MOTT MACDONALD

Old Colwyn Coastal Defence and Active Travel Scheme

Habitats Regulations Assessment - Report to Inform an Appropriate Assessment

July 2020

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Contents

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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 overwinteirng 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 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 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 EcIA

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 off 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 and 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

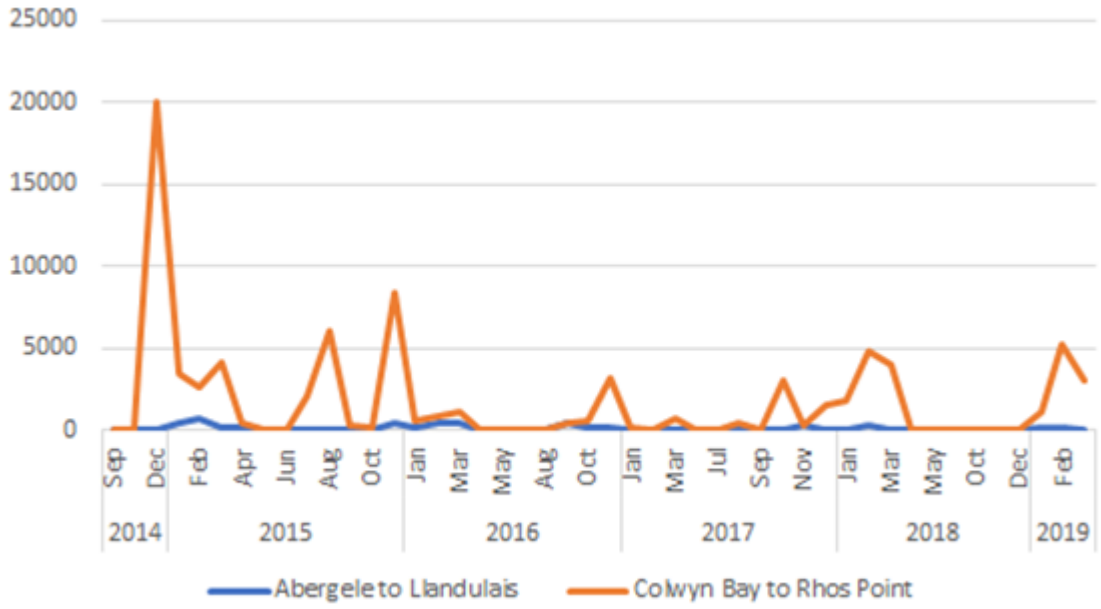
4.2.1.1 WeBS data (2014 – 2019)

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**
Arp		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

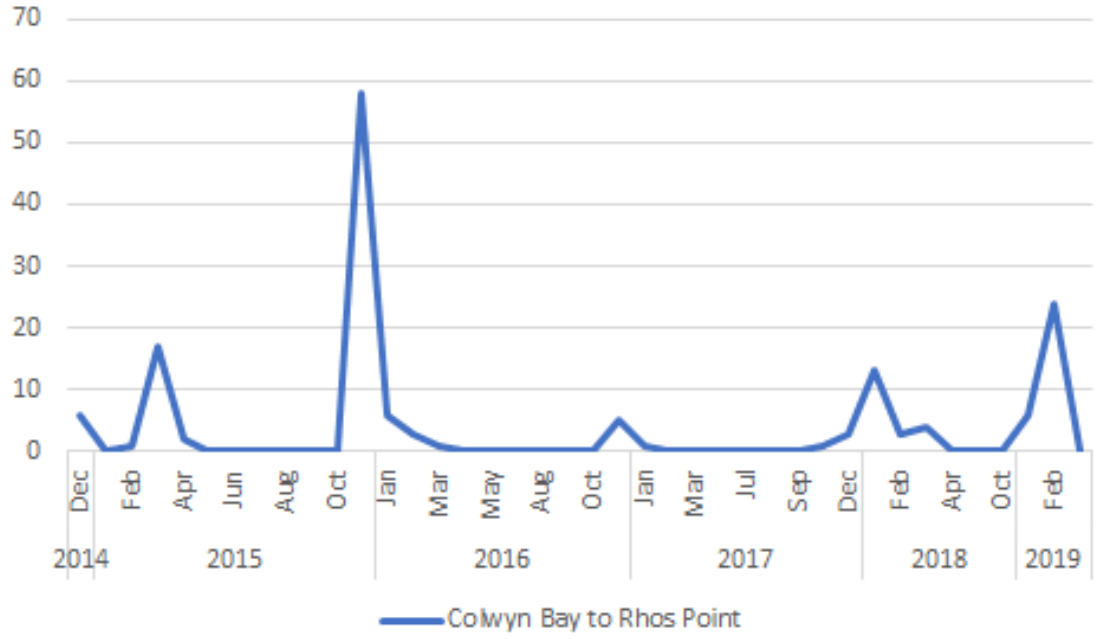
On the basis of the WeBS sector counts and field observations it is clear that common scoter use Colwyn Bay in large numbers over winter, with the key period appearing to be October to March. This is consistent with other research of common scoter in the local area which also concluded October to March 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 beeches 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).

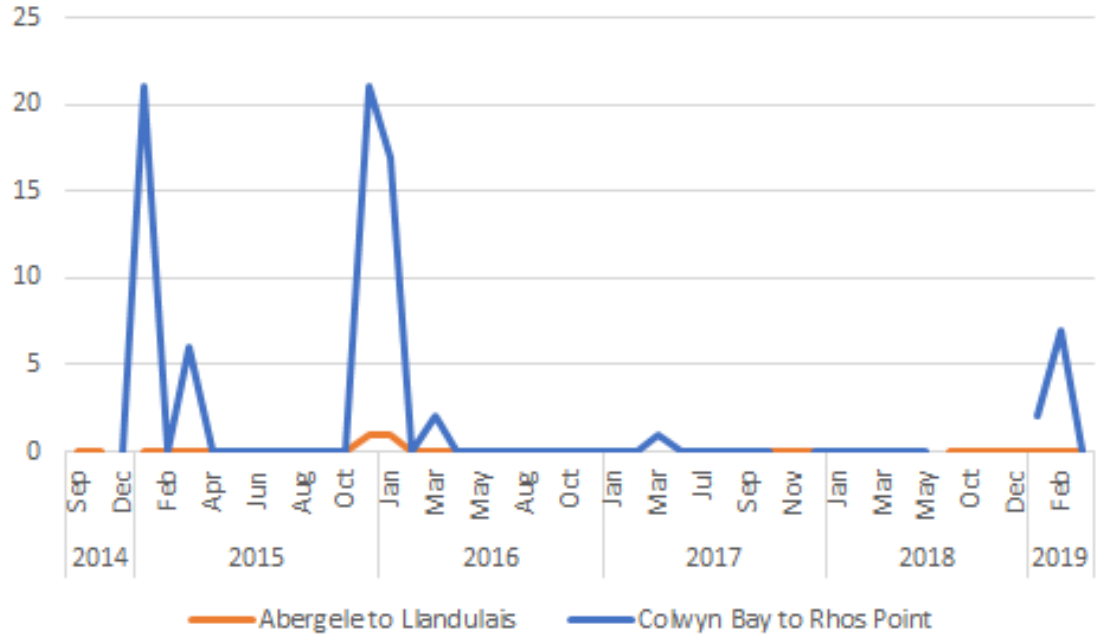
4.2.5 Waterbird assemblage

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

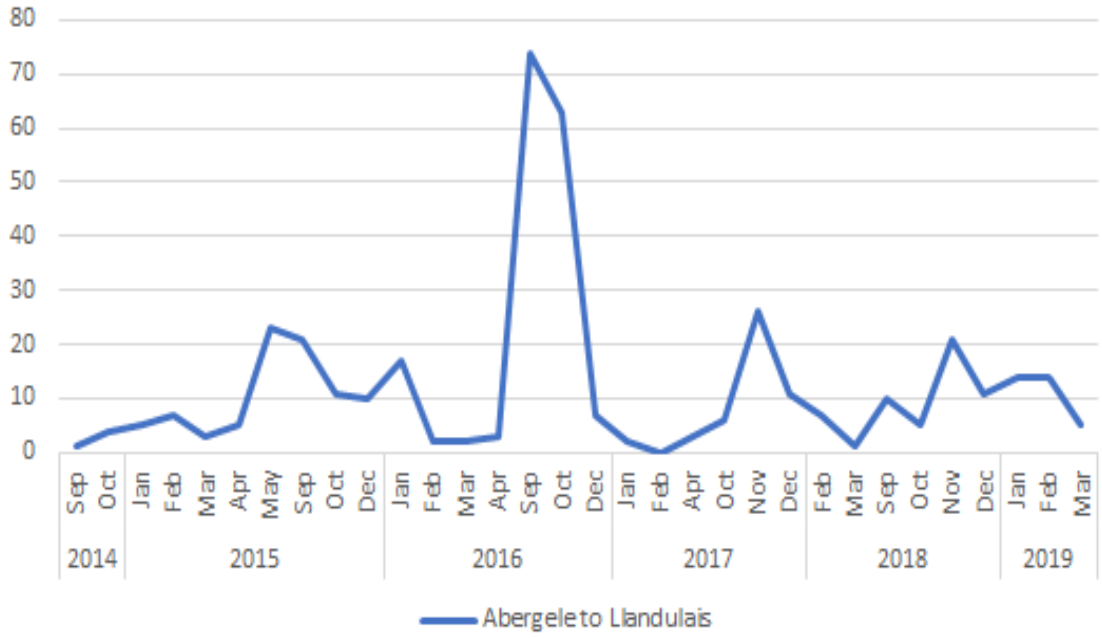


Source: WeBS data (BTO, 2020)

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			◦ A few individuals observed flying and feeding at sea.
	09 Dec 2019	42	◦ 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 transhipment 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 transhipment 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 transhipment, 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 (*Gavia stellata*) Little gull (*Larus minutus*) Common Scoter (*Melanitta nigra*) Little tern (*Sterna albifrons*) Common tern (*Sterna hirundo*)
	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 (*Mergus serrator*) and great cormorant (*Phalacrocorax carbo*).
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

Qualifying Feature	Assessment of significance	Likely significance effect of the project during:		
		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, transhipment or machinery cannot be ruled out. Such a pollution event would degrade habitat quality, foraging availability and injur birds; • **Disturbance:** Common scoter 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 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: – *Barge movements:* 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; – *Piling:* 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 – *Other onshore disturbance:* 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 *de-minimis* 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

	transhipment), 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. **Operation and Decommissioning** As set out above, no impact pathways during operation or decommissioning have been identified.			
Red-throated diver (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, transhipment or machinery cannot be ruled out. Such a pollution event would degrade habitat quality, foraging availability and injur 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 transhipment), 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. **Operation and Decommissioning** 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 beeches 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 SIGNIFCANT 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** 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. **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 *de-minimis* and not anticipated to significantly affect the population integrity.	Negligible
Red-throated Diver		Negligible
Water Bird Assemblage		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 loc ation 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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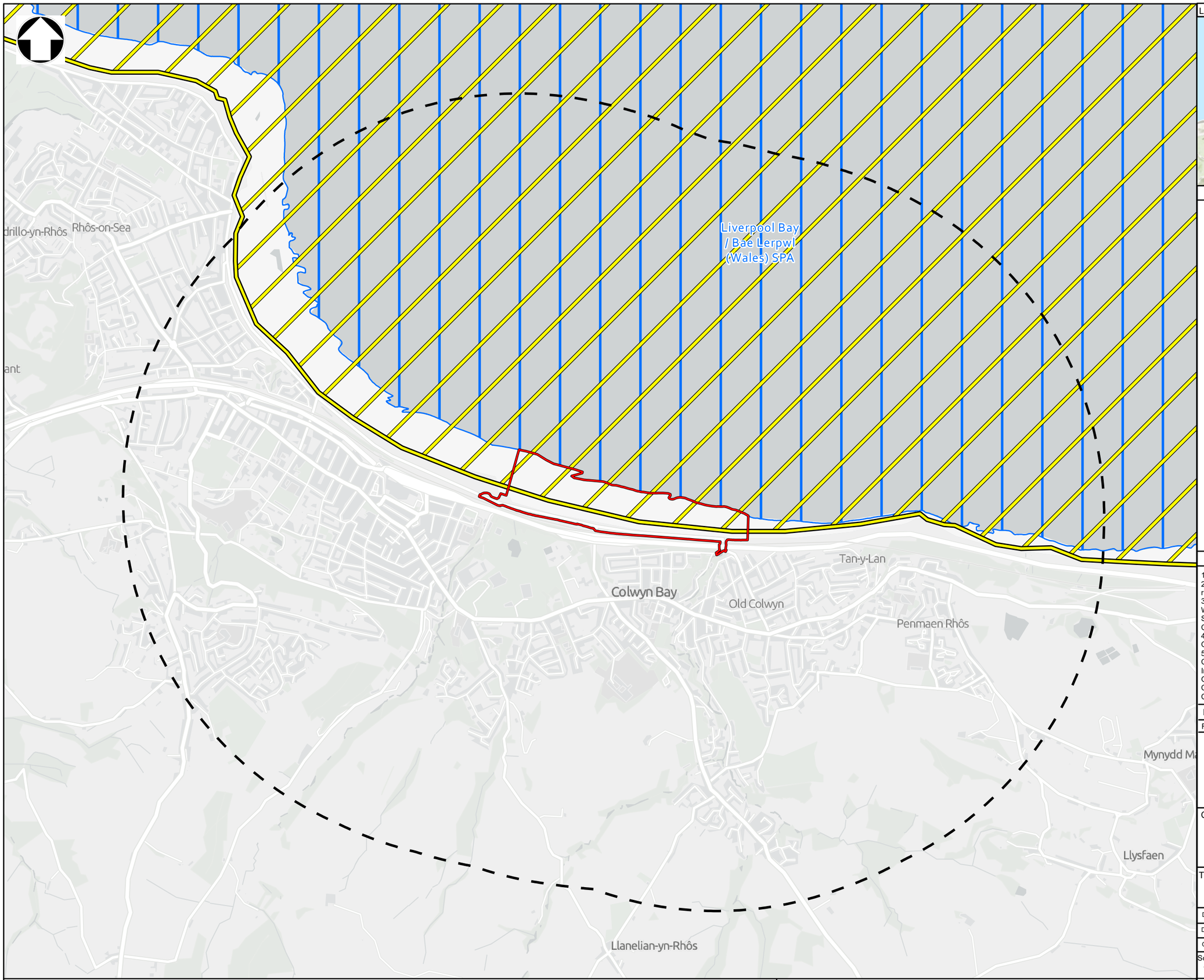
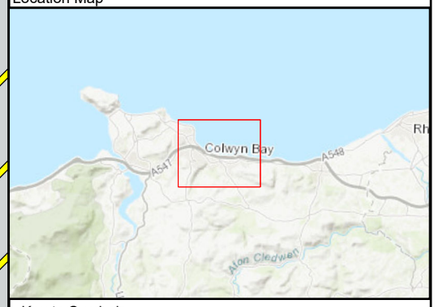
Natural England (October 2012) Liverpool Bay / Bae Lerpwl Special Protection Area – Advice under Regulation 35(3) of The Conservation of Habitats and Species Regulations 2010 (as amended). Version 6.5.

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



Location Map



Key to Symbols

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

Notes

1. For information only, not for construction.
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Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	23/07/20	SA	For information	LW	CW

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Client

CONWY
CYNGOR 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	Status	Rev	Security
1:20,000	INF	P1	STD

Drawing Number

415437-MMD-00-XX-DR-N-1714

0 200 400 600 800 1000 Meters

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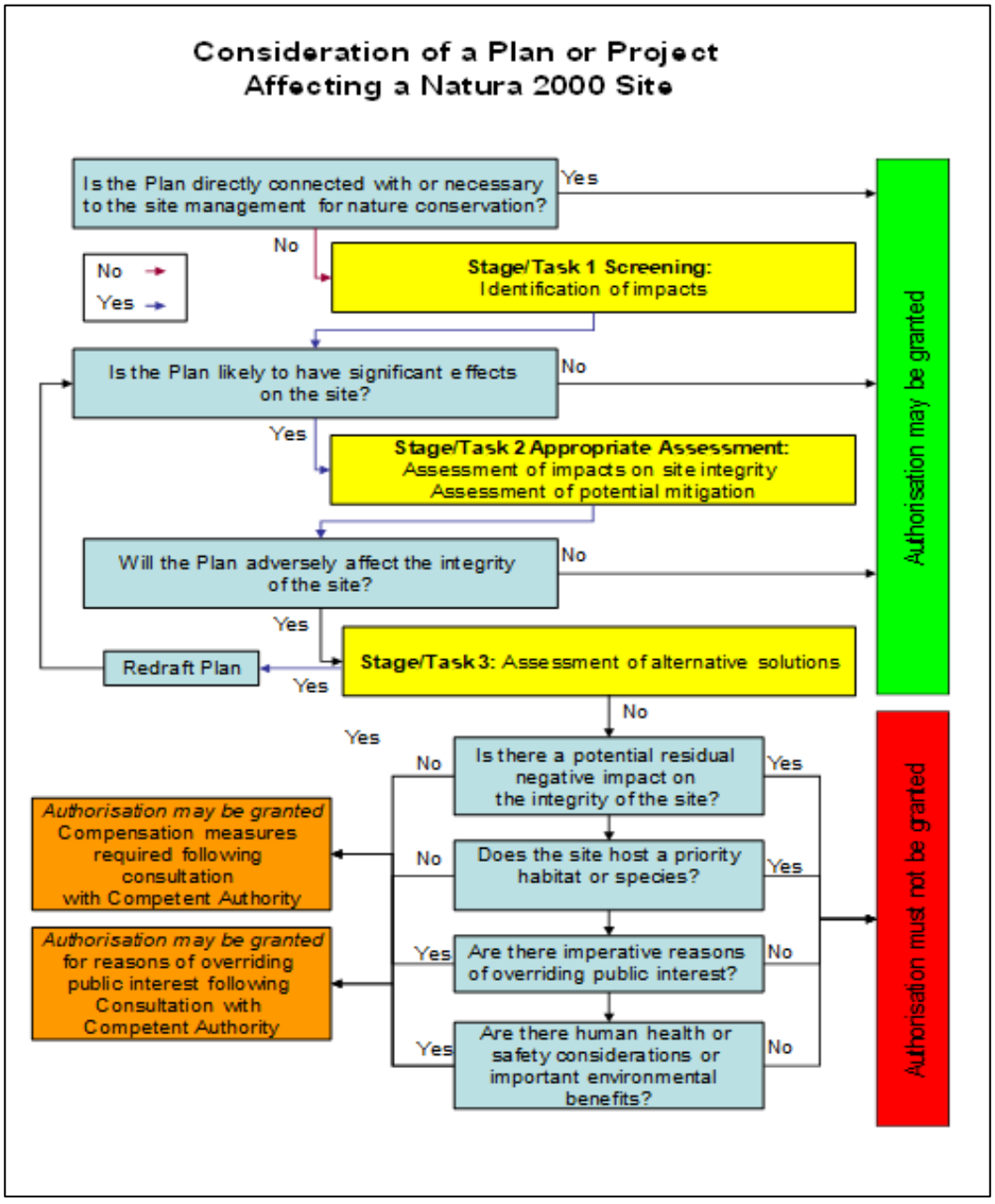
B. HRA Process

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.

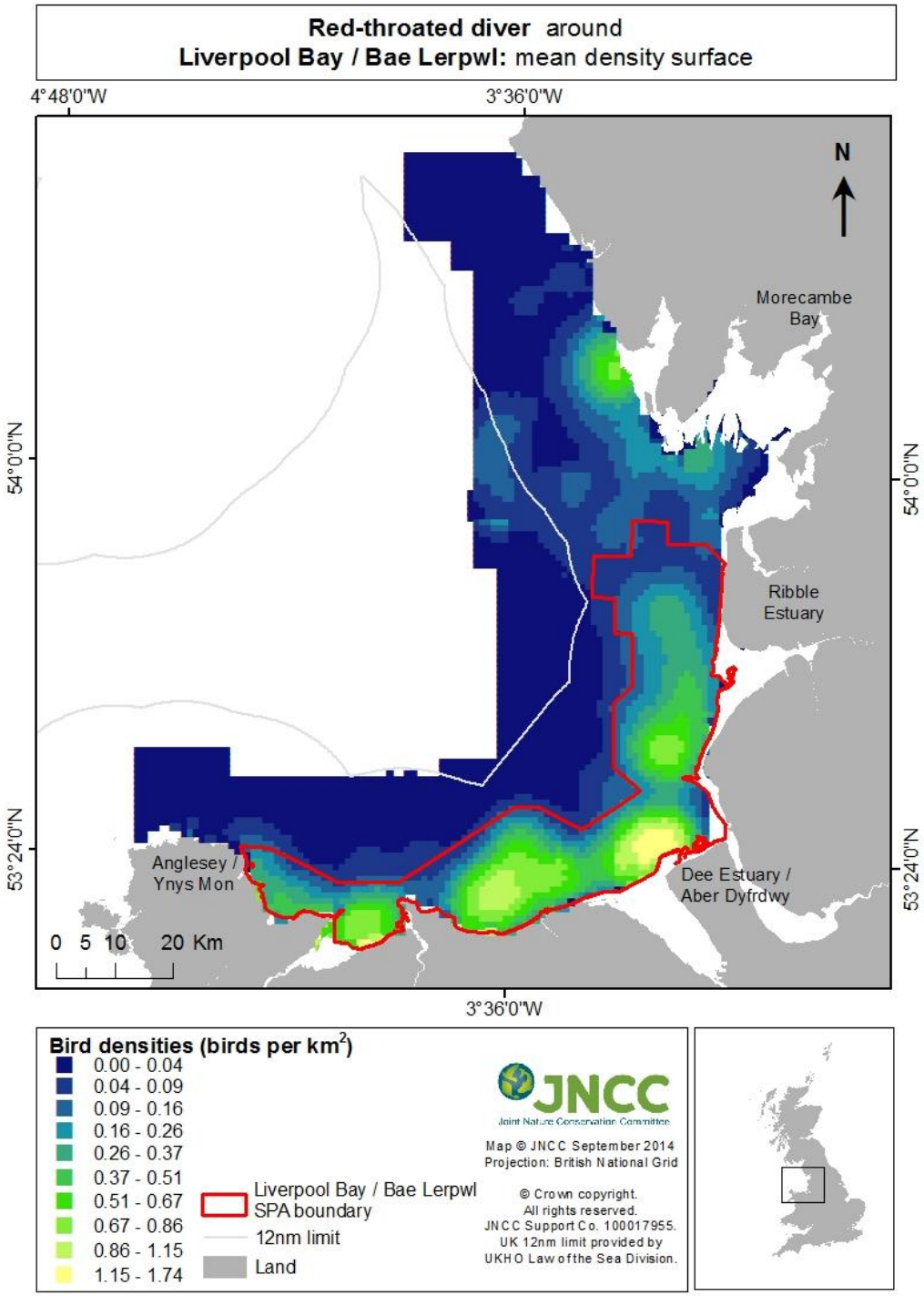


Figure 6. Estimated mean density surface of red-throated diver recorded from aerial surveys within Liverpool Bay/Bae Lerpwl area of search (2004/05, 2005/06, 2006/07, 2007/08, 2010/11).

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.

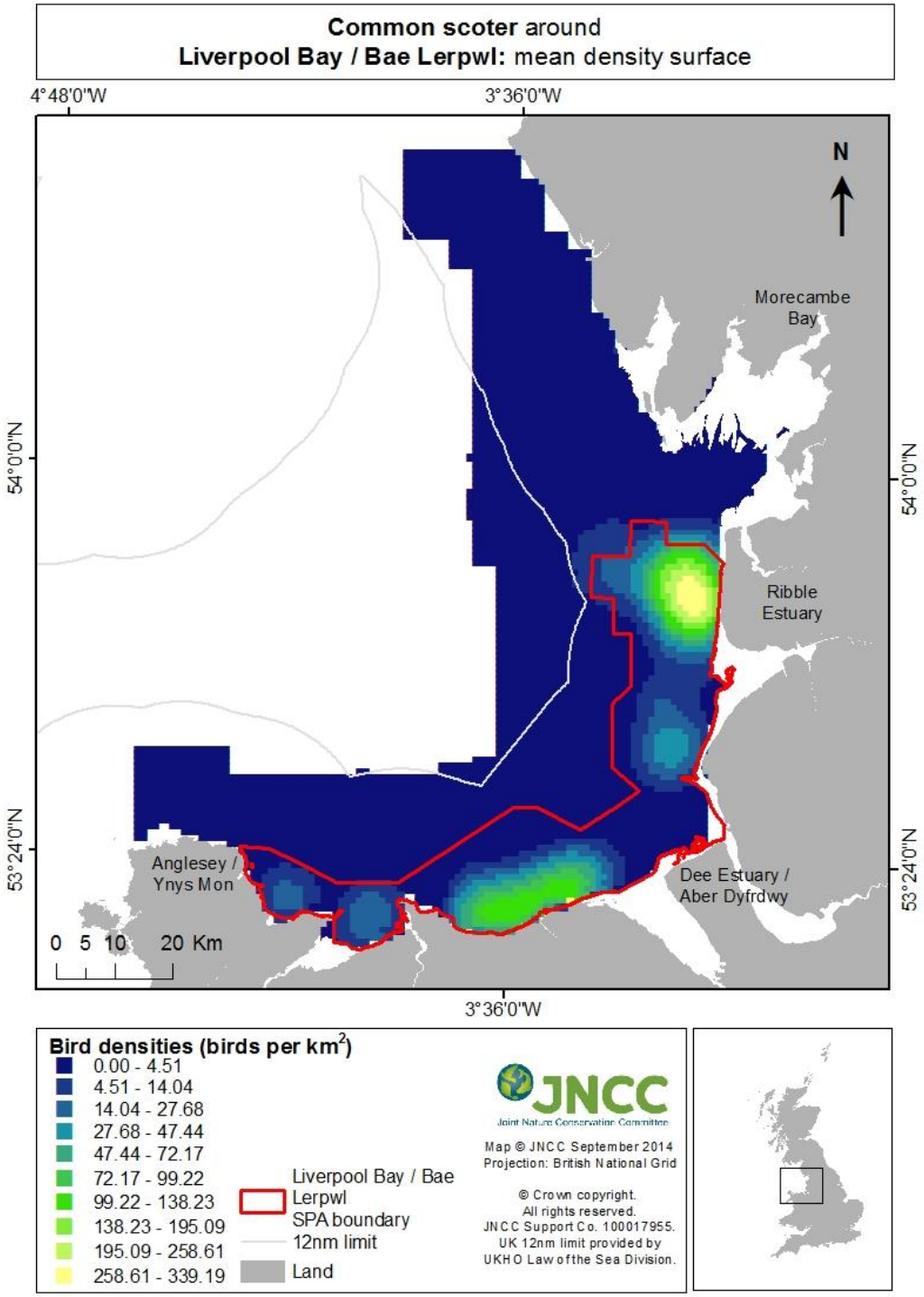


Figure 7. Estimated mean density surface of common scoter recorded from aerial surveys within Liverpool Bay/Bae Lerpwl area of search (2004/05, 2005/06, 2006/07, 2007/08, 2010/11).

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 km^2) - 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.

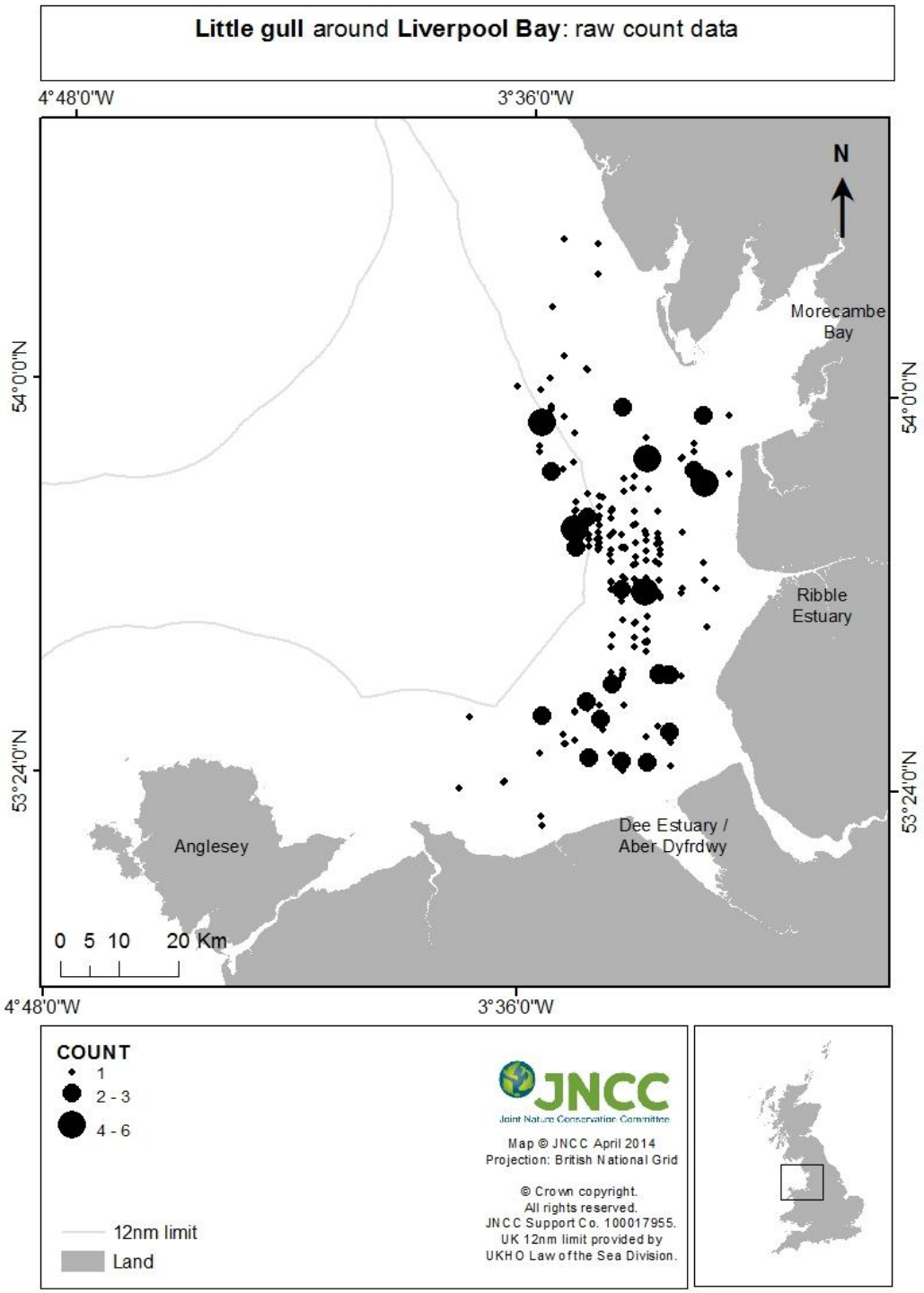


Figure 8. Raw count data of little gull recorded during WWT Consulting aerial surveys within Liverpool Bay/Bae Lerpwl area of search (2004/05, 2005/06, 2006/07, 2007/08, 2010/11).

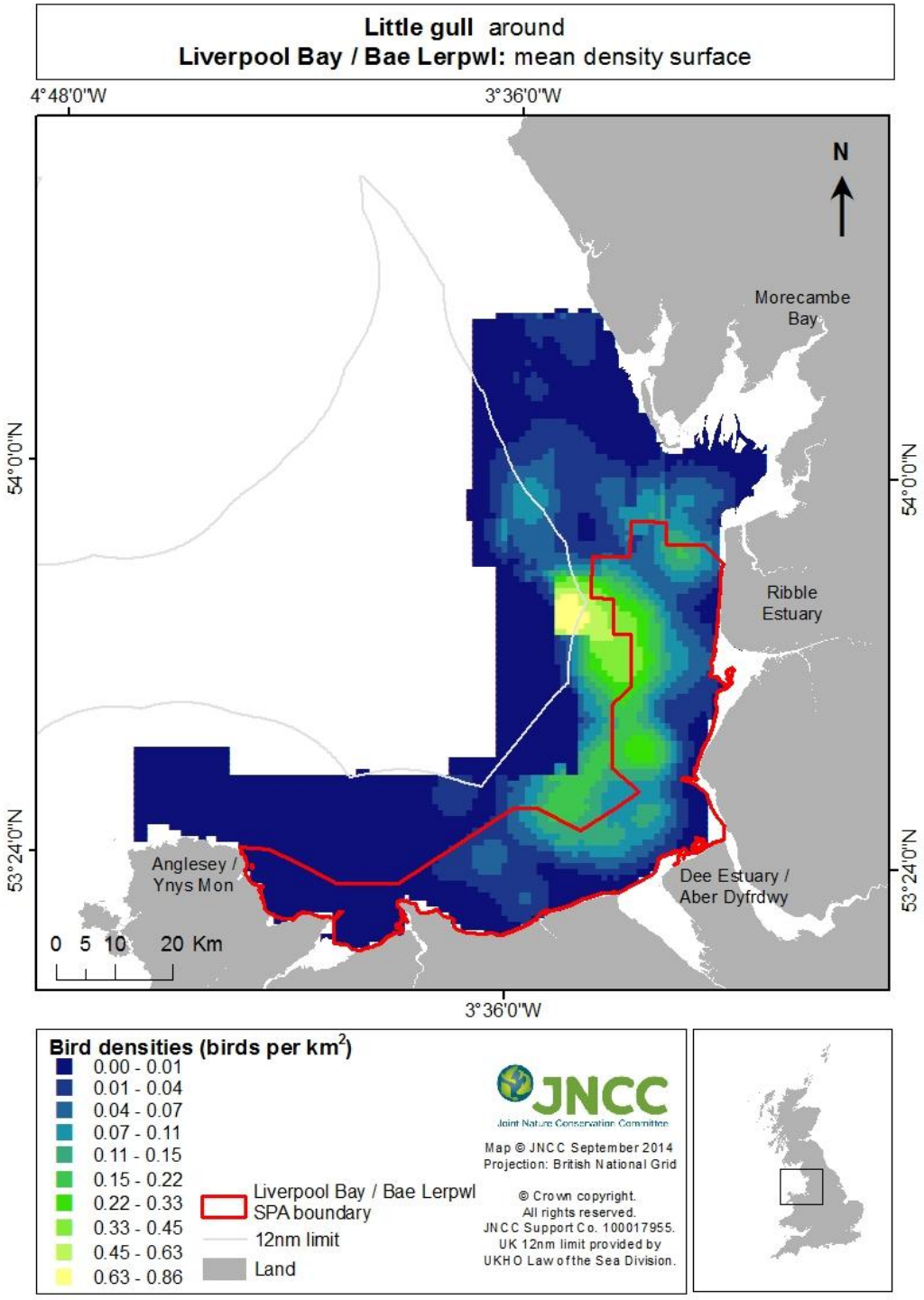


Figure 9. Estimated mean density surface of little gull recorded from aerial surveys within Liverpool Bay/Bae Lerpwl area of search (2004/05, 2005/06, 2006/07, 2007/08, 2010/11).

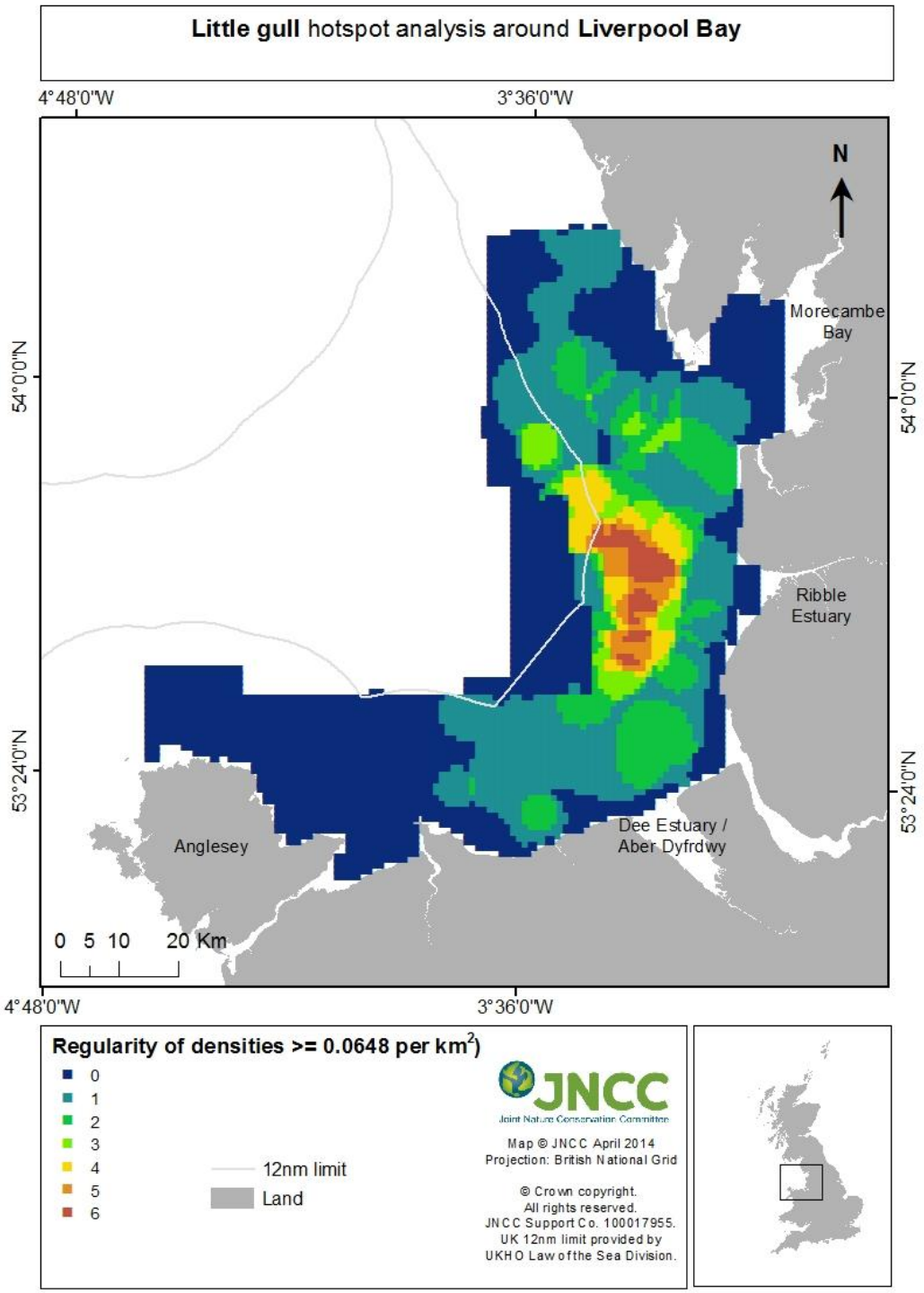


Figure 10. The number of surveys on which little gull densities met or exceeded the maximum curvature density threshold (0.0648 birds per km^2) in the Liverpool Bay/Bae Lerpwl area of search.

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