



Old Colwyn Coastal Defence and Active Travel Scheme Environmental Statement

Volume 2: Technical Appendix 8 - Biodiversity
(Marine and Terrestrial)

July 2020

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Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
P01	July 2020	A. Jones	N. Spofforth	C. Williams	First Issue

Document reference: 415437-MMD-00-XX-RP-N-1709

Information class: Standard

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Appendix 8.1 – Legislation Summary

Appendix A: Species Specific Legislation

A.1 Species Specific Legislation

A.1.1 The following information in this appendix relates to species assessed within this document as being potentially affected by the proposed works and is a summary version of the full legislative text only. The relevant acts referred to in this appendix should be referred to for the full legislative text.

Breeding and Overwintering Birds

A.1.2 All breeding and overwintering birds are protected under the Wildlife and Countryside Act (WCA) 1981¹ (as amended) which prohibits the intentional killing, injuring or taking of any wild bird (and) the taking, damaging or destroying eggs or of the nest (whilst being built or in use). Schedule 1 bird species are afforded greater protection under the WCA. It is an offence to disturb Schedule 1 birds or the dependants in the vicinity of their nest site.

Bats

A.1.3 All bat species are protected under the WCA and the Conservation of Habitat and Species Regulations 2017 (as amended). This means it is illegal to intentionally or deliberately kill, injure, disturb or capture these species or damage, destroy or obstruct access to any structure, breeding or resting place used by them.

Badger

A.1.4 Badgers and their setts are protected under the Protection of Badgers Act 1992². This makes it an offence to:

- Directly or indirectly kill, injure or take badgers;
- Cruelly ill-treat a badger;
- Dig for badger;
- Intentionally or recklessly damage or destroy a badger sett, or obstruct access to it;
- Cause a dog to enter a badger sett; and,
- Disturb a badger when it is occupying a sett.

Terrestrial Invertebrates

A.1.5 Beaded chestnut, blood-vein, buff ermine, large wainscot, rustic, September thorn, Slender Ground-hopper and small emerald are listed under Section 7 Species of Principal Importance under the Environment (Wales) Act 2016³.

Reptiles

A.1.6 Reptiles have varying degrees of protection under the WCA. The four widespread species of reptiles that are protected under Schedule 5 of the WCA are common lizard (*Zootoca vivipara*), slow-worm (*Anguis fragilis*), grass snake (*Natrix natrix*) and adder (*Vipera berus*). This means it is prohibited to intentionally kill, injure or trade these species.

¹ The Wildlife and Countryside Act 1981. [online]. Available at <http://www.legislation.gov.uk/ukpga/1981/69>

² Protection of Badgers Act 1992. [online]. Available at: <http://www.legislation.gov.uk/ukpga/1992/51>

³ The Environment (Wales) Act 2016. [online]. Available at: <http://www.legislation.gov.uk/anaw/2016/3/contents/enacted>

Sabellaria alveolata reef structures

A.1.7 *Sabellaria alveolata* is a Section 7 priority habitat in Wales. These polychaete worms themselves are not protected, but the biogenic reefs they create are listed as an Annex I habitat by the Habitats Directive (92/43/EEC).

Marine Mammals

A.1.8 All cetacean species are protected in the UK under the WCA. This makes it illegal to:

- kill or injure a cetacean intentionally; and
- ‘recklessly disturb’ a cetacean – e.g. causing it stress.

A.1.9 Seal species are protected in Britain under the Conservation of Seals Act 1970⁴.

Fish

A.1.10 The Sea Fish (Conservation) Act 1967⁵ protects marine fish species through the following:

- Placing size limits on fish species caught;
- Regulations on nets and other fishing gear;
- The power to restrict sea fishing; and
- The power to enforce penalties for offences.

Shellfish

A.1.11 The Sea Fisheries (Shellfish) Act 1976⁶ (as amended) sets out to protect shellfish stocks including crustaceans and molluscs:

- Ability to make orders for shellfish;
- Regulations on the taking and sale of certain crabs and lobsters (including preventing the selling of egg-bearing or soft-shelled edible crab).

⁴ The Conservation of Seals Act, 1970 [online]. Available at: <http://www.legislation.gov.uk/ukpga/1970/30>

⁵ The Sea Fish (Conservation) Act, 1967 [online]. Available at: <http://www.legislation.gov.uk/ukpga/1967/84>

⁶ The Sea Fisheries (Shellfish) Act, 1976 [online]. Available at: <http://www.legislation.gov.uk/ukpga/1976/83/contents>

Appendix 8.2 – Preliminary Ecological Appraisal Report



Colwyn Bay

Preliminary Ecological Appraisal Report

July 2020

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Colwyn Bay

Preliminary Ecological Appraisal Report

July 2020

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	21/02/2020	L Woolley	J Bates	E C Probert	First Issue
B	07/04/2020	A Morley	L Woolley	E C Probert	Second Issue
C	23/07/2020	A Morley	L Woolley	E C Probert	Third Issue

Document reference: 410895-MMD-N-R-00-XX-1701

Information class: Standard

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Executive summary

Mott MacDonald Limited has been commissioned by Conwy County Borough Council (CCBC) to complete a Preliminary Ecological Appraisal for two coastal defence and promenade improvement Schemes within Colwyn Bay, north Wales. The Victorian built coastal defences around Colwyn Bay from Rhos-on-Sea in the west to Old Colwyn in the east have suffered from undermining, corrosion, partial collapses and degradation with frequent overtopping events occurring at Spring Tides. Phase 1abc and 2a of the Colwyn Bay Waterfront Project have already been completed which included the construction of a 150m groyne and Porth Eirias, beach recharge and promenade improvements in the central Colwyn Bay area. Subsequent to this, CCBC are now seeking to provide a permanent upgrade of the coastal defences to protect the western and eastern areas of the bay concurrently with improvements to the promenade to facilitate active travel and regeneration. These proposed schemes are 'Colwyn Bay Waterfront Project Phase 2b' to the west and 'Old Colwyn Coastal Defence and Active Travel Scheme' to the east. The proposed works will include upgrades to the promenade, new coastal defences and beach recharge.

A desk-based assessment identified seven Statutory Designated sites within 2.0km and three non-statutory designations within 1.0km of the survey area. The closest and most relevant is the Liverpool Bay Special Protection Area (SPA) and Important Bird Area (IBA), located 45m north of the survey area, designated for important wading bird species. An assessment of the birds identified, and potential impacts is included within the Overwintering Bird Report (Mott MacDonald Limited, 2020). Due to the close proximity of this designation, a Habitats Regulations Assessment (HRA) screening is required for the scheme along with an application for a marine licence for the works. The nearest non-statutory designation is Coed Rhos Fossil Woodland, located in the west of the survey area. It is designated for its geological features and therefore not considered within the scope of this assessment. Other non-statutory designations are located over 0.6km away.

The survey area itself largely supports habitats of low ecological value save for the priority habitats 'Subtidal sand and gravels', '*Sabellaria alveolata* Reefs' (Honeycomb worm) and 'Blue mussel beds on sediment'. Further assessment for these habitats is recommended once the exact scope of works is finalised. However, based on the proposals, it is anticipated that the subtidal sand and gravels would be unaffected (beach recharge would add to this habitat) provided the sand was sourced from local areas. The '*Sabellaria alveolata* Reefs' could be damaged during construction activities or affected by changes to water quality / turbidity. In terms of the mussel beds, there are two mussel beds in the survey area (one within the west and one in the east), both on sand, which are in poor condition. The mussel bed in the west would be lost under the beach recharge works. Mussel beds are also known to be present beyond the survey area (at the toe of the groynes in the west) which could be affected by increased sediment and turbidity, albeit this would be temporary. Recommendations have been included in respect of these.

The survey area is considered to have habitats suitable to support roosting bats (two structures, namely a shelter and toilet block, both low potential), foraging bats (under street lights), badger, other mammals, nesting birds, overwintering and foraging birds (assessed in Mott MacDonald Limited, 2020), reptiles, fish and marine invertebrates. Based on the proposed scope of works, recommendations are included in the form of further survey and assessment, construction safeguards, design of landscaping and retention of habitats. Opportunities for enhancement have been highlighted.

1 Introduction

1.1 Background and Site Location

Mott MacDonald Limited has been commissioned by Conwy County Borough Council (CCBC) to complete a Preliminary Ecological Appraisal for two coastal defence and promenade improvement schemes within Colwyn Bay, north Wales (see Map 1).

Map 1: Colwyn Bay Location



Source: DigitalGlobe, Microsoft, Earthstar Geographics | Esri UK, Esri, HERE, Garmin, METI/NASA, USGS

The Victorian built coastal defences around Colwyn Bay from Rhos-on-Sea in the west to Old Colwyn in the east have suffered from undermining, corrosion, partial collapses and degradation with frequent overtopping events occurring at Spring Tides.

Phase 1abc and 2a of the Colwyn Bay Waterfront Project have already been completed which included the construction of a 150m groyne and the Porth Eirias beach recharge and promenade improvements in the central Colwyn Bay area.

Subsequent to this, CCBC are now seeking to provide a permanent upgrade of the coastal defences to protect the western and eastern areas of the bay concurrently with improvements to the promenade to facilitate active travel and regeneration.

These proposed schemes are illustrated on Map 2 (along with the Phase 1 area), namely:

- 'Colwyn Bay Waterfront Project Phase 2b' to the west; and
- 'Old Colwyn Coastal Defence and Active Travel Scheme' to the east.

These will be referred to as the Schemes within this report. These are the two areas targeted by the Preliminary Ecological Appraisal albeit the intervening area has been mapped for completeness.

Map 2: Scheme Location within Colwyn Bay



Source: 'ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community'. Note The completed Colwyn Bay Waterfront Phase 2a Scheme area straddles the Phase 1 and Phase 2 areas.

The national grid references for the western and eastern boundaries of each Scheme are approximately:

- The Colwyn Bay Waterfront Project Phase 2b west (285746, 378889) to east (287079, 378699); and
- Old Colwyn Coastal Defence and Active Travel Scheme west (284270, 380524) to east (284975, 379499).

1.2 Proposed Scope of Coastal and Promenade Works

1.2.1 Old Colwyn Coastal Defence and Active Travel Scheme

The proposed scope of work comprises a combination of coastal defence, promenade and active travel improvements:

Coastal defence improvements include:

- The construction of a rock revetment approximately 32m in cross-sectional width and 1.15km in length, with associated modifications to existing surface water outfalls on the beach to extend them through the new revetment;

- A new access build-out area to be constructed in the western half of the Scheme area which would have several functions, including providing a greater area for pedestrian access; Equality Act compliant ramp access and stepped access to the beach, along with landscaped seating steps at varying levels, to the beach access;
- New pedestrian accesses through the proposed revetment to comprise three sets of beach access steps perpendicular to the linear rock revetment;
- A dedicated fishing platform in the Splashpoint Area to keep anglers at a safe distance from active travel routes: and
- The raising of the Promenade to the west of Rotary Way and the raising of the Promenade and highway to the east of Rotary Way with associated access provision.

Active Travel improvements, to include new cycleway layouts, improved pedestrian access areas, improved lighting, new handrailing, improved picnic and outdoor spaces, improved signage and landscaping.

In addition, a series of ecological and educational enhancements have been incorporated into the proposals including new intertidal habitat creation, classification of the beach as a plastic free zone, incorporation of wildflower grassland into new amenity areas and enhancements to the network rail embankment.

1.2.2 Colwyn Bay Waterfront Project Phase 2b

The proposed scope of work is anticipated to comprise a combination of coastal defence and promenade improvements. The scope has not been finalised, however it is considered likely that the majority of the following aspects will be incorporated:

- Coastal defence works to comprise (from Horizon Shine to the southern boundary of Rhos-on-Sea Harbour):
 - Beach recharge to bring beach levels adjacent to the promenade up to those in the Phase 1 area; and
 - Modifications to the rock groyne adjacent to Rhos-on-Sea Harbour.
- Coastal defence works to comprise (from Rydal Boat store to the southern boundary of Rhos-on-Sea Harbour):
 - Repairs to the existing sea wall;
 - Removal of remaining areas of existing rock revetment located against the sea wall in recharge areas for re-use elsewhere; and
 - Modification of outfalls as appropriate to enable them to continue operating with the raised beach levels.
- Promenade improvement works currently anticipated to comprise (from Rydal Boat store to the southern boundary of Rhos-on-Sea Harbour):
 - 4.0m wide shared surface, 2.2m wide pedestrian only zone, highway alterations (one-way system), activity zones (for example seating, exercise areas, play features and garden areas), junction realignments, pedestrian links and crossings, new kiosks, planting and artwork.

1.2.3 Future Maintenance

The Schemes are also anticipated to also include future management and maintenance actions comprising:

- Maintenance and repair of coastal structures and sea wall;

- Maintenance and repair of promenade and associated features;
- Beach management;
- Reworking of structures to maintain the standard of service in line with sea level rise; and
- Beach re-nourishment if considered necessary (Colwyn Bay Waterfront project Phase 2b only).

1.2.4 Proposed Works Programme

As funding is yet to be secured for Scheme construction, the programme has not yet been confirmed. Due to the scale and funding requirements of the Schemes, the construction process may need to be split into several phases.

1.3 Purpose of this Report

The purpose of this report is to;

- Provide an initial appraisal of the ecological importance of the habitats in the areas relevant to the proposed works for the Scheme; and
- Provide an assessment of the potential for these areas to support protected ecological features and species.

This Preliminary Ecological Appraisal Report (PEAR) has been prepared in accordance with Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines.

The aims of this assessment are to:

- Carry out a Phase 1 Habitat survey (Joint Nature Conservation Committee (JNCC), 2010) to provide a description of the existing broad habitat types. To establish the presence or potential presence of any protected or notable species. The results of these surveys are presented in drawing form (Appendix A);
- To assess if the marine habitat has changed since Countryside Council for Wales (CCW) (now Natural Resources Wales) Marine Phase 1 was mapped previously;
- Undertake a desk-top study to identify any existing information regarding protected or notable species and sites with a nature conservation designation within the zone of influence (Zoi) of the survey area;
- Produce a report outlining any ecological constraints to the proposed development in terms of designated sites, habitats and/or protected and notable species;
- Provide a preliminary assessment of the potential for structures within the Scheme to support roosting bats;
- Provide recommendations for further ecological survey work, if considered necessary to inform an ecological baseline for the survey area;
- Identify any high-level mitigation or compensation measures that may be required to offset potential development impacts; and
- Identify opportunities for enhancement in line with national and local planning policy.

2 Legislation Context and Policy Framework

2.1 Legislation and National Planning Policy

The key legislation relating to ecology and the environment is the Wildlife and Countryside Act (WCA) 1981, as amended, which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive) in Great Britain. The WCA is complemented by the Conservation of Habitats and Species Regulations 2017 (CHSR, 2017), which implements Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive). The Regulations provide for the designation and protection of 'European sites', and the protection of 'European protected species'. The species and habitats listed by these measures are legally protected to varying degrees through the WCA. Together, the WCA and CHSR 2017 form the precedent for species and habitat protection in England and Wales.

- At national level, Chapter 6 of Planning Policy Wales (PPW), 2018 (which relates to conserving and enhancing the natural environment) requires Local Authorities (LA) to take measures to: Promote the conservation of landscape and biodiversity, in particular the conservation of native wildlife and habitats;
- Ensure that actions in Wales contribute to meeting international responsibilities and obligations for the natural environment;
- Ensure that statutorily designated sites are properly protected and managed;
- Safeguard protected species; and
- Promote the functions and benefits of soils, and in particular their function as a carbon store.

Developers must ensure that they comply with the above legislation by fully assessing the potential impacts on protected species and habitats from the proposed development. Where planning permission is required, this assessment must be finalised prior to and included with the submission of the planning application and the proposals should also be in compliance with relevant planning policy. The Planning Authority can ensure that the necessary protected species and habitats information has been provided to inform an assessment and that proposals are in full accordance with relevant legislation and policy.

Under the Environment (Wales) Act 2016 public bodies, including Local Authorities are required 'to seek to maintain and enhance biodiversity in Wales' when carrying out their normal functions. Under Section 7, a list of species and habitats of 'principle importance to the conservation of biodiversity in Wales' was drawn up which acts as an aid to guide public bodies in implementing their duty. The Local Authority must consider the impact of the proposed works on protected habitats and species.

2.2 Local Development Plan

At a local level, planning policies are set out within 'Conwy Local Development Plan' (Adopted October 2013). Supplementary documentation is in the form of 'Topic Paper 6: Natural Environment' (2018).

Three policies are of relevance to ecology:

- Policy NTE/1 – The Natural Environment;
- Policy NTE/3 – Biodiversity; and
- Policy NTE/5 – The Coastal Zone.

Policy NTE/1 states that:

“In seeking to support the wider economic and social needs of the Plan Area, the Council will seek to regulate development so as to conserve and, where possible, enhance the Plan Area’s natural environment, countryside and coastline. This will be achieved by:

- Safeguarding the Plan Area’s biodiversity, geology, habitats, history and landscapes through the protection and enhancement of sites of international, national, regional and local importance, in line with Policy DP/6 – ‘National Planning Policy and Guidance’;
- Using Green Wedges and settlement boundaries to control the identity of individual settlements, to prevent coalescence and to protect the immediate landscape surrounding urban areas in line with Policy NTE/2 – ‘Green Wedges and Meeting the Development Needs of the Community’;
- Where appropriate and necessary, improving the quality of statutory and non-statutory landscapes and areas of biodiversity value affected by development, through management agreements, habitat connectivity, improved planting, landscape and maintenance specifications, in line with the Development Principle Policies and Policy NTE/3 – ‘Biodiversity’;
- Working with developers to safeguard protected species and enhance their habitats in line with Policies DP/6 and NTE/3;
- Respecting, retaining or enhancing the local character and distinctiveness of the individual Special Landscape Areas in line with Policy NTE/4 – ‘The Landscape and Protecting Special Landscape Areas’ and as shown on the Proposals Map;
- Protecting the Coastal Zone in line with Policy NTE/5 – ‘The Coastal Zone’; and
- Preventing, reducing or remedying all forms of pollution including air, light, noise, soil and water, in line with Policy DP/6.”

Policy NTE/3 states that:

- “New development should aim to conserve and, where possible, enhance biodiversity through:
 - Sensitive siting; avoiding European protected sites or those of national or local importance;
 - Sensitive layout and design which avoids impacts or mitigates through an agreed programme for any identified adverse impact on biodiversity;
 - Creating, enhancing and managing wildlife habitats and natural landscapes including connectivity;
 - Integrating biodiversity measures into the built environment;
 - Contributing to achieving targets in the Conwy Local Biodiversity Action Plan (LBAP);
 - Providing for a management agreement with the Local Planning Authority to secure the retention and long-term future of biodiversity interests where applicable.
- All proposals should include a Biodiversity Statement detailing the extent of impact on biodiversity.
- The Council will refuse proposals which would have a negative impact on a European Site, protected or priority species or habitat unless the impact is adequately mitigated,

and appropriate remediation and enhancement measures are proposed and secured by planning conditions or obligations.”

Policy NTE/5 states that:

“A Coastal Zone is defined on the Proposals Map. Development in the Coastal Zone, outside settlement boundaries, will only be permitted where the development:

- Specifically requires a coastal location;
- Does not adversely affect the open character of the zone;
- Does not adversely affect the nature conservation value of the zone with any effects identified mitigated for;
- Does not detract from the tourism value or facilities;
- Does not interfere with natural coastal processes;
- Does not impede the function of any existing coastal defence structures;
- Accords with the Development Principles of the Plan.”

3 Methodology

3.1 Zone of Influence

The current guidance on ecological impact assessments (Chartered Institute of Ecology and Environmental Management (CIEEM, 2018) recommends that all ecological features that occur within a 'Zone of Influence' (Zoi) for a proposed development are investigated.

The Zoi includes:

- Areas directly within the land take for the proposed development and access;
- Areas which will be temporarily affected during construction;
- Areas likely to be impacted by hydrological disruption; and
- Areas where there is a risk of pollution and noise disturbance during construction and/or operation.

The Zoi is variable depending on the nature of the construction activities and the ecological receptors affected. For this assessment the following zones have been defined:

Ecological Feature	Zone of Influence
Statutory designated sites	2.0km
European designated sites for bats	10.0km
Non-statutory designated sites	1.0km
Protected species records	1.0km
Protected species evidence	Within the buffer of the scheme

Source: Mott MacDonald Limited

For the purposes of this assessment, the scheme survey area has been defined as the combined areas of both the Colwyn Bay Waterfront Project – Phase 2b Area and the Old Colwyn Coastal Defence and Active Travel areas. The Phase 1 habitat map has been drawn to show both extents along with Phase 1abc Areas (the stretch between the two) for completeness.

3.2 Desk Study

A desk study was undertaken, as recommended in the CIEEM 'Guidelines for Preliminary Ecological Appraisal' – 2nd edition (2017), to determine the presence of any designated nature conservation sites and protected or notable species within the Zoi of the Scheme. Records within 1.0km of the site for both protected species and designated sites were requested from the local records information database Cofnod. The data has been further curtailed to the nearest records for each species recorded, raw data is available on request. Information to inform the desk study was obtained from the following sources:

- Cofnod (<https://www.cofnod.org.uk/Home>);
- Multi Agency Geographical Information for the Countryside (MAGIC) website (<http://www.magic.gov.uk/MagicMap.aspx>);
- Natural Resources Wales (NRW) (<http://naturalresources.wales>); and
- Joint Nature Conservation Committee (JNCC) (<http://jncc.defra.gov.uk>).

3.3 Field Survey

Field surveys were undertaken by experienced surveyors in December 2019 and January 2020.

All habitats within the survey area, where accessible, were identified and mapped in compliance with the 'Handbook for Phase 1 Habitat Survey: a technique for environmental audit' (JNCC, 2010). Dominant plant species were noted, as were any protected, uncommon or invasive species listed on Schedule 9 of the WCA (as amended). The methodologies and assessment criteria used were based on current published guidance.

The buildings within the survey areas were inspected for bat potential. Given restrictions to survey work (see limitations), detailed photographs of the buildings including close up photographs of features where bats may be able to gain access to voids in structures were taken by a local surveyor. These photographs were then analysed by an experienced and licensed bat ecologist to assess the potential of the buildings to support roosting bats and/or signs of bat presence in accordance the table below, based on the Bat Conservation Trust Good Practice Guidelines (Collins, ed. 2016).

Table 3.1: Bat Suitability Classification

Suitability	Description Roosting Habitats	Commuting and Foraging Habitat
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site to be used by commuting or foraging bats.
Low	A structure with one or more potential roost features (PRF) that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a hedgerow with gaps or un-vegetated stream, but isolated, (i.e. not very well connected to the surrounding landscape by other habitat). Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broad-leaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Source: (Collins, ed. 2016).

For the intertidal zone, feedback received during the emergency works (Splashpoint) from the County Ecologist along with previous survey work indicated that the key concern is the presence of mussel beds. On this basis, for ease of interpretation, a separate biotope map has not been undertaken (as was completed for Splashpoint – updating the CCW biotope mapping) but instead the key intertidal habitat types have been included in the Phase 1 map along with the extent of mussel beds and location of *Sabellaria alveolata* Reefs as additional features.

3.4 Limitations

Biological records obtained from third parties and presented in the desk study do not represent a full and complete species list for the area. The records are mostly provided by individuals on an *ad-hoc* basis, often meaning there are areas of deficiency in the data. If species records are not present it may be as a result of the area being under surveyed and as such no records have been returned, lack of species should therefore not be disregarded.

Ecological surveys are limited to factors which affect the presence of plants and animals, such as time of year, migration patterns and behaviour. It is possible that certain species may have been overlooked or under-recorded during the assessment as optimal survey periods vary from species to species.

Due to the Government's restriction imposed to limit the spread of the Covid-19 virus, it was necessary to assess the bat roosting potential of structures within the survey area by using detailed high-resolution photographs, rather than by assessment in the field. This was done with the aim of minimising the time spent working in publicly accessible areas.

4 Results and Interpretation

4.1 Desk Study

A desk study was undertaken to identify key species and habitats near and adjacent to the site. The results are presented in the following sections.

4.1.1 Statutory Designated Sites

There are five statutory designated sites within 2.0km of the survey area. No Special Areas of Conservation (SACs) designated for bats were returned within 10.0km of the survey area. A map of these designated sites is provided in Appendix B. Details of the designated sites are provided in Table 4.1 below:

Table 4.1: Statutory Designations within 2.0km

Name	Status	Details	Distance and Direction
Bae Lerpwl / Liverpool Bay	Special Protection Area (SPA), Important Bird Area (IBA)	The inshore area of Colwyn Bay lies within the boundary of Bae Lerpwl / Liverpool Bay SPA. The SPA regularly supports more than 1% of the British populations of red-throated diver (<i>Gavia stellate</i>), 1% of the biogeographical population of common scoter (<i>Melanitta nigra</i>) and more than 50,000 waterfowl during the non-breeding season.	Adjacent to the north
Fairy Glen	Local Nature Reserve (LNR)	Ancient broadleaved woodland along the banks of the river Colwyn, supporting species such as grey wagtail (<i>Motacilla cinerea</i>).	Approximately 0.5km south east
Upper Dingle Woods	LNR	Broadleaved woodland supporting species such as lesser celandine (<i>Ficaria verna</i>) and bluebell (<i>Hyacinthoides non-scripta</i>).	Approximately 0.6km south east
Pwllcrochan Woods	LNR	Ancient broadleaved woodland supporting species such as great spotted woodpecker (<i>Dendrocopos major</i>), treecreeper (<i>Certhia familiaris</i>) and tawny owl (<i>Strix aluco</i>).	Approximately 0.8km south west
Bryn Euryn	Site of Special Scientific Interest (SSSI) and LNR	Species rich grassland upon carboniferous limestone, with notable species such as hoary rockrose (<i>Helianthemum canum</i>), bloody cranesbill (<i>Geranium sanguineum</i>) and Nottingham catchfly (<i>Silene nutans</i>) present.	Approximately 0.8km west
Creuddyn Peninsula Woods	SAC and SSSI	A collection of semi-natural broadleaved woodlands upon carboniferous limestone hills, which are an example of <i>Tilio-acerion</i> forest on the western boundary of their range. Pockets of yew (<i>Taxus baccata</i>) dominant woodland are also present with patches of species rich calcareous grasslands. Rare flora such as spiked speedwell (<i>Veronica spicata</i>) and spring cinquefoil (<i>Potentilla neumanniana</i>) are present.	Approximately 1.9km south west

Name	Status	Details	Distance and Direction
Mynydd Marian	SSSI	Of special interest for its range of limestone (calcareous) grassland communities as well as its population of the dwarf race of silver studded blue butterflies (<i>Plebejus argus</i> ssp. <i>Caermensis</i>). Nationally scarce plant species spring cinquefoil (<i>Potentilla neumanniana</i>) (<i>P. tabernaemontani</i>) is also present within stands of calcicolous grassland.	Approximately 2.0km south east

Source: MAGiC Cofnod, 2020 & JNCC

4.1.2 Non-Statutory Designated Sites

There is one non-statutory designated sites within 2.0km of the survey area. Details of this designated site is given below in Table 4.2.

Table 4.2: Non-Statutory Designations within 2.0km

Name	Status	Details	Distance and Direction
Coed Rhos Fossil Woodland	Local Wildlife Site	Candidate fossilised woodland, no survey information is currently available.	Within the Colwyn Bay Phase 2b area.
Royal Fishing Weir	Local Wildlife Site	Candidate intertidal site, no survey information is currently available.	Approximately 0.3km to the north west
Upper Dingle Woods	LWS	See LNR above	Approximately 0.6km south east
Pwllcrochan Woods	LWS	See LNR above	Approximately 0.8km south west
Bryn Eurnyn	LWS	See LNR above	Approximately 0.9km south west
Coed Sempyr	Local Wildlife Site	Candidate site consisting of broadleaved woodland, no survey information is currently available.	Approximately 2.0km south west

Source: Cofnod, 2020

4.1.3 Protected Species Records

Records of protected or notable species from within 1.0km of the survey area are listed within the following sections. Records of species such as badger and bat roosts are sensitive and should be treated as confidential.

4.1.3.1 Birds

Records of 127 species of bird were returned within 1.0km of the survey area, including the following WCA Schedule 1 species:

- Red kite (*Milvus milvus*);
- Brambling (*Fringilla montifringilla*);
- Snow bunting (*Plectrophenax nivalis*);
- Common crossbill (*Loxia curvirostra*);
- Black-throated Diver (*Gavia arctica*);
- Great Northern Diver (*Gavia immer*);

- Red-throated Diver (*Gavia 14lveolat*);
- Long-tailed duck (*Clangula hyemalis*);
- Fieldfare (*Turdus pilaris*);
- Slavonian Grebe (*Podiceps 14lveola*);
- Little Gull (*Hydrocoloeus minutus*);
- Mediterranean Gull (*Larus melanocephalus*);
- Marsh Harrier (*Circus aeruginosus*);
- Merlin (*Falco columbarius*);
- Osprey (*Pandion haliaetus*);
- Peregrine (*Falco peregrinus*);
- Leach's Petrel (*Oceanodroma leucorhoa*);
- Black Redstart (*Phoenicurus ochruros*);
- Redwing (*Turdus iliacus*);
- Purple Sandpiper (*Calidris maritima*);
- Scaup (*Aythya marila*);
- Velvet Scoter (*Melanitta fusca*);
- Common Scoter (*Melanitta nigra*);
- Whooper Swan (*Cygnus 14lveol*);
- Roseate Tern (*Sterna dougallii*);
- Little Tern (*Sternula albifrons*);
- Black Tern (*Chlidonias niger*); and
- Whimbrel (*Numenius phaeopus*).

4.1.3.2 Mammals

Records of mammals were returned within 1.0km of the survey area as follows:

Bats

The following bat species were returned within 1.0km of the survey area:

- Common pipistrelle (*Pipistrellus pipistrellus*);
- Noctule (*Nyctalus 14lveola*);
- Soprano pipistrelle (*Pipistrellus pygmaeus*);
- Long-eared bat (*Plecotus sp.*); and
- Lesser horseshoe (*Rhinolophus hipposideros*).

The closest records are that of common pipistrelle and soprano pipistrelle which were recorded 0.2km from the survey area.

Badger

Eight records of badger (*Meles meles*) were returned within 1.0km of the survey area, with the closest record approximately 0.3km to the south.

Hedgehog

A total of 25 records of hedgehog (*Erinaceus europaeus*) were recorded within 1.0km of the survey area, with the closest recorded 0.06km to the south.

Porpoise

A single record of a common porpoise (*Phocoena phocoena*) was returned within the survey area. The marine habitats off-site to the north are also occasionally used by other marine mammals including common bottlenose dolphin (*Tursiops truncatus*) and grey seal (*Halichoerus grypus*).

4.1.3.3 Herpetofauna

A single record of slow worm (*Anguis fragilis*), common lizard (*Zootoca vivipara*) and grass snake (*Natrix natrix*) were returned within 1.0km of the survey area, with the closest record of a slow worm approximately 0.9km to the south.

A single record of the non-native species Aesculapian snake (*Zamenis longissimus*) was also returned within 1.0km of the survey area. This is considered to be a zoo escape from the local Mountain Zoo.

Seven records of common frog (*Rana temporaria*) were returned within 1.0km of the survey area, with the closest record approximately 0.5km to the south.

4.1.3.4 Invertebrates

A total of 25 invertebrate species were returned within 1.0km of the survey area, with the closest record of holly blue (*Celastrina argiolus*) approximately 0.5km to the south west.

Three records of the invasive species Harlequin ladybird (*Harmonia axyridis*) were also returned within 1.0km of the survey area, with the nearest record 0.3km to the south west.

4.1.3.5 Flora

Bluebell (*Hyacinthoides non-scripta*) which is listed on Schedule 8 of the WCA 1981 was recorded approximately 0.5km away from the survey area.

4.2 Site Visit

The survey area sits on the intertidal zone with the Irish sea to the north and comprises the intertidal zone (beach and associated habitats) along with the current cycle path and adjacent amenity or re-colonising habitats on the embankments of the road and railway line.

For ease of interpretation, rather than produce separate terrestrial and marine maps, both the terrestrial and marine / intertidal survey information has been mapped onto a Phase 1 Habitat Map with specific additions of key marine features and habitat types (such as mussel beds). References to the key habitat types and biotopes are included in the text below.

4.2.1 Habitats

The habitats recorded within the survey area are described in Table 4.3 below along with reference to which areas of the scheme they are relevant to. The Phase 1 Habitat Map is provided within Appendix A. Example photographs of habitats are provided in Appendix C.

Table 4.3: Description of Habitats present in the survey area

Terrestrial / Marine	Habitat Code	Habitat Type	Description	Colwyn Bay Waterfront Project – Phase 2b Area	Old Colwyn Coastal Defence and Active Travel
Terrestrial	A2.1	Dense / continuous scrub	Dense bramble (<i>Rubus fruticosus</i>) is present on the railway embankment in the east of the survey area and on the road embankments south of the promenade behind the Phase 1abc and Phase 2b areas. As well as bramble, this habitat supported occasional ivy (<i>Hedera helix</i>), sycamore saplings (<i>Acer pseudoplatanus</i>), willow saplings (<i>Salix</i> sp.), bindweed sp. (<i>Convolvulus</i> sp.), horsetail sp. (<i>Equisetum</i> sp.) and hemp agrimony (<i>Eupatorium cannabinum</i>).	✓	✓
Terrestrial	A2.2	Scattered scrub	Scattered scrub is present within the semi-improved grassland habitat along the railway embankment in the east of the survey area. Species present include broom (<i>Cytisus</i> sp.), gorse (<i>Ulex</i> sp.) and blackthorn (<i>Prunus spinosa</i>).	✓	✓
Terrestrial	A3.3	Scattered mixed trees	Young scattered trees are present along the railway embankment in the east of the survey area and scattered along the roadside to the north west, including Scott's pine (<i>Pinus Sylvestris</i>), beech (<i>Fagus sylvatica</i>), sycamore, elm sp. (<i>Ulmus</i> sp.), pedunculate oak (<i>Quercus robur</i>), white poplar (<i>Populus alba</i>) and ash (<i>Fraxinus excelsior</i>).	✓	✓
Terrestrial	B6	Poor semi-improved grassland	Poor semi-improved grassland, parts of which were outgrown and appeared unmanaged, is found along much of the extent of the railway embankment in the east of the survey area. Scattered scrub and trees are found within the grassland, with some patches of tall ruderal. The grassland was dominated by fescue (<i>Festuca</i> sp.), with Yorkshire fog (<i>Holcus lanatus</i>) and false oat (<i>Arrhenatherum elatius</i>) found to the edges and occasional broadleaved dock (<i>Rumex obtusifolius</i>), greater plantain (<i>Plantago major</i>).	✓	✓
Terrestrial	C3.1	Tall ruderal vegetation	Patches of dense tall ruderal are found scattered within the poor semi-improved grassland and amongst the dense scrub and scattered trees in the east of the survey area. As a result, this habitat is not mapped but listed here for completeness. Species recorded in the ruderal vegetation includes rosebay willowherb (<i>Epilobium angustifolium</i>), hogweed (<i>Heracleum sphondylium</i>), knapweed (<i>Centaurea nigra</i>), bindweed (<i>Convolvulus arvensis</i>), ragwort (<i>Jacobaea</i> sp.), and nettle (<i>Urtica dioica</i>).	✓	✓
Terrestrial	G2	Running water	A culverted water course runs under the A55 and outflows at the eastern point of the Promenade in the eastern extent of the scheme. Due to the small scale of this habitat it is not specifically mapped but described here for completeness.		✓
Terrestrial	J1.2	Amenity grassland	Amenity grassland is present throughout the survey area, alongside the existing cycleway and at the base of the railway embankment in the east. The amenity grassland comprised close-mown, regularly managed	✓	✓

Terrestrial / Marine	Habitat Code	Habitat Type	Description	Colwyn Bay Waterfront Project – Phase 2b Area	Old Colwyn Coastal Defence and Active Travel
			grassland. Species recorded include perennial ryegrass (<i>Lolium perenne</i>), annual meadow grass (<i>Poa annua</i>), common daisy (<i>Bellis perennis</i>), ribwort plantain (<i>Plantago 17lveolate17</i>), dandelion sp. (<i>Taraxacum</i> sp.), creeping buttercup (<i>Ranunculus repens</i>) and yarrow (<i>Achillea millefolium</i>).		
Terrestrial	J3.6	Buildings and infrastructure	A number of buildings and structures are present throughout the survey area in the form of: • Railway bridges (stone abutments and wing walls of beam construction with a steel span, which is in a good state of repair); • Bus shelters (open with pebble dash walls and a flat roof); • Information centre (pitched tiled roof with concrete walls, artificial lighting on the external walls and a glass walled conservatory); • Kiosks (Concrete walls and a flat roof with metal fascia boards); • Restaurant (concrete structure with wooden cladding on the external walls, with a flat roof and metal fascia boards, in a good state of repair); • Water sports centre (glass and metal walls with wooden cladding and a flat roof used as an observation point. Artificial lighting is present on the external walls. The building was in a good state of repair); and • Public toilets blocks (pitched tiled roofs of concrete construction in a good state of repair, with artificial lighting on the external walls and sealed windows and doors).	✓	✓
Terrestrial	J4 and J5	Fences and Walls	Fences and stone walls are present throughout the survey area, marking boundaries of the embankments and along the existing promenades. Given the small scale of these habitats they are not specifically mapped but are described here for completeness.	✓	✓
Terrestrial	J5	Hardstanding	Hardstanding is present in the form of the existing cycleway and promenade.		✓
Marine	H1.1	Intertidal sand	The intertidal area is largely dominated by sand, which forms the main habitat type across the survey area as well as in the Phase 1abc area between the two (where a beach recharge exercise has previously been undertaken).	✓	✓
Marine	H1.1	Intertidal mud	Areas of mud are present in the west of the survey area adjacent to the sea wall.	✓	
Marine	H1.2	Shingle and gravel	Areas of shingle / gravel are present throughout the intertidal survey area, largely along the southern edge of the beach adjacent to the coastal defences and surrounding areas of mud and brackish water. Species recorded associated with these habitats include Honeycomb worm (<i>Sabellaria 17lveolate</i>) along with acorn barnacles (<i>Semibalanus balanoides</i>), periwinkle (<i>Littorina littorea</i>) and common limpet (<i>Patella vulgata</i>).	✓	✓
Marine	H1.3	Boulders / rocks (groynes and other	A number of man-made groynes are present along the length of the survey area. These comprise large boulders and a number have navigation markers (metal posts) at the end.	✓	✓

Terrestrial / Marine	Habitat Code	Habitat Type	Description	Colwyn Bay Waterfront Project – Phase 2b Area	Old Colwyn Coastal Defence and Active Travel
		man-made features)	Many of the boulders had been colonised by green algae, macroalgae and lichens including yellow lichen (<i>Xanthoria parietina</i>), a grey lichen species (<i>Lecanora</i> sp.) and black tar lichen (<i>Verrucaria maura</i>). Other species recorded in association with the boulders and sea wall include acorn barnacles, sea lettuce (<i>Ulva lactuca</i>), spiral wrack (<i>Fucus spiralis</i>), common limpet, toothed wrack (<i>Fucus serratus</i>), beadlet anemone (<i>Actinia equina</i>), dogwhelk (<i>Nucella lapillus</i>), periwinkle, Darwin barnacles (<i>Elminius modestus</i>), Hydroids (<i>Plumularia catharina</i>) and Honeycomb worm.		
Marine	G1.6	Standing water – brackish	An area of standing, brackish water is present in the west of the survey area, surrounded by gravel substrate with some rocks and shingle within it.	✓	
Marine	J3.5	Sea wall	A concrete sea wall is present along the boundary of the beach (the front), forming part of the current coastal defences, atop which is the current promenade. Boulders and gravel are present adjacent to the wall. Parts of the wall have been colonised by green algae and macroalgae along with associated invertebrates (see species list in boulders).	✓	✓
Marine	-	Dense and sparse mussel beds	Two blue mussel (<i>Mytilus edulis</i>) beds were identified as part of the survey work undertaken, one located in the west of the survey area and one in the far east of the survey area. Both comprise areas of denser and sparse mussels (albeit both relatively sparse), interspersed with brown seaweeds, fucoids and barnacles, which have colonised in the middle of the sand. Both areas appear to be in poor condition and appeared to have previously been dense (marked as 'dense' on the mapping as a relative term) but sparse at the time of survey, whilst there were many cracked and empty shells present. From surveys completed for Phase 1abc EIA and Addenda in 2010 some areas of dense blue mussel aggregations were recorded at the end of groynes within the Phase 2b area (beyond the current survey area) which were noted to be larger in extent and may extend into the subtidal zone.	✓	✓
Marine	-	<i>Sabellaria alveolata</i> patches	Small patches of Honeycomb worm were noted within shingle and gravel areas in the east of the Scheme (see Appendix A for approximate location). These were recorded to be relatively isolated and small in extent and are considered to be in poor condition.		✓

4.2.2 Protected or Notable Species

A list of bird species observed during the surveys is reported separately in the Wintering Bird Survey Report (Mott MacDonald Limited, 2020).

No evidence of any other protected or notable species was recorded during the survey work undertaken. The potential for notable species is discussed in the relevant interpretation section. The results of the bat roosting assessment of buildings are set out separately in Table 4.2 below.

Table 4.2: Summary of Structures with Potential Roost Features

Building Reference and Photo	Building Description	Features
Kiosk 	- Concrete structure clad in coated wood and metal/ composite panels. - Flat roof, supported by metal beams.	No potential roost features identified
Shelter 1 	- Concrete structure, clad in pebbledash. - Flat, hollow, wooden roof and fascia board with outer coating.	Gap under coated wooden fascia board on south west corner. This feature gives access into a hollow cavity. 
Shelter 2	- Concrete structure, clad in painted pebbledash. - Flat, wooden roof and wooden fascia board with outer coating.	No potential roost features identified

Building Reference and Photo	Building Description	Features
		
Toilet Block 	- Concrete walls with pitched, tiled roof with ridge tiles. - Exterior lighting present above doorways. - Composite material soffit box and fascia board present.	Gaps visible under ridge tiles and other roof tiles.  

Source: Mott MacDonald

The location of the structures described in Table 4.2 above, is shown in Figure 4.1 below:

Figure 4.1: Location of structures assessed for potential roost features



Source: 'ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community'.

4.2.3 Invasive Plant Species

No evidence of any invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) was recorded during the survey work undertaken.

4.3 Interpretation

4.3.1 Designations

Liverpool Bay SPA is located along the boundary of the survey area (approximately 45m from the boundary at its closest point). This is designated at an international level for the wetland bird species and assemblages present. Given the proximity of this designation, it has been scoped into the assessment of effects section below.

Coed Rhos Fossil Woodland LWS is located within the west of the survey area boundary. This is an archaeological / geological designation and therefore not addressed in this report.

All other statutory and non-statutory designations are considered sufficiently separated from the Scheme with no clear impact pathways. As such, these are considered unlikely to form a constraint to any proposals and are not considered further in this report.

4.3.2 Habitats

The following habitats within the survey area are considered to be of elevated value in the context of the site and could qualify as Priority Habitats (as listed under Section 7 of the Environment (Wales) Act):

- **Subtidal Sands and Gravels:** The majority of the survey area is dominated by sand and gravel which would be submerged during high tide;
- ***Sabellaria alveolata* Reefs:** The small patches of honeycomb worm reef (*Sabellaria alveolata*) recorded within the east of the site could meet the description of the priority habitat *Sabellaria alveolata* Reefs. This priority habitat can typically be 30 to 50cm thick and form large expanses. The patches in the site were noted to be small and isolated in extent and appear to be in decline and poor health (possibly with some sections already dead) and as a result are not a high quality example of this priority habitat. This is likely due to the exposed nature of the site;
- **Blue mussel beds on sediment (within the survey area):** The mussel beds within the survey area broadly meet the description for this priority habitat, in that blue mussel beds are present within the sand substrate. However, the beds are isolated areas of relatively sparse mussels (with areas that appeared to have previously been dense) in poor condition are now all that are present. Blue mussel beds as a priority habitat is valued as having a role in coastal sediment dynamics, acting as a food source for overwintering waders and providing an enhanced area of biodiversity (typically associated with a range of organisms including fucoids, barnacles, isopods and other fauna). The mussel beds within the survey area are small and in poor condition (many fragmented and broken shells present on site), whilst no evidence of any diverse assemblage of associated organisms was recorded during the surveys undertaken. On this basis, the habitats on site are considered to be poor examples of this priority habitat type and are not considered to be of any elevated ecological value in a local context; and
- **Blue mussel beds on sediment (outside of the survey area):** Areas of dense and sparse blue mussel aggregations recorded at the end of groynes within the Phase 2b area (beyond the current survey area) during the Phase 1abc (2013) surveys could qualify as the priority habitat.

The boulders as part of the groynes and revetments are man-made, embedded in sediment and subject to tidal scour, such that they are not considered to have sufficient gaps on the underside to support a valuable under boulder community. They are therefore not considered to represent the priority habitat 'Intertidal Underboulder Communities'.

The remaining intertidal and terrestrial habitats are largely small in extent and comprise either common and widespread species or are man-made structures, of no more than negligible-low ecological value at a site level.

4.3.3 Protected Species

On the basis of the habitats present, the site and surrounds could offer opportunities for a number of wetland bird species and marine invertebrates (although no notable species were recorded during the survey work). The marine habitats present on site could also support fish species, as a desktop search¹ shows that the wider marine area surrounding Colwyn Bay and areas further offshore to the north of the Site are considered to be a high intensity spawning ground for plaice (*Pleuronectes platessa*), cod (*Gadus morhua*), sand eel (*Ammodytes*

¹ Marine Plan Online Search Tool, 2020. Available at: <https://explore-marine-plans.marineservices.org.uk/>

tobianus) and sole (*Solea solea*), as well as a high intensity nursery ground for cod (*G. morhua*), sole (*S. solea*) and whiting (*Merlangius merlangus*).

A summary of the potential of structures within the survey area, to provide opportunities for roosting bats, is set out below in Table 4.3.

Table 4.3: Assessment of the Bat Roosting Potential of Structures

Building	Feature(s)	Assessment of Bat Roost Potential
Kiosk	No potential roost features identified	Negligible potential
Shelter 1	Gap under coated wooden fascia board on south west corner.	Low potential The shelter is located on the exposed coastal promenade with limited connectivity to wider habitat.
Shelter 2	No potential roost features identified	Negligible potential
Toilet Block	Gaps visible under ridge tiles and other roof tiles.	Low Potential Some access to foraging and commuting habitat. However, the block's overall opportunity to provide shelter is limited, being sited on the exposed coastal promenade and outward facing external lighting.

Source: Mott MacDonald

No features that would offer potential for roosting bats were noted in any of the bridges within the survey area, whilst a full survey of trees was not undertaken (this has been recommended in section 5). The existing promenade is lit and unlikely to be of value to more light sensitive species such as lesser horseshoe or myotis bats (for which records were returned) but could be used by more light tolerant species such as pipistrelle bats for foraging.

The semi-improved grassland, tall ruderal and scrub habitats (particularly the railway embankment) offer suitable opportunities for reptiles, records of which were returned from within 1.0km of the survey area. The trees, scrub and buildings could support nesting birds. The railway embankments could also offer opportunities for badger, which are known to be present in the local area from records returned, albeit as these are exposed and so are, at best, sub-optimal. Habitats in the site could also offer potential for a number of common mammal species.

No records of otter were identified within the search area whilst the habitats offer limited suitability for this species.

5 Assessment and Recommendations

5.1 Identification of Ecological Constraints

On the basis of the habitats and present and survey work completed, as identified in the interpretation section, the following potential ecological constraints have been identified:

- Liverpool Bay SPA;
- Subtidal sands and gravels (priority habitat);
- Blue mussel beds on sediment (priority habitat) – within and outside of the survey area;
- Roosting and foraging bats;
- Wintering and foraging birds;
- Nesting birds;
- Reptiles;
- Fish; and
- Marine invertebrates.

On the basis of the proposed scope of works, a high-level assessment of effects is set out below.

5.2 Initial Assessment of Effects (High-level only)

It is anticipated that an assessment of effects would be undertaken once the detailed proposals are finalised, as part of an Environmental Impact Assessment (EIA) or Ecological Impact Assessment (EcIA) (subject to the results of the screening exercise). Depending on the exact design of works, effects on these receptors could be positive or negative. However, based on the broad scope of works available, an initial assessment of potential effects is provided within Table 5.1 below.

Table 5.1: Potential Ecological Constraints and Initial Assessment of Effects

Constraint	Location		Level of Protection	Initial Assessment
	Colwyn Bay Waterfront Project – Phase 2b Area	Colwyn Bay Coastal Defence and Active Travel		
Liverpool Bay SPA	45m from survey area	45m from survey area	EC Habitats Directive, SSSIs are protected under Wildlife and Countryside Act 1981 (as amended).	No direct effects on this SPA are anticipated but given the proximity, construction and maintenance works could result in disturbance or degradation of habitat (from increased turbidity during beach recharge works) for birds using the SPA. A HRA is required along with a marine licence. An initial assessment of effects on designated interest features of the SPA is set out within the Over-wintering bird report.
Subtidal sands and gravels	Throughout the site	Throughout the site	Environment (Wales) Act 2016	The works will include recharge of the beach and an increased cover of this habitat. The quality may change depending on from where the sand is sourced.

Constraint	Location		Level of Protection	Initial Assessment
	Colwyn Bay Waterfront Project – Phase 2b Area	Colwyn Bay Coastal Defence and Active Travel		
<i>Sabellaria alveolata</i> Reefs	-	Associated with shingle and gravels (see Appendix A)	Environment (Wales) Act 2016	No direct loss of <i>Sabellaria alveolata</i> Reefs is anticipated. In the absence of mitigation, this habitat may be affected by increased sediment and turbidity, whilst the reefs could be damaged during construction in the absence of safeguards.
Blue mussel beds	Western boundary of the Scheme	Eastern edge of the Scheme	Environment (Wales) Act 2016	The works will result in the partial or complete loss of the western mussel bed located within the existing sandy habitats, which would be covered during the beach recharge works. No direct loss of mussel beds outside of the Scheme footprint is anticipated. In the absence of mitigation, mussels may be affected by increased sediment and turbidity, whilst the eastern mussel bed could be damaged during construction in the absence of safeguards. Rocky habitat will be lost but also created under the Scheme proposals and so habitat will continue to be available under the Proposed Scheme for colonisation by mussels in the future.
Roosting bats	Trees, Bridges	Trees, Bridges	Bat species and their roosts are fully protected under the Conservation of Habitats and Species Regulations 2017 and the WCA. Various bat species are also listed under Section 7 Species of Principal Importance under the Environment (Wales) Act 2016.	No bat potential features were noted in any bridges or trees during the survey, but a full assessment was not undertaken. No impacts to trees or bridges are anticipated under the current works. If this scope changes consideration would need to be given to assessing these structures for bats.
	Buildings	Buildings		Shelter 1 is to be demolished and re-built. Further survey required to ascertain presence/likely absence of bats. If present, a licence would be required.
				The Toilet Block is to be refurbished, the scope of which has not yet been confirmed. Should this work have potential to disturb bats, further surveys would be needed.
Foraging bats	Tree lines and under streetlights	Railway embankment, tree lines and under streetlights		Vegetated habitats and streetlights within the survey area may be used by foraging bats, which are known to be present in the area. Any change to these habitats, including a new lighting design, could affect availability of foraging resource. Depending on the scheme design, this could result in a betterment for bats.
Badger	-	Railway embankments	Badgers are protected under the Protection of Badgers Act 1992	No evidence of badgers was noted during the survey and the likelihood of this species being present is considered extremely low but given local records cannot be ruled out. The current scope of works does not affect the railway embankment. Should the scope change, consideration would need to be given to this species which could move into the survey area prior to works.

Constraint	Location		Level of Protection	Initial Assessment
	Colwyn Bay Waterfront Project – Phase 2b Area	Colwyn Bay Coastal Defence and Active Travel		
Over-wintering and foraging birds	Intertidal zone and off-shore	Intertidal zone and off-shore	(see SPA)	(see SPA above)
Nesting birds	Scrub, trees and buildings / structures	Scrub, trees and buildings / structures	All breeding birds are protected under the WCA 1981 (as amended) with Schedule 1 birds afforded greater protection from disturbance	Habitats within the Scheme have the potential to support nesting birds. Any works affecting these habitats could result in loss of nesting habitat and direct effects on nesting birds.
Reptiles	-	Railway embankments and verges	Reptiles are afforded varying degrees of protection under WCA. All reptiles are listed under Section 7 Species of Principal Importance under the Environment (Wales) Act 2016	The railway embankment habitats and scrub areas may provide suitable habitat for reptiles. Any works to these vegetated areas could adversely affect this species group (if present) and reduce available habitat.
Fish	In-shore	In-shore	Certain fish species are fully protected under the Conservation of Habitats and Species Regulations 2017 and the WCA.	The beach recharge works could result locally in small increases in sedimentation and turbidity which could affect small fish and invertebrates (prey). However, this would be temporary, probably in keeping with the tidal regime, and on a wider scale the bay is a large area which is available for fish and their prey. It is also anticipated that this would be undertaken at low tide above the water level, further minimising impacts.
Invertebrates and other submerged or benthic communities	In-shore	In-shore	Various species are protected under legislation and listed in planning policy	The beach recharge works could result locally in small increases in sedimentation and turbidity which could affect invertebrates, submerged seaweeds / plants and filter feeding organisms. However, this would be temporary and would not affect the entire bay (as Phases 1abc have already been completed). It is also anticipated that this would be undertaken at low tide above the water level, further minimising impacts. Settlement of larval mussels, fucoids and algal turf is anticipated to occur soon after the works have completed.

Source: Mott MacDonald Limited

In respect of over-wintering birds, an assessment of effects informed by the survey results is reported separately (Mott MacDonald Limited, 2020).

5.3 Recommendations

On the basis of the assessment of effects above, recommendations are made below for further survey and assessment along with mitigation and enhancement measures that are likely to be appropriate for the Scheme:

5.3.1 Further Survey and Assessment

Given the proximity of the Liverpool Bay SPA, it is recommended that the following is undertaken:

- A Habitats Regulations Assessment (HRA) Screening Report should be undertaken to ascertain any likely significant effects from both the Colwyn Bay Waterfront Project – Phase 2b works and the Colwyn Bay Coastal Defence and Active Travel works on the designation;
- Wintering bird surveys should be undertaken to ascertain the use of the local area by wintering birds and inform the HRA. This survey work was completed in December 2019 and January 2020 and the results are reported separately (Mott MacDonald Limited, 2020); and
- Bat emergence/return surveys are required for the structures identified with low bat roosting potential. Shelter 1 is proposed to be demolished and the toilet block is proposed for refurbishment (the scope of which has not been defined). They each require a single emergence/ return survey. These surveys will need to be undertaken between May and August.

If the scope of works changes to directly affect any trees or bridges, further survey would be required to assess bat roosting potential and, if required, ascertain the presence / likely absence of bats.

If the scope of works changes to affect the embankments, a walkover survey to check for evidence of badgers is recommended at least 8 weeks prior to commencement of works.

5.3.2 Mitigation and Licensing

As with the assessment of effects, it is anticipated that mitigation and enhancement measures would be included as part of an EIA or EcIA document, or within a bespoke mitigation report, to be completed once the design, construction methodology and programme for each Scheme is finalised. However, on the basis of the high-level assessment of effects and current proposals for each Scheme, it is anticipated that any mitigation strategy would include the below measures.

Where mitigation measures are relevant to only one of the Schemes, this is stated below. Otherwise the below are considered relevant to both.

- **Liverpool Bay SPA – Marine Licence.** A marine licence will be required from NRW for any works that could affect the SPA, including beach recharge and coastal defence upgrade works;
- **Habitats – Subtidal Sand and Gravels.** It is recommended that the sand for the beach recharge is sourced from the near vicinity of the site;
- **Habitats – *Sabellaria alveolata* Reefs.** Works should be confined to the footprint of works so as to ensure no adverse effects to *Sabellaria alveolata* Reefs outside of the survey area are affected. Safeguards such as fencing should be used to ensure this. Consideration should be given to the design of new rocky substrate habitats to maximise availability for colonisation by *Sabellaria alveolata*;
- **Habitats – Mussel Beds.** Works should be confined to the footprint of works so as to ensure no adverse effects to mussel beds outside of the survey area are affected (such as those known to be present to the north of Rhos Harbour). It is recommended that works to the beach be undertaken at low tide, where possible, to reduce the impacts of sedimentation on the marine habitats in the vicinity. The percentage of fine particles in the recharged beach material should be minimised to reduce smothering risk within subtidal aggregations by working at low tide for any methods that would be considered to increase sedimentation in

the water column. Consideration should be given to the design of new rocky substrate habitats to maximise availability for colonisation by mussel spat and inclusion of artificial rockpools at varying levels and locations along the scheme;

- **Roosting Bats.** If further surveys find evidence of roosting bats, then appropriate safeguards (including supervised soft-demolition of the buildings or strip of features) under licence by NRW would be required;
- **Foraging Bats.** Consideration should be given to bats in any new lighting design and landscape planting to ensure this is sensitive to the species known to be present in the area (in line with best practice guidance from the Bat Conservation Trust and the Institute for Lighting Professionals, 2018) and, where relevant, continues to offer the same if not enhanced opportunities for foraging bats. It is recommended that an ecologist is consulted on the lighting and planting schemes for the development;
- **Over-Wintering Birds.** Recommendations in respect of over-wintering birds are set out within a separate report (Mott MacDonald Limited, 2020);
- **Nesting Birds.** Vegetation, including scrub and trees, should be retained where possible. Where vegetation loss or management is required, this should be undertaken outside of the nesting bird season (typically March – August inclusive) or following the negative result of a nesting bird check by a suitably qualified ecologist;
- **Reptiles.** Vegetation, including scrub and long-sward grassland (particularly along the railway embankment) should be retained, where possible. Where vegetation loss or management is required, this would need to be supervised by a suitably qualified ecologist and preceded by a toolbox talk to contractors and a hand search for reptiles; and
- **General Construction Safeguards (including badgers and other mammals).** A CEMP should be produced prior to site works commencing to determine the reasonable and practicable steps to be taken to avoid pollution of the surrounding environment and safeguard wildlife. This should include measures to safeguard species such as badger (if present), hedgehog and other mammals which may be present. Such measures are anticipated to include staged strimming of long-sward grassland, ruderal vegetation and scrub; identification and avoidance of mammal burrows; and placement of arisings.

5.3.3 Enhancement

At national level, Chapter 6 of Planning Policy Wales requires Local Authorities to take measures to promote the conservation of landscape and biodiversity. It is therefore recommended that, to comply with the above planning policy, the opportunity is taken to incorporate ecological enhancements into the development.

In addition, during 2019 the Government produced the Environment Bill Policy Statement which, when the legislation comes into effect, will legally require developers to ensure habitats for wildlife are enhanced, with a 10% increase in habitat for wildlife compared with the pre-development baseline. This means the Councils across England will have a duty to ensure that any plans or projects provide biodiversity net gains, as opposed to 'no net loss'. Although the legislation to support this does not currently apply to Wales, it is expected to become a legal requirement from Welsh Government and clients are advised to plan accordingly.

At a local level, policy NTE/3 of the Local Plan promotes incorporating ecological enhancements into new development.

It is understood that an area of Colwyn Bay Coastal Defence and Active Travel has been identified for ecological enhancement as part of a 'Back to Nature' area. Such an enhancement would fall well in line with the above national policy objectives as well as local policy (NTE/3).

Enhancements that would be appropriate for both Schemes include the following:

- **Rocky Shore Habitat Creation** - Creation and management of new rocky shore habitat and artificial rockpools*, with options including bioblocks, drill coring, vertipools and enhanced sea walls;
- **Wildflower Grassland** – Wildflower grassland could be created on verges and embankments, planted with appropriate species**;
- **Landscaping Planting** – New or existing landscape planting could be planted to incorporate native species or species of wildlife value (i.e. fruit bearing shrubs and trees);
- **Habitat management** – retained and newly created habitats could be subject to an ecologically sympathetic management regime; including rotational or low-intensity cutting to encourage fruits and flowers; re-use of arisings for habitat piles; and avoiding use of herbicides;
- **Bat and bird boxes** - bat boxes could be integrated into, or installed on, any buildings and trees to provide enhanced roosting and nesting opportunities within the site in appropriate locations; and
- **Insect boxes** - insect boxes could be installed in retained or enhanced landscaping areas to provide enhanced nesting opportunities for invertebrates.

* careful placement to consider water depth and risk of sediment smothering would be required

** this may require initial management to reduce the nutrient load in the soil

6 Conclusions

A Preliminary Ecological Appraisal was undertaken to assess the potential constraints posed by ecological designations, protected and notable habitats and protected and notable species relating to the proposed Schemes in Colwyn Bay (Colwyn Bay Waterfront Project – Phase 2b and Colwyn Bay Coastal Defence and Active Travel).

The key constraint is the proximity of the Liverpool Bay SPA which lies 45m north of the Scheme. The survey area supports the priority habitats subtidal sand and gravels, *Sabellaria alveolate* reefs (small patches only) and blue mussel beds on sediment (two small mussel beds are present in the survey area, both of which comprise dense and sparse areas). All other habitats are considered to be of low ecological value and do not pose a constraint to any Scheme proposals. In terms of protected and notable species, the survey area has the potential to support bats, badger, other mammals, birds (nesting, foraging and overwintering), reptiles, fish and marine invertebrates. Further surveys are recommended for two buildings identified as having low bat potential.

Further surveys are also recommended in respect of wintering birds (these were undertaken in December 2019 and January 2020 and are reported separately), whilst a Habitats Regulations Assessment (HRA) screening and marine licence is recommended to assess effects on the SPA. Recommendations are made in respect of other habitats and species in terms of mitigation and opportunities for enhancement, although it is anticipated that these would be reviewed and refined once the proposals are finalised.

7 References

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- Cofnod (2020). Colwyn Bay P2B to P3 Biodiversity Information Search (Ref: E07906).

Appendices

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A. Phase 1 Habitat Map



Key to Symbols	
	Target note
	Phase boundaries
	Trees with low bat potential
	Honeycomb Worm Reef - sparse (approximate location)
	A3.1 - Broadleaved parkland/scattered trees
	A2.1 - Scrub - dense/continuous
	A3.1 - Broadleaved parkland/scattered trees
	B6 - Poor semi-improved grassland
	C1.1 - Bracken - continuous
	G1.6 - Standing water - brackish
	H1.1 - Intertidal - mud (approximate location)
	H1.1 - Intertidal - sand
	H1.2 - Intertidal - shingles/cobbles (approximate location)
	H1.3 - Intertidal - boulders/rocks (Groynes and man-made features)
	J1.2 - Cultivated/disturbed land - amenity grassland
	J3.5 - Artificial sea wall
	J3.6 - Buildings & infrastructure
	J5 - Hardstanding
	Mussel bed - dense (approximate location)
	Mussel bed - sparse (approximate location)

Notes

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4. Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
5. Phase 1c beach recharge extended into the Phase 2b area while transitioning back to existing beach levels and Phase 2a promenade improvements straddled the Phase1 and Phase2 boundary.

P5	23/07/20	SA	For information	NJS	JB
Rev	Date	Drawn	Description	Ch'k'd	App'd

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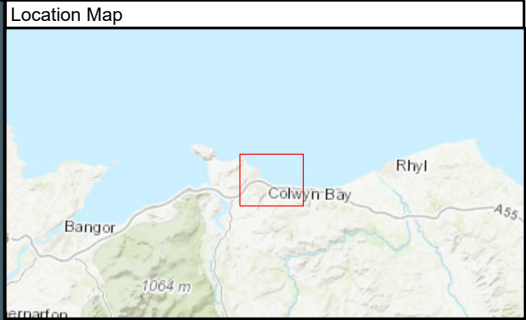
CONWY
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Title					
Colwyn Bay Phase 1 Habitat Survey					
Designed	L Woolley	LW	Eng. Check	N J Spofforth	NJS
Drawn	S Anstice	SA	Coordination	L Woolley	LW
GIS Check	H Wheldon	HW	Approved	J Bates	JB
Scale at A3 1:10,000		Status INF	Rev P5	Security STD	
Drawing Number 410895-MMD-00-XX-DR-C-0004					



B. Designated Site Plan



Key to Symbols

- 2 km buffer
- RSPB Reserves
- Local Nature Reserve (LNR)
- Local Wildlife Sites (LWS)
- Important Bird Area (IBA)
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Site of Special Scientific Interest (SSSI)
- Ancient Woodland

Notes

1. Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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P2	23/07/20	SA	For information	LW	JB
P1	10/02/20	HW	For information	LW	JB
Rev	Date	Drawn	Description	Ch'k'd	App'd

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Title

**Colwyn Bay
Designated sites plan**

Designed	L Woolley	LW	Eng Check	L Woolley	LW
Drawn	H Wheldon	HW	Coordination	L Woolley	LW
GIS Check	G O'Donovan	GO	Approved	J Bates	JB
Scale at A3	1:25,000	Status	PRE	Rev	P1
				Security	STD

C. Habitat Photographs

Figure C.1: Mussel Beds



Source: Mott MacDonald Limited

Figure C.2: Buildings and Infrastructure



Source: Mott MacDonald Limited

Figure C.3: Hardstanding



Source: Mott MacDonald Limited

Figure C.4: Running Water (culverted)



Source: Mott MacDonald Limited

Figure C.5: Poor Semi-improved Grassland



Figure C.6: Dense Scrub



Source: Mott MacDonald Limited

Figure C.7: Intertidal Sand



Source: Mott MacDonald Limited

Source: Mott MacDonald Limited

Figure C.8: Boulders



Source: Mott MacDonald Limited

Figure C.9: Sea Wall



Source: Mott MacDonald Limited

Figure C.10: Stone Wall



Source: Mott MacDonald Limited

Figure C.11: Amenity Grassland



Source: Mott MacDonald Limited

Figure C.12: Scattered Trees



Source: Mott MacDonald Limited

Figure C.13: Intertidal Mud Habitat



Source: Mott MacDonald Limited

Figure C.14: Algal Turf, Fucoids, Intertidal mud and sand habitats



Source: Mott MacDonald Limited

Figure C.15: *Sabellaria alveolate* reefs

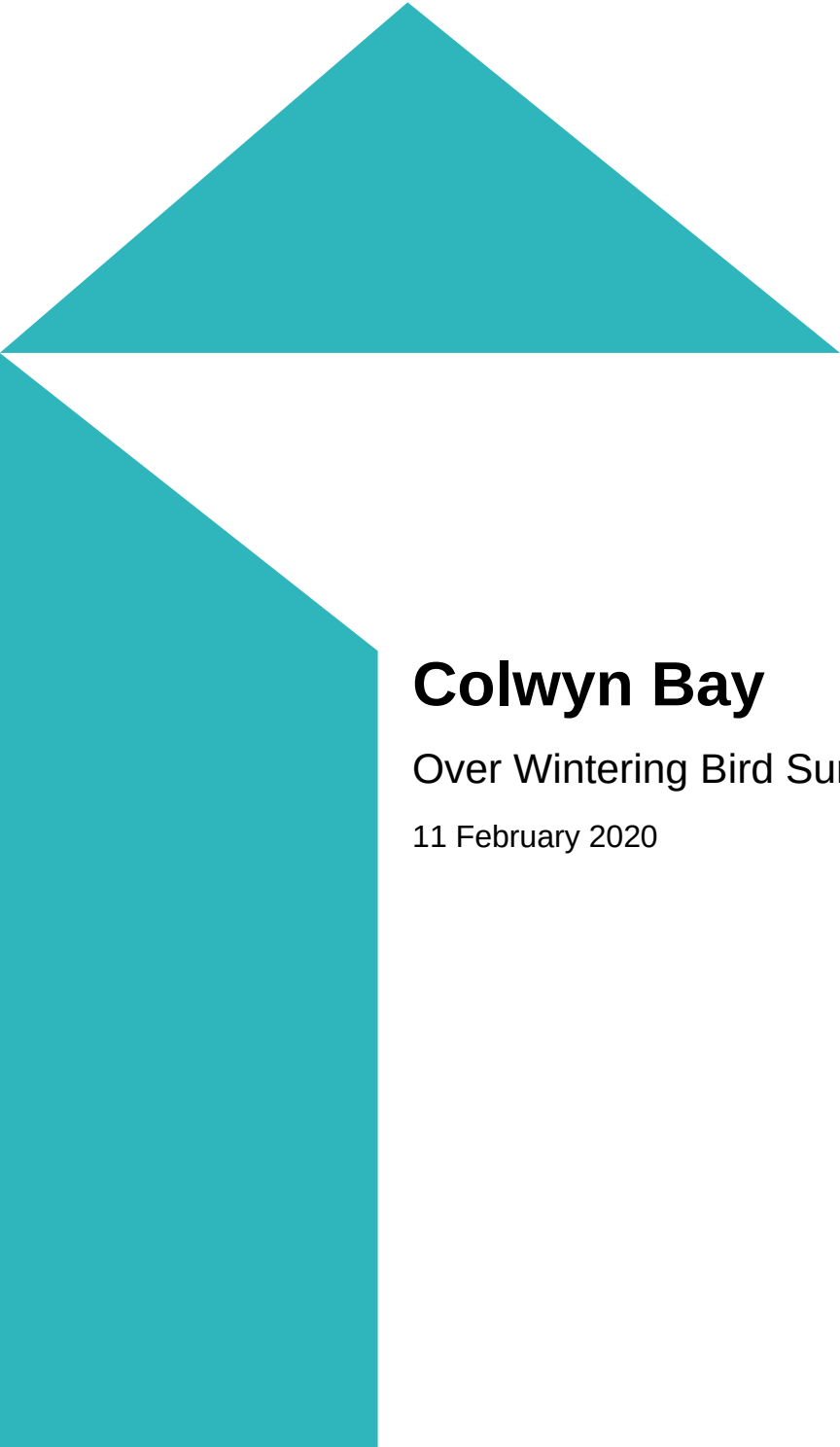


Figure C.16: Brackish Water





Appendix 8.3 – Wintering Bird Survey Report



Colwyn Bay

Over Wintering Bird Survey Report

11 February 2020

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Colwyn Bay

Over Wintering Bird Survey Report

11 February 2020

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	07/01/20	K Bowman	L Woolley	J Bates	First Issue
B	11/02/20	K Bowman	L Woolley	N Shelton	Second Issue

Document reference: 410895-MMD-N-R-00-XX-1700

Information class: Standard

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1 Introduction

1.1 Background and Site Location

Mott MacDonald Ltd has been commissioned by Conwy County Borough Council (CCBC) to complete over-wintering bird surveys relating to two coastal defence and promenade improvement Schemes within Colwyn Bay, North Wales (see Map 1).

Map 1: Colwyn Bay Location



Source: DigitalGlobe, Microsoft, Earthstar Geographics | Esri UK, Esri, HERE, Garmin, METI/NASA, USGS

The Victorian built coastal defences around Colwyn Bay from Rhos-on-Sea in the west to Old Colwyn in the east have suffered from undermining, corrosion, partial collapses and degradation with frequent overtopping events occurring at Spring Tides.

Phase 1abc and 2a of the Colwyn Bay Waterfront Project have already been completed which included the construction of a 150m groyne and Porth Eirias, beach recharge and promenade improvements in the central Colwyn Bay area.

Subsequent to this, CCBC are now seeking to provide a permanent upgrade of the coastal defences to protect the western and eastern areas of the bay concurrently with improvements to the promenade to facilitate active travel and regeneration.

These proposed schemes are illustrated on Map 2 (along with the Phase 1 area), namely:

- 'Colwyn Bay Waterfront Project Phase 2b' to the west; and
- 'Old Colwyn Coastal Defence and Active Travel Scheme' to the east.

These are the two areas targeted by the bird surveys discussed within this report.

Map 2: Scheme Location within Colwyn Bay



Source: 'ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community'. Note The completed Colwyn Bay Waterfront Phase 2a Scheme area straddles the Phase 1 and Phase 2 areas.

The national grid references for the western and eastern boundaries of each Scheme are approximately:

- The Colwyn Bay Waterfront Project Phase 2b west (285746, 378889) to east (287079, 378699); and
- Old Colwyn Coastal Defence and Active Travel Scheme west (284270, 380524) to east (284975, 379499).

1.2 Proposed Scope of Coastal and Promenade Works

1.2.1 Old Colwyn Coastal Defence and Active Travel Scheme

The proposed scope of work comprises a combination of coastal defence, promenade and active travel improvements:

Coastal defence works to comprise:

- The construction of a rock revetment (approximately 30m in cross sectional width and 1,200m in length);
- The extension of outfalls along the length of the revetment which currently outfall at the sea wall and protection works to existing outfalls that would be covered by the revetment;

- New pedestrian beach accesses through the new revetment to replace the existing ones;
- The raising of the promenade to permissible overtopping levels, accounting for climate change; and
- The widening of the promenade where it is narrow between Rotary Way access and Splashpoint at the eastern end of the promenade.

Active Travel improvements, to include new cycleway layouts, improved pedestrian access areas, improved lighting, new handrailing and improved signage.

Conceptual design has been completed for the Scheme which is to be classed as a 'Back to Nature' Zone. However, as these are concept options only it is anticipated that they may be subject to change during the detailed design phase depending on funding, technical physical and environmental constraints

In addition to the above key aspects of the Scheme, the conceptual design also includes:

- Boundary regrading to reconcile differences with existing levels;
- Three new headland areas across the western half of the Scheme to tie-in with the design of the promenade to the west of Porth Eirias including one with level access to the beach to comply with the Equalities Act 2010;
- The creation of platform or mini-headland areas with shelters across the eastern half of the Scheme to allow locations for fishing and other activities without blocking the promenade. The spacing and extent of these are yet to be confirmed;
- A new events and informal play area beyond the retaining wall to the north of Rotary Way;
- A picnic area with potential concessions building and refurbished toilet block;
- The creation of additional car parking spaces along the promenade, particularly along the eastern half of the Scheme (numbers of spaces created would be dependent on the parking layout option selected but are understood to vary from 77 to 235 – spaces in this area are estimated to number 49 currently). In the western half of the Scheme the number of parking spaces is anticipated to remain broadly the same as present with a potential small increase; and
- The creation of a new area of rock pools and rocky reef habitat between two existing groynes for ecological and educational enhancement.

These aspects have not been finalised as yet, however it is considered likely that many would be taken forward.

1.2.2 Colwyn Bay Waterfront Project Phase 2b

The proposed scope of work is anticipated to comprise a combination of coastal defence and promenade improvements. The scope has not been finalised as yet, however it is considered likely that the majority of the following aspects will be incorporated:

- Coastal defence works to comprise (from Horizon Shine to the southern boundary of Rhos-on-Sea Harbour):
 - Beach recharge to bring beach levels adjacent to the promenade up to those in the Phase 1 area; and
 - Modifications to the rock groyne adjacent to Rhos-on-Sea Harbour.
- Coastal defence works to comprise (from Rydal Boat store to the southern boundary of Rhos-on-Sea Harbour):
 - Repairs to the existing sea wall;

- Removal of remaining areas of existing rock revetment located against the sea wall in recharge areas for re-use elsewhere; and
- Modification of outfalls as appropriate to enable them to continue operating with the raised beach levels.
- Promenade improvement works currently anticipated to comprise (from Rydal Boat store to the southern boundary of Rhos-on-Sea Harbour):
 - 4m wide shared surface, 2.2m wide pedestrian only zone, highway alterations (one-way system), activity zones (for example seating, exercise areas, play features and garden areas), junction realignments, pedestrian links and crossings, new kiosks, planting and artwork.

1.2.3 Future Maintenance

The Schemes are also anticipated to also include future management and maintenance actions comprising:

- Maintenance and repair of coastal structures and sea wall;
- Maintenance and repair of promenade and associated features;
- Beach management;
- Reworking of structures to maintain the standard of service in line with sea level rise; and
- Beach re-nourishment if considered necessary (Colwyn Bay Waterfront project Phase 2b only).

1.2.4 Proposed Works Programme

As funding is yet to be secured for Scheme construction, the programme has not yet been confirmed. Due to the scale of the Schemes, the construction process may need to be split into several phases.

1.3 Ecology Context - Liverpool Bay SPA

The Schemes are both located in close proximity to the Bae Lerpwl/ Liverpool Bay inshore Special Protection Area (SPA) and Important Bird Area (IBA). For the Colwyn Bay Waterfront Project Phase 2b Scheme in particular it is anticipated that the beach recharge construction activities including boat and temporary floating pipeline activities will take place within the SPA boundary.

The SPA covers an area of approximately 252,757.73ha 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, the red-throated diver, common scoter and little gull are wintering species, whilst the little tern and common tern use the area in summer.

1.4 Purpose of this Report

The purpose of this report is to set out the results of the over-wintering bird surveys undertaken from November 2019–January 2020 and to assess the potential impacts from the two proposed coastal defence and promenade improvement Schemes, as far as is reasonably possible based

on current understanding (given that detailed design has not yet been completed for either Scheme). Recommendations are provided for mitigation as appropriate.

2 Survey Methodology

2.1 Scope of the Surveys

The survey area includes the Old Colwyn Coastal Defence and Active Travel Scheme area to the east (including 500m to the east to cover the potential zone of influence of the proposed works) and the Colwyn Bay Waterfront Project Phase 2b area to the west. The total survey area Old Colwyn Coastal Defence and Active Travel Scheme is approximately 1.4km and the total survey area for the Colwyn Bay Waterfront Project Phase 2b is approximately 1.5km.

There was some overlap into the Phase 1 Colwyn Bay Waterfront Project area and these results have been included in Appendix A for completeness.

2.2 Wetland Bird Survey (WeBS) Methodology

The British Trust for Ornithology's Wetland Bird Survey, 'look-see' methodology (Bibby *et al.* 2000) has been used for the surveys. The methods involve surveying the whole of a predefined area.

The coastal boundary was walked during a rising tide (within three hours of high tide), at a constant pace with surveyors stopping every 300m to scan the immediate bay and sea area.

Wetland birds 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 Survey Details

Four survey visits have been undertaken, the details for which are included in Table 2.1 below.

Table 2.1. Survey details

Scheme	Date	Start/ Finish Time (BST)	Total Cloud Cover (Oktas)	Wind Speed (Beaufort Scale) & Direction	Precipitation	Surveyor/s
Old Colwyn Coastal Defence and Active Travel Scheme	22/11/2019	11am-3pm	0	1 SE	None	K. Bowman & K. Howe
Colwyn Bay Waterfront Project Phase 2b	06/12/2019	10am-2pm	0	2 NW	None	K. Bowman & C. Taylor
Old Colwyn Coastal Defence and Active Travel Scheme & Colwyn Bay Waterfront Project Phase 2b	09/12/2019	10am-2pm	0	3 N	None	K. Bowman & C. Taylor

Scheme	Date	Start/ Finish Time (BST)	Total Cloud Cover (Oktas)	Wind Speed (Beaufort Scale) & Direction	Precipitation	Surveyor/s
Old Colwyn Coastal Defence and Active Travel Scheme & Colwyn Bay Waterfront Project Phase 2b	06/01/2020	11am-1.30pm	0	2 WSW	None	K. Bowman A. Crowl
Old Colwyn Coastal Defence and Active Travel Scheme Colwyn Bay Waterfront Project Phase 2b	16/01/2020	10:00am-2pm	0	3 SSE	None	K. Bowman B. Gray

3 Survey Results

The survey results are set out separately below in Section 3.1 for The Old Colwyn Coastal Defence and Active Travel Scheme area plus a 500m stretch to the east; and in Section 3.2 for The Colwyn Bay Waterfront Project Phase 2b area.

Survey results for the Phase 1 area (intervening land) are included in Appendix A for context only but are not considered below as it falls outside of the scope of this report.

3.1 Old Colwyn Coastal Defence and Active Travel Scheme (including Splashpoint and 500m east)

Table 3.1: Survey Visit 1 - 22nd November Results (note that SPA species are in bold)

Date	Species	Distance from bay	Count	Field observations
22/11/19	Black-headed gull (<i>Chroicocephalus ridibundus</i>)	<50m	4	Foraging on the intertidal area and rock revetment area, with the occasional bird flying over.
22/11/19	Common gull (<i>Larus canus</i>)	<50m	10	Foraging on the intertidal area amongst herring gull. The occasional bird flew over.
22/11/19	Common scoter	<400m (small numbers of birds) and >1.5km (main feeding zone)	c.2000	Scattered medium to large rafts of birds (50-500) were visible from the coastal footpath, up to 1.0km-3.0km out to sea. The majority of birds were observed feeding and flying to and from other, scattered rafts within the area. Two small rafts of 13-20 birds were recorded chasing one another towards the bay within 500m of the coastline for approximately 15 minutes. Subsequently, the birds returned to the larger rafts of birds approximately 2.0-3.0km away.
22/11/19	Cormorant (<i>Phalacrocorax carbo</i>)	<600m	104	The majority of cormorant were observed roosting upon the manmade structures along the bay. In addition, several individuals were noted feeding at sea close to common scoter and within 100m of the bay.
22/11/19	Great black-backed gull (<i>Larus marinus</i>)	<350m	7	Several individuals were seen foraging on the intertidal zone and others were seen flying over.
22/11/19	Great-crested grebe (<i>Podiceps cristatus</i>)	<200m	1	One individual was observed feeding at sea, close to the tideline.
22/11/19	Herring gull (<i>Larus argentatus</i>)	<500m	185	The majority of birds were seen in flocks feeding within the intertidal area. Other individuals were seen roosting on rock revetments and flying over.
22/11/19	Lesser black-back gull (<i>Larus fuscus</i>)	<200m	4	All individuals were observed flying over the survey area.
22/11/19	Oystercatcher (<i>Haematopus ostralegus</i>)	<200m	34	The majority of birds were seen feeding within the intertidal zone, with herring gull. Others were observed flying low through the area and close to the bay.
22/11/19	Turnstone (<i>Arenaria interpres</i>)	<40m	8	Turnstone were recorded feeding and roosting amongst the rock armour at grid reference SH911788. They were not observed again.

Table 3.2: Survey Visit 2 – 9th December Results (note that SPA species are in bold)

Date	Species	Distance from bay	Count	Field observations
09/12/19	Black-headed gull	<500m	19	The majority of birds were observed foraging within the intertidal area, with several individuals flying over the area.
09/12/19	Common gull	<200m	6	Three birds were observed foraging with other gull species within the intertidal zone. Three other individuals were recorded flying over.
09/12/19	Common scoter	<500 (small numbers of birds) >1.5km (main feeding zone).	c. 2000	Large rafts of birds making up approximately 1000 individuals were visible from coastline, approximately 1.5-2.0km away. A small raft of 23 individuals were observed within 0.5km of the bay, which remained in the area for approximately five minutes. A further 3 individual birds were also observed chasing one another within 0.5km of the bay, and these stayed in view for 10 minutes. All birds observed within 0.5km of the bay returned back to the larger groups of birds up to 1.5km away after a short period of time.
09/12/19	Cormorant	<800m	86	The majority of cormorant were seen roosting on manmade structures along the coastline, with a few individuals observed feeding at sea.
09/12/19	Great black-backed gull	<1.1km	2	One individual was observed feeding within the intertidal zone and another individual was recorded foraging at sea.
09/12/19	Herring gull	<300m	655	Herring gull were observed in large flocks feeding and roosting within the intertidal zone and rock revetment area. Many individuals were also seen flying over the area.
09/12/19	Lesser black-backed gull	<100m	5	All individuals were observed feeding within the intertidal area.
09/12/19	Meadow pipit (<i>Anthus pratensis</i>)	<50m	10+ (most likely under-recorded)	Meadow pipit were commonly encountered along the rock revetment and grassy areas running parallel to the coastal public footpath.
09/12/19	Oystercatcher	<100m	8	All individuals were observed foraging within the intertidal area.
09/12/19	Shelduck (<i>Tadorna tadorna</i>)	<100	3	Three Shelduck were observed flying through the area and travelling up to 1.0km out to sea. It is possible that the birds flew from the bay, however this could not be confirmed.

Table 3.3: Survey Visit 3 - 6th January Results (note that SPA species are in bold)

Date	Species	Distance from bay	Count	Field observations
06/01/2020	Black-headed gull	<20m	6	Observed feeding and loafing within the intertidal area.
06/01/2020	Common gull	<200m	4	All individuals were observed in mixed flocks of feeding and (or) loafing gulls, including herring and black-headed gull.
06/01/2020	Common scoter	<500m (small numbers of birds) >1.5km (main feeding zone).	c. 1000	Like the previous surveys, large rafts of feeding common scoter congregated approximately 2.0-3.0km from the coastal footpath.

Date	Species	Distance from bay	Count	Field observations
				Three small rafts of approximately 6-21 individuals maximum came within 500m of the bay. Rafts remained in the area for approximately 15 minutes and subsequently, returned to the larger feeding raft at 2.0-3.0km away.
06/01/2020	Cormorant	<400m	18	Cormorant were predominantly observed basking on rocks, east and west of the Splashpoint and feeding upon the water within 400m of the bay, parallel of the Splashpoint area.
06/01/2020	Great black-backed gull	<100m	1	One great black-backed gull was observed on the rock armour fringing the bay.
06/01/2020	Herring gull	<300m	89	Herring gull were observed regularly, feeding and loafing throughout the survey extent either in small or large flocks. Few individuals were also seen feeding at sea.
06/01/2020	Turnstone	<50m	32	Turnstone were observed feeding amongst the rocks directly opposite the Splashpoint, along with a few oystercatcher.
06/01/2020	Oystercatcher	<50m	11	One to three individuals were observed feeding within the intertidal area at a time. Others were seen upon rocks feeding and feeding with turnstone.
06/01/2020	Great-crested grebe	<100m	2	Two individuals were observed feeding close to the tideline.

Table 3.4: Survey Visit 4 - 16th January Results (note that SPA species are in bold)

Date	Species	Distance from bay	Count	Field observations
16/01/2020	Black-headed gull	<50m	69	All individuals were noted as foraging and roosting within the intertidal range.
16/01/2020	Common gull	<50m	1	Roosting within intertidal and high tide zones.
16/01/2020	Common scoter	>1.0km (main feeding zone) <1.0km (one raft) <800m (two small rafts)	c. 1300	Feeding at sea in scattered rafts of various sizes (40-300 per raft). Two small rafts of 50 and 40 individuals were detected approximately 650m and 500m away, respectively at their closest points. These did not drift closer towards the bay.
16/01/2020	Cormorant	<200m	1	One individual observed flying over the sea
16/01/2020	Great black-backed gull	<50m	2	Two individuals were observed foraging at sea.
16/01/2020	Herring gull	<50m	56	Observed foraging and roosting within the intertidal zone.
16/01/2020	Lesser black-backed gull	<50m	1	Observed feeding within the intertidal area.
16/01/2020	Oystercatcher	<50m	18	Similar to previous surveys, all individuals observed feeding amongst gulls and turnstone within the intertidal zone. The majority <50m away.
16/01/2020	Turnstone	<50m	60	60 turnstone were observed feeding within the intertidal zone and on the groin.

3.2 Colwyn Bay Waterfront Project Phase 2b

Table 3.5: Survey Visit 1 – 6th December Results (note that SPA species are in bold)

Date	Species	Distance from bay	Count	Field observations
06/12/19	Black-headed gull	<200m	3	All individuals were noted as foraging and roosting within the intertidal range.
06/12/19	Common gull	<250m	3	Foraging and roosting within the intertidal zone, amongst other gull species (mainly common and herring species).
06/12/19	Common scoter	>1.0km	c. 700	Feeding at sea in scattered rafts of various sizes (50-300).
06/12/19	Cormorant	<800m	46	The majority of birds were observed roosting on manmade structures such as walls and pylons. Fewer individuals were observed foraging and flying out to sea to feed.
06/12/19	Great black-backed gull	<200m	1	Foraging within intertidal zone.
06/12/19	Great crested grebe	<500m	4	All individuals were observed feeding at sea.
06/12/19	Great northern diver (<i>Gavia immer</i>)	600m	1	Observed feeding at sea.
06/12/19	Herring gull	<250m	57	Observed foraging and roosting within the intertidal zone.
06/12/19	Lesser black-backed gull	<200m	2	Observed feeding within the intertidal area.
06/12/19	Oystercatcher	<150m	6	Individuals observed feeding amongst gulls within the intertidal zone.
06/12/19	Red throated diver (<i>Gavia stellata</i>)	<800m	2	Two individual birds observed out at sea.
06/12/19	Redshank (<i>Tringa totanus</i>)	<200m	2	Both individuals were observed feeding within the intertidal zone area.

Table 3.6: Survey Visit 2 – 9th December Results (note that SPA species are in bold)

Date	Species	Distance from bay	Count	Field observations
9/12/19	Black-headed gull	<100m	14	Black-headed gull were observed roosting and foraging within the intertidal range and flying over the survey area.
9/12/19	Common gull	<50m	2	Both sightings of common gull were in mixed flocks of gull sp. foraging and roosting in the intertidal zone.
9/12/19	Common scoter	>1.0km	c. 1200	Large scattered raft at sea.
9/12/19	Cormorant	<100m	42	The majority of birds were observed roosting on manmade structures such as walls and pylons, north of the survey area. Few individuals were also observed foraging and flying out to sea to feed.
09/12/19	Great black-backed gull	<200m	1	Foraging within intertidal zone with other gull sp.
09/12/19	Herring gull	<100m	62	Foraging within intertidal zone with other gull sp.
09/12/19	Lesser black-backed gull	<200m	2	Foraging within intertidal zone with other gull sp.

Date	Species	Distance from bay	Count	Field observations
09/12/19	Oystercatcher	<50m	7	Foraging in the intertidal zone. One to two individuals were observed flying through the area.
9/12/19	Redshank	<50m	3	Feeding within the intertidal zone, with oystercatcher.

Table 3.7: Survey Visit 3 – 6th January Results (note that SPA species are in bold)

Date	Species	Distance from bay	Count	Field observations
06/01/20	Black-headed gull	<100m	26	All individuals were noted as foraging and roosting within the intertidal range and upon the rocky walls leading in to the sea.
06/02/20	Common gull	<250m	2	Similar to previous surveys, common gull were observed foraging and roosting within the intertidal zone, amongst other gull species (mainly black-headed and herring species).
06/01/20	Common scoter	>1.0km <1.0km (one small raft of three)	c. 800	Feeding at sea in scattered rafts of various sizes (50-300 per raft). One small raft of 3 individuals were detected approximately 500m away but did not drift any closer towards the bay.
06/01/20	Cormorant	<800m	16	Few individuals were observed roosting on manmade structures such as walls and pylons within the survey extent. Other individuals were observed foraging and flying out to sea to feed.
06/01/20	Great black-backed gull	<200m	1	One individual was observed foraging at sea.
06/01/20	Great crested grebe	<500m	3	All individuals were observed feeding at sea.
06/01/20	Herring gull	<50m	34	Observed foraging and roosting within the intertidal zone. Several individuals were also seen foraging at sea and flying over the survey extent.
06/01/20	Oystercatcher	<100m	11	Similar to previous surveys, all individuals observed feeding amongst gulls and turnstone within the intertidal zone.
06/01/20	Redshank	<100m	3	Three redshank were observed feeding within the intertidal zone, close to one another.

Table 3.8: Survey Visit 4 - 16th January Results (note that SPA species are in bold)

Date	Species	Distance from bay	Count	Field observations
16/01/20	Black-headed gull	<100m	32	Recorded foraging and roosting within the intertidal zone.
16/02/20	Common gull	<250m	3	Similar to previous surveys, common gull were observed foraging and roosting within the intertidal zone.
16/01/20	Common scoter	>1.0km	c. 800	Large raft commonly observed on all surveys, feeding at sea.
16/01/20	Cormorant	<800m	16	All individuals were observed roosting on the manmade wall north of the site boundary.
16/01/20	Great black-backed gull	<200m	1	One individual was observed foraging within the intertidal range.
16/01/20	Great crested grebe	<500m	2	All individuals were observed feeding at sea.

Date	Species	Distance from bay	Count	Field observations
16/01/20	Herring gull	<50m	34	Observed foraging and roosting within the intertidal zone with black-headed gulls.
16/01/20	Oystercatcher	<100m	12	Similar to previous surveys, all individuals observed feeding amongst gulls and turnstone within the intertidal zone.
16/01/20	Redshank	<100m	2	Two redshank were observed feeding within the intertidal zone, close to one another.

4 Assessment of Potential Impacts

Further, and more detailed, assessments of potential effects and impacts of the construction and operational phases of the works will be required to be undertaken once the detailed proposals are finalised, these being as part of an Environmental Impact Assessment (EIA) and Habitats Regulations Assessment (HRA).

However, based on the broad scope of works available at the current time, a high-level assessment of effects has been included below.

4.1 Assessment of Potential Impact Pathways

The impact pathways and assessment of effects below are undertaken for both Schemes (the Colwyn Bay Waterfront Project – Phase 2b and the Colwyn Bay Coastal Defence and Active Travel area).

4.1.1 Construction Phase

Construction impacts may occur during removal and placement of rock armour, excavation of sand, beach recharge, outfall extensions and the presence of humans and/or machinery travelling through the proposed works footprint.

Potential construction impacts to SPA species could include:

- Disturbance;
- Water pollution (notably turbidity and sedimentation);
- Noise pollution; and
- Light pollution.

The above effects could lead to a reduction in abundance and distribution of bird species due to displacement from areas utilised for feeding and impacts on feed availability and/or accessibility. Although the area is coastline with significant human usage and baseline levels of disturbance, the works are expected to exceed the baseline levels to which birds have become habituated to or have modified their behavior patterns to accommodate this activity.

In respect of the SPA species, if works are undertaken during winter months they could cause an impact by displacing relatively small numbers of SPA bird species. Smaller groups of wintering SPA species, common scoter, and red throated diver were observed during surveys, with the main populations being observed further offshore, as would be expected for these species. Timing of the elements of the proposed works will need to be considered, when they are known, regarding potential impacts on wintering, summering or passage SPA species.

In terms of other bird species (specifically those observed feeding within the intertidal zone) identified within the programmed works area, it is anticipated that these will be temporarily displaced during beach works as a result of both disturbance and also potentially due the replaced substrate. Following beach recharge (Colwyn Bay Waterfront project Phase 2b only) it is likely that there will be a short period of time until intertidal species recolonise the area of imported sand. However, there is extensive alternative habitat available compared with area likely affected and such effects would be temporary in nature, such that the birds will be able to recolonise following completion of works. Coastal habitats, especially those with sandy

sediments in exposed areas are subject to high levels of natural movements and change naturally and it is expected that re-colonisation will take place in a short period of time.

4.1.2 Operational Phase

Impacts relating to operation of the Schemes are anticipated not change the baseline levels of activity, with the exception of infrequent maintenance activities, which may include replenishment of the beach, the impact pathways for which are anticipated to be:

- Disturbance;
- Water pollution; and
- Light and noise pollution;

The above effects could lead to a reduction in species richness and/or abundance as well as displacement of SPA birds from areas utilised for feeding and any required maintenance will require assessment of potential impacts prior to being undertaken

4.2 Assessment of Impacts

As set out above, disturbance to non-SPA birds is considered likely to cause temporary displacement to other available habitat and so is not considered a particular constraint to the proposals.

In respect of SPA birds, an assessment of effects, although likely to impact only small numbers of birds for short period of time, would be undertaken as part of a Habitats Regulations Assessment (HRA) once the proposals are finalised.

Of the species designated as part of the SPA, only common scoter and red throated diver were recorded as part of the surveys and are therefore considered below. Other designated interest features for the Liverpool Bay SPA include little gull, little tern and common tern, none of which were observed during the wintering bird surveys undertaken (albeit this would be expected for summer visitors such as little tern and common tern).

A broad assessment of the anticipated impacts on the SPA birds recorded (common scoter and red throated diver) relating to both Schemes is provided within 4.1 below:

Table 4.1: Potential Impacts on recorded SPA Birds Relating to the Old Colwyn Coastal Defence and Active Travel Scheme and Colwyn Bay Waterfront Phase 2b Scheme Prior to Mitigation

Potential impact	Assessment	Construction	Operation (Occasional Maintenance)
Construction and personnel disturbance	Due to public access already permitted within the areas for the proposed works, the birds are likely to have some level of habituation to human disturbance. However with the presence of additional personnel and machinery, these have the potential to cause displacement to the species and lower the habitat quality of an area. Small number of common scoter that have been identified within c. 500m of the Scheme footprint are most at risk during construction and operational disturbance. Studies have suggested that human activity such as moving vessels (small and large), machinery and manmade structures can put birds into flight from 1.0-2.0km during non-breeding season (Kaiser <i>et al.</i>, 2006). As such, it is evident that common scoter can react in various ways according to the type of disturbance encountered. As for red-throated diver, only two individuals were observed within 800m of the proposed works area, and neither individual was observed feeding or moving closer to land. Red-throated diver is more susceptible to show vigilance or take flight when in smaller and more confined areas such as lochs and estuaries. However, studies have often shown that this particular species is not likely to take flight when at sea due to the larger fleeing area available. Due to the level of beach disturbance, due to works, being higher at the Colwyn Bay Waterfront Project Phase 2b area, by including boat and pipeline movements within the SPA, the potential impact to SPA species is considered to be higher in this area	Yes	Yes (maintenance works only)
Noise pollution	The majority of the survey area already experiences some form of noise pollution relating to cars and people. However, it is likely that additional impacts are most likely to occur during the construction phase of the works. Whilst the Scheme will result in increased noise levels and a potential reduction in habitat quality, the works areas are relatively small compared to the available habitat/sea resources available to common scoter and red throated diver. The Colwyn Bay Waterfront Project Phase 2b area would involve more intensive beach works closer to the SPA boundary and boat/pipeline movements with associated noise generation within the SPA during construction. The Old Colwyn Coastal Defence and Active Travel Scheme works are located further from the SPA boundary however there may be some piling activities (or other activities that generate percussive sounds) required during construction which could disturb birds.	Yes	Possible (maintenance works only)

Potential impact	Assessment	Construction	Operation (Occasional Maintenance)
Light pollution	The Scheme may result in increased light levels during construction (should lighting be required during the hours of darkness for e.g. tidal working). There is the potential of reduction in habitat quality, despite the affected areas being relatively small compared to the available habitat resource within the wider area. Light pollution and the impacts on over-wintering seabirds is poorly understood. Some studies have noted that the attraction to artificial sources of light has been recorded and has a detrimental effect on some globally threatened populations (Reed <i>et al.</i> 1985). However, most studies are produced during breeding season. It is unknown at this point whether the programmed works will use artificial lighting (although it is assumed given the requirement for tidal working) and therefore precautionarily it is assessed that this could impact birds.	Yes	Yes (maintenance works only)
Water pollution	Although mitigated by the timing of recharge at low tide, temporary increase in suspended sediment and turbidity levels within the local water column is anticipated during the construction phase and for a short period thereafter, particularly for the beach recharge aspect for the Colwyn bay Waterfront Project Phase 2b. This may adversely impact submerged seaweeds/plants and filter feeding organisms which provide prey for birds, as well as affecting fish-eating birds close to the coast. Oil and fuel spills also pose a risk in this environment.	Yes	Yes (maintenance works only)

In summary, from the above assessment the principal adverse impacts from both Schemes on SPA birds are considered to relate to construction noise, disturbance resulting from human presence and activity, including the use of machinery and water pollution, with light pollution having lower anticipated impacts

5 Mitigation and Recommendations

5.1 Habitats Regulations Assessment (HRA)

It is recommended that a Habitats Regulations Assessment (HRA) screening is undertaken in respect of the Liverpool Bay SPA to assess likely significant effects from the works, once the proposals are finalised. In the event that works are considered likely to have a significant effect, an Appropriate Assessment will be required which will consider the effectiveness of appropriate mitigation measures.

5.2 Construction Safeguards and Mitigation

It is anticipated that an assessment of effects and recommendations for mitigation would be set out within an EIA or specific mitigation strategy document once the design, construction methodology and programme are finalised for each Scheme. Any such mitigation strategy should be agreed with the County Ecologist and, if needed, NRW.

In the absence of specific design and programme information, it is not possible to recommend specific mitigation measures at this stage. Nonetheless, on the basis of the results and high-level assessment completed, broad mitigation measures are outlined below that are appropriate to the works.

As this report relates to wintering bird surveys these mitigation measures focus on the SPA species common scoter and red throated diver, which were assessed as the key constraints to the works if they are undertaken in the winter months when these species are present. For works undertaken at different times, then consideration for impacts will be required based on those works and species present, particularly for common and little tern in summer.

Mitigation is set out in respect of the broad impacts identified in Section 4.

5.2.1 Construction and Personnel Disturbance

Disturbance causing displacement to common scoter can vary depending on the duration of works, type of activity and its location. However, due to common scoter being a sensitive species and recorded within c.500m of the Scheme footprint, it is advised that:

- Disturbance is reduced as much as possible whilst working within close proximity to the population;
- All works should be preceded by a toolbox talk by a qualified Ecological Clerk of Works (ECoW) to advise contractors on how best to minimise disturbance;
- Works should be supervised or overseen by a qualified Ecological Clerk of Works (particularly in areas where common scoter and red throated diver have been recorded) who will monitor the presence, pattern of activity and proximity of sensitive bird species and halt any works where SPA species come within 500m of the bay to avoid disturbance or displacement of SPA birds;
 - The ECoW should be confident to identify and observe all bird movements from a vantage point;
 - From current observations the frequency and time the common scoter are coming into shore is relatively sporadic, the birds will stay within 0.5km for a maximum of 5-15 minutes before returning back to larger groups of feeding birds up to 3.0km away from land. It is not possible to predict the amount time and frequency of birds coming within

close proximity of the works. However, after analysing the current date survey results, it is likely that common scoter will approach land within 0.5km at least once per tidal cycle (6 hours) and that works would only be stopped for a short period; and

- No nocturnal surveys were produced during this 2019-2020 survey period, which is a constraint and limitation of the surveys. While some local studies that suggest the birds in general migrate north (off-shore) in the morning and south (towards the coast) in the morning (Kaiser *et al.*, 2002), it is advised that if over-wintering beach night-time beach works are required, thermal imaging is used by the ECoW in order to detect night-time bird movements, particularly SPA species.

Red throated diver was not recorded within 500m of the Scheme during the surveys but the on a precautionary basis the recommendations above are considered relevant to this species as well.

Recommendations for timing of works cannot be made without details of the proposal due to the presence of wintering and summer SPA species.

5.2.2 Noise Pollution

In order to mitigate for noise disturbance to birds, as with the construction effects above, the following is recommended:

- Disturbance is reduced as much as possible whilst working within close proximity to the population;
- All works should be preceded by a toolbox talk by a qualified ECoW to advise contractors on how best to minimise disturbance; and
- Works should be supervised or overseen by a qualified ECoW (particularly in areas where common scoter and red throated diver have been recorded) who will monitor the presence, pattern of activity and proximity of sensitive bird species and halt any works where SPA species come within 500m of the bay to avoid disturbance or displacement of SPA birds.;

The above is recommended for both day and night working.

5.2.3 Light Pollution

It is important that effective measures to reduce seaward and skyward light pollution are implemented. This includes removing unnecessary illumination, using landward facing directional lighting of the lowest lux possible to be effective and allow safe working.

During the operational phase, if path and/or road lights are to be installed, then it is advised that full cut off high pressure sodium lights that point downwards towards the paths/roads should be considered in order to minimise impacts.

5.2.4 Water Pollution

During construction, contamination risks to surface waters from, for example, spillages, accidents and direct runoff will be managed through the CEMP which will include the requirements for the storage of harmful chemicals/fuels. All construction staff would receive training and sign up to implementation of the management plan prior to the start of work.

A bio-security risk assessment should be completed for both Schemes.

For beach recharge activities there is limited mitigation for the increased levels of suspended sediment and turbidity however these effects will be temporary and will be undertaken during low tide conditions.

6 References

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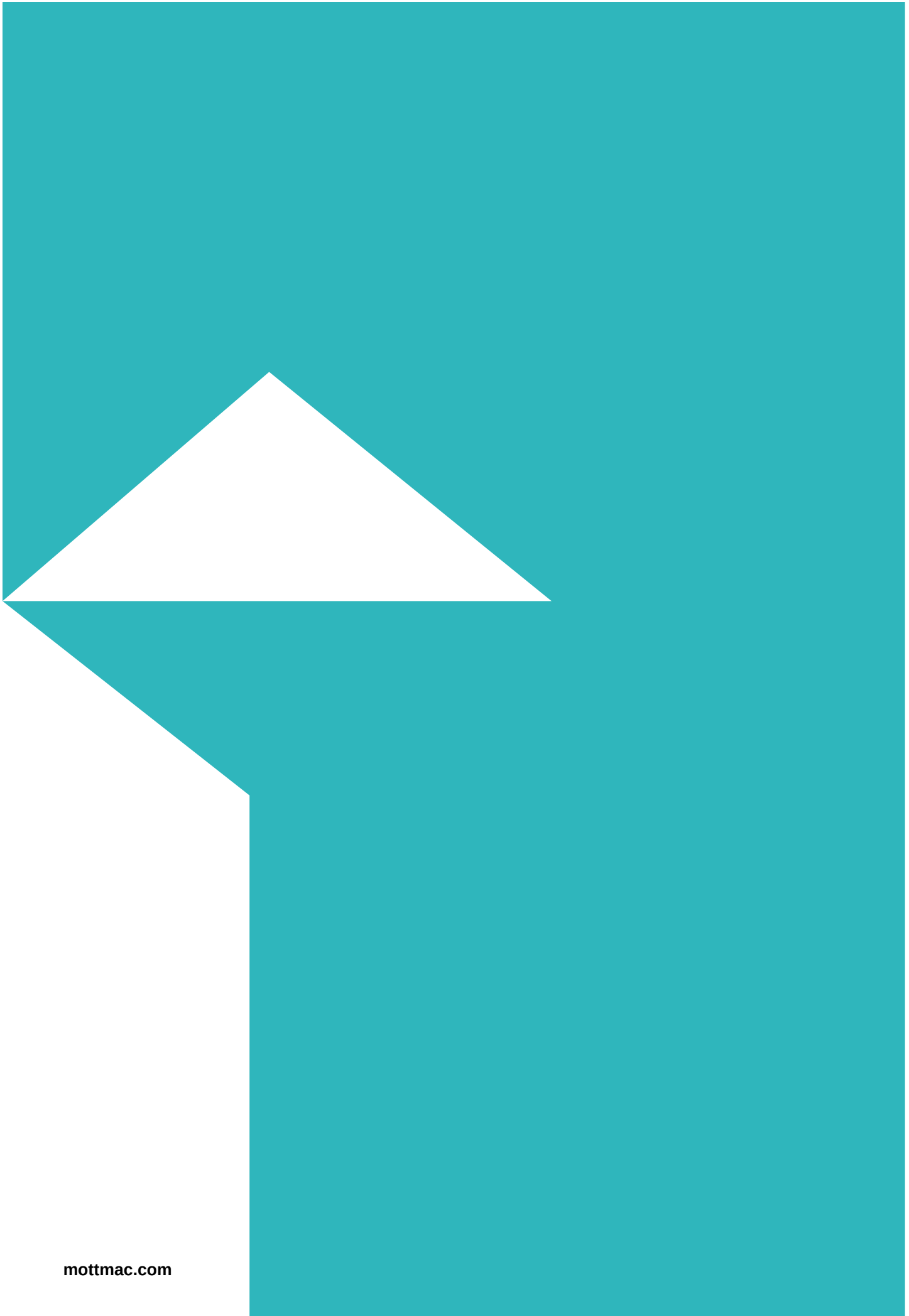
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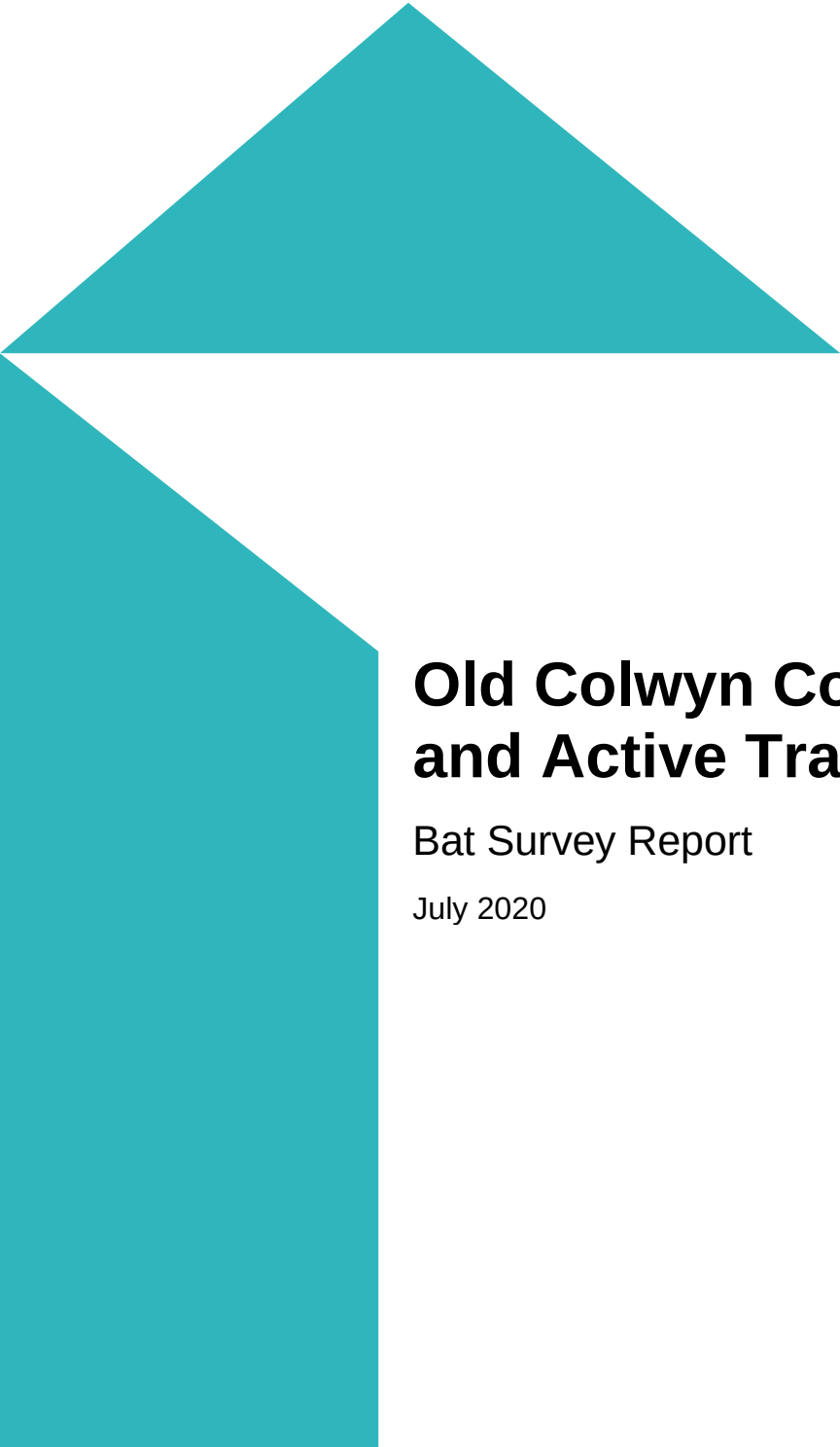
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A. Colwyn Bay Waterfront Phase 1 Area Supplementary Results

Date	Species	Distance from bay	Count	Field observations
22/11/19	Black-headed gull	<50m	65	Foraging on the intertidal area and rock revetment area, with the occasional bird flying over.
22/11/19	Common gull	<50m	2	Foraging on the intertidal area amongst herring gull. The occasional bird flew over.
22/11/19	Common scoter	>1.5km (main feeding zone)	c.2000	Scattered medium to large rafts of birds (50-500) were visible from the coastal footpath, up to 1.0km-3.0km out to sea. The majority of birds were observed feeding and flying to and from other, scattered rafts within the area.
22/11/19	Cormorant	<500m	5	All birds were observed flying over.
22/11/19	Great black-backed gull	<100m	4	Two individuals were seen foraging on the intertidal with other gull species zone and others were seen flying over.
22/11/19	Great-crested grebe	<100m	1	Two individuals were observed feeding at sea, close to the tideline.
22/11/19	Herring gull	<500m	63	The majority of birds were seen in flocks feeding within the intertidal area. Other individuals were seen roosting on manmade structures along the promenade.
22/11/19	Lesser black-back gull	<200m	2	All individuals were observed feeding with other gull species.



Appendix 8.4 – Bat Survey Report



Old Colwyn Coastal Defence and Active Travel Scheme

Bat Survey Report

July 2020

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Old Colwyn Coastal Defence and Active Travel Scheme

Bat Survey Report

July 2020

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	July 2020	A Morley	L Woolley	C Williams	First Issue

Document reference: 417437-MMD-00-XX-RP-N-1727

Information class: Standard

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Executive summary

Conwy County Borough Council (CCBC) has appointed Mott MacDonald Limited to provide ecological advice in respect of the proposed Old Colwyn Coastal Defence and Active Travel Scheme in Colwyn Bay (the Scheme). The proposed works will include upgrades to the promenade and new coastal defences.

Mott MacDonald Limited has undertaken a Preliminary Ecological Appraisal (PEA) of the site and its surroundings, which identified potential for roosting bats within the buildings and trees present on site. As such, further bat surveys were recommended.

The objectives of the bat survey and of this report are to: (i) determine the bat species currently present within the site; (ii) identify any roosts and assess if these roosts will be affected by the proposed works; (iii) identify foraging areas and commuting lines within the site; and (iv) to develop appropriate site-specific recommendations.

A data search from the local biodiversity records centre indicates records of five bat species recorded within 1.0km of the survey area. No international designated sites for bats were identified within 10km of the Scheme.

A building assessment for buildings affected by the proposed works was carried out during January 2020, which identified that both a shelter (shelter 1) and a toilet block have low potential to support roosting bats. In line with best practice methodology, a single bat emergence survey was undertaken for these buildings on the 3 June 2020. No bats were recorded emerging from or re-entering either of these buildings. As such, no further recommendations are made with regards to bats and buildings on site.

In addition, four trees with low bat roosting potential were identified within the wider survey area. This will be unaffected by the proposals and so is not considered further.

No bat activity was recorded in the areas surrounding either of the two buildings during the survey.

1 Introduction

1.1 Background and Site Description

Mott MacDonald Limited has been commissioned by Conwy County Borough Council to advise on the proposed Old Colwyn Coastal Defence and Active Travel Scheme, a major coastal defence and promenade improvement scheme, within Colwyn Bay, north Wales.

A Preliminary Ecological Appraisal of the area was undertaken in January 2020 which identified that two buildings within the scheme area, a shelter (shelter 1) and a toilet block, could have the potential to support roosting bats. As such, Mott MacDonald Limited were commissioned to undertake further survey and assessment in respect of bats.

The site consists of a section of the coastline between Rhos-on-Sea and Old Colwyn, from NGR (284270, 380524) in the west to NGR (284975, 379499) in the east (see Figures 1.1 and 1.2 below).

Figure 1.1: Site Location



Source: DigitalGlobe, Microsoft, Earthstar Geographics | Esri UK, Esri, HERE, Garmin, METI/NASA, USGS

The Scheme is located to the immediate east of the Colwyn Bay Waterfront Project Phase 1 area (which has already been subject to coastal and promenade improvements including beach recharge, the construction of Porth Eirias and an associated control structure). Beyond this to the west is the Colwyn Bay Waterfront Project Phase 2 area which is also proposed to be subject to coastal defence and promenade improvements, with the exact scope not yet finalised. These areas are included in Figure 1.2 for context.

Figure 1.2: Scheme locations within Colwyn Bay



Source: DigitalGlobe, Microsoft, Earthstar Geographics | Esri UK, Esri, HERE, Garmin, METI/NASA, USGS

1.2 Proposed Works

The current CCBC proposals for the site are to provide a permanent upgrade of the coastal defences to protect the western and eastern areas of the bay concurrently with improvements to the promenade to facilitate active travel and regeneration.

For the purposes of this report, the key works of relevance to bats are that demolition of the shelters is proposed along with refurbishment of the toilet block. No felling of trees or any refurbishment of bridges is proposed.

1.3 Scope of the Report

The objectives of this report are to:

- Determine presence of any bat species within the site;
- Identify any roosts within the development footprint and assess if the roost will be impacted by the proposed works;
- Record any foraging and commuting flight lines around the site; and
- Develop appropriate site-specific recommendations.

2 Legislation and Ecology

2.1 Legislation

All UK bat species and their roosts are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy any structure or place used for shelter or protection by a bat (even if bats are not present in the roost);
- Intentionally or recklessly obstruct access to a structure or place which it uses for that purpose; or
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.

To undertake an activity which is prohibited under wildlife legislation, a protected species development licence may be applied for from the statutory regulator; in this instance, Natural Resources Wales (NRW). By holding a development licence, the works can be conducted in accordance with an agreed method statement and as such an offence will not be committed provided the licence conditions are followed.

2.2 Status of Bat Species at the Local Level

Six species are listed in the Conwy Local Biodiversity Action Plan (LBAP) (2003)¹ as detailed below:

- Greater horseshoes bat (*Rhinolophus ferrumequinum*)*;
- Lesser horseshoe bat (*Rhinolophus hipposideros*)*;
- Common pipistrelle (*Pipistrellus pipistrellus*);
- Soprano pipistrelle (*Pipistrellus pygmaeus*);
- Noctule (*Nyctalus noctula*); and
- Brown long-eared bat (*Plecotus auritus*).

*These species are listed under Annex 2 of the Habitats Directive.

2.3 Current Factors Causing Loss or Decline at the National Level

British bats are insectivorous, occupying many habitat types. They require warm summer breeding roosts and cool, secure hibernation sites. The main factors currently causing loss or decline, in general across the UK include

- Habitat loss:
 - Decreasing areas of deciduous woodland, hedgerows, wetlands and grasslands reduce the availability of feeding and roosting sites. Loss and drainage of wetlands and inappropriate riparian management leads to loss of feeding and roosting areas. Undeveloped land which does not meet the standards for designation as a Site of Special Scientific Interest (SSSI) or Local Site probably forms the bulk of bats' foraging areas;
- Habitat fragmentation:
 - The presence of linear features and wildlife corridors such as hedgerows and former railway lines between habitats can reduce the impact of fragmentation;

¹ This document appears to have been withdrawn but was provided by email. No other more relevant local information appears to be available at this time.

- Disturbance:
 - Disturbance in the summer may lead to the abandonment of young;
 - Disturbance in the winter may arouse hibernating bats and force them to use up essential food reserves too quickly, with fatal consequences;
- Tree felling and arboriculture works to dead/hollow trees:
 - All bat species, and particularly noctules, will use hollow trees for both summer and winter roosting;
- Lack of awareness:
 - There is a tendency for the needs of bats to be under-emphasised during the planning process;
- Development:
 - The loss of rear gardens to small scale housing developments results in habitat loss and reduces the structural diversity of foraging habitats for bats. Development of brownfield land is likely to lead to further habitat loss for bats;
- Refurbishment and demolition of man-made structures and buildings:
 - Roost sites in cellars, roof spaces and under eaves in buildings are lost through building maintenance, renovation and the installation of cavity wall insulation. It is now thought that bats may use cavity walls as hibernation roost sites. Bats have very specific roost requirements therefore it cannot be assumed that they will relocate to another apparently suitable site if a roost site is destroyed;
- Remedial timber treatment:
 - These can be poisonous to bats. Because of their communal nature, entire roosts may be lost due to insensitive timber treatment exercises. Lindane, a chemical that was widely used in the past, has been implicated in the eradication of entire bat colonies. Treatments carried out during the 1980s are still toxic today; and
- Changes to external lighting:
 - May pose a threat to existing and potential bat roosts.

3 Methodology

3.1 Desk Study

A desk study was undertaken in accordance with current guidelines for Preliminary Ecological Appraisal (CIEEM, 2017) to determine the presence of any nature conservation sites designated for bats or records of bats within 10.0km of the site.

Biological records of bats collected in the last ten years and within a 2.0km radius of the site were requested from the North Wales Environmental Information Service (Cofnod). The data provided from this source has been curtailed to the nearest record for each species recorded, raw data is available on request following record centre terms and conditions.

The desk study involved consulting the following sources:

- Multi Agency Geographical Information for the Countryside (MAGIC) website (<http://www.natureonthemap.naturalengland.org.uk/MagicMap>);
- Natural Resources Wales (NRW) (<http://naturalresources.wales>);
- Joint Nature Conservation Committee (JNCC) (<http://jncc.defra.gov.uk>); and
- Conwy Local Biodiversity Action Plan (LBAP) (2003).

3.2 Bat Inspection Surveys

3.2.1 Buildings

Field surveys undertaken in December 2019 and January 2020 identified potential of buildings on site to support bats, whilst update inspections were undertaken in May 2020 by experienced surveyors. The buildings were inspected externally for features that could support roosting bats and/or signs of bat presence (such as droppings, staining, feeding remains, scratch marks or presence of bats).

Each building was classified as having low, moderate or high potential for roosting bats based on the Bat Conservation Trust Good Practice Guidelines (Collins, ed. 2016) as per Table 3.1 below.

Table 3.1: Guidelines for assessing the potential suitability of buildings for bats

Suitability	Description of roosting habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost features (PRF) that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and / or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Confirmed Roost	Positive signs of bats are recorded within the structure (internally or externally), such as individual bats or bat droppings.

Source: Modified from Collins (2016).

3.2.2 Trees

It is understood that trees are not to be affected by the proposed works and therefore no dedicated bat roosting assessment was undertaken for these structures. However, any trees with potential for roosting incidentally recorded during surveys were noted in accordance with best practice.

Features considered to offer potential for bats, in line with Collins (ed. 2016), are listed below:

- Woodpecker holes;
- Rot holes;
- Hazard beams;
- Other vertical or horizontal cracks;
- Partially lifted bark;
- Knot holes;
- Man-made holes;
- Cankers;
- Other hollows or cavities;
- Double-leaders;
- Gaps between overlapping stems or branches,
- Partially detached ivy with stem diameters in excess of 50mm; and / or
- Bat, bird or dormouse boxes.

Any evidence of bats was also noted and may include the following:

- Bat droppings in, around or below the PRF;
- Odour emanating from a PRF;
- Audible squeaking at dusk or in warm weather; and / or
- Staining below the PRF.

3.2.3 Bridges

It is understood that bridges are not to be affected by the proposed works and therefore no dedicated bat roosting assessment was undertaken for these structures.

3.3 Emergence/Re-entry Surveys (Buildings)

Buildings assessed to provide potential for roosting bats and considered likely to be affected by the current scope of works were subject to further emergence / re-entry surveys. All surveys were undertaken in accordance with the best practice guidance set out within the Bat Conservation Trust 'Bat Surveys Good Practice Guidelines' (Collins, 2016). Details of the surveys are presented in Table 3.2.

Table 3.2: Emergence / Re-entry Survey Details

Date	Sunrise / Sunset (BST)	Start / End Time	Start / End Temperature (°C)	Precipitation	Wind (Beaufort Scale)	Buildings Surveyed
03/06/2020	21:35	21:20/ 23:05	12°C	Dry	3	- Shelter 1 - Toilet block

Source: Mott MacDonald Limited

The surveys were carried out using Batlogger detectors to identify any bat activity, whilst recordings made during the surveys were analysed using 'Analook' software.

3.4 Foraging Habitat

An assessment was made to determine the value of the habitat types within and surrounding the site for bat foraging potential including connectivity to other suitable habitat within the surrounding area. In addition, the opportunity was taken to record incidental bat foraging and commuting activity during the emergence survey.

3.5 Limitations

Biological records obtained from third parties do not represent a full and complete species list for the area. Not all areas within the biological records search will have been surveyed so lack of records do not represent a lack of species present. They are mostly given by individuals on an *ad-hoc* basis, often meaning that there are areas of deficiency in the data.

The results taken from bat detector recordings are biased towards bats that use louder echolocation calls. Therefore, quiet species such as brown long-eared bats may be under recorded due to the limited recording range of the equipment. However, as surveys included a visual count to identify presence / absence of bats, it is considered that the survey work sufficiently informs an assessment of roost presence in the site.

It is difficult to confidently relate calls registered to numbers of bats present, even if more than one bat pass is detected simultaneously. The number of bat passes does not therefore provide any indication of bat abundance; it is intended to only indicate the level of activity at a moment in time.

4 Results

4.1 Desk Study

The results of the desk study are presented below.

4.1.1 Designated Sites

No European designated sites for bats were identified within 10.0km of the site. Two SSSIs designated for, or known to support, bats are present within 10.0km, namely:

- Llandulas Limestone and Gwrych Castle Wood – located approximately 4.5km east, which supports Clwyd's fourth largest hibernaculum of lesser horseshoe bat; and
- Coed y Gopa – located approximately 7.0km east, which supports Clwyd's second largest hibernaculum of lesser horseshoe bat.

4.1.2 Bat Species Records

The following bat species were returned within 1.0km of the survey area:

- Common pipistrelle;
- Noctule;
- Soprano pipistrelle;
- Long-eared bat (*Plecotus* sp.); and
- Lesser horseshoe.

The closest records are that of common pipistrelle and soprano pipistrelle which were recorded 0.2km from the survey area.

4.2 Field Survey

4.2.1 Building Inspections

Four buildings were assessed within the site (buildings B1 to B4 in Figure 4.1 below).

Figure 4.1: Location of Buildings



Source: 'ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community'

Table 4.1: Bat Assessment and Inspection Results for Buildings

Building	Description of Building and Potential Roost Features	Assessment of Bat Potential and Evidence of Bats
Kiosk	Concrete structure clad in coated wood and metal/ composite panels. Flat roof supported by metal beams. No potential roost features identified.	Negligible potential. No evidence.
Shelter 1	Concrete structure clad in pebbledash. Flat, hollow, wooden roof and fascia board with outer coating. A gap is present under coated wooden fascia board on south west corner. This feature gives access into a hollow cavity large enough for a small number of bats. The building is in an open environment which is relatively exposed, limiting bat potential.	Low potential. No evidence.
Shelter 2	Concrete structure clad in painted pebbledash. Flat, wooden roof and wooden fascia board with outer coating. No potential roost features identified	Negligible potential. No evidence.
Toilet Block	Single-storey building with concrete walls and a pitched, tiled roof with ridge tiles. Exterior lighting is present above doorways. A composite material soffit box and fascia board present. Gaps are visible under ridge tiles and other roof tiles offering some crevice dwelling opportunities. The surrounding environment is relatively exposed, limiting bat potential.	Low potential. No evidence.

Source: Mott MacDonald Limited.

Further survey work was recommended in respect of Shelter 1 and the Toilet Block in the form of emergence surveys (see below).

4.2.2 Trees

No trees are to be affected by the proposals such that dedicated surveys were not undertaken. However, four trees with bat potential incidentally were noted during the course of survey work and are included below for completeness. These fall within the area between Colwyn Bay Coastal Defence and Active Travel and Colwyn Bay Waterfront Phase 2b.

Trees within bat potential noted (trees T1-T4) are illustrated on Figure 4.2 and described below:

- Tree T1: Sycamore (*Acer pseudoplanatus*) tree with a callus roll;
- Tree T2: Sycamore tree with three callus rolls;
- Tree T3: Scot's Pine (*Pinus sylvestris*) with dense ivy covering; and
- Tree T4: Scot's Pine with dense ivy covering.

All of these trees were assessed as having low bat roosting potential.

Figure 4.2: Location of Trees with Bat Potential



Source: Esri, Intermap, NASA, NGA, USGS | Esri Community Maps Contributors, Esri UK, Esri, HERE, Garmin, INCREMENT P, METI/NASA, USGS | Maxar, Microsoft

4.3 Emergence/Re-entry Surveys

4.3.1 Emergence/Re-entry Surveys

During the emergence survey on 3 June 2020 no bats were recorded emerging from or re-entering either Shelter 1 or the toilet block. Emergence / re-entry surveyor locations are shown on Figures 4.1 and 4.2.

The results of the survey are summarised in Table 4.1 below.

Table 4.2: Emergence/ re-entry survey results by date

Date	Survey Type	Building	Emergence Results	General Observations
03/06/2020	Emergence	Shelter 1	None	No bat activity was identified during the survey.
03/06/2020	Emergence	Toilet Block	None	No bat activity was identified during the survey.

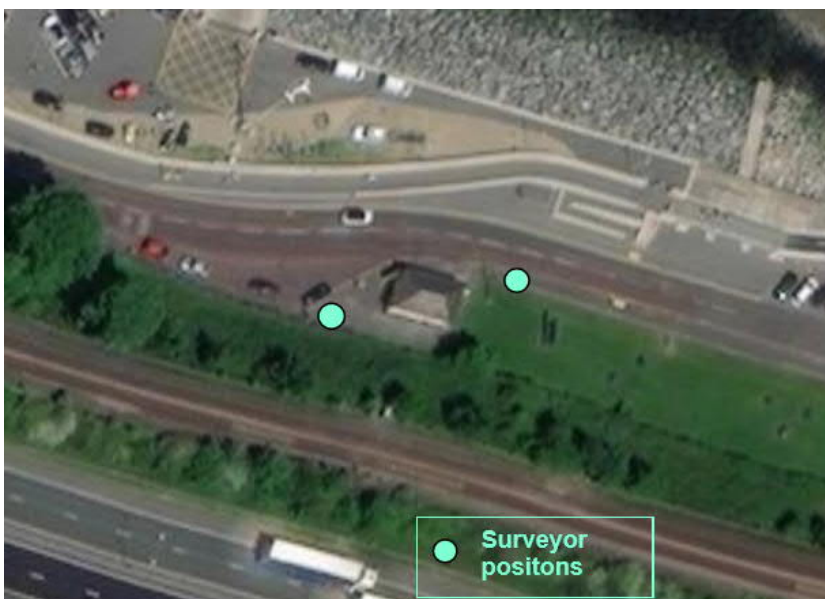
Source: Mott MacDonald Limited

Figure 4.3: Surveyor Positions- Shelter 1



Source: Mott MacDonald Limited

Figure 4.4: Surveyor Positions - Toilet Block



Source: Mott MacDonald Limited

4.4 Bat Activity

No foraging nor commuting bat activity was recorded during the surveys for either building.

5 Interpretations and Recommendations

5.1 Interpretation

5.1.1 Roosting Bats

No bats were recorded emerging from or re-entering either shelter 1 or the toilet block during the surveys undertaken. All other buildings within the site were assessed as having negligible potential for roosting bats.

Four trees with low bat potential were recorded incidentally (between the two sites). These are not to be affected by works.

5.1.2 Bat Activity

No bat activity was detected during the surveys for either shelter 1 or the toilet block.

5.2 Assessment and Recommendations

No bat roosts have been recorded within the site whilst works are not anticipated to affect trees with low bat potential. On this basis, no further recommendations are made.

The results of this survey work are considered to be valid for up to 12-18 months, which is in line with guidance on the lifespan of surveys (CIEEM 2019). Following this, survey work may require updating should any new works be proposed, or a significant delay occur.

6 References

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A. Building Photos

Table A.1: Building Photos

Photo A.1: Kiosk



Photo A.2: Shelter 1



Photo A.3: Shelter 1



Gap under coated wooden fascia board on south west corner.

Photo A.4: Shelter 2



Table A.1: Building Photos

Photo A.5: Toilet block



Photo A.6: Toilet block



Photo A.7: Toilet Block



Gaps visible under ridge tiles and other roof tiles.

Source: Mott MacDonald



Appendix 8.5 – Habitats Regulations Assessment: Report to Inform an Appropriate Assessment



Old Colwyn Coastal Defence and Active Travel Scheme

Habitats Regulations Assessment - Report to
Inform an Appropriate Assessment

July 2020

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Old Colwyn Coastal Defence and Active Travel Scheme

**Habitats Regulations Assessment - Report to
Inform an Appropriate Assessment**

July 2020

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	23/07/2020	L Woolley	N Shelton	C Williams	First Issue

Document reference: 417437-MMD-00-XX-RP-N-1726

Information class: Standard

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1 Introduction

1.1 Background and Site Location

Mott MacDonald Limited is advising on ecology matters relating to the proposed 'Old Colwyn Coastal Defence and Active Travel Scheme' in Colwyn Bay (see Figures 1.1 and 1.2 for Site Location).

Figure 1.1: Overview Site location



Source: DigitalGlobe, Microsoft, Earthstar Geographics | Esri UK, Esri, HERE, Garmin, METI/NASA, USGS

The Victorian built coastal defences around Colwyn Bay from Rhos-on-Sea in the west to Old Colwyn in the east have suffered from undermining, corrosion, partial collapses and degradation with frequent overtopping events occurring at Spring Tides. Phase 1abc and 2a of the Colwyn Bay Waterfront Project have already been completed which included the construction of a 150m groyne and Porth Eirias, beach recharge and promenade improvements in the central Colwyn Bay area. Subsequent to this, CCBC are now seeking to provide a permanent upgrade of the coastal defences to protect the western and eastern areas of the bay concurrently with improvements to the promenade to facilitate active travel and regeneration. The proposed works will include upgrades to the promenade, new coastal defences and beach recharge. These will be referred to as the Scheme within this report.

The Scheme is located along the easternmost section of the Promenade at Old Colwyn, from the eastern side of Porth Eirias in the west to Splashpoint in the east. The Scheme footprint is divided into two principal areas:

- Area 1 – From the picnic area to the east of Porth Eirias car park (approximate National Grid Reference (NGR) 285822, 378870) to the east of Rotary Way (approximate NGR 286347, 378756) where the road currently reduces in height from the junction back down to Promenade level; and
- Area 2 – From the eastern edge of Area 1 (approximate NGR 286347, 378756) to Splashpoint in the far east (approximate NGR 287029, 378701).

The red line boundary has been extended beyond the footprint as shown in Figure 1.2 to allow for access during construction. For the purposes of this report, the site refers to everything within the redline boundary.

Figure 1.2: Location of the Scheme



Source: Adapted from Red Line Boundary Plan Drawing 415437-MMD-00-XX-DR-N-1707

The Scheme is located immediately adjacent to Bae Lerpwl / Liverpool Bay inshore Special Protection Area (SPA), which is also an Important Bird Area (IBA), designated for a number of breeding and wintering bird species (see Appendix A for location). Notably wintering common scoter (*Melanitta nigra*), red-throated diver (*Gavia stellata*), little gull (*Hydrocoloeus minutus*) and breeding little tern (*Sternula albifrons*) and common tern (*Sterna hirundo*). It is also designated for its overwintering waterbird assemblage (over 60,000 birds).

Mott MacDonald Limited has therefore been commissioned by Conwy County Borough Council (CCBC) to prepare a report to inform a Habitats Regulations Assessment (HRA) in relation to the proposed works. Based on an initial assessment, avoidance and mitigation measures have already been proposed as part of the scheme to avoid adverse effects on wintering birds using the SPA. On this basis this report has been prepared to inform an Appropriate Assessment (Stage 2) to consider the effectiveness of applied mitigation measures.

1.2 Purpose and Structure of this Report

This document has been prepared to document the assessment of the proposed coastal defence improvement works in relation to the potential for effects on European Sites as required by Regulation 63(1) of the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations). The HRA process is described in Section 3 and in Appendix B.

The structure of this report can be summarised as:

- Sections 1-4 provide the context and baseline information (including an ecology baseline for SPA features of interest abundance and distribution) to inform the screening and appropriate assessment;
- Section 5 provides the information to inform a screening assessment; and
- Sections 6-8 provide information to inform an appropriate assessment.

1.3 Ecologist Qualifications

Table 1.1: Ecologist Qualifications

Name and Role	Qualifications	Experience
Clive Williams Approver	BSc (Hons), MSc, FGS, CGeol	23 years' environmental consultancy experience preparing Environmental Statements and HRA for various projects.
Nigel Shelton Checker	BA(Hons) MSc, MIFM	Over 25 years' experience in ecology with 15 years in national government agency and consultancy, with a specialism in ornithology, advising on ecological matters in relation to legislation, licensing and impact assessment, including review of HRA's for the competent authority.
Lorraine Wooley Author	MA (Oxon), MRes, CEcol, CEnv, MCIEEM	Over 10 years' experience in consultancy, advising on ecological matters including HRA and EclA

Source: Mott MacDonald Ltd

2 Project Description

2.1 Scheme Description

The Scheme comprises a combination of coastal defence, promenade and active travel improvements.

Coastal defence improvements include:

- The construction of a rock revetment approximately 32m in cross-sectional width and 1.15km in length, with associated modifications to existing surface water outfalls on the beach to extend them through the new revetment;
- A new access build-out area to be constructed in the western half of the Scheme area which would have several functions, including providing a greater area for pedestrian access; Equality Act compliant ramp access and stepped access to the beach, along with landscaped seating steps at varying levels, to the beach access;
- New pedestrian accesses through the proposed revetment to comprise three sets of beach access steps perpendicular to the linear rock revetment;
- A dedicated fishing platform in the Splashpoint Area to keep anglers at a safe distance from active travel routes: and
- The raising of the Promenade to the west of Rotary Way and the raising of the Promenade and highway to the east of Rotary Way with associated access provision.

Active Travel improvements, to include new cycleway layouts, improved pedestrian access areas, improved lighting, new handrailing, improved picnic and outdoor spaces, improved signage and landscaping.

In addition, a series of ecological and educational enhancements have been incorporated into the proposals including new intertidal habitat creation, classification of the beach as a plastic free zone, incorporation of wildflower grassland into new amenity areas and enhancements to the network rail embankment.

2.2 Proposed Works Methodology and Programme

2.2.1 Construction

As funding is yet to be secured for Scheme construction, the programme has not yet been confirmed. Due to the scale and funding requirements of the Scheme, the construction process may need to be split into several phases. However, it is anticipated that works would be undertaken over a period of approximately 20 months and would be split into at least two phases for areas 1 and 2.

The construction phase will involve construction of the above listed works. It is anticipated that construction would require the following elements (of key relevance to this assessment) and would be subject to tidal working:

- Import of rock revetment by barge or by road:
 - Import by barge would be undertaken outside of the period October to March only. For this method of delivery, the delivery barge would be guided to shore by a tug at a designated (and rising) tidal state when access to the upper shore area is possible. The rock armour would be unloaded directly to shallow water on the beach. The window for this operation would be relatively small (considered likely to be limited to 2 hours either side of high tide only) and therefore 24 hour working (requiring artificial lighting) may be

required. Rock armour would be stockpiled immediately seaward from where it is to be placed within the revetment; and

- Import by lorry would be undertaken throughout the year, as required, and would involve a large number of lorries offloading directly onto the foreshore. Storage of revetment would either be on the upper beach or on the promenade (awaiting transfer to the beach);
- Extensive and prolonged periods of piling along the existing promenade and revetment (tubular steel piles driven into the underlying clay for the fishing platform and sheet piles for the access steps and access build-out structure) (anticipated at least 12-14 weeks); and
- Vehicular movements on the beach and promenade as well as increased presence of construction personnel.

Construction compound locations are not yet finalised but will be located within the red line boundary. The existing groynes would be retained, maintained and enhanced.

2.2.2 Operation

Once constructed, the sea defences will work in a similar way to the current sea wall. However, maintenance requirements are anticipated to be reduced compared with the existing situation as fewer emergency repairs (often required in winter) would be needed.

2.2.3 Decommissioning

It is considered highly unlikely that the proposed coastal defences would be decommissioned as this would pose a safety and environmental hazard. These works are proposed as a long-term solution.

3 HRA Framework and Study Area

3.1 HRA Framework

National Site Network (formerly known as European or Natura 2000) sites form a network protected sites, designated for their rare, vulnerable and/or endangered species and habitats. National Site Network sites include Special Areas of Conservation and Special Protection Areas (SPA). HRAs are also required, as a matter of UK Government policy, for potential SPAs (pSPA), candidate SACs (cSAC) and wetlands of international importance (Ramsar sites) for the purposes of considering plans and projects, which may affect them. Hereafter all of the above designated nature conservation sites are referred to as “National Site Network sites

Part 6 of the Conservation of Species and Habitats Regulations 2017 (as amended) transpose the requirements of Article 6 paragraphs (3) of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) into UK law. These Regulations require that the competent authority undertakes an appropriate assessment of implications of a project for a National Site Network site, where this is likely to have a significant effect on any sites under that designation.

The regulations also require a person, or organisation, applying for a consent to undertake an activity to provide the competent authority with sufficient information to inform its assessment. This process of assessment has become known as a Habitat Regulations Assessment (HRA)

The HRA process consists of four stages;

Table 3.1: HRA Stages

Stage	Description
Screening (Stage One)	This is the process which identifies the potential effects upon the National Site Network sites and considers if the effects are likely to be significant. A significant effect or impact on a National Site Network site is that which could undermine the conservation objectives or/and management of the site. The likelihood of it occurring is judged on a case-by-case basis, taking account of the precautionary principle and the local circumstances of the site. The judgment of 'likelihood' is, in turn conducted in a very precautionary manner, taking account of the ecological circumstances of the National Site Network site. This is an iterative process and before moving to Stage Two it can be repeated if required. Proposals to mitigate any significant effects are no longer allowed to be considered at the screening stage, only features which are considered to be integral to the scheme and not those designed to avoid or mitigate for any negative effects on the National Site Network site, are included in the screening assessment. The competent authority must consult with the appropriate nature conservation body (in this case Natural Resources Wales (NRW)) and have regard to any representations made by that body.
Appropriate Assessment (Stage Two)	If the Stage One Screening identifies that the project or plan, alone or in combination, may have significant effects on a National Site Network site, or if there is uncertainty, the competent authority must undertake an Appropriate Assessment of the implications for that site in view of that site's conservation objectives. This step 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 National Site Network site with respect to the site's structure and function and conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts is also required.
Assessment of Alternative Solutions (Stage Three)	If the mitigation measures prescribed at Stage Two cannot avoid adverse effects on the integrity of a National Site Network site, this process examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the National Site Network site.
Assessment where no alternative solutions exist and where adverse	If no suitable alternative solutions are available, Stage Four requires an assessment of compensatory measures where, in the light of an assessment of Imperative Reasons of Overriding Public Interest (“IROPI”), it is deemed that the project or plan should proceed.

Stage	Description
impacts remain (Stage Four)	In making this assessment, it is important to recognise that it will be appropriate to the likely scale, importance and impact of the proposed project.

Each stage determines whether further stages in the process are required.

If the conclusion of Stage 1 is that there will be no significant effects on the National Site Network site, there is no requirement to undertake further stages.

All the Stages of the HRA process, including those beyond appropriate assessment are shown in Appendix B.

3.2 Study Area

The proposed coastal defence project has the potential to impact on ecological features such habitats and/or species beyond the confines of the working area itself. The potential impacts on the SAC are defined as:

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

Taking the above into consideration, for the proposed Scheme, a zone of influence (Zoi) of 2.0km (10.0km for SACs designated for bats or marine mammals) has been used to define the study area for this screening assessment.

4 Ecology Baseline

4.1 Site Description and Context

The site comprises approximately 1.2km stretch of intertidal habitats, including sandy beach, areas of gravel, rocky groynes and associated habitats as well as existing coastal defence, promenade and adjacent grassy verges. The beach is well used throughout the year for recreational use, including water sports (outside of winter), whilst the existing coastal defences are also subject to regular maintenance including frequent emergency works (often in winter) due to their poor state of repair.

The inshore area of Colwyn Bay lies within the boundary of Bae Lerpwl / Liverpool Bay SPA.

The wintering bird survey data is also presented for Colwyn Bay Phase 1abc (west of the site, comprising a stretch of sandy beach recently subject to recharge) and Colwyn Bay Phase 2b (west of Phase 1abc, comprising similar habitats to the site). These areas are indicated within Figure 4.1 below.

Figure 4.1: Detailed site location



Source: 'ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community'. Note The completed Colwyn Bay Waterfront Phase 2a Scheme area straddles the Phase 1 and Phase 2 areas.

4.2 Assessment of Bird Assemblage

Given the proximity of the site to Liverpool Bay SPA, in order to understand the local waterbird assemblage present, wintering bird surveys of the site and the adjacent areas (Phase 2b and Phase 1abc as shown in Figure 1.2) were undertaken in November 2019 to January 2020 (Mott MacDonald, 2020). In addition, Wetland Bird Survey (WeBS) data has also been sourced from the BTO for the count sectors covering the area (Colwyn Bay to Rhos Point and Abergele to Llandulais) for the most recent five-year period (2014 to 2019; see Appendix C for full records).

Liverpool Bay SPA regularly supports more than 1% of the British populations of red-throated diver (*Gavia stellata*), 1% of the biogeographical population of common scoter (*Melanitta nigra*) and more than 60,000 waterfowl during the non-breeding season. Within the entire SPA, peaks of common scoter can reach up to 29,000 birds (60% of total population) and up to 1000 (5%) of the UK red-throated diver population during October to March. The SPA is also designated for non-breeding little gull (*Hydrocoloeus minutus*) and breeding common tern (*Sterna hirundo*) and little tern (*Sternula albifrons*). The baseline survey results are therefore summarised below with particular reference to these interest features of the Liverpool Bay SPA. As common scoter were recorded in far larger numbers than other species, more detail from the WeBS counts and wintering bird surveys has been included in respect of this species than for the others.

4.2.1 Common Scoter

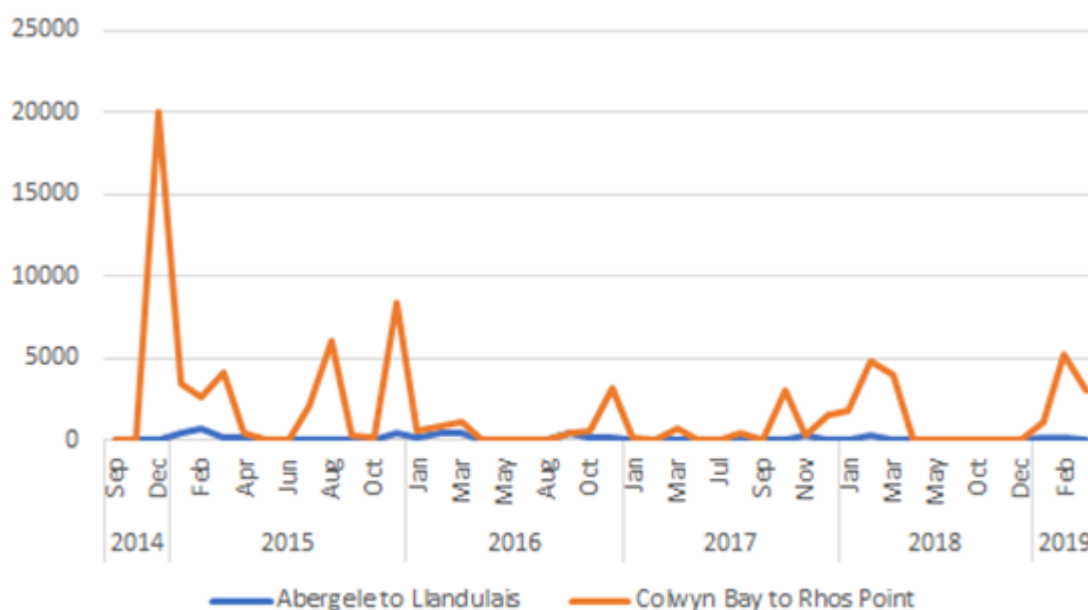
4.2.1.1 WeBS data (2014 – 2019)

The WeBS sector counts from the last five years is plotted in Figure 4.2 whilst the counts recorded for different months is summarised in Table 4.1. Raw data is provided in Appendix C.

This data shows that common scoter are present over winter in both the Abergele to Llandulais and the Colwyn Bay to Rhos Point sectors, with the latter supporting large numbers (typically 5,000 – 8,000, with a peak of 20,000 in December 2014). This is consistent with the wintering bird survey results from 2019 – 2020 (see next section) which also recorded large rafts of thousands of common scoter offshore from Colwyn Bay.

The trends in bird numbers vary between years but the majority of high bird counts appear between October and March, with the notable exception of a peak in August 2015 which is atypical for the species (a winter resident) and so not considered relevant to this analysis.

Figure 4.2: Common scoter



Source: WeBS data (BTO, 2020)

Table 4.1: Common scoter WeBS counts per month

Month	Abergele to Llandulais							Colwyn Bay to Rhos Point						
	2014	2015	2016	2017	2018	2019	Average	2014	2015	2015	2017	2018	2019	Average
Jan		415	200	0		200	204	3000	350	200	1800	1000		1270
Feb		710	461	6	386	230	359	2000	400	5	4500	5000		2381
Mar		206	505		0	4	179	4000	600	730	4000	3000		2466
Apr		203	0	0			68	300	0	1	0			75
May		4					4	0	101		4			35
Jun								0	0					0
Jul								2100			0			1050
Aug								6000	0		400			2133
Sep	51	0	420		0		118	300	4	0				101
Oct	53	0	161	0	0		43	200	400	3000	1			900
Nov				268	52		160							
Dec		401	220	0	44		166	20000	8000	3000	1500			8125

Source: Summarised from WeBS data (BTO, 2020)

4.2.1.2 Wintering Bird Surveys (2019-2020)

The wintering bird surveys recorded observations of common scoter on all four site visits. The common scoter observations from the wintering bird surveys are summarised in Table 4.2 below whilst full results are available in the wintering bird survey report (Mott MacDonald, 2020).

Table 4.2: Field survey results (2019/2020) – common scoter

Site	Date	Overall Count	Summary of Observations
Colwyn Bay Coastal Defence and Active Travel	22 Nov 2019	c.2000	- Scattered medium to large rafts of birds (50-500) were visible from the coastal footpath, up to 1.0km-3.0km out to sea; and - Two small rafts of 13-20 birds were recorded within 500m of the coastline for short periods* before returning to the larger groups.
	09 Dec 2019	c. 2000	- Large rafts of birds (approximately 1,000 individuals) were visible from coastline, approximately 1.5-2.0km out to sea; - Small rafts of birds (3 and 23 individuals) were observed within 0.5km of the bay for short periods* of time before returning to the larger groups.
	06 Jan 2020	c. 1000	- Large rafts of birds (approximately 1,000 individuals) were visible from coastline, approximately 2.0-3.0km out to sea; - Small rafts of birds (approximately 6 - 21 individuals) were observed within 0.5km of the bay for short periods* of time before returning to the larger groups.
	16 Jan 2020	c. 1300	Scattered medium to large rafts of birds (40-300) were visible from the coastal footpath. The closest of these (40 individuals) was recorded approximately 0.5km from shore but did not drift closer during the time observed.
Colwyn Bay Waterfront Phase 2b	06 Dec 2019	c. 700	Scattered medium to large rafts of birds (50-300) were visible, at least 1.0km out to sea.
	09 Dec 2019	c. 1200	Large scattered raft (1200) visible, at least 1.0km out to sea.
	06 Jan 2020	c. 800	- Scattered medium to large rafts of birds (50-300) were visible from the coastal footpath, at least 1.0km out to sea; and - One small rafts of 3 birds was recorded approximately 0.5km from the coastline but did not drift closer during the time observed.
	16 Jan 2020	c. 800	Large raft (800) visible, at least 1.0km out to sea.
Colwyn Bay Phase 1abc**	22 Nov 2019	c. 2000	Scattered medium to large rafts of birds (50-500) were visible from the coastal footpath, up to approximately 1.0km – 3.0km out to sea.

Source: Mott MacDonald Limited (2020); * typically 5 to 15 minutes; ** supplementary data from one visit only

In summary, the key findings from the wintering bird surveys are:

- Common scoter were consistently present in large rafts over 1.0km from shore during every visit;
- The largest numbers recorded were from the November and December visits (rafts of approximately 2,000 individuals);
- Smaller rafts (ranging from between 50-500 individuals) were observed between 0.5km – 1.0km from shore but did not drift closer; and
- Small numbers of individuals (typically up to 20) were observed within 0.5km for periods of 5 to 15 minutes before re-joining the larger rafts offshore.

4.2.1.3 Conclusions

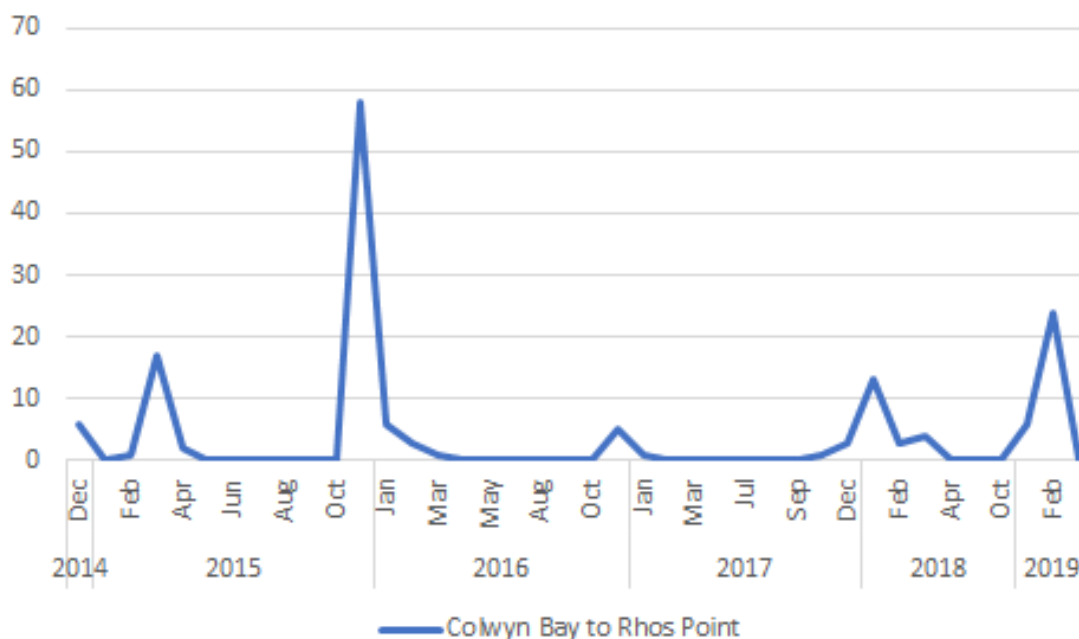
On the basis of the WeBS sector counts and field observations it is clear that common scoter use Colwyn Bay in large numbers over winter, with the key period appearing to be October to March. This is consistent with other research of common scoter in the local area which also concluded October to March as being the key period for this species (Kaiser *et al.*, 2002). The most important area appears to be approximately 1.0km offshore where large rafts of birds gather to rest and forage. Areas within approximately 0.5km appear to be used infrequently and only by very small numbers of individuals in short duration, so are unlikely to be of significant importance to the population.

4.2.2 Red-throated Diver

4.2.2.1 WeBS data (2014 – 2019)

Red-throated diver was only recorded within the Colwyn Bay to Rhos Point sector during October to March. The WeBS sector counts from the last five years are plotted in Figure 4.3 below. Raw data is provided in Appendix C.

Figure 4.3: Red-throated diver



Source: WeBS data (BTO, 2020)

In summary, red-throated diver was only recorded during the period October to March and numbers appear inconsistent between years. The peak counts returned are 58 and 24 from December 2015 and February 2019 respectively.

4.2.2.2 Wintering Bird Surveys (2019-2020)

The wintering bird surveys undertaken only recorded red-throated diver during one survey visit, on 6 December 2019, where two individuals were recorded within approximately 0.8km offshore in the Colwyn Bay Phase 2b survey area.

4.2.2.3 Conclusions

Red-throated diver has been confirmed as present in the Colwyn Bay area over winter (strictly between October and March) but in low numbers, indicating that this is unlikely to be a key area of importance for this species. This is consistent with distribution maps shown in Lawson *et al.* (2016) (see Appendix D) which show Colwyn Bay to be located outside of the main hotspots for this species.

4.2.3 Little Gull

No records of Little Gull were returned from the WeBS sector counts nor was this species recorded during any of the survey visits.

WeBS data online for little gull presents the annual peaks for this species for Colwyn Bay and North Clwyd Coast for the last five years. The peak count for this species was one bird for 2015/2016. The JNCC report (Lawson *et al.*, 2016; Appendix D) which assessed numbers and distribution of wintering waterbirds and seabirds to inform the SPA citation indicates that this species is largely associated with the areas further offshore from the Dee and Ribble Estuaries. For the purposes of this assessment, this species is considered likely to be a passage species migrating through in Autumn.

4.2.4 Common and Little tern

No records of any common or little terns were returned from the WeBS sector counts, whilst these species were not recorded during the wintering bird surveys (as anticipated). Common and little tern are known to be summer breeding species in the SPA.

Common terns are known to breed on shingle beaches and gravelly areas, which are notably absent from the Site, whilst only one known little tern breeding colony is known in Wales at Gronant Dunes (approximately 24.0km north east).

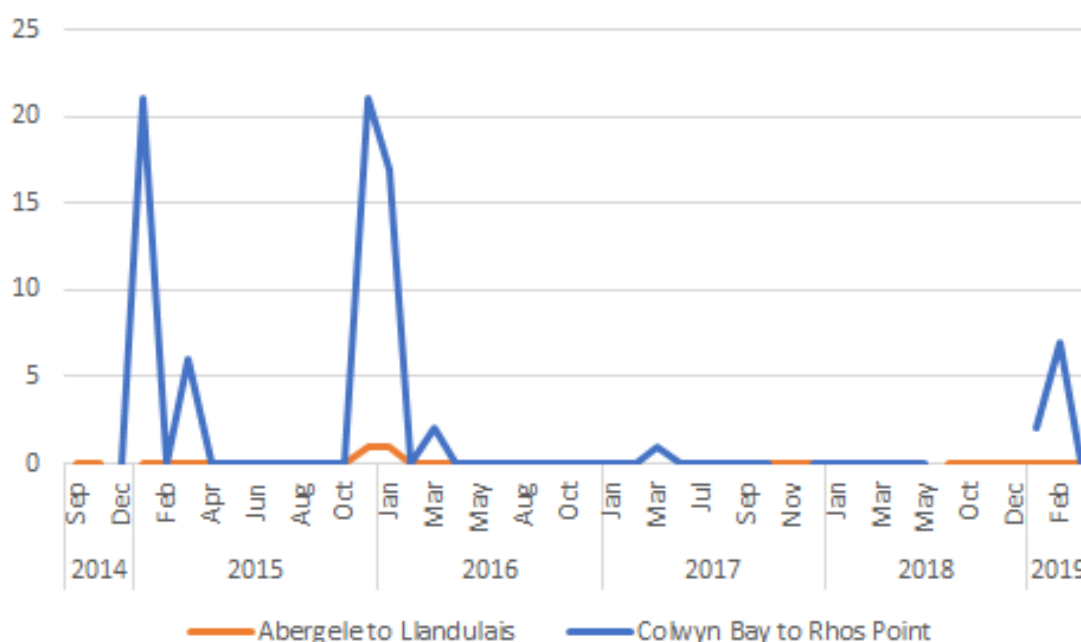
4.2.5 Waterbird assemblage

The waterbird assemblage is specifically noted to include common scoter, red-throated diver and little gull, discussed above, as well as red-breasted merganser and great cormorant as being present in greater numbers.

4.2.5.1 Red-breasted merganser

Red-breasted merganser was not recorded during the wintering bird surveys undertaken at the site, whilst only low numbers of this species were returned from WeBS sector counts from winter months (peak count of 21; see Figure 4.4 below).

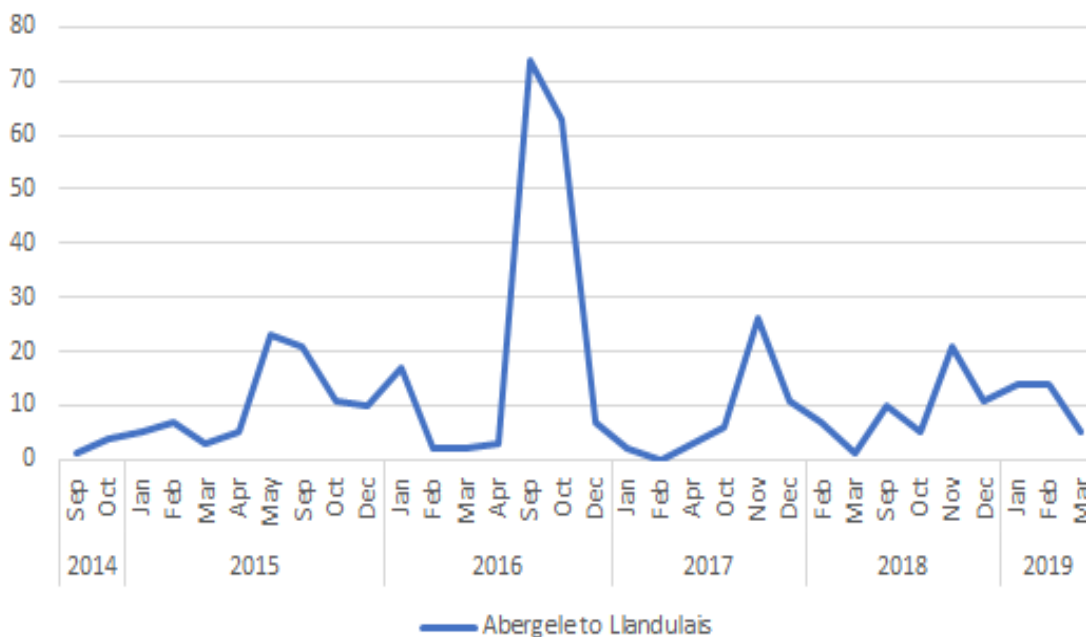
Figure 4.4: Red-breasted merganser



4.2.5.2 Cormorant

Cormorant appears to be present in small numbers throughout the year from the WeBS sector counts (see Figure 4.5), with larger numbers present in winter months, although given the small numbers present it is difficult to accurately draw out any trends in this data.

Figure 4.5: Cormorant



Source: WeBS data (BTO, 2020)

The wintering bird surveys did record this species consistently across the survey period, loafing on manmade structures along the bay as well as feeding both close to shore (within 0.1-0.4km) and out at sea amongst common scoter. The largest counts were recorded in the November and December surveys within the vicinity of the Colwyn Bay Coastal Defence and Active Travel survey area (104 and 86 respectively), before dropping to 18 and 1 individuals observed in the January visits. Similar trends were observed for the Phase 2b area.

Survey results for cormorant are summarised in Table 4.3 below.

Table 4.3: Field survey results (2019/2020) – cormorant

Site	Date	Overall Count	Summary of Observations
Colwyn Bay Coastal Defence and Active Travel	22 Nov 2019	104	- Majority of birds observed day roosting / loafing on manmade structures in the bay; and - Several individuals observed feeding at sea (close to common scoter) and inshore (within 100m of the bay).
	09 Dec 2019	86	- Majority of birds observed day roosting / loafing on manmade structures in the bay; and - A few individuals observed feeding at sea.
	06 Jan 2020	18	Majority of birds observed basking on rocks or feeding inshore (within 400m of the bay).
	16 Jan 2020	1	Flying at sea.
	06 Dec 2019	46	Majority of birds observed day roosting / loafing on manmade structures in the bay; and

Site	Date	Overall Count	Summary of Observations
Colwyn Bay Waterfront Phase 2b	09 Dec 2019	42	› A few individuals observed flying and feeding at sea. › Majority of birds observed day roosting / loafing on manmade structures in the bay; and › A few individuals observed feeding at sea.
	06 Jan 2020	16	› Majority of birds observed day roosting / loafing on manmade structures in the bay; and › A few individuals observed feeding at sea.
	16 Jan 2020	16	› All birds observed day roosting / loafing on manmade structures in the bay.
Colwyn Bay Phase 1abc**	22 Nov 2019	5	› Flying overhead.

Source: Mott MacDonald Limited (2020); * typically 5 to 15 minutes; ** supplementary data from one visit only

4.2.5.3 Conclusions

These results indicate that Colwyn Bay is unlikely to be of key importance for red-breasted merganser but does appear to be more well used by cormorant, albeit still in relatively low numbers in the context of the SPA population. Considering the distances and behaviour observed during surveys cormorant appear to have a considerable degree of habituation to any existing disturbance from the shore.

5 Screening Assessment

5.1 Identification of Sites

The only internationally designated site within 2.0km is Liverpool Bay SPA, located immediately north of the Scheme. No additional SACs designated for bats or marine mammals have been identified from within 10.0km.

As set out in Section 3.2, based on the project scope and assessment potential impact pathways, no designations outside of this distance are considered likely to be affected.

5.2 Assessment of Impact Pathways

Potential impact pathways and sources of disturbance from construction include:

- Pollution event – resulting from an oil spill or other pollution sources (from the barge or from machinery) which could damage habitats (reducing prey availability) as well as cause harm to birds directly;
- Noise and vibration disturbance – resulting from piling works (anticipated to last a number of weeks and which could be undertaken over winter), machinery, vehicle movements (including barge and transshipment vehicles if required) and personnel. Any such sources of disturbance close to the shoreline could disturb or displace individuals using these areas to forage, whilst disturbance out at sea from a barge and associated transshipment could disrupt any larger rafts of birds (if present outside October to March);
- Visual disturbance – from increased human activity and machinery along the promenade and intertidal area, which could disturb and displace birds foraging closer to shore;
- Artificial lighting disturbance – there is a requirement to use artificial lighting at night if the delivery of rocks via barge is required to be undertaken during hours of darkness to make use of the periods of high tide. This could which could disturb and displace birds using areas closer to shore or, for lighting associated with barges and transshipment, could affect larger rafts of birds out at sea (if present outside October to March); and
- Changes in turbidity – it is possible for sediment to be disturbed and released through construction activities and deliveries of material to site (e.g. dropping of rocks onto beach via barge). This could adversely impact submerged seaweeds/plants and filter feeding organisms which provide prey for birds, as well as affecting diving bird species using sight to feed/hunt close to the coast.

Disturbance impacts can affect birds directly, by displacing them away from key foraging grounds and causing swimming or flight flee responses. Fleeing from a disturbance event can also indirectly reduce food availability by displacing birds, directing them to less favourable habitats which can subsequently affect energy budgets and survival rates, thus impacting the overall population numbers.

Displacement from preferred feeding areas may have an adverse effect by being energetically expensive to individuals, particularly diving birds, where the feeding activity is physically depleting. Birds displaced from preferred feeding areas may need to swim against currents in order to stay in an area where prey species are present (Hawkins et al. 2000).

As set out above in respect of operational and decommissioning stages of the project, the operational stage is considered to be an improvement to the baseline in terms of potential disturbance to birds (with less maintenance required and therefore fewer emergency repairs), whilst no decommissioning is anticipated. As such, no potential impact pathways from these phases have been identified.

5.3 Screening Assessment

The following Tables 5.1 to 5.3 document the screening exercise to assess if the project, alone or in combination with other projects, will have an impact on Liverpool Bay SPA.

Table 5.1: Liverpool Bay SPA – Citation Details and Conservation Status

National Site Network Site(s)	Bae Lerpwl/ Liverpool Bay SPA	
Distance from the National Site Network Site(s)	Immediately adjacent	
Description of the site(s)		
Key Qualifying features		
Annex I habitats or species	Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site	No Annex I habitats that qualify for the primary reason for the designation
	Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site	No Annex I habitats present as a qualifying feature
Annex II habitats or species	Annex II 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>)
	Annex II species present as a qualifying feature, but not a primary reason for site selection	No Annex II species present as a qualifying feature
Assemblage qualification	An internationally important assemblage of birds present as a qualifying feature	In the non-breeding season, the site regularly supports at least 69,687 (2004/05 -2010/11) individual waterbirds. The main components of the assemblage include all of the non-breeding qualifying features listed above and red breasted merganser (<i>Mergus serrator</i>) and great cormorant (<i>Phalacrocorax carbo</i>).
Management of the site		
Vision of the site(s)	The stated objectives are to 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.	
Current status of species or habitats and vulnerabilities		
Site	Species	Status and vulnerabilities
Bae Lerpwl/ Liverpool Bay	Red-throated diver (wintering)	The increase in numbers may be the result of i) a proportion of the biogeographic population moving further west from Baltic wintering grounds, ii) a change in survey method i.e. visual aerial to digital aerial where there is greater confidence in the estimate or iii) a combination of the two. Known vulnerabilities including physical loss or damage of supporting habitat, disturbance (from certain sources noise or movement), toxic and non-toxic (turbidity) contamination and biological disturbance. Disturbance was noted to be the highest vulnerability for this species.
	Common scoter (wintering)	The significant change in numbers may be the result of i) a proportion of the biogeographic population moving from Baltic wintering grounds, ii) a change in survey method i.e. visual aerial to digital aerial where there is greater confidence in the estimate or iii) a combination of the two. Known vulnerabilities including physical loss or damage of supporting habitat, disturbance (from certain sources noise or movement), toxic and non-toxic (turbidity) contamination and biological disturbance. Disturbance was noted to be the highest vulnerability for this species.

**National Site
Network Site(s)** **Bae Lerpwl/ Liverpool Bay SPA**

Little Gull	NOT AVAILABLE
Little tern	NOT AVAILABLE
Common tern	NOT AVAILABLE
Waterbird assemblage	Common scoter are noted to be the dominant species in this feature and so the current status and vulnerabilities has been taken from this species.

Source: Natural England (October 2012)

Table 5.2: Liverpool Bay SPA – Screening Assessment

Screening		Likely significance effect of the project during:		
Qualifying Feature	Assessment of significance	Construction	Operation	Decommissioning
Common scoter (wintering)	Construction Effects are considered in respect of the impact pathways above: ● Oil Spills: In the absence of mitigation, a pollution event from oil spills from the barge, transshipment or machinery cannot be ruled out. Such a pollution event would degrade habitat quality, foraging availability and injure birds; ● Disturbance: Common scoter can be sensitive to disturbance. Due to lack of research of construction disturbance in relation to overwintering common scoter, recommended safe working distances during the breeding season (sensitive period) have been used as a broad guidance for the proposed works. Recommended safe working distances for nesting common scoter during construction is 300-800m (although reference is also included to 300-500m as an upper estimate). Survey work undertaken on site indicated only small numbers of individuals appeared to come within c.500m of shore (<25 individuals or small rafts) whilst a few rafts of approximately 40 birds were recorded to rest within offshore areas (c.500m-1.0km). The majority of birds rested further offshore (approximately 1.0km-3.0km). On this basis, the key sources of disturbance are considered below: – <i>Barge movements:</i> Delivery of revetment by barge would be within close proximity of large rafts of birds out to sea and so could cause significant disturbance at a population level; – <i>Piling:</i> Piling onshore is anticipated for extended time periods and, in the absence of mitigation, could result in propagation of noise and vibration through the water column (where this is required for the fishing platform) as well as the air which could affect benthic fauna (prey for scoter) as well as potentially disturbing birds themselves (albeit in small numbers) such that effects from piling cannot be ruled out; and – <i>Other onshore disturbance:</i> Other disturbance from construction, such as additional human presence, noise, artificial lighting, represent an increase to the existing baseline but are not new sources of disturbance for the area. Such effects would be temporary and are considered unlikely to affect birds beyond the above 500m threshold referenced above. Based on survey work this would result in temporary displacement to small numbers of individuals. The total length of shoreline (measured as the coast itself) within the SPA is approximately 125km, of which only approximately 1.5km (1.2% falls within the Site), such that there remains a large area of shoreline habitat (i.e. habitat within 500m of the coast where waters are shallower) available for foraging birds within the SPA. Such effects would therefore be considered <i>de-minimis</i> and not anticipated to significantly affect the population integrity. ● Changes in turbidity: Changes in turbidity would be localised and mostly associated with the shoreline (i.e. unloading rocks from the	Yes	None	None

Screening

	transshipment), such that they are likely to disperse and attenuate before affecting foraging for this species. As such, these temporary affects are considered unlikely to significant affect the population integrity. On the basis of the above, a LIKELY SIGNIFICANT EFFECT cannot be ruled out during construction as a result of the risk of pollution (oil spills) and disturbance to birds from the barge movements and piling. <u>Operation and Decommissioning</u> As set out above, no impact pathways during operation or decommissioning have been identified.			
Red-throated diver (wintering)	<u>Construction</u> Effects are considered in respect of the impact pathways above: ● Oil Spills: In the absence of mitigation, a pollution event from oil spills from the barge, transshipment or machinery cannot be ruled out. Such a pollution event would degrade habitat quality, foraging availability and injure birds; ● Disturbance: Red-throated diver can be sensitive to disturbance. Due to lack of research of construction disturbance in relation to over wintering common scoter, recommended safe working distances during the breeding season (sensitive period) have been used as a broad guidance for the proposed works. Recommended safe working distances for nesting red-throated diver during construction is 500-750m. Survey work identified only identified two individuals within this distances whilst the WeBS sector counts indicate that relatively low numbers are present in this area (key areas of importance being further north along the coast, offshore from the Dee and Ribble Estuaries). On this basis, displacement of individuals to other areas is considered unlikely to significantly affect the integrity of the SPA population. However, delivery of revetment by barge could affect larger numbers of birds which could be using offshore habitats such that significant effects from barge movements cannot be ruled out; and ● Changes in turbidity: Changes in turbidity would be localised and mostly associated with the shoreline (i.e. unloading rocks from the transshipment), such that they are likely to disperse and attenuate before affecting foraging for this species. As such, these temporary affects are considered unlikely to significant affect the population integrity. On the basis of the above, a LIKELY SIGNIFICANT EFFECT cannot be ruled out during construction as a result of the risk of pollution (oil spills) and disturbance to birds from the barge. <u>Operation and Decommissioning</u> As set out above, no impact pathways during operation or decommissioning have been identified.	Yes	None	None
Little Gull	The SPA is designated for non-breeding use by little gull, which were not recorded during the wintering bird species or WeBS sector counts. No likely significant effect on the integrity of the population from works is anticipated.	None	None	None
Little tern	The SPA is designated for summer use by little tern but this species was not recorded in the WeBS sector counts indicating this area is unlikely of importance to the SPA population. The upper shore habitats within the Scheme footprint do not offer any particular breeding opportunities for these species and the site is approximately 24.0km from the known breeding colony (Gronant Dunes). At this distance, no direct or indirect effects on breeding sites are anticipated as a result of the works, whilst any disturbance of foraging individuals (if present) would be low numbers and considered unlikely to significant affect the population.	None	None	None
Common tern	The SPA is designated for summer use by common terns. The upper shore habitats within the Scheme footprint do not offer any particular breeding opportunities for these species. Common terns are known to breed on shingle beaches and gravelly areas, which are notably absent from the Site. On this basis, no direct or indirect effects on breeding sites are anticipated as a result of the works, whilst any disturbance of foraging individuals (if present) would be low numbers and considered unlikely to significant affect the population.	None	None	None
Waterbird assemblage	Natural England advice (2002) on the vulnerability of this feature specifically cites that the most sensitive species, upon which the feature vulnerability is based, is common scoter. Disturbance effects on common	Yes	None	None

Screening

scoter are set out above, which conclude that likely significant effects cannot be ruled out for these species during construction, so a likely significant effect is also concluded for the waterbird assemblage in respect of oil spills, barge movements and piling.

Other species listed as part of the Waterbird assemblage include red-breasted merganser, recorded in extremely low numbers (and not observed during the surveys) and cormorant, which was recorded using manmade features close to shore and appeared to be well acclimatised to disturbance. It is therefore anticipated that this species would either readily habituate to increased shoreline disturbance or would be displaced to similar features in the wider surrounds. Given the numbers and activity recorded (largely loafing and foraging), no significant effects on the integrity of the SPA population would be anticipated.

As set out above, no impact pathways during operation or decommissioning have been identified.

Source: Mott MacDonald Limited

Table 5.3: Liverpool Bay SPA – Screening (In-combination Assessment)

Screening Qualifying Feature	Assessment of significance	Likely significance effect of the project during:		
		Construction	Operation	Decommissioning
Red-throated diver (wintering)	Potential impact pathways from this project have only been identified from the construction stage, where waterbirds could be disturbed by works and displaced away from key foraging grounds or expend energy to flee. It is therefore considered that appropriate to consider only projects nearby (therefore likely affecting the same population / group / rafts of birds) during the same or consecutive construction periods as likely to result in in-combination effects. Colwyn Bay Waterfront Phase 2b project is proposed along the same stretch of bay (approximately 1.0km northwest of the site), the scope of works for which also includes coastal and promenade improvements along with beach recharge. The construction period for this project is anticipated to coincide with the Colwyn Bay Coastal Defence and Active Travel scheme. On this basis, a LIKELY SIGNIFICANT EFFECT from the two projects cannot be ruled out. No other projects have been identified, on the basis of the above criteria, that are considered likely to have an in-combination effect.	Yes	None	None
Common scoter (wintering)		Yes	None	None
Waterbird assemblage		Yes	None	None
Little Gull	As set out in Table 5.2, the survey area is not considered to be of key importance for these species such that no significant impact pathways have been identified and any disturbance to individuals would be negligible. Given the extremely low numbers anticipated, no likely significant effects in-combination with any the Colwyn Bay Phase 2b scheme are anticipated.	None	None	None
Little tern		None	None	None
Common tern		None	None	None

Source: Mott MacDonald Limited

6 Mitigation

A description of all of the mitigation measures proposed under the Scheme in respect of biodiversity is included within the EIA, Chapter 8 - Biodiversity. The mitigation of relevance to the SPA and designated interest features is set out below.

6.1 Embedded Mitigation Measures

The following mitigation measures have been embedded into the Scheme design in order to avoid impacts on wintering birds and as part of best practice:

- The core wintering bird season (October to March, based on the data in Section 4) would be avoided for the delivery of revetment rock via barge. This activity would require the delivery barge to be moored offshore with smaller barges taking transhipped loads of rock to the shore, resulting in high levels of noise and movement in the zone where the wintering features of interest have been recorded. Timing delivery of revetment rock outside this period would avoid disturbance to SPA bird species;
- Piling works associated with the installation of fishing platforms would be undertaken at low tides. This would avoid piling within the marine waterbody, therefore avoiding the propagation of underwater noise through the water column. The tide cycle would also mean that birds would be further offshore and disturbance activities greatly reduced by the increased distance;
- Throughout the construction and operational phases, best practice guidance in reference to pollution prevention will be followed; and
- Pollution prevention measures and contingency planning would be implemented through the CEMP and during operational phases to ensure the marine environment and associated species/features are safeguarded during the works in line with CIRIA (Construction Industry Research and Information Associated) (2015).

6.2 Secondary (Additional) Mitigation

Given the nature of the works, which are highly constrained by tidal patterns and cannot be flexible in programme or location, mitigation options are limited. In particular, screening or stopping works is not feasible without compromising delivery of the repair works. On this basis, the additional measures proposed are as follows:

- Use of vibro piling instead of percussive piling;
- Toolbox talks will be undertaken with site staff prior to works commencing to highlight the importance of the SPA habitat and wintering birds, particularly their sensitivity to disturbance and what types of activities can disturb the birds, in order to minimise the disturbance as much as possible from construction as well as reduce the risk of pollution;
- Best practice measures under the CEMP to reduce noise;
- Avoidance of excessive working hours on site (save for where barge unloading is required); and
- Use of directional lighting, hoods and cowls to reduce light spill onto marine habitats.

7 Appropriate Assessment

7.1 Appropriate Assessment

7.1.1 Assessment of the Project Alone

The Stage 1 assessment screened in the following designated interest features:

- Common scoter;
- Red-throated diver; and
- Waterbird assemblage (of notable importance for the above species as well as red-breasted merganser and cormorant).

Likely significant effects were anticipated from the construction phase only. Impact pathways during construction were identified as follows:

- Damage to habitat and birds from oil spills / pollution;
- Disturbance to large rafts of birds offshore and out to sea from delivery of revetment by barge; and
- Disturbance to birds closer to shore from piling.

Following implementation of the mitigation set out in Section 6, the following table documents the assessment of significant effects on Liverpool Bay SPA, in respect of the above impact pathways, in line with Stage 2 of the HRA process.

Table 7.1: Liverpool Bay SPA – Appropriate Assessment

Designated Interest Feature	Assessment of Effects	Significance of Effect
Common Scoter	Oil Spills	Negligible
Red-throated Diver	The CEMP and best practice pollution safeguards are proposed to reasonably avoid or significantly minimise the risk of pollution events (oil spills) and potential degradation of foraging grounds. Following these measures, the likelihood of such an event occurring is considered extremely low.	Negligible
Water Bird Assemblage	Disturbance No disturbance from the rock revetment delivery by barge is anticipated as this will be undertaken outside of the wintering bird season. Mitigation for piling includes undertaking works at low tides to avoid any piling within the water column (for the fishing platform) as well as use of vibropiling instead of percussive piling, which will reduce the disturbance to benthic fauna. Combined with other best practice measures to reduce disturbance levels, any impacts on birds, particularly at a population level, are considered <i>de-minimis</i> and not anticipated to significantly affect the population integrity.	Negligible

Source: Mott MacDonald Limited

7.1.2 In-combination Assessment

As set out in the Stage 1 screening assessment, no likely significant effects are anticipated from the operation or decommissioning phases of the project. As such, only cumulative effects from the construction phases, where these construction periods overlap or are consecutive, are considered. The only such project identified is:

- Colwyn Bay Waterfront project Phase 2b:** Not yet in the planning system but known to be at outline design stage). This project forms part of the wider Colwyn Bay Waterfront Project for coastal defence remediation (repairs to the sea wall), beach recharge (understood to be from the location of Horizon Shine kiosk (approximate NGR 284880, 379374) westward to Rhos on Sea Harbour (approximate NGR 284253, 380450) and promenade enhancements for the western third of Colwyn Bay (approximately 1.3km in length in total of which ~850m comprise the sea wall and promenade improvements). The plans for this scheme are yet to be finalised and the construction timetable will be determined by availability and grant of funding. On this basis, it is assumed that there could be some overlap in the construction period between this Phase 2b scheme and the Scheme (Colwyn Bay Coastal Defence and Active Travel).

Cumulative impacts from this project with the proposed Scheme are considered in Table 7.2 below in respect of the designated interest features identified in the screening assessment (Table 5.3).

Table 7.2: Assessment of in-combination effects with Colwyn Bay Waterfront Phase 2b

Impact Pathway	Assessment of in-combination effects	Assessment of Significant Effects		
		Common Scoter	Red throated Diver	Waterbird assemblage
Oil Spills	The CEMP and best practice pollution safeguards are proposed to reasonably avoid or significantly minimise the risk of pollution events (oil spills). It is anticipated that similar best practice measures would be required for Colwyn Phase 2b. Following these measures, the likelihood of such an event occurring is considered extremely low.	Negligible	Negligible	Negligible
Disturbance - Noise and vibration - Visual disturbance - Artificial lighting	The construction periods of both schemes are likely to either overlap or occur consecutively. Disturbance could result from construction activities (e.g. piling works or machinery) as well as barge delivery of revetment and sand. Barge deliveries from Colwyn Phase 2b are anticipated to be subject to the same timing restrictions as this scheme (e.g. outside of October to March), whilst mitigation to reduce construction disturbance would also be anticipated to be consistent with this scheme. On this basis, disturbance would be anticipated to be of a similar nature to that described above and would only affect small numbers of birds during winter from works on the shore. In line with the assessment set out above, given the numbers of and distribution of birds recorded and the abundant alternative opportunities elsewhere in the SPA, such effects are considered unlikely to significantly affect the SPA population integrity of these features.	Negligible	Negligible	Negligible
Changes in turbidity	The beach recharge associated with Colwyn Phase 2b could result in increased turbidity changes in addition to localised and temporary effects from unloading of revetment or vehicle movements. However, it is anticipated that best practice measures to contain and minimise these effects would be implemented during construction, whilst effects would be temporary in nature. As described above, the bay represents a small proportion of the foraging habitat available for designated species, with abundant and more	Negligible	Negligible	Negligible

Impact Pathway	Assessment of in-combination effects	Assessment of Significant Effects		
		Common Scoter	Red throated Diver	Waterbird assemblage
	important foraging grounds available elsewhere. Given the relatively low numbers of designated interest features recorded inshore during surveys and from WeBS count data, any effects from changes in turbidity would be unlikely to affect the SPA population integrity of these features.			

Source: Mott MacDonald Limited

In summary, no significant adverse effects are anticipated on the designated interest features of Liverpool Bay SPA as a result of the project in combination with any other plans or projects.

8 Conclusions

This report to inform an Appropriate Assessment provides evidence that, following the implementation of mitigation, any adverse effects on Liverpool Bay SPA and its designated interest features alone or in combination with other projects are considered to be *de-minimis* such that no adverse effect on the integrity of the Liverpool Bay Special Protection Area is anticipated.

No impact pathways to any other internationally designated sites have been identified.

This report is provided to inform the competent authority in completing their Appropriate Assessment of the project.

9 References

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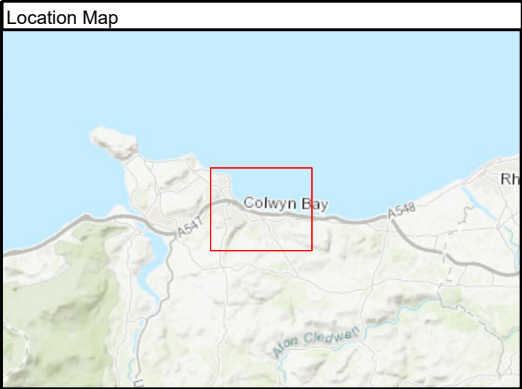
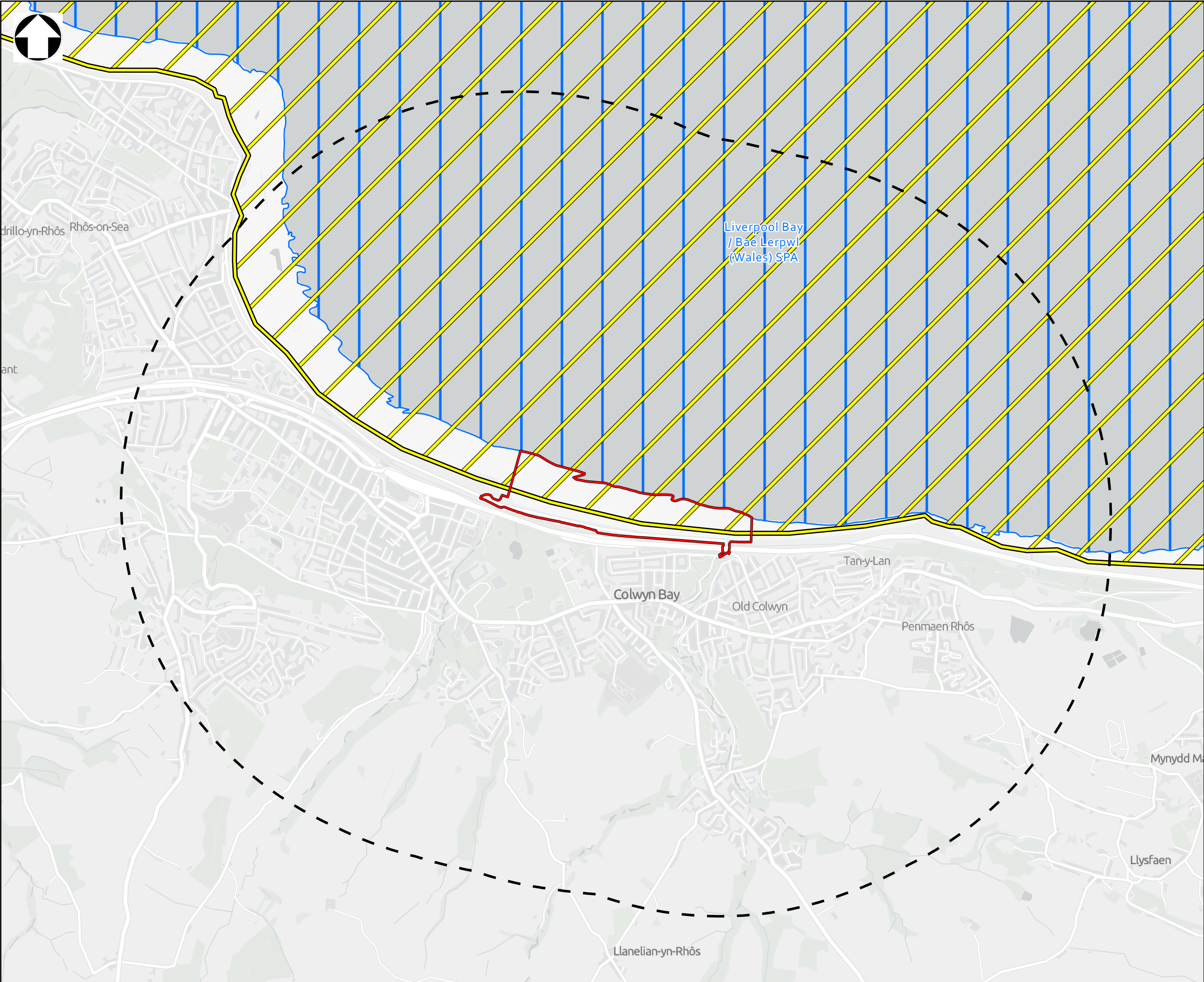
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Ruddock, M. and Whitfield, D.P., 2007. A review of disturbance distances in selected bird species. *A report from Natural Research (Projects) Ltd to Scottish Natural Heritage*, p.181.

A. International Designations within 2.0km



Key to Symbols

- Red line boundary
- 2km buffer of red line boundry
- Important Bird Area (IBA)
- Special Protection Area (SPA)

Notes

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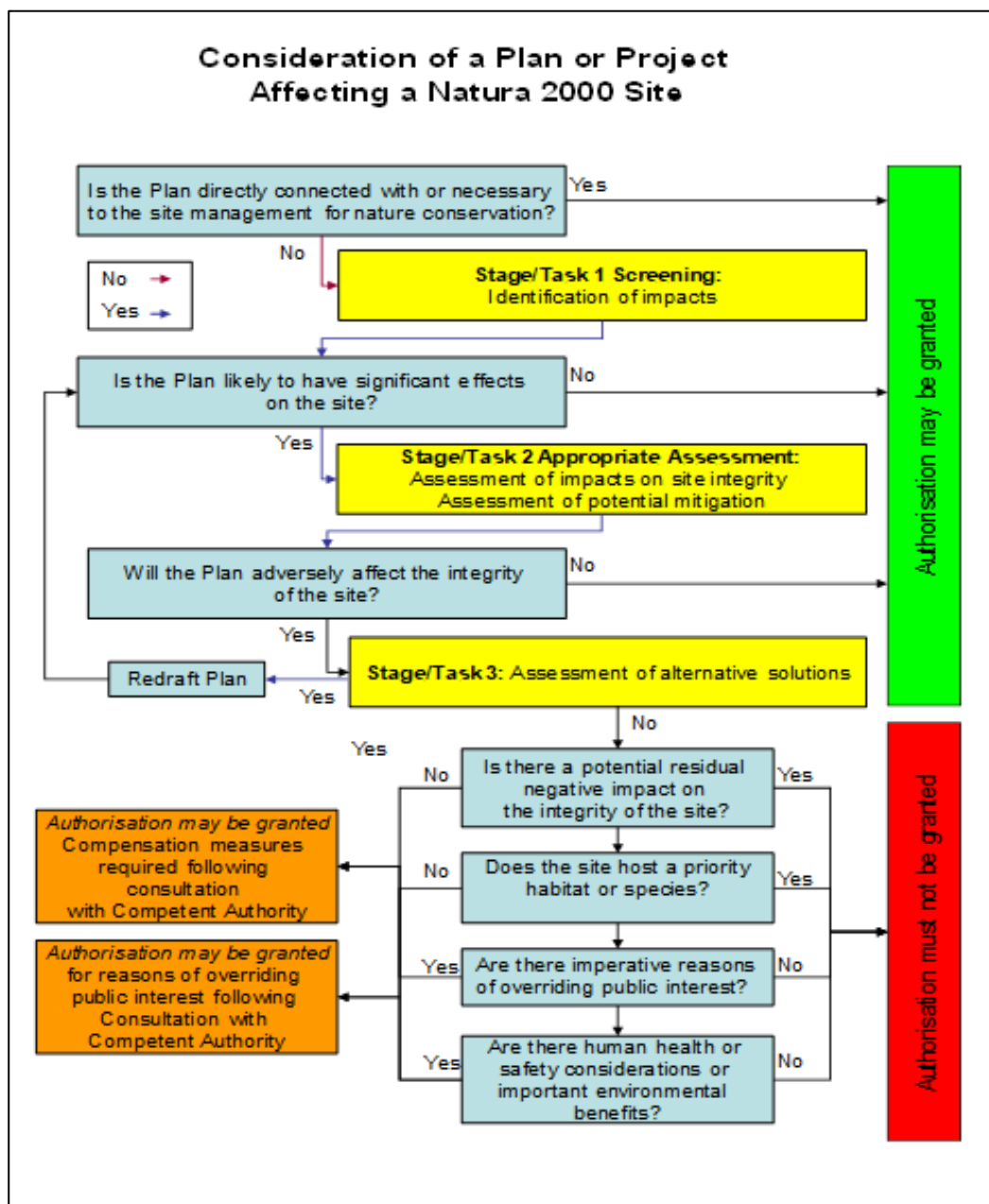
CONWY
CYNGOR Y BWRDEISTREF SIROL
COUNTY BOROUGH COUNCIL

Conwy County
Borough Council

Title Old Colwyn Coastal Defence and Active Travel Scheme International designations within 2.0km					
Designed	L Woolley	LW	Eng. Check	N Spofforth	LW
Drawn	S Anstice	MH	Coordination	L Woolley	LW
GIS Check	G O'Donovan	GO	Approved	C Williams	CW
Scale at A3 1:20,000		Status INF	Rev P1	Security STD	
Drawing Number 415437-MMD-00-XX-DR-N-1714					

B. HRA Process

Figure A.1: The Habitats Regulations Assessment Process



The term 'Task' is used in reference to an HRA of a plan and the term 'Stage' in reference to an HRA of a project.

C. WeBS Raw Data

The raw data has been curtailed to only show the species considered in this report, namely common scoter, common tern, red-throated diver, red-breasted merganser and cormorant. Full information is available on request.

Table 9.1: WeBS sector counts (2014-2019)

Species Code	Species	Taxon Sort	Visit	Count	Species Cover	Location
CX	Common Scoter	5810	Sep-14	51	Good	Abergele to Llandulais
CX	Common Scoter	5810	Oct-14	53	Good	Abergele to Llandulais
CX	Common Scoter	5810	Jan-15	415	Good	Abergele to Llandulais
CX	Common Scoter	5810	Feb-15	710	Good	Abergele to Llandulais
CX	Common Scoter	5810	Mar-15	206	Good	Abergele to Llandulais
CX	Common Scoter	5810	Apr-15	203	Good	Abergele to Llandulais
CX	Common Scoter	5810	May-15	4	Good	Abergele to Llandulais
CX	Common Scoter	5810	Sep-15	0	Good	Abergele to Llandulais
CX	Common Scoter	5810	Oct-15	0	Good	Abergele to Llandulais
CX	Common Scoter	5810	Dec-15	401	Good	Abergele to Llandulais
CX	Common Scoter	5810	Jan-16	200	Good	Abergele to Llandulais
CX	Common Scoter	5810	Feb-16	461	Good	Abergele to Llandulais
CX	Common Scoter	5810	Mar-16	505	Good	Abergele to Llandulais
CX	Common Scoter	5810	Apr-16	0	Good	Abergele to Llandulais
CX	Common Scoter	5810	Sep-16	420	Good	Abergele to Llandulais
CX	Common Scoter	5810	Oct-16	161	Poor	Abergele to Llandulais
CX	Common Scoter	5810	Dec-16	220	Good	Abergele to Llandulais
CX	Common Scoter	5810	Jan-17	0	Good	Abergele to Llandulais
CX	Common Scoter	5810	Feb-17	6	Good	Abergele to Llandulais
CX	Common Scoter	5810	Apr-17	0	Poor	Abergele to Llandulais
CX	Common Scoter	5810	Oct-17	0	Good	Abergele to Llandulais
CX	Common Scoter	5810	Nov-17	268	Good	Abergele to Llandulais
CX	Common Scoter	5810	Dec-17	0	Poor	Abergele to Llandulais
CX	Common Scoter	5810	Feb-18	386	Good	Abergele to Llandulais
CX	Common Scoter	5810	Mar-18	0	Good	Abergele to Llandulais
CX	Common Scoter	5810	Sep-18	0	Good	Abergele to Llandulais
CX	Common Scoter	5810	Oct-18	0	Good	Abergele to Llandulais
CX	Common Scoter	5810	Nov-18	52	Good	Abergele to Llandulais
CX	Common Scoter	5810	Dec-18	44	Good	Abergele to Llandulais
CX	Common Scoter	5810	Jan-19	200	Good	Abergele to Llandulais
CX	Common Scoter	5810	Feb-19	230	Good	Abergele to Llandulais
CX	Common Scoter	5810	Mar-19	4	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Sep-14	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Oct-14	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Jan-15	0	Good	Abergele to Llandulais

Species Code	Species	Taxon Sort	Visit	Count	Species Cover	Location
RM	Red-breasted Merganser	6030	Feb-15	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Mar-15	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Apr-15	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	May-15	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Sep-15	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Oct-15	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Dec-15	1	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Jan-16	1	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Feb-16	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Mar-16	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Apr-16	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Sep-16	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Oct-16	0	Poor	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Dec-16	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Jan-17	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Feb-17	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Apr-17	0	Poor	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Oct-17	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Nov-17	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Dec-17	0	Poor	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Feb-18	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Mar-18	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Sep-18	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Oct-18	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Nov-18	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Dec-18	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Jan-19	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Feb-19	0	Good	Abergele to Llandulais
RM	Red-breasted Merganser	6030	Mar-19	0	Good	Abergele to Llandulais
CA	Cormorant	25040	Sep-14	1	Good	Abergele to Llandulais
CA	Cormorant	25040	Oct-14	4	Good	Abergele to Llandulais
CA	Cormorant	25040	Jan-15	5	Good	Abergele to Llandulais
CA	Cormorant	25040	Feb-15	7	Good	Abergele to Llandulais
CA	Cormorant	25040	Mar-15	3	Good	Abergele to Llandulais
CA	Cormorant	25040	Apr-15	5	Good	Abergele to Llandulais
CA	Cormorant	25040	May-15	23	Good	Abergele to Llandulais
CA	Cormorant	25040	Sep-15	21	Good	Abergele to Llandulais
CA	Cormorant	25040	Oct-15	11	Good	Abergele to Llandulais
CA	Cormorant	25040	Dec-15	10	Good	Abergele to Llandulais
CA	Cormorant	25040	Jan-16	17	Good	Abergele to Llandulais
CA	Cormorant	25040	Feb-16	2	Good	Abergele to Llandulais
CA	Cormorant	25040	Mar-16	2	Good	Abergele to Llandulais
CA	Cormorant	25040	Apr-16	3	Good	Abergele to Llandulais

Species Code	Species	Taxon Sort	Visit	Count	Species Cover	Location
CA	Cormorant	25040	Sep-16	74	Good	Abergele to Llandulais
CA	Cormorant	25040	Oct-16	63	Poor	Abergele to Llandulais
CA	Cormorant	25040	Dec-16	7	Good	Abergele to Llandulais
CA	Cormorant	25040	Jan-17	2	Good	Abergele to Llandulais
CA	Cormorant	25040	Feb-17	0	Good	Abergele to Llandulais
CA	Cormorant	25040	Apr-17	3	Poor	Abergele to Llandulais
CA	Cormorant	25040	Oct-17	6	Good	Abergele to Llandulais
CA	Cormorant	25040	Nov-17	26	Good	Abergele to Llandulais
CA	Cormorant	25040	Dec-17	11	Poor	Abergele to Llandulais
CA	Cormorant	25040	Feb-18	7	Good	Abergele to Llandulais
CA	Cormorant	25040	Mar-18	1	Good	Abergele to Llandulais
CA	Cormorant	25040	Sep-18	10	Good	Abergele to Llandulais
CA	Cormorant	25040	Oct-18	5	Good	Abergele to Llandulais
CA	Cormorant	25040	Nov-18	21	Good	Abergele to Llandulais
CA	Cormorant	25040	Dec-18	11	Good	Abergele to Llandulais
CA	Cormorant	25040	Jan-19	14	Good	Abergele to Llandulais
CA	Cormorant	25040	Feb-19	14	Good	Abergele to Llandulais
CA	Cormorant	25040	Mar-19	5	Good	Abergele to Llandulais
CN	Common Tern	46930	Sep-14	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Oct-14	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Jan-15	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Feb-15	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Mar-15	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Apr-15	0	Good	Abergele to Llandulais
CN	Common Tern	46930	May-15	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Sep-15	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Oct-15	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Dec-15	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Jan-16	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Feb-16	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Mar-16	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Apr-16	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Sep-16	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Oct-16	0	Poor	Abergele to Llandulais
CN	Common Tern	46930	Dec-16	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Jan-17	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Feb-17	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Apr-17	0	Poor	Abergele to Llandulais
CN	Common Tern	46930	Oct-17	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Nov-17	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Dec-17	0	Poor	Abergele to Llandulais
CN	Common Tern	46930	Feb-18	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Mar-18	0	Good	Abergele to Llandulais

Species Code	Species	Taxon Sort	Visit	Count	Species Cover	Location
CN	Common Tern	46930	Sep-18	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Oct-18	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Nov-18	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Dec-18	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Jan-19	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Feb-19	0	Good	Abergele to Llandulais
CN	Common Tern	46930	Mar-19	0	Good	Abergele to Llandulais
CX	Common Scoter	5810	Dec-14	20000	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Jan-15	3000	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Feb-15	2000	Poor	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Mar-15	4000	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Apr-15	300	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	May-15	0	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Jun-15	0	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Jul-15	2100	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Aug-15	6000	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Sep-15	300	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Oct-15	200	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Dec-15	8000	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Jan-16	350	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Feb-16	400	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Mar-16	600	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Apr-16	0	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	May-16	101	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Jun-16	0	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Aug-16	0	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Sep-16	4	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Oct-16	400	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Dec-16	3000	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Jan-17	200	Poor	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Feb-17	5	Poor	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Mar-17	730	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Apr-17	1	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Jul-17	0	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Aug-17	400	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Sep-17	0	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Oct-17	3000	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Dec-17	1500	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Jan-18	1800	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Feb-18	4500	Poor	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Mar-18	4000	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Apr-18	0	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	May-18	4	Good	Colwyn Bay to Rhos Point

Species Code	Species	Taxon Sort	Visit	Count	Species Cover	Location
CX	Common Scoter	5810	Oct-18	1	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Jan-19	1000	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Feb-19	5000	Good	Colwyn Bay to Rhos Point
CX	Common Scoter	5810	Mar-19	3000	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Dec-14	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Jan-15	21	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Feb-15	0	Poor	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Mar-15	6	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Apr-15	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	May-15	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Jun-15	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Jul-15	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Aug-15	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Sep-15	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Oct-15	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Dec-15	21	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Jan-16	17	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Feb-16	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Mar-16	2	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Apr-16	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	May-16	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Jun-16	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Aug-16	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Sep-16	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Oct-16	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Dec-16	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Jan-17	0	Poor	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Feb-17	0	Poor	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Mar-17	1	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Apr-17	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Jul-17	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Aug-17	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Sep-17	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Oct-17	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Dec-17	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Jan-18	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Feb-18	0	Poor	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Mar-18	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Apr-18	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	May-18	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Oct-18	0	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Jan-19	2	Good	Colwyn Bay to Rhos Point
RM	Red-breasted Merganser	6030	Feb-19	7	Good	Colwyn Bay to Rhos Point

Species Code	Species	Taxon Sort	Visit	Count	Species Cover	Location
RM	Red-breasted Merganser	6030	Mar-19	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Dec-14	6	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Jan-15	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Feb-15	1	Poor	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Mar-15	17	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Apr-15	2	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	May-15	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Jun-15	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Jul-15	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Aug-15	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Sep-15	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Oct-15	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Dec-15	58	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Jan-16	6	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Feb-16	3	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Mar-16	1	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Apr-16	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	May-16	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Jun-16	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Aug-16	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Sep-16	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Oct-16	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Dec-16	5	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Jan-17	1	Poor	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Feb-17	0	Poor	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Mar-17	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Apr-17	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Jul-17	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Aug-17	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Sep-17	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Oct-17	1	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Dec-17	3	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Jan-18	13	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Feb-18	3	Poor	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Mar-18	4	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Apr-18	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	May-18	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Oct-18	0	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Jan-19	6	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Feb-19	24	Good	Colwyn Bay to Rhos Point
RH	Red-throated Diver	16760	Mar-19	0	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Dec-14	10	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Jan-15	2	Good	Colwyn Bay to Rhos Point

Species Code	Species	Taxon Sort	Visit	Count	Species Cover	Location
CA	Cormorant	25040	Feb-15	4	Poor	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Mar-15	14	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Apr-15	4	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	May-15	26	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Jun-15	1	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Jul-15	2	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Aug-15	12	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Sep-15	4	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Oct-15	0	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Dec-15	22	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Jan-16	21	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Feb-16	20	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Mar-16	1	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Apr-16	3	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	May-16	16	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Jun-16	3	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Aug-16	3	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Sep-16	2	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Oct-16	4	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Dec-16	14	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Jan-17	53	Poor	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Feb-17	2	Poor	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Mar-17	8	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Apr-17	3	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Jul-17	3	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Aug-17	6	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Sep-17	5	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Oct-17	30	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Dec-17	18	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Jan-18	16	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Feb-18	3	Poor	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Mar-18	0	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Apr-18	2	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	May-18	14	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Oct-18	4	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Jan-19	26	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Feb-19	10	Good	Colwyn Bay to Rhos Point
CA	Cormorant	25040	Mar-19	19	Good	Colwyn Bay to Rhos Point

Source: BTO (2020)

D. Distribution Maps (JNCC Report Extracts)

Lawson *et al.* (2016) includes the distribution maps showing the location of red-throated diver, common scoter and little gull within the Liverpool Bay SPA. Extracts from this report are provided here.

3.2 Distribution and densities of birds in Liverpool Bay/Bae Lerpwl area of search

3.2.1 Red-throated diver

The higher density areas of red-throated diver are located along the coastline close inshore. The main aggregation of red-throated diver is captured within the existing Liverpool Bay/Bae Lerpwl SPA, although a satellite aggregation is evident to the north of this, adjacent to the Duddon Estuary SPA and extending around towards Morecambe Bay.

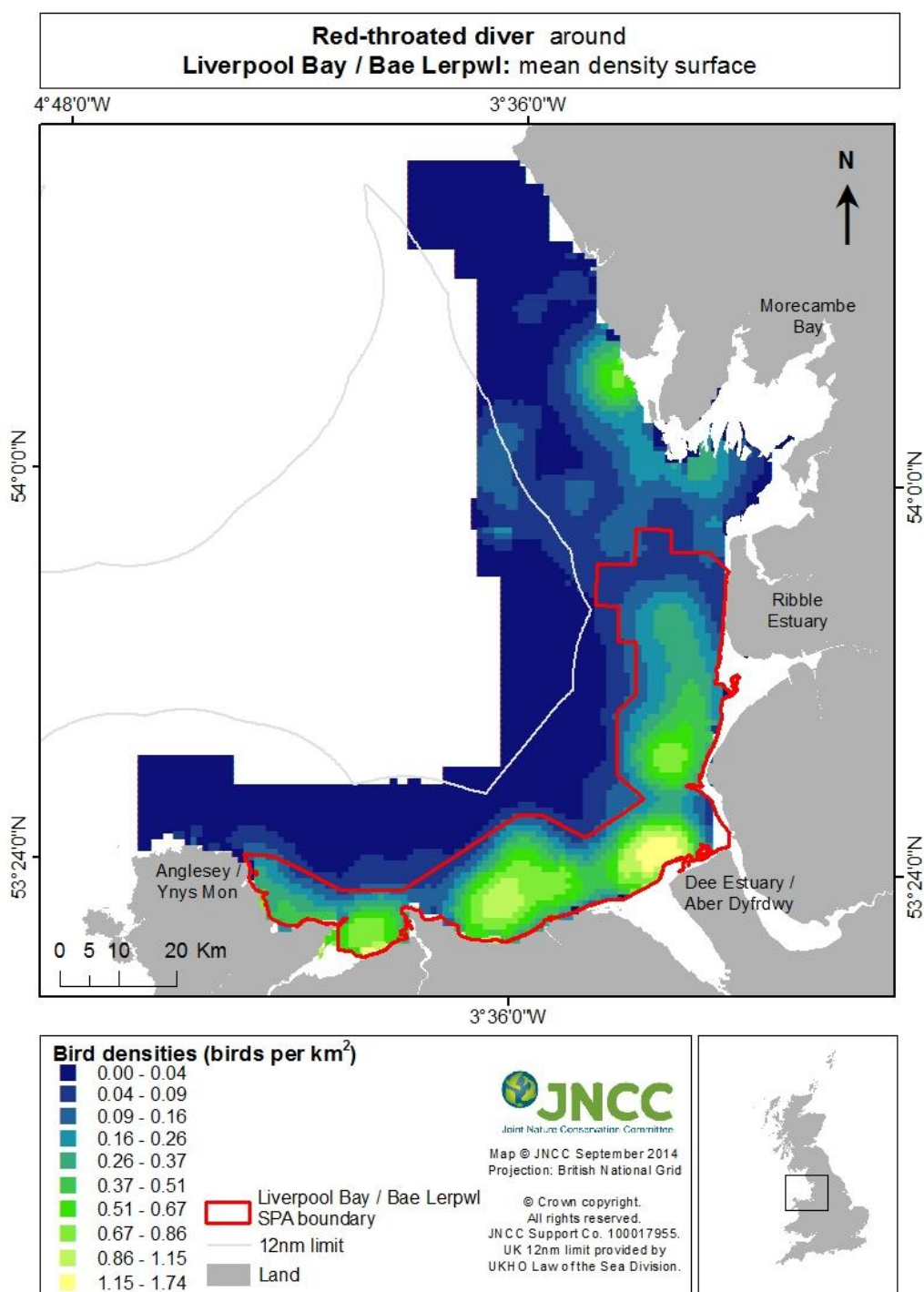


Figure 6. Estimated mean density surface of red-throated diver recorded from aerial surveys within Liverpool Bay/Bae Lerpwl area of search (2004/05, 2005/06, 2006/07, 2007/08, 2010/11).

3.2.2 Common scoter

Two main aggregations of common scoter are evident from the mean density surface and these are contained within the existing Liverpool Bay/Bae Lerpwl SPA.

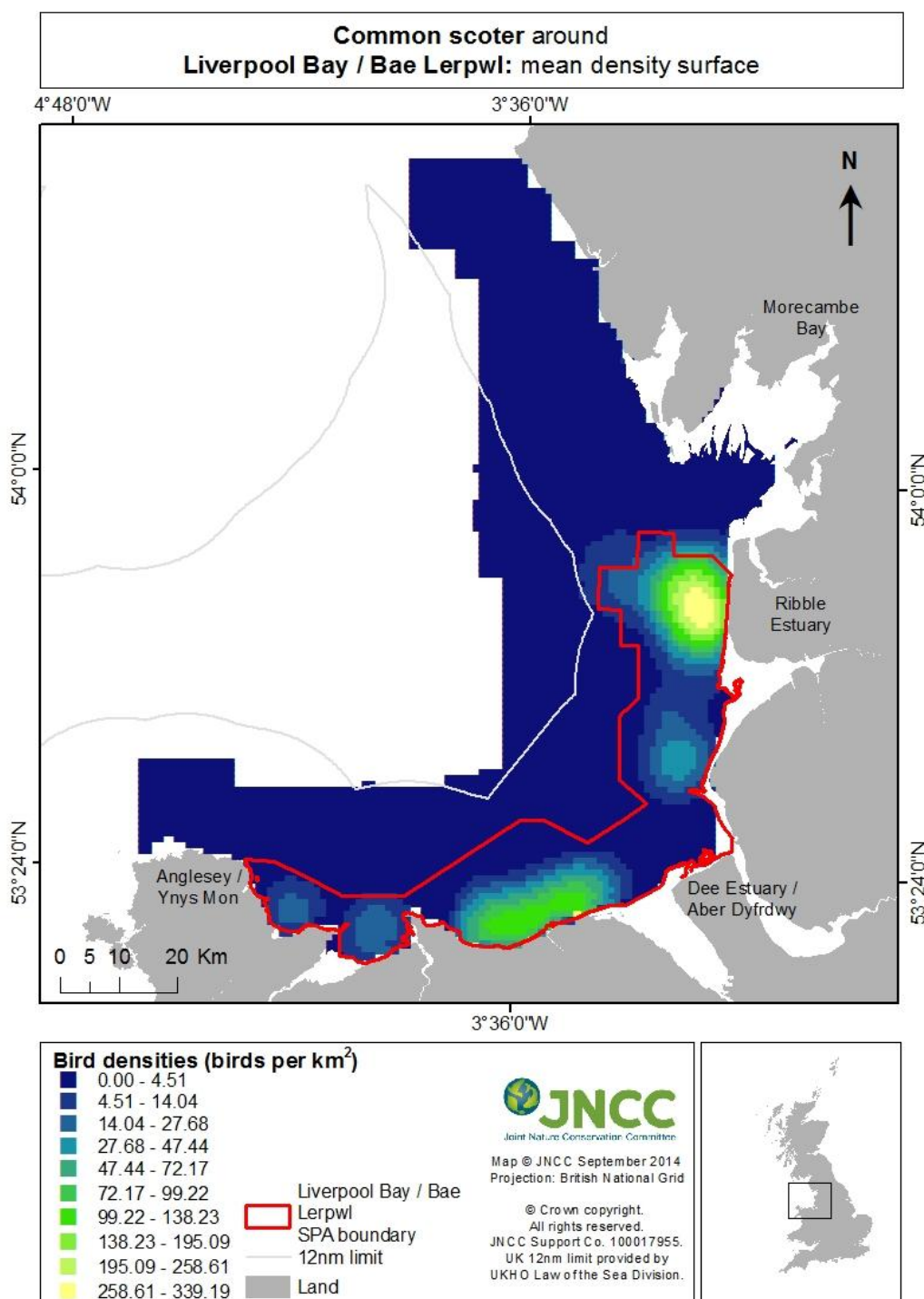


Figure 7. Estimated mean density surface of common scoter recorded from aerial surveys within Liverpool Bay/Bae Lerpwl area of search (2004/05, 2005/06, 2006/07, 2007/08, 2010/11).

3.2.3 Little gull

Observations of little gull within the Liverpool Bay/Bae Lerpwl area of search were concentrated off Blackpool close to the 12 nautical mile limit, the mean density surface reflects this pattern (Figure 8 and Figure 9), the higher density aggregation of little gull extends beyond the existing Liverpool/Bae Lerpwl SPA boundary to just beyond the 12 nautical mile line.

To assess the consistency of these aggregations or hotspots, the density threshold (0.0648 birds per km²) - determined by maximum curvature analysis - was applied to each survey-specific density surface. As a result each cell on the surface with a density equal to or greater than the density threshold was given a score of 1 (hotspot present) and cells with a density less than the threshold were given a score of 0 (hotspot absent). The survey-specific density surfaces were then overlaid and summed to create a hotspot assessment surface, such that each cell on this surface had a count of the number of times a hotspot was present in that cell.

The results of this hotspot analysis are presented in Figure 10 and shows that little gull were consistently present in a well defined location within the Liverpool Bay/Bae Lerpwl area of search. Twelve surveys were assessed in the hotspot analysis from the seasons (2004/05–2010/11), though the area covered varied between surveys.

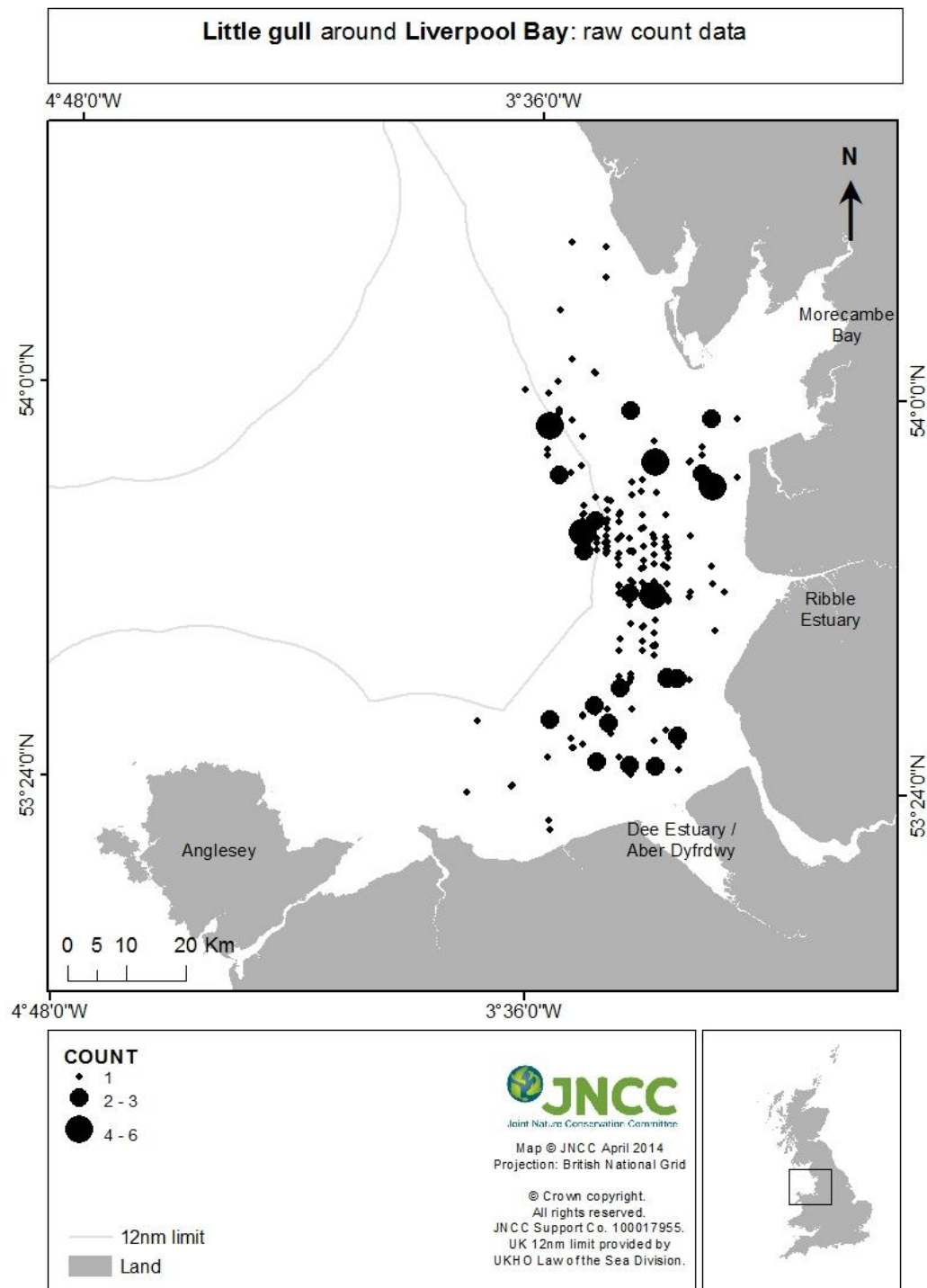


Figure 8. Raw count data of little gull recorded during WWT Consulting aerial surveys within Liverpool Bay/Bae Lerpwl area of search (2004/05, 2005/06, 2006/07, 2007/08, 2010/11).

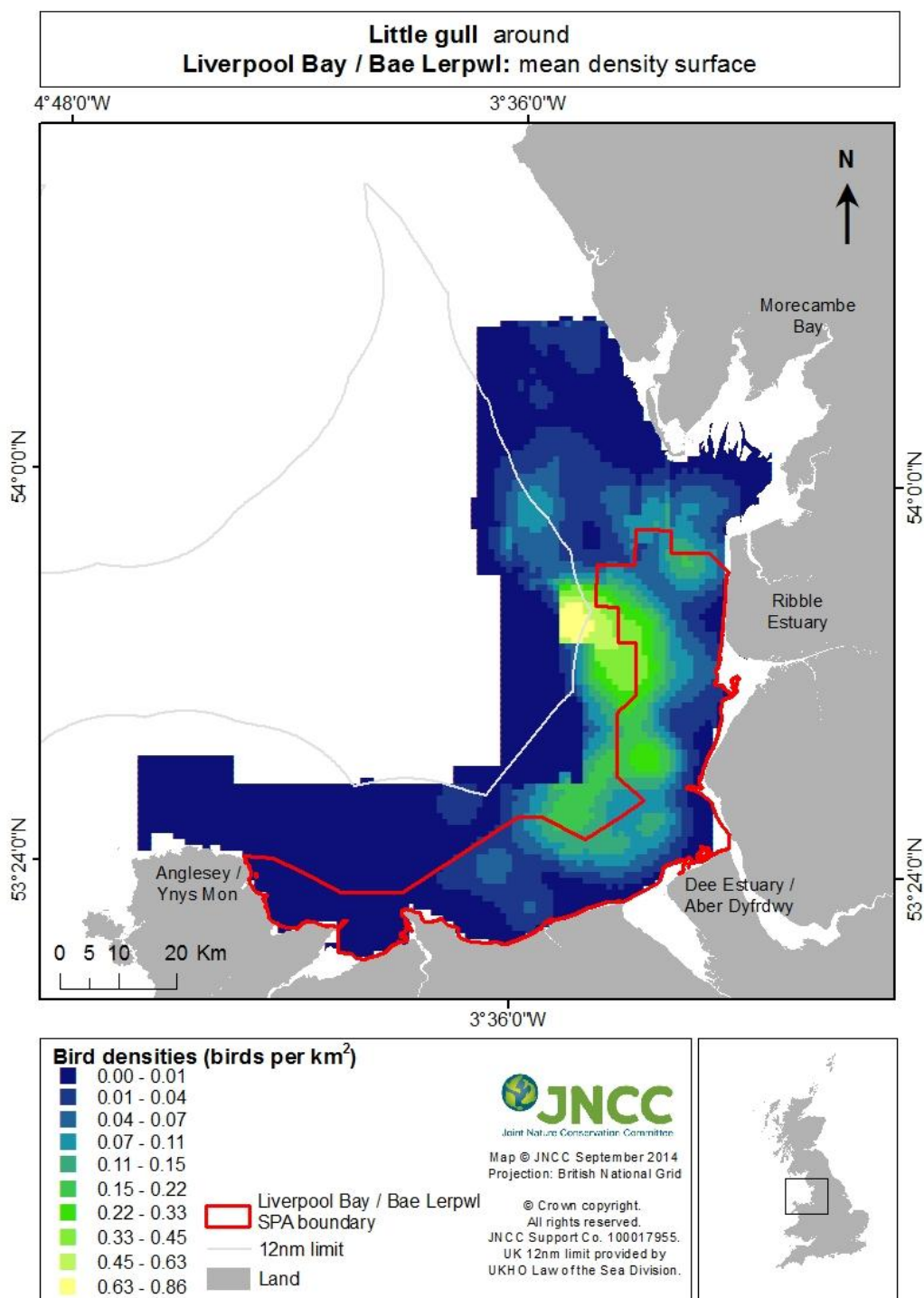


Figure 9. Estimated mean density surface of little gull recorded from aerial surveys within Liverpool Bay/Bae Lerpwl area of search (2004/05, 2005/06, 2006/07, 2007/08, 2010/11).

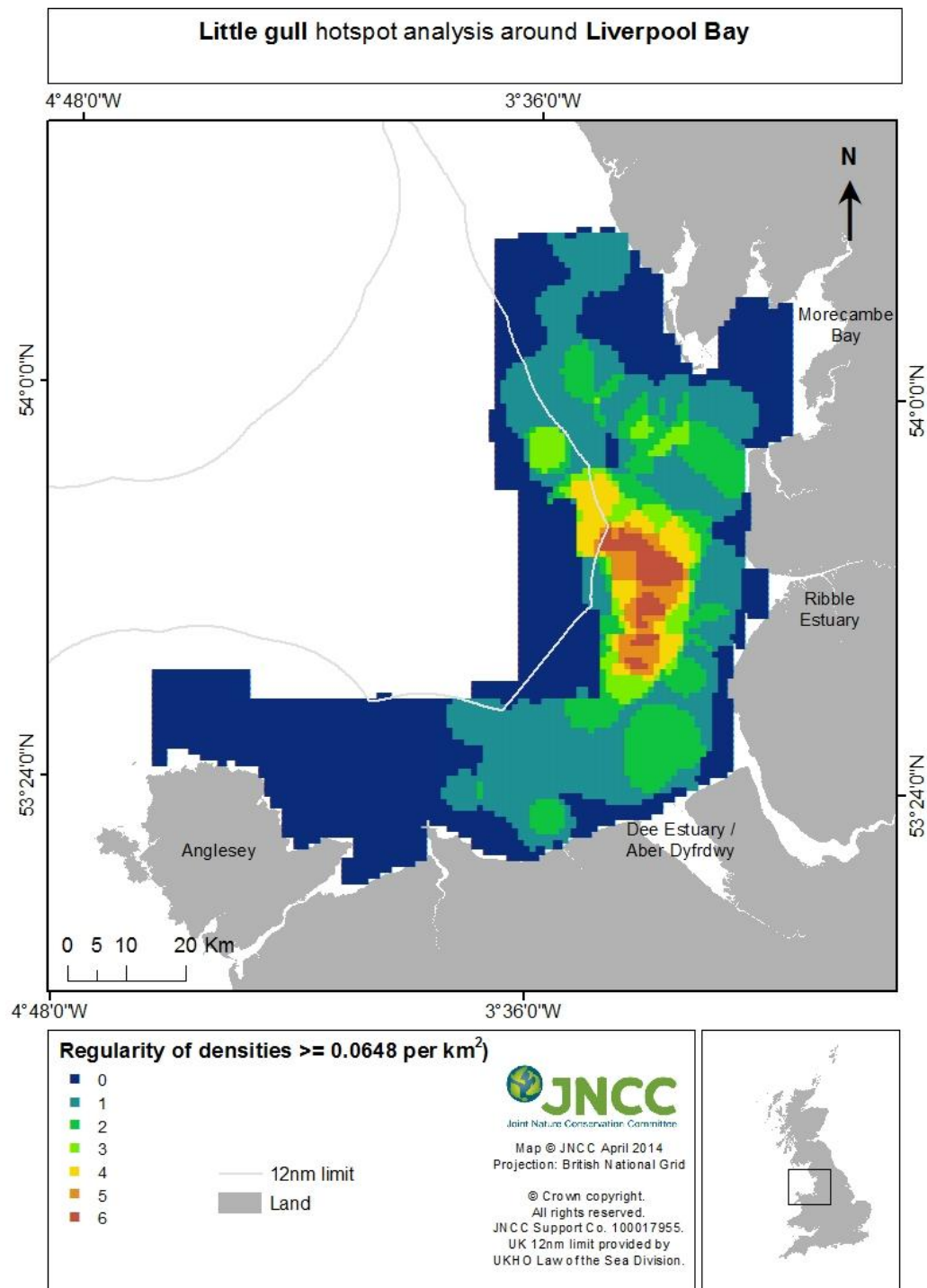


Figure 10. The number of surveys on which little gull densities met or exceeded the maximum curvature density threshold (0.0648 birds per km²) in the Liverpool Bay/Bae Lerpwl area of search.



Appendix 8.6 – Bio-Security Risk Assessment Report



Old Colwyn Coastal Defence and Active Travel Scheme

Bio-Security Risk Assessment

July 2020

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Old Colwyn Coastal Defence and Active Travel Scheme

Bio-Security Risk Assessment

July 2020

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
P01	23/07/2020	E. Haggett	R. Byrne N. Spofforth	C. Williams	First issue

Document reference: 417437-MMD-00-XX-RP-N-1722

Information class: Standard

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1 Introduction

1.1 Overview

This Bio Security Risk Assessment (BSRA) document has been produced in support of the Old Colwyn Coastal Defence and Active Travel Scheme (hereafter referred to as “the Scheme”).

This BSRA outlines the potential hazards relating to the introduction and spread of invasive and non-native species (INNS) on site for the Scheme. The Scheme will involve working on land, within the intertidal zone and it also may require the delivery of revetment rock by ship and barge. As a result, INNS relating to the terrestrial and marine environments have been considered.

Prior to implementing this risk assessment on site, a site briefing and a toolbox talk should be provided to all site workers regarding the importance of bio security. The required inspection, preventative and management techniques for personnel should be outlined and pest/containment identification should also be explained to ensure rapid and appropriate responses to any INNS present, (if INNS are found on site, the Ecological Clerk of Works (ECoW) should be notified and guidance should be sought with statutory agencies). An ecological walkover survey should be undertaken on site approximately 6-8 weeks prior to the construction phase commencing. This will provide an opportunity to confirm any new occurrences of INNS on site and for these to be managed suitably prior to works starting.

Formal standardised reporting to Natural Resources Wales (NRW) should be implemented on site throughout the duration of the works regarding the presence of INNS should any be discovered.

1.2 Terrestrial INNS

A Preliminary Ecological Appraisal Report has been produced for the Scheme¹, along with other subsequent assessments (both terrestrial and intertidal) for which a number of field surveys were undertaken from December 2019 to June 2020. During these surveys no invasive plant species were discovered on site. However, it is noted that INNS can be introduced into the site through poor bio-security protocols and construction practice, so a precautionary approach for the management of terrestrial INNS on site is outlined in Section 2.

1.3 Marine INNS

It should be noted that to date no site visit has been undertaken by a marine ecologist (visits were planned but these had to be cancelled due to the Covid-19 pandemic). Instead comprehensive high definition (HD) photographic evidence taken by an experienced local environmental consultant has been reviewed by a qualified marine ecologist to establish marine species present on site. It was not possible to confirm the presence/absence of marine INNS from these photographs. However, due to the potential delivery of revetment rock to the site via barge, precautionary measures to manage potential INNS within the marine environment need to be outlined.

The Marine Strategy Framework Directive (MSFD) (2008) outlines a monitoring list for INNS. These INNS listed by the MSFD are further outlined within the “Priority Monitoring and Surveillance List of Marine INNS for Wales”² and have been categorised into “High Risk” and “Medium Risk”

¹ Colwyn Bay Preliminary Ecological Appraisal Report (Ref: 410895-MMD-N-R-00-XX-1701), Mott MacDonald Ltd, 2020.

² Gov.Wales (2017). *Marine Invasive Non-Native Species Priority Monitoring and Surveillance List for Wales*. [Online] Available at: <https://gov.wales/sites/default/files/publications/2018-02/invasive-aquatic-species-priority-marine-species.pdf>

INNS. A “Low Risk” category also exists, but there are not INNS considered to require monitoring by the MSFD.

The “High” and “Medium” risk INNS listed by the MSFD have been reviewed and INNS from these categories that are believed to have the potential to interact with the site as a result of the delivery of revetment rock via barge have been considered for this BSRA. These species considered for this risk assessment are outlined below:

1.3.1 High Risk INNS

- Compass sea squirt (*Asterocarpa humilis*) – potential for introduction through fouling;
- Carpet sea squirt (*Didemnum vexillum*) – potential for introduction through fouling;
- Chinese mitten crab (*Eriocheir sinensis*) – potential for introduction through ballast water; and
- Red ribbon bryozoan (*Watersipora subatra*) – potential for introduction through fouling.

1.3.2 Medium Risk INNS

- Bonnemaison’s hook weed (*Bonnemaisonia hamifera*) – potential for introduction through fouling and ballast water;
- Japanese skeleton shrimp (*Caprella mutica*) – potential for introduction through fouling;
- Orange striped anemone (*Diadumene lineata*) – potential for introduction through fouling;
- Japanese wireweed (*Sargassum japonica*) – potential for introduction through fouling;
- Leathery sea squirt (*Styela clava*) – potential for introduction through fouling; and
- Wakame, Asian kelp (*Undaria pinnatifida*) – potential for introduction through fouling.

Bio Security Risk Assessment

The BSRA scoring methodology is presented in Appendix A

The risk assessment in **Error! Reference source not found.** outlines the potential hazards of the Scheme associated with the introduction, transfer and spread of INNS. This risk assessment should be included within the Construction Environmental Management Plan (CEMP). As outlined above, this risk assessment is precautionary as it relies upon records of INNS within and near to the site.

Table 2.1: BSRA for the Scheme (risk is the transfer and introduction of INNS)

Hazard	Who or What Might be Affected?	Initial Assessment			Risk Control Measures	Residual Risk		
		Severity	Likelihood	Assessed Risk		Severity	Likelihood	Assessed Risk
Land Based Plant								
Machinery access	Where access points are varied and/or used on a number of occasions, the risk of pathogen transfer/introduction will increase.	4	H	UA	The number of vehicles used on site and the frequency at which they enter the intertidal area should be limited (vehicles should only enter the intertidal area on an ebb tide when there is a suitable dry area available for working). Tracking of vehicles across the intertidal zone will remain within a strict working buffer of 20m from the rock revetment (which is 30m wide, so in total a buffer of 50m from the seawall will be adhered to).	2	L	A
Use of land-based plant on the foreshore	Heavy lifting plant will be used in the intertidal zone to collect revetment rock delivered by the barges once the tide has receded. This provides the opportunity for the spread of INNS across the intertidal area.	4	M	AR	Sections of the plant that would come into direct contact with the intertidal area (track/wheels) should be thoroughly cleaned before and after use to avoid the spread of any INNS. This will also prevent potential spread from the Scheme's site area into other sites that may be used after the Scheme's construction is completed.	3	L	A

Hazard	Who or What Might be Affected?	Initial Assessment			Risk Control Measures	Residual Risk		
		Severity	Likelihood	Assessed Risk		Severity	Likelihood	Assessed Risk
Machinery origins/ previous works	Machinery travelling or having previously worked on different sites has the potential to introduce non-native or non-localised species to site.	4	H	JA	A stringent system of vehicle maintenance and cleanliness should be implemented during construction works, including frequent vehicle washing between road and beach access. A CEMP should be adhered to and available on site and NRW Pollution Prevention Guidelines should be followed.	3	M	AR
Promenade works	Material used to raise and widen the promenade may introduce alien species or spread existing species and/or pathogens on site.	3	H	AR	Existing material will be reclaimed as far as possible, therefore the risk of introduction of invasive species is considered low.	2	L	A
PPE – contractor staff, operatives and sub-contractors	PPE can collect contaminants including mud, seeds, pathogens etc. which can easily be transferred to and between sites.	4	VH	JA	All PPE especially footwear, Velcro closures, gloves, etc. should be thoroughly inspected and cleaned and inspected before arrival on site. Boot washing as well as equipment cleaning facilities (with a biocide such as Virkon) should be provided and carried out when entering and exiting site. Ideally equipment should then be allowed to dry for 48 hours before it is used elsewhere (a different site). Transfer between work areas on site should be avoided and minimised where possible.	3	M	AR
Marine Vessels / Marine Plant								
Ballast water	It is currently anticipated that the rocks required for the construction of the revetment on site may be transported by ship from Norway. There may be a requirement for these ships to take on board ballast waters from seas of different nations and to then dispose of these in	4	H	JA	All vessels and associated staff must ensure adherence to the Ballast Water Management Convention, 2017 for each vessel required for the works. This legislation outlines the requirements for each vessel to have a ballast water management plan, a ballast water record book and an international ballast water management certificate. Vessels should have a on-board ballast water treatment system, if this is not possible then ballast water should be	3	L	A

Hazard	Who or What Might be Affected?	Initial Assessment			Risk Control Measures	Residual Risk		
		Severity	Likelihood	Assessed Risk		Severity	Likelihood	Assessed Risk
	UK waters (and vice versa). This could result in the spread of INNS in the form of marine microbes, plants and animals (such as Carpet sea squirt (<i>Didemnum vexillum</i>) larvae).				exchanged mid-ocean and not near the shoreline of the site.			
Anchorage	Anchors used for the mooring of vessels pose the opportunity for bio-fouling and introduction of INNS to the site when lowered to the seabed.	3	L	A	Only the larger ships that contain the delivery of the revetment rock will be allowed to drop anchor. These ships will be moored off-site, outside of the site boundary. Barges will be held in place by tugs which are self-propelled and so these will not require anchorage within the intertidal zone. Anchors for vessels used on site should be cleaned when the opportunity arises (e.g. at port or when refuelling) to minimise cross contamination between sites. It should be noted that the anchor will provide a relatively small opportunity for cross site contamination in comparison to other hazards listed in this risk assessment.	2	L	A
Bio-fouling of revetment rock	If revetment rocks delivered on site have been reused from other projects or have spent prolonged periods of time in the marine environment, they may already be colonised to marine INNS which would then be introduced to the site.	4	M	AR	Revetment rock delivered to site should preferably be virgin material and not consist of rocks used for previous coastal defence schemes that may have spent prolonged periods of time in coastal waters. Rocks should also be clean prior to introduction into the intertidal zone on site.	2	L	A
Bio-fouling (ships, barges and tugs used)	It is possible for the hulls of ships, barges and tugs used on site to be fouled by INNS such as algae,	4	M	AR	All vessels used on site should ensure they have a copy of their Bio-fouling Management Plan on board with clear information outlining efforts to reduce bio-fouling of the vessel, e.g.	4	L	AR

Hazard	Who or What Might be Affected?	Initial Assessment			Risk Control Measures	Residual Risk		
		Severity	Likelihood	Assessed Risk		Severity	Likelihood	Assessed Risk
for revetment deliveries).	barnacles, sea squirts. This presents an opportunity to introduce INNS to site and to other waters (e.g. from UK waters at Colwyn Bay to Norwegian waters where revetment rock is obtained).				through anti-fouling treatments or use of biocides.			
Bio-fouling of groynes	It should be noted that in order to install the ecological armouring units (ecological enhancements for the Scheme), sections of the existing groyne structures will be required to be removed to fit these in place. It is possible that if these sections of removed groyne are re-used on other projects, there could be a cross contamination of INNS from the Scheme area to other locations as the groyne structures could be fouled.	3	M	AR	Once removed, the sections of groyne should be disposed of suitably on land and should not be disposed of or reused within the marine environment.	3	VL	A

A. Bio-Security Risk Assessment Scoring Matrix

Table A.1: Bio-Security Risk Assessment Scoring Matrix

Biosecurity Severity or Consequence					
1 = Slight – no measurable consequence					
2 = Minor – slight impact, small scale, easily contained					
3 = Moderate – damage recoverable, moderate impact					
4 = Permanent – considerable damage, long term impacts on native flora and/or fauna					
5 = catastrophic – major damage, threat to species					
Likelihood					
VL = Improbable – unlikely to occur					
L = Remote – unlikely but possible					
M = Occasional – possible at some time					
H = Probable – likely to occur several times					
VH = Frequent – likely to occur many times					
Acceptability of assessed risks					
UA = Unacceptable (action essential)					
AR = Action required (if reasonably practical)					
A = Acceptable (manage risk)					
N = Negligible					
Assessed risk					
	Severity				
Likelihood	1	2	3	4	5
VL	N	N	A	A	A
L	N	A	A	AR	AR
M	A	A	AR	AR	UA
H	A	AR	AR	UA	UA
VH	A	AR	UA	UA	UA

Source: Mott MacDonald, 2015

