

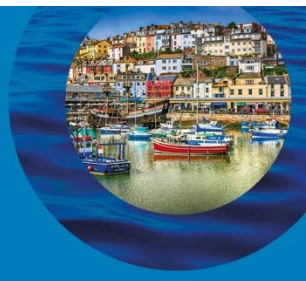


Marine  
Management  
Organisation

**Decision  
document:**

**Dogger Bank  
SAC Call for  
Evidence**

**February 2021**



...ambitious for our seas and coasts



## 1. Introduction

Between 28 October and 15 December 2020 the MMO ran a call for evidence to seek views on the draft assessments of the impacts of fishing and non-licensable activities in five marine protected areas (MPAs).

The four MPAs which are being assessed for the impact of fishing are:

- The Canyons Marine Conservation Zone (MCZ);
- Dogger Bank Special Area of Conservation (SAC);
- Inner Dowsing, Race Bank and North Ridge SAC;
- South Dorset MCZ.

Studland Bay MCZ is being assessed for the impact of marine non-licensable activities.

Further details on the call for evidence are provided [here](#).

This document presents a summary of the call for evidence responses received and the decision for the next steps for the Dogger Bank SAC.

## 2. Dogger Bank Special Area of Conservation

Dogger Bank Special Area of Conservation (SAC) was formally designated in September 2017<sup>1</sup>. Located in the Southern North Sea approximately 150 km north east of the Humber Estuary, Dogger Bank SAC lies entirely outside the 12 nautical mile limit sharing its eastern boundary with the UK's exclusive economic zone (EEZ). The site covers an area of 12,331 km<sup>2</sup>.<sup>2</sup>

Dogger Bank SAC is an offshore marine protected area (MPA) designated to protect the Annex I sandbank feature - sandbanks which are slightly covered by sea water all the time (H1110)<sup>2</sup>, which covers the expanse of the designated area. The Dogger Bank is the largest single continuous expanse of shallow sandbank in UK waters<sup>2</sup>.

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<sup>1</sup> <https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0030352.pdf>

<sup>2</sup> <https://jncc.gov.uk/our-work/dogger-bank-mpa/>

The sandbank consists of four sub-features: subtidal sand, subtidal coarse sediment, subtidal mixed sediments and subtidal mud<sup>3</sup>.

The conservation objectives set for the designated sandbank feature and sub-features of Dogger Bank are<sup>4</sup>:

*Subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the Favourable Conservation Status of its qualifying features, by maintaining or restoring:*

- *the extent and distribution of qualifying natural habitats;*
- *the structure and function (including typical species) of qualifying habitats;*
- *the supporting processes on which qualifying natural habitats rely.*

Joint Nature Conservation Committee (JNCC) stated that the general management approach is to 'restore' the extent and distribution of the Annex 1 sandbank feature, to 'restore' the structure and function of the Annex 1 sandbank feature, and to 'maintain' the supporting process on which the Annex 1 sandbank feature relies<sup>5</sup>.

The view of JNCC is that the Annex 1 sandbank feature is currently in unfavourable condition<sup>5</sup>.

### **3. Assessment of the Effects of Fishing in Dogger Bank SAC**

The MMO assessment used a range of information including landings records, vessel monitoring system (VMS) data, fisheries sightings data and self-reported patterns of fishing activity to understand patterns of fishing activity at the site. The MMO assessment of fishing impacts at this site concluded that bottom towed fishing (including semi-pelagic trawling and demersal seining) is not compatible with the conservation objectives of the site and may result in an adverse effect on site integrity.

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<sup>3</sup> <https://data.jncc.gov.uk/data/26659f8d-271e-403d-8a6b-300defcabcb1/DoggerBank-3-SACO-v1.0.pdf>

<sup>4</sup> <https://data.jncc.gov.uk/data/26659f8d-271e-403d-8a6b-300defcabcb1/DoggerBank-2-ConservationObjectives-v1.0.pdf>

<sup>5</sup> <https://data.jncc.gov.uk/data/26659f8d-271e-403d-8a6b-300defcabcb1/DoggerBank-4-Statements-v1.0.pdf>

## 4. Call for evidence responses

### 4.1 Methodology for collecting responses

The call for evidence for Dogger Bank SAC included an online survey, which presented multiple management options for fishing activities.

Questions sought evidence and views from stakeholders on management options for bottom towed fishing activities and asked for information about the location, condition and sensitivity of designated features as well as the level or nature of fishing within the site.

This management options consisted of three options:

**Option 1:** No fisheries restrictions. Introduce a monitoring and control plan within the site.

**Option 2:** Reduce/limit pressures. Due to the potential impacts of demersal and semi-pelagic trawls, demersal seines and dredges on the features of the site, management would be introduced to reduce the risk of the conservation objectives not being achieved. This may be through a zoned management approach and/or limiting the activity/intensity of these activity types.

**Option 3:** Remove/avoid pressures (whole site prohibition). Demersal and semi-pelagic trawls, demersal seines and dredges will be prohibited in all areas of the site.

Stakeholders also had the option to answer the questions to consider in the call for evidence letter via email. A number of responses were received in this way and these have been summarised here alongside the online survey responses.

### 4.2 MMO response to site specific consultation responses

MMO would like to thank everyone who responded to the call for evidence. We have reviewed all responses and have used these responses to update our assessment.

Based on the updated assessment, the MMO has concluded that option 3 (prohibition of bottom towed gear across the whole site) is the preferred option. The majority of respondents stated that this was also their preferred option and outlined reasoning and evidence as to why this option would be most beneficial to the site, environment and certain parts of the fishing industry.

During the call for evidence, 28 responses were received relating to Dogger Bank SAC. These included responses from individuals, academics, fishers, non-governmental organisations, industry groups and other government departments.

Responses included both support for, and objections to the proposed management options.

The subjects raised during the call for evidence fall within the following 10 overarching categories:

- sandeel fishery;
- grouping semi-pelagic fishing gear with demersal gear;
- variation in habitat sensitivity;
- factors (beyond fishing) that affect the protected feature or biological communities in Dogger Bank SAC;
- management of the scallop fishery;
- bycatch;
- use of fishing activity data;
- environmental benefits of the site are not fully considered;
- impacts on individual species;
- legislative adherence.

#### 4.2.1 Sandeel fishery

The following points were raised by respondents regarding the sandeel fishery:

1. The sandeel stock 1r (central and southern North Sea) was above biological reference points in 2016-2018, and recruitment in 2019 was above the geometric mean for this stock. Considering the stock's status and the 2019 recruitment, based on a maximum sustainable yield (MSY) approach, the International Council for the Exploration of the Sea (ICES) advised a catch of 113,987 tonnes in 2020. No evidence is presented on how this advice could indicate that the protected sandbank feature is being impacted by fishing. The presence of a targeted annual commercial fishery limited by total allowable catch (TAC) demonstrates that the populations of sandeel stock 1r are sufficiently abundant to support a fishery. The MMO assessment should therefore consider that ICES advice permits fishing pressure on the stock and present evidence as to why this advice does not satisfactorily manage this pressure.
2. Sandeels are short-lived species with highly variable recruitment patterns driven by natural factors. Variability in the biomass status and productivity of sandeel stock 1r is driven by natural factors.
3. Sandeel stock 1r has repeatedly fallen below biological reference points since 2004, indicating that the sandeel stock is poor condition. Fishing contributes to this, with the Marine Stewardship Council suspending certification in 2019 of the sandeels in management area 1r due to the stock falling below safe biological limits.

## MMO response regarding the sustainability of the sandeel fishery

In response to points 1 and 2, the spawning stock biomass of sandeels in stock 1r has fluctuated above and below  $MSY B_{trigger}$  since 2004<sup>6</sup>. While several factors can affect the recruitment and survival of sandeel stocks in the North Sea, including internal regulatory factors (such as density dependence) and external regulatory factors (such as climate-driven changes in prey availability)<sup>7</sup>, fishing mortality also contributes to the productivity of North Sea sandeel stocks<sup>7</sup>. Simulation models predict that reducing fishing mortality can lead to pronounced improvements in stock status<sup>7</sup>.

Sandeels are listed as a 'characteristic species' of Dogger Bank SAC and play an important role in the biological 'Structure and Function' of the sandbank feature. Given the fluctuations in sandeel spawning stock biomass, the large quantities of sandeels being removed from Dogger Bank SAC, and the contribution of this fishing mortality to the spawning stock biomass, the MMO cannot rule out that sandeel removal by demersal trawling and seining is having an adverse effect on site integrity and the ability to achieve the conservation objective to restore the sandbank habitat to favourable conservation status.

In response to point 3, the MMO agrees that the sandeel stock 1r has fallen below biological reference points since 2004, as shown in the latest ICES advice<sup>6</sup>, and fishing mortality can contribute to declines in the stock's productivity<sup>7</sup>. The MMO fisheries assessment shows that large quantities of sandeels are estimated as being removed from Dogger Bank SAC. Consequently, the assessment concluded that the biological assemblages and structure of the sandbank feature are likely to be significantly impacted via the removal of target species pressure where it concerns sandeels. Accordingly, the MMO cannot rule out that demersal trawl and demersal seine activity may result in an adverse effect on site integrity, and thus management measures have been recommended for these fishing activities.

### 4.2.2 Grouping semi-pelagic fishing gear with demersal gear

The following points were raised by respondents regarding grouping semi-pelagic gear with demersal gear:

1. Sandeel fishing is moving towards using fully pelagic trawl doors. Such gears have no/limited contact with the seabed, and are lighter, resulting in reduced impacts to the seabed. Grouping semi-pelagic gears with demersal towed gears is therefore not acceptable.
2. Draft measures for offshore MPAs in Scotland allow for semi-pelagic fishing to continue within designated areas.

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<sup>6</sup> ICES. (2020). Sandeel (*Ammodytes spp.*) in divisions 4.b and 4.c, Sandeel Area 1r (central and southern North Sea, Dogger Bank). In Report of the ICES Advisory Committee, 2020. ICES Advice 2020, san.sa.1r, <https://doi.org/10.17895/ices.advice.5760>.

<sup>7</sup> Lindegren, M. et al. 2018. Productivity and recovery of forage fish under climate change and fishing: North Sea sandeel as a case study. *Fisheries Oceanography*, 27: 212-221.

## MMO response regarding grouping semi-pelagic fishing gear with demersal gear

In response to point 1, the MMO agrees that using pelagic and semi-pelagic trawl doors may reduce impacts on the seabed compared to bottom trawl doors, however, impacts from semi-pelagic gear (including from the ground rope and sweeps) cannot be ruled out. Unlike bottom otter trawls, the semi-pelagic trawl doors do not come into contact with the seabed, instead swimming several metres above<sup>8</sup>. The board component of bottom otter trawls penetrates deepest into the sediment<sup>9</sup> and therefore semi-pelagic doors reduce a significant portion of the bottom impact compared with bottom otter trawls including the resuspension of sediments<sup>10</sup>. However, the overall footprint (surface area of the seafloor swept by the gear per unit of time), which is mainly affected by the ground rope and sweeps, will not be affected<sup>10</sup>. While some information is available detailing the reduced impact of semi-pelagic gear when compared to bottom otter trawls, there appears to be little evidence regarding the remaining impact of semi-pelagic gear. As the net is usually still in contact with the seabed (albeit perhaps more lightly than in bottom otter trawls)<sup>8</sup> abrasion and some degree of penetration impact is still likely to occur and little evidence is available to establish that this is not contributing to an adverse effect on site integrity. As per otter trawls, semi-pelagic gears are unlikely to significantly impact the large-scale topography or sediment composition of the sandbank feature, however, impacts to the biological structure are likely.

In response to point 2, the MMO undertakes site-by-site assessments to provide detail on the site's designated features and fishing activity, as well as the impact of this activity on the site's features. The MMO has a duty under the Conservation of Offshore Marine Habitats and Species Regulations 2017<sup>11</sup> to exercise all relevant functions to ensure compliance with the Habitats Directive<sup>12</sup>. If the assessment concludes that the impacts of fishing activity on the designated features are not compatible with the conservation objectives of the site, then in order to meet duties under the Conservation of Offshore Marine Habitats and Species 2017<sup>11</sup>, the MMO must introduce appropriate management measures.

### 4.2.3 Variation in habitat sensitivity

The following points were raised by respondents regarding variation in habitat sensitivity:

1. The impacts of bottom towed fishing can vary with levels of natural disturbance. Areas with high disturbance (such as the top of the bank/shallow dynamic areas of the bank) have wind driven waves and high currents that lead to a variable benthic community and low species abundance. The

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<sup>8</sup> <https://www.seafish.org/responsible-sourcing/fishing-gear-database/gear/semi-pelagic-trawl/>

<sup>9</sup> Eigaard O.R. et al. (2016) Estimating seabed pressure from demersal trawls, seines, and dredges based on gear design and dimensions. ICES Journal of Marine Science 73: i27-i47.

<sup>10</sup> Rijnsdorp, A.D. et al. (2017). Assessing and mitigating of bottom trawling. Final BENTHIS project Report (Benthic Ecosystem Fisheries Impact Study).

<sup>11</sup> <https://www.legislation.gov.uk/uksi/2017/1013/contents/made>

<sup>12</sup> Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora

adapted ecology of areas with high natural disturbance leads to faster recovery rates and lower sensitivity to towed fishing gear.

2. The impacts of bottom towed fishing can vary with sediment type. Certain sediments (e.g. sand, mud and coarser sediments) are less sensitive and/or have greater recovery potential from bottom towed fishing.
3. The impacts of bottom towed fishing vary between core and peripheral fishing grounds. Closing peripheral fishing grounds (which are more likely to contain healthy benthos), whilst allowing fishing to continue in core fishing grounds would prevent displacement to healthy peripheral fishing grounds; thus, providing the best trade-off between achieving conservation benefits at the lowest costs to the fishing industry.
4. Areas that are most sensitive to bottom towed fishing (such as gravel habitats, which contain higher levels of long-lived species) should be prioritised for protection, whilst less sensitive areas (e.g. areas with high natural disturbance, certain sediment types and/or core fishing grounds) should remain open to bottom towed fishing.
5. The impacts of bottom trawling are modest in Dogger Bank SAC compared to other areas, due to the site having low biomass and species richness, and/or the site containing species that are adapted to natural disturbance and thus more resilient to trawling.

### **MMO response regarding variation in habitat sensitivity**

In response to points 1 to 4, the MMO agrees that the impacts of bottom towed gear on the seabed may vary with several factors, including potentially the levels of natural disturbance<sup>13</sup>, sediment type<sup>14</sup> and exposure to previous fishing activity<sup>15</sup>. For example, in areas of high natural disturbance, benthic communities may recover faster from bottom towed fishing<sup>13</sup>. Due to containing large proportions of long-lived sessile epifauna, communities in gravel habitats may be more sensitive to bottom towed fishing<sup>14</sup>. The impacts of bottom towed fishing on lightly fished areas may also be greater<sup>15</sup>; however, this could be because historic trawling in core fishing grounds has removed sensitive species<sup>16</sup>. Delineating variation in habitat sensitivity (for example by levels of natural disturbance, sediment type and previous fishing exposure) does not, however, consider species-specific sensitivities, for example

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<sup>13</sup> Lambert, G. I. et al. (2014). Quantifying recovery rates and resilience of seabed habitats impacted by bottom fishing. *Journal of Applied Ecology*, 51(5), 1326-1336.

<sup>14</sup> Rijnsdorp, A. D. et al. (2018). Estimating sensitivity of seabed habitats to disturbance by bottom trawling based on the longevity of benthic fauna. *Ecological Applications*, 28(5), 1302-1312.

<sup>15</sup> Sciberras, M. et al. (2018). Response of benthic fauna to experimental bottom fishing: A global meta-analysis. *Fish and Fisheries*, 19(4), pp.698-715.

<sup>16</sup> Hiddink, J.G. et al. (2017). Global analysis of depletion and recovery of seabed biota after bottom trawling disturbance. *Proceedings of the National Academy of Sciences*, 114(31), pp.8301-8306.



fragile species will be more vulnerable<sup>17</sup>. Studies on how the impacts of bottom towed fishing vary with sediment type can, at times, also provide conflicting results<sup>16,18</sup>. While some information is available detailing how bottom towed fishing impacts vary, the intensity and extent of bottom towed fishing that is sustainable, even in more resilient habitats, remains unclear<sup>18</sup>. The view of JNCC is that the Annex 1 sandbank feature of Dogger Bank SAC is in unfavourable condition in part due to the impacts of demersal fishing<sup>19</sup>. Although the impacts may vary, trawling can have large negative effects on the biomass and production of benthic communities in the North Sea, including Dogger Bank<sup>17</sup>. Therefore, the MMO considers that bottom towed fishing activity is not compatible with the site's conservation objectives, particularly to 'restore' the extent and distribution of, and the structure and function of, the sandbank feature.

In response to point 5, there are studies showing that the impacts of bottom towed fishing on the benthic communities of Dogger Bank SAC may be limited, possibly because the benthic fauna consist of species that are not greatly affected by trawling<sup>20</sup> and/or due to the area having less initial species biomass<sup>17</sup>. However, historic trawling can remove more sensitive species, whilst the more resilient species remain<sup>16</sup> and fishing in Dogger Bank has been on-going for decades<sup>21</sup>. Such continuous fishing has likely contributed (alongside other factors) to the transformation of benthic communities, including reducing benthic habitat complexity and increasing the dominance of short-lived species<sup>21,22</sup>. This contributes to the MMO conclusion that bottom towed fishing activity is not compatible with restoring the site's biological communities. Furthermore, although the prohibition of bottom towed gears from the Dogger Bank SAC could lead to displacement of fishing activities to habitats elsewhere in the North Sea, the location (and thus the associated environmental costs) of displaced fishing activity is unclear. The MMO fisheries assessment indicates that bottom towed gears are currently adversely affecting the integrity of the site. As such the potential impact of displacement to areas outside of Dogger Bank SAC does not remove the requirement to ensure that fishing is managed to further the conservation objectives of the site.

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<sup>17</sup> Hiddink, J. G. et al. (2006). Cumulative impacts of seabed trawl disturbance on benthic biomass, production, and species richness in different habitats. *Canadian Journal of Fisheries and Aquatic Sciences*, 63(4), 721-736.

<sup>18</sup> Stewart, B. D., and Howarth, L. M. (2016). Quantifying and managing the ecosystem effects of scallop dredge fisheries. In *Developments in Aquaculture and Fisheries Science* (Vol. 40, pp. 585-609). Elsevier.

<sup>19</sup> <https://data.jncc.gov.uk/data/26659f8d-271e-403d-8a6b-300defcabcb1/DoggerBank-4-Statements-v1.0.pdf>

<sup>20</sup> Queirós, A. M. et al. (2006). Effects of chronic bottom trawling disturbance on benthic biomass, production and size spectra in different habitats. *Journal of Experimental Marine Biology and Ecology*, 335(1), 91-103.

<sup>21</sup> Plumeridge, A. A., & Roberts, C. M. (2017). Conservation targets in marine protected area management suffer from shifting baseline syndrome: A case study on the Dogger Bank. *Marine Pollution Bulletin*, 116(1-2), 395-404.

<sup>22</sup> Kröncke, I. (2011). Changes in Dogger Bank macrofauna communities in the 20th century caused by fishing and climate. *Estuarine, Coastal and Shelf Science*, 94(3), 234-245.

#### 4.2.4 Factors (beyond fishing) that affect the protected feature or biological communities in Dogger Bank SAC

The following points were raised by respondents regarding factors (beyond fishing) that affect the protected feature or biological communities in Dogger Bank SAC:

1. A range of factors, including climatic-driven changes, could be driving changes to the benthic ecology of Dogger Bank SAC, including a decreased abundance of long-lived species and an increased abundance of short-lived species.
2. Wind turbine development in the area will negatively impact Dogger Bank SAC, including the sandeel population, as well as seabirds from special protection areas that are reliant on these fish for prey. The MMO should consider how such developments could, either alone or in-combination, adversely affect the site's integrity.
3. The consultation documents fail to mention oil and gas exploration, which from observations is very damaging to the sandeel stock. Previous seismic surveys in the area have caused the stock to suffer, and it can take years for the fish to come back to some banks following such activity.

#### **MMO response regarding factors (beyond fishing) that affect the protected feature or biological communities in Dogger Bank SAC**

In response to point 1, MMO has acknowledged in the updated fisheries assessment that factors beyond fishing could be driving changes to the benthic ecology of Dogger Bank SAC. Hydroclimatic changes, driven by changes to the North Atlantic Oscillation system, could be contributing to decreased species numbers and increased numbers of small polychaetes in Dogger Bank SAC<sup>23</sup>. However, while both hydroclimatic changes and fishing are hypothesised to explain the changes in Dogger Bank macrofauna communities<sup>22</sup>, centuries of trawling has resulted in reduced benthic habitat complexity<sup>21</sup>. The presence of climate-driven factors does not exclude the possibility that fishing also contributes to changes in the biological communities of Dogger Bank SAC.

In response to point 2, the fisheries assessment of Dogger Bank SAC considers wind turbine development in Part C of the assessment. Part C of the MMO MPA fisheries assessments investigates the effects of fishing activities, which alone are considered compatible with the conservation objectives of an MPA, in-combination with other relevant activities. The only assessed fishing activities that were considered compatible with the conservation objectives of Dogger Bank SAC were anchored nets/lines and traps. In addition, fully pelagic fishing was considered not likely to be having significant effect on the site. The MMO SPiRiT (SPatial InfoRmatlon Toolkit) system was used to identify relevant activities that occur within,

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<sup>23</sup> Kröncke, I. and Reiss, H. (2007) Changes in community structure (1986-2000) and causal influences. In: Rees, H. L., Eggleton, J. D., Rachor, E., and Vanden Berghe, E. (eds.) Structure and Dynamics of the North Sea Benthos, ICES Cooperative Report No. 288. September 2007.

or adjacent to, Dogger Bank SAC. These activities included offshore windfarm construction, and offshore windfarm operation and maintenance. Using JNCC's Pressure Activity Database (PAD)<sup>24</sup> and the conservation advice package<sup>25</sup>, the Dogger Bank fisheries assessment concluded that the pressure associated with traps and anchored nets/lines, in combination with these other activities, were compatible with the conservation objectives of the site. The aim of an MMO MPA fisheries assessment is to identify adverse effects of fishing pressures on designated features, whilst also considering the effects of fishing activities in-combination with other relevant activities. The assessment determined that bottom towed fishing is not compatible with the conservation objectives of Dogger Bank SAC, and thus appropriate management measures were suggested. Windfarm development within Dogger Bank SAC are consented through the Planning Act 2008<sup>26</sup>. The regulator for this is the Planning Inspectorate, who would therefore be responsible for ensuring the appropriate level of environmental assessment when assigning windfarm developments.

In response to point 3, the SPIRIT system did not identify oil and gas exploration as an activity occurring within, or adjacent to, Dogger Bank SAC. JNCC's conservation advice package (Advice on Operations)<sup>25</sup> details the sensitivity of the protected sandbank feature to a range of activities. Using the Advice on Operations, under the activity of oil and gas exploration (which includes seismic surveys), the sensitivity of the sandbank feature is considered 'not relevant' to the pressure of underwater noise and 'insufficient evidence to assess' for the pressure of vibration. There is a general lack of understanding on how seismic surveys can have population-level impacts on free-ranging fish<sup>27</sup> and evidence linking seismic surveys to population-level effects on sandeels is consequently limited. Although seismic shooting can have a moderate effect on sandeel behaviour, it does not appear to cause immediate lethal impacts or changes to sandeel abundance<sup>28</sup>.

#### 4.2.5 Management of the scallop fishery

The following points were raised by respondents regarding management of the scallop fishery:

1. No reference is made to the recent measures being implemented and developed for the sustainable exploitation of scallops in Dogger Bank SAC, including the temporary cessation of the fishery in 2020. The conclusion that the removal of target species by dredges is not compatible with the conservation objectives is therefore not appropriate if management is to permit a sustainable level of exploitation.

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<sup>24</sup> <https://jncc.gov.uk/our-work/marine-activities-and-pressures-evidence/#jncc-pressures-activities-database>

<sup>25</sup> <https://hub.jncc.gov.uk/assets/26659f8d-271e-403d-8a6b-300defcabcb1>

<sup>26</sup> <https://www.legislation.gov.uk/ukpga/2008/29/contents>

<sup>27</sup> Slabbekoorn, H. et al. (2019). Population-level consequences of seismic surveys on fishes: An interdisciplinary challenge. *Fish and Fisheries*, 20(4), pp.653-685.

<sup>28</sup> Hassel, A. et al. (2004). Influence of seismic shooting on the lesser sandeel (*Ammodytes marinus*). *ICES Journal of Marine Science*, 61(7), pp.1165-1173.

2. Industry groups support Option 2, including an adaptive, collaborative and zonal management approach informed by science and industry. The industry is committed to promoting sustainable harvesting and delivery of well-managed fisheries, and would support a zonation and adaptive management approach using environmental disturbance thresholds to identify levels of disturbance that could be carried out without negatively affecting the conservation objectives of the site. This approach would allow fishing in areas until one of these limits is met, at which point the area would be closed to fishing, creating a set of rolling openings/closures that would enable fishing to continue whilst achieving the site's conservation objectives. Skippers who have knowledge of the fishery should be involved in any management discussions.
3. Option 1 could lead to overfishing of scallops, affecting stock sustainability, and is therefore not supported by industry groups.
4. Additional knowledge on the status and distribution of the scallop stock in Dogger Bank SAC is required to develop a suitable management plan.

### **MMO response regarding management of the scallop fishery**

In response to point 1, the MMO have updated its assessment regarding the impact of scallop removal on the sandbank feature. Scallops are not listed as 'key and influential' or 'characteristic' species of the site<sup>3</sup> and are not currently considered to have a critical role in maintaining the structure and function of the sandbank feature. As such, the MMO now considers that impacts from removal of target species by dredges on the sandbank feature are compatible with the conservation objectives of the site and will not result in an adverse effect on site integrity.

In response to point 2, following the call for evidence, the MMO has updated the fisheries assessment of Dogger Bank SAC with the inclusion of the new evidence provided. However, the MMO concludes that due to a number of significant pressures, demersal dredging activities are not compatible with the conservation objectives of the site and a zoned/adaptive approach is not appropriate as the areas open to fishing activity will continue to adversely affect site integrity and result in an ongoing suppression of the condition across the site as a whole.

In response to point 3, the MMO agrees that option 1 is not compatible with the conservation objectives of Dogger Bank SAC and will likely lead to adverse effects on site.

In response to point 4, the MMO is assessing the impact of fishing activities on the designated sandbank feature of Dogger Bank SAC. The MMO have updated its assessment following the submission of new evidence. As detailed in the response to point 1, the MMO now considers that impacts from removal of target species (scallops) by dredges on the sandbank feature are compatible with the conservation objectives of the site and will not result in an adverse effect on site integrity. The MMO agree that more information is required on the status and distribution of the

scallop stock in Dogger Bank SAC. Cefas are currently completing several reports to further our knowledge of this stock.

## 4.2.6 Bycatch

The following points were raised regarding bycatch:

1. Bycatch from sandeel fishing is extremely minimal.
2. Regarding the removal of non-target species by demersal seines, no consideration is given to the rate of capture or whether bycaught species are likely to be returned unharmed.
3. Bycatch from the scallop fishery is limited, with bycatch mostly comprised of plaice. Sandeel bycatch is extremely minimal, and no biogenic habitat-forming organisms (such as corals, sea fans or sea pens) have been caught by consulted scallop vessels.
4. No consideration is given to harbour porpoise bycatch, such as from gillnets.

### MMO response regarding bycatch

In response to point 1, the sandeel fishery can be highly selective and thus may have low bycatch of protected species<sup>29</sup>; however, there is limited evidence to suggest that bottom towed fishing (including demersal trawl, seines and semi-pelagic gear) does not affect the protected sandbank feature of Dogger Bank SAC through the removal of non-target species. Although semi-pelagic gear can have reduced seabed impacts compared to bottom otter trawls<sup>10</sup>, the similar footprint of these gears and the continued contact of the net with the seabed suggest that abrasion and penetration contact with the seabed are likely to occur for semi-pelagic gear, albeit to a reduced degree particularly via penetration<sup>10</sup>. Removal of non-target species is therefore likely to occur during fishing using bottom trawling and semi-pelagic gear owing to continued abrasion. Removal of non-target species, via abrasion may not always appear as by-catch, with long lived sessile species being damaged or killed but not necessarily retained in the fishing gear and identifiable as bycatch.

As there is little evidence to suggest otherwise, the MMO cannot rule out that bottom towed fishing (including demersal trawl, seines and semi-pelagic gear) has adverse effects on the integrity of Dogger Bank SAC via the removal of non-target species.

In response to point 2, the MMO fisheries assessment for Dogger Bank SAC now includes further detail on the removal of non-target species by demersal seines. Rate of capture (and therefore bycatch rate) varies with species and mesh sizes.

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<sup>29</sup> ICES. (2020). Herring Assessment Working Group for the Area South of 62° N (HAWG). ICES Scientific Reports. 2:60. 1151 pp.

Examples are given as follows: discard rates of *Arctica islandica* are on average 5 per hour for Scottish seines with mesh size 100 – 119 mm versus 1 per hour for mesh sizes over 120 mm, and discard rates of *Alcyonium digitatum* are average 2 per hour for mesh sizes 100 - 119 mm and 14 per hour for mesh sizes > 120 mm<sup>30</sup>. Survival rates of bycatch are influenced by several factors including the species caught, time fish spend on deck and fish body size<sup>31</sup>. It is noted that Scottish seines do encounter long-lived species such as dead man's fingers<sup>30</sup>, such fragile species are particularly sensitive to removal and displacement<sup>32</sup>.

In response to point 3, studies have shown that dredges can catch large amounts of bycatch for a range of non-commercially targeted species<sup>33</sup>. Due to crushing under the gear and/or the initial encounter with the gear, the majority of damage to large benthic invertebrates during scallop dredging can occur unobserved on the seabed<sup>34</sup>, with benthic megafauna on the seabed having similar (or even higher) levels of damage as those landed on the deck<sup>34</sup>. Given benthic communities can be significantly altered by scallop dredging<sup>35</sup>, the MMO cannot rule out that dredging has adverse effects on the integrity of Dogger Bank SAC via the removal of non-target species.

In response to point 4, Gill netting activity and therefore potential for harbour porpoise bycatch in Dogger Bank SAC is minimal. Additionally, the MMO undertakes site-level MPA fisheries assessments, which aim to assess the effects of fishing pressures on the designated features of the site that is under assessment. Harbour porpoise are not a designated feature of Dogger Bank SAC; however they are a designated feature of the Southern North Sea SAC. The MMO fisheries assessment for the Southern North Sea SAC will assess the effects of fishing pressures (including bycatch by gill nets) on harbour porpoise.

#### 4.2.7 Use of fishing activity data

The following points were raised by respondents regarding usage of fishing activity data:

1. No Pr-values are included in the assessment, and therefore conclusions on the intensity of fishing activity from visual interpretations of VMS are

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<sup>30</sup> van der Reijden, K.J. et al. (2014). Discard self-sampling of Dutch bottom-trawl and seine fisheries in 2013. CVO report 14.007, IJmuiden, CVO. 74 p.

<sup>31</sup> Benoît, H. P. et al. (2010). Assessing the factors influencing discard mortality of demersal fishes using a semi-quantitative indicator of survival potential. Fisheries Research, 106(3), 436-447.

<sup>32</sup> Jager, Z. et al. (2018). Impact of demersal & seine fisheries in the Natura 2000-area Cleaver Bank. NIOZ Royal Netherlands Institute for Sea Research.

<sup>33</sup> Howarth, L. M. & Stewart, B. D. (2014) The dredge fishery for scallops in the United Kingdom (UK): effects on marine ecosystems and proposals for future management. Report to the Sustainable Inshore Fisheries Trust. Marine Ecosystem Management Report no. 5, University of York, 54 pp.

<sup>34</sup> Jenkins, S. R. et al. (2001). Impact of scallop dredging on benthic megafauna: a comparison of damage levels in captured and non-captured organisms. Marine Ecology Progress Series, 215, 297-301.

<sup>35</sup> Bradshaw, C., Veale, L.O, Hill, A.S. and Brand, A.R. (2001). The effect of scallop dredging on Irish Sea benthos: experiments using a closed area. Hydrobiologia, 465, 129-138.

premature. References are made to high levels of activity without quantification or reference to the level of certainty.

### **MMO response regarding use of fishing activity data**

The MMO fisheries assessment for Dogger Bank SAC has been updated to include spatial footprint analysis (Pr-values). This analysis has confirmed the high intensity of bottom towed gear activity in areas of the site.

### **4.2.8 Environmental benefits of the site are not fully considered**

The following points were raised by respondents regarding the environmental benefits of the site that they consider are not fully considered:

1. The sandeel stock within Dogger Bank SAC is an important foraging area for the seabird features (black-legged kittiwake, northern gannet, razorbill and common guillemot) of the Flamborough and Filey Coast Special Protection Area (SPA). Declines in sandeel availability (exacerbated by fishing mortality) are adversely affecting the breeding success of these seabirds and thus possibly the overall condition status of these SPA conservation features.
2. Sandeels are an important food source for harbour porpoises, yet no consideration is given to the impacts of fishing activity on the harbour porpoise feature of the Southern North Sea SAC, of which about half of Dogger Bank SAC overlaps with.
3. High amounts of organic carbon are stored in UK continental shelf sediments, with the carbon storage potential of Dogger Bank SAC being over four megatonnes. Continued abrasion by bottom towed fishing gear would reduce carbon storage capacity and release carbon, contributing to climate change.
4. European sturgeon, which are recommended for restoration by European countries under the Habitats Directive, were historically present in Dogger Bank SAC.

### **MMO response regarding environmental benefits of the site are not fully considered**

In response to points 1 and 2, the MMO undertakes site-level MPA fisheries assessments. These assessments consider the impacts of fishing activity on the protected features of the MPA in consideration, which for Dogger Bank SAC is the Annex 1 sandbank feature. Sandeels are considered a 'characteristic species' of Dogger Bank SAC and play an important role in the biological 'Structure and Function' of the sandbank feature. The assessment concluded that an adverse effect on site integrity cannot be ruled out for bottom towed fishing. As part of the assessment, the removal of sandeels as a target species was found not compatible with the site's conservation objectives. Although this site-level assessment was for Dogger Bank SAC, the measures recommended for managing these fishing activities

(including bottom towed fishing for sandeels) could have benefits to the protected features of other MPAs, including the Southern North Sea SAC and Flamborough and Filey Coast SPA.

In response to points 1 to 4, the MMO fisheries assessments aim to identify adverse effects of fishing pressures on the designated features. Sturgeon are not a designated feature of Dogger Bank SAC and are not identified by JNCC as a characteristic component of the sandbank feature. Although sturgeon may have been historically present<sup>36</sup>, evidence that sturgeon are currently present in Dogger Bank SAC is limited<sup>37</sup>. However, the non-monetary benefits of Dogger Bank SAC, including the importance of the site for critically endangered fish species (e.g. common skate and angelshark), carbon storage, and food web dynamics (including how the large numbers of sandeels at the site are an important prey species to seabirds and cetaceans), are considered in the regulatory triage assessment.

## 4.2.9 Impacts on individual species

The following points were raised by respondents regarding impacts on individual species:

1. The assessment notes the abundance of dead man's fingers as evidence that anchored gill nets are not impacting this species. If this is the case, it would also suggest that other potentially impacting gears are also not impacting the species either.
2. The assessment references the reduction in fish species such as the thornback ray but does not detail a management objective for the species.

### MMO response regarding impacts on individual species

In response to point 1, the MMO has updated the fisheries assessment, removing the reference to Diesing et al. (2009) due to the little empirical evidence supporting a link between the impacts of gill nets and the removal of soft corals. The linking of dead man's finger corals in Dogger Bank SAC to a lack of impact by netting (or other gears) was misplaced as it did not consider the location of the samples in regard to the dominant areas of fishing activity. Although bycatch rates can vary, dead man's fingers have been recorded as bycatch in demersal seines, beam trawls and bottom otter trawls<sup>30</sup>. As well as being landed onboard vessels as bycatch, dead man's fingers may also be left damaged on the seafloor following disturbance from bottom towed fishing<sup>32</sup>. This species is permanently attached to the substratum and once it is displaced, it may not have the ability to re-attach<sup>32</sup>. This species is therefore considered highly sensitive to removal and displacement, and mortality following disturbance is likely to be high<sup>32</sup>. As a soft growing coral, dead man's fingers are also

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<sup>36</sup> Debus, L. (1996). The decline of the European sturgeon *Acipenser sturio* in the Baltic and North Sea. In Conservation of endangered freshwater fish in Europe (pp. 147-156). Birkhäuser Basel.

<sup>37</sup> Lassalle, G. et al. (2010). Global warming impacts and conservation responses for the critically endangered European Atlantic sturgeon. *Biological conservation*, 143(11), 2441-2452.



likely to take much longer to recover following the impacts of bottom towed fishing<sup>38</sup>. Therefore, the MMO cannot rule out the potential for bottom towed gear to have negative impacts on the sandbank feature via removal of non-target species such as such as dead man's fingers.

In response to point 2, the MMO are looking to manage the impact of fishing activities on the designated sandbank feature within Dogger Bank SAC. There is no management objective for the thornback ray with regard to the Dogger Bank SAC. The conclusion drawn with regard to the compatibility of demersal trawl activity with the conservation objectives of the site does not relate specifically to thornback ray, the reference was included to highlight the potential impact of demersal trawling and the associated abrasion/penetration pressure on the sandbank feature and its associated biological community.

#### 4.2.10 Legislative adherence

The following points were raised by respondents regarding legislative adherence:

1. Considering the Dogger Bank SAC in isolation from the wider UK Marine environment undermines the duties outlined in the UK Marine Strategy Regulations 2010: namely, that the MMO, as a public authority, is failing in its duty that it "must, in exercising any functions so far as affecting the marine strategy area, have regard to any marine strategy developed under regulation 5" and in so failing is therefore hindering progress towards good environmental status (GES).
2. Considering the extent and frequency of the interaction between bottom towed fishing and the protected feature of Dogger Bank SAC, and in the view of the MMO that the site will not achieve its conservation objectives due to these activities, failure to restrict bottom towed fishing will be in breach of the Habitats Directive, and The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.
3. The UK is signatory to the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS) and, therefore, is also committed to the Conservation Plan for Harbour porpoise in the North Sea.
4. Atlantic sturgeon is recommended for restoration by European countries under the Habitats Directive and evidence suggests Dogger Bank was once home to the sturgeon. This was not covered in the MMO's draft fisheries assessment for Dogger Bank SAC.

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<sup>38</sup> Kaiser, M. J. et al. (2006). Global analysis of response and recovery of benthic biota to fishing. *Marine Ecology Progress Series*, 311, 1-14.

## MMO response regarding legislative adherence

In response to point 1, the MMO's Dogger Bank SAC fisheries assessment contains a detailed assessment of the impacts of fishing in the site and takes into account evidence received and advice from JNCC. This has been used to develop draft management measures which are now subject to public consultation. The MMO has had regard to the UK Marine Strategy in the development of these draft measures, as required by regulation 9 of the Marine Strategy Regulations 2010, and consider that the proposed measures will contribute to the achievement of good environmental status (GES).

In response to point 2, the MMO fisheries assessment identified bottom towed gears as having a likely adverse effect on site integrity and are not compatible with the conservation objectives of the Dogger Bank SAC. As such the MMO has proposed management to exclude these activities from the site in accordance with its duties under the Habitats Directive and implementing domestic UK legislation.

In response to point 3, the MMO has duties to exercise all relevant functions to ensure compliance with the Habitats Directive. The MMO's fisheries assessment and proposed management measures have been developed to ensure the MMO is compliant with these duties. Harbour porpoise is not a designated feature of the site and therefore neither the assessment nor management proposal have been developed specifically for the protection of harbour porpoise. However, the exclusion of demersal trawls from the Dogger Bank SAC is likely to benefit harbour porpoises in the North Sea through, for example, habitat recovery and increased prey availability and thus indirectly supporting the Conservation Plan for Harbour porpoise in the North Sea.

In response to point 4, and as per our response to point 3, the MMO assessment is focussed on the Dogger Bank SAC and its features. Atlantic sturgeon is not a designated feature of the site and therefore neither the assessment nor management proposal have been developed specifically for the restoration of Atlantic sturgeon. However, given the likely impact of commercial fishing activities on the status of the species and evidence suggesting the Dogger Bank once provided a home for them, it is possible the management measures proposed may contribute to the restoration of the Atlantic sturgeon population in the North Sea.

## 4.3 General consultation responses

The MMO received consultation responses which apply to the general assessment process which do not relate to specific MPAs. Therefore, the MMO has summarised these consultation responses in the below section together with the MMO's response to the comments.

**Respondent comment:** It is not appropriate to discount fishing activities from the in-combination assessment where the assessment has concluded the activities will have an adverse effect on the site alone, and this is not the normal approach. This is due to the uncertainty around the management measures being put in place for fishing activities which are causing an adverse effect, the respondent has no

confidence that management will be effective and therefore suggest these activities must also be included in the in-combination assessment.

**MMO Response:** The MMO MPA fisheries assessments aim to identify adverse effects on designated features from fishing pressures and suggest appropriate management measures to ensure the site's conservation objectives are met, in accordance with scientific advice provided by JNCC and Natural England, <https://jncc.gov.uk/our-work/marine-activities-and-pressures-evidence/#jncc-pressures-activities-database> .

The assessment is completed in several parts: Part A provides a coarse sensitivity assessment to identify which fishing activities can be discounted from further assessment (Part B) as they are not taking place or are not a significant concern.

Part B provides an in-depth analysis to assess the pressures of fishing activities relevant for the site. Part C considers the effects of activities in-combination with other relevant activities taking place. These can include:

- Fishing activity/pressure combinations which were excluded in Part A due to not having a significant effect on features alone, but could have an in-combination affect.
- Fishing interactions assessed in Part B but not resulting in significant or adverse effect.
- Plans or projects such as marine development works requiring a marine licence.

Where activities have been identified in Part B to result in an adverse effect/significant risk alone, their consideration during Part C depends on the mitigation identified as a result of impacts identified in Part B.

Where an activity is identified in Part B as having an adverse effect/significant risk alone, and mitigation is introduced to reduce, but not entirely remove, this impacts, the residual impact will be considered in Part C to ensure all in-combination impacts are captured.

Where mitigation will be introduced to entirely remove a pathway for a pressure from the activity to affect the feature, this pressure from this activity will not be considered in Part C. For example, where the identified mitigation is a prohibition of use of a certain fishing gear types within the site, most or all of the pressures from this activity would be removed from the site and it is not therefore considered during the in-combination assessment.

The MMO assessment methodology is provided in Annex 1 of each assessment for full context.

**Respondent comment:** Any spatial management measure to reduce fishing pressure must also consider the potential displacement effects, and the wider impacts this could have on the benthic communities and mobile species associated with them.

**MMO Response:** The MMO MPA assessments use the best available evidence to fully consider all impacts against the conservation objectives, as identified by scientific evidence. If the assessment concludes that use of certain fishing gear types are not compatible with the site's conservation objectives, management measures may be put in place which could cause displacement of this fishing to other areas. This potential impact of displacement to areas outside of the MPAs or management areas does not remove the requirement to ensure that fishing is managed to further the conservation objectives of the site. However, the MMO will have regard to displacement and monitor every MPA by undertaking annual reports of fishing activities and pressures within MPAs, and by regularly reviewing and updating the MPA assessments to reflect any such changes that have been observed. See section 8 of the MMO MPA fisheries assessment for further details on the MMO process on reviewing assessments.

**Respondent comment:** The outcome of this call for evidence and any subsequent consultations will fall far short of providing the proper protection needed for the most ecologically important parts of our seas. The respondent highlighted that bottom trawling took place in 71 offshore MPAs in 2019 and advocate a ban on all destructive fishing gears starting with bottom trawlers and supertrawlers, across the entire MPA network. The respondent suggests these bans are introduced from 1st January 2021, by removing licenses for supertrawlers & bottom trawlers to fish in MPAs, via powers in the Fisheries Act 2020.

The respondent also stated that the process lacks ambition, both in the number of MPAs included and the management options proposed. It is also unnecessarily slow and cumbersome as a process for delivering the scale and extent of ambition required to protect our oceans.

**MMO Response:** The purpose of the call for evidence was to gather additional evidence and stakeholder views on the draft MMO assessments and management options for fishing in four offshore MPAs: Dogger Bank Special Area of Conservation (SAC), Inner Dowsing, Race Bank and North Ridge SAC, South Dorset Marine Conservation Zone (MCZ) and The Canyons MCZ. The MMO assessments contain detailed assessments of the impacts of fishing in these sites and set out a range of management options. The outcomes of updated MMO assessments, taking into account evidence received and advice from Natural England and JNCC, have been used to develop ambitious and proportionate draft management measures which are now subject to public consultation.

**Respondent comment:** The fisheries assessments would benefit from a glossary of terms and consistent use of them throughout the documentation, and that an overarching assessment methodological conceptualisation would help communicate how the assessments are undertaken.

**MMO response:** The MMO MPA assessments aim to use clear accessible language and provide explanation where required for use of non-standard terminology. We recognise it would be valuable to provide some supporting information to aid interpretation of the assessments for wider audiences and so will seek to develop such a glossary for future assessments. Annex 1 of each of the MMO MPA assessments fully details the methodology and aims of the assessment and well as

referencing the need for assessment in a manner consistent with section 126 of the Marine and Coastal Access Act. Evidence sources and SNCB advice packages are referenced in our assessments where appropriate.

**Respondent comment:** More explicit reference to SNCB advice within Part B would provide greater transparency on how the assessment is drawing its conclusions. The management objectives for mobile species was also identified as lacking clarity and purpose.

**MMO response:** Mobile species are not a designated feature of any of the sites assessed within this call for evidence. Natural England and JNCC conservation advice packages may include species (including mobile species) as a component part of a feature, and impacts on certain species may influence a target attribute for a site feature (feature target attributes are set out in Natural England or JNCC conservation advice packages). Where fishing impacts (for example the removal of target and non-target species) has the potential to impact a sites' conservation objectives we have used the best available evidence to assess this, in accordance with the pressures activities database published by JNCC and NE (<https://jncc.gov.uk/our-work/marine-activities-and-pressures-evidence/#jncc-pressures-activities-database>).

**Respondent comment:** The respondent provided advice on the spatial footprint analysis (Pr-values) methodology and suggested applying a rule of using vessel speeds of 1-6 knots, rather than 0-6 knots currently used.

**MMO response:** The Pr-values presented incorporate gear specific fishing speeds which are used to identify relevant vessel pings to be included within the values presented. Annex 2 in each of the MMO MPA assessments provides information regarding the speeds that have been included for each of the fishing gears included. It is acknowledged in the description, strengths and limitations of fishing activity data provided in the assessments, that this may overestimate, or in some cases, underestimate the true level of fishing activity.

## 5. Decisions and next steps

Having analysed all evidence and stakeholder views received during the call for evidence, and updated the MMO assessment of the impacts of fishing in the Dogger Bank SAC, we have concluded that in order to further the conservation objectives of the site, bottom towed fishing will be prohibited across the whole site.

The MMO is launching formal consultation on 1 February 2021 for 8 weeks on a draft byelaw which prohibits bottom towed gear fishing across the whole site. This will be accompanied by a draft regulatory triage assessment which examines the monetised and non-monetised costs and benefits of the draft byelaw and an updated fisheries assessment for Dogger Bank SAC.