Title:	Impact Assessment (IA)
North West Rockall Bank Special Area of Conservation.	**IA No:**
Lead department or agency: Defra Marine Biodiversity Policy	**Date:** 08/07/10
Other departments or agencies: Joint Nature Conservation Committee (JNCC)	**Stage:** Final
	Source of intervention: EU
	Type of measure: Secondary legislation
	Contact for enquiries: Gareth.Johnson@jncc.gov.uk (01733) 866838

Summary: Intervention and Options

What is the problem under consideration? Why is government intervention necessary?

Due to pressures of anthropogenic activities on habitats and species in the marine environment many are currently in decline. Although regulation is in place for some activities, it is not necessarily designed to achieve nature conservation objectives. Intervention is needed in order to manage activities in key areas for important species and habitats and to promote a healthy and resilient marine environment. JNCC have assessed this site against the Habitats Directive Annex III selection criteria, and advised the Secretary of State that it is eligible for identification as a 'Site of Community Importance' and should therefore be transmitted to the European Commission as required under Regulation 7 of the Offshore Marine Conservation Regulations 2007 (as amended).

What are the policy objectives and the intended effects?

The EC Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna (the Habitats Directive, 1992) aims to promote the maintenance of biodiversity. The Habitats Directive requires the UK (as a Member State) to propose sites hosting the habitat types and species in need of conservation listed in the Directive, which are eligible for identification as SCIs and designation as Special Areas of Conservation (SAC). The UK is required to establish conservation measures for sites designated as SACs and this is achieved through management of potentially damaging activities where the habitats and species are present and in their vicinity. 'Reefs' (Habitat 1170 in Annex I) are habitats of European importance and are the qualifying feature of the North West Rockall Bank.

What policy options have been considered? Please justify preferred option (further details in Evidence Base)

Baseline: Do nothing, that is do not designate the site.

Option 1: Propose the site to the European Commission for designation. This is the preferred option as it will contribute towards conserving habitat of European importance located in UK waters along with its typical species.

Option 2: Search for an alternative site. This option is not considered further here as there are no known alternative sites. If this site is not designated there is a significant risk that the EC will judge the UK's contribution to the network of SACs for reef to be insufficient, which could lead to infraction proceedings. Alternative sites of similar quality and extent are not currently known to exist (known alternatives were considered in the scoping stage but not recommended on scientific grounds). Though the site could be conserved under voluntary agreements or a national designation this would not contribute to fulfilling the requirements of the Habitats Directive.

When will the policy be reviewed to establish its impact and the extent to which the policy objectives have been achieved?	It will be reviewed 01/2020
Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review?	Yes

SELECT SIGNATORY Sign-off For consultation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible SELECT SIGNATORY:..... Date:.....

Summary: Analysis and Evidence — Policy Option 1

Description:

Price Base Year 2010	PV Base Year 2010	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: n/a	**High:** n/a	**Best Estimate: n/a**

COSTS (£m)	**Total Transition** (Constant Price)	Years	**Average Annual** (excl. Transition) (Constant Price)	**Total Cost** (Present Value)
Low	£44.6k		£0	**£44.6k**
High	£44.6k		£18.8k	**£206k**
Best Estimate	£44.6k		£9.4k	**£125.3k**

Description and scale of key monetised costs by 'main affected groups'

No additional costs to business for minimum scenario; enforcement costs (£44.6k one off).
For maximum scenario: costs for fishermen from restrictions on fishing (lost profits of £18.8k pa.); enforcement costs (£44.6k one-off from agreement of CFP measures in 2011).

Other key non-monetised costs by 'main affected groups'

Wider economic effects resulting from direct costs to fishermen.

BENEFITS (£m)	**Total Transition** (Constant Price)	Years	**Average Annual** (excl. Transition) (Constant Price)	**Total Benefit** (Present Value)
Low	Optional		Optional	**Optional**
High	Optional		Optional	**Optional**
Best Estimate	unquantified		unquantified	**unquantified**

Description and scale of key monetised benefits by 'main affected groups'

It has not been possible to monetise the benefits because the benefits cannot be readily quantified and most of the benefits are not traded so cannot be easily valued.

Details of the qualitative assessment of the benefits are provided in the evidence base.

Other key non-monetised benefits by 'main affected groups'

Moderate beneficial impacts on non-use values of natural environment; benefits to fish; intrinsic value; role of feature in the wider ecosystem; possible increased commercial stocks with designation of site; and benefits to ecosystem services beyond next 10 yrs.

Key assumptions/sensitivities/risks — **Discount rate (%)** 3.5%

Management measures for the site will not be known until after designation so a realistic range of measures is used for the analysis. If the site is not designated condition of the habitats may be maintained but could be at risk to further deterioration. Formal mechanisms to avoid damage to the habitats are weaker if the site is not designated. Risk of infraction if the suite of proposed SACs is not designated. Benefits could be jeopardised if appropriate fisheries management measures are not agreed through the Common Fisheries Policy, or if they are not enforced effectively. Displacement of activities could increase environmental degradation in other areas. Risk of cumulative economic impacts of marine protected areas.

Impact on admin burden (AB) (£m):			**Impact on policy cost savings (£m):**	**In scope**
New AB: 0	**AB savings:**	**Net:** 0	**Policy cost savings:**	No

Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?			United Kingdom		
From what date will the policy be implemented?			01/11/2010		
Which organisation(s) will enforce the policy?			MMO		
What is the annual change in enforcement cost (£m)?			Up to £56.4k		
Does enforcement comply with Hampton principles?			Yes		
Does implementation go beyond minimum EU requirements?			No		
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)			**Traded:** n/a	**Non-traded:** n/a	
Does the proposal have an impact on competition?			No		
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?			**Costs:** 100	**Benefits:** 100	
Annual cost (£m) per organisation (excl. Transition) (Constant Price)	**Micro**	**< 20**	**Small**	**Medium**	**Large**
Are any of these organisations exempt?	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No

Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

Please note this checklist is not intended to list each and every statutory consideration that departments should take into account when deciding which policy option to follow. It is the responsibility of departments to make sure that their duties are complied with.

Does your policy option/proposal have an impact on…?	**Impact**	**Page ref within IA**
Statutory equality duties[1] Statutory Equality Duties Impact Test guidance	No	
Economic impacts		
Competition Competition Assessment Impact Test guidance	No	
Small firms Small Firms Impact Test guidance	No	
Environmental impacts		
Greenhouse gas assessment Greenhouse Gas Assessment Impact Test guidance	No	
Wider environmental issues Wider Environmental Issues Impact Test guidance	Yes	All
Social impacts		
Health and well-being Health and Well-being Impact Test guidance	Yes	
Human rights Human Rights Impact Test guidance	No	
Justice system Justice Impact Test guidance	No	
Rural proofing Rural Proofing Impact Test guidance	No	
Sustainable development Sustainable Development Impact Test guidance	Yes	All

[1] Race, disability and gender Impact assessments are statutory requirements for relevant policies. Equality statutory requirements will be expanded 2011, once the Equality Bill comes into force. Statutory equality duties part of the Equality Bill apply to GB only. The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

Evidence Base (for summary sheets) – Notes

Use this space to set out the relevant references, evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Please fill in **References** section.

References

Include the links to relevant legislation and publications, such as public impact assessment of earlier stages (e.g. Consultation, Final, Enactment).

No.	Legislation or publication
1	NW Rockall Bank SAC Selection Assessment v3.0, JNCC
2	NW Rockall Bank Conservation Objectives and Advice on Operations v2.2, JNCC
3	NW Rockall Bank SAC Impact Assessment, V1.0, JNCC
4	Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended)

+

See attached evidence base and break down of present value of costs by sector in Appendix G. Details of the impact tests are provided in Appendix I.

Evidence Base

Ensure that the information in this section provides clear evidence of the information provided in the summary pages of this form (recommended maximum of 30 pages). Complete the **Annual profile of monetised costs and benefits** (transition and recurring) below over the life of the preferred policy (use the spreadsheet attached if the period is longer than 10 years).

The spreadsheet also contains an emission changes table that you will need to fill in if your measure has an impact on greenhouse gas emissions.

Annual profile of monetised costs and benefits* - (£m) constant prices

	Y_0	Y_1	Y_2	Y_3	Y_4	Y_5	Y_6	Y_7	Y_8	Y_9
Transition costs	0.045	0	0	0	0	0	0	0	0	0
Annual recurring cost	0.009	0.018	0.027	0.036	0.045	0.054	0.063	0.072	0.081	0.090
Total annual costs	0.045	0.063	0.072	0.081	0.090	0.099	0.108	0.117	0.126	0.135
Transition benefits	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Annual recurring benefits	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total annual benefits	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

* For non-monetised benefits please see summary pages and main evidence base section

The annual profile of monetised costs and benefits was calculated using the midpoint as a measure of best estimate. Benefits were not quantifiable.

Microsoft Office Excel Worksheet

Evidence Base (for summary sheets)

There is discretion for departments and regulators as to how to set out the evidence base. However, it is desirable that the following points are covered:

- Problem under consideration;
- Rationale for intervention;
- Policy objective;
- Description of options considered (including do nothing);
- Costs and benefits of each option;
- Risks and assumptions;
- Administrative burden and policy savings calculations;
- Wider impacts;
- Summary and preferred option with description of implementation plan.

Inserting text for this section:

Select the notes here and either type section text, or use **Paste Without Format** toolbar button to paste in the standard EBBodyPara Style. Format text by applying EB styles from the toolbar.

Annexes

Annex 1 should be used to set out the Post Implementation Review Plan as detailed below. Further annexes may be added to provide further information about non-monetary costs and benefits from Specific Impact Tests, if relevant to an overall understanding of policy options.

Annex 1: Post Implementation Review (PIR) Plan

A PIR should be undertaken, usually three to five years after implementation of the policy, but exceptionally a longer period may be more appropriate. A PIR should examine the extent to which the implemented regulations have achieved their objectives, assess their costs and benefits and identify whether they are having any unintended consequences. Please set out the PIR Plan as detailed below. If there is no plan to do a PIR please provide reasons below.

Basis of the review: [The basis of the review could be statutory (forming part of the legislation), it could be to review existing policy or there could be a political commitment to review];

PIR consists of two elements:

1. Assessment of any additional management needed to fulfil conservation objectives for the site, accompanied by assessment of likely socio-economic effects of any such management proposals.
2. Statutory monitoring of the condition of interest features in the site, six yearly report to Euro Commission required, next report due 2013.

Review objective: [Is it intended as a proportionate check that regulation is operating as expected to tackle the problem of concern?; or as a wider exploration of the policy approach taken?; or as a link from policy objective to outcome?]

1. Implementation of any management of marine activities required post-designation to fulfil conservation objectives for the features at the site.
2. The statutory monitoring of condition of the features aims to assess whether the conservation objectives for the site are being achieved. If conservation objectives are not being achieved, management of activities affecting the site will need to be reviewed.

Review approach and rationale: [e.g. describe here the review approach (in-depth evaluation, scope review of monitoring data, scan of stakeholder views, etc.) and the rationale that made choosing such an approach]

Review of existing industry activities at or affecting the site, based on information from regulators and stakeholders.

Conduct survey to monitor condition of features of the site, and activities which may affect those features, within 6 year reporting framework set by Euro Commission.

Baseline: [The current (baseline) position against which the change introduced by the legislation can be measured]

Baseline data on the condition of interest features in the site and baseline data collected for the impact assessment on human activities in or affecting the site.

Success criteria: [Criteria showing achievement of the policy objectives as set out in the final impact assessment; criteria for modifying or replacing the policy if it does not achieve its objectives]

Achievement of the conservation objectives for the site.

Monitoring information arrangements: [Provide further details of the planned/existing arrangements in place that will allow a systematic collection systematic collection of monitoring information for future policy review]

Statutory monitoring of the condition of interest features in the site following designation. Ongoing collation of socio-economic information from regulators and stakeholders on activities on or affecting the site.

Reasons for not planning a PIR: [If there is no plan to do a PIR please provide reasons here]

Add annexes here.

CONTENTS

1 INTRODUCTION

1.1 Purpose

Within Europe natural habitats are continuing to deteriorate and an increasing number of wild species are seriously threatened. The main aim of the EC Habitats Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance.

This impact assessment addresses the recommended designation by JNCC of a Special Area of Conservation (SAC) at NW Rockall Bank. Rockall Bank is an offshore bank situated in the North East Atlantic, approximately 400km west of the Outer Hebrides. The north western part of the bank is being recommended for SAC designation due to its Annex I reef (habitat 1170).

The UK is responsible for a sea area that is over three times larger than its land mass and which contains a rich diversity of habitats and associated species. The diverse range of habitats in Britain's seas supports over 10,000 species, ranging from whales and dolphins to sponges, corals and seaweeds (Hiscock et al 2005). This estimate was generated predominately from records from shallow waters and it is understood that there may be many more species that are still undiscovered in deeper UK waters. Britains' marine habitats are at risk of deterioration and a number of species are threatened.

Human activities can adversely affect our marine environment. Many UK marine habitats have already been altered by activities such as fishing, windfarm development, dredge disposal and oil and gas extraction (Eastwood 2007). Direct harvesting of fish has caused dramatic decreases in populations of target species including cod, herring, plaice and sole (Hall 1999) and even localised extinctions in parts of UK waters, for example the common skate (Dulvy & Reynolds 2002). Species that are not the target of harvesting are also damaged, particularly through inadvertent bycatch, and damage to habitats, for example through the use of destructive bottom fishing gear.

Currently little of the UK's offshore marine environment is protected for conservation purposes. Consequently, protection is not being provided to examples of the variety of habitats found in UK offshore waters. Given the overlap between anthropogenic activities and habitats of conservation importance, it is evident that additional management is needed to maintain and restore the healthy structure and function of marine ecosystems whilst supporting sustainable industries.

1.2 Policy drivers

Member States of the Council of Europe are committed to the Convention on the Conservation of European Wildlife and Natural Habitats (Bern 1979). The European Community has made this legally binding through the Habitats Directive (92/43/EEC) which aims to conserve natural habitats and species that have been prioritised for conservation at a European level (respectively listed in Annex I and II of the Directive). Habitats included in Annex I are either in danger of disappearance within their natural range, have a small natural range, or they present outstanding examples of typical characteristics of the biogeographical regions listed in Article I of the Directive[1].

Under the Habitats Directive, habitats and their typical species are to be protected by identifying a coherent European ecological network of sites (called Natura 2000) identified by the European Commission from lists of national sites proposed by each Member State. The network of sites will enable

[1] EC biogeographic regions: http://www.jncc.gov.uk/page-1470.

the habitat types to be maintained (or restored where appropriate) at a favourable conservation status within their natural range. Once adopted in the Natura 2000 network, the sites are designated by the Member State as Special Areas of Conservation (SACs).

The Offshore Marine Conservation (Natural Habitats, & c.) Regulations 2007 (as amended) transpose the Habitats Directive (92/43/EEC) and Wild Birds Directive (79/409/EEC) into national law. These regulations apply to the UK's offshore marine area which covers waters beyond 12 nautical miles, within British Fishery Limits and the seabed within the UK Continental Shelf Designated Area. The Offshore Habitats Regulations fulfill the UK's duty to comply with European law beyond inshore waters and ensure that activities regulated by the UK that have an effect on important species and habitats in the offshore marine environment can be managed. Under the Regulations, competent authorities have a general duty, in the exercise of any of their functions, to have regard to the EC Habitats and Birds Directives.

The Habitats Directive provides site selection criteria within Annex III. Site selection criteria comprise:

- the degree of representativeness of the natural habitat at the site in question;
- the area of the site in relation to the area of that habitat type within the national territory;
- the degree of conservation of the structure and functions of the habitat type (including restoration possibilities); and
- a global assessment of the conservation value of the site for that habitat type.

JNCC are responsible for providing scientific advice to Government on nature conservation matters, including identification of SAC sites under the Habitats Regulations[2], for UK offshore waters.

The European Commission provides guidelines on the degree of national representation for each habitat type that might be considered sufficient (EC 2007). These were not derived specifically for use in the marine environment and do not explicitly provide national targets for contribution to the network, but instead offer broad guidance for Member States. The guidelines indicate that 20% of the national resource of a particular habitat would likely be considered insufficient and more than 60% would likely be considered a sufficient national contribution to the Natura network (CEC 2007). Failure to identify SACs for what the EC judges to be a sufficient proportion of the UK resource of Annex I habitat could potentially result in infraction proceedings against the UK Government.

The European Commission will assess whether the list of SACs submitted by UK Government to them is sufficient or not. JNCC have worked to provide the best estimate of whether the UK's sites submitted so far will be sufficient or not in terms of both representing the habitat across its natural range, and also in proportion to the amount of that habitat type within UK waters.

JNCC concluded that if at least one example of each Annex I habitat sub-type in each of the UK's area Regional Seas[3] were included in the SAC network, this would ensure minimum representation of each Annex I habitat within its natural range in the UK (JNCC 2003). For some Annex I habitats, their distribution in UK is concentrated in a few regions, so it is likely that to ensure sufficient of the UK resource of such habitats is included within the site network, more than one site in some Regional Seas is likely to be needed.

UK identification of Annex I reef sites

Thirty-seven SACs with marine components have already been designated or submitted to the European Commission for Annex I reef features. Thirty four of these are in coastal or inshore waters, and three are in UK offshore waters (Haig Fras, Stanton Banks and Darwin Mounds).

[2] The Offshore Marine Conservation (Natural Habitats &c.) Regulations 2007 apply to UK offshore waters from 12-200 nm or the UK Continental Shelf.
[3] Regional Seas: http://www.jncc.gov.uk/page-161.

As well as this site at NW Rockall Bank, a further four possible offshore SACs for reefs (Wyville Thomson Ridge, North Norfolk Sandbanks and Saturn Reef, Haisborough Hammond and Winterton, Inner Dowsing Race Bank and North Ridge) plus five inshore SACs for reefs, have been subject to formal consultation, and are planned to be submitted to the European Commission by 1st October 2010.

The European Commission will assess whether the list of SACs submitted by UK Government to them is sufficient or not. JNCC have worked with the other conservation agencies, to best estimate whether the UK's sites submitted so far will be sufficient in terms of both representing the habitat sub-types across their natural range, and also in proportion to the amount of the variety of habitat types within UK waters.

The cold water coral and stony reef at NW Rockall Bank is very different in character to reefs in all the other existing SACs or those subject to consultation, due to the depth of the bank, its location, and the different oceanic conditions which influence the biological communities found there. The site is therefore recommended by JNCC for designation as an SAC, to contribute to completion of the UK's network of SACs for Annex I reefs.

Conservation objectives and management of sites

JNCC are responsible for establishing conservation objectives for the site, and advice on operations that could cause deterioration of the habitat and/or decline in the populations of its typical species. Draft Conservation Objectives and Advice on Operations are presented in a document[4] and will inform the management of activities within the site. Special provisions are made for the consideration of current and future plans and projects that may impact on the site (but are not directly connected with management of the site for conservation purposes). The goal of these is to ensure that carrying out plans and projects does not adversely affect the integrity of the site. An Appropriate Assessment of such plans or projects may need to be carried out by the Competent Authority if there is a likely significant effect on the integrity of the site. Management of ongoing activities is intended to ensure marine habitats and species are maintained at or restored to favourable condition.

To fulfil conservation objectives for Annex I reefs at NW Rockall Bank, it will be necessary for the competent authorities to manage human activities where possible to ensure that the feature is not impacted through: 1) physical loss due to obstruction or smothering; 2) physical damage by physical disturbance or abrasion; and/or 3) biological disturbance by selective extraction of species.

1.3 Background information on the impact assessment

This report sets out the evidence base that supports the IA summary page for the policy options for the North West Rockall Bank draft Special Area of Conservation Impact Assessment. Two options were initially considered for this site:

Baseline: do nothing
Option 1: designate the site
Option 2: consider alternative site

Earlier scoping studies considered all known areas of Annex I reef habitat against the principles of the SAC network, and narrowed down the selection of sites according to the principles outlined in the Directive[5]. NW Rockall Bank is one of only four areas of cold water coral reef, and is the only one in the Rockall Trough and Bank Regional Sea. It is different in character from other cold water coral sites, and there are no similar alternative sites known. Option 2 is therefore not considered further.

[4] Offshore Special Area of Conservation: North West Rockall Bank: Draft Conservation Objectives and Advice on Operations, version 2.2, Nov 2008, JNCC
[5] JNCC P14a Feb 2009

This initial IA presents JNCC's quantitative assessment of the potential costs and benefits of the policy option. Impacts have been assessed over a timescale of approximately ten years. The decision to use this timeframe was based on various factors. It provides a sufficiently long period over which conservation benefits may arise and fisheries control measures may be implemented. Assessment of the impacts beyond ten years becomes more uncertain. For example, businesses have greater scope to adjust their activities in the long-term (for example through purchasing new equipment) and may therefore avoid costs that arise in the short-term. Costs are calculated over the 10-year period using a discount rate of 3.5%, based on Green Book recommendations[6].

The overall approach to assessing potential costs and benefits is based on the approach adopted by JNCC for their previous offshore SAC IAs (eftec 2008). A framework is used to combine and assess cost and benefit information from different sources on the likely impacts of the different policy options in the evidence base.

This framework involves a description of:

- What the current situation at the site (the baseline) is, such as the site's ecological characteristics, the economic activities taking place, their value, and their environmental impacts;
- What changes to these, relative to baseline, are expected to result from potential management measures that may be required to meet the site's conservation objectives;
- What the direct and indirect economic costs of those changes are to operators, enforcement authorities and wider society;
- The likely benefits of achieving the conservation objectives; and
- The different data that can be used to estimate costs and benefits, including: impacts on goods and services that are bought and sold in commercial markets that can be valued in monetary units; impacts on goods and services that are not traded in commercial markets (that are less easy to value); and other impacts (such as change to non-use value).

This IA was originally prepared using information that was publicly available and information provided by government departments, and regulators[7] in January 2009. It has been revised in May 2010 by updating key information on economic activities at the site, expressing monetary values in 2010 prices[8], and taking into account comments from the formal public consultation.

2 Background information on the site

2.1 Baseline

This section assesses the current activities at the site and what is likely to happen over the assessment period if the site is not designated. This is the baseline against which the potential costs and benefits of Option 1 are compared in Section 4. By definition the costs and benefits of the baseline are zero since no additional actions will be taken.

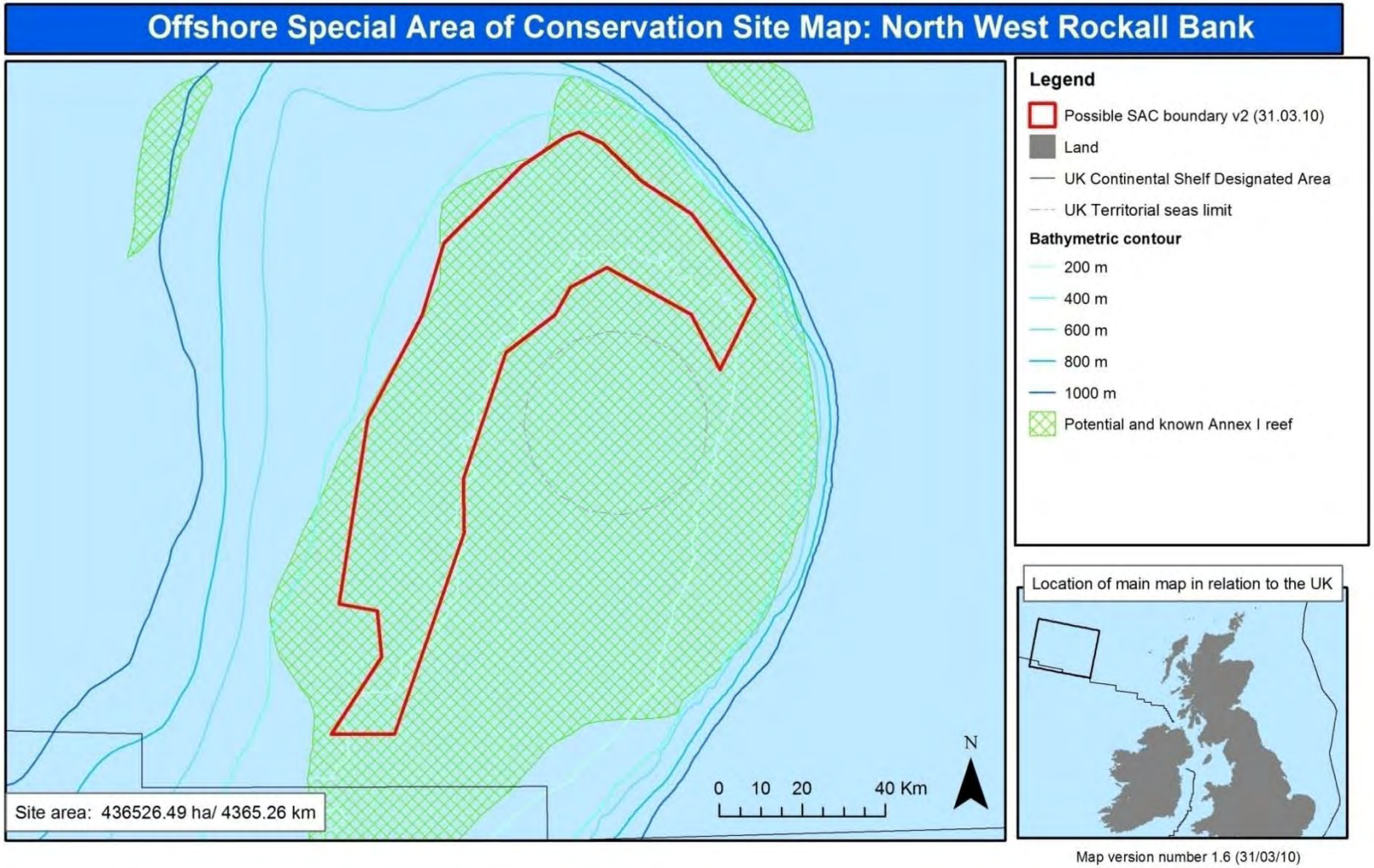
2.2 Characteristics of the site

Rockall Bank is an offshore bank situated in the North East Atlantic, approximately 400 kilometres west of the Outer Hebrides (Figure 2.1). It is oriented northeast to southwest, and is approximately 450 kilometres in length and 200 kilometres wide (Howell *et al*., 2009). Depth ranges from over 1000m at the

[6] HM Treasury, The Green Book: http://www.hm-treasury.gov.uk/data_greenbook_index.htm
[7] Department of Energy and Climate (DECC); Department for Environment, Food and Rural Affairs (Defra); and Marine Scotland.
[8] Using HM Treasury predicted Annual GDP deflators: http://www.hm-treasury.gov.uk/data_gdp_fig.htm

base of the Rockall Bank, to 200m across much of the top. The centre of the bank breaks the surface forming a rocky island outcrop around 25 metres wide and 20 metres high. On account of their sheer size, oceanic banks such as Rockall cause the deviation of ocean currents along their flanks. This facilitates the colonization of habitat-forming corals which depend on a consistent supply of current-transported organic matter and zooplankton (Freiwald *et al*., 2004). NW Rockall Bank pSAC is one of the most extensive sites for biogenic reef formed by cold water coral species in UK waters.

Evidence from the 1970s suggests that areas of *Lophelia pertusa* reef up to 30m in diameter existed on the North West Rockall Bank (Wilson, 1979; Davies and Roberts, 2006). More recent surveys (albeit at different locations in this region) have recorded reefs smaller in size (Howell *et al*., 2009). Cobble rubble surrounds the living reefs in many places, and supports fauna such as the squat lobster *Munida rugosa*, the holothurian *Stichopus tremulus*, brittle stars and encrusting yellow sponges. The north west area of the Rockall Bank is covered in a layer of fine sediment, gravel, cobbles and boulders of glacial origin, some of which is shaped into characteristic 'ploughmark' formations by icebergs during the last ice age. The iceberg ploughmarks are a variant of Annex I stony reef and consist of lines of cobbles and boulders with a sediment-filled furrow between (Howell *et al.,* 2009). The associated biological communities are dependent on this stony substratum. Notable species include sessile fauna such as the erect bryozoan *Reteporella* sp., the solitary coral *Caryophyllia* sp, serpulid worms and many types of sponge including globose, tubular, cup and encrusting varieties. Squat lobsters (*Munida rugosa*), sea cucumbers (*Stichopus tremulus*) and the bluemouth red fish (*Helicolenus dactylopterus)* are also present (Howell *et al.,* 2009). Interspersed with the stony reef are sizeable patches of Annex I *Lophelia pertusa* reef and associated species, including erect sponges and the pencil urchin *Cidaris cidaris*. Stands of *Madrepora oculata*, another cold water coral species, are also present (Howell *et al.,* 2009).



Boundary coordinates:
1) -13° 23' 9 ", 57° 49' 49" 2) -13° 43' 26", 57° 56' 6" 3) -13° 52' 28", 57° 53' 37" 4) -13° 56' 23", 57° 50' 5" 5) -14° 8' 24 ", 57° 45' 18" 6) -14° 19' 0", 57° 29' 0" 7) -14° 19' 0", 57° 22' 0" 8) -14° 36' 0", 56° 56' 0"
9) -14° 51' 0", 56° 56' 0" 10) -14° 39' 0", 57° 6' 0" 11) -14° 40' 0", 57° 12' 0" 12) -14° 49' 10", 57° 12' 55" 13) -14° 42' 0 ", 57° 37' 0" 14) -14° 28' 44", 57° 50' 15" 15) -14° 23' 11", 57° 59' 35" 16) -14° 3' 49", 58° 9' 30"
17) -13° 53' 18", 58° 13' 6" 18) -13° 49' 41", 58° 13' 43" 19) -13° 43' 52", 58° 12' 14" 20) -13° 34' 29", 58° 7' 12" 21) -13° 22' 26", 58° 2' 49" 22) -13° 7' 30", 57° 51' 36" 23) -13° 16' 29", 57° 42' 34"

Figure 2.1 Map of NW Rockall site boundary showing surrounding bathymetry

2.3 Human activity at the site

Current and proposed economic activity at NW Rockall is described below under the following sectors:

- Shipping –low activity
- Oil and gas – no current or planned activity at the site
- Aggregate extraction – no current or planned activity at the site
- Cables – no cables run through the site
- Fisheries – activity in part of the site and the surrounding area
- Renewables - no current or planned activity at the site

There are no other significant current or planned economic activities at the site.

Shipping

Parts of the site may be crossed by ships at some times. It is assumed that there are no significant effects associated with shipping at the site and therefore that no changes to shipping activity will occur under any of the options under consideration in this IA.

Oil and gas

There are no oil and gas interests currently at or planned for the site.

Aggregates

There are no aggregates interests currently at or planned for the site.

Renewables

North West Rockall Bank is a potentially attractive site for wave and wind energy generation. However, bringing power ashore from Rockall Bank would be a major challenge and therefore development is unlikely to happen in the next 10 years. As such, within the scope of this IA it is assumed that there are no renewables interests currently at or planned for the site.

Cables

No telecommunications infrastructure currently passes through, or is planned for, the site[9]. Although there is no Competent Authority to regulate the laying of cable in offshore waters, the UK Cable Protection Committee has indicated that the industry is eager to support marine conservation initiatives where possible. Additionally, cables are usually laid on soft sediment and are not likely to be laid on cold water reef (or other uneven surface) where they could get easily tangled. As such, it is assumed that no cables would be laid in the future within the possible SAC area.

Fisheries

Most of the demersal fishing at Rockall is otter trawling (Marine Scotland Science, pers comm.). The ecology and occurrence of the most common species of commercial interest are listed below:

[9] Caroline Wilson, UK Cable Protection Committee, pers comm., 09/12/08.

Table 2.1 Common fish species targeted in the NW Rockall Bank region[10]

Common Name	Latin name	Ecology	Occurrence
Haddock	*Melanogrammus aeglefinus*	demersal	very common
Blue Whiting	*Micromesistius poutassou*	benthopelagic (also deeper)	very common
Norway Haddock	*Sebastes viviparous*	demersal	very common
Lemon sole	*Microstomus kitt*	demersal	common
Grey gurnard	*Eutrigla gurnardus*	demersal	common
Megrim sole	*Lepidorhombus whiffiagonis*	demersal	less common
Anglerfish (monkfish)	*Lophius piscatorius*	demersal (also deeper)	less common
Bluemouth	*Helicolenus dactylopterus*	demersal (also deeper)	less common
Wolf fish	*Anarhicus lupus*	demersal	uncommon
Tusk	*Brosme brosme*	demersal	uncommon
Cod	*Gadus morhua*	demersal	uncommon
Ling	*Molva molva*	demersal	uncommon
Saithe	*Pollachius virens*	demersal	uncommon

The proposed North West Rockall Bank SAC straddles EU fisheries limits and thus falls under two separate jurisdictions for fisheries management; most of the site is within EU waters, with a small part in the south west in North East Atlantic Fisheries Commission (NEAFC) waters. A demersal fishing closure has been established by both the EU and NEAFC, as shown in Figure 2.2 below, to protect cold water corals. This closure is not thought to have had a major impact on trawling activity, as there are cold water reefs present that may damage demersal nets and so demersal trawlers would have historically tended to avoid the area. In addition, prior to the closure, there was little EU fishing activity on the site. Norwegian longliners are believed to have fished within the site prior to the introduction of fisheries closures.

The reason for the current EU/NEAFC closure is to implement existing obligations on fisheries managers to protect vulnerable habitats, and so it will remain relevant regardless of the outcome of the proposed designation. Therefore, while designation might make the closure more permanent, and will be likely to slightly extend the area closed to trawling, the most likely scenario in the absence of the designation would be that the closure continued, at least for the 10 year period under consideration.

[10] Dr Francis C. Neat, Marine Scotland Science, pers comm., 28/11/08

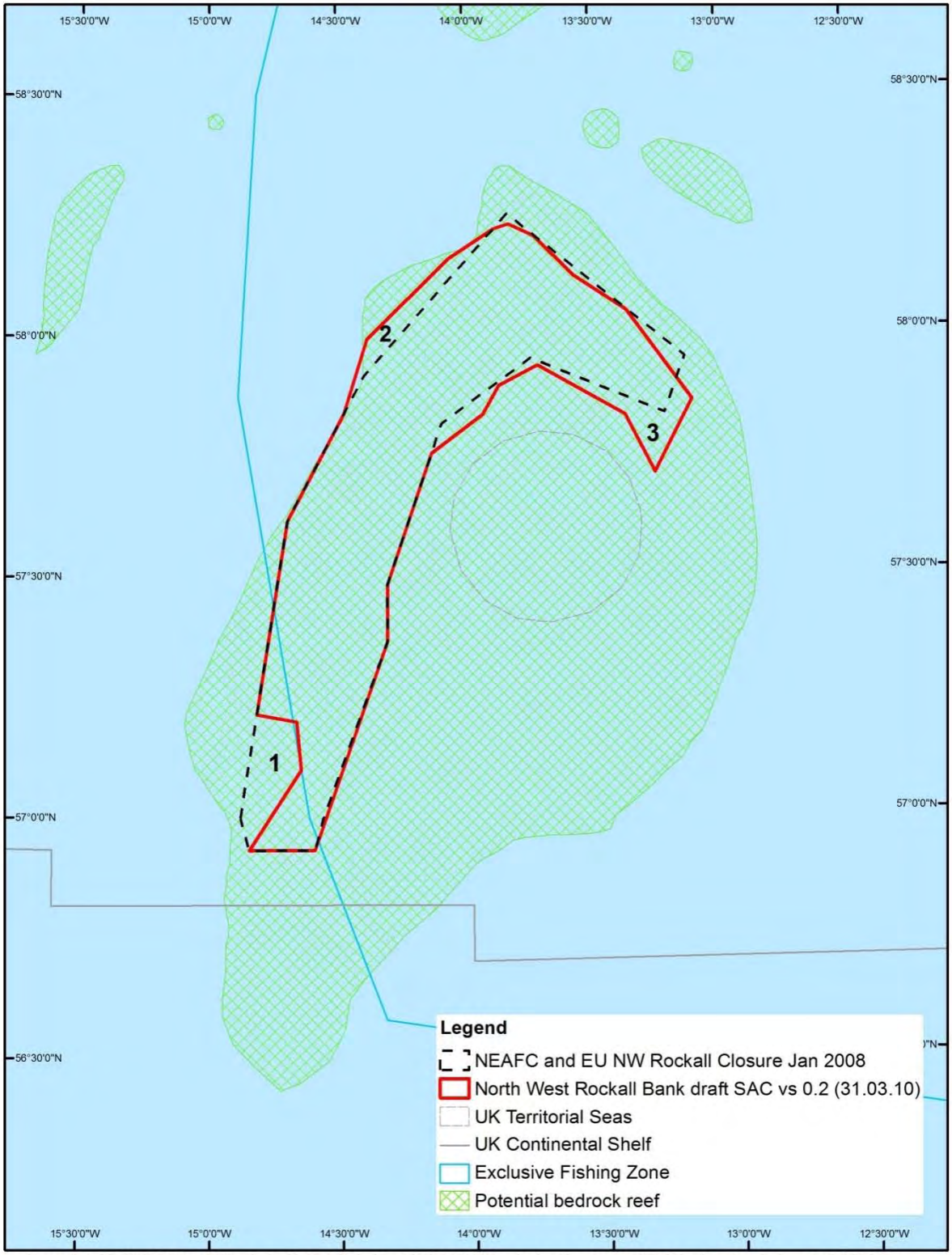


Figure 2.2: North West Rockall Bank possible SAC boundary and 2008 NEAFC/CFP closure fisheries closure boundary

The area of the pSAC within the EU/NEAFC closure has never been subject to heavy demersal fishing due to the presence of corals. The areas within the pSAC boundary but outside the EU/NEAFC closed area have been subject to occasional trawls, principally by Scottish Vessels, but are not heavily fished[11]. Trawlers tend to avoid coral areas due to damage to fishing gear caused by the hard corals. Landings and Vessel Monitoring System (VMS) data, as well as communication with the Scottish Government[12] indicates that there is no pelagic fishing in or near the closure or possible SAC.

Activity in the areas outside the EU/NEAFC closed area but within the pSAC was analysed using VMS data provided by the Scottish Government for 2007 and the first three quarters of 2008. Data is not analysed prior to 2007 as fishing patterns changed from 2006 to 2007 due to the implementation of the EU/NEAFC closure.

UK landings data were analysed from the six ICES statistical rectangles[13] that cover the majority of the potential bedrock reef and include the EU/NEAFC closure and possible SAC. The average total value of landings over the entire reef area was £6m. The majority of landings (97% by value) are reported at UK ports. In terms of gear types, the greatest proportion of landings reported from these rectangles is from otter trawls (bottom, twin, and unspecified) that report 93% of the landings by value.

The VMS records of activity in these eight rectangles were visually scrutinised. Of the vessel activity recorded in these eight rectangles it is generously estimated that approximately 1% of it occurs in the area included in the SAC, but not in the current EU/NEAFC closure. Applying this figure of 1% to data on the average total value of landings (£6m), and converting from 2008 prices to 2010 prices, the average annual value of landings at UK ports of demersal species catch occurring in the portions of the possible SAC outside the EU/NEAFC closure is £62,600. This figure is likely to be an overestimate as recent plotter trawl track records supplied by Scottish Fishermens Federation indicate trawling occurs predominantly outside the possible SAC boundary.

Fishing occurs around the site from non-EU vessels, in particular Russian activity in the south-western part of Rockall Bank. However, the scope of this IA only includes impacts to the UK fishing industry. As such, the impact of foreign-registered vessels landing their catch in foreign ports is not considered. Landings by UK-registered vessels in foreign ports is also not included as data for these landings are not available.

[11] Ian Gatt, Scottish Fishermens Federation, pers. comm. Sept 2009
[12] Eamon Murphy, Marine Scotland, pers comm. 11/12/08.
[13] 45D5, 45D6, 44D5, 44D6, 43D5, and 42D5

2.4 Baseline condition of the site

The condition of the site into the future if it is not designated forms the baseline against which to judge the value of potential improvements as a result of designating the site and achieving its conservation objectives.

The main consequence of not designating the site is that the Habitat Regulations would not apply as a matter of law to plans or projects. This would mean that regulatory authorities would not be required to consider the effect of activities on the conservation objectives for the site. The 'precautionary principle' (see Section 1.2) is an important element of assessment under Regulation 25 which requires that regulatory authorities only consent to a plan or project if they can ascertain that there will be no adverse effect on the habitat (or any other feature of European importance). This effectively places the burden of proof on developers and regulators to show the absence of an effect, rather than requiring those opposing a scheme to show that there would be an effect.

The potential application of the Habitat Regulations to important habitats in the site is clearly a relevant and important consideration when considering the need for an SAC. In the absence of an SAC, and thus without recourse to the Habitat Regulations, it would be difficult to influence the consenting of activities through, for example, the introduction of effective mitigation measures.

Table 2.2 below summarises JNCC's assessment of the vulnerability of the habitats at the site to pressures, based on current information on activities at the site. This was undertaken for the draft conservation objectives and advice on operations for the site[14]. It will be updated and revised as necessary to reflect new evidence. The vulnerability is determined by a combination of the sensitivity of the reefs to the specified pressures and current exposure to activities which result in these pressures. Only if a feature is both sensitive and exposed to a human activity is it considered vulnerable. The scores of relative sensitivity, exposure and vulnerability have been derived using best available scientific information and informed scientific interpretation and judgement.

The process uses sufficiently coarse categorisation to minimise uncertainty in information and reflects the current state of our knowledge and understanding of the marine environment. Sensitivity, defined as the intolerance of a habitat, community or individual (or individual colony) of a species to damage, or death, from an external factor has been assessed for the effects of broad categories of human activities. Current exposure of the reef to the effects of these categories of activities was assessed on best available advice (as of March 2010).

Key

Sensitivity key: ••• = High sensitivity •• = Moderate sensitivity • = Low sensitivity, ○ = No known sensitivity* and **?** = Insufficient information to make assessment (*Meaning: 'Sensitivity of the feature has been researched and no evidence of sensitivity to this pressure has been found')

Exposure key : High = High exposure, Medium = Medium exposure, Low = Low exposure, None = No known exposure, Unknown level = Exposure of an unknown level and **?** = Insufficient information to make assessment.

[14] NW Rockall Bank SAC Conservation Objectives and Advice on Operations v3.0 http://www.jncc.gov.uk/pdf/NorthWestRockallBank_SelectionAssessment_3.0.pdf

Table 2.2 Sensitivity, exposure and vulnerability of the North West Rockall Bank *Lophelia pertusa* reefs to physical, chemical and biological pressures

List of pressures which may cause deterioration or disturbance (with example activities)		**Northwest Rockall Bank:** *Lophelia pertusa* reefs		
		Sensitivity	**Exposure**	**Vulnerability**
Physical Loss	**Removal** (e.g. aggregate dredging, isolated rock dump, infrastructure development)	•••	**Unknown level**	**Vulnerability (not quantifiable)**
	Obstruction (e.g Permanent constructions [oil & gas infrastructure, windfarms, cables] & wrecks)	•••	**None**	**No known vulnerability: 0**
	Smothering (e.g. drill cuttings)	••	**None**	**No known vulnerability: 0**
Physical Damage	**Changes in suspended sediment** (e.g. screening plumes from aggregate dredging)	•	**Unknown level**	**Vulnerability (not quantifiable)**
	Physical disturbance or abrasion (e.g. mobile benthic fishing, anchoring, windfarm scour pits, pipeline burial, potting)	•••	**Unknown level**	**Vulnerability (not quantifiable)**
Non-physical disturbance	**Noise** (e.g. boat activity, seismic)	○	**?**	**No known vulnerability: 0**
	Visual presence (e.g. recreational activity)	○	**None**	**No known vulnerability: 0**
Toxic contamination	**Introduction of synthetic compounds** (e.g. TBT, PCBs, industrial chemical discharge, produced water, fuel oils)	**?**	**None**	**No known vulnerability: 0**

	Introduction of non-synthetic compounds (e.g. heavy metals, crude oil spills)	**?**	**None**	**No known vulnerability: 0**
	Introduction of radionuclides (e.g. nuclear energy industry)	**?**	**?**	**Insufficient information**
Non-toxic contamination	**Changes in nutrient loading** (e.g. outfalls)	••	**None**	**No known vulnerability: 0**
	Changes in thermal regime (e.g. cooling water discharges)	•••	**None**	**No known vulnerability: 0**
	Changes in turbidity (e.g. laying of pipelines, aggregate dredging)	•••	**Unknown level**	**Vulnerability (not quantifiable)**
	Changes in salinity (e.g. outfalls from rigs, ships)	•••	**None**	**No known vulnerability: 0**
Biological disturbance	**Introduction of microbial pathogens** (e.g. outfalls)	?	**?**	**Insufficient information**
	Introduction of non-native species and translocation (e.g. ballast water, hull fouling)	?	**?**	**Insufficient information**
	Selective extraction of species (e.g. bioprospecting, scientific research, demersal fishing)	•••	**Unknown level**	**Vulnerability (not quantifiable)**

Table 2.2 shows that it has not been possible to determine whether the North West Rockall Bank reefs are vulnerable to the introduction of radionuclides, microbial pathogens or non-native species. The exposure of both interest features to removal, physical damage, changes in turbidity and selective extraction of species is also unknown.

North West Rockall Bank is not expected to deteriorate significantly under baseline conditions, as although it is sensitive to a number of potential pressures, there is no known exposure to any of these. However, the sensitivity and risk of long term damage to cold water coral *Lophelia* reefs from benthic trawling is high, and this sensitivity means that in the absence of designation there would be a risk of deterioration, and therefore a risk of not achieving the aims of the Habitats Directive.

The conservation objective for Northwest Rockall Bank reef is to restore the reef to favourable condition, if evidence indicates the above activities are affecting the conservation status of the reef habitat. Activities that do not result in pressures to which the reef is sensitive may continue at current levels of spatial and temporal intensity. The management of other activities to which the feature is vulnerable may need to be reviewed by the responsible competent authorities. If new information suggests that the condition of the feature at the site is not significantly affected by current activities, then the conservation objective for the reef will be to maintain the features in favourable condition.

In its current condition a range of benefits are obtained from the site. The possible degradation of the site if not designated would potentially decrease each of these values. The baseline levels of activity in relation to the benefits of fisheries are described above. Other benefits include option and non-use value: benefits from values associated with potential future use, existence and others' use of the site.

3 Approach to analysis of costs and benefits

3.1 Approach

As stated in Section 1.3, this IA presents a quantitative assessment of the potential costs and benefits of the policy option to designate the site. Impacts have been assessed in the IA over a time scale of approximately ten years. Section 2 has outlined the current situation at the site (the baseline) in terms of economic activities. It should be remembered that the baseline may not be static (it may be subject to ongoing change), and the assessments try to take account of this (for example, where a benefit is identified as preventing continuing decline).

The same method has been adopted to develop impact assessments for a suite of marine Natura 2000 sites consulted on in 2009-2010. However, different sites have different baselines, activities and circumstances. Therefore even with a consistent methodology, different assumptions may be made, different impacts may be identified and even the same type of impact may have different monetary cost or benefit estimates associated with it for different sites.

Section 4 examines the potential costs and benefits of the policy option. The costs and benefits are subject to significant uncertainty. The main causes for this uncertainty are that:

- it is difficult to predict what management measures will be implemented at the site;
- it is difficult to know how operators will respond to them and what costs they will incur in doing so; insofar as operators can predict costs there may be reasons in some cases for not supplying this information, for example: commercial sensitivities;
- it is difficult to predict how the condition of the protected features and surrounding environment would change under Option 1; and
- there is currently very little evidence which can be used to monetise values for environmental changes in the marine environment.

Therefore the approach to the assessment has:

- used techniques to obtain the best available information on these areas of uncertainty. This is done firstly by developing scenarios on likely potential maximum and minimum management measures; and secondly by drawing on sources most likely to be able to predict the impacts of these potential management measures and provide relevant information;
- used a framework of factors likely to determine the benefits to society of achieving the conservation objective of the site;
- identified the possible minimum and maximum impact on economic sectors rather than the actual expected impact; and
- not assessed the precise direct or indirect impacts on businesses, employees or elements of the supply chain potentially affected. This is because there is not sufficient evidence available to accurately predict the distribution of net changes in activity within the regional economy.

The analysis in this document is based on the methods that are judged to be the best practicable option to address the issues considered.

3.2 Costs

Policy costs to the private sector

The policy costs arising from designation of the site are the costs of changes to existing and planned human activities taking place within or in the vicinity of the site in order to comply with the policy objectives. The costs considered include the direct and indirect economic costs of those changes to operators, enforcement authorities and wider society. The costs are expected to result from the potential range of management measures that may be required to meet the site's objectives. The costs are considered relative to the baseline of not designating the site.

The costs borne by each of the key sectors will depend on the extent to which their activity impacts on the site and the management measures deemed necessary to restore the reefs and their typical species to favourable condition, if that is deemed necessary. These are not yet known. It has therefore been necessary to make assumptions about what measures might be required for this site. It is assumed that the site will be submitted to the European Commission in 2010, and that some costs (for example, of more detailed survey and analysis requirements for Appropriate Assessment over that already required for EIA) would arise immediately. The timing of some one-off costs is unpredictable within the ten year assessment period (2010-2020), so are assumed to fall in 2015.

Policy costs to the private sector may arise if:

- Consent for a plan or project is granted or reviewed, but is subject to restrictions on the timing or manner in which the plan or project can be implemented which result in costs to businesses. These restrictions are determined by the competent authority in its assessment under the Habitats Regulations, and
- Consent for an existing or new plan or project is refused by the competent authority. The cost to businesses is assumed to be the additional cost of undertaking the plan or project elsewhere.

Administration costs to the private sector

Administration costs include the time and expenditure necessary for the private sector to provide the information and documentation required to comply within the administration requirements of a regulation. They exclude the 'policy costs' which are the time and expenditure necessary to adjust activities (for example to reduce pollution) to comply with regulatory standards. Potential administration costs to the private sector are:

- The costs to businesses of finding out about the designation and the management measures that may be needed;
- For ongoing or new plans and projects, the cost to businesses of providing the competent authority[15] with more detailed information than may be required if the site was not designated. This additional information may be required to inform the competent authority's assessment of the plan or project under the Habitat Regulations, above what would be required for EIA under baseline conditions

Costs to the public sector

Potential administration costs to the public sector are:

i. costs of monitoring the site and maintaining up to date information on its conservation status;
ii. costs of regulating human activities that might impact on the conservation status of the site.

3.3 Benefits

The potential benefits of site designation primarily arise from the increase in the area protected for nature conservation purposes[16]. The benefits are assessed in terms of the impact on ecosystem services provided by the natural environment that benefit humans[17]. The following overarching categories of ecosystem services are used[18]:

- Provisioning services (such as provision of food);
- Regulating services (such as absorbing waste); and
- Cultural services (e.g. the role of marine species in culture and the artistic inspiration they provide).

Here, and following Defra's guidance on the valuation of ecosystem services, the relevant benefits gained from supporting services[19] (such as cycling of nutrients and photosynthesis) are viewed as essentially being captured by the other benefits listed and so are not examined separately[20]. The analysis in Section 4 is based on a list of ecosystem service categories that are relevant to the site. *Relevant* means that the designation of the SAC would have a noticeable impact on the benefits derived from the service. The categories currently included are those known to be relevant at this stage, but may be subject to change should new information arise during public consultation.

Impacts of designation on these ecosystem services are analysed further in Section 4.3 below. In addition to these categories it is recognised by many that biodiversity has an intrinsic value. This value is viewed as an inherent characteristic of biodiversity that gives rise to other benefits. Therefore, intrinsic value cannot be assessed using economic valuation techniques[21] and is not analysed further. However, intrinsic value is one of the principal benefits of sites identified for nature conservation purposes.

[15] A competent authority is a body which grants consents for regulated activities in the marine area, for example the Department of Energy and Climate Change (DECC) is the competent authority for wind farm, oil and gas licensing.
[16] Heritage benefits, such as conservation of archaeological site, are the only benefits discussed that arguably sit outside the scope of nature conservation. Such benefits are still included.
[17] As described in Parliamentary Office of Science and Technology (2007).
[18] These are the categories used in the in the Millennium Ecosystem Assessment (Millennium Ecosystem Assessment (2005), available at http://www.millenniumassessment.org) which are also used in Defra's guidance on valuing ecosystem services Defra (2007). Identification of the services that fall under these categories draws on Beaumont *et al.* (2006); eftec (2006); and Frid (2008).
[19] Supporting services described as "those that are necessary for the production of all other ecosystem services" in the Millennium Ecosystem Assessment (2005) http://www.millenniumassessment.org
[20] For example, small marine organisms called phytoplankton form the basis of the food chain, ultimately ending in caught fish species. Valuing phytoplankton on its own in addition to these services they support would lead to double counting.
[21] For example, in Millennium Ecosystem Assessments (page 7, Section 2): http://www.millenniumassessment.org/documents/document.354.aspx.pdf.

4 Costs and benefits of Option 1: Designate the site

4.1 Implications of designation

Once sites have been submitted to the European Commission for designation, in order to achieve the site's Conservation Objectives, Competent Authorities are required to assess the impacts on the reefs and their typical species of any activity they consent and possibly to review some existing consents or permissions. As the site has not yet been submitted to the European Commission, the likely effects on offshore industries operating at or near the site are estimated.

In order to be able to assess the range within which the true costs and benefits are likely to fall, scenarios have been developed to identify the minimum and maximum potential management measures that might be required at the site. Development of these was informed by the potential environmental impacts of activities if the site was not designated. They are summarized in Table 4.1 below.

The minimum scenario requires the smallest change in activities that may be needed compared with the baseline and therefore presents the minimum potential effect on activities. The minimum management scenario is what would be likely to be needed to 'maintain' the reef feature in favourable condition.

The maximum scenario is at the other end of the scale: it involves the maximum change in activities that may be needed. This is in line with maximum costs. This is an estimate of the measures that may be required for the site to achieve the conservation objective of 'restore' the reef feature to favourable condition, if and when more detailed information becomes available, current activities at the site are deemed to be affecting the reef feature.

Table 4.1: Summary of the "minimum" and "maximum" management scenarios that may be required for North West Rockall Bank SAC

"Minimum" scenario:	*"Maximum" scenario*
Existing activities: Ban on all forms of demersal fishing over all areas of reef within the site. Proposed activities: *Offshore industry plans or projects that might adversely affect the integrity of the offshore SAC will be subject to Appropriate Assessment and will be refused if there is a significant effect.* *In response to a perception of more rigorous consideration of proposals (and on the advice of authorities and statutory advisers) businesses may make adjustments to projects proposed relative to option 1 to ensure no significant effects. Businesses are also likely to invest more in proposal assessment. It is assumed that assessments cost 10% more.*	Existing activities: Ban on all forms of fishing within SAC boundary. Proposed activities: *Offshore industry plans or projects that might adversely affect the integrity of the offshore SAC will be subject to Appropriate Assessment and will be refused if there is a significant effect.* *Some adjustments to project proposals are made to minimise interference with features (e.g. detours in pipelines to avoid feature). It is assumed that businesses invest 50% more in assessments.*

4.2 Costs to business

In line with the purposes of this IA, this section deals only with costs to the UK economy. Fishing activities from other Member States are considered within the fisheries section, but are not included in the costs neither calculated below nor presented in the summary sheets.

In the Oil and Gas; Aggregates; Renewables; Cables; and Shipping sectors there are no activities present at the site and none is expected in future. Therefore, there are no expected costs as a result of site designation.

Fisheries

EU Member State vessels, in addition to vessels from other countries (e.g. Russia, Norway, Iceland, Faroe Islands) fish in the Rockall Bank area. Calculations in the IA, however, are only concerned with the costs to the UK economy and so are primarily based on landings at UK ports from catches in the Rockall Bank region.

As described above in Section 1, most of the site is currently subject to a EU/NEAFC ban on all demersal fishing. It is likely that the closure will continue irrespective of the SAC designation and, in light of new evidence, may be amended to match the boundary proposed for the possible SAC irrespective of SAC designation. Here, however, a conservative assumption, to ensure the maximum costs are not underestimated, is that the EU/ NEAFC closure is not extended to align its boundary with the proposed SAC boundary.

Minimum
Assuming the current closure is continued, the minimum impact of SAC designation would likely be to increase the boundary of the demersal fishing closure to include the portions of the SAC not yet covered in the closure. Under the minimum scenario, it is considered that any fishing activity affected by the designation is displaced to nearby areas without significant cost i.e. additional costs to vessels or loss of catch. Therefore, the impact from changes in fishing activity under the minimum designation scenario is estimated at zero.

Maximum
The EU/NEAFC closure is only for demersal fishing. The maximum scenario would be to expand the closure to include pelagic fishing as well. However, there is no pelagic fishing at this site (though blue whiting are caught nearby)[22]. Therefore, the level of activity impacted is the same. The impacts under the maximum scenario differ from the minimum scenario because the displacement of activity to nearby areas is assumed to have significant impacts on the profitability of that activity.

This impact is estimated as the loss of profits from the fishing activity displaced by the designation. This estimate is based on data from the Marine Fisheries Agency on potential activity within the area (as above) and from the 2005 survey[23] on the profitability of fishing, which show that the net profit ratio does not exceed around 30% for any segments of the industry with most segments having much lower ratios. Therefore the impacts are assessed as 30% of the loss of landings from within the site (£62,600), or £18,800k per year.

[22] Scottish Government, pers comm. (Eamon Murphy, 11/12/08).
[23] *2005 Economic Survey of the UK fishing fleet.* Seafish Industry Authority.

Table 4.2	**Summary of "minimum" and "maximum" management scenarios and assumptions made in estimating costs for the fishing sector of designating the pSAC compared with not designating the site**	
"Minimum" scenario	*Assumptions*	*Change in costs*
Demersal fishing closure extension (no loss of profits)	Fishing activity displaced to nearby fishing grounds with no loss of profit.	£0
"Maximum" scenario	*Assumptions*	*Change in costs*
Total fishing closure (loss of profits)	Loss of profits from fishing activity displaced by designation (30% of £62.6k).	£18,800 per yr

Wider Implications

The impact on fishermen of closing areas to certain types of fishing is complex and difficult to predict. It will depend on what individual fishermen do as a result of restrictions and the cost implications of changes. Whether fishermen are able to fish at alternative sites will depend on a number of factors. A key factor will be the availability of suitable grounds. Some features may themselves attract fishing and so the availability of alternatives may be limited. Whether sites are suitable will not only depend on fish stocks but also for example whether static gear could be deployed without disturbance from mobile gears. There may also be weather and other seasonal constraints to moving to alternative areas.

Where fishermen do find alternative grounds there may be implications on costs and profitability. Going further out will mean increased fuel costs and potentially a higher proportion of time spent steaming rather than fishing and therefore reduced profitability. Alternative grounds may also be less productive and mean that fishing days are less productive and therefore less profitable.

In some cases, particularly where moving to an alternative ground would become unprofitable, individual fishermen may stop fishing. This does not necessarily mean that total income to the sector will reduce as other vessels may be able to draw on quota foregone, for example through co-operative arrangements. However, in many cases this will not happen. Quotas are often not fully used in any case and some stocks are not subject to quota.

Where fishing activity is reduced there are likely to be indirect social and economic effects particularly on the local and regional economy where catch would have been landed. These are inherently very difficult to quantify and are not included in this CBA. A recent study (Anderson and Curtis, 2007) estimates that a change in demersal fishing revenue of £1m in England generates an increase in output (direct and indirect) of £3.21m to the regional economy or £3.35m to the UK economy. Where individual fishermen stop fishing then there may also be implications to the fishermen themselves wider than foregone revenue, such as: the need to dispose of a vessel, potential decline in the market value of vessels and potential decline in the value of quotas.

Given the issues above, it is very difficult to predict how individual fishermen will respond to closures and the cost implications. At this stage the best that can be done for most of the closures is to provide an indication of the profitability of fishing within the area and suggest that the direct effect of a closure would be to reduce the profitability of the area by some margin.

For the estimated £62,600/yr of UK demersal landings from the site, the multipliers from Anderson and Curtis (2007) can be used to analyse the impact of this fishing activity on the UK economy. It should be noted, however, that multipliers are limited to a static reflection of economic linkages and will change over time and with differences in the economic structure of different areas. The multipliers used to determine these effects were recommended by Sea Fish Industry Authority as the best currently

available and account for landings in UK ports by UK- and foreign-registered vessels. A reduction of £0.06m of demersal landings could lead to a reduction in:

- UK Employment by 4.2 FTE jobs; and
- UK GDP by £0.12 million.

Although this IA does not take account of these potential indirect effects, these estimates give an indication of the scale of the potential economic importance of fishing at the site.

A further important issue is that any closures would have to be agreed with other Member States of the European Union through the CFP, or through NEAFC for areas outside 200nm. It is possible that this process may take three years to carry out and therefore that closures would not be in place until 2012.

Administration costs to business

As fishing is the only industry present in the region and administration costs to this sector are expected to be minimal, it can be assumed that there will be no significant increases in administration costs.

Administration costs to Government

Competent Authorities will incur costs in enforcing the regime as a result of:

i. *Requirements to review existing activities that may have impacts on the habitats for which sites have been designated.* It is assumed that no further work is necessary to assess the impacts of activities, but further work is necessary to develop, implement and communicate management measures. Experience of similar projects suggests that this may require 6 months of officer time plus related expenses. The estimated cost is a one-off £44.6k[24].

ii. *Requirements to assess the implications of any activity they consent.* It is difficult to predict how many proposals the authority will receive each year. This is an area of renewable energy potential, but there are unlikely to be developments within the next 10 years. Proposals will generally require input from other advisory bodies as well as the Competent Authority. Some inputs from them may have been required under existing arrangements such as the EIA process, but SAC management is likely to lead to a greater work load.

iii. *Monitoring and enforcement.* The Marine and Fisheries Agency assessed that an additional 3 days boat time and 6 hours air surveillance might be necessary per site to enforce measures effectively. This would cost £37.6k per annum[25]. It is assumed that this is carried out already because of the existing closure. The additional extension in the boundary of the closure is considered to be negligible. Administration of records and other activities is carried out as part of existing duties.

This IA assumes that the costs of Government administration and enforcement are constant for both the min and max scenarios. Under the two scenarios the effectiveness of enforcement is varied to estimate impacts that represent the likely range of outcomes from designating the site.

4.3 Benefits of designating the site

Discussion is provided below of the impact of designating the site based on specific ecosystem services. The site feature 'reef' has been graded as II for 'degree of conservation of structure' which indicates that

[24] This is based on the full costs (includes e.g. overheads and pensions contributions) of a Senior Executive Officer for 6 months from Defra's 2007-08 Ready Reckoner of staff costs and £10k for communication and other costs (inflated to 2010 prices).
[25] This is based on costings provided by the Marine Fisheries Agency (pers comm., Dec 2008) of £8k per boat day, £2k for an hour of air surveillance, updated to £8.34k and £2.09k respectively at 2010 prices.

the feature is not in pristine condition. As outlined, further information will be required to assess and monitor the condition of the interest feature on the pSAC[26].

Provisioning Services

Fish, shellfish and other crustaceans for human consumption
The region around North West Rockall Bank has historically been fished for haddock, blue whiting, ling, saithe, and squid with varying degrees of success (Blacker 1982).

Extraction of fish that are both targeted by fisheries and caught as bycatch may be affected by designation, with the potential for both positive and negative effects. On the one hand, if fisheries are controlled within the site to conserve the reefs and their typical species then this could reduce the amount of fish caught from the site. These controls could contribute to sustainable management of some fish stocks at the site and as a result the abundance of fish may increase. On the other hand, controls could cause fishing effort to be displaced to other areas outside of the site, increasing pressure on the stocks in these alternative areas, but not overall.

The control of commercial fishing on the site may extend the longevity of shellfish, and there may be greater numbers of larger individuals that can produce more young. This may contribute to a potentially larger population of fish in the future.

Regulating services
Impacts on carbon sequestration and coastal protection are analysed in Table 4.3 below. It is concluded that they will not be impacted on significantly by the designation of the site. Other regulating services are not mentioned further here as their value is considered to be minimal at a site level[27].

Types of Value

Option Values
Some people will gain from having the option to benefit in future from conservation of a good example of reef habitat, even if they do not currently plan to benefit from it (option value). This arises because if the site is not protected now there may not be good examples of reef habitat still available to conserve in future. Also, some will gain from knowing that it is conserved in case future information reveals that the reef habitat provides important benefits that we are not currently aware of (quasi-option value).

Non-use Values
Most people who benefit from knowing the site is being conserved are unlikely to use it or get tangible benefits from it. This is known as the existence value of conserving the site. Some people will also gain satisfaction from knowing that the reef habitat is being conserved for others in the current generation (altruistic value) and for future generations (bequest value).

There is reliable evidence in the UK and elsewhere that the general population has significant positive non-use values associated with rare species (see for example Christie et al, 2004 for general discussion or White, et al, 2001 for examples of value of conservation of specific mammal species). Additionally, Beaumont et al (2006) estimate the non-use value of biodiversity of the UK marine environment at £0.5-1.1 billion per year across the UK population.

The effects of designation of the North West Rockall Bank for the provision of each of the ecosystem services described above is summarised in Table 4.3 below as the difference due to site designation in comparison to the baseline (no designation). There are four additional columns of information in the table

[26] JNCC (2009)
[27] De Groot RS, Wilson MA & Boumans RMJ (2002) A typology for the classification, description and valuation of ecosystem functions, goods and services. *Ecological economics* 41: 393-408.

to clarify our understanding of the qualitative changes in ecosystem services arising from (non)designation:

- ***Relevance*** Relating to the amount of ecosystem good or function arising from site
- ***Value weighting*** Categorisation of how valuable the amount of ecosystem good or function from the site is in providing benefits to human population
- ***Scale of benefits*** Consideration of actual potential to deliver benefits (for example considering leakage, delivery to human population, etc)
- ***Confidence*** Level of confidence in our current knowledge of all other categories (in other words, scale of benefit, level of improvement, etc.)

Based on the above categories, an overall level of each ecosystem service is defined with its own confidence level. Following, an overall level of total benefits is also defined.

The parameters are assigned a level for each service from a menu, defined as:

- ***Nil*** Not present/none.
- ***Minimal*** Present at a very low level, unlikely to be large enough to make a noticeable impact on ecosystem services.
- ***Low*** Present/detectable, may have a small noticeable impact on ecosystem services, but unlikely to cause a meaningful change to site's condition.
- ***Moderate*** Present/detectable, noticeable incremental change to site's condition.
- ***High*** Present/detectable order of magnitude impact on sites condition.

Table 4.3: Potential significance of ecosystem services improvements for North West Rockall pSAC							
Services	*Relevance to site*	*Option 1 Decline*	*Option 2 Min improvement*	*Option 2 Max improvement*	*Value weighting*	*Scale of benefits*	*Confidence*
Fish for human consumption *Fish for non-human consumption*	**Low/moderate.** Some fishing but less than sites closer to coast.	**Low.** Existing ban should prevent decline.	**Low.** Ban already in place over much of the site.	**Low.** Ban already in place and any further change would cause displacement	**Moderate.** Not higher than other sites in region.	**Minimal.** An increase in fish stocks at the site is likely to be offset by declines elsewhere	**Moderate.** Possible that taking same catch level outside site is not neutral on stocks overall.
Carbon sequestration	**Minimal.** Features are a small area and likely to have a low effect.	**Minimal.** Unlikely to affect biological pump.	**Nil.** No change to biological pump.	**Minimal.** Unlikely to affect biological pump.	**Moderate.** Of high value but site plays minimal role.	**Minimal.**	**Moderate**. Biological pump not well understood.
Waste assimilation	**Minimal.** Features are small area and likely to have a low effect.	**Minimal.** Unlikely to affect assimilation functions and processes	**Nil.** No change to assimilation functions and processes	**Minimal.** Unlikely to affect assimilation functions and processes	**Minimal.** Site plays minimal role.	**Nil.**	**Moderate**. Assimilation not well understood.
Non-use value of natural environment	**Moderate.** Evidence that public has preferences for rare/unusual features and visually appealing features.	**Low.** Most features already protected although difficult to enforce. Use of some legal gears may have effect.	**Minimal.** Ban already in place over much of the site.	**Low/moderate.** Excluding all fishing may be easier to enforce and will prevent use of some other potentially harmful gear.	**Moderate.** All UK population is relevant but relatively low value per capita.	**Low.**	**Moderate.** No evidence on non-use values for specific features, enforcement uncertain.
Scientific research/ Genetic resources	**Low/moderate.** Little that is not found elsewhere	**Low**. Features of scientific interest largely protected by current ban but some gears may still affect.	**Minimal.** Ban already in place over much of the site.	**Low/moderate.** Easier to enforce and will prevent use of other gears.	**Moderate.** Little of research interest that is not elsewhere.	**Nil for min.** **Low for max**	**Moderate/high**
Archaeology	Information not readily available	**Nil.** Vessels avoid wrecks.	**Nil.** Ban already in place	**Nil.** Avoided wrecks before	**Moderate.** Interest to public.	**Nil.** Not affected by designation	**Moderate.** Little known of palaeo-archaeology
Total value of changes in ecosystem services			**Nil for min and nil/low for max scenarios**				**Moderate.**

Benefits to economic activity

Designation of sites may assist the different sectors that make use of the marine environment in the context of marine spatial planning and a more strategic consideration of available resources. This would mean that sectors can undertake future plans and applications for their operations (for example applications for licences) with the better knowledge of a) the nature conservation significance of different parts of the marine environment, and b) the added costs of these applications within or adjacent to a site boundary, as opposed to outside it. This may result in a focus of activity away from a site. This will be dependent upon appropriate marine resources being available within the region but outside of any site(s).

4.4 Summary of Costs and Benefits

Table 4.4 below summarises the potential costs and benefits of the site analysed in this section. The costs are analysed over a period of 10 years from designation in 2010, and are discounted at 3.5%. There are uncertainties in the assessment of costs, and some costs have not been quantified where data were not available.

Table 4.4: Summary costs and benefits table for Option 1: Designate the site

	Minimum Scenario		*Maximum Scenario*	
	Costs	*Benefits*	*Costs*	*Benefits*
Assessed	**Sectors** None Enforcement: £44.6k one-off	Nil: no change.	**Sectors** Fisheries: direct costs max of £18.8k/yr. Enforcement: £44.6k one-off	Low: better enforcement and avoiding damage to non-use and scientific value of site by some fishing gears.
Total Annual	None	Nil	£18.8k/yr	Nil/Low
Total one-off	£44.6k	0	£44.6k	0
Total (PV)	£44.6k	Nil	£206k	Nil/Low
Not assessed	Costs beyond next 10 years	- Role of feature in wider ecosystem - Intrinsic value of biodiversity improvements - Ecosystem recovery beyond next 10 years	Costs beyond next 10 years	- Role of feature in wider ecosystem - Intrinsic value of biodiversity improvements - Ecosystem recovery beyond next 10 years

Risk of unintended consequences

The main risks of unintended consequences are assessed to be:

- Fishermen may seek compensation for moving grounds;
- Displacement of fishing effort to alternative grounds may intensify fishing at those grounds to unsustainable levels, causing net damage to fish stocks overall
- Increased requirements for assessment may potentially slow down development of offshore renewable energy in the long term and hinder the delivery of UK targets on climate change. Although, EIAs would be required regardless of designation and there are no regulatory or statutory requirements for further work in the EIA if it were conducted in an SAC, in reality it would probably necessitate some.

Each of these risks is greater under the maximum scenario. These risks can be mitigated by involving stakeholders in the process of designation through public consultation.

4.5 Impact tests

Consideration has been given within the main body of this assessment to relevant and identifiable environmental impacts and effects on sustainable development of designating North West Rockall Bank pSAC. The further tests specified by the IA guidance are considered here.

Competition assessment

This assessment, shown in Table 4.5 is restricted to the sector where significant potential costs are identified above, namely: fisheries. The table analyses the impact of the maximum potential management measures that may be required (which represent the maximum impact on activities in the site). The maximum scenario is used to assess whether any significant impact is likely. A more detailed assessment of likely impacts should also take into account the minimum scenario. Cumulative impacts of designation of Natura 2000 sites in the marine environment could have more significant effects on competition in some sectors.

The designation of the site is not expected to have a significant impact on competition.

Table 4.5 Competition assessment for North West Rockall Bank

Would the proposal:	*Fisheries*
1. Directly limit the number or range of suppliers?	No direct restrictions
2. Indirectly limit the number or range of suppliers?	The main tests of this are whether the policy is expected to: - raise significantly the costs of new suppliers relative to existing suppliers, - raise significantly the costs of some existing suppliers relative to other existing suppliers, or - raise significantly the costs of entering, or exiting, the affected market. In general this should not be the case although if some fishing gear types are considered more damaging than others management measures may impose restrictions on them raising their costs relative to other gear types.
3. Limit the ability of suppliers to compete?	No restrictions on factors on which suppliers can compete.
4. Reduce suppliers' incentives to compete vigorously?	No reduction of incentive to compete.

Small firms impact test

Small and Medium Enterprises (SMEs) are considered for these purposes to be those with fewer than 250 employees. The industries potentially affected by the designation with a significant number of SMEs are: fishing and development of other renewable forms of energy.

In the fishing industry it is likely that the fishing vessels that may be impacted on by any additional management measures would be owned by SMEs and in most cases the company would not own more than one vessel.

The number of fishing vessels affected would depend on the actual management measures implemented. Small businesses could potentially be affected to the extent that some vessels fishing at the site need to adapt to any additional fisheries management measures that are required, which may reduce profitability (see fisheries analysis in Section 4.2).

Legal aid

Legal aid is available to individuals with an annual income of less than £12k or with income of between £12k and £21k and disposable income of less than £3.3k where the case is an interest of justice case. It is considered very unlikely that the designation of sites will lead to increased use of legal aid.

Carbon assessment

The main purpose of a carbon assessment is to establish the impact of designating the site on greenhouse gas (GHG) emissions. The management measures required for the Natura 2000 site (Option 1) are unlikely to have a major impact on GHG emissions compared with management of the area if it is not designated. If fishing vessels have to travel longer distances to access fishing grounds this would increase emissions. However, the impacts of this are not expected to be significant as vessels already operate over a variety of fishing grounds reached with different, and sometimes lengthy, steaming times.

The designation of the site may also have a strategic influence on adaptation to and mitigation of climate change and energy issues, as discussed in preceding sections.

Rural proofing

Some of the economic costs identified in relation to fisheries and other sectors may occur in remote coastal communities in predominantly rural areas of the UK. Due to the less diversified nature of their local economies, the potential impacts may be relatively more important as a proportion of economic activity in these locations.

Other impact tests

The effect of designating the site on health, disability, race, gender equality and human rights has been considered and it is not thought to have an impact. Consequently these impact tests are not examined further here.

5 CONCLUSIONS

The purpose of this impact assessment is to provide information about the impacts associated with the designation of North West Rockall Bank SAC and is carried out in order to inform government about the options for the site. This is done by considering the impacts of Option 1 (designating the site) relative to the baseline (not designating the site). The requirement for the UK to designate sufficient reef habitat to comply with the Habitats Directive makes pursuit of the baseline unlikely.

Two scenarios are presented under Option 1. The minimum scenario involves the smallest change in activities that may be needed compared with the baseline and therefore presents the minimum potential effect on activities. The maximum scenario is at the other end of the scale: it entails the largest change in activities that may be needed compared with the baseline and thereby presents the maximum potential effect on activities.

As Table 4.4 above shows, under Option 1 (for the 10 years of impact assessment framework):

- For the minimum management scenario there are enforcement costs of £44.6k.
- Under the maximum management scenario, there are additional costs associated with loss of fishing revenue (£18.8k/yr) that increases the total costs over 10 years to £206k.

In addition, a range of costs and benefits are possible through wider network and strategic effects. In terms of network benefits, designation of the proposed suite of marine Natura 2000 sites will prevent degradation of areas of the marine environment and enable restoration where damage has occurred. This could potentially be of benefit to the wider ecosystem and enable increases in fish stocks. It has not been possible to assess these benefits. It should be noted, however, that establishment of a network of protected sites is a key purpose of the policy (the Habitats Directive) stimulating the possible designation. This makes it important to consider the benefits of this site in the context of the value of the network of sites.

6 References

ANDERSON, J. AND CURTIS, H. (2007) The economic impacts of the UK sea fishing and fish processing sectors: an Input-Output analysis. March 2007.
http://www.seafish.org/pdf.pl?file=seafish/Documents/2006 I-O Key Features Final 090108.pdf

BLACKER R.W. (1982) Rockall and its Fishery. Ministry of Agriculture, Fisheries and Food. Laboratory Leaflet No.41.

EUROPEAN COMMISSION 2007. Guidelines for the establishment of the Natura 2000 network in the marine environment. Application of the Habitats and Birds Directives. May 2007.

FREIWALD, A., FOSSÅ, J. H., GREHAN, A., KOSLOW, T., AND ROBERTS, J. M. 2004. Cold-water coral reefs. Cambridge, UK:UNEP-WCMC. Available from: http://www.unep-wcmc.org/press/cold_water_coral_reefs/PDF/CWC_LR.pdf [Accessed July 2007]

HOWELL, K.L., DAVIES J.S., JACOBS, C., NARAYANASWAMY B.E. (2009). Broadscale Survey of the Habitats of Rockall Bank, and mapping of Annex I 'Reef' Habitat.

ICES. 2005a. *Report of the Working Group on Deep-water Ecology (WGDEC)*, 8-11 March 2005, ICES Headquarters, Copenhagen. ICES CM 2005/ACE:02. 76 pp.

ICES. 2005b. *Report of the ICES Advisory Committee on Fishery Management*, Advisory Committee on the Marine Environment and Advisory Committee on Ecosystems, 2005. ICES Advice. Volumes 1 -11. 1,403 pp. (Volume X, Section 1.3.2.2) [online]. Available from: http://www.ices.dk/products/icesadvice.asp [Accessed June 2007]

ICES. 2007a. *Report of the Working Group on Deep-water Ecology* (WGDEC), 26-28 February 2007, Plymouth, UK. ICES CM 2007/ACE: 01 Ref. LRC. 61 pp.

ICES. 2007b. *Report of the ICES Advisory Committee on Fishery Management*, Advisory Committee on the Marine Environment and Advisory Committee on Ecosystems, 2007. ICES Advice, May 2007, Book 9 (Section 9.3.2.1) [online]. Available from:

JNCC (2003) SUMMARY OF THE WORKING METHODOLOGY FOR IDENTIFYING HABITAT SACS IN UK WATERS (adopted March 2003)
http://www.jncc.gov.uk/pdf/consultation_habitatsiteselectionmethodology.pdf

ANNEX I: The present value of the total costs for all sectors shown in the summary sheets of the IA.

Fisheries

Description			One-off Cost		Annual Cost		
Scenario	***Cost Item***	***Type***	***Cost £k***	***Year Experienced***	***Cost £k***	***Year Commencing***	***Average***
MINIMUM							-
							-
							-
							-
							-
							-
Total		***Admin***	0		0		-
		Policy	0		0		-
		Both	0		0		-

	Discount	100.0%	96.6%	93.4%	90.2%	87.1%	84.2%	81.4%	78.6%	75.9%	73.4%
		0	1	2	3	4	5	6	7	8	9
Cost £k	***Present Value***	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Admin	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Policy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Both	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

MAXIMUM	Reduced catch	Policy			18.8	2010	18.80
							-
							-
							-
							-
							-
Total		***Admin***	0		0		-
		Policy	0		18.8		18.80
		Both	0		18.8		18.80

Cost £k	***Present Value***	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***
	161.82	18.80	18.16	17.55	16.96	16.38	15.83	15.29	14.78	14.28	13.79
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Admin	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Policy	161.82	18.80	18.16	17.55	16.96	16.38	15.83	15.29	14.78	14.28	13.79
Both	161.82	18.80	18.16	17.55	16.96	16.38	15.83	15.29	14.78	14.28	13.79

Enforcement

Description			One-off Cost		Annual Cost		
Scenario	*Cost Item*	*Type*	*Cost £k*	*Year Experienced*	*Cost £k*	*Year Commencing*	*Average*
MINIMUM		Policy	44.6	2010			-
							-
							-
							-
							-
							-
Total		***Admin***	0		0		-
		Policy	44.6		0		-
		Both	44.6		0		-

	Discount	100.0%	96.6%	93.4%	90.2%	87.1%	84.2%	81.4%	78.6%	75.9%	73.4%
		0	1	2	3	4	5	6	7	8	9
Cost £k	***Present Value***	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***
	44.60	44.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Admin	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Policy	44.60	44.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Both	44.60	44.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

MAXIMUM		policy	44.6	2010			-
							-
							-
							-
							-
							-
Total		***Admin***	0		0		-
		Policy	44.6		0		-
		Both	44.6		0		-

Cost £k	***Present Value***	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***
	44.60	44.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Admin	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Policy	44.60	44.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Both	44.60	44.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ANNEX II – International fisheries data

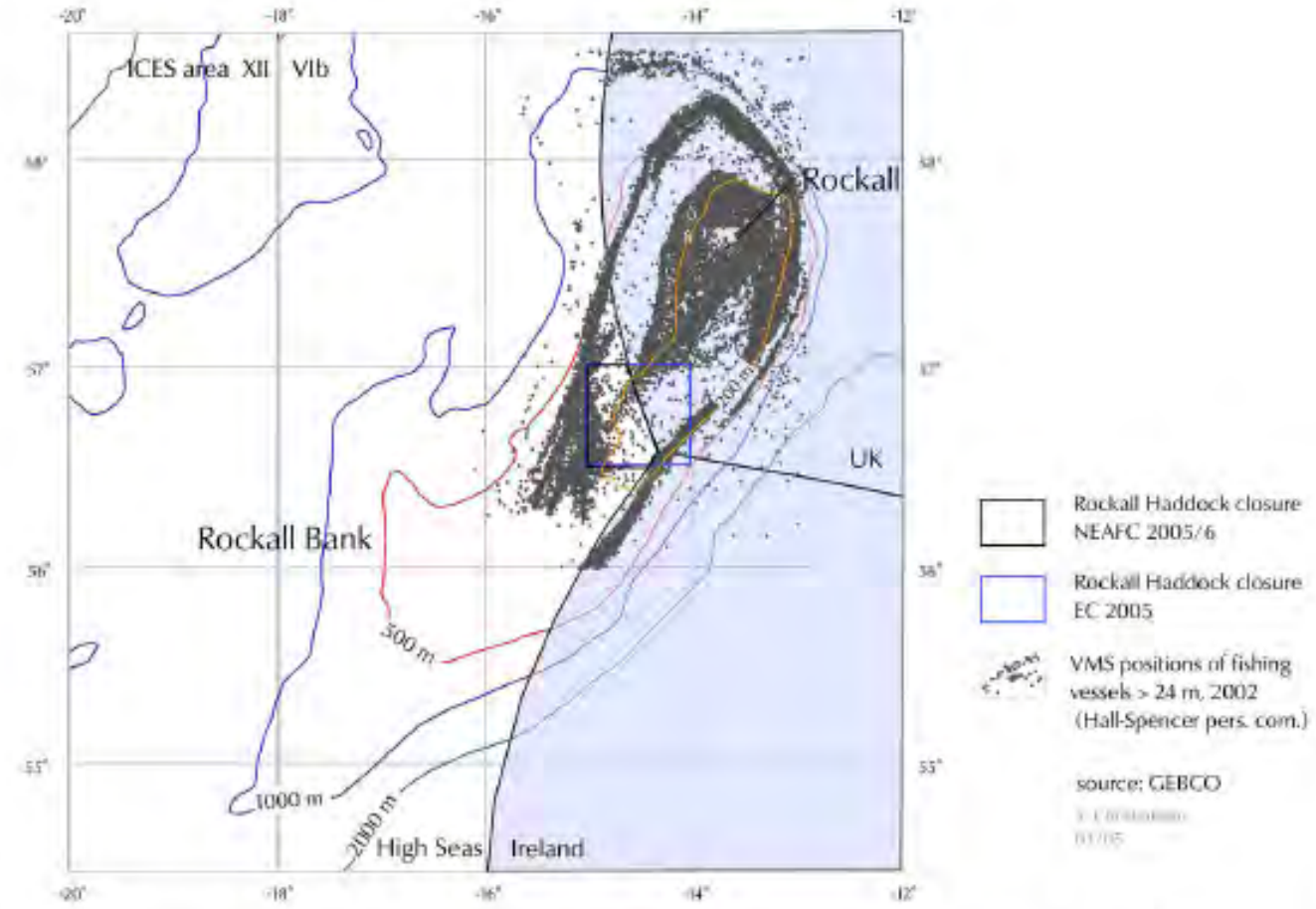


Figure 3.5.2.3.1 VMS data showing fishing vessel positions (all types of fishing vessels of all nationalities >24 m in length) every 2 hours in 2002 in the northern Rockall Bank area.

Source: ICES Report of the Working Group on Deep-Water Ecology 2005

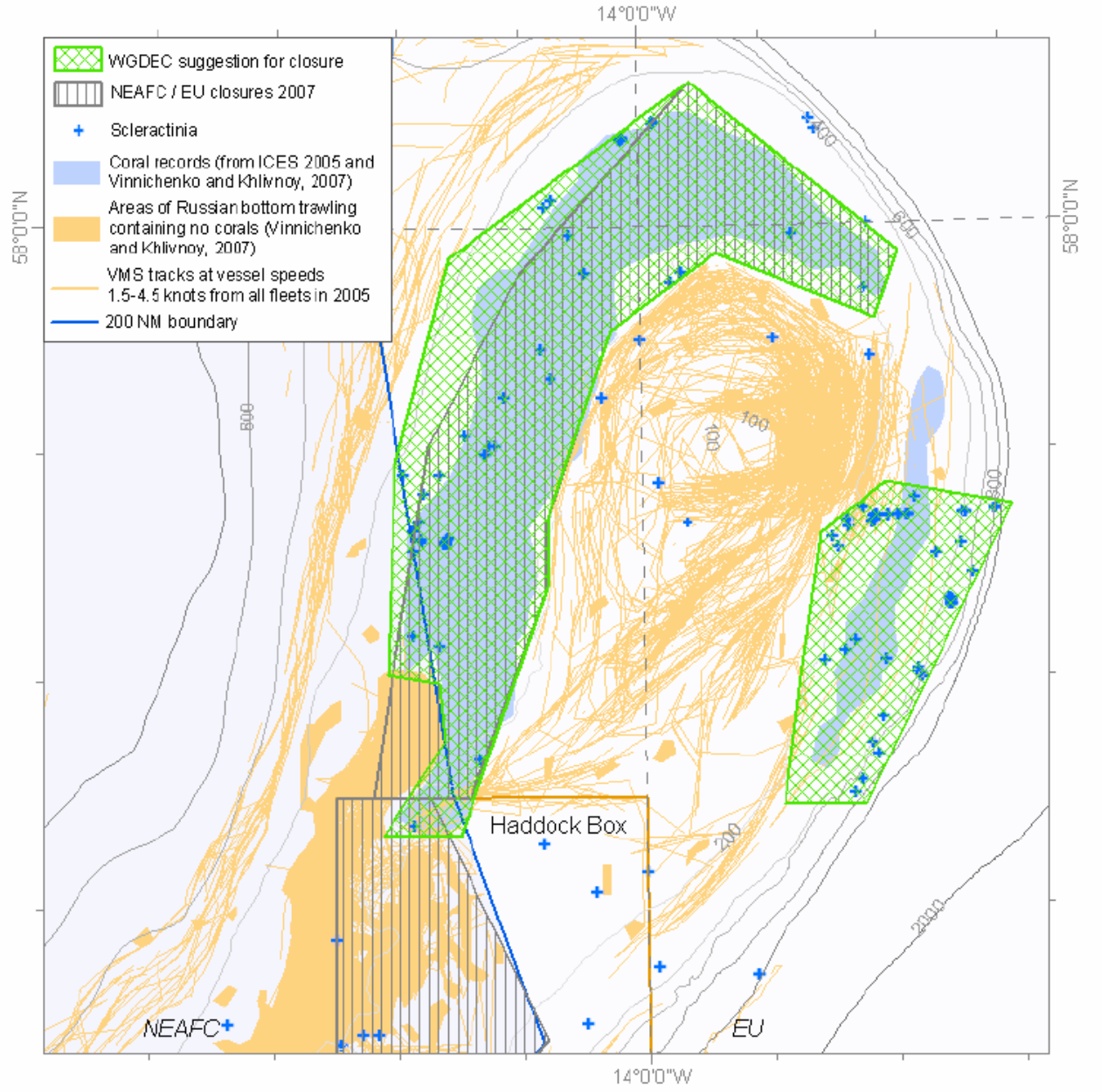


Figure 2.2.3.1 Amended closure to protect coral on west Rockall Bank and a suggested closure on east Rockall Bank.

Source: ICES Report of the Working Group on Deep-Water Ecology 2007