding);
- Resin injection of existing cracks/joints on seaward side of the wall;
- Increase in the height of the sea wall and tie-in with the existing promenade on the landward side using concrete;
- Excavation of 1.5m into the existing hardstanding promenade on the seaward side and increase in the height of the sea wall for 140m at the eastern end;
- Installation of weep holes and flap valves along the sea wall (from the landward side); and
- Construction of grasscrete parking on the promenade side of the sea wall.

Access to the foreshore will be gained using existing accesses. Works will be limited to lower tidal states and no plant or machinery will be required on the intertidal area for the works.

Method statements and risk assessments will be produced by the contractor prior to commencement.

1.4.2 Anticipated programme

As funding is yet to be secured for Scheme construction, the programme has not yet been confirmed. However, is anticipated to take 19 weeks with proposed working hours of 07:00 – 19:00, taking into account tidal constraints (low tide working).

Works through the winter period 2024/25 are anticipated due to funding constraints and to avoid busy holiday seasons.

1.5 Scope of this report

A HRA refers to the several distinct stages of assessment which must be undertaken in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations') to determine if a plan or project may affect the protected features of a Habitats Site before deciding whether to undertake, permit or authorise it.

All plans and projects which are not directly connected with, or necessary for, the conservation management of a Habitats Site, require consideration of whether the plan or project (in this case the proposed flood defence measures) is likely to have significant effects on that site. This consideration – typically referred to as the 'Habitats Regulations Assessment screening' – should take into account the potential effects both of the plan itself and in combination with other plans or projects. At this stage, mitigation is not to be taken into account.

Where the potential for Likely Significant Effects (LSE) cannot be excluded, a competent authority must make an Appropriate Assessment (AA) of the implications of the plan for that Habitats Site, in view the site's conservation objectives (Regulation 63).

The competent authority may agree to the plan only after having ruled out adverse effects on the integrity of the Habitats Site. Where an adverse effect on the Habitats Site's integrity cannot be ruled out, and where there are no alternative solutions, the plan can only proceed if there are imperative reasons of over-riding public interest (IROPI) and if the necessary compensatory measures can be secured (Regulation 64).

The objective of this Report is to undertake a HRA for the Scheme to determine if any aspects of the proposed works have the potential to cause LSE on the qualifying features of internationally designated sites either in isolation, or in combination with, other plans and projects. The process followed is outlined in Section 3.

2 Legislation

Habitats Regulations Assessment (HRA) refers to the assessment of the potential effects of a development / project on one or more UK National Network sites¹, including Special Protection Areas (SPAs) and Special Areas of Conservation (SACs). The government also expects potential SPAs (pSPAs), candidate SACs (cSACs), and any confirmed HRA compensatory habitat to be considered in the same way.

- SACs are designated in the UK under the Conservation of Habitats and Species Regulations 2017 (as amended) under the Habitats Directive (92/43/EEC) and are notified for particular habitats (Annex I) and/or species (Annex II) identified as being of European importance; and
- SPAs are classified under the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2010 (as amended) and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) (hereafter referred to as 'the Habitats Regulations'). These were designated for the protection of wild birds and their habitats (including particularly rare and vulnerable species listed in Annex 1 of the European Council Directive 'on the conservation of wild birds' (2009/147/EC) (the 'Wild Birds Directive'), and migratory species).

The UK government has also advised that Ramsar sites should be considered and included within the assessment:

- Ramsar sites support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention, 1971); and
- For ease of reference during HRA, these designations are collectively referred to as 'designated sites', despite Ramsar designations being at the wider international level, and are also known as 'Natura 2000' sites.

2.1 Purpose of this report

This report provides the conclusions of CCBC's HRA Stages 1 and 2 (screening and appropriate assessment) and includes the necessary information to allow the competent authority to decide whether the project may have a likely significant effect on the integrity of the sites, alone or in combination with other plans or projects.

2.2 Responsibility for undertaking HRA

The responsibility for undertaking HRA lies with the competent authority. Under the Habitats Regulations, the applicant (CCBC) has an obligation to provide the competent authority with such information as the authority may reasonably require for the purposes of the assessment.

¹ The 2019 (EU Exit) amendments to the Habitats Regulations transferred Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) site previously within the Natura 2000 network into a UK National Network of protected sites (designated sites).

3 HRA Framework and Methodology

3.1 Guidance

The following guidance documents and case law informed this HRA:

- Habitats regulations assessments: Protecting a European site, guidance²;
- Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provision of Article 6(3) and (4) of the Habitats Directive 92/43/EEC³;
- Habitats regulations guidance note: The Appropriate Assessment (Regulation 48) & The Conservation (Natural Habitats, & c.) Regulations, 1994⁴;
- The Habitats Regulations Assessment Handbook⁵; and
- Case law from the European Court of Justice (ECJ), notably the Waddenzee, Sweetman and People Over Wind cases^{6,7,8}.

For a broad understanding of the HRA process, the documents above should be read in conjunction with this report.

3.2 The HRA process

The Habitats Regulations include measures to establish and maintain a network of sites protecting habitats which in themselves are valuable as well as for the species they support. These sites form a network that across Europe is known as 'Natura 2000', and domestically as the 'National Site Network (NSN)'.

The NSN includes those areas designated under the Habitats Regulations as a SAC or SPA. It is government policy to afford the same level of protection to a cSAC, pSPA, a listed or proposed Ramsar Site and sites identified, or required, as compensatory measures for adverse effects on the above listed site designations. All these sites are collectively referred to in this document as 'Habitats Sites'.

For plans or projects that are not directly connected with, or necessary for, the conservation management of a Habitats Site, there is a requirement under the Habitats Regulations to determine if such a plan or project may have adverse effects on the integrity of a Habitats Site. The process of undertaking this assessment is known as an HRA. The competent authority (CCBC) may agree to the plan or project only after having ruled out adverse effects on the integrity of the Habitats Site(s).

² DEFRA, Natural England, Welsh Government and Natural Resources Wales, 2021 [online] Available at: [Assessment of plans and projects significantly affecting Natura 2000 sites - Publications Office of the EU \(europa.eu\)](https://european-council.europa.eu/media/en/pdfs/assessment-of-plans-and-projects-significantly-affecting-natura-2000-sites.pdf)

³ European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provision of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. European Communities: Luxembourg

⁴ English Nature (1997). Habitats regulations guidance note: The Appropriate Assessment (Regulation 48). The Conservation (Natural Habitats &c) Regulations, 1994. English Nature.

⁵ Tyldesley, D. and Chapman C. The Habitats Regulations Assessment Handbook. Published and updated online by DTA Publications Limited: <http://www.dtapublications.co.uk/handbooks>. [the Handbook is informed and regularly updated with amendments to the Regulations, the latest government guidance and case law]

⁶ See implications of people over wind judgement (Paragraph: 009 Reference ID: 65-009-20190722; GOV.UK, 2019)

⁷ People over Wind/Sweetman v Coillte Teorante, European Court of Justice Case C-323/17 ‘

⁸ People over Wind 2017’ Sweetman et al v An Bord Pleanala, European Court of Justice, Case C-258/11 ‘Sweetman 2011’

The HRA follows a multi-stage process in order to identify whether LSE will affect the integrity of a designated site and its features. There are four stages to this process which include Stage 1 (Screening), Stage 2 (Appropriate Assessment), Stage 3 (assessment of alternative solutions), and Stage 4 (IROPI).

Each stage is informed by the one preceding, to ensure an iterative and objective assessment. If the conclusion of the screening stage is that there will be no LSE, there is no requirement to undertake further stages. Similarly, if the AA stage concludes there will be no adverse effect on site integrity, then the assessment with respect to Regulation 63 of the 2017 Regulations is concluded. The HRA stages with respect to Regulation 63 are summarised within Table 3.1.

The third stage of the procedure is governed by Regulation 64 of the 2017 Regulations. If the AA stage concludes that there is likely to be an adverse effect on site integrity, it must be demonstrated that there are no alternative solutions to the plan or project, that the plan or project must be carried out for imperative reasons of overriding public interest, and that suitable compensatory measures can be secured to ensure that the overall coherence of the national site network is protected.

This report contains the assessment and result of Screening (Stage 1) for the Scheme and Appropriate Assessment (AA) (Stage 2) where applicable.

Table 3.1: HRA stages under Regulation 63 of the 2017 Regulations

Stage	Description
Screening (Stage 1)	This is the process which identifies the potential effects upon the Habitats Sites and considers if these are likely to be significant (see definitions below). Screening is an iterative process and before moving to Stage 2 it can be repeated if required. Proposals to mitigate any likely significant effects cannot be considered at the screening stage. If the Screening (Stage 1) identifies that the project or plan, alone or in combination, may have likely significant effects on a Habitats Site and/or its features of interest, or if there is uncertainty, the competent authority must undertake an Appropriate Assessment (Stage 2) of the implications for that Site in view of that Site's conservation objectives.
Appropriate Assessment (Stage 2)	This stage involves the consideration of the predicted adverse effects of the project or plan either alone, or in-combination with other projects or plans, on the integrity of the Habitats Site with respect to the Site's structure, function and conservation objectives. Additionally, where mitigation has been proposed to avoid or minimise likely significant effects, this stage includes assessment of the likely effectiveness of any mitigation applied. A key outcome of the Appropriate Assessment is to identify whether the integrity of the Habitats Site(s) is likely to be adversely affected by the plan/project

Source: Based on European Commission, 2021. Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

This assessment has been undertaken in an iterative and objective manner following the above stages, with reference to best practice guidance and relevant case law (Appendix B) to inform the interpretation and therefore correct application of the terms 'likelihood', 'significance' and 'in-combination'.

3.2.1 Zone of Influence

A Zone of Influence (Zol) has been used to define the study area for this assessment and the potential impacts on Habitats Sites. The Zol for the Scheme was informed by guidance provided by Chartered Institute of Ecology and Environmental Management (2018) and professional judgement. The Zol is defined as:

- Areas where there is physical disturbance to international sites and/or their designated interest features;
- Areas where there will be land take and habitat removal for the works;
- Areas where there is risk of altering the hydrodynamic regime;
- Areas where there is risk of an increase in noise, air and light pollution; and
- Areas where there is a risk of reduction of water quality.

A search was undertaken for all Habitats Sites within 2km of the site. This buffer is considered for the assessment of possible habitat loss, fragmentation, disturbance to key species, the effect of increased emissions on air pollution and increases in noise.

Habitats Sites hydrologically connected^{9,10} to the Scheme could be affected by water quality changes, because in the absence of appropriate mitigation measures, ground water, surface water or waterbodies could act as an impact pathway. A search within a 10km buffer of the Scheme was undertaken for Habitats Sites where the Scheme and the access routes cross or are adjacent to, upstream of, or downstream of, watercourses designated in part or wholly as a Habitats Site.

Additionally, Habitats Sites designated for mobile species such as birds, bats, migratory fish and otter, could be affected by the Scheme if those species for which the Habitats Site is designated, travel beyond the boundaries of the Habitats Site. A further search was undertaken for international sites within 15km, where mobile species such as birds, bats, migratory fish and otter are a qualifying feature.

The ZoI used for this assessment is summarised in Table 3.2 below.

Table 3.2: ZoI used for this assessment

ZoI	Justification
2km	All international sites
10km	International sites that are hydrologically connected
15km	International sites where a qualifying species is a mobile species

3.2.2 Baseline data

In undertaking this HRA, a number of steps were undertaken to identify the relevant information to inform the assessment. Information gathered to inform the screening included the identification of:

- Any SPA/SAC/pSPA/cSAC/Ramsar sites, including any marine or marine elements of these sites within the potential ZoI, and any known areas of land outside the site boundary itself, which plays an important role in supporting the site and its features of interest (functionally linked land);
- Potential effects resulting from the Scheme;
- The ZoI of these effects, noting this may extend some distance from the site and are not confined to activities on or adjacent to the site;
- Any viable pathways from the Scheme to the receptor (the Habitats Sites themselves or functionally linked land);
- The features of interest of the Habitats Site(s) in question; and

⁹ ABPmer, 2017. Tidal ellipse data - Renewables Atlas [Online] Available at: [WEBvision - Renewables \(Tide\) \(abpmer.net\)](http://webvision-renewables.tide.abpmer.net)

¹⁰ Double the length of the closest tidal ellipse was considered to be a good proxy for impacts hydrologically, should any deleterious substances enter the water.

- The conservation objectives of the Habitats Site, including any site sensitivities given within any supplementary advice, site improvement plan, or equivalent document published by the relevant SNCB.

Table 3.3: Data sources

Data	Source	Method
International Sites	DataMapWales database	Internet-based search of the ZOI
Where the Scheme crosses/is adjacent to, upstream of, or downstream of, watercourses designated in part or wholly as an SAC, SPA and Ramsar	MAGIC database	Internet-based search of hydrological connectivity for where the Scheme crosses/is adjacent to, upstream of, or downstream of, watercourses designated in part or wholly as an international site.
pSPA, pSAC and cSAC	JNCC website	Internet based search of proposed potential and candidate sites within the ZOI
Features of interest of the international site(s) and the conservation objectives of the international site(s)	JNCC website Natural Resources Wales Designated sites search	Internet based search of features of interest and the conservation objectives of the identified international site(s).

The information in Table 3.3 was reviewed in respect of each feature of interest and potential development effect / impact pathway to inform an assessment of any LSE or adverse effects on integrity.

3.2.3 Key terms

Key aspects and terms used in this assessment are defined below:

- **Likelihood:** Where an effect was considered to be potentially significant, then the assessment of its occurrence was based on the likelihood of it occurring and not certainty that it would occur. Potential effects are scoped in unless there was evidence to the contrary demonstrating that they would not occur e.g. there being no valid pathway, or the absence of the species in that area, at that time;
- **Significance:** The significance of any effect is considered objectively, against the scale and nature of the impact in relation to those of that particular feature or condition and in relation to the extent of that feature or condition over the entire Habitats Site. A significant effect within this assessment is one which, if it occurred, would lead to a decline in the quality or status of the habitats or distribution, abundance, etc. of feature(s) of interest; and
- **In-combination:** The assessment of in-combination effects considers those projects or plans which:
 - are currently in operation; and/or
 - are actually proposed - defined by being a valid live planning application, or any referenced with a local plan where there is potential for them being undertaken within a reasonable time period, specified within that plan.

In line with relevant case law (Appendix B), this assessment is undertaken in the absence of mitigation (including 'best practice' measures embedded into the option where these are intended for the avoidance of effects).

3.3 Limitations and assumptions

Information provided by third parties, including publicly available information and databases, is considered correct at the time of publication. Due to the dynamic nature of the environment, conditions may change in the period between the preparation of this report, and the construction and operation of the project.

The HRA has been undertaken in as much detail as possible, using all available data sources where they exist. The conclusions drawn from this are necessarily limited by the age, type, coverage and availability of data.

Uncertainties and the limitations of the assessment process are acknowledged and highlighted.

4 Identification of International Sites within the Zol

4.1 Identification of international sites

The Scheme is not directly connected with the management of an international site and fulfils the description for a 'project'.

The international sites within the Zol are shown in Table 4.1

Table 4.1: International sites within the Zol

Guidance criterion	Zol criteria	Results	Site name(s)
1	Is the project within any SAC, cSAC, SPA, pSPA or Ramsar sites?	Yes	- Traeth Lafan / Lavan Sands, Conway Bay SPA - Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC
2	Is the project within 2km of any SAC, cSAC, pSAC, SPA, pSPA or Ramsar sites?	Yes	Liverpool Bay / Bae Lerpwl SPA
3	Is the project within 15km of any SACs, cSACs, pSACs, SPA, pSPA or Ramsar sites where birds, bats, migratory fish, marine mammals or otter are one of the qualifying features?	Yes	- Anglesey Terns / Morwenoliaid Ynys Môn - Ynys Seiriol / Puffin Island
4	Is the project hydrologically connected to a waterbody or crossing or adjacent to, upstream of, or downstream of, watercourses designated in part or wholly as SAC's, cSACs, pSACs, SPAs, pSPAs or Ramsar sites (up to 10km)?	Yes	- Traeth Lafan / Lavan Sands, Conway Bay SPA - Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC - Liverpool Bay / Bae Lerpwl SPA

Source: MAGIC and DataMapWales, 2024.

The following sites have been taken forward for HRA Stage 1 Screening:

- Traeth Lafan / Lavan Sands, Conway Bay SPA;
- Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC;
- Liverpool Bay / Bae Lerpwl SPA;
- Anglesey Terns / Morwenoliaid Ynys Môn SPA; and
- Ynys Seiriol / Puffin Island SPA.

4.2 Proximity to international sites and conservation objectives

The screening for LSE will consider the implications of the proposal in view of the Conservation Objectives for the internationally designated sites screened in. The table below summarises the proximity of the international sites to the project.

Table 4.2: Distance of international sites from the Scheme

International site name	Approximate closest distance and direction from Scheme
Traeth Lafan / Lavan Sands, Conway Bay SPA	Within

International site name	Approximate closest distance and direction from Scheme
Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC	Within
Liverpool Bay / Bae Lerpwl SPA	250m north
Anglesey Terns / Morwenoliaid Ynys Môn	5.8km north north-west
Ynys Seiriol / Puffin Island SPA	7km north north-west

Source: MAGIC, 2024

Detailed Conservation Objectives, site characteristics and qualifying features for the identified sites are included within Appendix C.

5 Background to the Habitats Sites

5.1 Traeth Lafan / Lavan Sands, Conway Bay SPA

5.1.1 Site description

Traeth Lafan / Lavan Sands Conway Bay SPA is a large area of intertidal sand- and mud-flats located on the eastern edge of the Menai Strait. The site is of importance for wintering waterbirds, especially oystercatcher (*Haematopus ostralegus*) and curlew (*Numenius arquata*), acting as a refuge area for oystercatchers displaced from the Dee Estuary in severe winter weather conditions. The site is also an important moulting roost for great crested grebe (*Podiceps cristatus*) in late summer/early autumn. The SPA covers an area of approximately 2643 hectares.

5.1.2 Qualifying features

Qualifying individual species not listed in Annex I of the Wild Birds Directive (Article 4.2):

- Oystercatcher (*Haematopus ostralegus*) (over winter);
- Curlew (*Numenius arquata*) (over winter);
- Great-crested grebe (*Podiceps cristatus*) (on passage);
- Red-breasted Merganser (*Mergus serrator*); and
- Redshank (*Tringa totanus*) (over winter).

5.2 Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC

5.2.1 Site description

Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC includes the whole of the Menai Strait, from its south-western entrance at Abermenai Point through to Red Wharf Bay and Conwy Bay to the north. To the east the SAC extends to the Little Orme and to the north to Traeth Lligwy on the east coast of Anglesey. The SAC covers an area of about 26,483 hectares. The SAC is a multiple interest site with the presence of five marine habitat types and associated wildlife which is distributed throughout the SAC with no single feature occupying the entire SAC and some features overlapping.

5.2.2 Qualifying features

Annex I habitats that are a primary reason for selection of this site:

- Sandbanks which are slightly covered by sea water all the time;
- Mudflats and sandflats not covered by seawater at low tide; and
- Reefs.

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

- Large shallow inlets and bays; and
- Submerged or partially submerged sea caves.

5.3 Bae Lerpwl/Liverpool Bay SPA

5.3.1 Site description

Bae Lerpwl/ Liverpool Bay SPA is located in the south-east region of the northern part of the Irish Sea, bordering north-west England and north Wales, and running as a broad arc from Morecambe Bay to the east coast of Anglesey. The SPA is designated for five bird species and a non-breeding waterbird assemblage, Liverpool Bay supports important numbers of seabird species, including little gull, and supports the third highest aggregation of little gull in the UK. The SPA covers an area of approximately 170292 hectares.

5.3.2 Qualifying features

Qualifying individual species not listed in Annex I of the Wild Birds Directive (Article 4.2):

- Red-throated diver (*Gavia stellata*) (non-breeding);
- Little gull (*Hydrocoloeus minutus*) (non-breeding);
- Common tern (*Sterna hirundo*) (breeding); and
- Little tern (*Sternula albifrons*) (breeding).

Qualifying individual species not listed in Annex I of the Wild Birds Directive (Article 4.2):

- Common scoter (*Melanitta nigra*) (non-breeding)

Qualifying assemblages of species:

- In the non-breeding season, the site regularly supports at least 69,687 (2004/05 – 2010/11) individual waterbirds.

5.4 Morwenoliaid Ynys Môn/ Anglesey Terns SPA

5.4.1 Site description

The Anglesey Terns / Morwenoliaid Ynys Môn SPA extends around most of the east, north and west coasts of Anglesey, generally from the mean high water mark out to between 10 and 20 km from the shore. The Anglesey Terns / Morwenoliaid Ynys Môn SPA is designated for supporting colonies of four species of tern and consists of three component breeding sites (Ynys Feurig, Cemlyn Bay and The Skerries breeding colony sites) and a marine feeding area. The site was originally classified in June 1992 and extended in January 2017. The SPA covers an area of approximately 101,931 hectares.

5.4.2 Qualifying features

Qualifying individual species listed in Annex I of the Wild Birds Directive (Article 4.2):

- Common tern (*Sterna hirundo*) (breeding);
- Arctic tern (*Sterna paradisica*) (breeding);
- Roseate tern (*Sterna dougalli*) (breeding); and
- Sandwich tern (*Sterna sandvicensis*) (breeding).

5.5 Ynys Seiriol/ Puffin Island SPA

5.5.1 Site Description

Ynys Seiriol / Puffin Island SPA is located just off the eastern tip of the Isle of Anglesey in North Wales. The site is of European importance for its breeding population of cormorant *Phalacrocorax carbo*, which feed in the surrounding waters outside the SPA. The island also

supports other features including sea cliffs, maritime grassland, and intertidal rocks and is also of interest for other nesting seabirds breeding both on its sea-cliffs and open grassland areas. The SPA covers an area of approximately 31.6 hectares.

5.5.2 Qualifying features

Qualifying individual species not listed in Annex I of the Wild Birds Directive (Article 4.2):

- Cormorant (*Phalacrocorax carbo*) (breeding).

6 Stage 1: Screening for Likely Significant Effects (LSE)

6.1 Introduction

The following Habitats Regulations Assessment (HRA) Stage 1 screening has been produced to assess the potential effects resulting from the construction and operation of the proposed works and the likely significant effect on the National Sites Network (NSN)/Ramsar sites and their qualifying features. Should it not be possible to rule out any likely significant effects, then HRA Stage 2 – Appropriate Assessment (AA) would need to be undertaken.

The screening assessment has been carried out considering the following impacts which might lead to significant effects on a NSN/Ramsar site:

- Disturbance and/or displacement to key species;
- Pollution events and other effects on the water environment; and
- Introduction/ spread of invasive and non-native species (INNS).

6.1.1 Essential or intrinsic components of the proposed Scheme

The following methodology and guidance are considered essential and intrinsic to general construction of coastal defences and are not specific to the proposed Scheme:

- Intertidal works (i.e. re-pointing of the seawall) will be limited to the low tide due to safety and access constraints, as such there will be no impact pathway with regards to underwater noise and vibration.
- Standard construction best practice with regards to the control of water pollution on construction sites (CIRIA C532¹² and NetRegs Guidance for Pollution Prevention¹³):
 - GPP 1: Understanding your environmental responsibilities – good environmental practices;
 - GPP 5: Works and maintenance in or near water;
 - GPP 6 Working on construction and demolition sites;
 - GPP 13: Vehicle washing and cleaning;
 - GPP 21: Pollution incident response planning; and
 - GPP 22: Dealing with spills.
- INNS management toolkits¹⁴.

¹² CIRIA, 2001. Control of water pollution from construction sites. Guidance for consultants and contractors

¹³ NetRegs, ND. Guidance for Pollution Prevention (GPP) documents [online] Available at: [Guidance for Pollution Prevention \(GPP\) documents | NetRegs | Environmental guidance for your business in Northern Ireland & Scotland](#)

¹⁴ GB Non-Native Species Secretariat (NNSS). INNS Management toolkits [online] Available at: [INNS management toolkits » NNSS \(nonnativespecies.org\)](#)

6.2 Stage 1 screening summary

6.2.1 Traeth Lafan / Lavan Sands, Conway Bay SPA

Noise and visual disturbance

Traeth Lafan / Lavan Sands, Conway Bay SPA is designated for over-wintering oystercatcher and curlew. The site also supports great-crested grebe on passage. Oystercatcher have been assessed as having a moderate sensitivity to both visual and noise disturbance, with thresholds of up to 200m for visual disturbance and up to 70dB for noise disturbance. The Scheme is located within this SPA and given the proximity, there is the potential for temporary increases in noise and visual disturbance.

Presence of personnel and scaffolding on the foreshore would temporarily reduce the available roosting and foraging habitat for designated bird species during construction. Displacement from preferred foraging areas resulting from disturbance may result in changes in bird health and reproductive success as well as overall bird numbers.

Wintering bird surveys were undertaken from November 2021 to February 2022. The details of these assessments can be found in the Llanfairfechan coastal defences over wintering bird report (ERFCF2305N – Wintering Bird Report, Appendix D). Surveys identified peak numbers of curlew (for both high and low tide surveys) occurred in December, though the maximum count in December was 30 birds, comprising only 2% of the total population utilising the SPA (1500 birds).

Oystercatcher were present in larger numbers (with a total of 497 birds present during the February high-tide survey), though this is still significantly below the 5500 birds listed under the SPA, comprising 9% of the SPA population.

Only one great crested grebe only was observed during one of the surveys (February high-tide), comprising 0.2% of the SPA population.

Given the presence of SPA species, particularly moderate numbers of oystercatcher, likely significant effects from noise and visual disturbance cannot be ruled out.

Water quality and pollution events

Although intertidal works will be undertaken during the low tide (due to access constraints) removing the pathway of impact regarding the repointing works on the intertidal area, there remains a pathway of impact from the concreting works to raise the height of the seawall. As such, LSE relating to pollution events cannot be screened out.

Introduction/spread of INNS

Given best practice INNS control is implemented as standard, the potential introduction of INNS is not considered a pathway of impact.

Likely Significant Effects from pollution events and noise and visual disturbance cannot be screened out on the Traeth Lafan / Lavan Sands, Conway Bay SPA. An Appropriate Assessment is required to further examine the potential impacts.

6.2.2 Y Fenai a Bae Conwy / Menai Strait and Conway Bay SAC

The Scheme is located within this SAC, as above, given best practice INNS control is implemented as standard, the potential introduction of INNS is not considered a pathway of impact.

Given the small-scale of the proposed Scheme, any water pollution impacts would be localised and limited in extent. It is not considered that any impacts would be of a scale large enough to

degrade the quality of the habitats. Intertidal works are limited to the low tide and standard best-practice pollution prevention is considered sufficient to limit the likelihood and severity of any pollution events.

No Likely Significant Effects are considered likely to occur to Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC. This site has been screened out of further assessment.

6.2.3 Liverpool Bay / Bae Lerpwl SPA

Noise and visual disturbance

Liverpool Bay / Bae Lerpwl (Wales) SPA is designated for five waterbird species and an internationally important non-breeding waterbird assemblage. The Liverpool Bay was also designated as an SPA due to its essential function in supporting foraging seabirds.

The qualifying bird species of the SPA all have an affinity for feeding in shallow waters close to the coastline. The 2021/22 wintering bird surveys identified the presence of only one of the designated features of the SPA; red-breasted merganser, though a total of one bird was observed during the February high-tide survey. Additionally, low numbers of birds designated under the assemblage qualification were recorded during the surveys.

Though present in low numbers, it cannot be ruled out that individuals associated with the SPA are using the marine environment or other suitable foraging areas near the Scheme.

The intertidal works are not anticipated to have an impact as they are limited to the low tidal conditions, and the works would be sufficiently separated from any rafting or foraging birds. However, there is the potential for noise and visual disturbance to occur during the high tide from the sea wall raising works.

As a result, there is potential for construction to cause increased noise and visual disturbance on qualifying species foraging in shallow waters, within and adjacent to the SPA boundary. This may result in displacement of qualifying species from their preferred feeding sites. This in turn could result in changes in bird health and reproductive success as well as overall bird numbers, therefore jeopardising the conservation objectives of the SPA.

Water quality and pollution events

Though the SPA is considered hydrologically connected to the Scheme, standard best-practice pollution prevention is considered sufficient to limit any impacts resulting from pollution events.

Introduction/spread of INNS

Given best practice INNS control is implemented as standard, the potential introduction of INNS is not considered a pathway of impact.

Likely Significant Effects from increased noise and visual disturbance cannot be screened out on the Liverpool Bay / Bae Lerpwl (Wales) SPA. An Appropriate Assessment is required to further examine the potential impacts on the SPA.

6.2.4 Anglesey Terns / Morwenoliaid Ynys Môn SPA

The Anglesey Terns / Morwenoliaid Ynys Môn SPA is designated for supporting four species of tern (Common tern, Little tern, Arctic tern and Sandwich tern). The maximum foraging ranges for tern varies between species with records of up to 30km for Common tern and Arctic tern, 54km for Sandwich tern and 11km for Little tern. As such, suitable feeding areas within these distances of the breeding sites may constitute functionally linked habitat for each species respectively, if they support a large enough percentage of the SPA population on a regular basis.

There may be a functional linkage across the suite of SPAs within the ZOI of the Site including the Anglesey Terns / Morwenoliaid Ynys Môn SPA and the Liverpool Bay / Bae Lerpwl SPA. Therefore, the populations of terns associated with the Anglesey Terns / Morwenoliaid Ynys Môn SPA, particularly the common and little terns which are qualifying species in adjacent SPAs, should be regarded as dynamic and may utilise other (protected and non-protected) sites along the coastline for foraging and roosting. Where terns are using habitat outside of the designated site boundary this should be regarded as functionally linked habitat of the SPA for qualifying SPA birds. The preferred feeding locations of these four tern species includes shallow coastal waters. Therefore, marine habitat adjacent to the Scheme may be used by tern as a feeding site. It is unlikely that tern would breed in proximity to the Scheme given the tidal extent at Llanfairfechan (right up to the seawall) and high levels of disturbance by people and dogs during the breeding season.

Whilst all four species of tern for which the SPA is designated are considered to have a low sensitivity to disturbance when they are away from the breeding grounds¹⁵, they are unlikely to be present within the Scheme area or nearby, in autumn or winter as they are migratory.

It is unlikely that the construction of the proposed Scheme will result in disturbance related impacts upon the tern species, for which the SPA is designated.

Water quality and pollution events

Though the SPA is considered hydrologically connected to the Scheme, standard best-practice pollution prevention is considered sufficient to limit any impacts resulting from pollution events.

Introduction/spread of INNS

Given best practice INNS control is implemented as standard, the potential introduction of INNS is not considered a pathway of impact.

No Likely Significant Effects are considered likely to occur to Anglesey Terns / Morwenoliaid Ynys Môn SPA. This site has been screened out of further assessment.

6.2.5 Ynys Seiriol / Puffin Island SPA

Noise and visual disturbance

The Ynys Seiriol / Puffin Island SPA is designated for supporting cormorants and is located 7km north-west of the Scheme. Given cormorant have been recorded as having foraging ranges of up to 35km from a roost¹⁶, suitable feeding areas within 35km of the roosting site may constitute functionally linked habitat for cormorant, if they support a large enough percentage of the SPA population on a regular basis. Cormorants forage mainly in shallow coastal rather than offshore waters. Therefore, the coastal waters adjacent to the Scheme may constitute functionally linked habitat for feeding cormorants.

Wintering bird surveys identified low numbers of cormorant present within the Scheme area however, given the age of the study, cormorant using the area cannot be discounted. As a result, on a precautionary basis, there is the potential for noise and visual disturbance to cormorant to occur during the high tide from the sea wall raising works.

¹⁵ Goodship, N.M. and Furness, R.W. (MacArthur Green) (2022). Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.

¹⁶ Natural England Technical Information Note TIN140. Great cormorant: species information for marine Special Protection Area consultations [Online] Available from: [Natural England Access to Evidence - Natural England Information Notes](#)

Water quality and pollution events

Though the SPA is considered hydrologically connected to the Scheme, standard best-practice pollution prevention is considered sufficient to limit any impacts resulting from pollution events.

Introduction/spread of INNS

Given best practice INNS control is implemented as standard, the potential introduction of INNS is not considered a pathway of impact.

Likely Significant Effects cannot be screened out on the Ynys Seiriol / Puffin Island SPA. An Appropriate Assessment is required to further examine the potential impacts on the SPA.

6.3 In-combination

This section identifies the plans and projects proposed which may result in in-combination effects. This section only includes plans/projects which have been applied for, and/or are believed to be taken forward (actively progressing).

A review of Gwynedd and Conwy council's planning applications identified no terrestrial projects were identified within 2km of the proposed Scheme which may result in in-combination effects^{17,18}.

The NRW Public register was also reviewed for any Marine Licence applications for Conwy, Isle of Anglesey and Gwynedd councils¹⁹, no projects were identified within 10km which may result in in-combination effects. A distance of 10km was selected for marine/coastal projects based on the anticipated area of hydrological connectivity (based on two tidal excursion ellipses²⁰, a proxy for the extent to which waters mix in the area around the Scheme and maximum dispersion should any deleterious substances enter the marine environment).

Therefore, no in-combination effects are anticipated and no further assessment of in-combination effects will be undertaken.

¹⁷ Cyngor gwynedd, 2024. Planning applications [online] Available at: [Mapiau | Cyngor Gwynedd \(llyw.cymru\)](#)

¹⁸ Conwy County Council, 2024. Planning applications [online] Available at: [Planning Explorer - Conwy County Borough Council](#)

¹⁹ NRW, 2024. Marine Licence Applications [online] Available at: [Natural Resources Wales / Marine licence applications 2024](#)

²⁰ ABPmer, 2017. UK Renewables Atlas [Online] Available at: [Explore the ABPmer UK Renewables Atlas \(renewables-atlas.info\)](#)

7 Stage 2: Appropriate assessment

The following sites have been screened out following Stage 1 screening assessments:

- Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC; and
- Anglesey Terns / Morwenoliaid Ynys Môn SPA.

The remaining three sites have been screened in for LSE. The test of likely significance effects assessment has found that LSE cannot be ruled out as a result of the proposed Scheme at Llanfairfechan for the remaining three sites. The sites progressed to Stage 2 Appropriate Assessment, along with the potential linking impact pathways for LSE are detailed in Table 7.1.

Table 7.1: Designated sites progressed to AA and potential impact pathways

Internationally designated site	Potential linking impact pathways
Traeth Lafan / Lavan Sands, Conway Bay SPA	Water quality and pollution events Noise and visual disturbance
Liverpool Bay / Bae Lerpwl SPA	Noise and visual disturbance
Ynys Seiriol / Puffin Island SPA	Noise and visual disturbance

An Appropriate Assessment to determine any adverse effects of the proposed works related to the Scheme is required of the above Habitats Sites. To determine any adverse effects, detailed information regarding the proposed works is required in order to determine whether any mitigation is required.

The Stage 2 Appropriate Assessment provides an assessment to determine whether proposed development will result in an adverse effect on the site integrity of the Habitats Sites identified at the screening stage with potential for LSE. At this stage, mitigation measures to prevent adverse effects can be included.

7.1 Traeth Lafan / Lavan Sands, Conway Bay SPA

7.1.1 Noise and Visual disturbance

The HRA screening identified a potential impact pathway of disturbance to qualifying species linking the proposed works to Traeth Lafan / Lavan Sands, Conway Bay SPA. As a result, the following mitigation will be implemented:

- All works will be undertaken during daylight hours to avoid the need for artificial lighting;
- An ecological watching brief will be implemented for the works, with set procedures such as:
 - Pause/restart and stop or reschedule works should adverse effects be observed, or if large numbers of birds are present and likely to be sensitive to the works (particularly around the mouth of the Afon Ddu;
 - Starting works in an area with low numbers of birds to allow time for them to habituate; and
 - Minimising the number of personnel on the foreshore.
- Toolbox talks given to all workers to advise on how best to minimise disturbance.

7.1.2 Water Quality and pollution events

The HRA screening identified the potential for temporary impacts on water quality from the seawall raising which could result in degradation of qualifying features of the SPA. To mitigate this, intertidal works will be limited to the low tide conditions:

- Land-based works to raise the height of the seawall will not be undertaken when the water is within 20m of the base of the seawall on the incoming tide and will not be able to re-commence until the water is at least 5m from the base of the seawall on the outgoing tide.

In addition to the implementation of best-practice pollution prevention measure, a Construction Environment Management Plan (CEMP) will be in place to set out the reasonable and practicable procedures to be followed for the protection of the water environment alongside pollution best-practice guidance (Section 6.1.1). The CEMP will include (but not be limited to) the following:

- Identifying designated Control of Substances Hazardous to Health (COSHH) storage areas that are not within the marine environment;
- Ensuring bunded tanks and drip trays are utilised on site;
- Checking all equipment at the start of each working shift for leaks or faults;
- Imposing strict measures for minimising concrete use within the marine environment and using fast-setting concrete that is laid on an outgoing tide to ensure curing time is reached prior to the tides return or within watertight containment to prevent entry into the waters;
- Designating areas for concrete wash out that are not within the marine environment;
- Grout/concrete not to be mixed within 10m of waterbody or a surface water drain;
- All cement or concrete washout to be poured into a skip positioned on a waterproof membrane and bunded to contain any leakage from the skip, which would be appropriately disposed of off-site;
- The skip to be kept >10m from a waterbody or surface water drain and be in a suitable condition to prevent rainwater collecting;
- Ensuring that all machinery have accessible spill kits on hand;
- Outlining requirements for pollution spill drills with site staff;
- Requiring staff to undergo pollution toolbox talks prior to working on site;
- Storage of fuels and chemicals to be above any flood water level/tidal area, and where possible away from high-risk locations (more than 10m from a waterbody);
- In the event of a flood alert, all materials and equipment to be moved out of the area of flooding, to higher ground to avoid potential mobilisation of pollution;
- Where possible, non-toxic substances to be used during the works to avoid any impact to the marine or aquatic environment. Refer to Material Safety Data Sheets for further information on substances should be fully cured/stabilised before exposing to marine waters to prevent exposure to marine organisms;
- Best practice dust control measures to be employed; and
- Best practice construction and hygiene measures to be implemented (avoiding littering, fires, storage of foods, etc).

Taking the above into consideration, it is concluded that there will be no adverse effects on the integrity of the site or its qualifying features with mitigation in place.

7.2 Liverpool Bay / Bae Lerpwl SPA

Noise and Visual disturbance

Mitigation as above for Traeth Lafan / Lavan Sands, Conway Bay SPA.

7.3 Ynys Seiriol / Puffin Island SPA

Noise and Visual disturbance

Mitigation as above for Traeth Lafan / Lavan Sands, Conway Bay SPA.

8 Conclusions

A HRA was undertaken of the proposed coastal defence Scheme at Llanfairfechan. Screening was undertaken in relation to the following internationally designated sites:

- Traeth Lafan / Lavan Sands, Conway Bay SPA;
- Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC;
- Liverpool Bay / Bae Lerpwl SPA;
- Anglesey Terns / Morwenoliaid Ynys Môn SPA; and
- Ynys Seiriol / Puffin Island SPA.

The potential impact pathways identified within the HRA Stage 1 Screening were water quality and pollution events, and visual and noise disturbance to bird species. The Stage 1 Screening concluded that there would be no likely significant effects on Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC and Anglesey Terns / Morwenoliaid Ynys Môn SPA from the proposed Scheme.

The remaining three sites were screened in for LSE. The test of likely significance assessment found that likely significant effects cannot be ruled out as a result on the proposed Scheme on:

- Traeth Lafan / Lavan Sands, Conway Bay SPA;
- Liverpool Bay / Bae Lerpwl SPA; and
- Ynys Seiriol / Puffin Island SPA.

An Appropriate Assessment to determine any adverse effects of the proposed works at the Site was undertaken for the aforementioned Habitats Sites, both alone and in-combination with other projects and/or plans. The Stage 2 Appropriate Assessment provides an assessment to determine whether proposed development will result in an adverse effect on the site integrity of the Habitats Sites identified at the screening stage with potential for LSE.

The HRA Stage 2 Appropriate Assessment concluded that there will be no LSE on the qualifying features of the Traeth Lafan / Lavan Sands, Conway Bay SPA, Liverpool Bay / Bae Lerpwl SPA and Ynys Seiriol / Puffin Island SPA, following the implementation of the suggested mitigation. Therefore, the works will not adversely affect the integrity of these Habitats Sites during construction or in operation.

Should the scope of works change, further consideration of the impacts of the works upon Habitats Sites may be required.

Appendices

A. Drawings

B. Legislation

B.1 The Directives

Under the EC Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, commonly referred to as “the Habitats Directive” (Council Directive 92/43/EEC), Member States are required to take special measures to maintain the distribution and abundance of certain priority habitats and species (listed in Annexes I and II of the Directive). Each Member State is required to designate the most suitable sites as SACs. All such SACs will form part of the Natura 2000 network under article 3(1) of the Habitats Directive.

Article 2(3) sets out that Member States have a duty, in exercising their obligations under the Habitats Directive, to:

“.. take account of economic, social and cultural requirements and local characteristics.”

There is an obligation under the Habitats Directive for Member States to designate sites before turning to measures for their protection.

Article 6(2) requires Member States to take appropriate steps to avoid the deterioration of natural habitats and disturbance of species for which the sites have been designated, in so far as the disturbance could be significant in relation to the objectives of the Directive. Article 6(3) and Article 6(4) require that a plan or project not directly connected with the management of the site, but likely to have a significant effect upon it, either individually or in combination with other plans or projects, must be subject to an appropriate assessment of its implications on the site, in view of the sites conservation objectives.

Having undertaken an appropriate assessment, the competent authority may agree to a plan or project where it can be concluded that it will not adversely affect the integrity of the designated site. In light of a negative assessment on the implications for the integrity of the site, Article 6(4) provides that the plan or project may still proceed where it can be demonstrated that there are no alternatives and there are imperative reasons of over-riding public interest as to why it must proceed. In the event that a plan or project is to proceed on the basis of imperative reasons of over-riding public interest, by direction of Article 6(4), compensatory measures must be put in place to ensure that the overall coherence of the Natura 2000 network is protected.

B.2 The Habitats Regulations

The Habitats Regulations transpose the requirements of the Habitats Directive into UK legislation. The Habitats Regulations aim to protect a network of sites that have rare or important habitats and species in order to safeguard biodiversity.

Under the Habitats Regulations, Competent Authorities have a duty to ensure that all the activities they regulate have no adverse effect on the integrity of any of the Natura 2000 sites. Regulation 63 of the Habitats Regulations 2017 requires that:

“63(1) 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 in Great Britain (either alone or in combination with other plans or projects) and

(b) is not directly connected with or necessary for the management of the site, shall make an appropriate assessment of the implications for the site in view of that site’s conservation objectives.

...

63(5) In light of the conclusions of the assessment, and subject to regulation 64, the authority shall agree to a plan or project only after having ascertained that it will not adversely affect the integrity of the European site.

...

63(6) In considering whether a plan or project will adversely affect the integrity of the site, the authority shall have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which they propose that the consent, permission or other authorisation should be given.

..."

Regulation 63 of the Habitats Regulations therefore sets out a two-stage process. The first test is to determine whether the plan / project is likely to have a significant effect on the European site, the second test (if applicable) is to determine whether the plan / project will affect the integrity of the European site.

B.3 Guidance and other relevant documents

B.3.1 Natura Standard Data Forms

A standard reporting format has been developed for Natura 2000 sites (SACs and Special Protection Areas – SPAs) to ensure that the relevant site selection information is reported and stored in a consistent manner that can be easily made available.

A standard reporting form for SPAs and SACs was developed by the European Commission and published in 1996. The form is used for all sites designated or proposed to be designated as SPAs and SACs under the relevant Directives, with the information to be stored on a central database.

Article 4 of the Habitats Directive provides the legal basis for providing the data. Article 4 states that information shall include a map of the site, its name, location, extent and the data resulting from application of the criteria specified in Annex III and that this shall be provided in a format established by the Commission.

Whilst it is the relevant country agency (*Natural England) that is responsible for designating a site, it is the JNCC who are responsible for collating the lists of European and international designated sites, together with relevant supporting information. The Natura 2000 Data Forms for SPAs and SACs are therefore made available by the JNCC.

Within the explanatory notes for Natura Standard Data Forms (European Commission 1996) the following "main objectives" of the Natura data form / database are given:

1. *"to provide the necessary information to enable the Commission, in partnership with the Member States, to co-ordinate measures to create a coherent NATURA 2000 network and to evaluate its effectiveness for the conservation of Annex I habitats and for the habitats of species listed in Annex II of Council Directive 92/43/EEC as well as the habitats of Annex I bird species and other migratory bird species covered by Council Directive 79/409/EEC."*
2. *"to provide information which will assist the Commission in other decision making capacities to ensure that the NATURA 2000 network is fully considered in other policy areas and sectors of the Commission's activities in particular regional, agricultural, energy, transport and tourism policies."*

3. “to assist the Commission and the relevant committees in choosing actions for funding under LIFE and other financial instruments where data relevant to the conservation of sites, such as ownership and management practice, are likely to facilitate the decision making process.”
4. “to provide a useful forum for the exchange and sharing of information on habitats and species of Community interest to the benefit of all Member States.”

B.3.2 Communication from the Commission on the Precautionary Principle (2000)

Enshrined within the Habitats Directive and Regulations (though not explicitly set out in either), based upon article 191 of the Treaty on the Functioning of the European Union, is the need to have due regard to the Precautionary Principle when assessing the risks posed to the integrity of the site(s). If a risk of significant effect to the integrity of a site cannot be excluded on the basis of objective information, then the application of the precautionary principle requires no consent to be given for such a project.

The document titled “Communication from the Commission on the Precautionary Principle” (2000) provides useful guidance in relation to the application of the Precautionary Principle in relation to European sites issues. Paragraph 6, sets out the six key matters for consideration when applying the Precautionary Principle. Paragraph 6 states:

“Where action is deemed necessary, measures based on the precautionary principle should be, inter alia:

- *proportional to the chosen level of protection,*
- *non-discriminatory in their application,*
- *consistent with similar measures already taken,*
- *based on an examination of the potential benefits and costs of action or lack of action (including, where appropriate and feasible, an economic cost/benefit analysis),*
- *subject to review, in the light of new scientific data, and*
- *capable of assigning responsibility for producing the scientific evidence necessary for a more comprehensive risk assessment.”*

Under these bulleted points, the guidance gives specific definitions in relation to each of the above, with further detail provided within Section 6.

B.3.3 Managing Natura 2000 Sites (European Communities 2000)

The document entitled “Managing Natura 2000 Sites the provisions of article 6 of the Habitats Directive 92/43/CEE”, published by the European Commission in 2000, provides guidelines to the Member States on the interpretation of certain key concepts used in Article 6 of the Habitats Directive. It should be noted that the Section relating to Article 6(4) has subsequently been replaced through the publication of a further guidance document by the European Commission in 2007 entitled “Guidance document on Article 6(4) of the ‘Habitats Directive’, which is considered below under the relevant heading.

This document states in Section 2.3.3 that conservation measures must correspond to the ecological requirements of the habitats and species present for which the site is designated and that these requirements “*involve all the ecological needs necessary to ensure their favourable conservation status*”.

In Section 3.5 the guidance states, in relation to deterioration and disturbance of habitats or species:

“Deterioration or disturbance is assessed against the conservation status of species and habitats concerned. At a site level, the maintenance of the favourable conservation status has to be evaluated against the initial conditions provided in the Natura 2000 standard data forms

when the site was proposed for selection or designation, according to the contribution of the site to the ecological coherence of the network. This notion should be interpreted in a dynamic way according to the evolution of the conservation status of the habitat or the species."

Section 4.4.1 sets out that in determining what may constitute a likely 'significant' effect one should take into account the conservation objectives for the site and other relevant baseline information. In the second paragraph of this section of the document it is stated:

"In this regard, the conservation objectives of a site as well as prior or baseline information about it can be very important in more precisely identifying conservation sensitivities."

Section 4.5.3 of the document sets out the duty of Member States to provide certain specific information in support of the inclusion of a site within the Natura 2000 network. This information is to be provided in a format specified by the European Commission (the Natura 2000 Standard Data Form).

A link is drawn between the Standard Data Form and the formation of the sites conservation objectives within the text box at the end of Section 4.5.3 of the guidance where it is stated:

"The information provided according to the standard data form established by the Commission forms the basis for a Member State's establishment of the site's conservation objectives."

With regard to an assessment of the effects of a plan / project on the integrity of a site, the 'integrity of the site' is defined in Section 4.6.3 as:

"... the coherence of the site's ecological structure and function, across the whole area, or the habitats, complex of habitats and / or populations of species for which the site is or will be classified."

The guidance is clear, within the text box at the foot of page 39, that an assessment as to the implications of the plan / project on the integrity of the site should be limited to an assessment against the sites' conservation objectives:

"The integrity of the site involves its ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives."

Section 5 of the document deals with Article 6(4) of the Habitats Directive. Note that this section has been expanded upon and replaced by further guidance issued by the European Commission entitled "Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC" (2007).

B.3.4 Assessment of Plans and Projects Significantly Affecting Natura 2000 sites Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission 2001)

This document, published by the European Commission in 2001, gives guidance on carrying out and reviewing those assessments required under Article 6(3) and (4) of the Habitats Directive. It is provided as supplementary guidance and does not over-ride or replace any of that set out within Managing Natura 2000 (European Commission 2000) which as stated at page 6 of the document, "is the starting point for the interpretation of the key terms and phrases contained in the Habitats Directive". The guidance provided is not mandatory and it is clearly set out that its use is "optional and flexible" and that it is for "Member States to determine the procedural requirements deriving from the directive".

The guidance sets out the key stages in following the tests contained within the Habitats Directive. Pertinent to this assessment of the Best Value Plan, alternative plans and adaptive pathways, stages one and two are relevant. Stage one is the screening stage assessing the

likelihood of a plan / project resulting in a significant effect upon the European site. The second comprises the appropriate assessment.

Section 3.2.4 is concerned with Appropriate Assessment and specifically, the assessment against the conservation objectives of the European Site. Box 9 provides a list of five example conservation objectives for differing broad habitat types. One such example, that for a coastal site, taken from Box 9 is provided below:

“to maintain the status of the European features of this coastal site in favourable condition, allowing for natural change. Features include coastal shingle vegetation and lagoons (within a candidate special area of conservation (SAC), which is also an SPA).”

B.4 Common Standards Monitoring (JNCC February 2004)

Common Standards Monitoring is a means by which condition objectives for habitats, species, or other features of designated sites (e.g. SSSIs and SPAs) are set based on key attributes of the features.

The JNCC and the country Conservation Agencies (e.g. NE) developed guidance on the setting and assessment of condition objectives, as required under the Birds and Habitats Directives and set out a framework for this in 1999. This framework is provided in the form of Common Standards Monitoring (“CSM”) guidance which comprises a suite of documents including an “Introduction to the Guidance Manual on Common Standards Monitoring” and several species/habitat specific documents. The Introduction to the Guidance Manual covers various relevant concepts and terms. It also provides a background to the setting of conservation objectives and sets out the desired approach to setting targets, monitoring, management and reporting on conservation measures in designated sites.

The Introduction to the CSM Guidance and CSM guidance for individual site attributes, sets out specific criteria regarding the identification of interest features, targets and methods of assessment. There is in-built flexibility and allowances for ‘judgements to be made’ when assessing, for example, favourable condition.

It is understood that NIEA applies the Common Standards Monitoring approach to European designated sites through an assessment of the SSSI condition. This is undertaken on a cycle of approximately 6 years. The assessment does not relate to the Conservation Objectives of the European site but provides a tool for tailoring future management of the SSSI such that favourable condition of the interest features can be maintained or restored as appropriate.

B.4.1 Guidance document on Article 6(4) of the ‘Habitats Directive’ (European Commission 2007)

This document, published by the European Commission in 2007, is intended to provide clarification on key terms / concepts as referred to within “Managing Natura 2000 Sites” and replaces the section on Article 6(4) within that earlier document.

The Guidance document covers, in particular, the concepts of Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensation Measures, Overall coherence and the Opinion of the Commission. With regard to ensuring the quality of an appropriate assessment, and to define exactly what needs to be compensated, it is stated in Section 1.3 that:

“Assessment procedures of plans or projects likely to affect Natura 2000 sites should guarantee full consideration of all elements contributing to the site integrity and to the overall coherence of the network, both in the definition of the baseline conditions and in the stages leading to identification of potential impacts, mitigation measures and residual impacts. These determine what has to be compensated, both in quality and quantity.”

The need to use information contained within the Natura Standard Data Form, in tandem with the sites conservation objectives, when undertaking an appropriate assessment is specifically referred to (under the second hyphenated point in Section 1.3 on page 5).

Section 1.3.2 gives guidance on the application of Article 6(4) in respect of reasons of overriding public importance and Section 1.4.1 gives guidance on the application of Article 6(4) in respect of compensatory measures.

B.4.2 Managing Natura 2000 Sites – The provisions of Article 6 of the habitats Directive 92/43/EEC

In January 2019 the European Commission published updated guidance in relation to managing Natura 2000 sites, following initial guidance published in 2000 (see above).

The primary purpose of the revision was to incorporate relevant rulings of the Court of Justice of the European Union (EU) which have been issued since the initial guidance was published in 2000. It also integrates, into a single document, other relevant European Commission notes / guidance documents. Those key rulings (of the Court of Justice of the EU) and other relevant European Commission notes / guidance are discussed above in this report. The revised guidance provides clarifications of key concepts to Member State, authorities and stakeholders involved in the management of Natura 2000 sites (e.g. SPAs and SACs).

B.4.3 Conservation objectives

Whilst Regulation 63 of the Habitats Regulations is explicit in setting out that any assessment of the implications of the plan/project on a European designated site should be undertaken in view of the site's "conservation objectives", the term 'conservation objective' is not explicitly defined within the Regulations. The term "conservation objectives" appears at Article 6(3) of the Habitats Directive which sets out the process of assessment for a plan or project which may be likely to have an effect on a designated site, however the term itself is not defined.

To understand what is meant by the term "conservation objective" it is necessary to look at the Habitats Directive in light of relevant European and other guidance. That guidance is not always consistent or clear about the use of the term "conservation objectives". For the purposes of this assessment, reference is made to the formal "conservation objectives" mentioned in Article 6(3) and Regulation 63 as "Conservation Objectives".

The term "conservation" is defined within the Habitats Directive at Article 1(a):

"conservation means a series of measures required to maintain or restore the natural habitats and the populations of species of wild fauna and flora at a favourable status as defined in I and j)".

The term "conservation status of a natural habitat" is defined within the Habitats Directive at Article 1(e):

"conservation status of a natural habitat means the sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species within the territory referred to in Article 2."

The term "conservation status of a species" is defined within the Habitats Directive at Article 1(i):

"conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2:

The conservation status will be taken as 'favourable' when:

- *Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and*
- *The natural range of the species is neither being reduced nor is it likely to be reduced for the foreseeable future, and*
- *There is and will probably continue to be a sufficiently large habitat to maintain its populations on a long-term "asis."*

Article 3 of the Habitats Directive sets out that Member States have a duty to designate (in accordance with Article 4 of the Directive) special areas of conservation and that where necessary Member States shall endeavour to improve the ecological coherence of Natura 2000.

Article 4(1) of the Habitats Directive states that Member States must provide a list of sites, indicating which Annex I habitats and species occurring on Annex II are present. This Article also clarifies the type of information that must be submitted for each listed site (map, name, location, extent and the results of the application of qualification criteria listed at Annex III of the Directive). This information provides the basis of the Natura 2000 Data Form discussed elsewhere within this document. Article 4(4) states:

"Once a site of Community importance has been adopted in accordance with the procedure laid down in paragraph 2, the Member State concerned shall designate that site as a special area of conservation as soon as possible within six years at most, establishing priorities in the light of the importance of the sites for the maintenance or restoration, at a favourable conservation status, of a natural habitat type in Annex 1 or a species in Annex 2 and for the coherence of Natura 2000, and in the light of the threats of degradation or destruction to which those sites are exposed."

Full regard has been had to the significant weight to be applied to the formal Conservation Objectives when considering a plan or project and applying the tests of the Habitats Regulations. Regard has also been had to other relevant information including that available from the JNCC.

B.4.4 Summary

The above legal framework and guidance documents have been used by the Authors of this HRA in determining the effects of both the individual elements of the Scheme and the Scheme as a whole. In doing so the judgements made rely on the baseline information currently available and the information regarding the nature of the proposals at this the Plan making stage.

C. Conservation objectives, site characteristics and qualifying features

C.1 Traeth Lafan / Lavan Sands, Conway Bay SPA

Characteristics of Habitats Site

Name and code	Traeth Lafan/ Lavan Sands, Conway Bay UK9013031
General site character	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins) (98%) Salt marshes, Salt pastures, Salt steppes (2%)
Location and distance from the Scheme	Within
Size (ha)	2,643
Qualifying features	Article 4.4 qualification (79/409/EEC) Over winter the area regularly supports: <i>Haematopus ostralegus</i> (Europe & Northern/Western Africa) 1.4% of the population in Great Britain 5 year peak mean 1991/92-1995/96
Vulnerability of the Habitats Site (any information available from the standard data forms on potential effect pathways)	Negative impacts – high rank - Human induced changes in hydraulic conditions - Changes in abiotic conditions
Conservation objectives	Feature 1: Oystercatcher (<i>Haematopus ostralegus</i>) The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: - The 5-year mean peak of the number of wintering oystercatchers is at least 4,000. - The abundance and distribution of cockles of 15mm or larger and other suitable food are maintained at levels sufficient to support the population with a 5-year mean peak of 4,000 individuals. - Oystercatchers are not disturbed in ways that prevent them spending enough time feeding for survival. - Roost sites, including high tide roost sites, remain suitable for oystercatchers to roost undisturbed. - The management and control of activities or operations likely to adversely affect the oystercatchers, is appropriate for maintaining the feature in favourable condition and is secure in the long term.

C.2 Y Fenai a Bae Conwy / Menai Strait and Conwy Bay SAC

Characteristics of Habitats Site

Name and code	Y Fenai a Bae Conwy/ Menai Strait and Conwy Bay UK0030202
General site character	Marine areas, Sea inlets (80%) Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins) (19%) Salt marshes, Salt pastures, Salt steppes (0.5%) Shingle, Sea cliffs, Islets (0.5%)

Characteristics of Habitats Site

Location and distance from the Scheme	Within
Size (ha)	26501.64
Qualifying features	Annex I habitats that are a primary reason for selection of this site: • Sandbanks which are slightly covered by sea water all the time • Mudflats and sandflats not covered by seawater at low tide • Reefs Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: • Large shallow inlets and bays • Submerged or partially submerged sea caves
Vulnerability of the Habitats Site (any information available from the standard data forms on potential effect pathways)	Negative im-acts - High Rank • Human induced changes in hydraulic conditions • Pollution to surface waters (limnic & terrestrial, marine & brackish) • Fishing and harvesting aquatic resources • Other human intrusions and disturbances • Invasive non-native species Negative im-acts - Medium Rank • Changes in abiotic conditions
Conservation objectives	To achieve favourable conservation status all the following, subject to natural processes, need to be fulfilled and maintained in the long-term. If these objectives are not met restoration measures will be needed to achieve favourable conservation status. Habitat features: • Mudflats and sandflats not covered by seawater at low tide • Reefs • Sandbanks which are slightly covered by seawater all the time • Large shallow inlets and bays • Submerged or partially submerged sea caves Range: The overall distribution and extent of the habitat features within the site, and each of their main component parts is stable or increasing. For the intertidal mudflats and sandflats feature these include; • Muddy gravel communities – Dwarf eelgrass, <i>Zostera noltei</i> beds – Sediment communities at Traeth Lafan • For the reef feature these include; – Reef communities in high energy wave-sheltered, tide-swept conditions – Under-boulder, overhang and crevice communities – Limestone reef communities – Clay outcrop reef communities • For the large shallow bay feature these include; – Organically enriched muddy sediment areas Structure and function: The physical biological and chemical structure and functions necessary for the long-term maintenance and quality of the habitat are not degraded. Important elements include; • geology, • sedimentology, • geomorphology, • hydrography and meteorology,

Characteristics of Habitats Site

- water and sediment chemistry,
- biological interactions.

This includes a need for nutrient levels in the water column and sediments to be:

- at or below existing statutory guideline concentrations
- within ranges that are not potentially detrimental to the long term maintenance of the features species populations, their abundance and range.

Contaminant levels in the water column and sediments derived from human activity to be:

- at or below existing statutory guideline concentrations below levels that would potentially result in increase in contaminant concentrations within sediments or biota
- below levels potentially detrimental to the long-term maintenance of the feature species populations, their abundance or range taking into account bioaccumulation and biomagnification.

Restoration and recovery:

- This includes the need for restoration of some reef features such as underboulder, overhang and crevice communities, and of some mudflat and sandflat features such as the muddy gravel habitats and sheltered muddy habitats. All of these habitats are also part of the large inlets and bays feature

Typical species:

The presence, abundance, condition and diversity of typical species is such that habitat quality is not degraded. Important elements include:

- species richness
- population structure and dynamics,
- physiological health,
- reproductive capacity recruitment,
- mobility range

As part of this objective it should be noted that:

- Populations of typical species subject to existing commercial fisheries need to be at an abundance equal to or greater than that required to achieve maximum sustainable yield and secure in the long term
- The management and control of activities or operations likely to adversely affect the habitat feature is appropriate for maintaining it in favourable condition and is secure in the long term

C.3 Bae Lerpwl/Liverpool Bay SPA

Characteristics of Habitats Site

Name and code	Liverpool Bay / Bae Lerpwl SPA UK9020294A
General site character	Marine areas, Sea inlets (96%) Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins) (4%)
Location and distance from the Scheme	250m north
Size (ha)	252757.73
Qualifying features	Annex I species that are a primary reason for selection of this site: • Red throated diver (<i>Gavia stellata</i>) • Little gull (<i>Larus minutus</i>) • Common scoter (<i>Melanitta nigra</i>) • Little tern (<i>Sterna albifrons</i>) • Common tern (<i>Sterna hirundo</i>) Also designated for its assemblage of at least 69,687 (2004/05 -2010/11) individual waterbirds in the non-breeding season. Comprising the above listed and red-breasted merganser (<i>Mergus serrator</i>) and great cormorant (<i>Phalacrocorax carbo</i>).

Characteristics of Habitats Site

Vulnerability of the Habitats Site (any information available from the standard data forms on potential effect pathways)	Negative impacts – High rank - Human induced changes in hydraulic conditions - Shipping lanes, ports, marine constructions - Utility and service lines - Roads, paths and railroads - Renewable abiotic energy use Negative impacts – Medium rank - Pollution to surface waters (limnic & terrestrial, marine & brackish) - Outdoor sports and leisure activities, recreational activities - Invasive non-native species - Mining and quarrying - Exploration and extraction of oil or gas - Marine water pollution - Fishing and harvesting aquatic resources Negative impacts – Low risk - Airports, flightpaths
Conservation objectives	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; - The extent and distribution of the habitats of the qualifying features - The structure and function of the habitats of the qualifying features - The supporting processes on which the habitats of the qualifying features rely - The population of each of the qualifying features, and, - The distribution of the qualifying features within the site.

C.4 Morwenoliaid Ynys Môn/ Anglesey Terns SPA

Characteristics of Habitats Site

Name and code	Anglesey Terns / Morwenoliaid Ynys Môn UK9013061
General site character	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins) (0.5%) Heath, Scrub, Maquis and Garrigue, Phygrana (0.1%) Bogs, Marshes, Water fringed vegetation, Fens (0.1%) Marine areas, Sea inlets (99%) Salt marshes, Salt pastures, Salt steppes (0.1%) Shingle, Sea cliffs, Islets (0.2%)
Location and distance from the Scheme	5.8km north north-west
Size (ha)	101931.08
Qualifying features	Article 4.2 qualification (79/409/EEC) During the breeding season the area regularly supports: - Common tern <i>Sterna hirundo</i> ((North-western Europe) 1.5% of the GB population - Arctic tern <i>Sterna paradisaea</i> ((North-western Europe) 2.9% of the GB population - Roseate tern <i>Sterna dougalli</i> ((North-western Europe) 5% of the GB population - Sandwich tern <i>Sterna sandvicensis</i> ((North-western Europe) 3.3% of the GB population
Vulnerability of the Habitats Site (any information available from the standard data)	Negative impacts – High rank Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)

Characteristics of Habitats Site

forms on potential effect pathways)	• Interspecific faunal relations • Industrial or commercial areas • Outdoor sports and leisure activities, recreational activities Negative impacts – medium rank • Changes in abiotic conditions • Marine water pollution • Renewable abiotic energy use • Human induced changes in hydraulic conditions • Other ecosystem modifications
Conservation objectives	Feature 1: Breeding population of Arctic tern <i>Sterna paradisae</i> The size of the population should be stable or increasing, allowing for natural variability, and sustainable in the long term. The breeding population of Arctic tern should be stable or increasing. The site was designated for 1,290 pairs across the SPA. The distribution of the population should be being maintained, or where appropriate increasing. The range and distribution of terns within the SPA and beyond is not constrained or hindered. There should be sufficient habitat, of sufficient quality, to support the population in the long term. The extent of supporting habitats used by terns is stable or increasing. Supporting habitats are of sufficient quality to support the requirements of terns. There are appropriate and sufficient food sources for terns within access of the SPA. Factors affecting the population or its habitat should be under appropriate control. The number of chicks successfully fledged in the SPA and beyond is sufficient to help sustain the population. Actions or events likely to impinge on the sustainability of the population are under control. There should be no mammalian land predators present in the SPA, and control measures should be in place to ensure that accidental introduction does not take place. Feature 2: Breeding population of common tern <i>Sterna hirundo</i> The size of the population should be stable or increasing, allowing for natural variability, and sustainable in the long term. The breeding population of Common Tern should be stable or increasing. The site was designated for 189 pairs across the SPA. The distribution of the population should be being maintained, or where appropriate increasing. The range and distribution of terns within the SPA and beyond is not constrained or hindered. There should be sufficient habitat, of sufficient quality, to support the population in the long term. The extent of supporting habitats used by terns is stable or increasing. Supporting habitats are of sufficient quality to support the requirements of terns. There are appropriate and sufficient food sources for terns within access of the SPA. Factors affecting the population or its habitat should be under appropriate control. The number of chicks successfully fledged in the SPA and beyond is sufficient to help sustain the population. Actions or events likely to impinge on the sustainability of the population are under control. There should be no mammalian land predators present in the SPA, and control measures should be in place to ensure that accidental introduction does not take place. Feature 3: Breeding population of roseate tern <i>Sterna dougallii</i> The size of the population should be stable or increasing, allowing for natural variability, and sustainable in the long term. The breeding population of Roseate tern should be stable or increasing. The site was designated for 3 pairs across the SPA. The distribution of the population should be being maintained, or where appropriate increasing. The range and distribution of terns within the SPA and beyond is not constrained or hindered. There should be sufficient habitat, of sufficient quality, to support the population in the long term. The extent of supporting habitats used by terns is stable or increasing. Supporting habitats are of sufficient quality to support the requirements of terns. There are appropriate and sufficient food sources for terns within access of the SPA. Factors affecting the population or its habitat should be under appropriate control. The number of chicks successfully fledged in the SPA and beyond is sufficient to help sustain the population. Actions or events likely to impinge on the sustainability of the population are under control. There should be no mammalian land predators present in the SPA, and

Characteristics of Habitats Site

	control measures should be in place to ensure that accidental introduction does not take place.
	Feature 4: sandwich tern <i>Sterna sandvicensis</i>
	The size of the population should be stable or increasing, allowing for natural variability, and sustainable in the long term. The breeding population of Sandwich tern should be stable or increasing. The site was designated for 460 pairs across the SPA.
	The distribution of the population should be being maintained, or where appropriate increasing. The range and distribution of terns within the SPA and beyond is not constrained or hindered.
	There should be sufficient habitat, of sufficient quality, to support the population in the long term. The extent of supporting habitats used by terns is stable or increasing. Supporting habitats are of sufficient quality to support the requirements of terns There are appropriate and sufficient food sources for terns within access of the SPA.
	Factors affecting the population or its habitat should be under appropriate control. The number of chicks successfully fledged in the SPA and beyond is sufficient to help sustain the population. Actions or events likely to impinge on the sustainability of the population are under control. There should be no mammalian land predators present in the SPA, and control measures should be in place to ensure that accidental introduction does not take place.

C.5 Ynys Seiriol/ Puffin Island SPA

Characteristics of Habitats Site

Name and code	Ynys Seiriol / Puffin Island UK9020285
General site character	Humid grassland, Mesophile grassland (34%) Heath, Scrub, Maquis and Garrigue, Phygrana (24%) Shingle, Sea cliffs, Islets (42%)
Location and distance from the Scheme	7km north north-west
Size (ha)	31.32
Qualifying features	Article 4.2 qualification (79/409/EEC) During the breeding season the area regularly supports: Cormorant (North-western Europe) 1.35% of the breeding population 5 year mean for 1996 – 2000.
Vulnerability of the Habitats Site (any information available from the standard data forms on potential effect pathways)	Negative impacts – High rank - Interspecific faunal relations Negative impacts – Medium rank - Biocenotic evolution, succession Negative impacts – Low rank - Marine water pollution
Conservation objectives	Feature 1: Breeding population of cormorant <i>Phalacrocorax carbo</i> The conservation objective for the Cormorant is to achieve and maintain favourable conservation status, in which all the following conditions are satisfied: - The number of breeding cormorants within the SPA are stable or increasing. - The abundance and distribution of prey species are sufficient to support this number of breeding pairs and for successful breeding. - The management and control of activities or operations likely to adversely affect the Cormorants, is appropriate for maintaining the feature in favourable condition and is secure in the long"term."

C.6 Gogledd Môn Forol/ North Anglesey Marine SAC

Characteristics of Habitats Site

Name and code	Gogledd Môn Forol/ North Anglesey Marine SAC UK0030398
General site character	Marine area (100%) A mixture of hard substrate and sediments, including rock, coarse sediment, sand and mud. Full salinity. Water depths between Mean Low Water Tide and 100m.
Location and distance from the Scheme	21km north-west
Size (ha)	324949
Qualifying features	Annex II species that are a primary reason for selection of this site: Harbour porpoise (<i>Phocoena phocoena</i>)
Vulnerability of the Habitats Site (any information available from the standard data forms on potential effect pathways)	Negative impacts – Medium rank • Marine water pollution Negative impacts – Low rank • Shipping lanes, ports, marine constructions • Fishing and harvesting aquatic resources • Military use and civil unrest • Exploration and extraction of oil or gas • Renewable abiotic energy use
Conservation objectives	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining Favourable Conservation Status (FCS) for Harbour Porpoise in UK waters by ensuring that: • Harbour porpoise is a viable component of the site; • There is no significant disturbance of the species; and • The condition of supporting habitats and processes, and the availability of prey is maintained.

D. Wintering Bird Report



Environment, Roads & Facilities

Flood Risk & Infrastructure

Llanfairfechan Coastal Defences

Over Wintering Bird Survey Report

September 2024

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Executive summary

Over wintering bird surveys were undertaken from November 2021 to February 2022 relating to the Llanfairfechan Coastal Defence Scheme, North Wales ("the Scheme").

The surveys were undertaken twice monthly (to include a high tide and low tide survey) to provide information on the local over wintering bird communities present and to highlight any potential for ornithological impacts and associated constraints that may be imposed upon the proposed development.

The purpose of this report is to document the findings of the overwintering bird surveys, to inform the proposed development and provide appropriate recommendations.

The survey method applied was The British Trust for Ornithology's Wetland Bird Survey, 'look-see' methodology with the entire Scheme area covered during the survey period. Important habitat areas identified within the Scheme survey area for overwintering birds include the boating pool and adjacent grassed areas, mouth of the Afon Ddu, intertidal area north of the Afon Ddu and the upper shore in the east and western ends of the Scheme area.

A total of 27 species were recorded during the surveys. Of these, four SPA species were observed (cormorant, great-crested grebe, oystercatcher and curlew). Oystercatcher were observed in moderate numbers whereas the others were present however, in much lower numbers.

General construction safeguards are recommended to be implemented for the Scheme, these include:

- Timing of works:
 - Appropriate tide cycle working i.e. working at mid-low tide only; and
 - Working during daylight hours only, avoiding the need for artificial lighting.
- Given that avoidance of the over wintering season is not possible for this Scheme, deploying an ecological watching brief, to monitor effects during works and with set procedures to pause/restart and stop or reschedule works should adverse effects be observed; and
- Toolbox talks given to all workers to advise on how best to minimise disturbance.

Given proximity to Special Protection Areas, it is recommended that a Habitats Regulations Assessment is undertaken to assess the significance of effects on SPA qualifying species and define the requirements of any mitigation.

1 Introduction

1.1 Project background

The sea defences at Llanfairfechan extend for approximately 1.8km around the coastline, comprising several forms of construction, using masonry, mass concrete and rock armour. The defences under consideration extend north-east to south-west from Shore Road East to the Afon Ddu (Llanfairfechan) and provide some protection to the promenade and town. However they are subject to overtopping during storm events and with climate change, the frequency and severity of these events is anticipated to increase. A section of the sea wall was breached during a storm in October 2021 with further damage to the frontage occurring in November and December that year. Storm Pierrick in April 2024 resulted in a flooding event across the entire Llanfairfechan frontage, including flooding of the properties lining the promenade. As a result, there is a need to improve the coastal defences along the frontage.

1.2 Site location

Llanfairfechan is a seaside town in North Wales, within the administrative area of CCBC. The A55 trunk road passes through the town, running parallel to the London-Holyhead railway, both of which separate the main town from the waterfront. The Scheme extends from the mouth of the Afon Ddu (Llanfairfechan) to the west, to the eastern extent of the promenade (see Red Line Boundary Plan ERCF2305N PLAN 009). The beach predominantly comprises sand and shingle with regular wooden groynes. A slipway is located in the centre of the Scheme area along with four pedestrian accesses through the sea wall, these are fitted with storm boards and a flood gate over winter periods. A pedestrian promenade and cycleway run along the length of the sea wall and are backed by the Promenade road to the eastern end of the Scheme. In the central section of the Scheme area, the promenade is separated from the road by amenity grassland and boat storage and to the western end, a car park and café. Residential houses, guest houses, a garden, playground and cafes line the vehicular promenade.

The Scheme itself focusses on the sea wall which separates the promenade from the beach. Though the existing sea wall is in relatively good condition, some sections require maintenance works which will be undertaken as part of the Scheme.

The national grid references for the western and eastern Scheme boundaries are approximately (SH 67834 75452) and (SH 68544 75570) respectively (see Red Line Boundary Plan, ERCF2305N PLAN 006 in Appendix A).

1.3 Scheme description

1.3.1 Coastal defence works

The proposed scope of work (see Design Drawings ERCF2305N PLAN 010 Proposed Sections, ERCF2305N PLAN 011 Proposed Sections, ERCF2305N PLAN 012 Proposed Elevations and ERCF2305N PLAN 013 Proposed Elevations in Appendix A) comprises repairs to, and increasing the height of, 725m of the existing sea wall by approximately 500mm using concrete. The main design consists of a cantilever retaining wall constructed from the promenade on the landward side of the existing sea wall, however approximately 140m will need to be constructed from the seaward side (from the promenade path on the seaward side of the wall).

This 140m length is to be constructed in front of the junction of the Promenade highway with Shore Road East and a private property. The design will consist of a 1.5m excavation in the existing promenade on the seaward side. The works in this location are approx. 3.0m above the

Mean High Water Spring (MHWS) and approx. 2.5m from the foreshore, meaning the works will have minimal intrusion on the beach in this area.

The Scheme is currently at the outline design stage and the methodology is yet to be formally established, however it is anticipated that works will comprise the following:

- Temporary scaffolding (if required) - for re-pointing works alone, to be lifted from the promenade side of the sea wall onto the beach and which will be removed between tides (the intertidal area will be accessed by personnel on foot for construction of the scaffolding);
- Resin injection of existing cracks/joints on seaward side of the wall;
- Increase in the height of the sea wall and tie-in with the existing promenade on the landward side using concrete;
- Excavation of 1.5m into the existing hardstanding promenade on the seaward side and increase in the height of the sea wall for 140m at the eastern end;
- Installation of weep holes and flap valves along the sea wall (from the landward side); and
- Construction of grasscrete parking on the promenade side of the sea wall.

Access to the foreshore will be gained using existing accesses. Works will be limited to lower tidal states and no plant or machinery will be required on the intertidal area for the works.

Method statements and risk assessments will be produced by the contractor prior to commencement.

1.3.2 Anticipated programme

As funding is yet to be secured for Scheme construction, the programme has not yet been confirmed. However, is anticipated to take 19 weeks with proposed working hours of 07:00 – 19:00, taking into account tidal constraints (low tide working).

Works through the winter period 2024/25 are anticipated due to funding constraints and to avoid busy holiday seasons.

1.4 Ecological context

1.4.1 Site habitats

The Scheme survey area briefly comprised the following:

- Intertidal area;
- Marine area;
- Afon Ddu (Llanfairfechan);
- Boating pool and amenity grassland; and
- Buildings and structures lining the promenade.

1.4.2 Designated sites with bird interest

1.4.2.1 Traeth Lafan/ Lafan Sands SPA and SSSI

Llanfairfechan is located directly adjacent to the Traeth Lafan/Lafan Sands Special Protection Area (SPA)¹ which is a site afforded statutory protection, both for its habitats and the species that occur within them. The SPA covers 2,642ha, comprising a large area of intertidal sandflats

¹ Natural Resources Wales, 2008. Traeth Lafan/ Lafan Sands, Conway Bay SPA – Core management plan [Online] Available at: [CONSERVATION OBJECTIVES FOR N2K SITES \(naturalresources.wales\)](https://naturalresources.wales/conservation-objectives-for-n2k-sites)

and mudflats located on the eastern edge of the Menai Strait. It regularly supports high numbers of wintering waterbirds such as oystercatcher and curlew. The site acts as a refuge area for oystercatchers displaced from the Dee estuary during storm conditions and is also an important moulting ground for great crested grebe (*Podiceps cristatus*) in the late summer/early autumn. In summary, designated features comprise Eurasian oystercatcher (*Haematopus ostralegus*), Eurasian curlew (*Numenius arquata*), red-breasted merganser (*Mergus serrator*), great crested grebe (*Podiceps cristatus*) and common redshank (*Tringa totanus*).

The SSSI² also comprises intertidal habitats and is designated for its dwarf eelgrass (*Zostera noltii*). It is the third most important site in Wales for wintering waterbirds, with an annual peak of 10,000 – 14,000 waders comprising 10 species. There are also up to 1,500 wintering duck. The sandflats are of national importance for great-crested grebe and red-breasted merganser (*Mergus serrator*), and regionally important for shelduck (*Tadorna tadorna*).

1.4.2.2 Liverpool Bay SPA

The Scheme is also located in close proximity to the Bae Lerpwl/Liverpool Bay SPA³ (approximately 250m south). The SPA covers an area of approximately 252,758ha and regularly supports approximately 6.89% of the British populations of red-throated diver (*Gavia stellata*), 10.31% of the biogeographical population of common scoter (*Melanitta nigra*), 6.84% of the British population of little tern (*Sternula albifrons*), 1.8% of the British population of common tern (*Sterna hirundo*) and also supports little gull (*Hydrocoloeus minutus*) (the population percentage of which is not given). In terms of use of the area, red-throated diver, common scoter and little gull are known as over wintering species, whilst little tern and common tern are summer visitors.

The Liverpool Bay SPA is also located approximately 250m from the sea wall at Llanfairfechan at its closest.

1.4.2.3 Ynys Seiriol/ Puffin Island SPA⁴

This SPA is located approximately 7km north north-west of Llanfairfechan. The SPA is designated as it regularly supports 1.35% of the NW European breeding population of cormorant (*Phalacrocorax carbo*).

1.4.2.4 Glannau Penmon – Biwmares SSSI⁵

Given its proximity to the Traeth Lafan, the shore of this SSSI provides an important high tide roost site for the waders that feed at Traeth Lafan.

1.4.2.5 Aber Afon Conwy Site of Special Scientific Interest (SSSI)⁶

The SSSI is located 6.5km east northeast of the site, of importance for its intertidal estuarine communities. In addition to its importance for terrestrial and invertebrate biology the site hosts frequently high numbers of waders, especially curlew (*Numenius arquata*), redshank (*Tringa totanus*) and oystercatcher (*Haematopus ostralegus*).

² NRW. Traeth Lafan SSSI citation [Online] Available at: [GWYNEDD/ARFON and ABERCONWY \(naturalresources.wales\)](http://GWYNEDD/ARFON and ABERCONWY (naturalresources.wales))

³ Natural England, 2012. Liverpool Bay / Bae Lerpwl Special Protection Area, Advice under Regulation 35(3) of The Conservation of Habitats and Species Regulations 2010 (as amended) [Online] Available at: [liverpool-bay-bae-lerpwl-spa-conservation-advice.pdf \(naturalresources.wales\)](http://liverpool-bay-bae-lerpwl-spa-conservation-advice.pdf (naturalresources.wales))

⁴ NRW, 2008. Ynys Seiriol/ Puffin Island Core management Plan [Online] Available at: [CYNGOR CEFN GWLAD CYMRU \(naturalresources.wales\)](http://CYNGOR CEFN GWLAD CYMRU (naturalresources.wales))

⁵ NRW, 2003. Glannau Penmon – Biwmares SSSI citation [Online] Available at: [CITATION \(naturalresources.wales\)](http://CITATION (naturalresources.wales))

⁶ NRW, 2003. Aber Afon Conwy SSSI [CITATION \(naturalresources.wales\)](http://CITATION (naturalresources.wales))

1.4.2.6 Other designated sites of relevance to bird species

The Menai Strait and Conwy Bay SAC⁷ is also located directly adjacent to the Scheme and is designated for its habitats, notably mudflats and sandflats not covered by seawater at low tide.

Although a non-statutory designation, the importance of the area for wild birds is also recognised by it lying within the Traeth Lafan, Conwy Bay Important Bird Area (IBA)⁸.

1.5 Purpose of this report

The purpose of this report is to set out the results of the over-wintering bird surveys undertaken by Mott MacDonald Ltd from November 2021 to February 2022 and to assess the potential impacts of the proposed Scheme, as far as is reasonably possible based on current understanding. Recommendations are provided for mitigation as appropriate.

⁷ JNCC, 2022. [Online] Available at: [Y Fenai a Bae Conwy/ Menai Strait and Conwy Bay - Special Areas of Conservation \(jncc.gov.uk\)](https://jncc.gov.uk/y-fenai-a-bae-conwy-menai-strait-and-conwy-bay-special-areas-of-conservation)

⁸ Bird Life International, 2024. Traeth Lafan, Conwy Bay IBA [Online] Available at: [BirdLife Data Zone](https://www.birdlife.org/datazone/species/index?quicksearch=Traeth+Lafan&results=1)

2 Survey Methodology

2.1 Scope of the surveys

The Scheme area was surveyed over the 2021/22 winter period by Mott MacDonald Ltd and CCBC ecologists. Results of these surveys have been outlined and discussed below in Section 3. The survey area extended from the north-eastern promenade extent to the north-western West Shore allotments, also including a 100m buffer area either side.

2.2 Wetland Bird Survey (WeBS) methodology

The British Trust for Ornithology's Wetland Bird Survey, 'look-see' methodology⁹ was implemented for the surveys. The methods involve surveying all of a predefined area.

The coast was walked within two hours either side of high and low tide and undertaken during falling and rising tidal states to obtain a good representation of the bird species present during each part of the tidal cycle. The coast was walked at a constant pace with surveyors stopping every 150m to scan the immediate bay and sea area.

Species identified by sight or sound were counted and recorded separately for each feature along the coastline using an appropriate digital mobile device. Particular attention was paid to the presence of over-wintering SPA species and notes taken on behaviour, location, time spent at location and existing disturbance levels and any species responses to these, where relevant.

In order to maintain a relatively consistent ability to detect bird activity, the surveys were conducted where practicable in optimal or near optimal conditions and avoiding periods of heavy rain and/or strong wind (above wind Force 4) wherever possible.

2.3 Data collection

Birds identified by sight or sound were registered electronically, using the ArcCollector application in conjunction with Survey123. The identification, numbers of each bird species and activities were noted throughout the data collection period. Only notable bird species were recorded, which includes those that are afforded additional legal status and are of conservation concern i.e. Red and Amber Listed species.

2.4 Personnel

Each of the surveys were undertaken by competent ornithological surveyors, in accordance with the requirements of BS42020:201318¹⁰.

2.5 Survey details

Details of the survey visits have been outlined below in Table 2.1.

⁹ Bibby et al., 2000. Bird Census Techniques. Second Edition. Academic Press, London. ISBN 0-12-095831-7

¹⁰ BSI, 2013. British Standard 42020: 2013. Biodiversity – Code of practice for planning and development. British Standards Institution, London

Table 2.1: Llanfairfechan survey details

Date	Tidal state	Start/finish time (BST)	Cloud cover (Oktas)	Wind speed (Beaufort scale)	Precipitation	Temperature (degrees Celsius)	Notes
2 nd November 2021	Low tide	12:45 – 14:00	7	2 Light breeze	No	10	Flat sea, good visibility, cool
3 rd November 2021	High tide	08:00 – 10:00	6	1 Light air	Yes - spitting	8	Spitting with rain, big waves
1 st December 2021	High tide	08:15 – 09:45	8	4 Moderate breeze	Yes - drizzle	8	Constraints in daylight hours - survey started later, large waves.
2 nd December 2021	Low tide	13:20 – 16:00	5	3 Gentle breeze	No	8	Due to traffic on the A55, the survey started a bit later. Large number of gulls rafting and roosting.
13 th January 2022	Low tide	12:00 – 14:45	1	3 Gentle breeze	No	7	
14 th January	High tide	08:30 – 10:30	0	0 Calm	No	5	Cool, clear and still day.
08 th February 2022	Low tide	08:00 – 10:15	8	5 Fresh breeze	No	12	
09 th February 2022	High tide	14:40 – 16:15	3	2 Light breeze	No	8	

Source: Mott MacDonald, 2022

2.6 Survey limitations

The absence of a species is not conclusive proof that a species is not present or that it will not be present in the future. However, the field surveys do provide a good comprehensive understanding of wintering bird species that exist within the Scheme's footprint and surrounding areas which are likely to be impacted by the proposed works. Surveys were carried out in daylight hours only and therefore species behaviour and locations during the hours of darkness and/or twilight have not been recorded.

Additionally, due to daylight hours and tidal constraints, some surveys started later or earlier with daylight hours.

3 Survey Results

3.1 Survey results

The surveys identified a total of 27 bird species. Table 3.1 summarised the conservation status and location of the species identified. Full results are provided in Appendix B.

Table 3.1: Species identified and their conservation status

Species	Max count	SPA species	SSSI species	Section 7 priority species ¹¹	Birds of conservation concern ¹²
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	200			✓	Amber
Brent goose (<i>Branta bernicla</i>)	10				Amber
Common gull (<i>Larus canus</i>)	2			✓*	Amber
Cormorant (<i>Phalacrocorax carbo</i>)	5	✓			Green
Curlew (<i>Numenius arquata</i>)	20	✓	✓	✓	Red
Dipper (<i>Cinclus cinclus</i>)	1				Amber
Eider (<i>Somateria mollissima</i>)	7				Amber
Great black-backed gull (<i>Larus marinus</i>)	8				Amber
Great-crested grebe (<i>Podiceps cristatus</i>)	1	✓	✓		Green
Greenshank (<i>Tringa nebularia</i>)	1				Amber
Grey heron (<i>Ardea cinera</i>)	1				Green
Greenfinch (<i>Chloris chloris</i>)	20				Red
Grey wagtail (<i>Motacilla cinerea</i>)	2				Amber
Herring gull (<i>Larus argentatus</i>)	300			✓	Red
House sparrow (<i>Passer domesticus</i>)	20			✓	Red
Lapwing (<i>Vanellus vanellus</i>)	45			✓	Red
Lesser black-backed gull (<i>Larus fuscus</i>)	5				Amber
Little egret (<i>Egretta garzetta</i>)	1				Green
Mallard (<i>Anas platyrhynchos</i>)	14				Amber
Mute swan (<i>Cygnus olor</i>)	9				Green
Oystercatcher (<i>Haematopus ostralegus</i>)	400	✓	✓		Amber
Pied wagtail (<i>Motacilla alba</i>)	1				Green
Red-breasted merganser (<i>Mergus serrator</i>)	1		✓		Amber
Redshank (<i>Tringa totanus</i>)	40		✓		Amber
Rock pipit (<i>Anthus petrosus</i>)	3				Green
Starling (<i>Sturnus vulgaris</i>)	50			✓	Red
Turnstone (<i>Arenaria interpres</i>)	16				Amber

*Dark-bellied brent goose (subsp. *bernicula*)

¹¹ Welsh Government, 2016. Section 7 Priority Species List [Online] Available at: [Wales Biodiversity Partnership - Section 7 \(biodiversitywales.org.uk\)](https://www.biodiversitywales.org.uk)

¹² BTO, 2021. Birds of Conservation Concern 5 [Online] Available at: [BB 2021 DECEMBER \(Med-res\) \(britishtobirds.co.uk\)](https://www.britishtobirds.co.uk)

3.1.1 Interpretation

Generally, the highest densities of birds were located at the mouth of the Afon Ddu. With the boating pool and surrounding grassed area providing roosting opportunities for numerous species.

3.1.1.1 High tide

At high tide, the boating pool and grassed areas surrounding it to the west of the Scheme area are utilised at high tide by mute swan, mallard and moderate numbers of gulls as a loafing and roosting area. During the February visit, 20 greenfinch were observed perched in the trees lining the boating pool. Dogs were noted to disturb roosting birds in this area from the grass into the pool on two of the visits.

Generally, limited bird numbers were present during the high tide surveys; during the November visit, most birds were observed in flight, passing over the site. Low numbers of redshank, turnstone and oystercatcher were noted feeding on the upper shore at the base of the seawall. During the November visit, moderate numbers of gulls were observed rafting north of the Pavilion car park with larger numbers present in the eastern half of the Scheme area rafting within 30m of the sea wall. For the remainder of the surveys generally, limited numbers of gulls were rafting. Individual cormorant, red-breasted merganser and great-crested grebe were noted feeding and loafing within 50m of the seawall.

West of the Scheme, adjacent to the listed buildings on the frontage, ten starling were observed roosting during the November visit. During the January visit, 20 house sparrow were observed perched in bushes of the front gardens lining the promenade.

The mouth of the Afon Ddu provided a high tide roosting and feeding site for gulls, redshank, turnstone, oystercatcher, mute swan and mallard. A dipper was observed during the November visit, feeding in the Afon Ddu, upstream of the footbridge.

3.1.1.2 Low tide

For the first survey in November, the area was surveyed up to the Glan y Mor Elias nature reserve. Here, approximately 45 lapwing and one pochard were observed roosting on the fields backing the beach.

The intertidal area north of the mouth of the Afon Ddu was predominantly utilised by the highest densities of birds. These comprises gulls, oystercatcher and curlew; moderate numbers of feeding redshank and turnstone were also noted. Low numbers of brent geese were also observed here during the January visit and seven eider were observed loafing on the water during the November visit. During the February visit, 400 oystercatcher were noted roosting on the mid-shore.

In the western end, the boating pool and grassed areas surrounding were still used for roosting and loafing however, in much lower numbers than during the high tide surveys. The Afon Ddu, south of the footbridge was utilised by pied wagtail and mallard for feeding and roosting.

Generally, lower densities of birds were observed in the eastern Scheme area, with those observed predominantly limited to the upper shore; these comprised low numbers of gulls, oystercatcher, curlew and a little egret. During the November visit, 50 starling were also noted feeding on the upper shore at the base of the seawall.

In the centre of the Scheme area, low numbers of gulls and oystercatcher were noted roosting on the upper intertidal along with little egret. The mid and low shore was used by limited numbers of birds.

3.1.2 Areas and habitats of value

The notable areas and habitats identified during the surveys include:

- The boating pool and adjacent amenity grassed areas;
- The Afon Ddu;
- Intertidal area north of the mouth of the Afon Ddu; and
- The upper shore in the east and western ends of the Scheme area, areas of mixed substrate and rockpools provide roosting and foraging opportunities.

4 Assessment of site and potential impacts

4.1 Site importance

The surveys were undertaken twice monthly, at the low and high tide from November 2021 to February 2022. These recorded the presence of 27 species within the Scheme area.

The western end of the Scheme area is considered to be of higher value, with the highest densities of birds present on the intertidal area and roosting on the boating pool and adjacent grassed areas. The eastern end provided roosting and feeding opportunities, however, was utilised by significantly less numbers. Lower numbers were observed at high tide, with gulls, oystercatcher and cormorant observed passing through the site however, the boating lake and upper shore in the western end of the Scheme area were utilised for roosting.

In terms of the SPA species, cormorant were present in very low numbers (maximum total count of five birds during the December surveys). They were observed flying over during the November, December and February high tide surveys and one bird was noted feeding at high tide (250m from the seawall) during the January survey.

Curlew were generally observed in low numbers in the western end, feeding out from the mouth of the Afon Ddu. Curlew were present in largest numbers during the December surveys, with a total count of 31 birds which is a low proportion of the number designated under Treath Lafan SPA (1500 birds).

One great-crested grebe was noted during the surveys, feeding out from the centre of the Scheme area approximately 60m from the sea wall during the February high tide survey.

Oystercatcher present in moderate to large numbers throughout the surveys (with the largest observation comprising 400 birds and total of 497 birds during the February low tide survey). Oystercatcher were present in larger numbers (with a total of 497 birds present during the February high-tide survey), though this is still significantly below the 5500 birds listed under the SPA, comprising 9% of the SPA population. They were mostly feeding and roosting on the intertidal area in the western end of the Scheme, located from the upper to the lower shore at the outfall of the Afon Ddu.

4.2 Potential impacts

Construction impacts on birds would likely include the following:

- Disturbance and/or displacement of overwintering birds (noise, light and/or visual); and
- Pollution incidents impacting birds

These could result in the following temporary effects:

- Reduction in species richness and/or abundance of bird species and numbers using areas in close proximity to the works.

5 Recommendations

The Scheme is located in proximity to the following designations:

- Traeth Lafan/ Lafan Sands SPA and SSSI;
- Liverpool Bay SPA;
- Menai Strait and Conwy Bay SAC;
- Aber Afon Conwy SSSI;
- Ynys Seiriol/ Puffin Island SPA (7km NNW); and
- Glannau Penmon – Biwmares SSSI (6km NW).

As a result, a Habitats regulations Assessment (HRA) will be required to assess the significance of any effects on bird species resulting from the works.

Based on the species recorded, it is considered that any mitigation required for SPA species, particularly curlew and redshank (which are prone to disturbance effects) would likely benefit other bird species wintering or on passage through the area.

Given the identified potential impacts above, mitigation measures will need to include best practice construction safeguards as well as specific measures to reduce disturbance to birds including:

- Timing of works:
 - Appropriate tide cycle working i.e. working at mid-low tide only; and
 - Working during daylight hours only, avoiding the need for artificial lighting.
- Deploying an ecological watching brief, to monitor effects during works and with set procedures to pause/restart and stop or reschedule works should adverse effects be observed; and
- Toolbox talks given to all workers to advise on how best to minimise disturbance.

The specific requirements for any mitigation will be defined by the HRA.

Appendices

A. Drawings

B. Full survey results

The surveys for the Scheme were undertaken from November 2021 to February 2022. Results have been set out in the following Tables. SPA designated species are in **bold**.

Table 5.1: Survey Visit 1 – 1st and 2nd November

Species	Distance from sea wall (at closest)	Average count per observation (min, max count)	Field observations
Low tide			
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	0m	5 (1,20)	Predominantly observed roosting on the upper shore throughout the survey area. Four birds were located adjacent to the boating pool. 20 on the intertidal area at the mouth of the Afon Ddu.
Common gull (<i>Larus canus</i>)	40m	2	Two birds roosting at the mouth of the Afon Ddu.
Curlew (<i>Numenius arquata</i>)	40m	1	Feeding in a rock pool on the intertidal area, north of the Afon Ddu.
Eider (<i>Somateria mollissima</i>)	80m	7	Loafing on the intertidal area in the centre of the Scheme area.
Greenshank (<i>Tringa nebularia</i>)	30m	1	Feeding north of the Afon Ddu.
Grey wagtail (<i>Motacilla cinerea</i>)	20m	2	Observed flying west down the river.
Herring gull (<i>Larus argentatus</i>)	0m	5 (1,15)	Predominantly observed roosting, feeding and loafing on the upper shore throughout the survey area. One bird observed loafing on the boating pool.
Lapwing (<i>Vanellus vanellus</i>)	1km	45	All observed roosting on the fields within the Glan y Mor Elias nature reserve.
Lesser black-backed gull (<i>Larus fuscus</i>)	20m	1	Roosting in the end end of the Scheme area.
Little egret (<i>Egretta garzetta</i>)	20m	1	Observed feeding on the upper shore in the centre of the Scheme area.
Mute swan (<i>Cygnus olor</i>)	45m	4 (1,7)	One observed loafing in the pond and a further seven north of Afon Ddu.
Oystercatcher (<i>Haematopus ostralegus</i>)	0m	10 (1,50)	Predominantly feeding throughout the upper-mid intertidal.
Redshank (<i>Tringa totanus</i>)	25m	1	Feeding in a rockpool on the western end of the Scheme area.
Starling (<i>Sturnus vulgaris</i>)	4m	35 (20,50)	50 birds noted feeding on rocks on the upper shore in the eastern end of the survey area. A further 20 observed roosting on the fields in the western end of the survey area within Glan y Mor Elias nature reserve.
High tide			
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	0m	12 (1,40)	40 birds observed roosting on the grass beside the pond. One bird roosting on the seawall in the western end of the Scheme area. Five birds noted flying south.
Cormorant (<i>Phalacrocorax carbo</i>)	20m	1 (1,2)	All observed flying north.

Species	Distance from sea wall (at closest)	Average count per observation (min, max count)	Field observations
Herring gull (<i>Larus argentatus</i>)	50m	13 (3,30)	Three and eight birds observed flying south. 30 were observed flying 1km offshore. 10 birds loafing on the pond.
Mute swan (<i>Cygnus olor</i>)	100m	9	Loafing on the boating pool.
Oystercatcher (<i>Haematopus ostralegus</i>)	0m	25 (1,60)	One observed roosting on the grass by the pond was disturbed by a dog at a distance of 15m. Three flocks of 20 birds were observed flying north.
Redshank (<i>Tringa totanus</i>)	20m	20	Flying north 20m from the seawall.
Rock pipit (<i>Anthus petrosus</i>)	0m	3	Feeding on the upper shore in the eastern Scheme area.
Starling (<i>Sturnus vulgaris</i>)	290m	10	Roosting in a tree adjacent to the listed terraces on the seafront in the western survey area.

Source: Mott MacDonald, 2022

Table 5.2: Survey Visit 2 – 1st and 2nd December

Species	Distance from sea wall	Average count per observation (min, max count)	Field observations
Low tide			
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	10m	83 (10,200)	200 feeding at the low shore in the western Scheme area. 50 feeding and roosting on the upper shore by the Afon Ddu. In the western end, 10 and 40 respectively were feeding on the upper shore.
Curlew (<i>Numenius arquata</i>)	30m	20	Feeding on the upper shore.
Great black-backed gull (<i>Larus marinus</i>)	80m	4 (1,8)	One bird feeding on the mid shore in the western end with a further 8 feeding at the low shore.
Grey heron (<i>Ardea cinera</i>)	60m	1	Flying north-west.
Grey wagtail (<i>Motacilla cinerea</i>)	5m	1	Flying south-east up the Afon Ddu.
Herring gull (<i>Larus argentatus</i>)	10m	180 (60, 300)	300 feeding at the low shore in the western Scheme area. 60 birds roosting on the upper shore by the Afon Ddu and a further 40 feeding on the mid shore. 25 feeding on the upper shore in the eastern end.
Lesser black-backed gull (<i>Larus fuscus</i>)	100m	4 (3,5)	5 birds feeding at the low shore and a further three feeding on the mid shore.
Little egret (<i>Egretta garzetta</i>)	50m	1	Feeding on the upper shore.
Mallard (<i>Anas platyrhynchos</i>)	85m	12	Loafing on the boating pool.
Mute swan (<i>Cygnus olor</i>)	65m	8	Feeding by the boating pool.
Oystercatcher (<i>Haematopus ostralegus</i>)	8m	31 (1,60)	Feeding throughout the intertidal area.
Redshank (<i>Tringa totanus</i>)	35m	30 (20,40)	Feeding on the mid an upper shore.
High tide			
Black-headed gull	15m	30 (8,60)	Rafting on the upper intertidal throughout the survey area. 60 birds observed roosting on the grass adjacent

Species	Distance from sea wall	Average count per observation (min, max count)	Field observations
<i>(Chroicocephalus ridibundus)</i>			to the boating pool and a further 25 roosting on the upper intertidal adjacent to the Afon Ddu.
Brent goose (<i>Branta bernicla</i>)	30m	10	Flying north from the Afon Ddu/ boating pool.
Common gull (<i>Larus canus</i>)	20m	2	Rafting on the upper intertidal in the centre of the survey area.
Cormorant (Phalacrocorax carbo)	30m	5	Observed flying north-west over the survey area.
Curlew (Numenius arquata)	35m	20	Feeding at the mouth of the Afon Ddu.
Dipper (<i>Cinclus cinclus</i>)	10m	1	Feeding in the river mouth south of the foot bridge.
Great black-backed gull (<i>Larus marinus</i>)	65m	2	Roosting on the grass adjacent to the boating pool.
Herring gull (<i>Larus argentatus</i>)	7m	57 (20,150)	90 birds were observed roosting on the grass adjacent to the boating pool. All other birds were rafting on the upper intertidal, occasionally taking flight with the waves.
Lesser black-backed gull (<i>Larus fuscus</i>)	10m	3 (1,4)	Two birds roosting on the grass adjacent to the boating pool. All others were rafting on the upper intertidal, occasionally taking flight with the waves.
Mallard (<i>Anas platyrhynchos</i>)	80m	10	Loafing on the boating pool.
Mute swan (<i>Cygnus olor</i>)	115m	9	Loafing on the boating pool.
Oystercatcher (Haematopus ostralegus)	35m	3 (1,8)	One bird observed flying south. Eight feeding on the upper intertidal on the west side of the Afon Ddu and one roosting on the grass adjacent to the boating pool.
Redshank (<i>Tringa totanus</i>)	10m	7 (4,10)	Observed feeding on the rocks below the seawall.
Rock pipit (<i>Anthus petrosus</i>)	0m	1	Observed feeding on the rocks adjacent to the sea wall at the mouth of the Afon Ddu.
Turnstone (<i>Arenaria interpres</i>)	0m	10	Observed feeding on the rocks adjacent to the sea wall at the mouth of the Afon Ddu.

Source: Mott MacDonald, 2022

Table 5.3: Survey Visit 3 – 13th and 14th January

Species	Distance from sea wall	Average count per observation (min, max count)	Field observations
Low tide			
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	70m	9 (1,30)	Observed roosting throughout the mid shore. 30 were observed roosting on the grass by the boating pool.
Brent goose (<i>Branta bernicla</i>)	105m	2	Roosting on the mid shore out from the Afon Ddu.
Common gull (<i>Larus canus</i>)	95m	2	Roosting on the mid shore.

Species	Distance from sea wall	Average count per observation (min, max count)	Field observations
Curlew (Numenius arquata)	140m	3 (1,5)	Five birds observed roosting at the low shore in the eastern Scheme area. One bird feeding at the low shore out from the Afon Ddu.
Great black-backed gull (<i>Larus marinus</i>)	85m	1	Roosting on the intertidal out from the Afon Ddu at the mid shore.
Herring gull (<i>Larus argentatus</i>)	0m	11 (2,60)	Observed roosting and feeding throughout the intertidal area. The largest density was found at the mouth of the Afon Ddu, with 60 birds roosting and 5 observed flying south.
Lesser black-backed gull (<i>Larus fuscus</i>)	85m	1	Roosting at the mid shore in the centre of the survey area.
Little egret (<i>Egretta garzetta</i>)	30m	1 (1,1)	Feeding on the upper shore in the centre of the survey area.
Mallard (<i>Anas platyrhynchos</i>)	130m	14	Loafing on the boating pool.
Mute swan (<i>Cygnus olor</i>)	170m	7	Seven birds roosting on the grass, disturbed into the boating pool by a dog.
Oystercatcher (Haematopus ostralegus)	8m	24 (1,100)	Feeding and roosting throughout the intertidal area, though in higher densities out from the mouth of the Afon Ddu with 100 birds located at the low shore here. 30 birds were noted flying south-west.
Redshank (<i>Tringa totanus</i>)	85m	10	Observed feeding at the mid shore north of the Afon Ddu.
Turnstone (<i>Arenaria interpres</i>)	90m	16	Feeding at the mid shore north of the Afon Ddu.
High tide			
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	10m	6 (1,12)	One bird feeding on the grass between the Pavilion café and seating shelter, a further 12 were loafing on the boating pool.
Cormorant (Phalacrocorax carbo)	250m	1	Feeding out from the Pavilion car park.
Great black-backed gull (<i>Larus marinus</i>)	20m	1 (1,1)	Two birds observed loafing on the intertidal area, one on the upper shore in the eastern Scheme area and the other at the low shore in the centre of the Scheme area.
Herring gull (<i>Larus argentatus</i>)	200m	2	Loafing on the low shore out from the Pavilion car park.
House sparrow (<i>Passer domesticus</i>)	5m	20	Feeding south of the sea wall.
Lesser black-backed gull (<i>Larus fuscus</i>)	185m	1	Roosting on the low shore out from the Pavilion car park.
Mute swan (<i>Cygnus olor</i>)	80m	8	Feeding on the boating pool.
Oystercatcher (Haematopus ostralegus)	55m	5 (1,8)	Eight birds observed feeding on the upper shore west of the Afon Ddu. A further six noted flying north.
Redshank (<i>Tringa totanus</i>)	90m	4 (5,8)	Five birds feeding and a further three roosting on the upper shore west of the Afon Ddu.

Species	Distance from sea wall	Average count per observation (min, max count)	Field observations
Rock pipit (<i>Anthus petrosus</i>)	0m	1	Feeding on the promenade in the eastern end of the Scheme area.
Turnstone (<i>Arenaria interpres</i>)	50m	15	Roosting on the mid-shore in the western end of the Scheme area.

Source: Mott MacDonald, 2022

Table 5.4: Survey Visit 4 – 8th and 9th February

Species	Distance from sea wall	Average count per observation (min, max count)	Field observations
Low tide			
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	5m	3 (1,8)	Eight birds roosting on the grass by the boating pool. Six birds feeding on the mid shore north of the Afon Ddu. Numerous individuals feeding throughout the upper intertidal with one feeding on the grassed area east of the Pavilion car park.
Curlew (Numenius arquata)	5m	3 (1,7)	Seven birds roosting on the upper shore in the eastern end were noted to be disturbed by a dog. Three birds were feeding on the grass by the boating pool and a further four feeding on the upper shore in the western end.
Great black-backed gull (<i>Larus marinus</i>)	0m	2 (1,4)	One bird observed feeding on the upper shore north of the Pavilion car park. Four birds flying north over the eastern end of the Scheme area.
Herring gull (<i>Larus argentatus</i>)	5m	11 (2,40)	40 birds observed roosting on the upper intertidal west of the mouth of the Afon Ddu. A further 22 were noted roosting and feeding on the upper intertidal north of the Pavilion car park.
Little egret (<i>Egretta garzetta</i>)	10m	1	Feeding amongst the rocks on the upper shore north of Victoria gardens.
Mallard (<i>Anas platyrhynchos</i>)	35m	11 (10,12)	Ten birds loafing up the Afon Ddu, south of the footbridge. 12 birds roosting on the boating pool.
Mute swan (<i>Cygnus olor</i>)	20m	3 (2,6)	On the boating pool, two birds were loafing with six roosting on the waters edge, a further 2 were roosting adjacent to the mouth of the Afon Ddu and two birds were observed flying over.
Oystercatcher (Haematopus ostralegus)	15m	52 (1,400)	400 birds observed roosting on the upper shore north of the Pavilion car park, a further 34 were noted on the grass adjacent to the boating pool. Birds were observed feeding throughout the Scheme area on the upper intertidal.
Pied wagtail (<i>Motacilla alba</i>)	70m	1	Feeding adjacent to the sea wall west of the Afon Ddu.
Redshank (<i>Tringa totanus</i>)	10m	1 (1,2)	All observed feeding on the upper intertidal, two in the centre of the Scheme area and one north-west of the boating pool.
High tide			
Black-headed gull (<i>Chroicocephalus ridibundus</i>)	25m	10 (1,35)	Two birds feeding in Victoria gardens with a further bird feeding on an area of amenity grassland east of the Pavilion car park. Two observed flying west across the upper intertidal. 40 birds were observed roosting at the mouth of the Afon Ddu on the upper shore with a further 30 observed loafing on the boating pool.
Common gull (<i>Larus canus</i>)	30m	1	Observed feeding on the skate park.

Species	Distance from sea wall	Average count per observation (min, max count)	Field observations
Cormorant (<i>Phalacrocorax carbo</i>)	130m	1	Flying north-east.
Curlew (<i>Numenius arquata</i>)	0m	1	Flying south over the eastern end of the Scheme area.
Great black-backed gull (<i>Larus marinus</i>)	20m	1	Loafing on the upper intertidal area.
Great-crested grebe (<i>Podiceps cristatus</i>)	60m	1	Feeding out from the centre of the Scheme area.
Grey heron (<i>Ardea cinerea</i>)	0m	1	Flying west.
Greenfinch (<i>Chloris chloris</i>)	170m	20	Perched on pine trees backing the boating pool.
Herring gull (<i>Larus argentatus</i>)	5m	5 (1,20)	One bird roosting on the roof of the Pavilion café. Three flying west 50m from the seawall. Two loafing on the boating pool. 20 birds flying overhead around the listed buildings west of the boating pool and a further 10 flying over the boating pool itself. 19 birds roosting on the intertidal at the mouth of the Afon Ddu. Two birds rafting on the water 20m from the seawall. One bird feeding in Victoria gardens.
House sparrow (<i>Passer domesticus</i>)	35m	10	Observed perched on a hedge lining a property off Promenade Road in the centre of the Scheme area.
Mallard (<i>Anas platyrhynchos</i>)	45m	8 (5,12)	12 birds observed roosting up the Afon Ddu and a further 5 noted roosting on the western edge of the boating pool.
Mute swan (<i>Cygnus olor</i>)	15m	4 (2,6)	Six birds loafing on the boating pool and a further two observed roosting on the upper intertidal area by the mouth of the Afon Ddu.
Oystercatcher (<i>Haematopus ostralegus</i>)	5m	8 (2,15)	12 birds roosting on the upper shore in the eastern end of the Scheme area. 15 birds roosting on the upper shore adjacent to the west of the Afon Ddu, a further 10 were also roosting further west, north-west of the boating pool. Four birds were also noted flying north-east across the mid intertidal area.
Red-breasted merganser (<i>Mergus serrator</i>)	20m	1	Loafing out from the Pavilion car park.
Redshank (<i>Tringa totanus</i>)	300m	2	Feeding on the upper shore north of the listed buildings in the western end.
Starling (<i>Sturnus vulgaris</i>)	37m	20	Perched on bushes in front of houses in the centre of the Scheme area.
Turnstone (<i>Arenaria interpres</i>)	155m	5	Feeding on the upper intertidal area, north-west of the boating pool.

Source: Mott MacDonald, 2022