

Offshore Oil & Gas Licensing 26th Seaward Round

Habitats Regulations Assessment

Phase 1 - Block Screening

October 2010

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1 INTRODUCTION

On 27th January 2010, the Secretary of State for the Department of Energy and Climate Change (DECC) invited applications for licences in the 26th Seaward Licensing Round. Applications for Traditional Seaward, Frontier Seaward and Promote Licences covering over 350 blocks/part Blocks have been received.

The draft plan to hold a 26th Seaward Licensing Round had previously been subject to a Strategic Environmental Assessment (SEA). The SEA Environmental Report includes detailed consideration of the status of the natural environment and potential effects of the range of activities which could follow licensing, including potential effects on conservation sites. The SEA Environmental Report was subject to a 3 month public consultation period, and a post-consultation report summarising and responding to feedback received has been produced as an input to DECC licensing decisions.

The exclusive rights to search and bore for petroleum in Great Britain, the territorial sea adjacent to the United Kingdom and on the UK continental shelf (UKCS) are vested in the Crown and the Petroleum Act 1998 gives the Secretary of State for Energy and Climate Change the power to grant licences to explore for and exploit these resources. Offshore licensing for oil and gas exploration and production commenced in 1964 and progressed through a series of Seaward Licensing Rounds. The award of a licence under the Petroleum Act 1998 does not confer an automatic right to conduct any offshore activities, which are subject to a range of statutory permitting and consenting requirements, including, where relevant, activity specific Appropriate Assessment (AA) under Article 6(3) of the Habitats Directive (Directive 92/43/EC).

The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001 (as amended) (OPAR 2001) implement the requirements of Article 6(3) and Article 6(4) of the Habitats Directive (92/43/EEC) with respect to oil and gas activities in UK waters.

To comply with its obligations under OPAR 2001, the Department is undertaking a Habitats Regulations Assessment (HRA), the first stage of which is a screening assessment to determine whether award of any Blocks applied for is likely to have a significant effect on a site, either individually or in combination with other plans or projects. In so doing, it has applied the amplification of the Habitats Directive test provided by the European Court of Justice in the *Waddenzee* case (Case C-127/02). This test is set out below:

- A plan or project not directly connected with or necessary to the management of a site must be subject to an AA if it cannot be excluded on the basis of objective information that it will have a significant effect on that site, either individually or in combination with other plans or projects.
- 2. Where a plan or project not directly connected with or necessary to the management of the site is likely to undermine the sites conservation objectives, it must be considered likely to have a significant effect on that site.

This screening has:

 Identified the relevant Natura 2000 sites in the area of each Block applied for or likely to be affected by the grant of a licence for such a Block (applying the Waddenzee test as set out above) 1.

Relevant Natura 2000 sites considered included designated, candidate, possible and draft coastal, marine and offshore SACs and SPAs whose location in relation to the Blocks which have been applied for indicate the possibility of interactions.

 Considered the potential oil and gas activities that could follow from the licensing of each Block applied for and in particular the potential sources of significant effects on Natura 2000 sites.

This included both a generic consideration of oilfield activities and Block specific consideration based on DECC assessment of prospectivity and indications of potential activity levels from the application for each Block.

 Identified those Blocks from which no significant effects were likely on relevant Natura 2000 sites, for example because of distance or the features or natural history of the species for which the site is designated are not at risk.

This screening assessment has been undertaken in accordance with the European Commission Guidance (EC 2000) and with reference to various other guidance and reports, including the Habitats Regulations Guidance Notes (EN 1997; SEERAD 2000), the Planning and Policy Statement Note 9 (PPS9 2005²) and English Nature Research reports, No. 704 (2006).

As part of this process, DECC has consulted with the Joint Nature Conservation Committee (JNCC), Natural England, Scottish Natural Heritage (SNH), the Countryside Council for Wales (CCW) and the Northern Ireland Environment Agency (NIEA) on the draft of this screening assessment.

2 BLOCKS APPLIED FOR

Offshore Blocks for which applications have been made during the 26th Seaward Licensing Round and considered in this screening assessment are shown on Figure 1 and listed in Table 1.

Note, the majority of these Blocks have been licensed previously.

¹ EC 2000

² Which states that "Listed Ramsar sites, also as a matter of policy, should receive the same protection as designated SPAs and SAC" – see Appendix B.

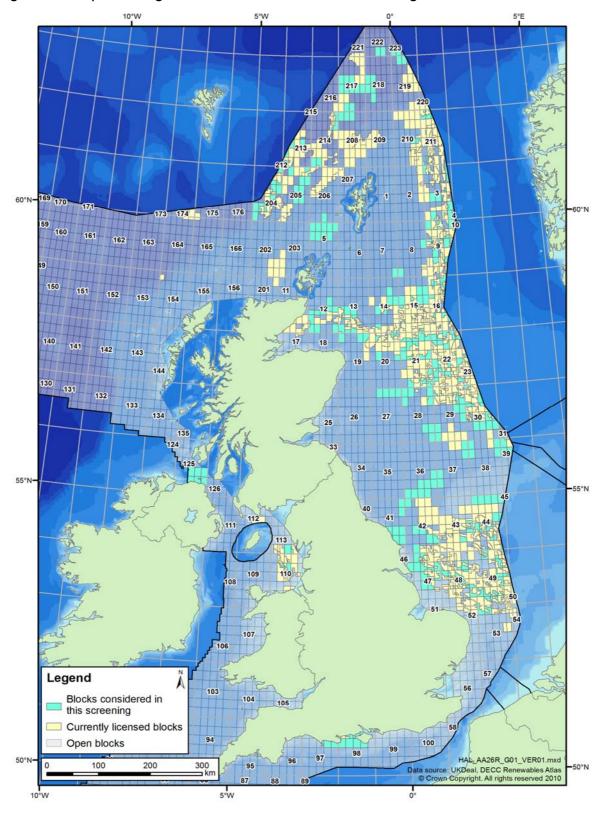


Figure 1 - Map showing Blocks considered in this screening

Table 1 – List of Blocks applied for in the 26th Seaward Licensing Round

3/01b	14/19c	22/17b	38/05	48/13c	204/23b
3/05	14/27b	22/18b	38/06	48/14b	204/26
3/10c 3/14f	14/29e 14/30b	22/20b 22/21c	38/10 39/01b	48/14c 48/18e	205/02b 205/05b
3/141	15/09	22/210 22/22d	39/06	48/19d	205/05b 205/05c
3/18	15/10	22/22d 22/23c	39/07	48/20b	205/09
3/25b	15/11	22/26c	41/05	48/25a	205/10
3/27a	15/13c	22/30e	41/10	48/30c	205/13b
3/30b	15/14	23/11c	41/18	49/02c	205/14
4/21	15/15	23/26e	41/19	49/04d	205/18
4/26b	15/16d	27/02	41/20	49/09d	205/19
5/01	15/21d	27/03	41/24	49/14a	206/28
5/02	15/23g	27/04	41/25	49/15d	208/01
5/03	15/29c	27/05	42/01	49/17d	208/02
5/04	16/01a	28/01	42/13b	49/18b	208/03
5/05	16/02d	28/02	42/17	49/19b	210/19a
5/06	16/03d	28/05 28/06	42/18	49/21c	210/20a
5/07 5/08	16/06c 16/08c	28/10a	42/24 42/25c	49/22b 49/23b	211/01b 211/01c
5/09	16/11a	28/24	42/27	49/23b 49/23c	211/01c 211/02b
7/30	16/11a	28/25	43/15a	49/24c	211/02b
8/15	16/23b	28/30	43/20a	49/24d	211/02d
8/26	16/24a	29/01d	43/20c	49/26b	211/03b
9/01	19/01	29/04e	43/24b	49/27c	211/11a
9/03c	19/04	29/09e	44/01	49/28c	211/26c
9/03d	19/05b	29/10d	44/02	49/29f	211/26d
9/05b	20/02c	29/14	44/03	49/30f	212/30
9/09d	20/04c	29/15	44/04	52/05c	213/16
9/11d	20/05f	29/20	44/05	53/01b	213/17
9/13d	20/12	29/21	44/14	53/02c	213/19b
9/14	20/15b	29/26	44/15	97/14	213/21
9/15d	21/01b	30/01a	44/16a 44/17d	97/15	213/26c
9/17b 9/22b	21/02b 21/03c	30/06b 30/06c	44/17d 44/17e	98/06b 98/07b	213/27c 214/05c
9/24d	21/03c 21/04b	30/08	44/17 6 44/17f	98/08	214/09d
10/01b	21/05b	30/11a	44/18c	98/11	214/10b
12/14	21/06a	30/12d	44/23c	98/12	214/26
12/16b	21/07b	30/13b	44/23d	98/13	214/27b
12/17b	21/08b	30/17c	44/24c	98/14	217/11
12/18	21/11	30/17d	44/30	110/07d	217/12
12/19a	21/12d	30/19b	45/01	110/08b	217/13
12/20a	21/14b	30/20b	47/02b	113/28	217/16
12/21b	21/15a	30/22	47/03g	113/29a	217/17
12/26b	21/25c	30/23	47/06	125/18	217/18
12/27 12/30	21/27a	30/24	47/07	125/19 125/20	217/19
12/30 13/16b	21/29d 21/30e	30/25 36/20	47/08d 47/09d	125/20	217/20 217/27
13/17	22/01a	36/23	47/10c	125/23	217/27
13/18	22/02c	36/24	47/13b	125/25	218/11
13/22d	22/02d	36/25	47/14c	204/04b	218/12
13/23c	22/03c	36/26	47/14d	204/05b	218/16
13/26a	22/04c	36/27	47/15c	204/09b	218/17
13/27c	22/05c	36/28	47/18	204/10b	218/22
13/28b	22/06b	36/29	47/19b	204/14c	219/02
14/09	22/07b	37/05	48/06c	204/14d	219/03
14/14	22/08a	37/10	48/08d	204/15	222/28
14/15	22/14c	37/16	48/09b	204/19c	222/29
14/17	22/16	37/21	48/11c	204/21	223/26
14/18c	22/17a	38/01	48/12b	204/22b	223/27

3 LICENSING AND ACTIVITY

3.1 Licensing

The exclusive rights to search and bore for and get petroleum in Great Britain, the territorial sea adjacent to the United Kingdom and on the UK Continental Shelf (UKCS) are vested in the Crown and the *Petroleum Act 1998* (as amended) gives the Secretary of State the power to grant licences to explore for and exploit these resources. The main type of offshore Licence is the Seaward Production Licence. Offshore licensing for oil and gas exploration and production commenced in 1964 and has progressed through a series of Seaward Licensing Rounds. A Seaward Production Licence may cover the whole or part of a specified Block or a group of Blocks. A Licence grants exclusive rights to the holders "to search and bore for, and get, petroleum" in the area covered by the Licence. A Licence does not confer any exemption from other legal/regulatory/fiscal requirements.

There are three types of Seaward Production Licences:

- Traditional Production Licences are the standard type of Seaward Production Licences and run for three successive periods or Terms. Each Licence expires automatically at the end of each Term, unless the licensee has made enough progress to earn the chance to move into the next Term. The Initial Term lasts for four years and the Licence will only continue into a Second Term of four years if the agreed Work Programme has been completed and if 50% of the acreage has been relinquished. The Licence will only continue into a Third Term of 18 years if a development plan has been approved, and all the acreage outside that development has been relinquished.
- Frontier Production Licences are a variation of the Traditional Production Licence with longer terms. A Frontier Production Licence has a longer Initial Term (six years as opposed to four) with the objective of allowing companies to screen larger areas. After 3 years, the licensee must relinquish 75% of the licensed acreage. At the end of the Initial Term, the exploration Work Programme must have been completed and the licensee must relinquish, 50% of what is left (i.e. leaving one eighth of the original licensed area).
- In the 21st Round (2002) the Department introduced Promote Licences. The general concept of the Promote Licence is that the licensee is given two years after award to attract the technical, environmental and financial capacity to complete an agreed Work Programme. In effect, DECC will defer (not waive) its financial, technical and environmental checks until the preset Check Point. Promote licensees are not allowed to carry out field operations until they have met the full competence criteria. The way this is implemented is that each Promote Licence carries a "Drill-or-Drop" Initial Term Work Programme. The Licence will therefore expire after two years if the licensee has not made a firm commitment to DECC to complete the Work Programme (e.g. to drill a well). By the same point, it must also have satisfied DECC of its technical, environmental and financial capacity to do so.

The model clauses and terms and conditions which are attached to Licences are contained in Regulations.

It is noted that the environmental management capacity and track record of applicants is considered by DECC, through written submissions and interviews, before licences are awarded.

3.2 Activity

As part of the licence application process, applicant companies provide DECC with details of work programmes they propose in the first term to further the understanding or exploration of the Blocks(s) in question. These work programmes are considered with a range of other factors in DECC's decision on whether to license the Blocks and to whom. There are three levels of drilling commitment:

- A Firm Drilling Commitment is a commitment to the Secretary of State to drill a well. Applicants are required to make firm drilling commitments on the basis that, if there were no such commitment, the Secretary of State could not be certain that potential licensees would make full use of their licences. However, the fact that a licensee has been awarded a licence on the basis of a "firm commitment" to undertake a specific activity should not be taken as meaning that the licensee will actually be able to carry out that activity. This will depend upon the outcome of all relevant environmental assessments.
- A Contingent Drilling Commitment is also a commitment to the Secretary of State to drill a well, but it includes specific provision for DECC to waive the commitment in light of further technical information.
- A **Drill-or-Drop (D/D) Drilling Commitment** is a conditional commitment with the proviso, discussed above, that the licence is relinquished if a well is not drilled.

Note that Drill-or-Drop and Contingent work programmes (subject to further studies by the licensees) will probably result in a well being drilled in less than 50% of the cases.

It is made clear in the application guidance that a Production Licence does not allow a licensee to carry out all petroleum-related activities from then on. Field activities, such as seismic survey or drilling, are subject to further individual controls by DECC, and a licensee also remains subject to controls by other bodies such as the Health and Safety Executive. It is the licensee's responsibility to be aware of, and comply with, all regulatory controls and legal requirements.

The proposed work programmes for the first four-year period are detailed in the licence applications. For some activities, such as seismic survey noise and oil spills, the impacts can occur some distance from the licensed Blocks and the degree of activity is not necessarily proportional to the size or number of Blocks in an area. For the case of direct physical disturbance, the licence Blocks being applied for are relevant, although there may still be pipelines that cross unlicensed Blocks should any significant development ensue after the initial four-year exploratory period.

For the purposes of the screening assessment, the implications of geophysical survey and drilling were considered in a generic way for all the Blocks applied for.

On past experience, less activity actually takes place than is bid at the licence application stage. A proportion of Blocks awarded may be relinquished without any field activities occurring.

Activity after the initial term is much harder to predict, as this depends on the results of the initial phase, which is, by definition, exploratory. Typically less than half the wells drilled reveal hydrocarbons, and of that half, less than half again will yield an amount significant enough to warrant development. Depending on the expected size of finds, there may be further drilling to appraise the hydrocarbons (appraisal wells). Discoveries that are developed may require further drilling, wellhead infrastructure, pipelines and possibly

production facilities such as platforms, although most recent developments are tiebacks to existing production facilities rather than stand alone developments.

The extent and timescale of development, if any, which may ultimately result from the licensing of these Blocks is therefore uncertain.

4 RELEVANT NATURA 2000 SITES

Sites were considered for inclusion/exclusion in the screening assessment with respect to their location to the Blocks which are the subject of licence applications and in terms of the foreseeable possibility of interactions. Sites considered include designated Natura 2000 sites and potential sites for which there is adequate information on which to base an assessment.

The sites considered in this screening are shown in Figures 2 and 3. In accordance with Government policy (as set out in PPS9), the relevant sites considered include classified and potential SPAs, designated and candidate SACs and Sites of Community Importance³ (SCIs). Guidance in relation to sites which have not yet been submitted to the European Commission is given by Circular 06/2005 (ODPM 2005b) which states that: "Prior to its submission to the European Commission as a cSAC, a proposed SAC (pSAC) is subject to wide consultation. At that stage it is not a European site and the Habitats Regulations do not apply as a matter of law or as a matter of policy. Nevertheless, planning authorities should take note of this potential designation in their consideration of any planning applications that may affect the site."

The relevant sites are detailed in Appendix A and include:

- Coastal and marine Natura 2000 sites along the coasts of the United Kingdom
- Offshore Natura 2000 sites
- Riverine Natura 2000 sites designated for migratory fish and/or the freshwater pearl mussel
- Natura 2000 sites designated for breeding red-throated divers

In addition, Natura 2000 sites in the waters of other member states at or adjacent to the UK median line have been considered see Appendix A (Section A8).

³ Sites of Community Importance (SCIs) are more advanced in designation than cSACs in that they have been adopted by the European Commission but not yet formally designated by the government of the relevant country.

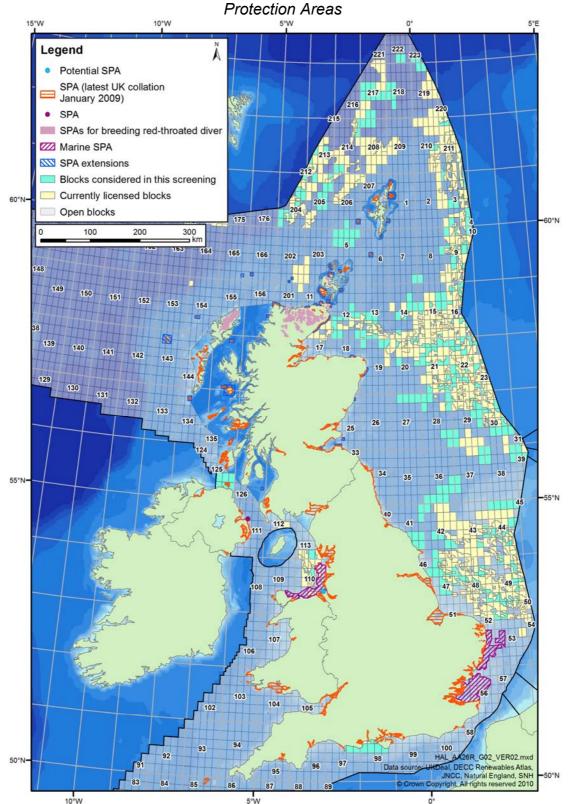


Figure 2 - Map showing Blocks considered in this screening and relevant Special

Note: A number of onshore SPAs designated for breeding red-throated diver (shown in pink) are included where there is potential for interaction with marine activities

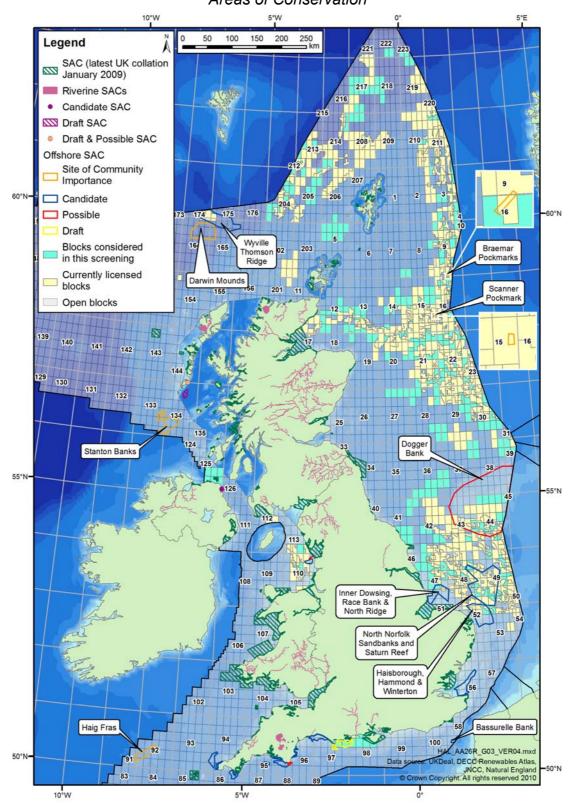


Figure 3 - Map showing Blocks considered in this screening and relevant Special Areas of Conservation

Note: Only those riverine SACs are included where there is potential for interaction with marine activities e.g. SACs designated for migratory fish and/or freshwater mussels

5 SCREENING ASSESSMENT

This screening assesses the potential implications for Natura 2000 sites of the potential award of licences for UKCS Blocks in the 26th Licensing Round, rather than considering the implications of specific individual projects. The award of such licences may or may not give rise to subsequent development activity, the implications of which have been considered in this screening in so far as possible. Where relevant, such future activities will themselves be subject to the screening procedure and tests under the Habitats Directive.

This screening assessment has considered all Blocks applied for in the 26th Round, their location relative to the Natura 2000 sites, and in terms of the foreseeable interactions from activities that could follow from licensing. These activities, effects, legal and other controls are extensively described in previous DECC SEA Environmental and Technical Reports and Appropriate Assessments and are not duplicated here (see www.offshore-sea.org.uk).

Use has been made of advice prepared by the conservation agencies under the various Habitats Regulations, since this typically includes advice on operations that may cause deterioration or disturbance to relevant features or species. The Regulation 33 Advice includes an activities/factors matrix derived from Marlin (www.marlin.ac.uk) where applicable. However, it is noted that several of the "probable" effects highlighted in the matrices are not inevitable consequences of oil and gas exploration and production since they can be mitigated through timing, siting or technology (or a combination of these). There is an expectation that these options would be evaluated in the environmental assessments required as part of activity consenting.

Where a potential for a significant effect on a listed habitat or species was considered reasonably foreseeable from consideration of the geographic location of the sites, and the general characteristics of habitat and species present, it is proposed that the offer for licensing of these Blocks will be subject to further screening and an AA will be carried out with appropriate consultation, if required.

Following an initial consideration of the above sources (informed by the evidence base in the scientific literature, relevant DECC Strategic Environmental Assessments, and Environmental Statements prepared for exploration, development and decommissioning activities), this screening assessment has been restricted to those sources of impact generally considered to have the potential to affect relevant Natura 2000 sites, specifically:

- Oil spills (including all liquid phase hydrocarbons)
- Physical disturbance and other effects (e.g. pipeline trenching, marine discharges)
- Underwater noise (in particular, seismic surveys)
- In-combination effects (e.g. cumulative and synergistic and secondary/indirect effects).

5.1 Screening for Natura 2000 sites vulnerable to oil spills

Oil spills can have potentially adverse environmental effects, and are accordingly controlled by a legal framework aimed at minimising their occurrence, providing for contingency planning, response and clean up, and which enables prosecutions. It is not credible to conclude that in spite of the regulatory controls and other preventative measures, an oil spill will never occur as a result of 26th Round licensing.

In April 2010, a major incident occurred in the US Gulf of Mexico. During an exploratory well in deep water approximately 50 miles offshore Louisiana, there was an explosion and fire on the semi-submersible drilling rig Deepwater Horizon. The rig was drilling in a water depth of 5000ft with the oil reservoir at 18000ft. UK regulators are in contact with their counterparts in the United States (the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE)) to understand the cause of the incident and whether there are implications for safety at offshore operations on the UK continental shelf.

The Health and Safety Executive (HSE) is responsible for regulating the risks to health and safety arising from work in the Offshore Industry on the UKCS. Inspectors from HSE's Offshore Division subsequently undertake offshore inspections of well control/integrity arrangements and related safety issues, and also review well designs and procedures. In the UK a safety case regime exists with specific safeguards including:

- The Offshore Installations (Safety Case) Regulations 2005 require written safety cases and risk assessments to be prepared by the operator, and then approved by HSE, for all mobile offshore drilling rigs operating in the UK.
- A system of well notification, where the HSE reviews well design and procedures.
- A requirement for the design and construction of a well to be examined by an independent and competent specialist.
- A scheme of independent verification of offshore safety critical equipment such as blowout preventers to ensure they are fit for purpose.
- Checks that workers involved in well operations have received suitable information, instruction, training and supervision.
- Offshore inspections of well control and integrity arrangements, and related safety issues, by specialist inspectors from HSE's Offshore Division.
- Weekly drilling reports submitted to HSE by operators.

A review has been carried out by DECC which has found that the existing system is fit for purpose, but in light of the Deepwater Horizon spill the regime is meantime being strengthened further:

- 1. DECC is increasing the oversight of drilling operations through the recruitment of additional inspectors in its Aberdeen office. This will double the number of annual environmental inspections to drilling rigs.
- 2. In light of the Gulf of Mexico incident, DECC is reviewing the indemnity and insurance requirements for operating in the UK Continental Shelf.
- 3. Industry trade association Oil and Gas UK has established a new group comprised of regulators, industry and trade union representatives (the Oil Spill Prevention and Response Advisory Group OSPRAG) to examine the UK's strengths and weaknesses in responding to a Gulf like incident. DECC is participating in this group and the Secretary of State will be examining its findings closely.
- 4. The EU has asked companies operating in EU waters to provide assurances that they are working as hard as possible to ensure safe practice and that they are able to take on full responsibilities for environmental and other damage if an incident were to occur.

The southern part of the North Sea is a gas province and so, although a blowout might in theory occur there, it would not result in significant oil spillage. Some other areas of the North Sea contain oil reservoirs which have insufficient pressure to support a blow out similar in nature to the Deepwater Horizon spill. Oil has to be actively pumped up from those reservoirs in order to produce it. But there remain other oil reservoirs, including some in

deeper waters to the west of Shetland, where in theory a blowout could occur were the safety measures in place to fail.

Potential risks of oil spills are mitigated in the southern North Sea and the specific Blocks applied for in the eastern Irish Sea by the nature of the hydrocarbons present in those areas (natural gas; whilst there are a number of oilfields in Liverpool Bay, the prospectivity of the Blocks applied for is for gas). In the case of the majority of Blocks being applied for where prospectivity is for crude oil, the distance offshore allows for natural dispersion before a slick would approach a Natura 2000 site. Modelling, and field experiments and experience indicates that very large diesel spills in the UK disperse naturally within 8 to 9 hours, travelling some 25km under worst case conditions (constant 30 knot onshore wind). This allows a distinction in terms of relative risk, to be made between Blocks in the southern North Sea gas province and those in other areas.

Similarly, although strong winds can come from any direction and in any season, the predominant winds in the UK are from the southwest which for Blocks to the east of the UK would push spilled oil away from the coast. However, in view of the relative proximity to the coast of a number of the Blocks applied for including Blocks in Quadrants 125 off the Northern Irish coast, Quadrants 97 and 98 in the central Channel, a group of Blocks between Orkney and Shetland and a group of Blocks in the outer Moray Firth will be subject to further screening and an AA will be carried if required prior to any decision on whether to grant licences. These Blocks are listed below.

A number of Blocks have been applied for in the deep water to the west of Shetland (see Figure 1). There have been numerous Blocks licensed in these deep water areas in previous licensing rounds and extensive exploration drilling has been undertaken to the west of Shetland over several decades and a number of hydrocarbon field developments. In connection with this exploration and field development, assessment has been undertaken of the behaviour of spills and contingency planning. The presence of the North Atlantic Drift/shelf edge current strongly flowing to the northeast, and legal requirements on well design safety and spill contingency planning, mitigate against the likelihood of significant effects on Natura 2000 and other conservation sites arising from oil spills from activities in those areas. The award of Seaward Production Licences for the Blocks in this area will not in itself lead to significant effects on Natura 2000 sites, since they do not permit subsequent field activities. DECC will ensure that the relevant lessons learned from the recent deep water spill in the Gulf of Mexico, including any additional mitigation measures considered necessary to prevent major oil spillage, will be implemented in UK waters and required as part of activity permitting for exploration and development drilling.

5.2 Screening for Natura 2000 sites vulnerable to physical and other effects

Physical disturbance e.g. from pipeline trenching, and placing facilities or deposits on the seabed were considered to have the potential to result in significant effects only if the Block was within or impinged on the site boundary. The scale of direct impacts and potential secondary effects are well documented in shelf depth (<200m) areas (from studies around oil & gas facilities and in connection with other marine industries such as cable laying and aggregate dredging), but less so in the deeper water areas. There is no evidence that the sediment plumes from activities such as pipeline trenching have detectable effects on mobile species.

Marine discharges from exploration and production activities include produced water, sewage, cooling water, drainage, drilling wastes and surplus water based mud (WBM), which

in turn may contain a range of hydrocarbons, various production and utility chemicals, metal ions or salts. In addition to these mainly platform-derived discharges, a range of discharges is associated with operation of subsea infrastructure (hydraulic fluids), pipeline testing and commissioning (treated seawater), and support vessels (sewage, cooling and drainage waters).

The effects of the majority of these have been judged negligible in previous DECC SEAs in the context of UK offshore oil and gas exploration and production, based on a wide variety of monitoring data and risk assessment results. These discharges are subject to a range of legal controls and would also be considered in detail in project specific AAs, Environmental Statements and chemical risk assessments under existing permitting procedures.

Drilling discharges of WBM and cuttings drilled with WBM may cause:

- Plume formation and turbidity, mainly associated with silt and clay particles which do not settle rapidly through the water column
- Settlement of particulates on the seabed, potentially causing physical smothering and changes to substrate characteristics
- Organic enrichment and subsequent oxygen depletion associated with enhanced aerobic microbial activity in surface sediments
- Direct toxicity effects in the water column and affected seabed

None of the above effects have been found to be significant following extensive use and discharge of WBM in the North and Irish Seas. The chemical formulation of WBM avoids or minimises the inclusion of toxic components, and the materials used in greatest quantities (barite and bentonite) are of negligible toxicity. Most of the WBM drilling chemicals typically used are categorised by OSPAR as PLONOR (Pose Little Or NO Risk to the marine environment).

5.2.1 Sites with scoter and red-throated diver

Several of the Blocks are within or close to sites designated for birds potentially vulnerable to physical disturbance such as common scoter and red-throated diver. Based on consultee advice, effects on the common scoter feature of the Rinns of Islay SPA and the red-throated diver feature of the Caithness and Sutherland Peatlands SPA can be screened out and are therefore not further assessed here.

The Blocks applied for in the Irish Sea are near the Ribble and Alt Estuaries SPA and the Liverpool Bay SPA (one Block in Quadrant 110 abuts the SPA site boundary). Site feature disturbance through oilfield vessel traffic was considered unlikely to result in significant effects because of the relatively low intensity during routine operations and since mitigation is possible for construction e.g. through routeing or timing measures. However, based on consultee advice, the Blocks applied for in the Irish Sea will be subject to further screening and an AA will be carried out if required prior to any decision on whether to grant licences.

5.2.2 Southern North Sea potential and draft SACs

The North Norfolk Sandbanks pSAC, Dogger Bank dSAC, Inner Dowsing, Race Bank and North Ridge pSAC and Haisborough, Hammond and Winterton pSAC (see map A.13) have

been proposed on account of the presence of extensive areas of Annex I habitat, sandbanks which are slightly covered by sea water all the times. The sites also contain a number of existing exploration wells, pipelines or gas fields and several Blocks have been applied for within the boundaries of these potential SACs. Consequently the sites may be affected by a variety of activities including drilling, pipelaying via direct physical disturbance and deposits of rock and other particulates. While local effects are foreseeable, activities that might follow award of licences in the 26th Licensing Round would modify an extremely small area of these Natura 2000 sites and as rapid recovery has been observed in many similar circumstances such effects are not considered to be significant. Risks of significant effects from major projects are also mitigated through the existing legal framework for the respective activities.

However, based on the number of blocks applied for, and the potential for cumulative effects, it is concluded that blocks wholly within or overlapping with these sites will be subject to further screening and an AA will be carried out if required prior to any decision whether to grant licences.

5.2.3 Scanner and Braemar Pockmarks cSACs

Pockmark SACs may be affected by direct physical damage, physical disturbance and interruption of the gas or fluid flow on which they depend. Specific mitigation measures are available to ensure the conservation objectives for the sites are not compromised by oilfield activities, in particular controls on anchoring to avoid physical damage and on well location and trajectory to prevent interruption of the flow of shallow gas supplying and maintaining the features. Blocks applied for in the 26th Round are 15 or more kilometres distant from the Scanner Pockmark site (see Map A.12) and significant effects are not predicted; no further assessment is therefore needed in respect of the Blocks in the vicinity. One Block applied for overlaps with the boundary of the Braemar Pockmarks site and consequently further assessment is considered necessary before a decision on licence award.

5.2.4 Darwin Mounds and Wyville Thomson Ridge potential SACs

The Darwin Mounds cSAC and Wyville Thomson Ridge pSACs have been identified for their Annex I reef habitat (respectively, biogenic *Lophelia pertusa* and stony). Such features and their associated biota may be affected by physical disturbance and damage from drilling rig anchoring, drilling discharges, pipeline laying etc. However, since the closest block applied for is some 50km distant, such interactions and thus significant effects on site integrity are considered unlikely.

5.2.5 Coastal Sites impinged on by Blocks applied for

Several Blocks applied for in the 26th Round overlap with or are immediately adjacent to the boundaries of coastal (and offshore sites abutting the coast) Natura 2000 sites, these are in the Channel (see Maps A.4 and A.10), southern North Sea (see Maps A.3 and A.9) and northern Northern Ireland (see Maps A.2 and A.8). In view of this it is concluded that these Blocks will be subject to further screening and AAs will be carried out if required prior to any decision whether to grant licences.

5.2.6 Coastal Sites not impinged on by Blocks applied for

The majority of Blocks applied for in the 26th Licensing Round are several tens of kilometres offshore and remote from Natura 2000 sites. Significant effects from consequent activities

are thus unlikely. It is unlikely that any new terminals would be built as a result of developments following 26th Round Licensing. While new pipelines could conceivably come ashore at existing terminals, either through or near to coastal SACs and SPAs, there are well proven methods to prevent significant impacts. There is a legal framework, via the necessary pipeline consents, OPAR 2001 and EIA regulations, to ensure that correct project design and mitigation is employed so that significant effects on Natura 2000 sites are avoided. Pipeline proposals with the potential to adversely affect site integrity would be subject to AA prior to decisions on consent, which could be refused, or amended, if such effects could not be avoided or a case made for Imperative Reasons of Overriding Public Importance and suitable compensatory measures identified.

5.3 Screening for Natura 2000 sites vulnerable to acoustic disturbance

The majority of Blocks applied for in the 26th Licensing Round are several tens of kilometres offshore and remote from UK Natura 2000 sites designated for birds (see Figure 2) and for marine mammals and fish (see Figure 3). Two sites of other member states in the southern North Sea which abut the median lines have marine mammals as qualifying features (see Map A.13 and Table A.10). Potential effects of anthropogenic noise on receptor organisms range from acute trauma to subtle behavioural and indirect ecological effects for example on prey species, complicating the assessment of significant effects. The sources. measurement, propagation, ecological effects and potential mitigation of noise associated with hydrocarbon exploration and production have been extensively reviewed and assessed. Significant effects were only considered possible for those SACs with marine mammals and fish as a primary or secondary feature, and in Blocks impinging on the boundaries of SPAs. Although seismic survey, piling and other oilfield noise is detectable by marine mammals, waterbirds and their prey, there is no evidence that such noise (suitably mitigated) presents a risk to the viability of populations in UK waters. This would require direct mortality, behavioural response with implications for reproductive success (e.g. disturbance at fixed breeding locations) or reduced long-term ecological viability (e.g. sustained displacement from foraging grounds). In the localised areas of Natura 2000 sites designated for marine mammals, acoustic disturbance associated with seismic is intermittent and there is no evidence that cumulative effects of previous survey effort have been adverse. Despite considerable scientific and effects monitoring effort, no evidence of significant effect in relation to population viability or disturbance of Natura 2000 qualifying species has been found to result from hydrocarbon exploration and production noise.

A number of simple analyses on common noise sources have shown that, except at very close range, seismic and other oilfield noise is well within the frequency and received level range of noises to which bottlenose dolphin, harbour porpoise, grey and harbour seals, and various fish species are frequently exposed. Several studies note disturbance reactions in those species as a result of exposure to vessels and high frequency devices such as net pingers, which appear to have greater potential to interfere with cetaceans (e.g. because the noise is continuous or because it is tonal rather than 'white noise'). Although hydrocarbon production platforms are sources of semi-continuous noise, they have not been observed to result in adverse effects on marine mammal and fish occurrence in the vicinity of an installation.

In-combination effects from seismic surveys are not considered to be any greater than inisolation effects; seismic surveys are deliberately not undertaken in the presence of other noise sources (such as construction piling) that would compromise the acoustic signals. Existing assessment requirements and mitigation measures are considered adequate to identify and prevent in-combination effects occurring sequentially in an area over time. It is

not envisaged that noise originating from activities in the great majority of Blocks applied for in the 26th Licence Round would result in significant effects on Natura 2000 sites with birds, marine mammals and fish as qualifying features, either in terms of population viability or significant disturbance of the species. However, a number of Blocks in proximity to such sites will be subject to further screening and an AA will be carried out if required, prior to any decision on whether to grant licences.

5.4 In-combination effects

In-combination effects include cumulative, synergistic and secondary/indirect effects. The screening assessment included consideration of other human activities likely to cause cumulative or synergistic effects that when taken in-combination with the activities associated with Block licensing would have a likely significant effect on Natura 2000 sites so as to undermine the conservation objectives of a site. This consideration was of necessity tentative, in some respects, given the uncertainty of the scale and timing of activities which could follow licensing of 26th Round Blocks. However, there are effective regulatory mechanisms in place to ensure that operators and DECC take such considerations into account during activity permitting. These mechanisms generally allow for public participation in the process, and in the case of oil and gas activities and a range of other developments also include project specific Appropriate Assessment.

Adopting a precautionary approach, prior to any decision on whether to grant licences, further assessment of potential in-combination effects will be undertaken for a number of Blocks in the Channel, southern North Sea, and outer Moray Firth which are, for example, near potential sites of offshore wind farm construction and for which in-combination effects can be conceived from existing and projected activities/installations.

5.5 Conclusion

This screening assessment is based on the Blocks applied for in the 26th Round and has considered the likelihood for significant effects on Natura 2000 sites from activities that could follow licensing of Blocks. The screening concluded that for the majority of the Blocks, licensing would not have the potential to cause significant effects on Natura 2000 site(s), on the understanding that subsequent field activities will be subject to specific activity permitting and HRA (where appropriate) to ensure appropriate mitigation measures are applied to planned operations and the prevention of potential for accidents. However, a number of Blocks (listed below) will be subject to further screening and an AA will be carried out if required prior to any decision whether to grant licences.

Blocks for which further assessment is recommended prior to licensing

5/01	12/19a	41/24	44/16a	47/07	49/17d	53/02c	113/29a
5/02	12/21b	41/25	44/17d	47/13b	49/18b	97/14	125/18
5/03	12/26b	42/27	44/17e	47/18	49/19b	97/15	125/19
5/04	12/27	43/15a	44/17f	47/19b	49/21c	98/06b	125/20
5/05	12/30	43/20a	44/18c	48/08d	49/22b	98/07b	125/23
5/06	13/26a	43/20c	44/23c	48/09b	49/23b	98/08	125/24
5/07	13/27c	44/01	44/23d	48/14c	49/23c	98/11	125/25
5/08	16/03d	44/02	44/24c	48/18e	49/24d	98/12	206/28
5/09	19/01	44/03	44/30	48/19d	49/26b	98/13	
12/14	19/04	44/04	45/01	48/20b	49/27c	98/14	
12/16b	41/18	44/05	47/02b	48/25a	49/28c	110/07d	
12/17b	41/19	44/14	47/03g	48/30c	52/05c	110/08b	
12/18	41/20	44/15	47/06	49/14a	53/01b	113/28	

6 REFERENCES

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APPENDIX A - THE DESIGNATED SITES

A1 Introduction

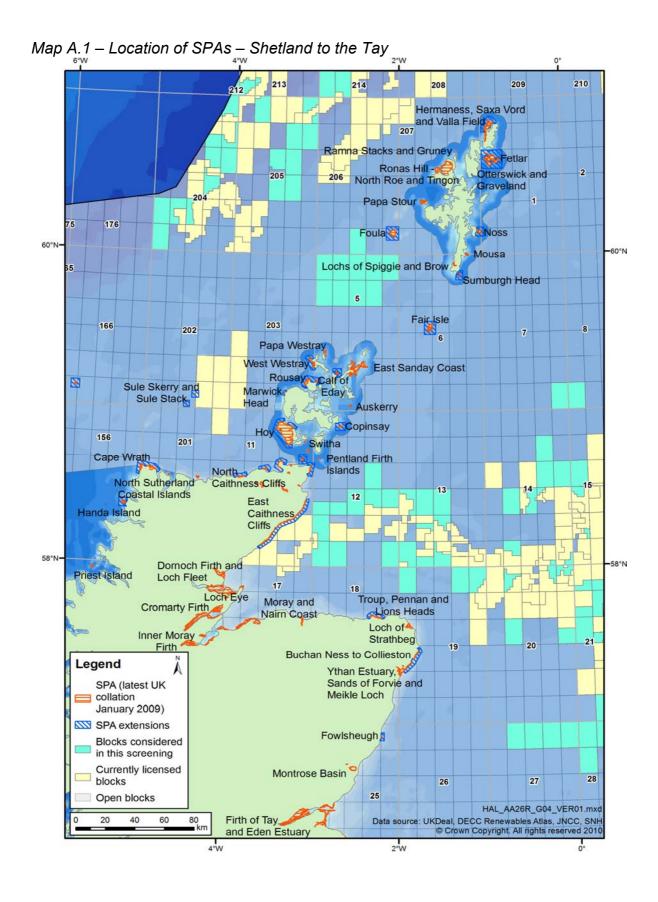
The following maps and tables show the locations of potentially relevant European sites and their qualifying features.

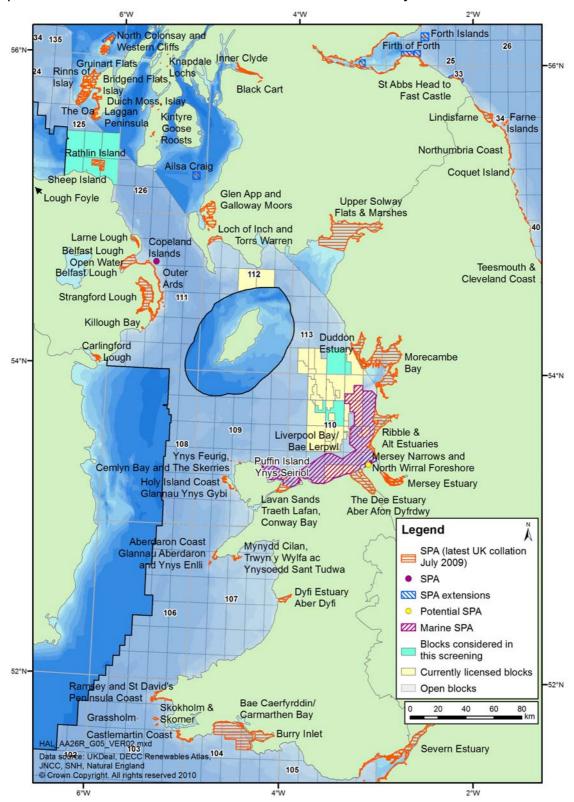
A2 Coastal and Marine Special Protection Areas⁴

Special Protection Areas (SPAs) are protected sites classified in accordance with Article 4 of the EC Birds Directive of 1979. Sites are classified for rare and vulnerable birds and for regularly occurring migratory birds. The SPAs included in this section are coastal sites which have been selected for the presence of one or more of the bird species listed in Box A.1 (below). In 2009, Marine extensions were added to 31 existing seabird breeding colony SPAs in Scotland, the details of which are also included below. Those sites that have been approved by the UK government and are in the process of being classified are known as potential SPAs (pSPAs).

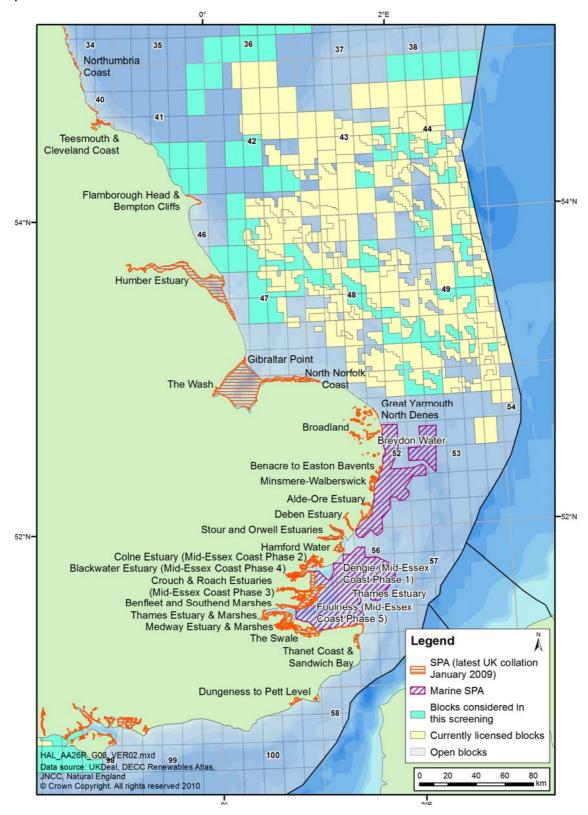
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⁴ Note: The tables also include a number of inland SPAs with breeding red throated divers

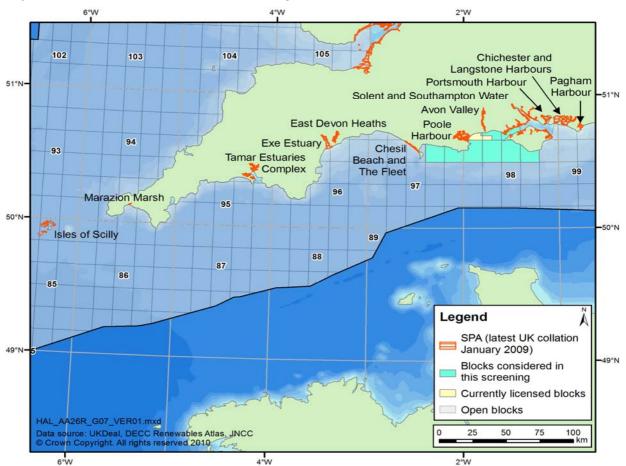




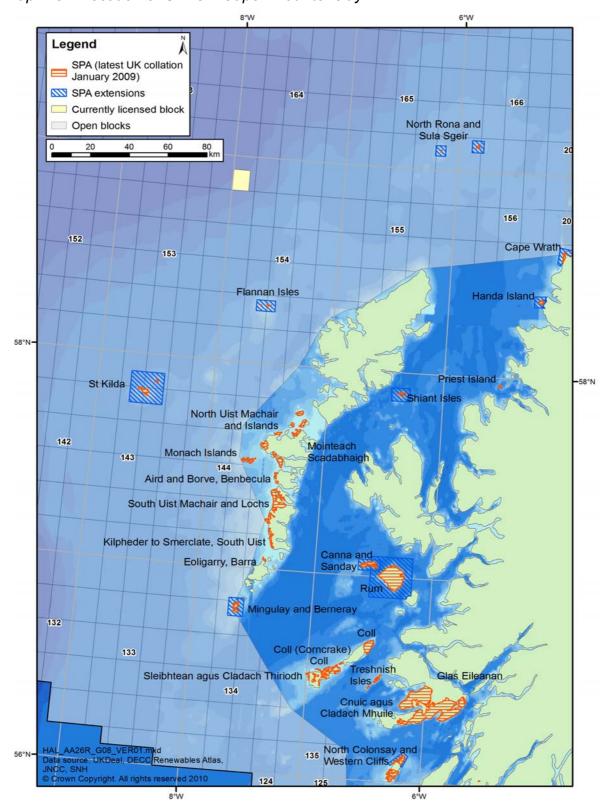
Map A.2 – Location of SPAs – Forth to Teesmouth and Islay to Bristol Channel



Map A.3 - Location of SPAs - Northumbria to Kent



Map A.4 - Location of SPAs - Isle of Wight to Bristol Channel



Map A.5 - Location of SPAs - Cape Wrath to Islay

Box A.1 - Migratory and/or Annex I bird species for which SPAs are selected in the

Divers and grebes

Red-throated diver Gavia stellata Black-throated diver Gavia arctica Little grebe Tachybaptus ruficollis Great crested grebe Podiceps cristatus Slavonian grebe Podiceps auritus

Seabirds

Fulmar Fulmarus glacialis Manx shearwater Puffinus puffinus Storm petrel Hydrobates pelagicus Leach's petrel Oceanodroma leucorhoa

Gannet Morus bassanus

Cormorant Phalacrocorax carbo carbo

Shaq Phalacrocorax aristotelis

Guillemot Uria aalge

Black guillemot Cepphus grylle

Razorbill Alca torda Puffin Fratercula arctica

Gulls, terns and skuas

Arctic skua Stercorarius parasiticus

Great skua Catharacta skua

Mediterranean gull Larus melanocephalus

Black-headed gull Larus ridibundus

Common gull Larus canus

Lesser black-backed gull Larus fuscus

Herring gull Larus argentatus

Great black-backed gull Larus marinus

Kittiwake Rissa tridactyla

Sandwich tern Sterna sandvicensis Roseate tern Sterna dougallii Common tern Sterna hirundo Arctic tern Sterna paradisaea

Little tern Sterna albifrons

Crakes and rails

Spotted crake Porzana porzana

Corncrake Crex crex Coot Fulica atra

Bittern Botaurus stellaris

Birds of prey and owls

Honey buzzard Pernis apivorus

Red kite Milvus milvus

Marsh harrier Circus aeruginosus

Hen harrier Circus cyaneus Golden eagle Aquila chrysaetos

Osprey Pandion haliaetus

Merlin Falco columbarius

Peregrine Falco peregrinus

Short-eared owl Asio flammeus

Other bird species

Capercaillie Tetrao urogallus

Nightjar Caprimulgus europaeus

Woodlark Lullula arborea

Fair Isle wren Troglodytes troglodytes fridariensis

Aquatic warbler Acrocephalus paludicola

Dartford warbler Sylvia undata Chough Pyrrhocorax pyrrhocorax

Scottish crossbill Loxia scotica

Waders

Oystercatcher Haematopus ostralegus

Avocet Recurvirostra avosetta

Stone curlew Burhinus oedicnemus

Ringed plover Charadrius hiaticula

Dotterel Charadrius morinellus

Golden plover Pluvialis apricaria

Grey plover Pluvialis squatarola

Lapwing Vanellus vanellus

Knot Calidris canutus

Sanderling Calidris alba

Purple sandpiper Calidris maritima

Dunlin Calidris alpina alpina

Ruff Philomachus pugnax

Snipe Gallinago gallinago

Black-tailed godwit Limosa limosa (breeding) Black-tailed godwit Limosa limosa islandica (non-

Bar-tailed godwit Limosa lapponica

Whimbrel Numenius phaeopus

Curlew Numenius arguata

Redshank Tringa totanus

Greenshank Tringa nebularia

Wood sandpiper Tringa glareola

Turnstone Arenaria interpres

Red-necked phalarope Phalaropus lobatus

Little egret Egretta garzetta

Waterfowl

Bewick's swan Cygnus columbianus bewickii

Whooper swan Cygnus cygnus

Bean goose Anser fabalis

Pink-footed goose Anser brachyrhynchus

Russian white-fronted goose Anser albifrons albifrons

Greenland white-fronted goose Anser albifrons

flavirostris

Icelandic greylag goose Anser anser

Greenland barnacle goose Branta leucopsis

Svalbard barnacle goose Branta leucopsis

Dark-bellied brent goose Branta bernicla bernicla

Light-bellied brent goose Branta bernicla hrota

Shelduck Tadorna tadorna

Wigeon Anas penelope Gadwall Anas strepera

Teal Anas crecca

Mallard Anas platyrhynchos

Pintail Anas acuta Shoveler Anas clypeata

Pochard Aythya ferina

Tufted duck Aythya fuligula

Scaup Aythya marila

Eider Somateria mollissima

Long-tailed duck Clangula hyemalis

Common scoter Melanitta nigra

Velvet scoter Melanitta fusca

Goldeneve Bucephala clangula

Red-breasted merganser Mergus serrator

Goosander Mergus merganser

Table A.1 – SPAs from Shetland to Kent and their Qualifying Features (North Sea)

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁵
SHETLAND				
Sumburgh Head SPA	2439.62	Breeding: Arctic tern	N/A	Breeding: Seabirds
Lochs of Spiggie and Brow SPA	141.48	Over winter: Whooper swan	N/A	N/A
Foula SPA	7985.49	Breeding: Arctic tern Leach's storm petrel	Breeding: Great skua Guillemot Puffin	N/A
Papa Stour SPA	569.03	Breeding: Arctic tern	N/A	N/A
Ronas Hill-North Roe and Tingon SPA	5470.2	Breeding: Red-throated diver	Breeding: Great skua	N/A
Ramna Stacks and Gruney SPA	11.59	Breeding: Leach's storm petrel	N/A	N/A
Hermaness, Saxa Vord and Valla Field SPA	6507.16	Breeding: Red-throated diver	Breeding: Gannet Great skua Puffin	Breeding: Seabirds
Fetlar SPA	16962.16	Breeding: Arctic tern Red-necked phalarope	Breeding: Dunlin Great skua Whimbrel Fulmar Arctic skua Black guillemot	Breeding: Seabirds
Noss SPA	3338.34	N/A	Breeding: Gannet Great skua Guillemot Kittiwake	N/A
Mousa SPA	197.98	Breeding: Arctic tern Storm petrel	N/A	N/A
Fair Isle SPA	6824.40	Breeding: Arctic tern Fair Isle wren	Breeding: Guillemot Razorbill Great skua Puffin Fulmar Shag Kittiwake Arctic skua Guillemot	N/A
ORKNEY				
Pentland Firth Islands SPA	170.51	Breeding: Arctic tern	N/A	N/A
Switha SPA	57.39	Over winter: Barnacle goose	N/A	N/A
Hoy SPA	18122.17	Breeding: Peregrine Red-throated diver	Breeding: Great skua	Breeding: Seabirds

⁵

⁻ A seabird assemblage of international importance. The area regularly supports at least 20,000 seabirds. Or

⁻ A wetland of international importance. The area regularly supports at least 20,000 waterfowl.

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁵
Marwick Head SPA	492.96	N/A	Breeding: Guillemot Kittiwake	N/A
Rousay SPA	5483.37	Breeding: Arctic tern	N/A	Breeding: Seabirds
West Westray SPA	3781.29	Breeding: Arctic tern	Breeding: Razorbill Kittiwake Arctic skua Guillemot	Breeding: Seabirds
Papa Westray (North Hill and Holm) SPA	245.71	Breeding: Arctic tern	N/A	N/A
Calf of Eday SPA	2668.91	N/A	N/A	Breeding: Seabirds
East Sanday Coast SPA	1515.23	N/A	Over winter: Purple sandpiper Turnstone	N/A
Auskerry SPA	101.97	Breeding: Arctic tern Storm petrel	N/A	N/A
Copinsay SPA	3607.7	N/A	Breeding: Great black-backed gull Kittiwake Guillemot	N/A
Sule Skerry and Sule Stack SPA	3890.55	Breeding: Leach's storm petrel Storm petrel	Breeding: Gannet Puffin Shag	N/A
NORTH COAST OF S	COTLAND			
North Caithness Cliffs SPA	14621.14	N/A	Breeding: Razorbill Fulmar Kittiwake Guillemot	N/A
North Sutherland Coastal Islands SPA	221.11	Over winter: Barnacle goose	N/A	N/A
MORAY FIRTH AND	ABERDEENSHIRE			
East Caithness Cliffs SPA	11690.92	N/A	Breeding: Razorbill Black guillemot Fulmar Herring gull Great black-backed gull Shag Cormorant Kittiwake Guillemot	N/A
Dornoch Firth and Loch Fleet SPA	7836.33	Breeding: Osprey	Over winter: Greylag goose Wigeon	Over winter: Waterfowl
		Over winter: Bar-tailed godwit		
Loch Eye SPA	205.14	Over winter: Whooper swan	Over winter: Greylag goose	N/A
Cromarty Firth SPA	3766.24	Breeding: Common tern Osprey	Over winter: Greylag goose	Over winter: Waterfowl
		Over winter: Bar-tailed godwit Whooper swan		

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁵
Inner Moray Firth SPA	2339.23	Breeding: Common tern Osprey	Over winter: Greylag goose Red-breasted	N/A
		Over winter: Bar-tailed godwit	merganser Redshank	
Moray and Nairn Coast SPA	2410.25	Breeding: Osprey	Over winter: Greylag goose Pink-footed goose Redshank	Over winter: Waterfowl
Troup, Pennan and Lion's Heads SPA	3367.21	N/A	Breeding: Guillemot Kittiwake	Breeding: Seabirds
Loch of Strathbeg SPA	615.94	Breeding: Sandwich tern Over winter: Whooper swan	Over winter: Teal Greylag goose Pink-footed goose Goldeneye	Over winter: Waterfowl
Buchan Ness to Collieston Coast SPA	5400.94	N/A	Breeding: Kittiwake	Breeding: Seabirds
Ythan Estuary, Sands of Forvie and Meikle Loch SPA	1016.24	Breeding: Common tern Little tern Sandwich tern	Over winter: Pink-footed goose	Over winter: Waterfowl
Fowlsheugh SPA	1303.54	N/A	Breeding: Razorbill Guillemot Kittiwake	N/A
SOUTH OF ABERDE	ENSHIRE			
Montrose Basin SPA	984.61	N/A	Over winter: Greylag goose Knot Pink-footed goose Oystercatcher Redshank	Over winter: Waterfowl
Firth of Tay and Eden Estuary SPA	6923.29	Breeding: Little tern Marsh harrier Over winter: Bar-tailed godwit	Over winter: Greylag goose Pink-footed goose Redshank	Over winter: Waterfowl
Forth Islands SPA	9796.98	Breeding: Roseate tern Common tern Sandwich tern	Breeding: Razorbill Puffin Lesser black-backed gull Gannet Shag Cormorant Kittiwake Guillemot	N/A
Firth of Forth SPA	6313.72	Over winter: Red-throated diver Oystercatcher Bar-tailed godwit Golden plover Slavonian grebe On passage:	Over winter: Pink-footed goose Turnstone Knot Shelduck Redshank	Over winter: Waterfowl
		Sandwich tern		
Imperial Dock Lock, Leith SPA	0.11	Breeding: Common tern	N/A	N/A

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁵
St Abb's Head to Fast Castle SPA	1736.52	N/A	Breeding: Guillemot	Breeding: Seabirds
NORTHEAST ENGLA	ND			
Lindisfarne SPA	3679.22	Breeding: Little tern Roseate tern Over winter: Whooper swan Bar-tailed godwit Golden Plover	Over winter: Wigeon Icelandic greylag goose Svalbard light-bellied brent goose Sanderling Dunlin Ringed plover Long-tailed duck Red-breasted merganser Grey plover Eider Shelduck	N/A
Farne Islands SPA	101.86	Breeding: Common tern Arctic tern Sandwich tern	N/A	N/A
Northumbria Coast SPA	1107.98	Breeding: Little tern	Over winter: Purple sandpiper Turnstone	N/A
Coquet Island SPA	22.28	Breeding: Arctic tern Common tern Roseate tern Sandwich tern	N/A	N/A
Teesmouth and Cleveland Coast SPA	1247.31	Breeding: Little tern On passage:	On passage: Redshank Over winter:	Over winter: Waterfowl
		Sandwich tern	Knot	
YORKSHIRE AND HU	JMBER			
Flamborough Head and Bempton Cliffs SPA	212.17	N/A	Breeding: Kittiwake	N/A
Humber Estuary SPA	37630.24	Breeding: Bittern Marsh harrier Avocet Little tern Over winter:	Over winter: Dunlin Knot Black-tailed godwit Shelduck Redshank	Non-breeding: Waterfowl
		Bittern Hen harrier Bar-tailed godwit Golden plover Avocet On passage:	On passage: Dunlin Knot Black-tailed godwit Redshank	
LINCOLNSHIRE, NOI	DEULK VND SHEEG	Ruff		
Gibraltar Point SPA		Breeding: Little tern Over winter:	Over winter: Grey plover Sanderling	N/A
		Bar-tailed godwit		

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁵
The Wash SPA	62211.66	Breeding: Common tern Little tern Over winter: Bewick's swan Bar-tailed godwit	Over winter: Pintail Wigeon Gadwall Pink-footed goose Turnstone Dark-bellied brent goose	Over winter: Waterfowl
			Goldeneye Sanderling Dunlin Knot Oystercatcher Black-tailed Godwit Common scoter Curlew Grey plover Shelduck Redshank	
North Norfolk Coast SPA	7886.79	Breeding: Bittern Marsh harrier Avocet Little tern Common tern Sandwich tern	Over winter: Wigeon Pink-footed goose Dark-bellied brent goose Knot	Over winter: Waterfowl
		Over winter: Avocet		
Broadland SPA	5462.4	Breeding: Bittern Marsh harrier	Over winter: Gadwall	N/A
		Over winter: Hen harrier Bewick's swan Whooper swan		
Great Yarmouth North Denes SPA	149.19	Breeding: Little tern	N/A	N/A
Breydon Water SPA	1202.94	Breeding: Common tern	Over winter: Lapwing	Over winter: Waterfowl
		Over winter: Bewick's swan Avocet Golden plover		
		On passage: Ruff		
Benacre to Easton Bavents SPA	516.83	Breeding: Bittern Little tern Marsh harrier	N/A	N/A
Minsmere- Walberswick SPA	2018.92	Breeding: Bittern Nightjar Marsh harrier Avocet	Breeding: Shoveler Teal Gadwall	N/A
		Little tern Over winter:	Over winter: Shoveler Gadwall	
		Hen harrier	Russian white-fronted goose	

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁵
Alde-Ore Estuary SPA	2416.87	Breeding: Marsh harrier Avocet Little tern Sandwich tern Over winter: Ruff	Breeding: Lesser black-backed gull Over winter: Redshank	N/A
		Avocet		
Deben Estuary SPA	978.93	Over winter: Avocet	Over winter: Dark-bellied brent goose	N/A
Stour and Orwell Estuaries SPA	3676.92	Breeding: Avocet	Over winter: Pintail Dark-bellied brent goose Knot Dunlin Black-tailed godwit Grey plover Redshank On passage:	Over winter: Waterfowl
FOOEY AND KENT			Redshank	
ESSEX AND KENT	070 000 11	O communications	NI/A	NI/A
Outer Thames Estuary (Margate and Long Sands) SPA	379,268.14	Over winter: Red-throated diver	N/A	N/A
Hamford Water SPA	2187.21	Breeding: Little tern Over winter: Avocet	Over winter: Teal Dark-bellied brent goose Ringed plover Black-tailed godwit Grey plover Shelduck Redshank	N/A
Foulness (Mid- Essex Coast Phase 5) SPA	10968.9	Breeding: Avocet Little tern Common tern Sandwich tern Over winter: Hen harrier Bar-tailed godwit Avocet	Breeding: Ringed plover Over winter: Dark-bellied brent goose Knot Oystercatcher Grey plover Redshank	Over winter: Waterfowl
Colne Estuary (Mid-Essex Coast Phase 2) SPA	2701.43	Breeding: Little tern Over winter: Hen harrier	Breeding: Pochard Ringed plover Over winter: Dark-bellied brent goose Redshank	Over winter: Waterfowl

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁵
Medway Estuary and Marshes SPA	4684.36	Breeding: Avocet Little tern Common tern Over winter: Bewick's swan Avocet	Over winter: Pintail Shoveler Teal Wigeon Turnstone Dark-bellied brent goose Dunlin Knot Ringed plover Oystercatcher Black-tailed godwit Curlew Grey plover Shelduck Greenshank Redshank	Breeding: Kingfisher Mallard Short-eared owl Pochard Hen harrier
Benfleet and Southend Marshes SPA	2251.31	N/A	Over winter: Dark-bellied brent goose Dunlin Knot Ringed plover Grey plover	Over winter: Waterfowl
Dengie (Mid-Essex Coast Phase 1) SPA	3127.23	Over winter: Hen harrier	Over winter: Dark-bellied brent goose Knot Grey plover	Over winter: Waterfowl
Thanet Coast and Sandwich Bay SPA	1870.16	Breeding: Little tern Over winter: Golden plover	Over winter: Turnstone	N/A
Thames Estuary and Marshes SPA	4838.94	Over winter: Hen harrier Avocet	Over winter: Dunlin Knot Black-tailed godwit Grey plover Redshank On passage:	Over winter: Waterfowl
Crouch and Roach Estuaries (Mid- Essex Coast Phase 3) SPA	1735.58	Over winter: Hen harrier	Ringed plover Over winter: Dark-bellied brent goose	Over winter: Waterfowl
The Swale SPA	6514.71	N/A	Over winter: Dark-bellied brent goose Dunlin Redshank	Breeding: Reed warbler Teal Mallard Gadwall Ringed plover Reed bunting Coot Common moorhen Oystercatcher Curlew Grey plover Shelduck Redshank Lapwing Over winter: Waterfowl

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁵
Blackwater Estuary (Mid-Essex Coast Phase 4) SPA	4395.15	Breeding: Little tern Over winter: Hen harrier	Breeding: Pochard Ringed plover Over winter: Dark-bellied brent goose Dunlin Ringed plover Black-tailed godwit Grey plover	Over winter: Waterfowl
Dungeness to Pett Level SPA	1474.04	Breeding: Common tern Little tern Mediterranean gull Over winter: Bewick's swan	Over winter: Shoveler	N/A

Table A.2 – SPAs from Sutherland to Severn Estuary and their Qualifying Features

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁶
WEST SCOTLAND				
Cape Wrath SPA	6737.26	N/A	N/A	Breeding: Seabirds
North Rona and Sula Sgeir SPA	6850.58	Breeding: Leach's petrel Storm petrel	Breeding: Razorbill Puffin Fulmar Great black-backed gull Gannet Kittiwake Guillemot	Breeding: Seabird
Flannan Isles SPA	5832.82	Breeding: Leach's petrel Storm petrel	Breeding: Razorbill Puffin Guillemot	N/A
St Kilda SPA	29014.62	Breeding: Leach's petrel Storm petrel	Breeding: Razorbill Fulmar Manx shearwater Gannet Kittiwake Puffin Guillemot	N/A
North Uist Machair and Islands SPA	4876.35	Breeding: Corncrake Over winter: Barnacle goose	Breeding: Dunlin Ringed plover Over winter: Ringed plover Turnstone	N/A
Monach Isles SPA	595.74	Breeding: Common tern Little tern Over winter: Barnacle goose	Breeding: Black guillemot	N/A

⁶ - A seabird assemblage of international importance. The area regularly supports at least 20,000

⁻ A wetland of international importance. The area regularly supports at least 20,000 waterfowl.

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁶
Aird and Borve, Benbecula SPA	361	Breeding: Corncrake	N/A	N/A
South Uist Machair and Lochs SPA	3352.28	Breeding: Corncrake Little tern	Breeding: Dunlin Oystercatcher Redshank Ringed plover Over winter: Ringed plover	N/A
			Sanderling	
Kilpheder to Smerclate, South Uist SPA	380.63	Breeding: Corncrake	N/A	N/A
Eoligarry, Barra SPA	144.04	Breeding: Corncrake	N/A	N/A
Mingulay and Berneray SPA	7801.72	N/A	Breeding: Razorbill Fulmar Shag Kittiwake Guillemot	N/A
Handa Island SPA	3205.61	N/A	Breeding: Guillemot Great skua Kittiwake Arctic skua Razorbill	N/A
Priest Island SPA	131.68	Breeding: Storm petrel	N/A	N/A
Shiant Isles SPA	6935.65	Over winter: Barnacle goose	Breeding: Razorbill Puffin Fulmar Shag Guillemot	N/A
Canna and Sanday SPA	6566.8	N/A	N/A	Breeding: Seabird
Rum SPA	46716.21	Breeding: Red throated-diver	Breeding: Manx shearwater	Breeding: Seabird
Coll SPA	2321.88	Overwinter: Greenland white-fronted goose Barnacle goose	N/A	N/A
Sléibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) SPA	1938.59	Overwinter: Greenland white-fronted goose Barnacle goose	Oystercatcher Redshank Ringed Plover	
			Overwinter: Turnstone Ringed plover	
Treshnish Isles SPA	240.67	Breeding: Storm petrel Overwinter: Greenland barnacle	N/A	N/A
Glas Eileanan SPA	1 //3	goose Breeding:	N/A	N/A
Gias Elleanan SPA	1.40	Common tern	14/73	IWA

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁶
Cnuic agus Cladach Mhuile (Mull Coast and Hills) SPA	29248.97	Resident: Golden eagle	N/A	N/A
Oronsay and South Colonsay SPA	2016.86	Breeding: Corncrake Chough Overwinter:	N/A	N/A
		Chough		
North Colonsay and Western Cliffs SPA	3307.22	Breeding: Chough Overwinter:	N/A	Breeding: Seabird
		Chough		
Knapdale Lochs SPA	112.39	Breeding: Black-throated diver	N/A	N/A
Gruinart Flats, Islay SPA	3261.32	Overwinter: Barnacle goose Greenland white-fronted goose	Overwinter: Canadian light-bellied brent goose	N/A
Bridgend Flats, Islay SPA	331.16	Overwinter: Barnacle goose	N/A	N/A
Rinns of Islay SPA	9407.46	Breeding: Chough Corncrake Hen harrier On passage:	Breeding: Common scoter	N/A
		Whooper swan Overwinter: Greenland white-fronted goose		
Eilean na Muice Duibhe (Duich Moss), Islay SPA	576.42	Overwinter: Greenland white-fronted goose	N/A	N/A
The Oa SPA	1943	Breeding: Chough	N/A	N/A
Laggan, Islay SPA	1230.02	Overwinter: Barnacle goose Greenland white-fronted goose	N/A	N/A
Kintyre Goose Roosts SPA	412.37	Overwinter: Greenland white-fronted goose	N/A	N/A
NORTH NORTHERN	IRELAND	<u>-</u>		
Lough Foyle SPA	2204.36	Over winter: Bar-tailed godwit Berwick's swan Golden plover Whooper swan	Over winter: Light-bellied brent goose	Over winter: Waterfowl
Copeland Islands SPA	201.52	Breeding: Arctic tern	Breeding: Manx shearwater	N/A
Sheep Island SPA	3.5	Breeding: Cormorant	N/A	N/A
Rathlin Island SPA	3344.62	Breeding: Peregrine	Breeding: Guillemot Razorbill Kittiwake	Breeding: Seabird

Site Name	Area (ha) Article 4.1 Article 4.2 Species Migratory species		Article 4.2 Assemblages ⁶	
EAST NORTHERN IR	ELAND			
Larne Lough SPA	395.94	Breeding: Common tern Roseate tern	Over winter: Canadian light-bellied brent goose	N/A
Belfast Lough SPA	432.14	N/A	Over winter: Redshank	N/A
Belfast Lough Open Water SPA	5592.99	N/A	Over winter: Great crested grebe	N/A
Outer Ards SPA	1410.41	Breeding: Arctic tern	N/A	N/A
		Over winter: Golden plover		
Strangford Lough SPA	15580.79	Breeding: Arctic tern Common tern Sandwich tern	Over winter: Knot Canadian light-bellied brent goose Redshank	Over winter: Waterfowl
Killough Bay SPA	104.23	N/A	Over winter: Canadian light-bellied brent goose	N/A
Carlingford Lough SPA	827.12	Breeding: Common tern Sandwich tern	N/A	N/A
SOUTHWEST SCOTL	AND			
Black Cart SPA	56.3	Overwinter: Whooper swan	N/A	N/A
Inner Clyde Estuary SPA	1826.02	N/A	Overwinter: Redshank	N/A
Ailsa Craig SPA	2759.57		Breeding: Razorbill Gannet Lesser black-backed gull	N/A
Glen App-Galloway Moors SPA	8942.38	Breeding: Hen harrier	N/A	N/A
Loch of Inch & Torrs Warren SPA	2111.04	Over winter: Greenland white-fronted goose Hen harrier	N/A	N/A
Upper Solway Flats and Marshes SPA	Bar-tailed godwit Barnacle goose Golden plover Whooper swan Whooper swan Sanderling Knot Oystercatcher Pink-footed goose Pintail Redshank Shoveler Teal Turnstone Scaup Goldeneye Grey plover Shelduck		Over winter: Waterfowl	
NORTHWEST ENGLA				
Duddon Estuary SPA	6806.3	Breeding: Sandwich tern	Over winter: Knot Pintail Redshank	Over winter: Waterfowl

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁶
Morecambe Bay SPA	37404.6	Breeding: Sandwich tern	On passage: Ringed plover	Breeding: Seabird
			Over winter: Curlew Dunlin Grey plover Knot Oystercatcher Pink-footed goose	
			Pintail Redshank Shelduck Turnstone	
Ribble and Alt Estuaries SPA	12361.13	Breeding: Common tern Ruff	Bar-tailed godwit Breeding: Lesser black-backed gull	Breeding: Seabird
		Over winter: Bar-tailed godwit	Black-headed gull On passage:	Over winter: Waterfowl
		Bewick's swan Golden plover Whooper swan	Ringed plover Sanderling Redshank Whimbrel	
			Over winter: Black-tailed godwit Dunlin Grey plover Knot Oystercatcher Pink-footed goose Pintail Redshank Sanderling Shelduck Teal Wigeon Scaup	
			Common scoter Curlew Cormorant	
Mersey Narrows and North Wirral Foreshore pSPA	2089.41	N/A	Lapwing Over winter: Redshank Turnstone	Over winter: Waterfowl
Mersey Estuary SPA	5033.14	Over winter: Golden plover	On passage: Redshank Ringed plover	N/A
			Over winter: Dunlin Pintail Redshank Shelduck Teal Lapwing Great crested grebe Grey plover Curlew Black-tailed godwit Wigeon	
Liverpool Bay SPA	170292.94	Over winter: Red-throated diver	Over winter: Common scoter	Non breeding waterfowl

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁶
The Dee Estuary SPA	13076.29	Over winter: Bar-tailed godwit		
NORTH AND WEST V	WALES			
Traeth Lafan / Lavan Sands, Conway Bay SPA	2642.98	N/A	Over winter: Oystercatcher Curlew	N/A
			On passage: Great crested grebe	
Ynys Seiriol / Puffin Island SPA	31.21	N/A	Breeding: Cormorant	N/A
Ynys Feurig, Cemlyn Bay and The Skerries SPA	85.66	Breeding: Arctic tern Common tern Roseate tern Sandwich tern	N/A	N/A
Glannau Ynys Gybi/Holy Island Coast SPA	352.59	Breeding: Chough Over winter: Chough	N/A	N/A
Glannau Aberdaron and Ynys Enlli/Aberdaron Coast and Bardsey Island SPA	505.03	Breeding: Chough	Breeding: Manx shearwater	N/A
Mynydd Cilan, Trwyn y Wylfa ac Ynysoedd Sant Tudwal / Mynydd Cilan, Trwyn y Wylfa and the St Tudwal Islands SPA	373.55	Breeding: Chough Over winter: Chough	N/A	N/A
Dyfi Estuary / Aber Dyfi SPA	2056.6	Overwinter: Greenland white-fronted goose	N/A	N/A
SOUTH WALES				
Ramsey and St David's Peninsula Coast SPA	845.63	Breeding: Chough	N/A	N/A
Skokholm and Skomer SPA	427.71	Breeding: Storm petrel	Breeding: Razorbill Puffin Manx shearwater	N/A
Grassholm SPA	10.73	N/A	Breeding: Gannet	N/A
Castlemartin Coast SPA	1122.32	Breeding: Chough	N/A	N/A

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁶
Burry Inlet SPA	6627.99	N/A	Over winter: Pintail Shoveler Teal Gadwall Dunlin Knot Oystercatcher Whimbrel Grey plover Shelduck Redshank	Over winter: Waterfowl
Bae Caerfyrddin/ Carmarthen Bay SPA	33410.03	N/A	Over winter: Common scoter	N/A
Severn Estuary SPA	24662.98	Over winter: Bewick's swan	Over winter: Gadwall Russian white-fronted goose Dunlin Shelduck Redshank	Over winter: Waterfowl

Table A.3 – SPAs from North Devon Coast to Kent and their Qualifying Features

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁷
CORNWALL AND DE	VON			
Isles of Scilly SPA	401.64	Breeding: Storm petrel	Breeding: Lesser black-backed gull	Breeding: Seabirds
Marazion Marsh SPA	54.58	On passage: Aquatic warbler	N/A	N/A
		Over winter: Bittern		
Tamar Estuaries Complex SPA	1955	On passage: Little egret	N/A	N/A
		Over winter: Avocet		
Exe Estuary SPA	2345.71	Over winter: Avocet Slavonian grebe	N/A	Over winter: Waterfowl
East Devon Heaths SPA	1119.94	Breeding: Dartford warbler Nightjar	N/A	N/A
SOUTH COAST				
Chesil Beach and The Fleet SPA	748.11	N/A	Over winter: Dark bellied brent goose	N/A
Poole Harbour SPA	2271.99	Breeding: Common tern Mediterranean gull	Over winter: Black tailed godwit Shelduck	Over winter: Waterfowl
		Over winter: Avocet		

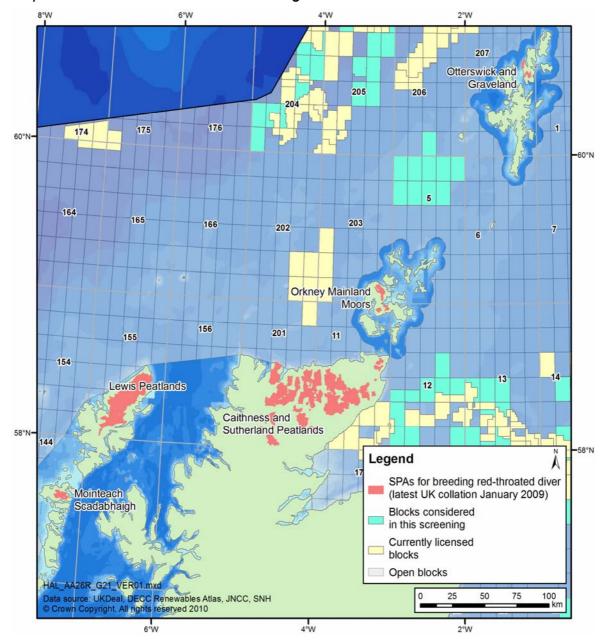
 $^{^{7}}$ - A seabird assemblage of international importance. The area regularly supports at least 20,000 seabirds. Or

⁻ A wetland of international importance. The area regularly supports at least 20,000 waterfowl.

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁷
Avon Valley SPA	1385.08	Over winter: Bewick's swan		
Solent and Southampton Water SPA	5505.86	Breeding: Common tern Little tern Mediterranean gull Roseate tern Sandwich tern	Over winter: Black tailed godwit Dark bellied brent goose Ringed plover Teal	Over winter: Waterfowl
Portsmouth Harbour SPA	1248.77	N/A	Over winter: Dark bellied brent goose Dunlin Black-tailed godwit Red-breasted merganser	N/A
Chichester and Langstone Harbours SPA	5810.03	Breeding: Little tern Sandwich tern Common tern Over winter: Bar tailed godwit	Over winter: Pintail Shoveler Teal Wigeon Turnstone Dark bellied brent goose Sanderling Dunlin Ringed plover Red-breasted merganser Curlew Grey plover Shelduck Redshank	Over winter: Waterfowl
Pagham Harbour SPA	636.68	Breeding: Little tern Common tern Over winter: Ruff	Breeding: Over winter: Little tern Dark-bellied Brent Common tern goose Over winter:	

A3 Special Protection Areas for breeding red-throated diver

The following SPAs represent those sites which are only included because they support breeding red-throated diver. The other bird species included within the site designations are listed for completeness.



Map A.6 - Location of SPAs for breeding red-throated diver

Table A.4 – Relevant SPAs designated for breeding red throated diver

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ⁸	
Otterswick and Graveland SPA	2241.41	Breeding: Red-throated diver	N/A	N/A	
Orkney Mainland Moors SPA	4444.35	Breeding: Hen harrier Red-throated diver Short-eared owl	N/A	N/A	
		Over winter: Hen harrier			
Caithness and Sutherland Peatlands SPA	145516.75	Breeding: Black-throated diver Golden eagle Golden plover Hen harrier Merlin Red-throated diver Short-eared owl Wood sandpiper	Breeding: Dunlin	N/A	
Mointeach Scadabhaigh SPA	4148.44	Breeding: Black-throated diver Red-throated diver	N/A	N/A	
Lewis Peatlands SPA	58984.23	Breeding: Black-throated diver Golden eagle Golden plover Merlin Red-throated diver	Breeding: Dunlin Greenshank		

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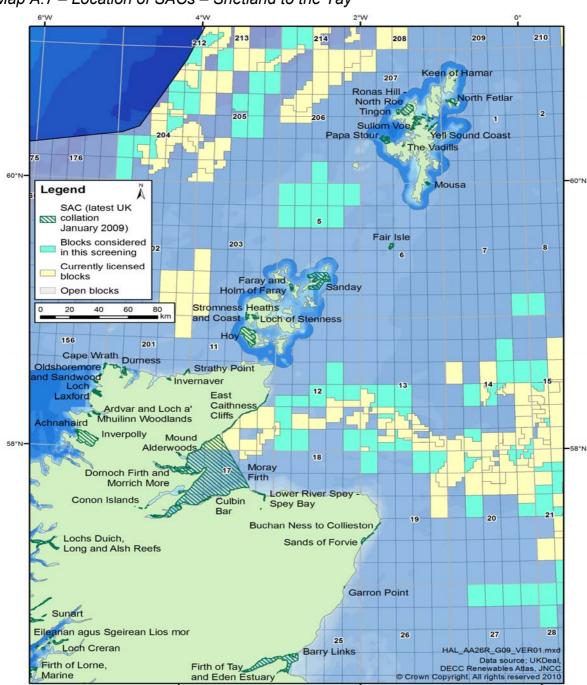
 $^{^{\}rm 8}$ - A seabird assemblage of international importance. The area regularly supports at least 20,000 seabirds. Or

⁻ A wetland of international importance. The area regularly supports at least 20,000 waterfowl.

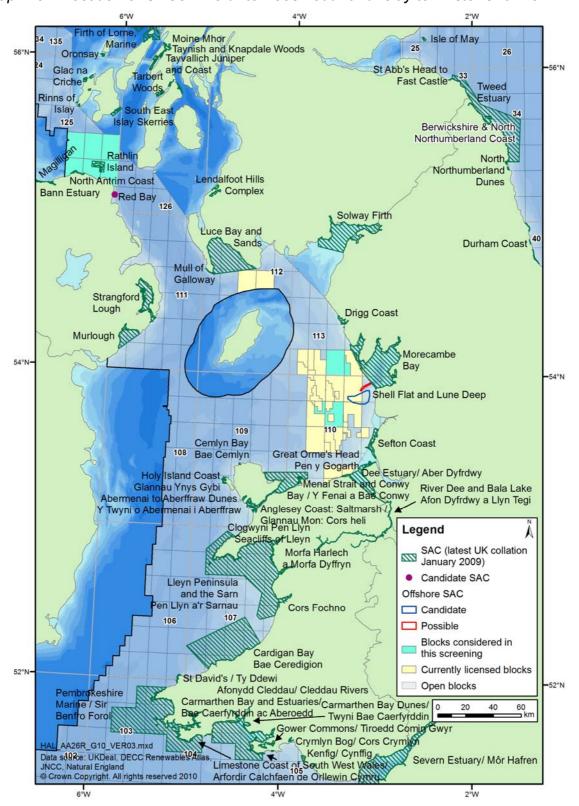
A4 Coastal and Marine Special Areas of Conservation

This section includes coastal or nearshore marine (within 12nm boundary) Special Areas of Conservation (SAC) sites which contain one or more of the Annex I coastal habitats listed in Box A.2 (below) or examples of Annex II qualifying marine species.

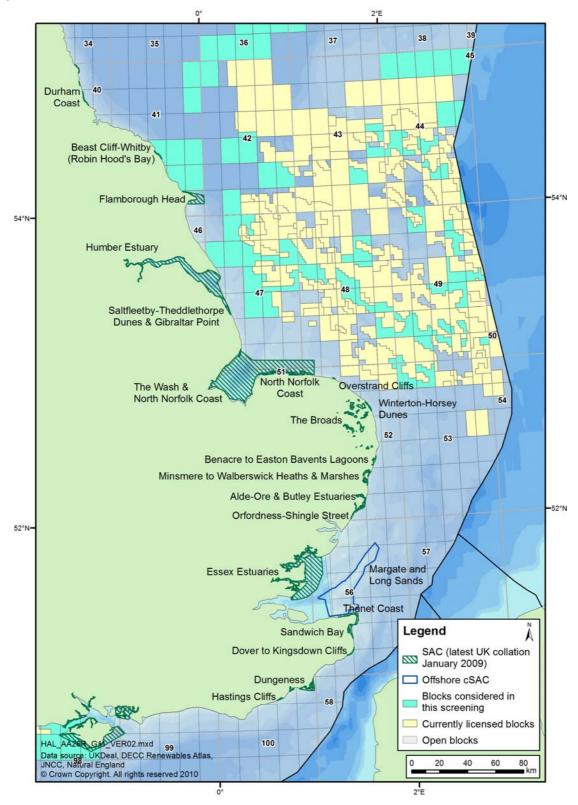
Relevant offshore (out with or crossing the 12nm boundary) SACs are included on the maps here and described in Section A5. Riverine/freshwater SACs which are designated for migratory fish and/or freshwater pearl mussel are considered in Section A6.



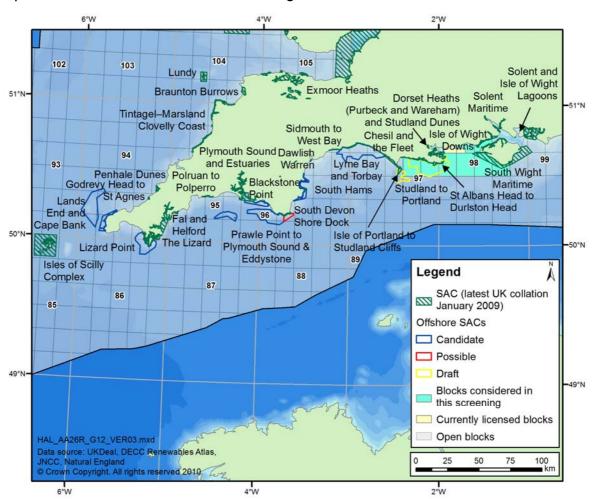
Map A.7 – Location of SACs – Shetland to the Tay



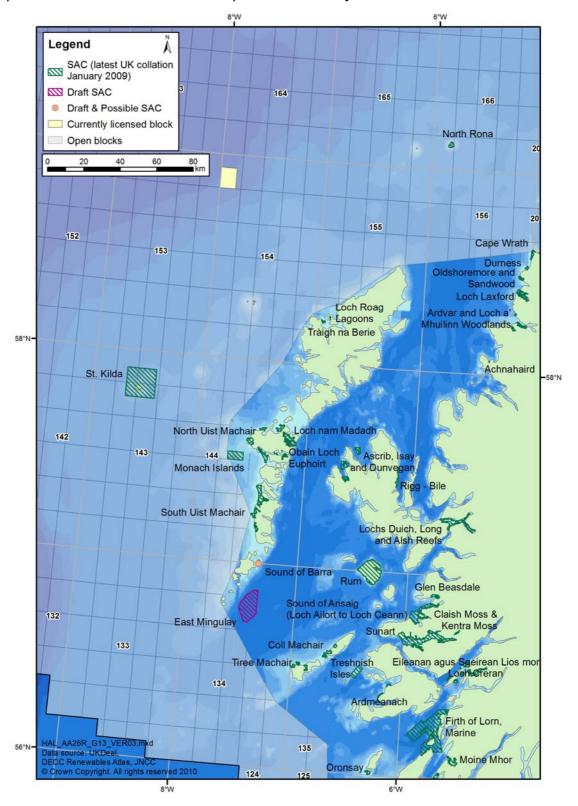
Map A.8 – Location of SACs – Forth to Teesmouth and Islay to Bristol Channel



Map A.9 - Location of SACs - Northumbria to Kent



Map A.10 - Location of SACs - Isle of Wight to Bristol Channel



Map A.11 - Location of SACs - Cape Wrath to Islay

Box A.2 – Annex 1 Habitat Abbreviations Used in Site Summaries

Annex I Habitat (abbreviated)	Annex I Habitat(s) (full description)
Bogs	Active raised bogs * Priority feature
	Blanket bogs * Priority feature
	Bog Woodland * Priority feature
	Degraded raised bogs still capable of natural regeneration
	Depressions on peat substrates of the Rhynchosporion
	Transition mires and quaking bogs
Caves	Caves not open to the public
Coastal dunes	Atlantic decalcified fixed dunes (Calluno-Ulicetea)
	Coastal dunes with <i>Juniperus</i> spp.
	Decalcified fixed dunes with Empetrum nigrum
	Dunes with Hippophae rhamnoides
	Dunes with Salix repens ssp. argentea (Salicion arenariae)
	Embryonic shifting dunes
	Fixed dunes with herbaceous vegetation (`grey dunes`) * Priority feature
	Humid dune slacks
	Shifting dunes along the shoreline with Ammophila arenaria (`white dunes`)
Coastal lagoons	Coastal lagoons *Priority feature
Estuaries	Estuaries
Fens	Alkaline fens
Fens	Alkaline fens Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> * Priority feature
Fens	Calcareous fens with Cladium mariscus and species of the Caricion
Forest	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> * Priority feature
	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> * Priority feature Petrifying springs with tufa formation (<i>Cratoneurion</i>) * Priority feature Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> ,
	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> * Priority feature Petrifying springs with tufa formation (<i>Cratoneurion</i>) * Priority feature Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion, Alnion incanae, Salicion albae</i>) * Priority feature
	Calcareous fens with Cladium mariscus and species of the Caricion davallianae * Priority feature Petrifying springs with tufa formation (Cratoneurion) * Priority feature Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) * Priority feature Old sessile oak woods with Quercus robur on sandy plains
Forest	Calcareous fens with Cladium mariscus and species of the Caricion davallianae * Priority feature Petrifying springs with tufa formation (Cratoneurion) * Priority feature Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) * Priority feature Old sessile oak woods with Quercus robur on sandy plains Tilio-Acerion forests of slopes, screes and ravines * Priority feature
Forest	Calcareous fens with Cladium mariscus and species of the Caricion davallianae * Priority feature Petrifying springs with tufa formation (Cratoneurion) * Priority feature Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) * Priority feature Old sessile oak woods with Quercus robur on sandy plains Tilio-Acerion forests of slopes, screes and ravines * Priority feature Alpine and subalpine calcareous grasslands
Forest	Calcareous fens with Cladium mariscus and species of the Caricion davallianae * Priority feature Petrifying springs with tufa formation (Cratoneurion) * Priority feature Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) * Priority feature Old sessile oak woods with Quercus robur on sandy plains Tilio-Acerion forests of slopes, screes and ravines * Priority feature Alpine and subalpine calcareous grasslands Calaminarian grasslands of the Violetalia calaminariae Hydrophilous tall herb fringe communities of plains and of the montane to
Forest	Calcareous fens with Cladium mariscus and species of the Caricion davallianae * Priority feature Petrifying springs with tufa formation (Cratoneurion) * Priority feature Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) * Priority feature Old sessile oak woods with Quercus robur on sandy plains Tilio-Acerion forests of slopes, screes and ravines * Priority feature Alpine and subalpine calcareous grasslands Calaminarian grasslands of the Violetalia calaminariae Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion
Forest	Calcareous fens with Cladium mariscus and species of the Caricion davallianae * Priority feature Petrifying springs with tufa formation (Cratoneurion) * Priority feature Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) * Priority feature Old sessile oak woods with Quercus robur on sandy plains Tilio-Acerion forests of slopes, screes and ravines * Priority feature Alpine and subalpine calcareous grasslands Calaminarian grasslands of the Violetalia calaminariae Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) Semi-natural dry grasslands and scrubland facies: on calcareous

Annex I Habitat (abbreviated)	Annex I Habitat(s) (full description)
	Dry Atlantic coastal heaths with <i>Erica vagans</i>
	European dry heaths
	Northern Atlantic wet heaths with Erica tetralix
Inlets and bays	Large shallow inlets and bays
Limestone pavements	Limestone pavements * Priority feature
Machairs	Machairs
Mudflats and sandflats	Mudflats and sandflats not covered by seawater at low tide
Reefs	Reefs
Rocky slopes	Calcareous rocky slopes with chasmophytic vegetation
Running freshwater	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation
Salt marshes and salt meadows	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)
	Salicornia and other annuals colonising mud and sand
	Spartina swards (Spartinion maritimae)
Sandbanks	Sandbanks which are slightly covered by sea water all the time
Scree	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)
	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)
Scrub (mattoral)	Juniperus communis formations on heaths or calcareous grasslands
Sea caves	Submerged or partially submerged sea caves
Sea cliffs	Vegetated sea cliffs of the Atlantic and Baltic coasts
Standing freshwater	Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.
	Mediterranean temporary ponds
	Natural dystrophic lakes and ponds
	Natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrocharition</i> -type vegetation
	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea
Vegetation of drift lines	Annual vegetation of drift lines
Vegetation of stony banks	Perennial vegetation of stony banks
, , , , , , , , , , , , , , , , , , , ,	

Table A.5 – SACs from Shetland to Essex and their Qualifying Features

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
SHETLAND				-	, ,
The Vadills SAC	62.43	Coastal lagoons	N/A	N/A	N/A
Papa Stour SAC	2076.69	Reefs	N/A	N/A	N/A
		Sea caves			
Tingon SAC	569.3	Bogs	Standing freshwater	N/A	N/A
Ronas Hill-North Roe SAC	4900.9	Standing freshwater	Heath	N/A	N/A
		Heath	Scree		
		Bogs			
Sullom Voe SAC	2698.55	Inlets and bays	Coastal lagoons	N/A	N/A
			Reefs		
Yell Sound Coast	1540.55	N/A	N/A	Otter Lutra lutra	N/A
SAC				Harbour seal Phoca vitulina	
Keen of Hamar	38.52	Grasslands	Heath	N/A	N/A
SAC		Scree			
North Fetlar SAC	1581.93	Heath	N/A	N/A	N/A
		Fens			
Mousa SAC	530.6	N/A	Reefs	Harbour seal	N/A
			Sea caves	Phoca vitulina	
Fair Isle SAC	561.27	Sea cliffs	Heaths	N/A	N/A
ORKNEY					
Hoy SAC	9499.7	Sea cliffs	Heath	N/A	N/A
		Standing	Fens		
		freshwater	Rocky slopes		
		Heath	, ,		
		Bog			
Loch of Stenness SAC	791.87	Coastal lagoons	N/A	N/A	N/A
Stromness Heaths	635.78	Sea cliffs	Fens	N/A	N/A
and Coasts SAC		Heath			
Faray and Holm of Faray SAC	785.68	N/A	N/A	Grey seal Halichoerus grypus	N/A
Sanday SAC	10971.65	Reefs	Sandbanks	Harbour seal Phoca vitulina	N/A
			Mudflats and sandflats	. Hood vitaiiild	
NORTH COAST OF	SCOTLAND				
Otrastlas Daist OAO	203.58	Sea cliffs	N/A	N/A	N/A
Stratny Point SAC			Canadal dunas	N/A	N/A
Strathy Point SAC Invernaver SAC	294.54	Coastal dunes	Coastal dunes	IN/A	11//-3
•	294.54	Coastal dunes Heath	Fens Fens	N/A	TW/A

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
Durness SAC	1212.74	Coastal dunes	Coastal dunes	N/A	Otter Lutra lutra
		Standing freshwater	Heath		
		Grasslands	Grasslands		
		Limestone pavements	Fens		
Cape Wrath SAC	1018.18	Sea cliffs	N/A	N/A	N/A
MORAY FIRTH AND					
East Caithness Cliffs SAC	442.64	Sea cliffs	N/A	N/A	N/A
Mound Alderwoods SAC	297.33	Forests	N/A	N/A	N/A
Moray Firth SAC	151341.67	N/A	Sandbanks	Bottlenose dolphin Tursiops truncatus	N/A
Conon Islands SAC	120.11	Forests	N/A	N/A	N/A
Dornoch Firth and	8700.53	Estuaries	Sandbanks	Otter Lutra lutra	N/A
Morrich More SAC		Mudflats and sandflats	Reefs	Harbour seal Phoca vitulina	
		Saltmarsh and salt meadows			
		Salt meadows			
		Coastal dunes			
Culbin Bar SAC	612.88	Vegetation of stony banks		N/A	N/A
Lower Diver Spay	652.6	Vegetation of stony	Coastal dunes	N/A	N/A
Lower River Spey - Spey Bay SAC	052.0	banks	IV/A	N/A	IWA
D 1 N 1	007.50	Forests	NI/A	NI/A	NI/A
Buchan Ness to Collieston SAC	207.52	Sea cliffs	N/A	N/A	N/A
Sands of Forvie SAC	734.05	Coastal dunes	N/A	N/A	N/A
SOUTH OF ABERDE	ENSHIRE				
Garron Point SAC	15.58	N/A	N/A	Narrow-mouthed whorl snail <i>Vertigo</i> angustior	N/A
Barry Links SAC	789.67	Coastal dunes	N/A	N/A	N/A
Firth of Tay and	15412.53	Estuaries	Sandbanks	Harbour seal Phoca vitulina	N/A
Eden Estuary SAC			Mudflats and sandflats		
Isle of May SAC	356.75	N/A	Reefs	Grey seal Halichoerus grypus	N/A
Berwickshire and North	65045.5	Mudflats and sandflats	N/A	Grey seal Halichoerus grypus	N/A
Northumberland Coast SAC		Inlets and Bays			
		Reefs			
		Sea caves			

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
St Abb's Head to Fast Castle SAC	127.52	Sea cliffs	N/A	N/A	N/A
Tweed Estuary SAC	155.93	Estuaries Mudflats and	N/A	N/A	Sea lamprey Petromyzon marinus
		sandflats			River lamprey Lampetra fluviatilis
NORTHEAST ENGLA	AND				, p
North Northumberland Dunes SAC	1147.56	Coastal dunes	N/A	Petalwort Petalophyllum ralfsii	N/A
Durham Coast SAC	393.63	Sea cliffs	N/A	N/A	N/A
YORKSHIRE AND TH	IE HUMBER				
Beast Cliff-Whitby (Robin Hood's Bay) SAC	260.2	Sea cliffs	N/A	N/A	N/A
Flamborough Head	6311.96	Reefs	N/A	N/A	N/A
SAC		Sea cliffs			
		Sea caves			
Humber Estuary	36657.15	Estuaries	Sandbanks	N/A	River lamprey
SAC		Mudflats and sandflats	Salt marshes and salt meadows		Lampetra fluviatilis Sea lamprey
			Coastal lagoons		Petromyzon marinus
			Coastal dunes		Grey seal Halichoerus grypus
LINCOLNSHIRE, NO	RFOLK AND S	UFFOLK			
Saltfleetby - Theddlethorpe Dunes and Gibraltar Point SAC	960.2	Coastal dunes	Coastal dunes	N/A	N/A
The Wash and	107761.28	Sandbanks	Coastal lagoons	Harbour seal Phoca vitulina	Otter Lutra lutra
North Norfolk Coast SAC		Mudflats and sandflats		FIIOCA VILUIIIIA	
		Inlets and bays			
		Reefs			
		Salt marshes and salt meadows			
North Norfolk	3207.37	Coastal lagoons	N/A	N/A	Otter Lutra lutra
Coast SAC		Vegetation of stony banks			Petalwort Petalophyllum ralfsii
		Salt marshes and salt meadows			ranon
		Coastal dunes			
Overstrand Cliffs SAC	30.02	Sea cliffs	N/A	N/A	N/A

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
The Broads SAC	5865.6	Standing freshwater	Grasslands	Desmoulin`s whorl snail Vertigo moulinsiana	Otter Lutra lutra
		Bog		Con orabid Linevia	
		Fens		Fen orchid <i>Liparis</i> loeselii	
		Forests			
Winterton-Horsey Dunes SAC	425.94	Coastal dunes	Coastal dunes	N/A	N/A
Benacre to Easton Bavents Lagoons SAC	366.93	Coastal lagoons	N/A	N/A	N/A
Minsmere to Walberswick	1265.52	Vegetation of drift lines	Vegetation of stony banks	N/A	N/A
Heaths and Marshes SAC		Heath			
Alde, Ore and Butley Estuaries	1561.53	Estuaries	Mudflats and sandflats	N/A	N/A
SAC			Salt marshes and salt meadows		
Orfordness-Shingle	901.19	Coastal lagoons	N/A	N/A	N/A
Street SAC		Vegetation of drift lines			
		Vegetation of stony banks			
ESSEX AND KENT					
Essex Estuaries	46140.82	Estuaries	Sandbanks	N/A	N/A
SAC		Mudflats and sandflats			
		Salt marshes and salt meadows			
Thanet Coast SAC	2803.84	Reefs	N/A	N/A	N/A
		Sea caves			
Dover to Kingsdown Cliffs SAC	183.85	Sea cliffs	Grasslands	N/A	N/A
Sandwich Bay SAC	1137.87	Coastal dunes	Coastal dunes	N/A	N/A
Hastings Cliffs SAC	183.72	Sea cliffs	N/A	N/A	N/A
Dungeness SAC	3223.56	Vegetation of drift lines	N/A	Great crested newt Triturus cristatus	N/A
		Vegetation of stony banks			

Table A.6 - SACs from Sutherland to Severn Estuary and their Qualifying Features

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
WEST SCOTLAND					
Inverpolly SAC	11877.32	Standing freshwater	Heath	Otter Lutra lutra	Freshwater pearl mussel
		Heath	Grassland		Margaritifera margaritifera
		Bogs	Scree		
		3	Rocky slopes		
			Forest		
North Rona SAC	628.53	N/A	Reefs	Grey seal	N/A
			Sea cliffs	Halichoerus grypus	
			Sea caves		
Oldshoremore and	443.73	Coastal dunes	Coastal dunes	N/A	N/A
Sandwood SAC		Machairs			
Loch Laxford SAC	1221.33	Inlets and bays	Reefs	N/A	N/A
Ardvar and Loch a' Mhuilinn Woodlands SAC	805.99	Forest	N/A	N/A	Freshwater pearl mussel Margaritifera margaritifera
					Otter Lutra lutra
Achnahaird SAC	21.37	N/A	N/A	Petalwort Petalophyllum ralfsii	N/A
Loch Roag Lagoons SAC	43.62	Coastal lagoons	N/A	N/A	N/A
Tràigh na Berie SAC	153.75	Machairs	N/A	N/A	N/A
St Kilda SAC	25467.58	Reefs	N/A	N/A	N/A
		Sea cliffs			
		Sea caves			
North Uist Machair	3048.54	Salt meadows	Vegetation of drift	N/A	Slender naiad
SAC		Machairs	lines		Najas flexilis
		Standing freshwater	Coastal dunes		
Loch nam Madadh	2320.38	Coastal lagoons	Sandbanks	Otter Lutra lutra	N/A
SAC		Inlets and bays	Mudflats and sandflats		
			Reefs		
Obain Loch Euphoirt SAC	348.59	Coastal lagoons	N/A	N/A	N/A
Monach Islands SAC	3646.58	Machairs	Coastal dunes	Grey seal Halichoerus grypus	N/A
South Uist	3432.65	Machairs	Coastal lagoons	Slender naiad	Otter Lutra lutra
Machair SAC		Standing freshwater	Vegetation of drift lines	Najas flexilis	

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
Sound of Barra dSAC	N/A	Reefs Sandbanks	N/A	Harbour seal <i>Phoca</i> vitulina	N/A
East Mingulay dSAC	N/A	Reefs	N/A	N/A	N/A
Ascrib, Isay and Dunvegan SAC	2584.99	N/A	N/A	Harbour seal <i>Phoca</i> vitulina	N/A
Rigg - Bile SAC	500.89	Sea cliffs	Forest	N/A	N/A
Lochs Duich, Long and Alsh Reefs SAC	2380.86	Reefs	N/A	N/A	N/A
Rum	10835.33	Standing	Sea cliffs	Otter Lutra lutra	N/A
		freshwater	Heaths		
		Heaths	Grasslands		
		Grasslands	Bogs		
		Scree	Fens		
			Scree		
<u> </u>		F	Rocky slopes	NI/A	Farabasetas
Glen Beasdale SAC	507.32	Forest	N/A	N/A	Freshwater pearl mussel Margaritifera margaritifera
					Otter Lutra lutra
Sound of Arisaig (Loch Ailort to Loch Ceann Traigh) SAC	4556.65	Sandbanks	N/A	N/A	N/A
Sunart SAC	10246.72	Forest	Reefs	Otter Lutra lutra	N/A
			Heath		
			Forest		
Coll Machair SAC	851.33	Coastal dunes	Coastal dunes	Slender naiad	N/A
		Machairs	Standing freshwater	Najas flexilis	
Tiree Machair	785.46	Coastal dunes	Coastal dunes	N/A	N/A
SAC		Machairs			
		Standing freshwater			
Treshnish Isles SAC	1962.66	N/A	Reefs	Grey seal Halichoerus grypus	N/A
Eileanan agus Sgeiran Lios mór SAC	1139.62	N/A	N/A	Harbour seal <i>Phoca</i> vitulina	N/A
Loch Creran SAC	1226.39	Reefs	N/A	N/A	N/A
Ardmeanach SAC	374.79	Grassland	Sea cliffs	N/A	N/A
Loch Moidart and Loch Shiel Woods	1756.77	Forests	Mudflats and sandflats	N/A	Otter Lutra lutra
SAC			Forests		

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
Mull Oakwoods SAC	1401.89	Forest	N/A	N/A	Otter Lutra lutra
Firth of Lorn, Marine SAC	20975.01	Reefs	N/A	N/A	N/A
Oronsay SAC	340.07	Machairs	N/A	N/A	N/A
Moine Mhor SAC	1150.41	Bogs	Mudflats and sandflats Salt marshes and salt meadows	N/A	Marsh fritillary butterfly Euphydryas (Eurodryas, Hypodryas) aurinia
			Forests		Otter Lutra lutra
Taynish and Knapdale Woods SAC	966.27	Forests	Standing freshwater	Marsh fritillary butterfly Euphydryas (Eurodryas, Hypodryas) aurinia	Otter Lutra lutra
Glac na Criche SAC	265.33	Bogs	Sea cliffs	N/A	Marsh fritillary butterfly
			Heaths		Euphydryas (Eurodryas, Hypodryas) aurinia
Rinns of Islay SAC	1149.7	N/A	N/A	Marsh fritillary butterfly Euphydryas (Eurodryas, Hypodryas) aurinia	N/A
South-East Islay Skerries SAC	1498.3	N/A	N/A	Harbour seal <i>Phoca</i> vitulina	N/A
Tayvallich Juniper and Coast SAC	1213.47	Scrub (matorral)	N/A	Marsh fritillary butterfly Euphydryas (Eurodryas, Hypodryas) aurinia	Otter Lutra lutra
Tarbert Woods SAC	1595.97	Forests	N/A	N/A	N/A
NORTH NORTHERN	IRELAND				
Magilligan SAC	1058.22	Coastal dunes	Coastal dunes	N/A	Marsh fritillary butterfly Euphydryas (Eurodryas, Hypodryas) aurinia
					Petalwort Petalophyllum ralfsii
Bann Estuary SAC	347.94	Coastal dunes	Salt marshes and salt meadows	N/A	N/A
			Coastal dunes		
Rathlin Island SAC	3344.62	Reefs Sea cliffs	Sandbanks Vegetation of drift	N/A	N/A
		Sea caves	lines		

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
North Antrim Coast SAC	314.59	Sea cliffs	Vegetation of drift lines	Narrow-mouthed whorl snail <i>Vertigo</i> angustior	N/A
			Salt marshes and salt meadows	angustioi	
			Coastal dunes		
			Grasslands		
Red Bay cSAC	965.54	Sandbanks	N/A	N/A	N/A
EAST NORTHERN I	RELAND				
Strangford Lough SAC	15398.54	Mudflats and sandflats	Vegetation of drift lines	N/A	Harbour seal Phoca vitulina
		Coastal lagoons	Vegetation of stony banks		
		Inlets and bays	Salt marshes and		
		Reefs	salt meadows		
Murlough SAC	11902.03	Coastal dunes	Sandbanks	Marsh fritillary	Harbour seal
			Mudflats and sandflats	butterfly Euphydryas (Eurodryas,	Phoca vitulina
			Salt marshes and salt meadows	Hypodryas) aurinia	
			Coastal dunes		
SOUTHWEST SCOT	ΓLAND				
Lendalfoot Hills Complex SAC	1309.71	Grassland	Heaths	N/A	N/A
Complex OAC		Fens	Grasslands		
			Bogs		
Mull of Galloway SAC	136.39	Sea cliffs	N/A	N/A	N/A
Luce Bay and Sands SAC	48759.28	Inlets and bays	Sandbanks	N/A	Great crested newt Triturus cristatus
Garias OAO		Coastal dunes	Mudflats and sandflats		
			Reefs		
Solway Firth SAC	43636.72	Sandbanks	Reefs	Sea lamprey	N/A
		Estuaries	Vegetation of stony banks	Petromyzon marinus	
		Mudflats and sandflats	Coastal dunes	River lamprey Lampetra fluviatilis	
		Salt marshes and salt meadows			
NORTHWEST ENGI	_AND				
Drigg Coast SAC	1397.44	Estuaries	Mudflats and sandflats	N/A	N/A
		Coastal dunes	Salt marshes and salt meadows		
			Coastal dunes		

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
Morecambe Bay SAC	61506.22	Estuaries Mudflats and sandflats	Sandbanks Coastal lagoons	Great crested newt Triturus cristatus	N/A
		Inlets and bays Vegetation of stony banks Salt marshes and	Reefs Coastal dunes		
		salt meadows			
		Coastal dunes			
Sefton Coast SAC	4563.97	Coastal dunes	Coastal dunes	Petalwort Petalophyllum ralfsii	Great crested newt Triturus cristatus
Dee Estuary SAC	15805.07	Mudflats and sandflats	Estuaries Sea cliffs	N/A	River lamprey Lampetra fluviatilis
		Salt marshes and salt meadows	Vegetation of drift		Sea lamprey Petromyzon marinus
			lines		Petalwort Petalophyllum ralfsii
River Dee and Bala Lake SAC	1308.93	Running freshwater	N/A	Atlantic salmon Salmo salar	Sea lamprey Petromyzon marinus
Daid Lake 6/16				Floating water- plantain <i>Luronium</i> natans	Brook lamprey Lampetra planeri
					River lamprey Lampetra fluviatilis
					Bullhead Cottus gobio
NORTH AND WEST	WALES				Otter Lutra lutra
NORTH AND WEST					
Great Orme's Head / Pen y	302.63	Heaths Grasslands	Sea cliffs	N/A	N/A
Gogarth SAC		0 " '		1 1/4	N1/A
Y Fenai a Bae Conwy/Menai Strait and Conwy Bay SAC	26482.67	Sandbanks Mudflats and sandflats	Inlets and bays Sea caves	N/A	N/A
Day OAC		Reefs			
Bae Cemlyn/Cemlyn Bay SAC	43.43	Coastal lagoons	Vegetation of stony banks	N/A	N/A
Glannau Ynys Gybi/Holy Island Coast SAC	464.27	Sea cliffs Heaths	Heaths	N/A	N/A
Glannau Môn: Cors heli/Anglesey Coast: Saltmarsh SAC	1058	Salt marshes and salt meadows	Estuaries Mudflats and sandflats	N/A	N/A

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
Y Twyni o Abermenai i Aberffraw/Aberme	1871.03	Coastal dunes	Standing freshwater	Petalwort Petalophyllum ralfsii	N/A
nai to Aberffraw Dunes SAC				Shore dock Rumex rupestris	
Clogwyni Pen Llyn/Seacliffs of Lleyn SAC	1048.4	Sea cliffs	N/A	N/A	N/A
Pen Llyn a`r Sarnau/Lleyn	146023.48	Sandbanks	Mudflats and sandflats	N/A	Bottlenose dolphin Tursiops truncatus
Peninsula and the Sarnau SAC		Estuaries Coastal lagoons	Salt marshes and salt meadows		Otter Lutra lutra
		Inlets and bays	Sea caves		Grey Seal Halichoerus grypus
		Reefs			
Morfa Harlech a Morfa Dyffryn SAC	1062.57	Coastal dunes	N/A	Petalwort Petalphyllum ralfsii	N/A
Cardigan Bay/Bae Ceredigion SAC	95860.36	Sandbanks	N/A	Bottlenose dolphin Tursiops truncatus	Sea lamprey Petromyson
ocicalgion ono		Reefs			marinus
		Sea caves			River lamprey Lampetra fluviatilis
					Grey seal Halichoerus grypus
SOUTH WALES					
Limestone Coast of South West	1594.53	Sea cliffs	Heaths	Greater horseshoe bat <i>Rhinolophus</i>	Petalwort Petalophyllum ralfsii
Wales/Arfordir		Dunes	Grasslands	ferrumequinum	
Calchfaen de Orllewin Cymru			Sea caves	Early gentian Gentianella anglica	
SAC			Caves		
Pembrokeshire Marine/Sir Benfro	138069.45	Estuaries	Sandbanks	Grey seal Halichoerus grypus	Sea lamprey Petromyson
Forol SAC		Inlets and bays	Mudflats and sandflats	Shore dock Rumex	marinus
		Reefs	Coastal lagoons	rupestris	River lamprey Lampetra fluviatilis
			Salt marshes and salt meadows		Otter Lutra lutra
			Sea caves		Allis shad Alosa alosa
					Twaite shad Alosa fallax
St David's/Ty Ddewi SAC	935.47	Sea cliffs	N/A	Floating water- plantain <i>Luronium</i>	N/A
Duewi SAC		Heaths		natans	

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
Carmarthen Bay and Estuaries/Bae Caerfyrddin ac	66101.16	Sandbanks Estuaries	N/A	Twaite shad Alosa fallax	Sea lamprey Petromyzon marinus
Aberoedd SAC		Mudflats and sandflats			River lamprey Lampetra fluviatilis
		Inlets and bays			Allis shad Alosa alosa
		Salt marshes and salt meadows			Otter Lutra lutra
Carmarthen Bay Dunes / Twyni Bae Caerfyrddin SAC	1206.32	Coastal dunes	N/A	Narrow-mouthed whorl snail <i>Vertigo</i> angustior	N/A
				Petalwort Petalophyllum ralfsii	
				Fen orchid <i>Liparis</i> loeselii	
Gower Commons/Tiroedd	1776.72	Heaths	N/A	Southern damselfly Coenagrion	N/A
Comin Gwyr		Grasslands		mercuriale	
				Marsh fritillary butterfly <i>Euphydryas aurinia</i>	
Crymlyn Bog / Cors Crymlyn SAC	299.45	Bogs	Forest	N/A	N/A
Kenfig/Cynffig	1191.67	Fens Coastal dunes	Salt marshes and	Petalwort	N/A
SAC	1101.07	Standing freshwater	salt meadows	Petalophyllum ralfsii	
				Fen orchid <i>Liparis</i> loeselii	
Dunraven Bay SAC	6.47	N/A	N/A	Shore dock Rumex rupestris	N/A
Severn Estuary/Môr	73715.4	Estuaries	Sandbanks	Sea lamprey Petromyzon	N/A
Hafren SAC		Mudflats and sandflats	Reefs	marinus	
		Salt marshes and salt meadows		River lamprey Lampetra fluviatilis	
-				Twaite shad Alosa fallax	

Table A.7 - SACs from North Devon coast to Kent and their Qualifying Features

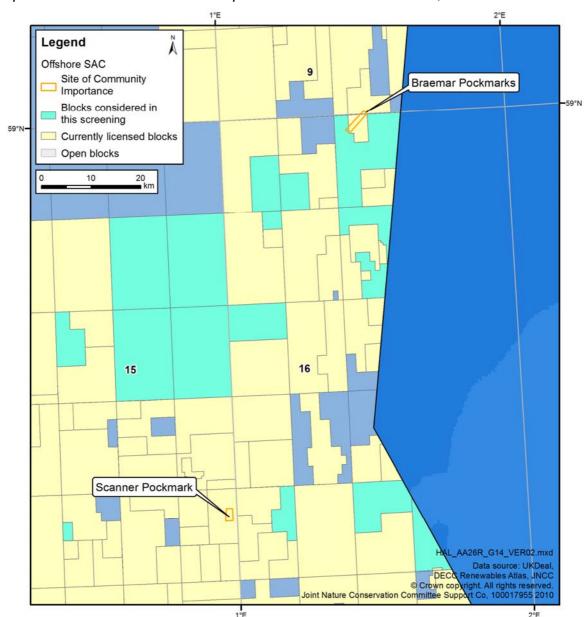
Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
CORNWALL AND D	DEVON				
Exmoor Heaths SAC	10705.87	Heaths	Sea cliffs	N/A	N/A
			Bogs		
			Fens		
			Forest		

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
Braunton Burrows SAC	1346.64	Coastal dunes	Mudflats and sandflats	Petalwort Petallophylum ralfsii	N/A
Lundy SAC	3064.53	Reefs	Sandbanks Sea caves	N/A	Grey seal Halichoerus grypus
Tintagel–Marsland- Clovelly Coast SAC	2429.84	Sea cliffs Forest	Heaths	N/A	N/A
Penhale Dunes SAC	621.34	Coastal dunes	Coastal dunes	Petalwort Petalophyllum ralfsii	N/A
				Shore dock Rumex rupestris	
				Early gentian Gentianella anglica	
Godrevy Head to St Agnes SAC	128.07	Heaths	N/A	Early gentian Gentianella anglica	N/A
Isles of Scilly Complex SAC	26850.95	Sandbanks Mudflats and sandflats Reefs	N/A	Shore dock Rumex rupestris	Grey seal Halichoerus grypus
The Lizard SAC	3257.11	Sea cliffs Standing freshwater	N/A	N/A	N/A
Fall and Talkand	0007.0	Heaths Sandbanks	Catuarias	Shore dock Rumex	NI/A
Fal and Telford SAC	6387.8	Mudflats and sandflats	Estuaries Reefs	rupestris	N/A
		Inlets and bays Salt marshes and			
Polruan to Polperro SAC	213.39	salt meadows Sea cliffs	Heaths	Shore dock Rumex rupestris	N/A
Plymouth Sound and Estuaries SAC	6402.03	Sandbanks Estuaries	Mudflats and sandflats	Shore dock Rumex rupestris	Allis shad <i>Alosa</i> alosa
		Inlets and bays Reefs			
		Salt marshes and salt meadows			
Blackstone Point SAC	7.38	N/A	N/A	Shore dock Rumex rupestris	N/A
South Devon Shore Dock SAC	341.01	Sea cliffs	N/A	Shore dock Rumex rupestris	N/A
South Hams SAC	129.53	Heath	Sea cliffs	Greater horseshoe bat Rhinolophus	N/A
	Gras	Grassland	Caves	ferrumiquinum	
			Forest		

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
Dawlish Warren SAC	58.84	Coastal dunes	Coastal dunes	Petalwort Petalophyllum ralfsii	N/A
Sidmouth to West Bay SAC	897.3	Sea cliffs Forest	Vegetation of drift lines	N/A	N/A
SOUTH COAST		1 Olest			
Chesil and the Fleet SAC	1631.63	Coastal lagoons	Salt marshes and salt meadows	N/A	N/A
		Vegetation of drift lines			
		Vegetation of stony banks			
		Salt marshes and salt meadows			
Isle of Portland to Studland Cliffs	1447.5	Sea cliffs	Vegetation of drift lines	Early gentian Gentianella anglica	N/A
SAC		Grassland		3	
St Albans Head to	287.22	Sea cliffs	N/A	Early gentian Gentianella anglica	Greater horseshoe bat Rhinolophus
Durlston Head SAC		Grassland		Gentianena anglica	ferrumiquinum
Dorset Heaths (Purbeck and	2221.94	Coastal dunes	Grassland	Southern damselfly Coenagrion	Great crested newt Triturus cristatus
Wareham and Studland Dunes		Standing freshwater	Fens	mercuriale	
SAC		Heath	Forest		
0.1.1.1.1.1	00.04	Bogs	NI/A	NI/A	NI/A
Solent and Isle of Wight Lagoons SAC	36.24	Coastal lagoons	N/A	N/A	N/A
South Wight	19862.71	Reefs	N/A	N/A	N/A
Maritime SAC		Sea cliffs			
		Sea caves			
Solent Maritime	11325.09	Estuaries	Sandbanks	N/A	Desmoulin's whorl snail Vertigo
SAC		Salt marshes and salt meadows	Mudflats and sandflats		moulinisiana
			Coastal lagoons		
			Vegetation of drift lines		
			Vegetation of stony banks		
			Salt marshes and salt meadows		
			Coastal dunes		
Isle of Wight Downs SAC	461.8	Sea cliffs	N/A	Early gentian Gentianella anglica	N/A
DOMIR SAC		Heaths			
		Grassland			

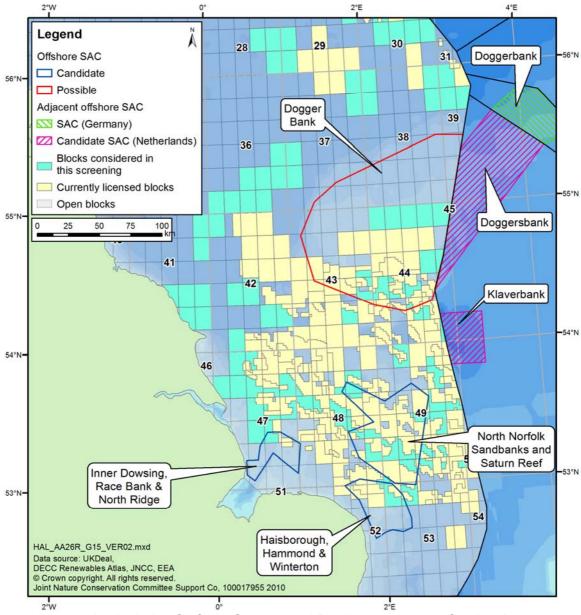
A5 Offshore Special Areas of Conservation

This section considers the relevant candidate, possible and draft SACs located in UK offshore waters – see Maps below and Table A.89. Candidate SACs have been submitted to the European Commission for consideration, but not yet formally adopted, unlike possible SACs which have yet to submitted to the EC and draft SACs which have yet to be formally approved by the UK government as sites for public consultation. Note Hatton Bank dSAC and NW Rockall Bank pSAC are remote from any Block applied for and are not mapped here.



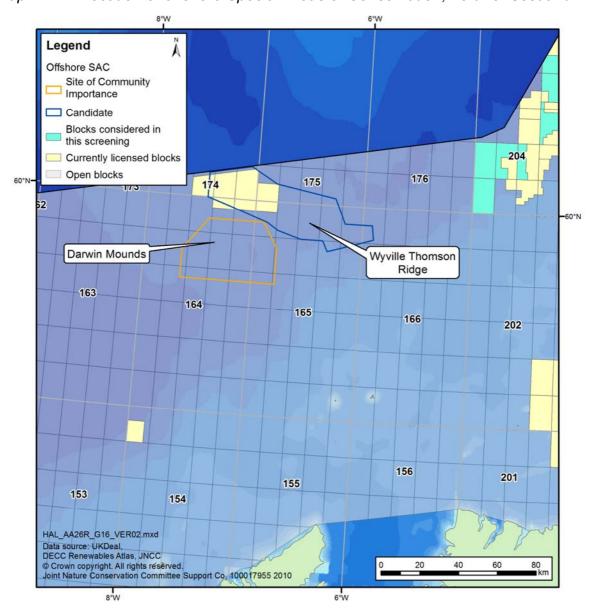
Map A.12 – Location of offshore Special Areas of Conservation, northern North Sea

⁹ Sites in the adjacent waters of other member states are also identified where relevant on maps and described in Section A7.

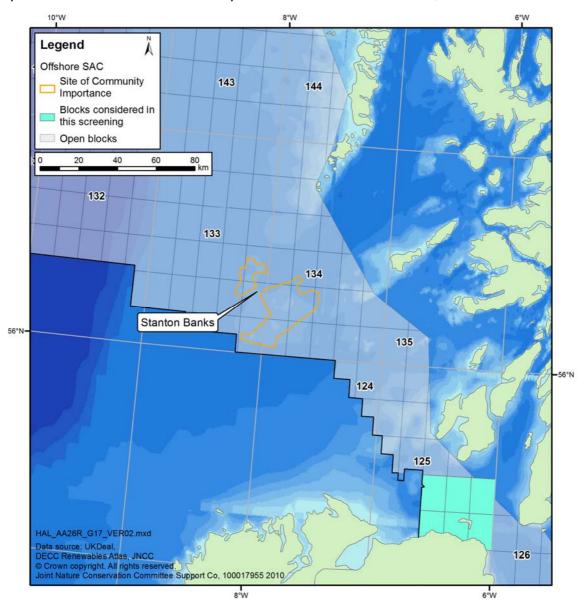


Map A.13 - Location of offshore Special Areas of Conservation, southern North Sea

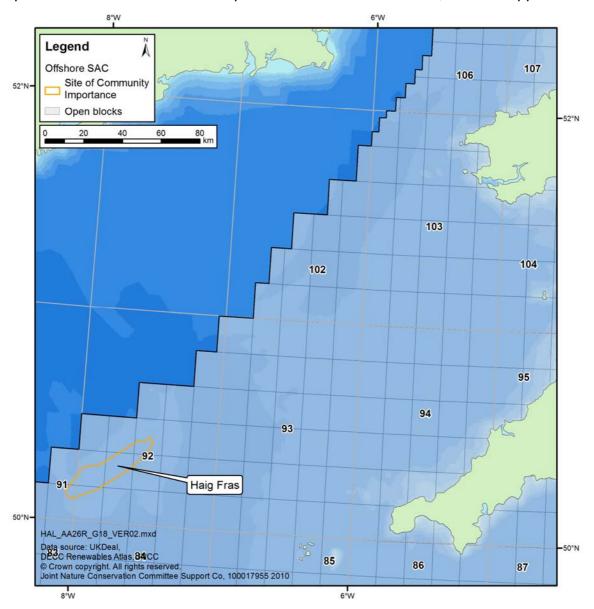
Note this map also includes SACs in German and Dutch waters – see Section A7



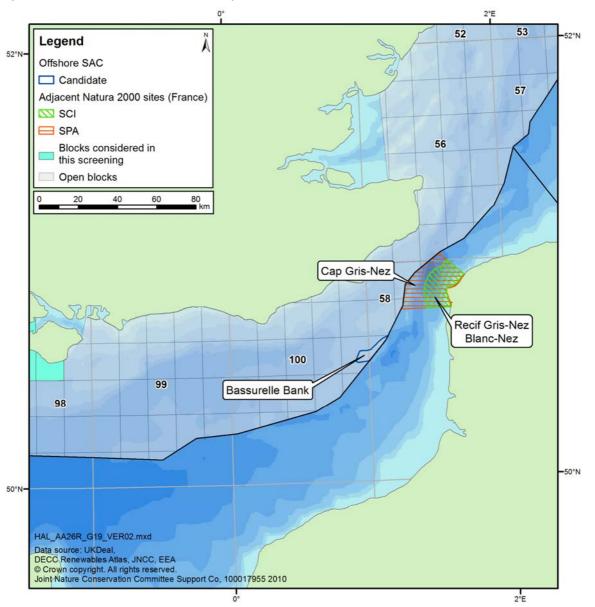
Map A.14 - Location of offshore Special Areas of Conservation, north of Scotland



Map A.15 - Location of offshore Special Areas of Conservation, west of Scotland



Map A.16 – Location of offshore Special Areas of Conservation, western approaches



Map A.17 – Location of offshore Special Areas of Conservation, in the Channel

Note: this map also shows the location of French Natura 2000 sites in the Straits of Dover – see Section A7.

Table A.8 – Offshore SACs and their Qualifying Features

Site Name	Area (ha)	Annex I Habitat	Annex II Species
Dogger Bank pSAC	1,233,884	Sandbanks	N/A
North Norfolk Sandbanks and Saturn Reef pSAC	360,341	Sandbanks Reefs (biogenic <i>Sabellaria spinulosa</i>)	N/A
Inner Dowsing, Race Bank and North Ridge cSAC	84,514	Sandbanks Reefs	N/A
Haisborough, Hammond and Winterton cSAC	146,759	Sandbanks Reefs	Grey seal Harbour porpoise
Margate and Long Sands cSAC	64,914	Sandbanks	N/A
Darwin Mounds SCI	137,726	Reefs	N/A
Wyville-Thomson Ridge cSAC	173,995	Reefs	Bottlenose dolphin <i>Tursiops truncatus</i> (non-qualifying)
Scanner Pockmark SCI	335	Submerged structures made by leaking gases	N/A
Braemar Pockmarks SCI	518	Submerged structures made by leaking gases	N/A
North-West Rockall Bank cSAC (beyond scope of maps)	436,526	Reefs (biogenic Lophelia pertusa)	N/A
Hatton Bank dSAC (beyond scope of maps)	1,569,433	Reefs	N/A
Stanton Banks SCI	81,727	Reefs	N/A
Lune Deep pSAC	916.72	Reefs	N/A
Haig Fras SCI	48,103	Reefs	N/A
Lands End and Cape Bank cSAC	30,172	Reefs	N/A
Lizard Point cSAC	13,988	Reefs	N/A
Prawle Point to Plymouth Sound & Eddystone cSAC	31,524.40	Reefs	N/A
Lyme Bay and Torbay cSAC	31,248	Reefs Sea caves	N/A
Studland to Portland dSAC	33,177.41	Reefs	N/A
Bassurelle Sandbank cSAC	6,709	Sandbanks	N/A

A7 Riverine and Freshwater Special Areas of Conservation

The following riverine and freshwater SACs designated for migratory fish and/or the freshwater pearl mussel are also considered.

Map A.18 – Location of riverine and freshwater SACs

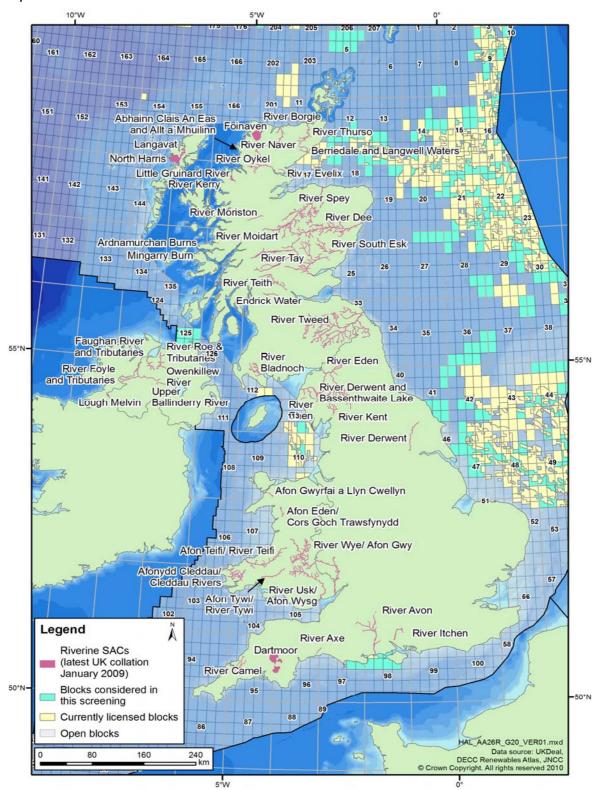


Table A.9 – Relevant riverine and freshwater SACs designated for migratory fish and/or the freshwater pearl mussel

Site Name	Freshwater pearl mussel Margaritifera margaritifera	Migratory fish ¹
River Naver	✓	AS
Foinaven	✓	-
River Borgie	✓	AS
River Thurso		AS
River Evelix	✓	-
River Oykel	✓	AS
River Spey	✓	AS, SL
River Dee	✓	AS
River South Esk	✓	AS
River Tay		AS, RL, SL
River Teith		AS, RL, SL
River Tweed		AS, RL, SL
North Harris	✓	AS
Langavat		AS
Little Gruinard River		AS
River Kerry	✓	-
River Moidart	✓	-
River Moriston	✓	-
Abhainn Clais An Eas and Allt a`Mhuilinn	✓	-
Ardnamurchan Burns	✓	-
Mingarry Burn	✓	-
Berriedale and Langwell Waters		AS
Endrick Water		RL, AS
River Bladnoch		AS
Lough Melvin		AS
Owenkillew River	✓	AS
Upper Ballinderry River	✓	-
River Faughan and Tributaries		AS
River Foyle and Tributaries		AS
River Roe and Tributaries		AS
River Kent	✓	-
River Eden		SL, RL, AS
River Ehen	✓	AS
Afon Gwyrfai a Llyn Cwellyn		AS
Afon Eden - Cors Goch Trawsfynydd	✓	AS
Afonydd Cleddau / Cleddau Rivers		RL
Afon Teifi / River Teifi		SL, RL, AS
Afon Twyi / River Tywi		SL, RL

Site Name	Freshwater pearl mussel Margaritifera margaritifera	Migratory fish ¹
River Usk / Afon Wysg		SL, RL, AS
River Wye / Afon Gwy		SL, RL, AS
River Derwent & Bassenthwaite Lake		SL, RL, AS
River Derwent		SL, RL
River Camel		AS
Dartmoor		AS
River Axe		SL
River Avon		SL, AS
River Itchen		AS

¹ SL - Sea lamprey Petromyzon marinus, RL - River lamprey Lampetra fluviatilis, AS - Atlantic salmon Salmo salar

A8 Sites in the adjacent waters of other member states

See also Maps A13 and A17.

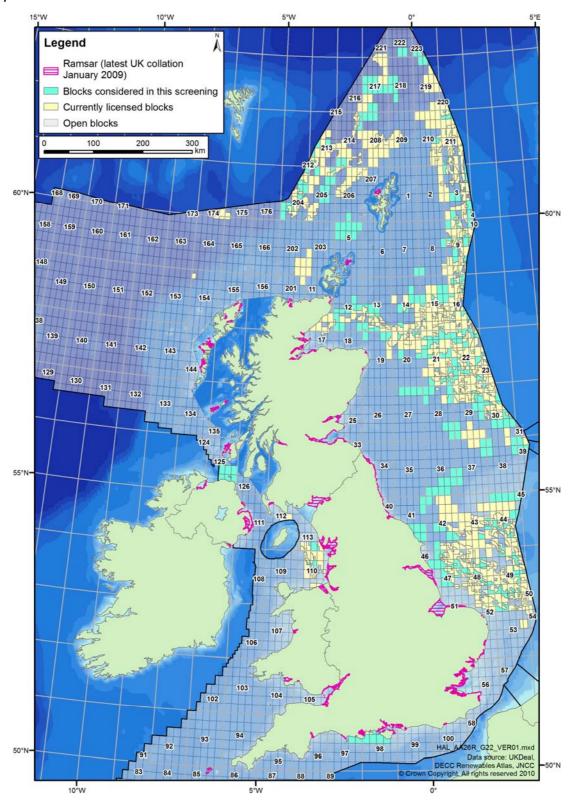
Table A.10 – Sites in the adjacent waters of other member states

Site Name	Area (ha)	Annex I Habitat	Annex II Species
Doggerbank	169,895	Sandbanks	Harbour porpoise Phocoena phocoena
SAC (Germany)			Harbour seal Phoca vitulina
Doggersbank	417,750	Sandbanks	Harbour porpoise Phocoena phocoena
cSAC (Netherlands)			Harbour seal Phoca vitulina
			Grey seal Halichoerus grypus
Klaverbank	123,733	Reefs	Harbour porpoise <i>Phocoena phocoena</i>
cSAC (Netherlands)			Harbour seal <i>Phoca vitulina</i>
			Grey seal Halichoerus grypus
Recifs Gris-Nez Blan-Nez – SCI	29,156	Sandbanks, Reefs	Harbour porpoise Phocoena phocoena
(France)			Grey seal Halichoerus grypus
			Harbour seal <i>Phoca vitulina</i>
Can Cia Na-	50.004	An outonaign of the area of eviat	ing SDA abute the modian line. The extension
Cap-Gis-Nez – SPA (France)	56,224	An extension of the area of existing SPA abuts the median line. The extension covers over 480 km ² of surface in depths up to 69m.	
		Migrating and wintering bird com	nmunities. Breeding fulmars, herring gulls, kittiwakes
		Also breeding Greater black-bac	ked gull, lesser black backed gull, peregrine falcon

In addition, there are several Natura 2000 sites along the Irish Coast 25km plus to the west of the UK/Ireland median line, including Inishtrahull SAC and SPA, North Inishowen Coast SAC, Trawbreaga Bay SPA and Lough Foyle SPA.

APPENDIX B - RAMSAR SITES

Map B.1 – Location of coastal Ramsar sites



With the exception of Pevensey Levels, the coastal Ramsar sites are also SPA.s and/or SACs (although site boundaries are not always strictly coincident and a Ramsar site may comprise one or more Natura 2000 sites), see tabulation below.

The Pevensey Levels Ramsar site is mainly terrestrial but includes some shingle and intertidal mud and sand.

Table B.1 – Coastal Ramsar sites and corresponding Natura 2000 site

Ramsar Name	SPA Name	SAC Name
Alde-Ore Estuary	Alde-Ore Estuary	Alde, Ore and Butley Estuaries
		Orfordness – Shingle Street
Avon Valley	Avon Valley	River Avon
Belfast Lough	Belfast Lough	
	Belfast Lough Open Water	
	Outer Ards	
Benfleet and Southend Marshes	Benfleet and Southend Marshes	Essex Estuaries
	Foulness (Mid-Essex Coast Phase 5)	
Blackwater Estuary (Mid-Essex Coast Phase 4)	Blackwater Estuary (Mid- Essex Coast Phase 4)	Essex Estuaries
	Dengie (Mid-Essex Coast Phase 1)	
Breydon Water	Breydon Water	
Bridgend Flats, Islay	Bridgend Flats, Islay	
Broadland	Broadland	The Broads
Burry Inlet	Bae Caerfyrddin/ Carmarthen Bay	Carmarthen Bay and Estuaries/ Bae Caerfyrddin ac Aberoedd
	Burry Inlet	Carmarthen Bay Dunes/ Twyni Bae Caerfyrddin
Caithness and Sutherland Peatlands	Caithness and Sutherland Peatlands	
Carlingford Lough	Carlingford Lough	
Chesil Beach and The Fleet	Chesil Beach and The Fleet	Chesil and the Fleet
Chichester and Langstone Harbours	Chichester and Langstone Harbours	Solent and Isle of Wight Lagoons
		Solent Maritime
Coll	Coll	
Colne Estuary (Mid-Essex Coast Phase 2)	Colne Estuary (Mid-Essex Coast Phase 2)	Essex Estuaries
Cors Fochno and Dyfi	Dyfi Estuary / Aber Dyfi	Pen Llyn a`r Sarnau/ Lleyn Peninsula and the Sarnau
Cromarty Firth	Cromarty Firth	Conon Islands

Ramsar Name	SPA Name	SAC Name
		Moray Firth
Crouch and Roach Estuaries (Mid-Essex Coast Phase 3)	Crouch and Roach Estuaries (Mid-Essex Coast Phase 3)	Essex Estuaries
	Dengie (Mid-Essex Coast Phase 1)	
Crymlyn Bog		Crymlyn Bog/ Cors Crymlyn
Deben Estuary	Deben Estuary	
Dengie (Mid-Essex Coast Phase 1)	Blackwater Estuary (Mid- Essex Coast Phase 4)	Essex Estuaries
	Crouch and Roach Estuaries (Mid-Essex Coast Phase 3)	
	Dengie (Mid-Essex Coast Phase 1)	
Dornoch Firth and Loch Fleet	Dornoch Firth and Loch Fleet	Dornoch Firth and Morrich More
		Moray Firth
		Mound Alderwoods
Dorset Heathlands	Poole Harbour	Dorset Heaths (Purbeck and Wareham) and Studland Dunes
Duddon Estuary	Duddon Estuary	Morecambe Bay
	Morecambe Bay	
East Sanday Coast	East Sanday Coast	Sanday
Eilean na Muice Duibhe (Duich Moss), Islay	Eilean na Muice Duibhe (Duich Moss), Islay	
Exe Estuary	Exe Estuary	Dawlish Warren
Firth of Forth	Firth of Forth	
Firth of Tay & Eden Estuary	Firth of Tay & Eden Estuary	Barry Links
		Firth of Tay & Eden Estuary
Foulness (Mid-Essex Coast Phase 5)	Benfleet and Southend Marshes	Essex Estuaries
	Foulness (Mid-Essex Coast Phase 5)	
Gibraltar Point	Gibraltar Point	Saltfleetby–Theddlethorpe Dunes and Gibraltar Point
	The Wash	The Wash and North Norfolk Coast
Gruinart Flats, Islay	Gruinart Flats, Islay	Rinns of Islay
	Rinns of Islay	
Hamford Water	Hamford Water	
Humber Estuary	Humber Estuary	Humber Estuary
		Saltfleetby–Theddlethorpe Dunes and Gibraltar Point

Ramsar Name	SPA Name	SAC Name
Inner Clyde Estuary	Inner Clyde Estuary	
Inner Moray Firth	Inner Moray Firth	Moray Firth
Isles of Scilly	Isles of Scilly	Isles of Scilly Complex
Killough Bay	Killough Bay	
Kintyre Goose Roosts	Kintyre Goose Roosts	
Larne Lough	Larne Lough	
Lewis Peatlands	Lewis Peatlands	Langavat
Lindisfarne	Lindisfarne	Berwickshire and North Northumberland Coast
	Northumbria Coast	North Northumberland Dunes
Loch an Duin		Loch nam Madadh
Loch Eye	Loch Eye	
Loch of Inch and Torrs Warren	Loch of Inch and Torrs Warren	Luce Bay and Sands
Loch of Strathbeg	Loch of Strathbeg	
Lough Foyle		Faughan River and Tributaries Magilligan
Medway Estuary and Marshes	Medway Estuary and Marshes	
	Thames Estuary and Marshes	
Mersey Estuary	Mersey Estuary	
Minsmere–Walberswick	Minsmere–Walberswick	Minsmere to Walberswick Heaths and Marshes
Montrose Basin	Montrose Basin	
Moray and Nairn Coast	Moray and Nairn Coast	Culbin Bar
		Lower River Spey – Spey Bay
		Moray Firth
		River Spey
Morecambe Bay	Duddon Estuary	Morecambe Bay
	Morecambe Bay	
North Norfolk Coast	North Norfolk Coast	North Norfolk Coast
	The Wash	The Wash and North Norfolk Coast
North Uist Machair and Islands	North Uist Machair and Islands	North Uist Machair
Northumbria Coast	Northumbria Coast	Berwickshire and North Northumberland Coast
	Teesmouth and Cleveland Coast	Durham Coast
		North Northumberland Dunes

Ramsar Name	SPA Name	SAC Name
Outer Ards	Belfast Lough	Strangford Lough
	Outer Ards	
	Strangford Lough	
Pagham Harbour	Pagham Harbour	
Pevensey Levels		
Poole Harbour	Poole Harbour	Dorset Heaths (Purbeck and Wareham) and Studland Dunes
Portsmouth Harbour	Portsmouth Harbour	
Ribble and Alt Estuaries	Ribble and Alt Estuaries	Sefton Coast
Rinns of Islay	Rinns of Islay	Glac na Criche
		Rinns of Islay
Ronas Hill – North Roe and Tingon	Ronas Hill – North Roe and Tingon	Ronas Hill – North Roe
		Tingon
Severn Estuary	Severn Estuary	River Usk/ Afon Wysg
		River Wye/ Afon Gwy
		Severn Estuary/ Môr Hafren
Sléibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast)	Sléibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast)	Tiree Machair
Solent and Southampton Water	Solent and Southampton Water	Solent and Isle of Wight Lagoons
		Solent Maritime
		South Wight Maritime
South Uist Machair and Lochs	South Uist Machair and Lochs	South Uist Machair
Stour and Orwell Estuaries	Stour and Orwell Estuaries	
Strangford Lough	Outer Ards	
	Strangford Lough	Strangford Lough
Teesmouth and Cleveland Coast	Northumbria Coast	
	Teesmouth and Cleveland Coast	Durham Coast
Thames Estuary and Marshes	Medway Estuary and Marshes	
	Thames Estuary and Marshes	
Thanet Coast and Sandwich Bay	Thanet Coast and Sandwich Bay	Sandwich Bay
		Thanet Coast
The Dee Estuary	The Dee Estuary	Dee Estuary/ Aber Dyfrdwy
The Swale	The Swale	

Ramsar Name	SPA Name	SAC Name
The Wash	Gibraltar Point	
	North Norfolk Coast	
	The Wash	The Wash and North Norfolk Coast
Upper Solway Flats and Marshes	Upper Solway Flats and Marshes	River Eden
		Solway Firth
Ythan Estuary and Meikle Loch	Ythan Estuary, Sands of Forvie and Meikle Loch	Sands of Forvie