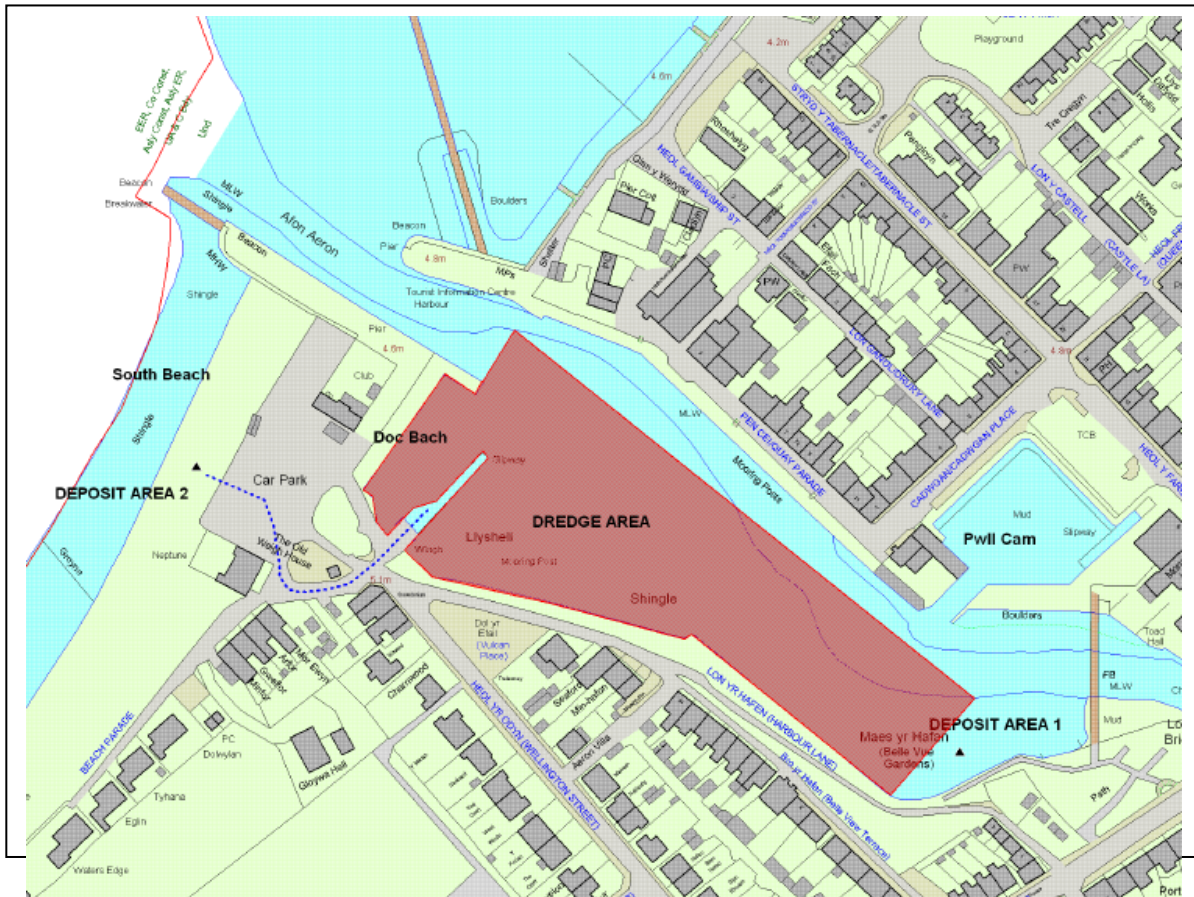




CSCC•CWIC



Engineering Design Services



ED3446 Aberaeron Harbour Dredging

Water Framework Directive Assessment & Test of Likely Significant Effects

21/05/2021

Report Prepared for:-

**Steve Hallows –
Service Manager
Highways
Development**

Report No. ED3446 ECO 2

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MSc

ED3446 Aberaeron Harbour Dredging

Water Framework Directive Assessment & Test of Likely Significant Effects

	Name	Signature	Position	Date of Issue	Version
Prepared	Julia Pschera		Highways Ecologist	21/05/2021	
Approved					

Record of Previous Issue and Amendments

Version	Revision date	Summary of Changes

Ceredigion County Council (CCC) is responsible for the maintenance of Aberaeron Harbour. As part of this, the harbour basin is dredged annually to maintain access for boats. The dredged material is used locally to replenish the beach in two locations.

The Marine Licence renewal for the maintenance dredging requires CCC to demonstrate that the proposed dredging is compatible with legal requirements to safeguard water bodies (Water Framework Directive 2000/60/EC) and sites which are designated under the Conservation of Habitat and Species Regulations (2010) such as Cardigan Bay Special Area of Conservation (SAC). The required assessments are the Water Framework Directive Assessment (Appendix 1 of this report) and a Test of Likely Significant Effects on a European Protected Site (TLSE; Appendix 2 of this report) to determine whether a full Habitats Regulations Assessment (HRA) is required.

Both the risk of endangering the 'Good' status of 'Cardigan Bay Central' and of undermining the conservation objectives for Cardigan Bay SAC are negligible for the dredging operation as proposed. Best practice regarding pollution prevention must be adhered to at all times.

Appendix 1: Water Framework Directive Assessment

Water Framework Directive assessment: scoping for activities in estuarine and coastal waters

Your activity	Description, notes or more information
Applicant name	Ceredigion County Council
Application reference number (where applicable)	
Name of activity	Aberaeron Harbour dredging and associated beach replenishment
Brief description of activity	<i>It is proposed to dredge gravelly material from the harbour basin at low tide around the time of Spring tides in winter/ early spring. The material will be dredged using excavators and will be used subsequently to replenish the beach in two locations: South Beach & Spending Beach. Annual volume of material to be dredged: 2000 tonnes.</i>
Location of activity (central point XY coordinates or national grid reference)	<i>Dredging</i> <i>SN 245520 262987</i> <i>SN 245468 262919</i> <i>SN 245670 262816</i> <i>SN 245700 262846</i> <i>Disposal Area 1 (Spending Beach)</i> <i>SN 245707 262839</i> <i>SN 245675 262813</i> <i>SN 245684 262813</i> <i>SN 245715 262831</i>

	<i>Disposal Area 2 (South Beach)</i> <i>SN 245406 262960</i> <i>SN 245395 262937</i> <i>SN 245403 262932</i> <i>SN 245413 262951</i>
Footprint of activity (ha)	2 ha
Timings of activity (including start and finish dates)	Low tide during Spring tides each year.
Extent of activity (for example size, scale frequency, expected volumes of output or discharge)	2000 tonnes pa
Use or release of chemicals (state which ones)	n/a

Water body¹	Description, notes or more information
WFD water body name	<i>Cardigan Bay Central</i>
Water body ID	<i>GB651009030000</i>
River basin district name	<i>Western Wales River Basin District</i>
Water body type (estuarine or coastal)	<i>Coastal</i>
Water body total area (ha)	<i>104.29</i>
Overall water body status (2015)	<i>Good</i>
Ecological status	<i>Good</i>
Chemical status	<i>Good</i>
Target water body status and deadline	<i>(Good 2021)</i>

Hydromorphology status of water body	
Heavily modified water body and for what use	<i>n/a</i>
Higher sensitivity habitats present	<i>SABELLARIA ALVEOLATA REEFS ON SAND-ABRADED EULITTORAL ROCK (polychaete reef)</i>
Lower sensitivity habitats present	<i>Mud/shingle</i>
Phytoplankton status	
History of harmful algae	
WFD protected areas within 2km	<i>Cardigan Bay SAC</i>

¹ Water body information can be found in the Environment Agency's catchment data explorer and the water body summary table. Magic maps provide additional information on habitats and protected areas. Links to these information sources can be found in the WFD assessment guidance for estuarine and coastal waters.

Specific risk information

Consider the potential risks of your activity to each of these receptors: hydromorphology, biology (habitats and fish), water quality and protected areas. Also consider invasive non-native species (INNS).

Section 1: Hydromorphology

Consider if hydromorphology is at risk from your activity.

Use the water body summary table to find out the hydromorphology status of the water body, if it is classed as heavily modified and for what use.

Consider if your activity:	Yes	No	Hydromorphology risk issue(s)
Could impact on the hydromorphology (for example morphology or tidal patterns) of a water body at high status		Impact assessment not required	
Could significantly impact the hydromorphology of any water body		Impact assessment not required	
Is in a water body that is heavily modified for the same use as your activity		Impact assessment not required	

Record the findings for hydromorphology and go to section 2: biology.

Section 2: Biology

Habitats

Consider if habitats are at risk from your activity.

Use the water body summary table and Magic maps, or other sources of information if available, to find the location and size of these habitats.

Higher sensitivity habitats ²	Lower sensitivity habitats ³
chalk reef	cobbles, gravel and shingle
clam, cockle and oyster beds	intertidal soft sediments like sand and mud
intertidal seagrass	rocky shore
maerl	subtidal boulder fields
mussel beds, including blue and horse mussel	subtidal rocky reef
polychaete reef	subtidal soft sediments like sand and mud
saltmarsh	
subtidal kelp beds	
subtidal seagrass	

² Higher sensitivity habitats have a low resistance to, and recovery rate, from human pressures.

³ Lower sensitivity habitats have a medium to high resistance to, and recovery rate from, human pressures.

Consider if the footprint ⁴ of your activity is:	Yes	No	Biology habitats risk issue(s)
0.5km ² or larger	Yes to one or more – requires impact assessment		
1% or more of the water body's area			
Within 500m of any higher sensitivity habitat			
1% or more of any lower sensitivity habitat			

⁴ Note that a footprint may also be a temperature or sediment plume. For dredging activity, a footprint is 1.5 times the dredge area.

Fish

Consider if fish are at risk from your activity, but only if your activity is in an estuary or could affect fish in or entering an estuary.

Consider if your activity:	Yes	No	Biology fish risk issue(s)
Is in an estuary and could affect fish in the estuary, outside the estuary but could delay or prevent fish entering it or could affect fish migrating through the estuary	Continue with questions		
Could impact on normal fish behaviour like movement, migration or spawning (for example creating a physical barrier, noise, chemical change or a change in depth or flow)		Impact assessment not required- an open river channel will be maintained at all times; no potential impact on migration	
Could cause entrainment or impingement of fish		Impact assessment not required	

Record the findings for biology habitats and fish and go to section 3: water quality.

Section 3: Water quality

Consider if water quality is at risk from your activity.

Use the water body summary table to find information on phytoplankton status and harmful algae.

Consider if your activity:	Yes	No	Water quality risk issue(s)
Could affect water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days)		Impact assessment not required- due to the gravelly particle size, it is expected that sediment will re-settle quickly after works	
Is in a water body with a phytoplankton status of moderate, poor or bad		Impact assessment not required	
Is in a water body with a history of harmful algae		Impact assessment not required	

Consider if water quality is at risk from your activity through the use, release or disturbance of chemicals.

If your activity uses or releases chemicals (for example through sediment disturbance or building works) consider if:	Yes	No	Water quality risk issue(s)
The chemicals are on the Environmental Quality Standards Directive (EQSD) list		Impact assessment not required	
It disturbs sediment with contaminants above Cefas Action Level 1		Impact assessment not required	

If your activity has a mixing zone (like a discharge pipeline or outfall) consider if:	Yes	No	Water quality risk issue(s)
The chemicals released are on the Environmental Quality Standards Directive (EQSD) list	N/A		

⁵ Carry out your impact assessment using the Environment Agency's surface water pollution risk assessment guidance, part of Environmental Permitting Regulations guidance.

Record the findings for water quality go on to section 4: WFD protected areas.

Section 4: WFD protected areas

Consider if WFD protected areas are at risk from your activity. These include:

- special areas of conservation (SAC)
- bathing waters
- special protection areas (SPA)
- nutrient sensitive areas
- shellfish waters

Use Magic maps to find information on the location of protected areas in your water body (and adjacent water bodies) within 2km of your activity.

Consider if your activity is:	Yes	No	Protected areas risk issue(s)
Within 2km of any WFD protected area ⁶	Requires impact assessment		

⁶ Note that a regulator can extend the 2km boundary if your activity has an especially high environmental risk.

Record the findings for WFD protected areas and go to section 5: invasive non-native species.

Section 5: Invasive non-native species (INNS)

Consider if there is a risk your activity could introduce or spread INNS.

Risks of introducing or spreading INNS include:

- materials or equipment that have come from, had use in or travelled through other water bodies
- activities that help spread existing INNS, either within the immediate water body or other water bodies

Consider if your activity could:	Yes	No	INNS risk issue(s)
Introduce or spread INNS		Impact assessment not required	

Record the findings for INNS and go to the summary section.

Summary

Summarise the results of scoping here.

Receptor	Potential risk to receptor?	Note the risk issue(s) for impact assessment
Hydromorphology	No	
Biology: habitats	Yes	The potential for impacts on the SABELLARIA ALVEOLATA REEFS is covered by the TLSE since this is one of the SAC's habitat features. No additional assessment required.
Biology: fish	No	
Water quality	No	
Protected areas	Yes	Impact assessment: TLSE
Invasive non-native species	No	

If you haven't identified any receptors at risk during scoping, you don't need to continue to the impact assessment stage and your WFD assessment is complete.

If you've identified one or more receptors at risk during scoping, you should continue to the impact assessment stage.

Include your scoping results in the WFD assessment document you send to your activity's regulator as part of your application for permission to carry out the activity.

Appendix 2: Test of Likely Significant Effects on a European Protected Site (TLSE) for Cardigan Bay Special Area of Conservation (SAC)

Record of Assessment of Likely Significant Effect on a European Site		Cyngor Sir CEREDIGION  ADRAN Y GWASANAETHAU AMGYLCHEDDOL A THAI
PART A <i>To be completed by relevant technical/project officer in consultation with Conservation/Ecology section and NRW. Please refer to English Nature Habitat Regulations Guidance Note 3 when completing this form.</i>		
1. Type of permission/activity:	Marine Licence to dredge and / or dispose of dredge material	
2. Planning application number	n/a	
3. National Grid reference:	SN 455 629	
4. Site reference:	Aberaeron Harbour dredging	

5. Brief description of proposal	Localised dredging within Aberaeron Harbour and associated beach nourishment works by means of land-based mechanical excavator at low tide. Renewal of licence for annual harbour maintenance dredging works. The proposed dredging will involve removal of sand from the main harbour basin and the disposal of the dredged material for use as beach nourishment at Spending Beach and South Beach. The works are carried out annually at the time of early year spring tides, while the tide is out. Adverse effects may include: • impacts on shoreline and intertidal habitats and species from release and suspension of sandy sediments into the water column, • general construction activities, • noise during construction, • fuel or lubricant spillage.
6. European site name(s) and status:	Cardigan Bay SAC.
7. List of features of interest relevant to application site: Cardigan Bay SAC features: 4 Habitats Directive Annex 2 Species and 3 Habitats Directive Annex 1 Habitats <u>Tursiops truncatus - bottlenose dolphin</u> <u>Reefs</u> <u>Submerged or partially submerged sea-caves</u> <u>Sandbanks which are slightly covered by seawater all the time</u> <u>Halichoerus grypus – grey seal</u> <u>Lampetra fluviatilis – river lamprey</u> <u>Petromyzon marinus – sea lamprey</u>	<u>Tursiops truncatus - bottlenose dolphin</u> <u>Halichoerus grypus – grey seal</u> <u>Reefs - Sabellaria alveolata reef</u> <u>Lampetra fluviatilis – river lamprey</u> <u>Petromyzon marinus – sea lamprey</u>

8. Conservation objectives: will the proposal undermine the conservation objectives? If no then plan may be granted.	No – this is a small scale, regular, annual maintenance operation. The dredging and nourishment will only be carried out at low water and no machinery or plant will enter the water. There will be no noise disturbance within the water and therefore no noise impact on dolphins or grey seals. Any re-suspension of sediment will be localised and of negligible volume since the material to be excavated is fairly coarse, consisting of predominantly gravel and sand with small quantities of silt/ clay. This type of sediment will settle quickly rather than being transported over long distances in the water. Because of this, the likelihood of significant effects on any <i>Sabellaria alveolata</i> outcrops or reefs is negligible. All plant and machinery will be well maintained, will use biodegradable oils and WILL NOT BE REFUELLED ON THE BEACH.
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9. Risk assessment - Where there is not a clear cut case for there being no likely significant effect on the interest features or conservation objectives, you should carry out and record a brief risk assessment. ARE FULLER CONSIDERATIONS REQUIRED? [If YES go to 9(a)]

9(a)What potential hazards are likely to affect the interest features? (Refer to relevant sensitivity matrix and only include those to which the interest features are sensitive). **Are the interest features potentially exposed to the hazard?**

Sensitive Interest Feature:	Potential hazard:	Probability of effect on SAC	Magnitude of effect
Sea lamprey & River lamprey	Disturbance & disruption of spawning migration	Negligible probability of disturbance due to the location of the works (machinery not to be used in the water).	Negligible
Grey seal & Bottlenose dolphin	Noise disturbance.	Negligible probability of significant impacts since the works will take place above the water, minimising the risk of noise disturbance.	Negligible

Reefs – <i>Sabellaria alveolata</i>	Potential adverse factors arising from maintenance dredging include: • Suspension of sediments and deposition on local <i>Sabellaria alveolata</i> reefs • Pollution from fuel or lubricant spills	The volume of sediment suspension and movement of suspended sediment as a consequence of the operation will be negligible since the material to be excavated is coarse, gravel and sand dominated sediment. There will be no plant or machinery working in the water. All plant and machinery will be well maintained, use biodegradable oils and WILL NOT BE REFUELLED ON THE BEACH.	Negligible
Sea caves & Sandbanks	Suspension of sediments and deposition on feature habitats.	Negligible probability due to the coarse particle size of the sediment to be excavated.	
10. Is the proposal directly connected with or necessary to the management of the site for nature conservation?		No	
11. Case History/ additional information			
12. Is the potential scale or magnitude of any effect likely to be significant?			
a) Alone? (explain conclusion)	No – very small scale; annual maintenance programme		

b) In combination with other plans or projects? (Explain conclusion and which plans/projects have been included, including those associated with other functions).	No	
13. Conclusion: Is the proposal likely to have a significant effect ‘alone or in combination’ on a European site? (justification – attach any relevant supporting information)	No	
14. Name of CCC officer and Date	Julia Pschera, 2 nd December 2020	
15. NRW comment on assessment:		
16. NRW Officer:		Date:
IF THE PROPOSAL IS LIKELY TO HAVE A SIGNIFICANT EFFECT AN APPROPRIATE ASSESSMENT WILL BE REQUIRED (see part B for suggested scope).		

CONSERVATION OBJECTIVES FOR RELEVANT FEATURES (taken from the Cardigan Bay SAC Conservation Strategy).

A) Conservation Objective for the bottlenose dolphin *Tursiops truncatus*.

The feature will be considered to be in a favourable conservation status when each of the following conditions are met:	Will the proposal undermine the conservation objective? If 'yes', give brief details.
(1.1) Population Dynamics: Population size the size of the population utilising the site and its contribution to the SW UK & Ireland population is determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	NO
(1.2) Population dynamics: Reproductive success calf production and survival is determined by inherent reproductive capacity, biotic and abiotic processes, no more degraded or suppressed as a consequence of human action than at the time the site was classified a candidate SAC; <i>and</i> calf production is insuppressed by sub-optimal physiological health caused by human action	NO
(1.3) Population Dynamics: Population structure the population structure is: - determined by natural density dependent and independent processes, reproductive success and physiological health, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC; <i>and</i> - not selectively modified by human action;	NO
(1.4) Population Dynamics: Physiological health the physiological health and reproductive capacity of the population is determined by natural physiological and environmental processes, no more degraded by human action than at the time the site was classified a candidate SAC; <i>and</i> contaminant burdens derived from human activity remain below levels that may cause physiological damage, or immune or reproductive suppression;	No
(2) Range The range, access to and use of natural habitat throughout the site necessary for the <i>bottlenose dolphin</i> population at any stage of its biological cycle are: - determined by natural habitat structure, function and quality; <i>and</i> - no more degraded by human action than at the time the site was classified a candidate SAC;	No
(3.1) Habitat: Distribution and extent the distribution and extent of habitat necessary for the <i>bottlenose dolphin</i> population at any stage of its biological cycle are determined by natural environmental processes, no more degraded by human action than at the time the site was classified a candidate SAC;	No
(3.2) Habitat: Structure, function and quality the habitat structures and environmental processes necessary for the	NO

<i>bottlenose dolphin</i> population are determined by natural geomorphological, hydrological, meteorological and ecological processes, no more degraded by human action than at the time the site was classified a candidate SAC;	
• <i>bottlenose dolphin</i> habitat remains no more degraded by human action than at the time the site was classified a candidate SAC; • the degree of hazard to the <i>bottlenose dolphin</i> population from material of anthropogenic origin is at or below that at the time the site was classified a candidate SAC; • disturbance by human activity remains below levels that suppress reproductive success, physiological health or long-term behaviour; • <i>bottlenose dolphin</i> prey availability is determined by inherent population dynamics and distribution of prey species, no more degraded as a result of human action than at the time the site was classified a candidate SAC; and • the ability of the <i>bottlenose dolphin</i> population to maintain itself in the long-term is not inhibited by human exploitation of potential <i>bottlenose dolphin</i> prey species; and • populations of <i>bottlenose dolphin</i> prey species subject to existing commercial fisheries are within safe limits • contamination of potential prey species by contaminants derived from human activity is below concentrations potentially harmful to <i>bottlenose dolphin</i> physiological health and reproductive capability;	NO
(4) Management of Activities and Operations • the management of activities or operations likely to degrade the population dynamics, range or habitat of the <i>bottlenose dolphin</i> population, is appropriate for maintaining favourable conservation status and is secure in the long term; • the management commercial fisheries for <i>bottlenose dolphin</i> prey species is appropriate for maintaining prey species populations within safe biological limits and is secure in the long term.	No

(B) Conservation Objective for Features: Grey Seal (*Halichoerus grypus*)

The feature will be considered to be in a favourable conservation status when each of the following conditions are met:	Will the proposal undermine the conservation objective? If 'yes', give brief details.
(1.1) Population Dynamics: Population size the part of the SW Wales <i>grey seal</i> population utilising the site is maintaining itself at a size determined by natural biotic and abiotic factors, no more degraded or inhibited as a consequence of human action than at the time the site was classified a candidate SAC;	No
(1.2) Population Dynamics: Reproductive success pup production and survival is determined by inherent reproductive capacity, biotic and abiotic processes, no more degraded or suppressed as a consequence of human action than at the time the site was classified a candidate SAC;	No
and	

pup production is unsuppressed by sub-optimal physiological health caused by human action,	
(1.3) Population Dynamics: Population structure the population structure is: - determined by natural density dependent and independent processes, reproductive success and physiological health, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC; and - not selectively modified by human action;	No
(1.4) Population Dynamics: Physiological health the physiological health and reproductive capacity of the population is determined by natural physiological and environmental processes, no more degraded by human action than at the time the site was classified a candidate SAC; contaminant burdens derived from human activity remain below levels that may cause physiological damage, or immune or reproductive suppression;	No
(2) Range the range, access to and use of natural habitat throughout the site necessary for the <i>grey seal</i> population at any stage of its biological cycle are: - determined by natural habitat structure, function and quality; and - no more degraded by human action than at the time the site was classified a candidate SAC;	No
(3.1) Habitat: Distribution and extent the distribution and extent of habitat necessary for the <i>grey seal</i> population at any stage of its biological cycle are determined by natural environmental processes, no more degraded by human action than at the time the site was classified a candidate SAC;	No
(3.2) Habitat: Structure, function and quality the habitat structures and environmental processes necessary for the <i>grey seal</i> population are determined by natural geomorphological, hydrological, meteorological and ecological processes, no more degraded by human action than at the time the site was classified a candidate SAC; <i>grey seal</i> habitat remains no more degraded by human action than at the time the site was classified a candidate SAC; • the degree of hazard to the <i>grey seal</i> population from material of anthropogenic origin is at or below that at the time the site was classified a candidate SAC; • disturbance by human activity that suppresses reproductive success, physiological health or modifies long-term behaviour is no greater than at the time the site was classified a candidate SAC; <i>grey seal</i> prey availability is determined by inherent population dynamics and distribution of prey species, no more degraded as a result of human action than at the time the site was classified a candidate SAC; and the ability of the <i>grey seal</i> population to maintain itself in the long-term is not inhibited by human exploitation of potential <i>grey seal</i> prey species; and populations of <i>grey seal</i> prey species subject to existing commercial	No

fisheries are within safe biological limits;	
contamination of potential prey species by contaminants derived from human activity is below concentrations potentially harmful to <i>grey seal</i> physiological health and reproductive capability;	
(4) Management of Activities and Operations the management of activities or operations likely to degrade the population dynamics, range or habitat of the <i>grey seal</i> population, is appropriate for maintaining favourable conservation status and is secure in the long term;	No
the management commercial fisheries for <i>grey seal</i> prey species is appropriate for maintaining prey species populations within safe biological limits and is secure in the long term.	

(C) Conservation Objective for Feature: river lamprey (*Lampetra fluviatilis*) and sea lamprey (*Petromyzon marinus*)

The lamprey features will be considered to be in a favourable conservation status when each of the following conditions are met:	Will the proposal undermine the conservation objective? If 'yes', give brief details.
(1) Population dynamics the <i>lamprey</i> population within the site is maintaining itself at a size, structure and in a state of physiological health: - determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(2) Range the range, access to and use of natural habitat within the site necessary for the <i>lamprey</i> population are determined by natural habitat structure, function and quality, no more degraded or inhibited by human action than at the time the site was classified a candidate SAC;	No
(3.1) Habitat: Distribution and extent the distribution and extent of habitat necessary for the <i>lamprey</i> population to meet its ecological requirements within the site are: - determined by natural environmental processes, no more degraded by human action than at the time the site was classified a candidate SAC;	No
(3.2) Habitat: Structure, function and quality the habitat structures and environmental processes necessary for <i>lamprey</i> within the site are: - determined by natural environmental processes, no more degraded by human action than at the time the site was classified a candidate SAC; <i>lamprey</i> prey availability is determined by inherent population dynamics and distribution of prey species, no more degraded as a result of human action than at the time the site was classified a candidate SAC; <i>and</i> the ability of the <i>lamprey</i> population to maintain itself in the long-term is not inhibited by human exploitation of potential <i>lamprey</i> prey species; <i>and</i>	No

populations of <i>lamprey</i> prey species subject to existing commercial fisheries are within safe biological limits;	
contamination of potential prey species by contaminants derived from human activity is below concentrations potentially harmful to <i>lamprey</i> physiological health;	
(3) Management of Activities and Operations the management of activities or operations likely to degrade the population dynamics, range or habitat of the <i>lamprey</i> population, is appropriate for maintaining favourable conservation status and is secure in the long term; the management commercial fisheries for <i>lamprey</i> prey species is appropriate for maintaining prey species populations within safe biological limits and is secure in the long term.	No

(D) Conservation Objective for reefs.

The lamprey features will be considered to be in a favourable conservation status when each of the following conditions are met:	Will the proposal undermine the conservation objective? If 'yes', give brief details.
(1.1) Distribution and Extent the distribution and extent of <i>reefs</i> are determined by natural structure and environmental processes, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(2.1) Structure and Function: Geology the natural distribution, extent and variation of <i>reefs</i> geology is no more reduced or degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(2.2) Structure and Function: Sedimentology the granulometry, structure, distribution and extent of <i>reefs</i> sediment deposits, are determined by natural sediment supply and transport processes, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(2.3) Structure and Function: Geomorphology and topography <i>reefs</i> geomorphology, and its natural variation, distribution and extent, are determined by natural environmental processes, no more degraded or inhibited as a consequence of human action than at the time the site was classified a candidate SAC;	No
(2.4) Structure and Function: Habitat structure quality habitat structure remains at or above the quality existing at the time the site was classified a candidate SAC; <i>where</i> the quality of habitat structure is no more degraded as a consequence of human action or by materials of anthropogenic origin, <i>and</i> ecological processes are no more impeded by degraded habitat quality as a consequence of human action, than at the time the site was classified a candidate SAC;	No
(3.1) Function: the natural environmental processes necessary for the long-term maintenance	No

of <i>reefs</i> habitat and its typical species are no more inhibited or degraded as a consequence of human action than at the time the site was classified a candidate SAC;	
(3.1) Function: Hydrography, hydrodynamics and meteorology the hydrographic and meteorological processes necessary for long-term maintenance of the <i>reefs</i> habitat and its typical species, are no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(3.2) Function: water and sediment chemistry the salinity regime and gradients of the water column are determined by natural hydrodynamic, hydrological and meteorological processes, no more inhibited or degraded as a consequence of human action than at the time the site was classified a candidate SAC; nutrients in the water column and sediments remain at or below existing statutory guideline concentrations; inputs of nutrients to the water column and sediments, derived from human activity remain: - at or below levels at the time the site became a candidate SAC, - at or below existing statutory guideline concentrations, - within ranges that are not potentially detrimental to the long-term maintenance of <i>reefs</i> species populations; Contaminants in the water column and sediments, derived from human activity remain: - at or below levels at the time the site became a candidate SAC, - at or below existing statutory guideline concentrations; inputs of contaminants derived from human activity remain: - at or below levels at the time the site became a candidate SAC, - at or below existing statutory guideline concentrations, - below levels that would potentially result in increase in contaminant concentrations within sediments or biota, - below levels potentially detrimental to the long-term maintenance of <i>reefs</i> species populations; dissolved oxygen concentrations in the water column, and in sediment on <i>reefs</i> surfaces are: - determined by natural environmental processes, no more reduced or degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(3.3) Sediment processes the dynamism and magnitude of sediment accretion and erosion on reef surfaces are: - determined by the interaction between hydrodynamic and ecological processes, sediment supply and the seabed and coastal morphology, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(3.4) Biological interactions inter-specific and intra-specific interactions of <i>reefs</i> typical species are determined by inherent population dynamics and ecological processes, no more inhibited or degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No

(4.1) Conservation Status of Typical Species populations of typical species are maintaining their conservation status on a long-term basis as viable components of <i>reefs</i> habitats, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC.	No
(4.1) Conservation Status of Typical Species: species richness species richness is determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(4.2) Conservation Status of Typical Species: Population dynamics the <i>reefs</i> species' populations are maintaining their abundance and biomass at levels determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC; populations of typical species subject to existing commercial fisheries are within safe biological limits; the population structures of the <i>reefs</i> typical species are maintaining themselves at levels determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC; the physiological health, reproductive capacity and recruitment of the <i>reefs</i> ' typical species is determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(4.3) Range the range of the <i>reefs</i> typical species is determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC; access to, and use of, <i>reefs</i> habitat by its typical species is no more impeded or degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(5.1) Management of Activities and Operations the management of activities or operations likely to degrade the distribution, extent, structure, function or typical species populations of the feature, is appropriate for maintaining favourable conservation status and is secure in the long term; the management of existing commercial fisheries for typical species is appropriate for maintaining their populations within safe biological limits and is secure in the long term.	No

(E) Conservation Objective for Submerged or Partially Submerged Sea-Caves

(1) Distribution and Extent the distribution and extent of <i>sea-caves</i> are determined by natural structure and environmental processes, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(2.1) Structure and Function: Geology the natural habitat structures necessary for the long-term maintenance of <i>sea</i>	No

<i>cave</i> habitat and its typical species, are no more degraded as a consequence of human action than at the time the site was classified a candidate SAC; the natural distribution, extent and variation of <i>sea cave</i> geology is no more reduced or degraded as a consequence of human action than at the time the site was classified a candidate SAC; <i>sea cave</i> structural integrity evolves under the action of natural environmental processes, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC	
(2.2) Structure and Function: Sedimentology the granulometry, structure, distribution and extent of <i>sea cave</i> sediment deposits, are determined by natural sediment supply and transport processes, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(2.3) Structure and Function: Geomorphology and topography the geomorphology of <i>sea-caves</i>, and its natural variation, distribution and extent, are determined by natural environmental processes, no more degraded or inhibited as a consequence of human action than at the time the site was classified a candidate SAC;	No
(2.4) Structure and Function: Habitat structure quality habitat structure remains at or above the quality existing at the time the site was classified a candidate SAC; <i>where</i> • the quality of habitat structure is no more degraded as a consequence of human action or by materials of anthropogenic origin, <i>and</i> • ecological processes are no more impeded by degraded habitat quality as a consequence of human action, than at the time the site was classified a candidate SAC;	No
(3.1)Function: the natural environmental processes necessary for the long-term maintenance of <i>sea cave</i> habitat and its typical species are no more inhibited or degraded as a consequence of human action than at the time the site was classified a candidate SAC:	No
(3.1) Function: Hydrography, hydrodynamics and meteorology the hydrographic and meteorological processes necessary for long-term maintenance of the <i>sea-cave</i> habitat and its typical species, are no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(3.2) Function: water and sediment chemistry the salinity regime and salinity gradients of the water column are determined by natural hydrodynamic, hydrological and meteorological processes, no more inhibited or degraded as a consequence of human action than at the time the site was classified a candidate SAC; nutrients in the water column and sediments remain at or below existing statutory guideline concentrations; inputs of nutrients to the water column and sediments, derived from human activity remain: - at or below levels at the time the site became a candidate SAC, - at or below existing statutory guideline concentrations, - within ranges that are not potentially detrimental to the long-term	No

maintenance of <i>sea-caves</i> species populations; contaminants in the water column and sediments, derived from human activity remain: - at or below levels at the time the site became a candidate SAC, - at or below existing statutory guideline concentrations; inputs of contaminants derived from human activity remain: - at or below levels at the time the site became a candidate SAC, - at or below existing statutory guideline concentrations, - below levels that would potentially result in increase in contaminant concentrations within sediments or biota, - below levels potentially detrimental to the long-term maintenance of <i>sea cave</i> species populations; dissolved oxygen concentrations in the water column, and <i>sea-caves</i> sediments are determined by natural environmental processes, no more reduced or degraded as a consequence of human action than at the time the site was classified a candidate SAC;	
(3.3) Sediment processes sediment processes affecting <i>sea-caves</i> are determined by natural environmental processes, no more degraded as a consequence of human actions than at the time the site was designated a candidate SAC;	No
(3.4) Biological interactions inter-specific and intra-specific interactions of <i>sea-caves</i> typical species are determined by inherent population dynamics and ecological processes, no more inhibited or degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(4.1) Conservation Status of Typical Species populations of <i>sea-caves</i> typical species are maintaining their conservation status on a long-term basis as viable components of <i>sea-caves</i> habitats, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC.	No
(4.1) Conservation Status of Typical Species: species richness species richness in <i>sea-caves</i> is determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(4.2) Conservation Status of Typical Species: Population dynamics the <i>sea-caves</i> species' populations are maintaining their abundance and biomass at levels determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC; populations of typical species subject to existing commercial fisheries are within safe biological limits; the population structures of <i>sea cave</i> typical species are maintaining themselves at levels determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC; the physiological health, reproductive capacity and recruitment of the <i>sea-caves</i>' typical species is determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site	No

was classified a candidate SAC;	
(4.3) Range the ranges of the <i>sea-caves'</i> typical species are determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC; access to, and use of, <i>sea cave</i> habitat by its typical species is no more impeded or degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(5.1) Management of Activities and Operations the management of activities or operations likely to degrade the distribution, extent, structure, function or typical species populations of the feature, is appropriate for maintaining favourable conservation status and is secure in the long term; • the management of existing commercial fisheries for typical species is appropriate for maintaining their populations within safe biological limits and is secure in the long term.	No

(D) Conservation Objective for Sand Banks

(1.1) Distribution and Extent the distribution and extent of sandbanks are determined by natural structure and environmental processes, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
Structure and Function: the natural habitat structures necessary for the long-term maintenance of <i>sandbanks</i> habitat and its typical species, are no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(2.1) Structure and Function: Sedimentology each <i>sandbank's</i> sediment granulometry and structure, and that of its supporting sediments, are determined by natural sediment processes, no more degraded or inhibited as a consequence of human action than at the time the site was classified a candidate SAC;	No
(2.2) Structure and Function: Geomorphology and topography The distribution, extent and variation in geomorphology and topography of <i>sandbanks</i> and their supporting sediments are determined by natural environmental processes, no more inhibited or degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(2.3) Structure and Function: Habitat structure quality habitat structure remains at or above the quality existing at the time the site was classified a candidate SAC; <i>where</i> • the quality of habitat structure is no more degraded as a consequence of human action or by materials of anthropogenic origin, <i>and</i> ecological processes are no more impeded by degraded habitat quality as a consequence of human action, than at the time the site was classified a candidate SAC;	No
(3.1) Function: the natural environmental processes necessary for long-term maintenance of	No

the <i>sandbank</i> habitat and its typical species are no more inhibited or degraded as a consequence of human action than at the time the site was classified a candidate SAC;	
(3.1) Function: Hydrography, hydrodynamics and meteorology the hydrographic and meteorological processes necessary for long-term maintenance of the <i>reef</i> habitat and its typical species, are determined by natural processes, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(3.2) Function: water and sediment chemistry nutrients in the water column and sediments remain at or below existing statutory guideline concentrations; • inputs of nutrients to the water column and sediments, derived from human activity remain: - at or below levels at the time the site became a candidate SAC, - at or below existing statutory guideline concentrations, - within ranges that are not potentially detrimental to the long-term maintenance of <i>sand bank</i> species populations; contaminants in the water column and sediments, derived from human activity remain: - at or below levels at the time the site became a candidate SAC, - at or below existing statutory guideline concentrations; • inputs of contaminants derived from human activity remain: - at or below levels at the time the site became a candidate SAC, - at or below existing statutory guideline concentrations, - below levels that would potentially result in increase in contaminant concentrations within sediments or biota, - below levels potentially detrimental to the long-term maintenance of <i>sand bank</i> species populations;	No
(3.3) Sediment processes each <i>sandbank</i> 's inherently dynamic sediment processes are determined by natural environmental processes, no more inhibited or degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(3.4) Biological interactions inter-specific and intra-specific interactions of <i>sandbanks</i> typical species are determined by inherent population dynamics and ecological processes, no more inhibited or degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(4.1) Conservation Status of Typical Species populations of <i>sea-caves</i> typical species are maintaining their conservation status on a long-term basis as viable components of <i>sea-caves</i> habitats, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(4.1) Conservation Status of Typical Species: species richness species richness of the <i>sandbanks</i> ' typical species is determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(4.2) Conservation Status of Typical Species: Population dynamics <i>sand bank</i> species' populations are maintaining their abundance and biomass at levels determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No

populations of typical species subject to existing commercial fisheries are within safe biological limits; the population structures of <i>sand bank</i> typical species are maintaining themselves at levels determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC; the physiological health, reproductive capacity and recruitment of the <i>sea-caves'</i> typical species is determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC;	
(4.3) Range the ranges of the <i>sand banks'</i> typical species are determined by natural biotic and abiotic factors, no more degraded as a consequence of human action than at the time the site was classified a candidate SAC; access to, and use of, <i>sand bank</i> habitat by its typical species is no more impeded or degraded as a consequence of human action than at the time the site was classified a candidate SAC;	No
(5.1) Management of Activities and Operations the management of activities or operations likely to degrade the distribution, extent, structure, function or typical species populations of the feature, is appropriate for maintaining favourable conservation status and is secure in the long term; • the management of existing commercial fisheries for typical species is appropriate for maintaining their populations within safe biological limits and is secure in the long term.	No