# Summary: Intervention & Options

| Department /Agency: | Title: | |
|---|---|---|
| **Defra/JNCC** | **Impact Assessment of Stanton Banks SAC** | |
| **Stage:** Options | **Version:** 1 | **Date:** 18.07.08 |

**Related Publications**: **Stanton Banks SAC Selection Assessment (v4.0), JNCC**
**2007 Consultation on the selection of offshore SACs: Consultation Document, JNCC**

**Available to view or download at:**
http://www.jncc.gov.uk/marineconsult

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

There are a number of pressures on habitats and species in the marine environment and many are therefore in decline. Currently there is an absence of effective mechanisms to ensure that the costs of economic activities in terms of impacts on habitats and species are taken into account in deciding where and how activities take place. Intervention is needed to be able 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 be transmitted to the European Commission' as required under Regulation 7 of the Offshore Marine Conservation Regulations 2007.

## What are the policy objectives and the intended effects?

The objectives are to ensure habitats and species of European importance are protected in the UK's offshore waters. The intention is that these habitats and species be maintained at (or restored to) Favourable Conservation Status within their natural range through management of potentially damaging activities within or near to sites identified for these habitats and species.

## What policy options have been considered? Please justify any preferred option.

Three policy options have been considered:

Option 1: do nothing;

Option 2: designate the offshore SACs (preferred option);

Option 3: search for alternative sites for SAC designation.

## When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

This has not yet been determined, but it is anticipated that this policy will be reviewed in 10 years time (2017)

## Ministerial Sign-off For SELECT 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 Minister:

.....Date:

# Summary: Analysis & Evidence

| Policy Option: | Description: |
|---|---|
| **Option 1: Do nothing** | **This is the counterfactual against which other options are compared. Only the penalties of inaction are registered here.** |

**COSTS**

| ANNUAL COSTS | | Description and scale of **key monetised costs** by 'main affected groups' |
|---|---|---|
| **One-off** (Transition) | **Yrs** | |
| **£** | 10 | Costs from risk of infraction proceedings and fines possibly of around £100k per day. This may be more likely if this option is also pursued for the other proposed offshore SACs. |
| **Average Annual Cost** (excluding one-off) | | |
| **£** | | **Total Cost** (PV) **£ None** |

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

**BENEFITS**

| ANNUAL BENEFITS | | Description and scale of **key monetised benefits** by 'main affected groups' |
|---|---|---|
| **One-off** | **Yrs** | |
| **£** | | |
| **Average Annual Benefit** (excluding one-off) | | |
| **£** | | **Total Benefit** (PV) **£ None** |

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

Key Assumptions/Sensitivities/Risks

Site deteriorates under this option.

Risk of infraction

| Price Base Year | Time Period Years | **Net Benefit Range** (NPV) **£** | **NET BENEFIT** (NPV Best estimate) **£ None** |
|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| What is the geographic coverage of the policy/option? | | | | Scotland/UK | |
| On what date will the policy be implemented? | | | | Assume 2008 | |
| Which organisation(s) will enforce the policy? | | | | NA | |
| What is the total annual cost of enforcement for these organisations? | | | | £ None | |
| Does enforcement comply with Hampton principles? | | | | Yes | |
| Will implementation go beyond minimum EU requirements? | | | | No | |
| What is the value of the proposed offsetting measure per year? | | | | £ NA | |
| What is the value of changes in greenhouse gas emissions? | | | | £ NA | |
| Will the proposal have a significant impact on competition? | | | | No | |
| Annual cost (£-£) per organisation (excluding one-off) | Micro | Small | Medium | Large | |
| Are any of these organisations exempt? | No | No | N/A | N/A | |

**Impact on Admin Burdens Baseline** (2005 Prices) (Increase - Decrease)

Increase of £ Decrease of £ **Net Impact** **£** NA

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

# Summary: Analysis & Evidence

| Policy Option: | Description: |
|---|---|
| **Option 2: Designate site** | **The assessment considers the minimum and maximum plausible management scenarios to achieve conservations** |

**COSTS**

| ANNUAL COSTS | | Description and scale of **key monetised costs** by 'main affected groups' |
|---|---|---|
| **One-off** (Transition) | **Yrs** | Fishermen will face costs resulting from restrictions on fishing of a maximum of £130k under the minimum scenario and a maximum of £261k under the maximum scenario. Enforcement costs to authorities for setting up designations and management arrangements and subsequent monitoring and enforcement. |
| **£ 42k** | 10 | |
| **Average Annual Cost** (excluding one-off) | | |
| **£ 303k max** | | **Total Cost** (PV) **£ 2.0m max** |

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

Wider economic effects resulting from direct costs to fishermen.

**BENEFITS**

| ANNUAL BENEFITS | | Description and scale of **key monetised benefits** by 'main affected groups' |
|---|---|---|
| **One-off** | **Yrs** | |
| **£** | | |
| **Average Annual Benefit** (excluding one-off) | | |
| **£** | | **Total Benefit** (PV) **£** |

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

Benefits are assessed to be minimal/low under the minimum scenario and low under the maximum scenario. This consists largely of non-use benefits to the UK population and increased oppportunities for scientific research. Role of feature in wider ecosystem and intrinsic value of biodiversity is not taken into account.

Key Assumptions/Sensitivities/Risks

Management measures may be difficult to enforce effectively.

It may not be possible to secure agreement at EU level on management measures.

| Price Base Year | Time Period Years | **Net Benefit Range** (NPV) **£** | **NET BENEFIT** (NPV Best estimate) **£** |
|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| What is the geographic coverage of the policy/option? | | | | Scotland/UK | |
| On what date will the policy be implemented? | | | | Assume 2008 | |
| Which organisation(s) will enforce the policy? | | | | MMO | |
| What is the total annual cost of enforcement for these organisations? | | | | £ 42k | |
| Does enforcement comply with Hampton principles? | | | | Yes | |
| Will implementation go beyond minimum EU requirements? | | | | No | |
| What is the value of the proposed offsetting measure per year? | | | | £ NA | |
| What is the value of changes in greenhouse gas emissions? | | | | £ NA | |
| Will the proposal have a significant impact on competition? | | | | No | |
| Annual cost (£-£) per organisation (excluding one-off) | Micro | Small | Medium | Large | |
| Are any of these organisations exempt? | No | No | N/A | N/A | |

**Impact on Admin Burdens Baseline** (2005 Prices) (Increase - Decrease)

Increase of £ 0 Decrease of £ 0 **Net Impact** **£** 0

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

# Summary: Analysis & Evidence

| Policy Option: | Description: |
|---|---|
| **Option 3: alternative site** | **Reject this site and search for an alternative site.** |

**COSTS**

| ANNUAL COSTS | Description and scale of **key monetised costs** by 'main affected groups' |
|---|---|
| **One-off** (Transition) **Yrs** | |
| **£** | |
| **Average Annual Cost** (excluding one-off) | |
| **£** | **Total Cost** (PV) **£** |

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

Costs of searching for alternative sites and of implementing designation.

Costs associated with alternative site may be higher or lower than original site.

**BENEFITS**

| ANNUAL BENEFITS | Description and scale of **key monetised benefits** by 'main affected groups' |
|---|---|
| **One-off** **Yrs** | |
| **£** | |
| **Average Annual Benefit** (excluding one-off) | |
| **£** | **Total Benefit** (PV) **£** |

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

Depends on relative quality and value of features at alternative site - unlikely to find anything better than original site.

Key Assumptions/Sensitivities/Risks

Unlikely to be possible to find appropriate site.

Possible costs of infraction proceedings and fines.

| Price Base Year | Time Period Years | **Net Benefit Range** (NPV) **£** | **NET BENEFIT** (NPV Best estimate) **£** |
|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| What is the geographic coverage of the policy/option? | | | UK | |
| On what date will the policy be implemented? | | | Assume 2008 | |
| Which organisation(s) will enforce the policy? | | | MMO | |
| What is the total annual cost of enforcement for these organisations? | | | £ | |
| Does enforcement comply with Hampton principles? | | | Yes | |
| Will implementation go beyond minimum EU requirements? | | | No | |
| What is the value of the proposed offsetting measure per year? | | | £ | |
| What is the value of changes in greenhouse gas emissions? | | | £ NA | |
| Will the proposal have a significant impact on competition? | | | No | |
| Annual cost (£-£) per organisation (excluding one-off) | Micro | Small | Medium | Large |
| Are any of these organisations exempt? | No | No | N/A | N/A |

**Impact on Admin Burdens Baseline** (2005 Prices) (Increase - Decrease)

Increase of £ Decrease of £ **Net Impact** **£** Not possible

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

# Evidence Base (for summary sheets)

[Use this space (with a recommended maximum of 30 pages) to set out the evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Ensure that the information is organised in such a way as to explain clearly the summary information on the preceding pages of this form.]

## Introduction

This section sets out the evidence base to support the conclusions made in the *Summary: Analysis and Evidence* pages for the three options for the Stanton Banks Special Area of Conservation Impact Assessment:

Option 1: do nothing
Option 2: designate
Option 3: find alternative site.

The costs and benefits of the options to the UK are considered over a period of ten years from 2008-2018. A start date of 2008 is chosen because sites could be designated as early as 2008. An assessment period of ten years is chosen on the basis that it is difficult to predict what the implications, particularly of choosing option 2, will be more than ten years into the future. A major reason for this is that legislation governing designation of sites or the practice of designating sites is likely to have evolved by then for example subsequent to the implementation of the measures proposed in the Marine Bill White Paper. Such changes and the impact they have on designated sites are likely to be subject to their own impact assessments. It is also considered that this policy should be reviewed after ten years. This should give a sufficient timeframe to be able to observe whether or not expected outcomes have been achieved (e.g. to observe ecological responses) and implement supporting fisheries agreements under the CFP, which are unlikely before 2011.

The costs and benefits assessed in this Impact Assessment are subject to significant uncertainty. The main causes for this uncertainty are that:

i. it is difficult to predict what management measures will be implemented at the site;
ii. it is difficult to know how operators will respond to them and what costs they will incur in doing so; insofar as they can predict this there may be reasons in some cases for not supplying this information, for example: commercial sensitivities;
iii. it is difficult to predict how the condition of the protected features and surrounding environment would change under options 1 and 2; and
iv. there is currently very little evidence on which monetised values for environmental changes in the marine environment can be based.

Therefore the approach to the assessment has:

i. used available techniques to obtain the best information feasible on these areas of uncertainty, by developing scenarios on potential management measures in consultation with those who are going to implement them; and, drawing on sources and informants[1] most likely to be able to predict impacts and provide relevant information;

[1] Study informants: Associated British Ports, British Marine Aggregates Producers Association, British Telecommunications, British Wind Energy Association, Centre for Environment, Fisheries and Aquaculture Science, Chamber of Shipping, Cornish Fish Producers Organisation, Department for Business, Enterprise and Regulatory Reform, Department for Environment, Food and Rural Affairs, Eastern Sea Fisheries Joint Committee, English Heritage, Fisheries Research Service, Foreign and Commonwealth Organisation, Isle of Man Government, Joint Nature Conservation Committee, Marine and Fisheries Agency, Oil and Gas UK, Renewable Energy Association, Scottish Executive, Scottish Fisheries Protection Agency, Scottish Marine Conservation Society, Sea Fish Industry Authority, The Crown Estate, UK Major Ports Group, Welsh Assembly Government.

ii. used a framework that sets out the factors likely to determine the value to society and the environment of any changes that result from management measures implemented, as a basis for making judgements on the level of benefits;
iii. in some cases identified the plausible maximum impact on economic sectors rather than the actual expected impact. For fisheries for example, the impacts are generally assessed as the likely maximum direct loss of profits, because there is not sufficient evidence available to accurately predict the scale to which economic activity will be displaced, and therefore the net change in activity; and
iv. 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 a regional economy.

Following consultation and review, JNCC revised the proposed site boundary in June 2008. The revision reduced the area of the site, giving a boundary with a closer fit around the features of interest. In the short time available following these boundary revisions, this Impact Assessment was revised to adjust the impacts of the 'maximum scenario' costs. The costs of the 'minimum scenario' and the benefits were both related closely to the features of interest, and therefore were assumed to change little as a result of the boundary revisions, which did not alter the extent of features of interest with the site.

**Background information on the site**

*Overview*

The proposed Stanton Banks SAC is a 818km² area south of the Outer Hebrides. It contains a series of granite rises which outcrop from the seafloor which qualify as Annex 1 reefs under the Habitats Directive. This rocky landscape is criss-crossed by deep gullies. Major gullies are 100m wide and others a few 10s of metres wide. The seabed is about 190m and the verticals rise around 130m from that depth. The granite is deeply fissured and extremely rugged. The interconnecting gullies are filled with rippled coarse shell sand and the tops of banks are smooth and characteristically colonised by encrusting red algae and small encrusting sponges.

On the slopes where the rock is less smooth, featherstars, dead man's fingers and hydroids are abundant. At the edges the banks are fringed with boulders and cobbles. In surveyed areas, biological communities represent moderately exposed/exposed circalittoral bedrock reef habitat of the Scottish Continental Shelf Regional Sea. There are fish resources present at the site (mainly commercial species). The Banks are nursery areas for Norway Pout, lemon sole, Norway lobster (*Nephrops*) but none of these are unique to the area or rigidly fixed.

*Economic activities*

*Fishing:*

Information for twelve months ending July 2007 from the Scottish Fisheries Protection Agency's (SFPA) Vessel Monitoring System (VMS) database indicates from a recent 12 months data that there are roughly 337 vessel days per year within the site. There is currently significant fishing activity within and around the proposed boundaries of this site, although much of the activity to the north and north west of the site will now be outside the site given the revised boundary proposed in June 2008. SFPA report that it is fished heavily by vessels based in west coast of Scotland. The site tends to be a seasonal fishery because of weather and as such provides a good fishing area for larger boats during summer months. The effort is nearly all demersal trawling. The main species targeted are *Nephrops* (Norway lobster or 'scampi'), haddock, hake and monkfish as well as various other species. The West of Scotland Fish Producers Organisation note that their vessels target *Nephrops* and take by-catches of monk, megrim whiting, haddock and hake using bottom trawls. In addition there is seasonal pelagic boat activity and significant crab fishing.

Part of the proposed site lies in Irish grey zone where UK- and Irish-claimed fishing limits overlap and there is an agreed system for enforcement. SFPA report that the industry are aware of coral in the area, and that fishermen make an effort to steer clear of it as it damages their nets.

*Defence Activities*

The site may interact with classified defence activities, but these are not expected to have a detrimental impact on the site features (MoD pers comm.[2])

*Assessing environmental benefits*

The environmental benefits, or changes in environmental value provided by the site and its protected features, that result from the options are assessed in this IA using the Ecosystem Services Approach (or 'ecosystem approach')[3]. The ecosystem approach operates by identifying all the relevant goods and services that the ecosystem provides in four overarching categories: provisioning, regulating, cultural and supporting. In the case of offshore Marine sites, the following services were considered:

- Provisioning:- fish for human consumption
  - fish for non-human consumption
- Regulating: - carbon sequestration
  - coastal protection
- Cultural: - non-use value (value, other than derived from the direct use, such as from the knowledge of species richness and biodiversity)
  - scientific research
  - archaeology
  - scuba diving
  - sea angling
- Supporting: - role in wider ecosystem. This has not been included in the assessment as there is currently no basis for assessing it.

[2] Email from MoD dated 14th March 2008.
[3] For more details of the ecosystems approach, see the Methodology section of the Phase 1 report, in particular figure 1.

The coastal protection and scuba diving services are not relevant to this site. The impacts of designation on the other services are analysed in table 3. In addition to these categories it is recognised by many people that biodiversity has an intrinsic value that cannot be assessed using traditional economic techniques[4].

In addition to these categories it is recognised by many people that biodiversity has an intrinsic value that cannot be assessed using traditional economic techniques[5].

It has not been possible in this impact assessment to express the benefits of changes in the features' conditions in monetary terms because a) it is not possible to predict accurately what the change will be and b) no basis has been identified for inputting a unit economic value for changes. A qualitative approach has therefore been used, which reflected in table 3.

**Option 1: no action**

This option is the 'policy off' scenario. It assesses what is likely to happen over the assessment period if the site is not designated and therefore no management measures are put in place. This is the counterfactual or baseline against which the costs and benefits of options 2 and 3 are compared.

The Stanton Banks are likely to deteriorate under this option. Fishing, particularly with mobile demersal gear, would be difficult to control if the site is not designated and this is likely to contribute to some level of decline of the features over the assessment period. Table 1 below simplifies a similar table from the 'Conservation objectives and Advice on operations' document for the site. It assesses the vulnerability of the reefs as determined by their sensitivity to impacts and the potential exposure to those impacts under a 'no action' scenario.

This shows two respects in which the feature is vulnerable to impacts. If no action is taken and the features are exposed to impacts over a ten year period, it would seem reasonable to conclude that it might face at least 'low' decline.

[4] This is referred to for example on page 7 of section 2 of this Millennium Ecosystem Assessment report:
http://www.millenniumassessment.org/documents/document.354.aspx.pdf

[5] This is referred to for example on page 7 of section 2 of this Millennium Ecosystem Assessment report:
http://www.millenniumassessment.org/documents/document.354.aspx.pdf

| **Table 1: Vulnerability of Stanton Banks site under option 1** | | | | |
|---|---|---|---|---|
| *List of pressures which may cause deterioration (with example activities)* | | *Stanton Banks* | | |
| | | *Sensitivity* | *Exposure* | *Vulnerability*[6] |
| *Physical loss* | *Removal* | *** | None | No known vulnerability |
| | *Obstruction* | *** | None | No known vulnerability |
| | *Smothering* | ** | None | No known vulnerability |
| *Physical damage* | *Changes in suspended sediment* | * | None | No known vulnerability |
| | *Physical disturbance or abrasion* | *** | Unknown level | Vulnerability (not quantifiable) |
| *Non-physical disturbance* | *Noise* | 0 | ? | No known vulnerability |
| | *Visual presence* | 0 | None | No known vulnerability |
| *Toxic contamination* | *Introduction of synthetic compounds* | *** | None | No known vulnerability |
| | *Introduction of non-synthetic compounds* | *** | None | No known vulnerability |
| | *Introduction of radionuclides* | ? | ? | Insufficient information |
| *Non-toxic contamination* | *Changes in nutrient loading* | ** | None | No known vulnerability |
| | *Changes in thermal regime* | ** | None | No known vulnerability |
| | *Changes in turbidity* | * | None | No known vulnerability |
| | *Changes in salinity* | *** | None | No known vulnerability |
| *Biological disturbance* | *Introduction of microbial pathogens* | ? | ? | Insufficient information |
| | *Introduction of non-native species and translocation* | ? | ? | Insufficient information |
| | *Selective extraction of species* | *** | Unknown level | Vulnerability (not quantifiable) |

A further potential consequence of this option is that the UK may be subject to infraction proceedings by the European Commission and subsequently fines for not implementing the Habitats Directive fully. This may be more likely if this option is also pursued for the other proposed offshore SACs. In previous recent cases daily fines of around £100,000 and higher have been proposed by the European Commission for failure to implement or comply with EU directives[7].

**Option 2: designate**

*Implications of designation*

[6] Vulnerability is a product of sensitivity and exposure.

[7] EC propose fixed fine (to European Court of Justice) for France of €28 million and a daily penalty payment of €117 882 for failure to comply with the EU Drinking Water Directive. http://www.eurosite.org/insight_brussels/2007_03/5_3.html. EC propose daily fine of €168 800 for France for failure to implement the Contained use of GMs Directive (EU press release, 1 February 2006).

Once sites have been submitted to the European Commission for designation, in order to achieve the site's Conservation Objectives, Competent Authorities are required:

1) to assess the implications of any activity they consent; and
2) to review existing consents or permissions which may adversely affect the integrity of this site as soon as reasonably practicable

This stage has not yet been reached. It is therefore necessary to make assumptions about what measures might be required for this site. The assumption underlying this assessment is that the site will be designated in 2008 and that management measures will be in place in 2011. 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 management changes that might be required at the site. Table 2 outlines these scenarios for the Stanton Banks site.

**Table 2 – "Minimum" and "maximum" management scenarios. Measures plausibly put in place following designation**

| *"Minimum" scenario:* | *"Maximum" scenario* |
|---|---|
| Existing activities:<br>- Ban on all forms of demersal fishing (mobile *and* static/set gears) over all areas of reef within the site<br><br>Proposed activities:<br>*Offshore industry plans or projects which 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.*<br><br>*No proposals are currently expected. 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 – assume assessment costs 10% more.* | Existing activities:<br>- Ban on all forms of demersal fishing (mobile *and* static/set gears) within SAC boundary<br><br>Proposed activities:<br>*Offshore industry plans or projects which 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.*<br><br>*Some adjustments to project proposals are made to minimise interference with features – e.g. prohibition of stabilising rocks on features, detours in pipelines to avoid features. Assume businesses invest 50% more in assessment.* |

*Costs to business*

*Fisheries:*

This IA is concerned only with the costs to UK vessels. 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.

All informants interviewed during the development of the IAs for these sites considered that many fishermen would find alternative areas to fish. Some thought

that in general all fishermen would find somewhere else to fish and others thought that some would and others would not. One informant provided the view that given increasing regulation and restrictions on fishing in recent years, the first thought that would come to mind of many fishermen would be whether it would be possible to stop fishing. The same informant thought that fishermen would generally only be able to stop fishing if compensated for their vessels and other equipment.

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. Whether sites are suitable will not only depend on fish stocks but also for example whether static nets could be deployed without disturbance from beam trawls. Another important factor is whether boats have the capacity to reach alternative grounds; smaller vessels may not have the capacity to go further out or to deeper grounds. 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 and labour 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. The West of Scotland Fish Producers Organisation suggests that if there are restrictions on fishing vessels, the vessels fishing the area are not of a size to fish further offshore, and will therefore be forced to fish elsewhere onto inshore grounds which would be damaging to the adjacent fishing communities. SFF state that closing Stanton Banks to fishing would lead to significant displacement of effort, predominantly into inshore grounds. This is because *nephrops* are only caught on muddy substrata and the only other grounds on the West Coast are inshore. This would increase pressure on stocks inshore. SFF also state that closing Stanton Banks to fishing is also likely to mean that vessels targeting crab would be displaced inshore, increasing pressure on inshore crab stocks.

In some cases, particularly where moving to an alternative ground would become unprofitable, individual fishermen may stop fishing. This may not necessarily mean that total income to the sector will reduce, given fixed quotas for many stocks and if other vessels are 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. This may be a particular issue for the Stanton Banks site, for example in the effects on processing operations, such as on Barra, and on the ports of Mallaig and Oban. A recent study[8] estimates that an increase in demersal fishing revenue of £1m in Scotland generates an increase in output (direct and indirect) of £2.08m to the regional economy or £3.16m to the UK economy. Given the view that fishing will simply be displaced and landings will not be affected, the Seafish multipliers are not reflected in the estimates. There may be geographical distribution effects.

[8] *The economic impacts of the UK sea fishing and fish processing sectors: an Input-Output analysis.* The Seafish Industry Authority. March 2007.

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 likely maximum level of direct costs. The profitability of fishing within the area is taken as a proxy for this. This is because in general it can be expected that for each vessel if costs increase, or income reduces such that fishing is no longer profitable, and the vessel can not respond by moving somewhere else, then they will not fish. This maximum will be reached if costs increased or income reduces such that fishing in the area was no longer profitable for any of the visits to the area. There is some evidence that fishermen continue to fish at unprofitable levels but as a general assumption it is reasonable to suggest that they will not. This estimate of profitability is informed by data from the Scottish Fisheries Protection Agency on potential activity within the area and from the 2005 survey[9] on the profitability of fishing.

A further important issue is that any closures would have to be agreed with other Member States of the European Union through the Common Fisheries Policy. It is assumed that this process may take three years to carry out and therefore that closures would not be in place until 2011.

Maximum and Minimum

SFPA have provided an estimate that there are roughly 337 vessel days per year within the site boundary proposed for Stanton Banks in March 2008. In order to identify a likely maximum net profit, the level of net profit per vessel day is taken for larger boats (trawlers over 24m) operating in the North Sea and West of Scotland where in 2005 there were 217 vessel days and a net profit of £168k, giving a net profit per vessel day of £774. On a pro rata basis 337 vessel days would yield a net profit of £261k. A chart of UK fishing activity within the site suggests that the vast majority of this takes place off the feature. The direct effect of the maximum scenario may reduce this net profit of £261k by some proportion. The direct effect of the minimum scenario will reduce this net profit by significantly less (assumed to be 50% less) than that, giving a maximum of £130k. There may also be wider effects as referred to above.

The site boundary proposed for Stanton Banks in June 2008 reduces its area by 53%. As fishing effort is not distributed evenly within the original boundary (the majority is believed to take place off the feature) the impacts cannot reliably be reduced in proportion to this. Therefore the above data is the best available, although it is likely to be an overestimate.

*Administration costs to business:*

[9] *2005 Economic Survey of the UK fishing fleet.* Seafish Industry Authority.

No costs of significant administrative actions have been identified for this site. The costs of finding out about designations and measures and any other requirements to provide information to authorities will be dependent on the future management regime and cannot currently be assessed.

*Costs to Government of administering regime:*

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 £42k[10].

ii. *Requirements to assess the implications of any activity they consent.* No proposals are expected.

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. Given that the distances are generally further in Scotland it is estimated that 5 days might be necessary per site. This would cost £42.2k per annum[11]. It is assumed that administration of records and other activities is carried out as part of existing duties.

*Environmental Benefits*

This assessment considers the magnitude of the benefits of the two management scenarios in option 2 to be the value of the changes in services under each relative to the level of services under option 1. The maximum scenario provides the upper bound and the minimum scenario provides the lower bound for the benefits. There is, however, very little data that can inform quantified estimates of either the level of changes in services under the management scenarios or the value of those changes[12].

In the absence of robust data to inform benefits, the parameters that determine the benefits for each service are considered in turn to form a judgement of the scale of benefits of option 2, against which costs can be compared. The following parameters are considered:

[10] 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 Ready Reckoner of staff costs and £10k for communication and other costs. 2007 prices.
[11] This is based on £7k per boat day and £1.2k for an hour of air surveillance. This uses figures from the 2005-6 SFPA Annual report as a guide.
[12] N.B. there has been some valuation work done recently e.g. *Marine Biodiversity an economic valuation* by the Plymouth Marine Laboratory in 2006 which concludes that the benefits of marine biodiversity are very significant.

- *The relevance of the service to the site.* Whether the service is performed at the site, and to what degree, is the first factor to take into account.
- *The decline of the services under option 1.* This considers the decline for each service under option 1 as a basis for comparing the increase in services under option 2 management scenarios.
- *The increase of services under option 2 (minimum and maximum scenarios) compared with option 1.* This considers the increase for each service compared with option 1 for both of the scenarios considered under option 2.
- *The value weighting of change in services.* This considers how valuable the service and changes to it are.

On the basis of expert judgement, including information received during discussions with key informants and consultations on the designation of the site, these parameters are assigned a "level" for each service from a menu of:

- Nil
- Minimal
- Low
- Moderate
- High

The scale of benefits relating to each service can then be assessed for both minimum and maximum scenarios taking account of the "level" of the parameters above. Finally a level is assigned to the overall benefits from the two scenarios.

The confidence in the conclusions on benefits is also considered. This is a measure of the certainty in the assessment of the scale of benefits based on the availability and robustness of data and the assessors' confidence in the judgement exercised. Table 3 below summarises the results of this assessment. Advice from the team's marine ecologist and JNCC and available evidence was used to inform the ranking for the first three parameters listed above. The team's economists provided a view of the fourth parameter above taking account of available evidence. The full team then provided a view of the overall scale of benefits and confidence in the results.

It should be noted that in assessing the benefits of the minimum and maximum scenarios for the SAC proposals the likely success of enforcement of measures has been taken into account. This means that the benefits derived from site management are frequently assessed as lower in this IA than if evaluated independently of enforcement considerations. In some cases a minimum measure that excludes an activity from the feature alone may be harder to enforce than the maximum measure which excludes it from the entire site. The minimum measure would therefore on average lead to lower benefits to the environment, or increased enforcement costs, than the maximum measure.

As referred to under the heading 'Assessing Environmental Benefits' above, the role of the features in the wider ecosystem is not yet taken into account and neither is the notion that biodiversity has an intrinsic value.

| **TABLE 3 – Significance of change for ecosystem services** | | | | | | | |
|---|---|---|---|---|---|---|---|
| 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* | **Moderate.** Important for shellfish. Spawning and nursery ground for several commercially significant fish species but other areas are more important. | **Moderate.** Interruption of lifecycle processes could mean that decline is significant | **Nil.** Improvement on site offset by corresponding decline as fishing is displaced. Alternatively risk measures will not be effective | **Nil.** Improvement on site offset by corresponding decline as fishing is displaced. | **Moderate.** Not higher value than other sites in region | **Nil.** 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 |
| *Fish for non-human consumption* | | **Low.** Probably not demersal so less affected by bottom trawling. | | | | | |
| *Carbon sequestration* | **Minimal.** The features are likely to have a low effect and small area | **Minimal.** Unlikely to affect biological pump. | **Minimal.** Unlikely to affect biological pump | **Minimal.** Unlikely to affect biological pump | **Moderate**. – CS is of high value but site plays minimal role | **Minimal.** | **Moderate** – biological pump not well understood |
| *Non-use value* | **Moderate.** Evidence that public has preferences for rare/unusual features and visually appealing features | **Low/moderate.** Fisherman reported to avoid reef. | **Low.** As reef already avoided, risk enforcement not successful | **Low/moderate.** As reef already avoided | **Moderate.** All UK population is relevant but relatively low value per capita | **Low for min.** Taking account of enforcement **Low/moderate for max.** | **Moderate.** No evidence on non-use values for specific features. |
| *Scientific research* | **Moderate.** Potential for research interest | **Low/moderate.** Fisherman reported to avoid reef. VMS data backs this up. | **Low.** Reef reportedly avoided and risk enforcement not successful | **Low/moderate.** Reef reportedly avoided | **Low/moderate.** Little that is not found elsewhere | **Minimal/low for min.** **Low for max.** | **Moderate/high** |
| *Archaeology* | Information not readily available | **Nil.** Vessels avoid wrecks. | **Nil.** Avoided wrecks before | **Nil.** Avoided wrecks before | **Moderate.** Interest to public. | **Nil.** Not affected by designation | **Moderate.** Little known of Paleo-archaeology |
| *Sea angling* | Information not readily available. | **Moderate.** As for fish for human con. | **Nil.** As for fish | **Nil.** As for fish | Information not readily available. | **Nil.** As for Fish | **Moderate** |
| **Total value of changes in ecosystem services** | | | **Minimal/low for min and low for max scenarios** | | | | **Moderate.** |

*Risk of unintended consequences*

- Management measures may be difficult to enforce effectively
- It may be difficult to secure agreement at EU level on management measures

*Summary*

| **Table 4 - Summary costs and benefits table for option 2: designate** | | | | |
|---|---|---|---|---|
| | *Minimum Scenario* | | *Maximum Scenario* | |
| | *Costs* | *Benefits* | *Costs* | *Benefits* |
| *Assessed* | Fisheries: direct costs of max of £130k p.a. after 2011 | Minimal/ low | Fisheries: direct costs max of £261k p.a. after 2011 | Low |
| | Enforcement: £42k one-off and £42k pa | | Enforcement: £42k one-off and £42k pa | |
| *Total Annual* | After 2011: £42k + small proportion of £130k | Minimal/ low | After 2011: £42k + proportion of £261k | Low |
| *Total one-off* | £42k | 0 | £42k | 0 |
| *Total (PV)* | Max of £1.1m | Minimal/ low | Max of £2.0m | Low |
| *Not assessed* | - Wider effects of any direct costs to fishing<br>Costs beyond next 10 years | - Role of feature in wider ecosystem<br>- Intrinsic value of biodiversity improvements<br>- Ecosystem recovery beyond next 10 years | - Wider effects of any direct costs to fishing<br>- Some may exit fisheries sector. This could allow recovery of fish stocks<br>- Costs beyond next 10 years | - Role of feature in wider ecosystem<br>- Intrinsic value of biodiversity improvements<br>- Ecosystem recovery beyond next 10 years |

**Option 3: find alternative site**

This option is to find another site instead of the Stanton Banks site. This could only be allowed on scientific grounds rather than grounds of costs. Nevertheless there would be costs associated with searching for an alternative site and, if a site were found and designated the cost and benefit implications at the alternative site would be different and would need to be taken into account.

*Costs to UK government*

- The UK is likely to face further costs in searching for and characterising an alternative site. Finding new features of conservation value would require new areas of the seabed to be mapped. It is unlikely, however, that mapping new areas of seabed would be undertaken specifically for the purpose of finding potential Natura 2000 sites, rather that potential sites would be identified through mapping undertaken under other programmes, for example to inform marine spatial planning. Estimates of the costs of mapping the entire UK seabed for those other purposes tend to be in the order of £200m. Detailed survey of the features is likely to be necessary to inform site assessment and this could cost anything from a few £10,000s to several £100,000s. In addition to these there would be costs associated with further stakeholder engagement, satisfying procedural requirements and further assessments. This might cost up to £100k per site.
- The UK may face EU infringement fines for not implementing the Habitats Directive fully. This may be more likely if alternative sites are also sought for the other proposed SACs particularly those involving reefs. As before daily fines could be in the order of £100,000.

*Costs to businesses*

- Depending on what alternative is found, if any, the relative total costs to businesses of the management measures may increase or decrease and the distribution of costs between sectors may also change. The extent of relative costs will depend largely on the density of economic activities within any area identified as an alternative and the value of business activities undertaken within them, compared with Stanton Banks.
- Not knowing which areas are going to be protected increases uncertainty for businesses and investment risk.

*Benefits to the environment*

- This will depend on the relative quality and value of features on any site identified as an alternative and the potential to achieve improved conservation of features relative to the baseline scenario. Advice from JNCC suggests that finding an alternative to the Stanton Banks would be highly unlikely so this benefit is unlikely to accrue.

*Risks*

- That the costs of searching and possibly facing fines are incurred without being able to find a better or more suitable site.

## Impact tests

Consideration has been given within the main body of this assessment to all relevant and identifiable environmental impacts and effects on sustainable development.

*Small Firms Impact Test*

SMEs are considered for these purposes to be those with fewer than 250 employees. It is likely that all the fishing vessels that would have to avoid the features or site would be owned by SMEs; in most cases the company would not own more than one vessel. The minimum scenario is unlikely to affect any small businesses. The maximum scenario almost certainly would. The costs for those fishing vessels that continue to fish nearby to Stanton Banks are unlikely to be high. However, the costs for those who decide to move further afield would be higher and some vessels may leave the sector. There may also be an impact on small angling businesses.

Costs might affect the smaller companies more significantly as they would be less likely to be able to move further afield as they may not have the capacity to do so.

*Competition Assessment*

| **Table 5: competition assessment** | | | |
|---|---|---|---|
| *Would the proposal:* | *Fisheries* | *Oil and gas* | *Aggregates* |
| *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:<br>- raise significantly the costs of new suppliers relative to existing suppliers,<br>- raise significantly the costs of some existing suppliers relative to other existing suppliers, or<br>- raise significantly the costs of entering, or exiting, the affected market.<br>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. | | |

See: 'Completing competition assessments in Impact Assessments. Draft guideline for policymakers' Office of Fair Trading. February 2007.

*Carbon Assessment*

The main purpose of a carbon assessment is to establish the impact of the policy on greenhouse gas emissions. It is suggested that conservation of the features as envisaged in option 2 (relative to option 1) is unlikely to have a major impact on climate regulation.

It should also be noted, however, that the *Conservation Objectives and Advice on Operations* for the site concludes that climate change is likely to have an impact on the features and biological processes at the site but this is unlikely to be the case within the assessment period.

The improved condition of site features and biological diversity envisaged in option 2 is likely to increase the resilience and adaptability of the site to climate change.

*Rural proofing*

Some of the economic costs identified in relation to fisheries will occur in remote coastal communities in predominantly rural areas of the UK. Due to the less diversified nature of their economies, the impacts may be relatively more important in these locations.

*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 the use of legal aid in these ways.

*Other Impact Tests*

The Health, Race equality, Disability equality, and Human Rights impacts tests are not considered relevant to this Impact Assessment.

# Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

**Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.**

| Type of testing undertaken | *Results in Evidence Base?* | *Results annexed?* |
|---|---|---|
| Competition Assessment | Yes | Yes/No |
| Small Firms Impact Test | Yes | Yes/No |
| Legal Aid | No | Yes/No |
| Sustainable Development | No | Yes/No |
| Carbon Assessment | Yes | Yes/No |
| Other Environment | Yes | Yes/No |
| Health Impact Assessment | No | Yes/No |
| Race Equality | No | Yes/No |
| Disability Equality | No | Yes/No |
| Gender Equality | No | Yes/No |
| Human Rights | No | Yes/No |
| Rural Proofing | No | Yes/No |

# Annexes

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