Offshore Oil & Gas Licensing

25th Seaward Round

Block Screening Assessment

November 2008

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1 INTRODUCTION

On 20th February 2008, the Secretary of State for Business, Enterprise and Regulatory Reform (BERR) invited applications for licences in the 25th Seaward Licensing Round. Applications for Traditional Seaward, Frontier Seaward and Promote Licences were invited. Applications for licences have been made for a number of Blocks in the 25th Round (see Section 2, Figure 1).

The draft plan to hold a 25th Seaward Licensing Round had previously been subject to a Strategic Environmental Assessment (SEA), the seventh in a series undertaken by the Department (now the Department of Energy and Climate Change, DECC) since 1999. The SEA Environmental Report includes *inter alia* detailed consideration of the status of the natural environment and potential effects of the range of activities which could follow licensing, including 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 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 gives the Secretary of State for Business, Enterprise and Regulatory Reform, 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 has 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 has undertaken 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 test set out 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 site's conservation objectives, it must be considered likely to have a significant effect on that site

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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, 2005) and English Nature Research Reports, No 704 (2006).

As part of the process, DECC consulted the Joint Nature Conservation Committee, Natural England, Scottish Natural Heritage and the Countryside Council for Wales on a draft of this screening assessment.

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¹ EC 2000

2 BLOCKS APPLIED FOR

Offshore Blocks for which applications have been made during the 25th Seaward Licensing Round and considered in this screening assessment are listed below and shown on Figure 1 overleaf. Note, the majority of these Blocks have been licensed previously.

0/451	4.4.40	04/07/	00/401	4.4/00	50/4	000/47	044/401
2/15b	14/13	21/27b	29/10b	44/28a	53/4g	208/17	211/12b
2/10a	14/25b	21/29c	30/29	44/29c	53/3e	208/21	211/16b
2/20	14/30b	21/28b	30/1f	44/26c	54/1a	208/22	211/24c
3/11a	15/7	21/20e	30/7b	44/8	54/6	208/23	211/27d
3/16	15/8	21/24c	30/18b	44/11b	110/2d	208/24	211/27e
3/22	15/12a	21/12b	30/18c	44/12b	112/13	208/25	211/28b
3/26	15/21e	21/3f	30/12c	44/16d	112/14	208/27	211/13c
3/23b	15/26a	21/11b	30/11c	44/19f	113/28b	208/28	213/8
3/8d	15/20d	22/24e	35/21	47/5b	164/4	208/12	213/13
3/3b	15/23e	22/28b	38/4	47/4d	164/5	208/13b	213/12
8/25b	15/30b	22/30d	39/2b	48/10c	165/1	208/18b	213/18
8/30	15/18c	22/26b	42/15	48/23a	174/30	208/19b	213/24b
9/27b	15/19c	22/27b	42/10	48/2b	174/29	208/20b	214/21b
9/4a	16/1b	22/19c	42/30b	48/5	174/28	209/16	214/17
9/6	16/12b	22/9b	42/27d	48/1c	175/26	209/17	214/22
9/7	16/6b	22/1a	42/27e	48/8c	201/5	210/20e	219/9
9/8b	16/2c	22/29c	42/29c	48/16a	202/24	210/1	219/10
9/10c	16/13b	23/26c	42/30c	48/3b	202/25	210/2	219/13
9/9d	19/15	23/11b	43/13b	48/29b	202/29	210/3	219/14
9/12b	19/10b	26/5	43/14a	48/22	202/30	210/4	219/15
9/21	20/10	26/10	43/18	48/7e	203/16	210/5	219/18
9/2c	20/5b	27/1	43/19b	48/7f	203/21	210/8	219/19
9/26	20/3f	29/4b	43/20d	49/15b	203/26	210/9	219/20
12/16a	20/7	29/3b	43/17	49/3	204/18	210/10	219/29
12/23b	20/8	29/6a	43/26b	49/7	205/3	210/19b	219/30
12/22b	20/30	29/8c	43/27b	49/29c	205/4	210/23	220/16
12/17c	20/9b	29/23	43/28	49/30b	205/6	210/28	220/26
13/27e	20/15	29/30	43/29	49/13	205/7	210/24c	220/27
13/17	21/20c	29/2e	43/30b	49/8b	205/11	210/25b	
13/22b	21/6b	29/2f	43/23	50/26b	206/11b	210/29b	
13/29c	21/13a	29/5e	43/22b	53/14	206/16	210/30b	
13/23a	21/21	29/2g	43/15c	53/5c	206/17	211/6	
14/28c	21/22	29/7b	44/7	53/4c	206/12b	211/7b	
14/29c	21/24b	29/1c	44/9	53/10	206/5b	211/8b	
14/26b	21/26	29/9c	44/26b	53/15	207/1b	211/11b	

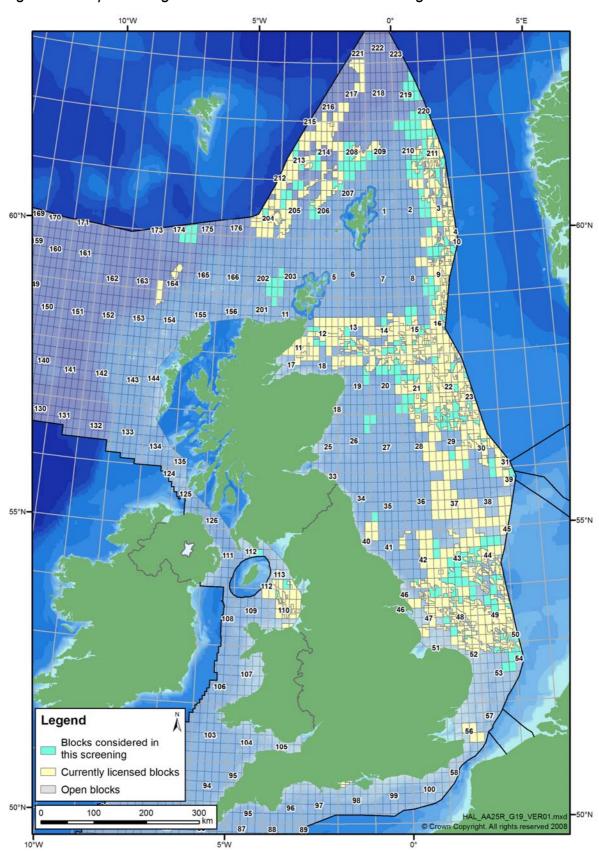


Figure 1 - Map showing Blocks considered in this screening

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 gives the Secretary of State for Business, Enterprise and Regulatory Reform, 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 four Terms rather than three. A Frontier Production Licence has a longer exploration phase (six years as opposed to four) with the objective of allowing companies to screen larger areas, during a three year Initial Term so they can look for a wider range of prospects. At the end of the Initial Term, the Licensee must relinquish 75% of the licensed acreage. The Second Term lasts three years at the end of which (i.e. when the Licence is six years old), 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 this sense, the end of a Frontier Licence's Second Term corresponds to the end of a Traditional Licence's Initial Term.
- 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.

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The terms and conditions of the Licences to be granted in this Licensing Round are contained in the Petroleum Licensing (Production) (Seaward Areas) Regulations 2008 (SI 2008/225).

It is noted that the environmental management capacity and track record of applicants is explicitly examined by DECC, by way of 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 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. Although the approach in this assessment has been to take the proposed activity for a given Block as being the maximum of any application for that Block, and assume that all activity takes place as a result of the structuring of licences, it is possible to foresee what activity may potentially occur in the next four years, as this information is contained within the licence applications. On past experience, less activity actually takes place than is bid at the licence application stage. Activity after the initial four years is much harder to predict, as this depends on the results of the initial phase, which is, by definition, exploratory. A proportion of Blocks awarded will be relinquished without any field activities occurring.

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 conditional 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 Licence holders) will probably only result in an actual well being drilled in less than 50% of the cases.

It is made clear in the application guidance that a Production Licence does not grant carte blanche 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 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.

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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.

Experience from previous licensing rounds indicate that it is typical for less than half the wells drilled to 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). Potential developments are then considered against current assets, current plans and a list of other discoveries. 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 which may ultimately result from the 25th Round Licensing is therefore uncertain. For the purposes of the screening assessment, the implications of development activities were considered in a generic way for all the Blocks applied for.

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 list of sites considered in this screening includes (see also Figures 2 and 3):

- Coastal and marine Natura 2000 sites (SPAs and SACs) along the east coast of Great Britain from Shetland to Kent
- Coastal and marine Natura 2000 sites along the west coast from Cape Wrath to Pembrokeshire
- Coastal and marine Natura 2000 sites along the coast of Northern Ireland
- Offshore Natura 2000 sites in the Southern North Sea
- Offshore Natura 2000 sites in the Central North Sea
- Offshore Natura 2000 sites to the north and west of the Hebrides

The sites, together with their features of interest, are summarised in Tables A.1 to A.5 in Appendix A together with more detailed location maps (Maps A.1 to A.12).

In addition, consideration was given to riverine SACs designated for migratory fish and/or the freshwater pearl mussel (Table A.6).

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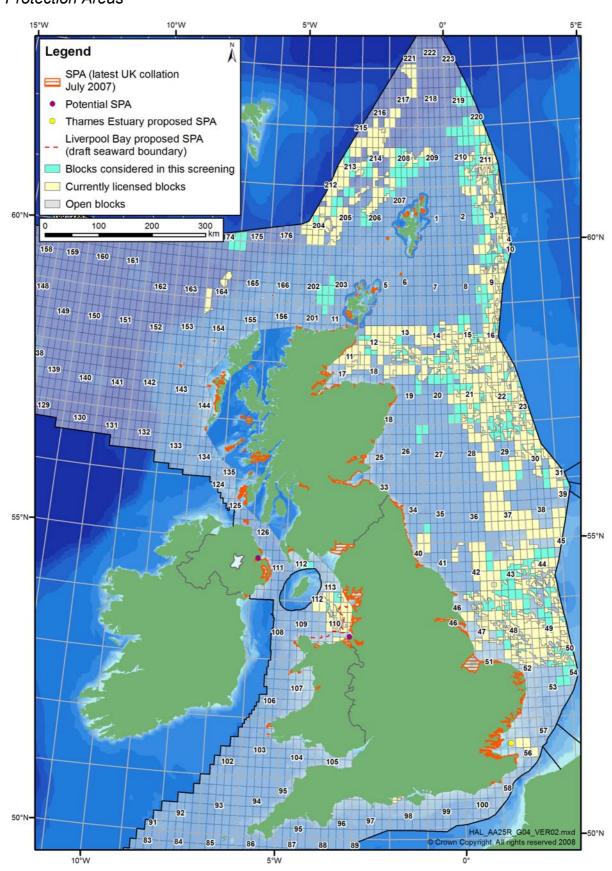


Figure 2 - Map showing Blocks considered in this screening and relevant Special Protection Areas

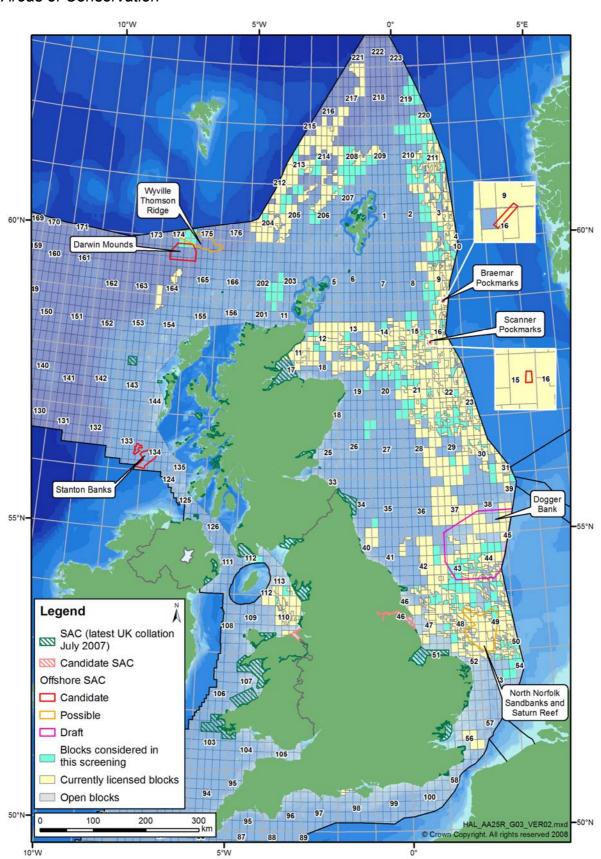


Figure 3 - Map showing Blocks considered in this screening and relevant Special Areas of Conservation

5 SCREENING ASSESSMENT

This screening assesses the potential implications for Natura 2000 sites of the potential award of licences for UKCS Blocks in the 25th 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 25th 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 if required with appropriate consultation.

Following an initial consideration of the above sources, this screening assessment has been restricted to those sources of impact judged to have the potential to affect 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 25th Round licensing. However, the potential risks of oil spills are mitigated in the southern North Sea and the Blocks applied for in the eastern Irish Sea by the nature of the hydrocarbons present in those areas (natural gas), or in the case of the majority of Blocks being applied for where prospectivity is for crude oil, by the distance

offshore which 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 proximity to the coast and semi-enclosed nature of the Moray Firth, it is recommended that the 4 part Blocks applied for in the Moray Firth (Quadrant 12, see Figure 1) will be subject to further screening and an AA will be carried if required prior to any decision on whether to grant licences.

Several Blocks have been applied for to the immediate west of Orkney in Quadrants 201, 202 and 203 that have never previously been licensed and are adjacent to a range of Natura 2000 sites (see Maps A.1 and A.5). As there is not an evidence base of past oil spill modelling and contingency planning for this area, 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.

The eastern boundaries of several Blocks applied for to the west of Shetland are within 40km of the coast (see Figure 1). There has been significant assessment undertaken of the behaviour of spills and contingency planning in this area from previous exploration drilling and oilfield developments to the west of Shetland. Based on this, the presence of the North Atlantic Drift/shelf edge current strongly flowing to the northeast, and legal requirements for spill contingency planning, it is concluded that there is no likelihood of significant effects on the Natura 2000 sites arising from oil spills as a result of the award of licences for Blocks in those areas.

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. None of the Blocks are within or close to sites designated for birds potentially vulnerable to physical disturbance such as common scoter and read throated diver. Consequently this screening assessment is focussed on the offshore sites listed in Table A.5. 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. 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.

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 North Norfolk Sandbanks and Dogger Bank potential SACs

The North Norfolk Sandbanks pSAC and Dogger Bank dSAC 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 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 25th 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, particularly within the Dogger Bank dSAC (see Figure A.10) 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.

5.2.2 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

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features. The closest Blocks applied for in the 25th Licensing Round are 10 or more kilometres distant from the sites (see Map A.9) and significant effects are not predicted; no further assessment is therefore needed in respect of the Blocks in the vicinity.

5.2.3 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.

Based on the number of Blocks applied for, and the potential for cumulative effects, particularly within the Wyville Thomson Ridge pSAC (see Figure A.11), 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.

5.2.4 Coastal Sites impinged on by Blocks applied for

One Block applied for in the 25th Round impinges on the boundaries of a coastal Natura 2000 site (see Map A.6) and it is concluded that this, and the adjacent Block, will be subject to further screening and an AA will be carried out if required prior to any decision whether to grant licences.

5.2.5 Coastal Sites not impinged on by Blocks applied for

The majority of Blocks applied for in the 25th 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 25th 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.

5.3 Screening for Natura 2000 sites vulnerable to acoustic disturbance

The majority of Blocks applied for in the 25th Licensing Round are several tens of kilometres offshore and remote from Natura 2000 sites designated for birds (see Figure 2) and for marine mammals and fish (see Figure 3). 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 presents a risk to the viability of populations in UK waters and specifically not within designated Natura

2000 sites. 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 effort, no causal link, or reasonable concern in relation to population viability has been found.

A number of simple analyses on common noise sources have shown that seismic and other oilfield noise is well within the 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.

It is concluded that noise originating from activities in the great majority of Blocks applied for in the 25th Licence Round would not result in significant effects on Natura 2000 sites with birds, marine mammals and fish as qualifying features. 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 exacerbate the impact 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 25th Round Blocks. However, there is certainty that effective regulatory mechanisms are 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 southern North Sea and Morecambe Bay which are near potential sites of offshore wind farm construction and for which in-combination effects can be conceived.

5.5 Conclusion

This screening assessment is based on the Blocks applied for in the 25th 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,

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licensing would not have the potential to cause significant effects on Natura 2000 site(s). However, a number of Blocks (listed overleaf) 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

12/16a	174/29	203/16	43/19b	44/8	112/14
12/17c	174/30	203/21	43/20d	44/9	113/28b
12/22b	175/26	203/26	43/23	48/29b	42/27d
12/23b	201/5	43/13b	44/11b	48/8c	42/27e
164/4	202/24	43/14a	44/12b	49/13	48/22
164/5	202/25	43/15c	44/16d	49/7	48/23
165/1	202/29	43/17	44/19f	49/8b	
174/28	202/30	43/18	44/7	112/13	

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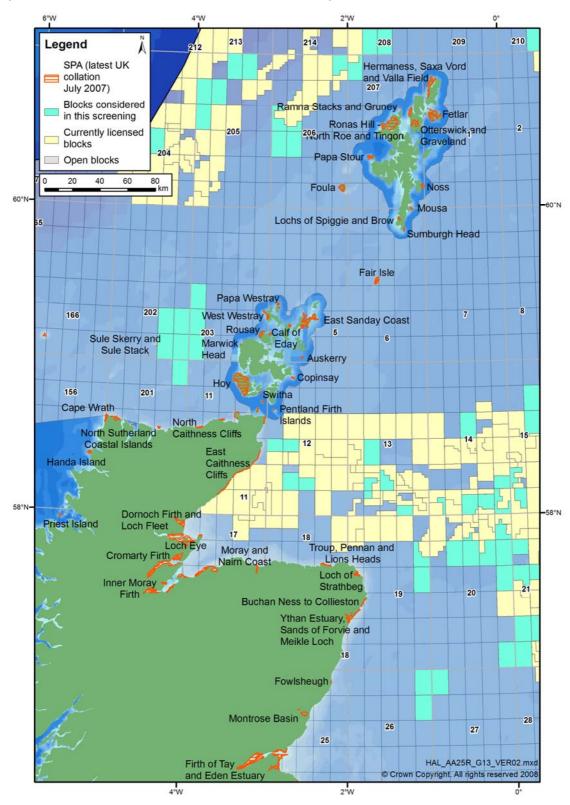
APPENDIX A - THE DESIGNATED SITES

A1 Introduction

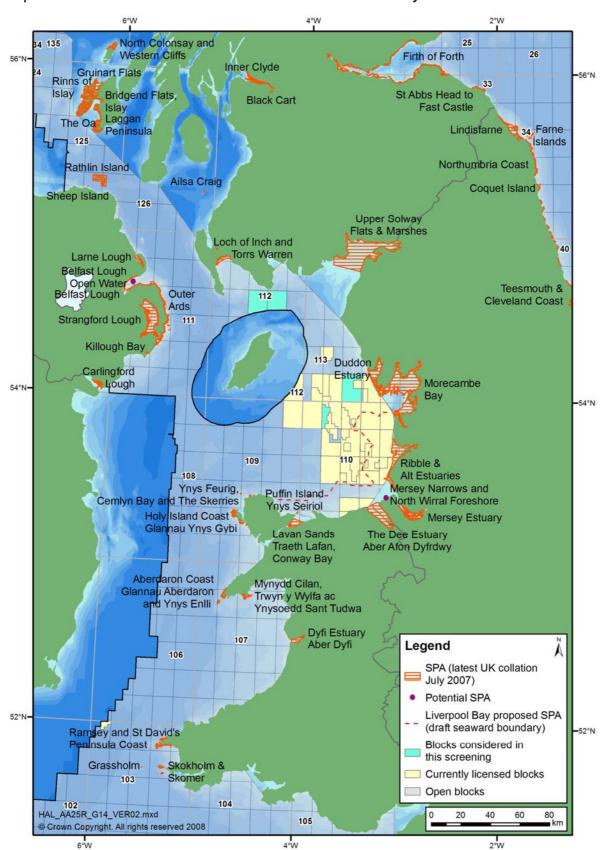
The following maps and tables show the locations of potentially relevant European sites and describe their qualifying features.

A2 Coastal and Marine Special Protection Areas²

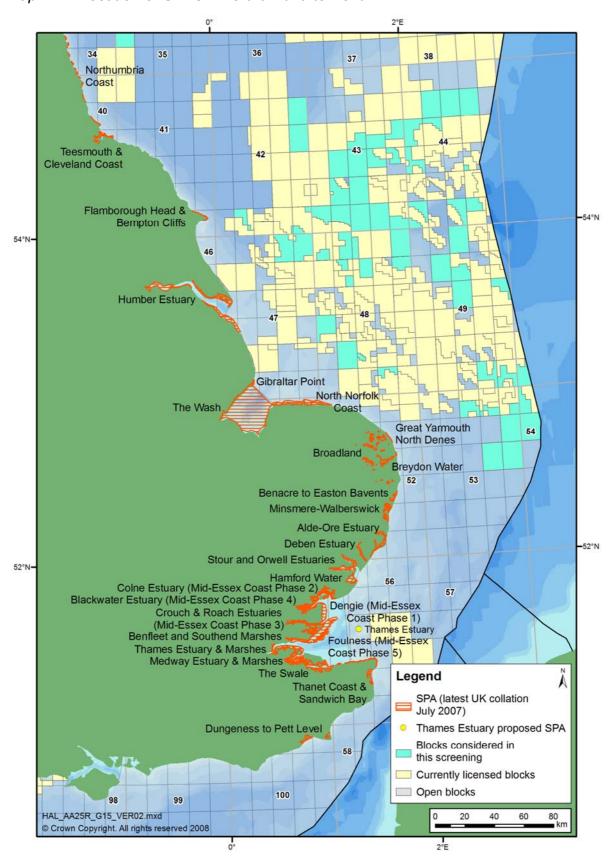
Map A.1 - Location of SPAs - Shetland to the Tay



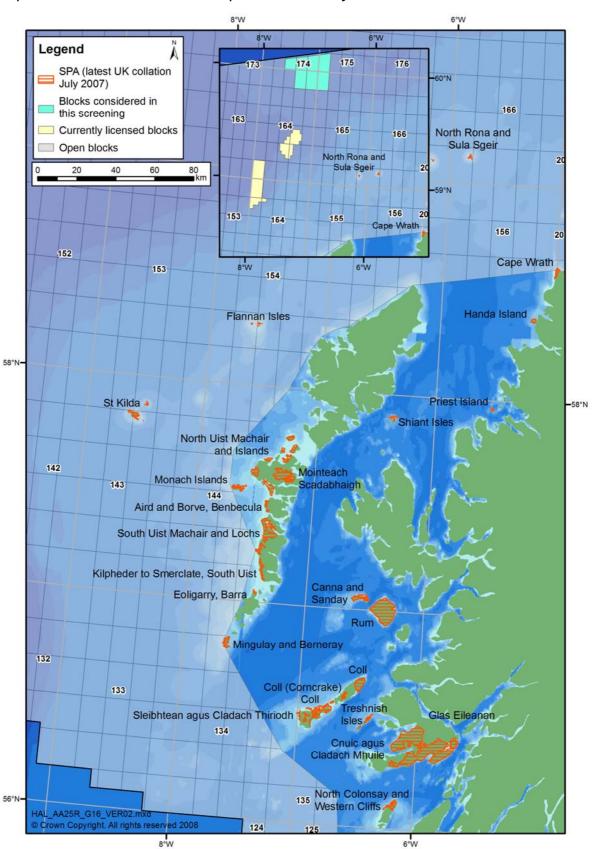
² NB: The tables also contain a number of inland SPAs with breeding red throated divers.



Map A.1 - Location of SPAs - Forth to Teesmouth and Islay to Pembrokeshire



Map A.2 - Location of SPAs - Northumbria to Kent



Map A.4 - Location of SPAs - Cape Wrath to Islay

Table A.1 - East Coast SPAs from Shetland to Kent and their Qualifying Features

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ³
SHETLAND				
Sumburgh Head SPA	39.04	Breeding: Arctic tern <i>Sterna</i> <i>paradisaea</i>	N/A	Breeding: Seabirds
Lochs of Spiggie and Brow SPA	141.48	Over winter: Whooper swan Cygnus cygnus	N/A	N/A
Foula SPA	1323.31	Breeding: Arctic tern <i>Sterna</i> <i>paradisaea</i>	Breeding: Great Skua Catharacta skua	Breeding: Seabirds
		Leach's Storm-petrel Oceanodroma leucorhoa	Guillemot <i>Uria aalge</i> Puffin <i>Fratercula</i>	
		Red-throated diver Gavia stellata	arctica Shag Phalacrocorax aristotelis	
Papa Stour SPA	569.03	Breeding: Arctic tern <i>Sterna</i> <i>paradisaea</i>	Breeding: Ringed plover Charadrius hiaticula	N/A
Ronas Hill-North Roe and Tingon SPA	5470.2	Breeding: Merlin <i>Falco</i> columbarius	Breeding: Great skua Catharacta skua	N/A
		Red-throated diver Gavia stellata		
Ramna Stacks and Gruney SPA	11.59	Breeding: Leach's storm-petrel Oceanodroma leucorhoa	N/A	N/A
Otterswick and Graveland SPA	2241.41	Breeding: Red-throated diver <i>Gavia stellata</i>	N/A	N/A
Hermaness, Saxa Vord and Valla Field SPA	1037.3	Breeding: Red-throated diver <i>Gavia stellata</i>	Breeding: Gannet <i>Morus</i> bassanus	Breeding: Seabirds
			Great skua Catharacta skua	
			Puffin <i>Fratercula</i> arctica	
Fetlar SPA	2594.91	Breeding: Arctic tern <i>Sterna</i> <i>paradisaea</i>	Breeding: Dunlin <i>Calidris alpina</i> schinzii	Breeding: Seabirds
		Red-necked phalarope Phalaropus lobatus	Great skua Catharacta skua	
			Whimbrel <i>Numenius</i> phaeopus	

 $[\]overline{\ }^3$ - A seabird assemblage of international importance. The area regularly supports at least 20,000 seabirds. Or

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⁻ 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 ³
Noss SPA	343.82	N/A	Breeding: Gannet <i>Morus</i> bassanus	Breeding: Seabirds
			Great skua Catharacta skua	
			Guillemot <i>Uria aalge</i>	
Mousa SPA	197.98	Breeding: Arctic tern <i>Sterna</i> paradisaea	N/A	N/A
		Storm petrel Hydrobates pelagicus		
Fair Isle SPA	561.27	Breeding: Arctic tern <i>Sterna</i> paradisaea	Breeding: Guillemot <i>Uria aalge</i>	Breeding: Seabird
		Fair Isle wren Troglodytes troglodytes fridariensis		
ORKNEY				
Pentland Firth Islands SPA	170.51	Breeding: Arctic tern <i>Sterna</i> <i>paradisaea</i>	N/A	N/A
Switha SPA	57.39	Over winter: Barnacle goose Branta leucopsis	N/A	N/A
Orkney Mainland Moors	4444.35	Breeding: Hen harrier <i>Circus</i> <i>cyaneus</i>	N/A	N/A
		Red-throated diver Gavia stellata		
		Short-eared owl Asio flammeus		
		Overwintering: Hen harrier <i>Circus</i> <i>cyaneus</i>		
Hoy SPA	9499.7	Breeding: Peregrine <i>Falco</i> <i>peregrinus</i>	Breeding: Great skua Catharacta skua	Breeding: Seabirds
		Red-throated diver Gavia stellata		
Marwick Head SPA	8.7	N/A	Breeding: Guillemot <i>Uria aalge</i>	Breeding: Seabirds
Rousay SPA	633.41	Breeding: Arctic tern <i>Sterna</i> paradisaea	N/A	Breeding: Seabirds
West Westray SPA	350.62	Breeding: Arctic tern <i>Sterna</i> paradisaea	Breeding: Guillemot <i>Uria aalge</i>	Breeding: Seabirds
Papa Westray (North Hill and Holm) SPA	245.71	Breeding: Arctic tern Sterna paradisaea	Breeding: Arctic skua Stercorarius parasiticus	N/A
Calf of Eday SPA	238.03	N/A	N/A	Breeding: Seabirds

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ³
East Sanday Coast SPA	1515.23	Over winter: Bar-tailed godwit Limosa lapponica	Over winter: Purple sandpiper Calidris maritima	N/A
			Turnstone Arenaria interpres	
Auskerry SPA	101.97	Breeding: Arctic tern <i>Sterna</i> <i>paradisaea</i>	N/A	N/A
		Storm petrel Hydrobates pelagicus		
Copinsay SPA	125.42	N/A	N/A	Breeding: Seabirds
Sule Skerry and Sule Stack SPA	18.9	Breeding: Leach's storm petrel Oceanodroma leucorhoa	Breeding: Gannet Morus bassanus	Breeding: Seabird
		Storm petrel Hydrobates pelagicus	Puffin <i>Fratercula</i> arctica	
NORTH COAST OF S	COTLAND			
Cape Wrath SPA	1019.18	N/A	N/A	Breeding: Seabirds
North Sutherland Coastal Islands SPA	221.11	Over winter: Barnacle goose Branta leucopsis	N/A	N/A
Caithness and Sutherland Peatlands	145516.75	Breeding: Black-throated diver <i>Gavia arctica</i>	Breeding: Common Scoter <i>Melanitta nigra</i>	N/A
		Golden eagle <i>Aquila</i> chrysaetos	Dunlin <i>Calidris alpina</i> alpina	
		Golden plover Pluvialis apricaria	Greenshank <i>Tringa</i> nebularia	
		Hen harrier Circus cyaneus	Wigeon <i>Anas</i> penelope	
		Merlin <i>Falco</i> columbarius		
		Red-throated diver Gavia stellata		
		Short-eared owl Asio flammeus		
		Wood sandpiper <i>Tringa glareola</i>		
Caithness Lochs	1378.57	Overwintering: Greenland white- fronted goose Anser albifrons flavirostris,	Overwintering: Greylag goose <i>Anser</i> <i>anser</i>	N/A
		Whooper swan Cygnus cygnus		
North Caithness Cliffs SPA	557.73	Breeding: Peregrine Falco peregrinus	Breeding: Guillemot <i>Uria aalge</i>	Breeding: Seabirds

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ³
MORAY FIRTH AND	ABERDEENSHIRE			
East Caithness Cliffs SPA	442.62	Breeding: Peregrine Falco peregrinus	Breeding: Guillemot <i>Uria aalge</i>	Breeding: Seabirds
		peregimus	Kittiwake <i>Rissa</i> tridactyla	
			Razorbill Alca torda	
			Herring Gull Larus argentatus	
			Shag <i>Phalacrocorax</i> aristotelis	
Dornoch Firth and Loch Fleet SPA	7836.33	Breeding: Osprey <i>Pandion</i> haliaetus	Over winter: Greylag goose <i>Anser</i> anser	Over winter: Waterfowl
		Over winter: Bar-tailed godwit <i>Limosa lapponica</i>	Wigeon <i>Anas</i> penelope	
Loch Eye SPA	205.14	Over winter: Whooper swan Cygnus cygnus	Over winter: Greylag goose <i>Anser</i> <i>anser</i>	N/A
Cromarty Firth SPA	3766.24	Breeding: Common tern <i>Sterna</i> <i>hirundo</i>	Over winter: Greylag goose <i>Anser</i> anser	Over winter: Waterfowl
		Osprey Pandion haliaetus		
		Over winter: Bar-tailed godwit <i>Limosa lapponica</i>		
		Whooper swan Cygnus cygnus		
Inner Moray Firth SPA	2339.23	Breeding: Common tern <i>Sterna</i> <i>hirundo</i>	Over winter: Greylag goose Anser anser	Over winter: Waterfowl
		Osprey Pandion haliaetus	Red-breasted merganser <i>Mergus</i> <i>serrator</i>	
		Over winter: Bar-tailed godwit <i>Limosa lapponica</i>	Redshank <i>Tringa</i> totanus	
			Scaup Aythya marila	
Moray and Nairn Coast SPA	2410.25	Breeding: Osprey <i>Pandion</i> haliaetus	Over winter: Greylag goose <i>Anser</i> anser	Over winter: Waterfowl
		Over winter: Bar-tailed godwit Limosa lapponica	Pink-footed goose Anser brachyrhynchus	
			Redshank <i>Tringa</i> totanus	
Troup, Pennan and Lion's Heads SPA	174.22	N/A	Breeding: Guillemot <i>Uria aalge</i>	Breeding: Seabirds

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ³
Loch of Strathbeg SPA	615.94	Breeding: Sandwich tern <i>Sterna</i> sandvicensis	Over winter: Greylag goose Anser anser	Over winter: Waterfowl
		Over winter: Barnacle goose <i>Branta leucopsis</i>	Pink-footed goose Anser brachyrhynchus	
		Whooper swan Cygnus cygnus		
Buchan Ness to Collieston Coast SPA	208.62	N/A	N/A	Breeding: Seabirds
Ythan Estuary, Sands of Forvie and Meikle Loch SPA	1016.24	Breeding: Common tern <i>Sterna</i> <i>hirundo</i>	Over winter: Pink-footed goose Anser brachyrhynchus	Over winter: Waterfowl
		Little tern Sterna albifrons		
		Sandwich tern Sterna sandvicensis		
Fowlsheugh SPA	10.15	N/A	Breeding: Guillemot <i>Uria aalge</i>	Breeding: Seabirds
			Kittiwake <i>Rissa</i> tridactyla	
SOUTH OF ABERDE	ENSHIRE TO BORD	ERS		
Montrose Basin SPA	984.61	N/A	Over winter: Greylag goose Anser anser	Over winter: Waterfowl
			Knot Calidris canutus	
			Pink-footed goose Anser brachyrhynchus	
			Redshank <i>Tringa</i> totanus	
Firth of Tay and Eden Estuary SPA	6923.29	Breeding:	Over winter:	Over winter:
Edell Estudiy SPA		Little tern Sterna albifrons	Greylag goose Anser anser	Waterfowl
Euen Estuary SFA				Waterfowl
Edell Estuary SFA		albifrons Marsh harrier Circus	anser Pink-footed goose	Waterfowl
Firth of Forth Islands SPA	105.06	albifrons Marsh harrier Circus aeruginosus Over winter: Bar-tailed godwit	anser Pink-footed goose Anser brachyrhynchus Redshank Tringa	Waterfowl Breeding: Seabirds
Firth of Forth Islands	105.06	albifrons Marsh harrier Circus aeruginosus Over winter: Bar-tailed godwit Limosa lapponica Breeding: Arctic tern Sterna	anser Pink-footed goose Anser brachyrhynchus Redshank Tringa totanus Breeding: Gannet Morus	Breeding:
Firth of Forth Islands	105.06	albifrons Marsh harrier Circus aeruginosus Over winter: Bar-tailed godwit Limosa lapponica Breeding: Arctic tern Sterna paradisaea Common tern Sterna	anser Pink-footed goose Anser brachyrhynchus Redshank Tringa totanus Breeding: Gannet Morus bassanus Lesser black-backed	Breeding:

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ³
Firth of Forth SPA	tbc	On passage: Sandwich tern <i>Sterna</i> sandvicensis	Over winter: Knot <i>Calidris canutus</i>	Over winter: Waterfowl
		Over winter: Bar-tailed godwit <i>Limosa lapponica</i>	Pink-footed goose Anser brachyrhynchus Redshank Tringa totanus	
		Golden plover Pluvialis apricaria	Shelduck Tadorna tadorna	
		Red-throated diver Gavia stellata	Turnstone Arenaria interpres	
		Slavonian grebe Podiceps auritus	merpres	
St. Abb's Head to Fast Castle SPA	247.85	N/A	N/A	Breeding: Seabirds
NORTH EAST ENGI	_AND			
Lindisfarne SPA	3679.22	Breeding: Little tern <i>Sterna</i> <i>albifrons</i>	On passage: Ringed plover Charadrius hiaticula	Over winter: Waterfowl
		Over winter: Bar-tailed godwit <i>Limosa lapponica</i>	Over winter: Grey plover <i>Pluvialis</i> squatarola	
		Golden plover Pluvialis apricaria	Greylag goose Anser anser	
		Whooper swan Cygnus cygnus	Knot Calidris canutus	
			Light-bellied Brent goose <i>Branta bernicla</i> <i>hrota</i>	
			Wigeon <i>Anas</i> penelope	
Farne Islands SPA	101.86	Breeding: Arctic tern Sterna paradisaea	Breeding: Guillemot <i>Uria aalge</i>	Breeding: Seabirds
		Common tern Sterna hirundo	Puffin <i>Fratercula</i> arctica	
		Roseate tern Sterna dougallii		
		Sandwich tern Sterna sandvicensis		
Northumbria Coast SPA	1107.98	Breeding: Little tern <i>Sterna</i> <i>albifrons</i>	Over winter: Purple sandpiper Calidris maritima	N/A
			Turnstone Arenaria interpres	

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ³
Coquet Island SPA	22.28	Breeding: Arctic tern <i>Sterna</i> paradisaea	Breeding: Puffin <i>Fratercula</i> <i>arctica</i>	Breeding: Seabirds
		Common tern Sterna hirundo		
		Roseate tern Sterna dougallii		
		Sandwich tern Sterna sandvicensis		
Teesmouth and Cleveland Coast SPA	1247.31	Breeding: Little tern Sterna albifrons	On passage: Ringed plover <i>Charadrius hiaticula</i>	Over winter: Waterfowl
		On passage: Sandwich tern <i>Sterna</i> sandvicensis	Over winter: Knot <i>Calidris canutus</i>	
			Redshank <i>Tringa</i> totanus	
YORKSHIRE AND H	UMBER			
Flamborough Head and Bempton Cliffs SPA	212.17	N/A	Breeding: Kittiwake <i>Rissa</i> <i>tridactyla</i>	Breeding: Seabirds
Humber Flats, Marshes and Coast (Phases 1 and 2)	15202.53	Breeding: Little tern Sterna albifrons	On passage: Redshank <i>Tringa</i> <i>totanus</i>	Over winter: Waterfowl
SPA		Marsh harrier Circus aeruginosus	Sanderling <i>Calidris</i> alba	
		Over winter: Bar-tailed godwit <i>Limosa lapponica</i>	Over winter: Dunlin <i>Calidris alpina</i> <i>alpina</i>	
		Bittern <i>Botaurus</i> stellaris	Knot Calidris canutus	
		Golden plover Pluvialis apricaria	Redshank Tringa totanus	
		Hen harrier Circus cyaneus	Shelduck Tadorna tadorna	
LINCOLNSHIRE, NO	RFOLK and SUFFOLK	<u> </u>		
Gibraltar Point SPA	414.09	Breeding: Little tern Sterna albifrons	Over winter: Grey plover <i>Pluvialis</i> squatarola	Over winter: Waterfowl
		Over winter: Bar-tailed godwit Limosa lapponica	Knot Calidris canutus	

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ³
The Wash SPA	62211.66	Breeding: Common tern <i>Sterna</i> <i>hirundo</i>	On passage: Ringed plover <i>Charadrius hiaticula</i>	Over winter: Waterfowl
		Little tern Sterna albifrons	Sanderling Calidris alba	
		Marsh harrier Circus aeruginosus	Over winter: Black-tailed godwit <i>Limosa limosa</i>	
		Over winter: Avocet <i>Recurvirostra</i>	islandica	
		avosetta	Curlew <i>Numenius</i> arquata	
		Bar-tailed godwit <i>Limosa lapponica</i>	Dark-bellied Brent goose <i>Branta bernicla</i>	
		Golden plover Pluvialis apricaria	bernicla	
		Whooper swan Cygnus cygnus	Dunlin <i>Calidris alpina</i> <i>alpina</i>	
		70 70	Grey plover <i>Pluvialis</i> squatarola	
			Knot Calidris canutus	
			Oystercatcher Haematopus ostralegus	
			Pink-footed goose Anser brachyrhynchus	
			Pintail Anas acuta	
			Redshank Tringa totanus	
			Shelduck Tadorna tadorna	
			Turnstone Arenaria interpres	

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ³
North Norfolk Coast SPA	7886.79	Breeding: Avocet <i>Recurvirostra</i> avosetta	Breeding: Redshank <i>Tringa</i> <i>totanus</i>	Over winter: Waterfowl
		Bittern <i>Botaurus</i> stellaris	Ringed plover Charadrius hiaticula	
		Common tern Sterna hirundo	On passage: Ringed plover Charadrius hiaticula	
		Little tern Sterna albifrons	Over winter: Dark-bellied Brent	
		Marsh harrier Circus aeruginosus	goose Branta bernicla bernicla	
		Mediterranean gull Larus melanocephalus	Knot Calidris canutus	
		Roseate tern Sterna dougallii	Pink-footed goose Anser brachyrhynchus	
		Sandwich tern Sterna sandvicensis	Pintail <i>Anas acuta</i> Redshank <i>Tringa</i>	
		Over winter:	totanus	
		Avocet Recurvirostra avosetta	Wigeon <i>Anas</i> penelope	
		Bar-tailed godwit <i>Limosa lapponica</i>		
		Bittern <i>Botaurus</i> stellaris		
		Golden plover Pluvialis apricaria		
		Hen harrier Circus cyaneus		
		Ruff <i>Philomachus</i> pugnax		
Broadland SPA	5462.4	Breeding: Bittern <i>Botaurus</i> stellaris	Over winter: Gadwall <i>Anas strepera</i>	Over winter: Waterfowl
		Marsh harrier Circus aeruginosus	Pink-footed goose Anser brachyrhynchus	
		Over winter: Bewick's swan Cygnus columbianus bewickii	Shoveler Anas clypeata	
		Bittern <i>Botaurus</i> stellaris		
		Ruff Philomachus pugnax		
		Whooper swan Cygnus cygnus		
Great Yarmouth North Denes SPA	149.19	Breeding: Little tern <i>Sterna</i> <i>albifrons</i>	N/A	N/A

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ³
Breydon Water SPA	1202.94	Breeding: Common tern <i>Sterna</i> <i>hirundo</i>	N/A	Over winter: Waterfowl
		Over winter: Avocet <i>Recurvirostra</i> avosetta		
		Bewick's swan Cygnus columbianus bewickii		
		Golden plover Pluvialis apricaria		
Benacre to Easton Bavents SPA	516.83	Breeding: Bittern <i>Botaurus</i> <i>stellaris</i>	N/A	N/A
		Little tern Sterna albifrons		
		Marsh harrier Circus aeruginosus		
		Over winter: Bittern <i>Botaurus</i> stellaris		
Minsmere- Walberswick SPA	2018.92	Breeding: Avocet <i>Recurvirostra</i> avosetta	N/A	N/A
		Bittern Botaurus stellaris		
		Little tern Sterna albifrons		
		Marsh harrier Circus aeruginosus		
		Nightjar Caprimulgus europaeus		
		Woodlark <i>Lullula</i> arborea		
		Over winter: Avocet <i>Recurvirostra</i> avosetta		
		Bittern <i>Botaurus</i> stellaris		
		Hen harrier Circus cyaneus		

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ³
Alde-Ore Estuary SPA	2416.87	Breeding: Avocet <i>Recurvirostra</i> avosetta	Breeding: Lesser black-backed gull <i>Larus fuscus</i>	Breeding: Seabirds Over winter: Waterfowl
		Little tern <i>Sterna</i> albifrons	Over winter: Redshank <i>Tringa</i> totanus	
		Marsh harrier Circus aeruginosus		
		Sandwich tern Sterna sandvicensis		
		Over winter: Avocet <i>Recurvirostra</i> avosetta		
Deben Estuary SPA	978.93	Over winter: Avocet <i>Recurvirostra</i> avosetta	N/A	N/A
Stour and Orwell Estuaries SPA	3323.62	Over winter: Hen harrier <i>Circus</i> <i>cyaneus</i>	Over winter: Black-tailed godwit Limosa limosa islandica	Over winter: Waterfowl
			Dunlin <i>Calidris alpina</i> alpina	
			Grey plover <i>Pluvialis</i> squatarola	
			Pintail Anas acuta	
			Redshank <i>Tringa</i> totanus	
			Ringed plover Charadrius hiaticula	
			Shelduck <i>Tadorna</i> tadorna	
			Turnstone <i>Arenaria</i> interpres	
ESSEX AND KENT				
Hamford Water SPA	2187.21	Breeding: Little tern <i>Sterna</i> <i>albifrons</i>	On passage: Ringed plover Charadrius hiaticula	Over winter: Waterfowl
		Over winter: Avocet <i>Recurvirostra</i> avosetta	Over winter: Black-tailed godwit Limosa limosa islandica	
		Golden plover Pluvialis apricaria Ruff Philomachus pugnax	Dark-bellied Brent goose <i>Branta bernicla</i> <i>bernicla</i>	
			Grey plover Pluvialis	
			squatarola Ringed plover	
			Charadrius hiaticula	
			Teal Anas crecca	

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ³
Colne Estuary (Mid- Essex Coast Phase 2) SPA	2701.43	Breeding: Little tern Sterna albifrons	Over winter: Dark-bellied Brent goose <i>Branta bernicla</i> bernicla	Over winter: Waterfowl
		Over winter: Avocet Recurvirostra avosetta	Redshank Tringa totanus	
		Golden plover Pluvialis apricaria		
		Hen harrier Circus cyaneus		
Blackwater Estuary (Mid-Essex Coast Phase 4) SPA	4395.15	Breeding: Little tern <i>Sterna</i> <i>albifrons</i>	On passage: Ringed plover <i>Charadrius hiaticula</i>	Over winter: Waterfowl
		Over winter: Avocet Recurvirostra avosetta	Over winter: Black-tailed Godwit Limosa limosa islandica	
		Golden plover Pluvialis apricaria Hen harrier Circus	Dark-bellied Brent goose <i>Branta bernicla</i> <i>bernicla</i>	
		cyaneus Ruff Philomachus	Dunlin <i>Calidris alpina</i> alpina	
		pugnax	Grey plover <i>Pluvialis</i> squatarola	
			Redshank <i>Tringa</i> totanus	
			Ringed plover Charadrius hiaticula	
			Shelduck <i>Tadorna</i> tadorna	
Crouch and Roach Estuaries (Mid- Essex Coast Phase 3) SPA	1735.58	N/A	Over winter: Dark-bellied Brent goose <i>Branta bernicla</i> <i>bernicla</i>	N/A
Dengie (Mid-Essex Coast Phase 1) SPA	3127.23	Over winter: Bar-tailed godwit <i>Limosa lapponica</i>	Over winter: Grey plover <i>Pluvialis</i> squatarola	Over winter: Waterfowl
		Hen harrier Circus cyaneus	Knot Calidris canutus	
Benfleet and Southend Marshes SPA	2251.31	N/A	On passage: Ringed plover <i>Charadrius hiaticula</i>	Over winter: Waterfowl
			Over winter: Dark-bellied Brent goose <i>Branta bernicla</i> <i>bernicla</i>	
			Grey plover <i>Pluvialis</i> squatarola	
			Knot Calidris canutus	

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ³
Foulness (Mid- Essex Coast Phase 5) SPA	10968.9	Breeding: Avocet <i>Recurvirostra</i> avosetta	On passage: Redshank <i>Tringa</i> <i>totanus</i>	Over winter: Waterfowl
		Common tern Sterna hirundo	Over winter: Dark-bellied Brent goose Branta bernicla bernicla Grey plover Pluvialis squatarola Knot Calidris canutus Oystercatcher Haematopus ostralegus	
		Little Tern Sterna albifrons		
		Sandwich tern Sterna sandvicensis		
		Over winter: Avocet <i>Recurvirostra</i> avosetta		
		Bar-tailed godwit Limosa lapponica		
		Golden plover Pluvialis apricaria		
		Hen harrier Circus cyaneus		
Thames Estuary and Marshes SPA	4838.94	Over winter: Avocet <i>Recurvirostra</i> avosetta	On passage: Ringed plover Charadrius hiaticula	Over winter: Waterfowl
		Hen harrier <i>Circus</i> cyaneus	Over winter: Ringed plover Charadrius hiaticula	
The Greater Thames Estuary pSPA	TBC	Red-throated diver Gavia stellata, black- throated Diver Gavia arctica	N/A	N/A
Medway Estuary and Marshes SPA	4684.36	Breeding: Avocet <i>Recurvirostra</i> avosetta	On passage: Ringed plover Charadrius hiaticula	Over winter: Waterfowl
		Little Tern <i>Sterna</i> albifrons	Over winter: Black-tailed godwit <i>Limosa limosa</i>	
		Over winter: Avocet Recurvirostra avosetta	islandica	
			Dark-bellied Brent goose <i>Branta bernicla</i> <i>bernicla</i>	
			Dunlin <i>Calidris alpina</i> alpina	
			Grey plover <i>Pluvialis</i> squatarola	
			Pintail Anas acuta	
			Redshank <i>Tringa</i> totanus	
			Ringed plover Charadrius hiaticula	
			Shelduck Tadorna tadorna	

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages ³
The Swale SPA	6514.71	Breeding: Avocet Recurvirostra avosetta	On passage: Ringed plover Charadrius hiaticula	Over winter: Waterfowl
		Marsh harrier Circus aeruginosus	Over winter: Black-tailed godwit <i>Limosa limosa</i>	
		Mediterranean gull Larus melanocephalus	islandica	
		Over winter: Avocet <i>Recurvirostra</i>	Grey plover <i>Pluvialis</i> squatarola	
		avosetta	Knot Calidris canutus	
		Bar-tailed godwit Limosa lapponica	Pintail Anas acuta	
		Golden plover Pluvialis apricaria	Redshank <i>Tringa</i> totanus	
		Hen harrier Circus	Shoveler Anas clypeata	
Thanet Coast and	1870.16	cyaneus N/A	Over winter:	N/A
Sandwich Bay SPA	1070.10	IVA	Turnstone Arenaria interpres	IVA
Dungeness to Pett Level SPA	1474.04	Breeding: Common tern <i>Sterna</i> <i>hirundo</i>	Over winter: Shoveler <i>Anas</i> clypeata	N/A
		Little tern Sterna albifrons		
		Mediterranean gull Larus melanocephalus		
		On passage: Aquatic warbler Acrocephalus paludicola		
		Over winter: Bewick's swan <i>Cygnus</i> columbianus bewickii		

Table A.2 - West Coast SPAs from North Rona and Sula Sgeir to Pembrokeshire and their Qualifying Features

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages
NORTH RONA TO	COLONSAY			
North Rona and Sula Sgeir SPA	TBC	Breeding: Leach's storm-petrel Oceanodroma leucorhoa	Breeding: Gannet <i>Morus</i> <i>bassanus</i> Guillemot <i>Uria aalge</i>	Breeding: Seabird

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages
Lewis Peatlands	58984.24	Breeding: Black-throated diver <i>Gavia arctica</i>	Breeding: Dunlin <i>Calidris alpina</i> <i>alpine</i>	N/A
		Golden eagle Aquila chrysaetos	Greenshank <i>Tringa</i> nebularia	
		Golden plover Pluvialis apricaria,		
		Merlin <i>Falco</i> columbarius		
		Red-throated diver Gavia stellata		
Flannan Isles SPA	58.87	Breeding: Leach's storm-petrel Oceanodroma leucorhoa	Leach's storm-petrel Oceanodroma	
St Kilda	865.51	Breeding: Breeding: Leach's storm-petrel Gannet Morus Oceanodroma bassanus Ieucorhoa Great skua Catharacta skua Puffin Fratercula arctica		Breeding: Seabird
North Uist Machair and Islands SPA	4876.35	Breeding: Corncrake <i>Crex crex</i> Over winter: Barnacle goose <i>Branta leucopsis</i>	Breeding: Dunlin Calidris alpina schinzii Oystercatcher Haematopus ostralegus Redshank Tringa totanus Ringed plover Charadrius hiaticula Over winter: Purple sandpiper Calidris maritima Ringed plover	N/A
			Charadrius hiaticula Turnstone Arenaria interpres	
Mointeach Scadabhaigh SPA	4148.44	Breeding: Black-throated diver G <i>avia arctica</i> Red-throated diver <i>Gavia stellata</i>	Black-throated diver G <i>avia arctica</i> Red-throated diver	
Monach Islands SPA	595.74	Breeding: Common tern <i>Sterna</i> <i>hirundo</i> Little tern <i>Sterna</i> <i>albifrons</i>	N/A	N/A
		Over winter: Barnacle goose <i>Branta</i> <i>leucopsis</i>		
Aird and Borve, Benbecula SPA	361	Breeding: Corncrake <i>Crex crex</i>	N/A	N/A

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Site Name	Area (ha)	Area (ha) Article 4.1 Species		Article 4.2 Assemblages	
South Uist Machair and Lochs SPA	3352.28	Breeding: Corncrake <i>Crex crex</i> Little tern <i>Sterna</i> <i>albifrons</i>	Breeding: Dunlin Calidris alpina schinzii Oystercatcher Haematopus ostralegus Redshank Tringa totanus Ringed plover Charadrius hiaticula Over winter:	N/A	
			Ringed plover Charadrius hiaticula Sanderling Calidris alba		
Kilpheder to Smerclate, South Uist SPA	380.63	Breeding: Corncrake <i>Crex crex</i>	N/A	N/A	
Eoligarry, Barra SPA	144.04	Breeding: Corncrake <i>Crex crex</i>	N/A	N/A	
Mingulay and Berneray SPA	911.07	N/A	Breeding: Razorbill <i>Alca torda</i>	Breeding: Seabird	
Handa Island SPA	367.49	N/A	Breeding: Guillemot <i>Uria aalge</i> , Razorbill <i>Alca torda</i>	Breeding: Seabird	
Priest Island SPA	131.68	Breeding: Storm petrel Hydrobates pelagicus	N/A	N/A	
Shiant Isles SPA	212.33	Over winter: Barnacle goose <i>Branta</i> <i>leucopsis</i>	Breeding: Puffin <i>Fratercula</i> <i>arctica</i> Razorbill <i>Alca torda</i>	Breeding: Seabird	
Canna and Sanday SPA	1341.27	N/A	N/A	Breeding: Seabird	
Rum SPA	10942.38	Breeding: Golden eagle Aquila chrysaetos Red-throated diver Gavia stellata	lden eagle Aquila Manx shearwater ysaetos Puffinus puffinus d-throated diver		
Coll SPA	2321.88	Over winter: Barnacle goose Branta leucopsis Greenland white- fronted goose Anser albifrons flavirostris	Barnacle goose <i>Branta</i> leucopsis Greenland white- fronted goose <i>Anser</i>		
Coll (Concrake) SPA	371.13	Breeding: Corncrake <i>Crex crex</i>	N/A	N/A	

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages
Sleibhtean agus Cladach Thiriodh SPA	TBC	Over winter: Barnacle Goose Branta leucopsis Greenland White- fronted Goose Anser albifrons flavirostris	Breeding: Dunlin: Calidris alpina schinzii Oystercatcher Haematopus ostralegus Redshank Tringa totanus Ringed Plover Charadrius hiaticula Over winter: Turnstone Arenaria interpres	N/A
Treshnish Isles SPA	240.67	Breeding: Storm petrel Hydrobates pelagicus	N/A	N/A
		Over winter: Barnacle goose <i>Branta</i> leucopsis		
Glas Eileanan SPA	1.43	Breeding: Common tern <i>Sterna</i> <i>hirundo</i>	N/A	N/A
Cnuic agus Cladach Mhuile SPA	TBC	Breeding: Golden Eagle <i>Aquila</i> <i>chrysaetos</i>	Golden Eagle <i>Aquila</i>	
North Colonsay and Western Cliffs SPA	973.6	Breeding: Chough Pyrrhocorax pyrrhocorax	N/A	Breeding: Seabird
		Over winter: Chough <i>Pyrrhocorax</i> pyrrhocorax		
Oronsay and South Colonsay pSPA				
ISLAY TO KINTYRE				
Gruinart Flats, Islay SPA	3261.32	Over winter: Barnacle goose <i>Branta</i> <i>leucopsi</i> s	N/A	N/A
		Greenland white- fronted goose Anser albifrons flavirostris		
Rinns of Islay SPA	9407.46	Breeding: Chough <i>Pyrrhocorax</i> <i>pyrrhocorax</i>	Breeding: Common scoter <i>Melanitta nigra</i>	N/A
		Corncrake Crex crex		
		Hen harrier Circus cyaneus		
		On passage: Whooper swan <i>Cygnus cygnus</i>		
		Over winter: Chough <i>Pyrrhocorax</i> <i>pyrrhocorax</i>		
		Greenland white- fronted goose Anser albifrons flavirostris		

Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages	
Bridgend Flats, Islay SPA	331.16	Over winter: Barnacle goose <i>Branta</i> <i>leucopsis</i>	N/A	N/A	
Laggan, Islay SPA	1230.02	Over winter: Barnacle goose <i>Branta</i> <i>leucopsis</i>	N/A	N/A	
		Greenland white- fronted goose Anser albifrons flavirostris			
The Oa SPA	1943	Breeding: Chough Pyrrhocorax pyrrhocorax	Pyrrhocorax		
NORTH NORTHERN	IRELAND				
Rathlin Island SPA	3344.62	Breeding: Peregrine <i>Falco</i> peregrinus	Breeding: Guillemot <i>Uria aalge</i>	Breeding: Seabird	
			Razorbill Alca torda		
Sheep Island SPA	3.5	Breeding: N/A Cormorant Phalacrocorax carbo		N/A	
EAST NORTHERN I	RELAND				
Larne Lough SPA	395.94	Breeding: Common tern <i>Sterna</i> <i>hirundo</i>	Over winter: Light-bellied Brent goose <i>Branta</i> bernicula hrota	N/A	
		Roseate tern Sterna dougallii	some meta		
		Sandwich tern <i>Sterna</i> sandvicensis			
Belfast Lough SPA	432.14	Over winter: Bar-tailed godwit <i>Limosa lapponica</i>	Redshank <i>Tringa</i> totanus	Over winter: Waterfowl	
		Elmoda lappomoa	Turnstone Arenaria interpres		
Belfast Lough Open Water					
Outer Ards SPA	1410.41	Breeding: Arctic tern <i>Sterna</i> paradisaea	Over winter: Light-bellied Brent goose <i>Branta</i> bernicula hrota	N/A	
		Over winter: Golden plover <i>Pluvialis</i> <i>apricaria</i>	Ringed plover Charadrius hiaticula		
			Turnstone Arenaria interpres		

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages	
Strangford Lough SPA	15580.79	Breeding: Arctic tern <i>Sterna</i> paradisaea	Over winter: Knot <i>Calidris canutus</i>	Over winter: Waterfowl	
		Common tern Sterna hirundo	Light-bellied Brent goose <i>Branta</i> <i>bernicula hrota</i>		
		Sandwich tern Sterna sandvicensis	Redshank <i>Tringa</i> totanus		
		Over winter: Bar-tailed godwit <i>Limosa lapponica</i>	Shelduck <i>Tadorna</i> tadorna		
		Golden plover <i>Pluvialis</i> apricaria			
Killough Bay SPA	104.23	N/A Over winter: Light-bellied Brent goose Branta bernicula hrota		N/A	
Carlingford Lough SPA	827.12	Breeding: Common tern <i>Sterna</i> <i>hirundo</i>	Over winter: Light-bellied Brent goose <i>Branta</i> bernicula hrota	N/A	
		Sandwich tern Sterna sandvicensis			
SOUTHWEST SCOT	LAND				
Black Cart SPA	56.3	Over winter: Whooper swan Cygnus cygnus	N/A	N/A	
Inner Clyde Estuary SPA	1826.02	N/A	Over winter: Redshank <i>Tringa</i> totanus	N/A	
Ailsa Craig SPA	99.94	N/A	Breeding: Gannet <i>Morus</i> bassanus	Breeding: Seabird	
			Lesser black-backed gull <i>Larus fuscus</i>		
Loch of Inch & Torrs Warren SPA	2111.04	Over winter: Greenland white- fronted goose Anser albifrons flavirostris	N/A	N/A	
		Hen harrier Circus cyaneus			

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Site Name	to Namo Aroa (ha)		Article 4.2 Migratory species	Article 4.2 Assemblages
Upper Solway Flats and Marshes SPA	30706.26	Over winter: Bar-tailed godwit <i>Limosa lapponica</i>	On passage: Ringed plover Charadrius hiaticula	Over winter: Waterfowl
		Barnacle goose <i>Branta</i> leucopsis	Over winter: Curlew <i>Numenius</i> arquata	
		Golden plover <i>Pluvialis</i> apricaria	Dunlin <i>Calidris alpina</i> alpina	
		Whooper swan Cygnus cygnus	Knot Calidris canutus	
			Oystercatcher Haematopus ostralegus	
			Pink-footed goose Anser brachyrhynchus	
			Pintail Anas acuta	
			Redshank <i>Tringa</i> totanus	
NORTHWEST ENGI	_AND			
Duddon Estuary SPA	6806.3	Breeding: Sandwich tern Sterna sandvicensis	On passage: Ringed plover Charadrius hiaticula	Over winter: Waterfowl
			Sanderling <i>Calidris</i> alba	
			Over winter: Knot <i>Calidris canutus</i>	
			Pintail Anas acuta	
			Redshank Tringa totanus	

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages
Morecambe Bay SPA	37404.6	Breeding: Little tern <i>Sterna</i> <i>albifrons</i>	Breeding season: Lesser black-backed gull <i>Larus fuscus</i>	Breeding: Seabird
		Sandwich tern Sterna sandvicensis	Herring gull <i>Larus</i> argentatus	Over winter: Waterfowl
		Over winter: Bar-tailed godwit Limosa lapponica	On passage: Ringed plover <i>Charadrius hiaticula</i>	
		Golden plover <i>Pluvialis</i> apricaria	Sanderling <i>Calidris</i> alba	
			Over winter: Curlew <i>Numenius</i> arquata	
			Dunlin <i>Calidris alpina</i> alpina	
			Grey plover Pluvialis squatarola	
			Knot Calidris canutus	
			Oystercatcher Haematopus ostralegus	
			Pink-footed goose Anser brachyrhynchus	
			Pintail Anas acuta	
			Redshank <i>Tringa</i> totanus	
			Shelduck <i>Tadorna</i> tadorna	
			Turnstone Arenaria interpres	

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages
Ribble and Alt Estuaries SPA	12361.13	Breeding: Common tern <i>Sterna</i> <i>hirundo</i>	Breeding: Lesser black-backed gull <i>Larus fuscus</i>	Breeding: Seabird
		Ruff <i>Philomachus</i> pugnax	On passage: Ringed plover Charadrius hiaticula	Over winter: Waterfowl
		Over winter: Bar-tailed godwit <i>Limosa lapponica</i>	Sanderling Calidris alba	
		Berwick's swan Cygnus columbianus bewickii	Over winter: Black-tailed godwit Limosa limosa islandica	
		Golden plover <i>Pluvialis</i> apricaria	Dunlin <i>Calidris alpina</i> alpina	
		Whooper swan Cygnus cygnus	Grey plover <i>Pluvialis</i> squatarola	
			Knot Calidris canutus	
			Oystercatcher Haematopus ostralegus	
			Pink-footed goose Anser brachyrhynchus	
			Pintail Anas acuta	
			Redshank <i>Tringa</i> totanus	
			Sanderling Calidris alba	
			Shelduck Tadorna tadorna	
			Teal Anas crecca	
			Widgeon Anas penelope	
Mersey Narrows and North Wirral Foreshore pSPA	2089.41	N/A	Over winter: Redshank <i>Tringa</i> totanus	Over winter: Waterfowl
			Turnstone Arenaria interpres	

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Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages
Mersey Estuary SPA	5033.14 Over winter: Golden plover Pluvialis apricaria		On passage: Redshank <i>Tringa</i> <i>totanus</i>	Over winter: Waterfowl
			Ringed plover Charadrius hiaticula	
			Over winter: Dunlin <i>Calidris alpina</i> <i>alpina</i>	
			Pintail Anas acuta	
			Redshank Tringa totanus	
			Shelduck Tadorna tadorna	
			Teal Anas crecca	
Liverpool Bay pSPA	197,504	Red-throated diver Gavia stellata	Migratory Species: Common scoter Melanitta nigra,	N/A
Dee Estuary SPA	13076.29	Breeding: Common tern <i>Sterna</i> <i>hirundo</i>	On passage: Redshank <i>Tringa</i> totanus	Over winter: Waterfowl
		Little tern Sterna albifrons	Over winter: Black-tailed godwit Limosa limosa	
		On passage: Sandwich tern Sterna sandvicensis Over winter: Bar-tailed godwit Limosa lapponica	islandica	
			Curlew <i>Numenius</i> arquata	
			Dunlin <i>Calidris alpina</i> alpina	
			Grey plover <i>Pluvialis</i> squatarola	
			Knot Calidris canutus	
			Oystercatcher Haematopus ostralegus	
			Pintail <i>Anas acuta</i>	
			Redshank Tringa totanus	
			Shelduck Tadorna tadorna	
			Teal Anas crecca	
NORTH AND WEST	WALES			
Traeth Lafan / Lavan Sands, Conway Bay SPA	2642.98	N/A	Over winter: Oystercatcher Haematopus ostralegus	N/A
Ynys Seiriol / Puffin Island SPA	31.21	N/A	Breeding: Cormorant <i>Phalacrocorax carbo</i>	N/A

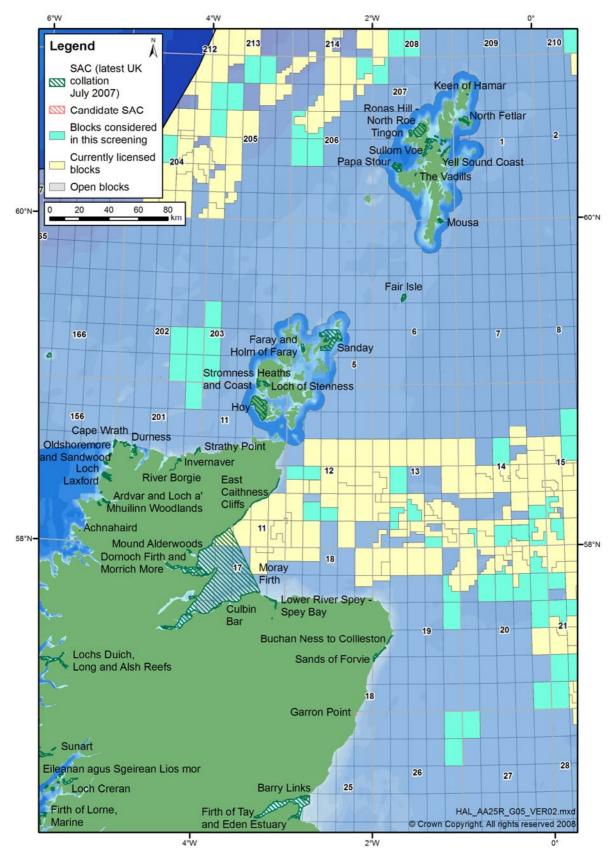
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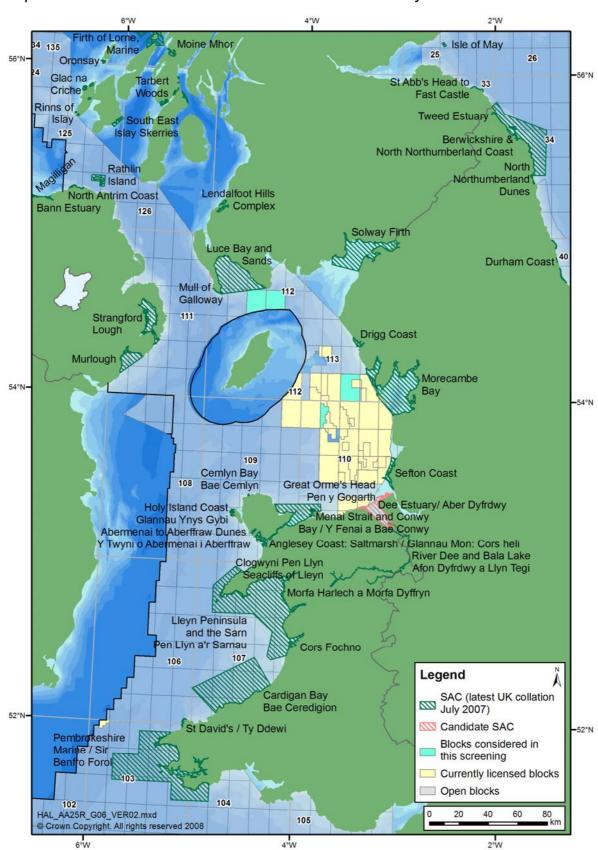
Site Name	Area (ha)	Article 4.1 Species	Article 4.2 Migratory species	Article 4.2 Assemblages
Ynys Feurig, Cemlyn Bay and The Skerries SPA	85.66	Breeding: Arctic tern <i>Sterna</i> paradisaea	N/A	N/A
		Common tern Sterna hirundo		
		Roseate tern <i>Sterna</i> dougallii		
		Sandwich tern <i>Sterna</i> sandvicensis		
Glannau Ynys Gybi/Holy Island Coast SPA	352.59	Breeding: Chough <i>Pyrrhocorax</i> <i>pyrrhocorax</i>	N/A	N/A
		Over winter: Chough <i>Pyrrhocorax</i> pyrrhocorax		
Glannau Aberdaron and Ynys Enlli/Aberdaron	505.03	Breeding: Chough <i>Pyrrhocorax</i> pyrrhocorax	Breeding: Manx shearwater Puffinus puffinus	N/A
Coast and Bardsey Island SPA		Over winter: Chough <i>Pyrrhocorax</i> <i>pyrrhocorax</i>		
Mynydd Cilan, Frwyn y Wylfa ac Ynysoedd Sant	373.55	Breeding: Chough <i>Pyrrhocorax</i> <i>pyrrhocorax</i>	N/A	N/A
Tudwal SPA		Over winter: Chough <i>Pyrrhocorax</i> <i>pyrrhocorax</i>		
Dyfi Estuary/Aber Dyfi SPA	2048.11	Over winter: Greenland white- fronted goose <i>Anser</i> albifrons flavirostris	N/A	N/A
Ramsey, St. David's Peninsula Coast SPA	845.63	Breeding: Chough <i>Pyrrhocorax</i> <i>pyrrhocorax</i>	N/A	N/A
		Over winter: Chough <i>Pyrrhocorax</i> <i>pyrrhocorax</i>		
Grassholm SPA	10.72	N/A	Breeding: Gannet <i>Morus</i> bassanus	N/A
Skokholm and Skomer SPA	427.71	Breeding: Chough <i>Pyrrhocorax</i> <i>pyrrhocorax</i>	Breeding: Lesser black-backed gull <i>Larus fuscus</i>	Breeding: Seabird
		Short-eared owl Asio flammeus	Manx shearwater Puffinus puffinus	
		Storm petrel Hydrobates pelagicus	Puffin <i>Fratercula</i> arctica	

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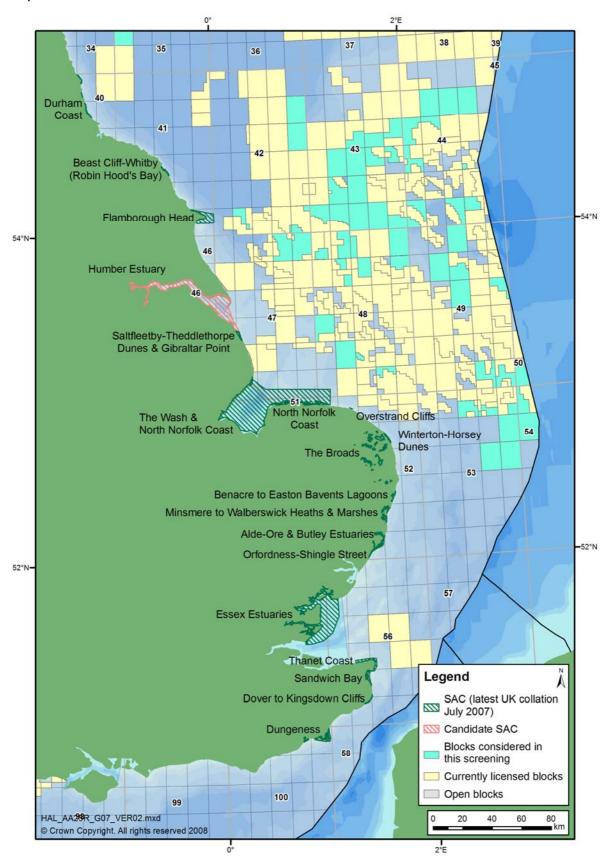
A3 Coastal and Marine Special Areas of Conservation

Map A.5 - Location of SACs - Shetland to the Tay

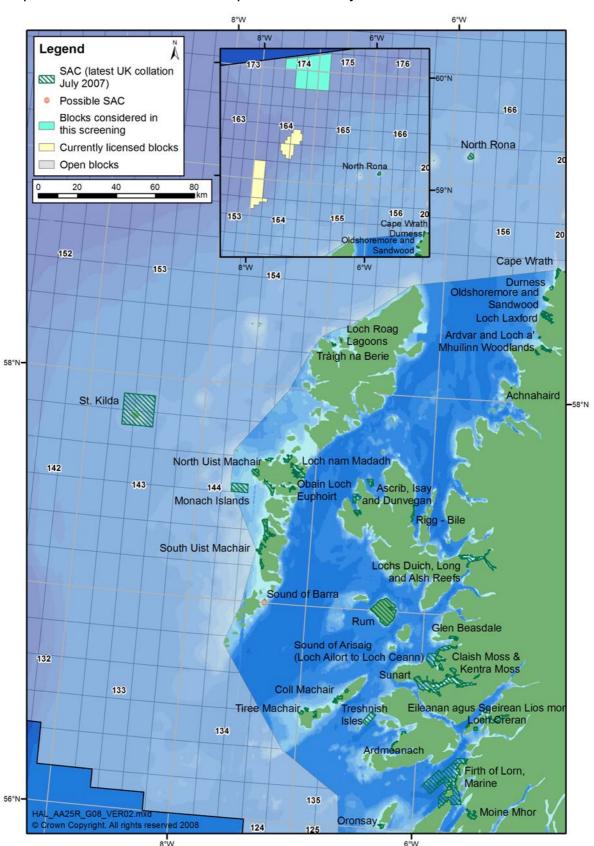




Map A.6 - Location of SACs - Forth to Teesmouth and Islay to Pembrokeshire



Map A.7 - Location of SACs - Durham to Kent



Map A.8 – Location of SACs - Cape Wrath to Islay

Table A.3 - East Coast SACs from Shetland 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
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				Common seal Phoca vitulina	
Keen of Hamar SAC	38.52	Grasslands	Heath	N/A	N/A
		Scree			
North Fetlar SAC	1581.93	Heath	N/A	N/A	N/A
		Fens			
Mousa SAC	530.6	N/A	Reefs	Common seal Phoca vitulina	N/A
			Sea caves		
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 freshwater	Fens		
		Heath	Rocky slopes		
Loch of Stenness	791.87	Bog Coastal lagoons	N/A	N/A	N/A
SAC	701.07	Coustal lagoons	13/73	14/7	14// (
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 Mudflats and sandflats	Common seal Phoca vitulina	N/A
NORTH COAST OF S	SCOTI AND		Saliuliais		
	1018.18	Sea cliffs	N/A	N/A	N/A
Cape Wrath SAC	1010.10	Sea Cills	13/74	13/73	IN/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 Grasslands Limestone	Heath Grasslands Fens		
Inversey CAC	294.54	pavements	Coastal dunos	NI/A	N/A
Invernaver SAC	294.54	Coastal dunes	Coastal dunes	N/A	N/A
		Heath	Fens		
		Grasslands			
River Borgie SAC	32.72	N/A	N/A	Freshwater pearl mussel Margaritifera margaritifera	Atlantic salmon Salmo salar Otter Lutra lutra
Strathy Point SAC	203.58	Sea cliffs	N/A	N/A	N/A
MORAY FIRTH AND	ABERDEENSI	HIRE			
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 <i>Tursiops</i> <i>truncatus</i>	N/A
Dornoch Firth and	8700.53	Estuaries	Sandbanks	Otter Lutra lutra	N/A
Morrich More SAC		Mudflats and sandflats	Reefs	Common seal Phoca vitulina	
		Saltmarsh and saltmeadows			
		Salt meadows			
Culhin Day CAC	640.00	Coastal dunes	Calt mandaya	NI/A	NI/A
Culbin Bar SAC	612.88	Vegetation of stony banks	Salt meadows	N/A	N/A
			Coastal dunes		
Lower River Spey - Spey Bay SAC	652.6	Vegetation of stony banks	N/A	N/A	N/A
		Forests			
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 TO	THE BORDERS			
Garron Point cSAC	15.58	N/A	N/A	Narrow-mouthed whorl snail Vertigo angustior	N/A
Barry Links SAC	789.67	Coastal dunes	N/A	N/A	N/A
Firth of Tay and Eden Estuary SAC	15412.53	Estuaries	Sandbanks Mudflats and sandflats	Common seal Phoca vitulina	N/A

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Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
Isle of May SAC	356.75	N/A	Reefs	Grey seal Halichoerus grypus	N/A
St. Abb's Head to Fast Castle SAC	127.52	Sea cliffs	N/A	N/A	N/A
NORTH EAST ENGL	AND				
Berwickshire and North Northumberland Coast SAC	65045.5	Mudflats and sandflats Inlets and Bays	N/A	Grey seal Halichoerus grypus	N/A
Coast SAC		Reefs			
		Submerged or partially submerged sea caves			
Tweed Estuary SAC	155.93	Estuaries Mudflats and sandflats	N/A	N/A	Sea lamprey Petromyzon marinus River lamprey
					Lampetra fluviatilis
North Northumberland Dunes SAC	1147.56	Coastal dunes		Petalwort Petalophyllum ralfsii	
Durham Coast SAC	393.63	Sea cliffs	N/A	N/A	N/A
YORKSHIRE AND TH	HE 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		Sandbanks	N/A	River lamprey
cSAC		Estuaries	Salt marshes and salt meadows		Lampetra fluviatilis
			Coastal lagoons		Sea lamprey Petromyzon marinus
			Coastal dunes		Grey seal
		Mudflats and sandflats			Halichoerus grypus
LINCOLNSHIRE, NO	RFOLK AND SI	UFFOLK			
Saltfleetby - Theddlethorpe Dunes and Gibraltar Point SAC	960.2	Coastal dunes	Coastal dunes	N/A	N/A

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Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
The Wash and	107761.28	Sandbanks	Coastal lagoons	Common seal	Otter Lutra lutra
North Norfolk Coast SAC		Mudflats and sandflats		Phoca vitulina	
		Inlets and bays			
		Reefs			
		Salt marshes and salt meadows			
North Norfolk Coast	3207.37	Coastal lagoons			Otter Lutra lutra
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
The Broads SAC	5865.6	Standing freshwater	Grasslands	Desmoulin`s whorl snail <i>Vertigo</i>	Otter Lutra lutra
		Bog		moulinsiana	
		Fens		Fen orchid Liparis 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 Heaths and Marshes SAC	1265.52	Vegetation of drift lines	Vegetation of stony banks	N/A	N/A
Alde, Ore and	1561.53	Heath Estuaries	Mudflats and	N/A	N/A
Butley Estuaries	1001.00	Estadios	sandflats	IW/A	IN/A
SAC			Salt marshes and salt meadows		
Orfordness-Shingle Street SAC	901.19	Coastal lagoons Vegetation of drift lines	N/A	N/A	N/A
		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			
			NI/A	NI/A	N/A
Thanet Coast SAC	2803.84	Reefs	N/A	N/A	IN/A

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
Sandwich Bay SAC	1137.87	Coastal dunes	Coastal dunes	N/A	N/A
Dover to Kingsdown Cliffs SAC	183.85	Sea cliffs	Grasslands	N/A	N/A
Dungeness SAC	3223.56	Vegetation of drift lines	N/A	Great crested newt <i>Triturus</i> cristatus	N/A
		Vegetation of stony banks		ootata o	

Table A.4 - West Coast SACs from North Rona to Pembrokeshire and their Qualifying Features

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
NORTH RONA TO OF	RONSAY				
North Rona SAC	628.53	N/A	Reefs	Grey seal	N/A
			Sea cliffs	Halichoerus grypus	
			Sea caves		
St Kilda SAC	25467.58	Reef	N/A	N/A	N/A
		Sea cliffs			
		Sea caves			
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
North Uist Machair	3048.54	Salt meadows	Vegetation of drift lines	N/A	Slender naiad Najas flexilis
SAC		Machairs			Ivajas liekliis
		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		
Monach Islands SAC	3646.58	Machairs	Coastal dunes	Grey seal Halichoerus grypus	N/A
Obain Loch Euphoirt SAC	348.59	Coastal lagoons	N/A	N/A	N/A
South Uist Machair	3432.65	Machairs	Coastal lagoons	Slender naiad	Otter Lutra lutra
SAC		Standing freshwater	Vegetation of drift lines	Najas flexilis	
			Coastal dunes		
Sound of Barra pSAC					
Durness SAC	1212.74	Coastal dunes	Coastal dunes		Otter Lutra lutra
		Standing freshwater	Heaths		

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
		Grasslands	Grasslands		
			Fens		
		Limestone pavements			
Oldshoremore and Sandwood SAC	443.73	Coastal dunes	Coastal dunes	N/A	N/A
Canawood 6/10		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
Ascrib, Isay and Dunvegan SAC	2584.99	N/A	N/A	Common seal Phoca vitulina	N/A
Rigg – Bile SAC	500.89	Sea cliffs	Forest	N/A	N/A
Lochs Duig, Long and Alsh Reefs SAC	2380.86	Reefs	N/A	N/A	N/A
Rum SAC	10835.33	Standing	Sea cliffs	Otter Lutra lutra	N/A
		freshwater	Heaths		
		Heaths	Grasslands		
		Grasslands	Bogs		
		Scree	•		
			Fens		
			Scree		
			Rocky slopes		
Glen Beasdale SAC	507.32	Forest	N/A	N/A	Freshwater pearl mussel <i>Margaritifera</i> <i>margaritifera</i>
					Otter Lutra lutra
Sound of Arisaig (Loch Ailort to Loch Ceann) SAC	4556.65	Sandbanks	N/A	N/A	N/A
Claish Moss & Kentra Moss SAC	1013.78	Bogs	Bogs	N/A	N/A
Sunart SAC	10246.72	Forests	Reefs	Otter Lutra lutra	N/A
			Heaths		
			Forests		
Coll Machair SAC	851.33	Coastal dunes	Coastal dunes	Slender naiad	N/A
		Machairs	Standing freshwater	Najas flexilis	
Tiree Machair SAC	785.46	Coastal dunes	Coastal dunes	N/A	N/A

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Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
		Standing freshwater			
Treshnish Isles SAC	1962.66	N/A	Reefs	Grey seal Halichoerus grypus	N/A
Eileanan agus Sgeirean Lios mór SAC	1139.62	N/A	N/A	Common seal Phoca vitulina	N/A
Loch Creran SAC	1226.39	Reefs	N/A	N/A	N/A
Ardmeanach SAC	374.79	Grasslands	Sea cliffs	N/A	N/A
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
ISLAY TO KINTYRE					
Moine Mhor SAC	1150.41	Bogs	Mudflats and sandflats Salt marshes and salt meadows Forests	N/A	Marsh fritillary butterfly Euphydryas (Eurodryas, Hypodryas) aurinia
					Otter Lutra lutra
Glac na Criche SAC	265.33	Bogs	Sea cliffs Heaths	N/A	Marsh fritillary butterfly 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	Common seal Phoca 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
Bann Estuary SAC	347.94	Coastal dunes	Salt marshes and salt meadows	N/A	ralfsii N/A
			Coastal dunes		
			Ouasiai uulles		

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
Rathlin Island SAC	3344.62	Reefs	Sandbanks	N/A	N/A
		Sea cliffs	Vegetation of drift lines		
		Sea caves	driit iiries		
North Antrim Coast SAC	314.59	Sea cliffs	Vegetation of drift lines	Narrow-mouthed whorl snail Vertigo angustior	N/A
			Salt marshes and salt meadows		
			Coastal dunes		
			Grasslands		
EAST NORTHERN IR	RELAND				
Strangford Lough SAC	15398.54	Mudflats and sandflats	Vegetation of drift lines	N/A	Common seal Phoca vitulina
		Coastal lagoons	Vegetation of stony banks		
		Inlets and bays Reefs	Salt marshes and salt meadows		
Murlough SAC	11902.03	Coastal dunes	Sandbanks	Marsh fritillary	Common seal
ū			Mudflats and sandflats	butterfly Euphydryas (Eurodryas, Hypodryas) aurinia	Phoca vitulina
			Salt marshes and salt meadows		
			Coastal dunes		
SOUTHWEST SCOTE	_AND				
Lendalfoot Hills	1309.71	Grassland	Heaths	N/A	N/A
Complex SAC		Fens	Grasslands		
			Bogs		
Mull of Galloway SAC	136.39	Sea cliffs	N/A	N/A	N/A
Luce Bay and Sands	48759.28	Inlets and bays	Sandbanks	N/A	Great crested newt <i>Triturus</i>
SAC		Coastal dunes	Mudflats and sandflats		cristatus
			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		naviamo	
NORTHWEST ENGLA	AND				
Drigg Coast SAC	1397.44	Estuaries	Mudflats and sandflats	N/A	N/A
		Coastal dunes	Salt marshes and salt meadows		

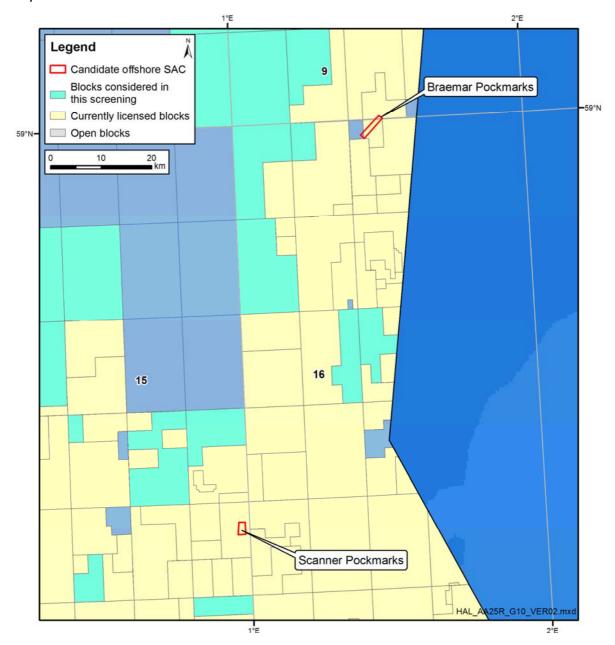
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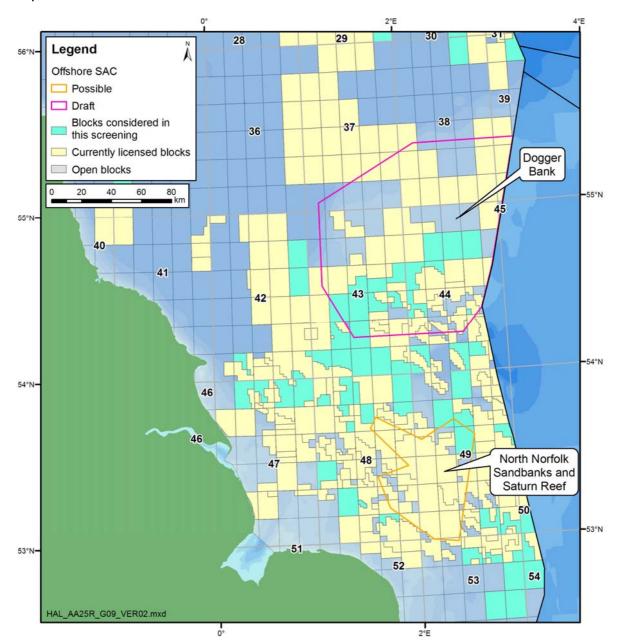
Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
			Coastal dunes		
Morecambe Bay SAC	61506.22	Estuaries	Sandbanks	Great crested newt Triturus	N/A
S/NO		Mudflats and sandflats Inlets and bays	Coastal lagoons Reefs	cristatus	
		Vegetation of stony banks	Coastal dunes		
		Salt marshes and salt meadows			
		Coastal dunes			
Sefton Coast SAC	4563.97	Coastal dunes	Coastal dunes	Petalwort Petalophyllum ralfsii	Great crested newt <i>Triturus</i> cristatus
Dee Estuary CSAC	15805.07	Mudflats and sandflats	Estuaries Sea cliffs	N/A	River lamprey Lampetra fluviatilis
		Salt marshes and salt meadows	Vegetation of drift lines		Sea lamprey Petromyzon marinus
			Coastal dunes		Petalwort Petalophyllum ralfsii
River Dee and Bala Lake SAC		Running freshwater	N/A	Atlantic salmon Salmo salar	Sea lamprey Petromyzon marinus
				Floating water- plantain <i>Luronium natans</i>	Brook lamprey Lampetra planeri
					River lamprey Lampetra fluviatilis
					Bullhead Cottus gobio
					Otter Lutra lutra
NORTH AND WEST V	WALES				
Great Orme's Head / Pen y Gogarth SAC	302.63	Heaths	Sea cliffs	N/A	N/A
- Only Cogaran Crito		Grasslands			
Y Fenai a Bae	26482.67	Sandbanks	Inlets and bays	N/A	N/A
Conwy/Menai Strait and Conwy Bay SAC		Mudflats and sandflats	Sea caves		
		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	1058	Salt marshes	Estuaries	N/A	N/A

Site Name	Area (ha)	Annex 1 Habitat Primary	Annex 1 Habitat Qualifying	Annex II Species Primary	Annex II Species Qualifying
Saltmarsh SAC		meadows	Mudflats and sandflats		
Y Twyni o Abermenai i Aberffraw/Abermenai to Aberffraw Dunes	1871.03	Coastal dunes	Standing freshwater	Petalwort Petalophyllum ralfsii Shore dock	N/A
SAC				Rumex rupestris	
Clogwyni Pen Llyn/Seacliffs of Lleyn SAC	1048.4	Sea cliffs	N/A	N/A	N/A
Pen Llyn a`r	146023.48	Sandbanks	Mudflats and sandflats	N/A	Bottlenose
Sarnau/Lleyn Peninsula and the		Estuaries			dolphin <i>Tursiops</i>
Sarnau SAC		Coastal lagoons	Salt marshes and salt meadows		truncatus
		Inlets and bays	Sea caves		Otter Lutra lutra
		Reefs			Grey Seal Halichoerus grypus
Morfa Harlech a Morfa Dyffryn SAC	1062.57	Coastal dunes	N/A	Petalwort Petalphyllum ralfsii	N/A
Cors Fochno SAC	652.71	Bogs	Bogs	N/A	N/A
Cardigan Bay/Bae	95860.36	95860.36 N/A	Sandbanks	Bottlenose dolphin	Sea lamprey Petromyzon
Ceredigion SAC			Reefs	Tursiops truncatus	marinus
			Sea caves	n aricatus	River lamprey Lampetra fluviatilis
					Grey Seal Halichoerus grypus
St David's/Ty Ddewi	935.47	Sea cliffs	N/A	Floating water-	N/A
SAC		Heaths		plantain <i>Luronium natans</i>	
Pembrokeshire	138069.45	Estuaries	Sandbanks	Grey Seal Halichoerus	Sea lamprey Petromyzon
Marine/Sir Benfro Forol SAC		Inlets and bays	Mudflats and sandflats	grypus	marinus
		Reefs	Lagoons	Shore dock Rumex rupestris	River lamprey Lampetra fluviatilis
			Salt marshes and salt meadows		Allis shad Alosa
			Sea caves		Twaite shad Alosa fallax

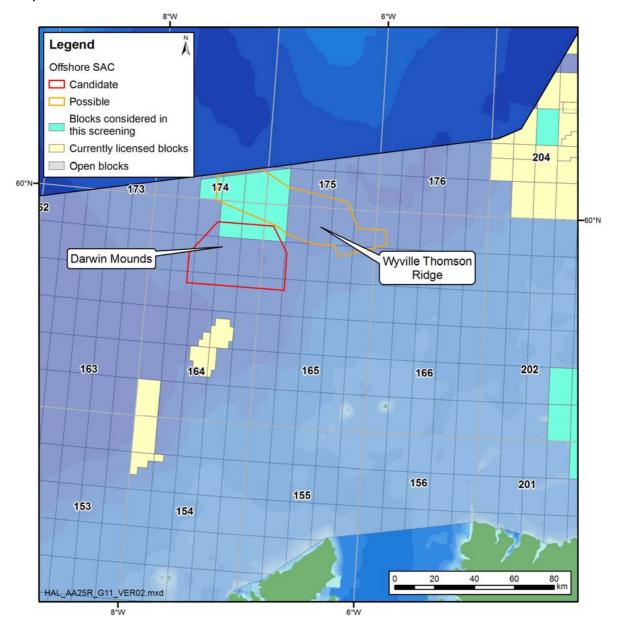
A4 Offshore Special Areas of Conservation

Map A.9 - Location of offshore SACs in the Central North Sea



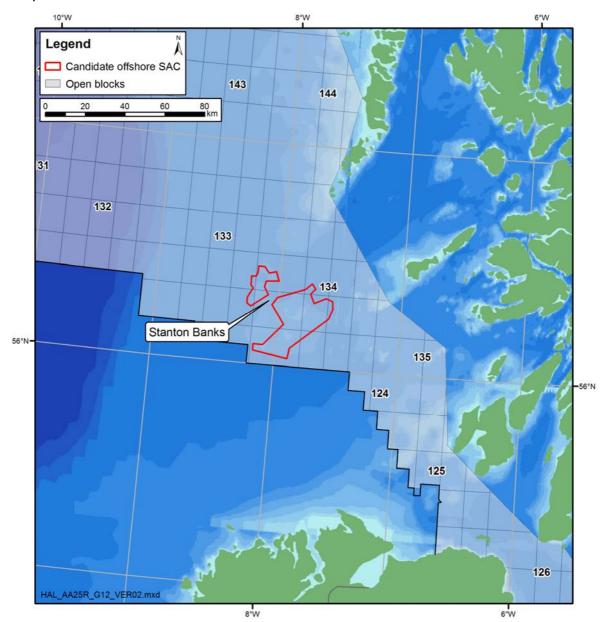


Map A.10 - Location of offshore SACs in the Southern North Sea



Map A.11 - Location of offshore SACs to the north of the Hebrides

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Map A.12 - Location of offshore SACs to the west of Hebrides

Table A.5 - Offshore SACs and their Qualifying Features

Site Name	Area (ha)	Annex I Habitat Qualifying	Annex II Species Qualifying
Darwin Mounds cSAC	137726	Reefs (biogenic Lophelia pertusa)	N/A
Wyville Thomson Ridge pSAC	173995	Reefs	N/A
Braemar Pockmarks cSAC	518	Submarine structures made by leaking gases	N/A
Scanner Pockmark cSAC	335	Submarine structures made by leaking gases	N/A
Dogger Bank dSAC	1485715	Sandbanks	N/A
Stanton Banks cSAC	81727	Reefs	N/A
North Norfolk	432651.4	Sandbanks	N/A
Sandbanks and Saturn Reef pSAC		Reefs (biogenic Sabellaria spinulosa)	

In addition to the sites listed in Table A.5, an area of reef (bedrock and stony), often referred to as the Irish Sea Mounds, has been identified in the northwest Irish Sea. The potential conservation value of this site has been acknowledged by the JNCC (Johnston *et al.* 2004), however, a proposed area for SAC designation has not yet been submitted.

Table A.6 – Riverine SACs designated for migratory fish and/or the freshwater pearl mussel

	Designated for			
Site Name	Freshwater pearl mussel Margaritifera margaritifera	Migratory fish ¹		
River Eden		SL, RL, AS		
Afon Teifi / River Teifi		RL, AS, SL		
River Tweed		AS, SL, RL		
North Harris	√	AS		
River Moidart	\checkmark			
River Kerry	✓			
River Spey	√	SL, AS		
Endrick Water		RL, AS		
River Derwent & Bassenthwaite Lake		SL, RL, AS		
Afon Gwyrfai a Llyn Cwellyn		AS		
River Eden	✓	AS		
Afonydd Cleddau / Cleddau Rivers		RL, SL		
Afon Eden - Cors Goch Trawsfynydd	✓	AS		
Ardnamurchan Burns	✓			
Abhainn Clais an Eas and Allt a'Mhuilinn	✓			
Berriedale and Langwell Waters		AS		
Little Gruinard River		AS		
Mingarry Burn	√			
River Bladnoch		AS		

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Designated for

Site Name	Freshwater pearl mussel Margaritifera margaritifera	Migratory fish ¹
River Dee	✓	AS
River Derwent		RL, SL
River Evelix	✓	
Langavat		AS
River Moriston	✓	AS
River Naver	✓	AS
River Oykel	✓	AS
River South Esk	✓	AS
River Teith		SL, RL, AS
River Thurso		AS
Tweed Estuary		SL, RL
River Tay		AS, SL, RL

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

A5 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
	Degraded raised bogs still capable of natural regeneration
	Depressions on peat substrates of the Rhynchosporion
	Transition mires and quaking bogs
Coastal dunes	Atlantic decalcified fixed dunes (Calluno-Ulicetea)
	Coastal dunes with Juniperus 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
	Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> * Priority feature
	Petrifying springs with tufa formation (Cratoneurion) * Priority feature
Forest	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

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Annex I Habitat (abbreviated)	Annex I Habitat(s) (full description)
Grasslands	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 substrates (Festuco-Brometalia) (important orchid sites) * Priority feature
	Species-rich <i>Nardus</i> grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe) * Priority feature
Heaths	Alpine and Boreal heaths
	European dry heaths
	Northern Atlantic wet heaths with Erica tetralix
Inlets and bays	Large shallow inlets and bays
Limestone pavements	Limestone pavements * Priority feature
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 (Sarcocornetes 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 (Thlaspietes 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 Chara spp.
	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

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