# Conservation Objectives and Management Advice for Swallow Sand Marine Conservation Zone

## UKMCZ0026 May 2026

JNCC

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## What the conservation advice package includes

The information provided in this document sets out:

- The conservation objectives for the protected features of the site;
- The conservation benefits which the site can provide if managed effectively;
- JNCC's current view of protected feature condition; and
- The conservation measures that JNCC consider are required to support achievement of the site's conservation objectives.

This document forms part of JNCC's formal conservation advice package for the site and must be read in conjunction with:

- **Background document** explaining where to find the advice package, JNCC's role in the provision of conservation advice, how the advice has been prepared, when to refer to it and how it can be applied;
- **Supplementary Advice on Conservation Objectives** (SACO) providing more detailed and site-specific information on the conservation objectives of the protected features of the site; and
- **Advice on Operations** providing information on those human activities that, if taking place within or near to the site, could impact it and hinder the achievement of the conservation objectives stated for the site.

The most up-to-date conservation advice package for this site can be downloaded from the conservation advice section of the Site Information Centre on JNCC's website.

## Conservation objectives

This site has been designated to protect **Subtidal coarse sediment**, **Subtidal sands** and **North Sea glacial tunnel valleys (Swallow Hole)**.

The conservation objectives for the Swallow Sand MCZ are set out in the Designation Order and say that *the protected features*:

- *so far as already in favourable condition, remain in such condition; and*
- *so far as not already in favourable condition, be brought into such condition, and remain in such condition and*

*With respect to the **subtidal coarse sediment** and **subtidal sand** within the site, this means that their:*

- *extent is stable or increasing; and*
- *structures and functions, quality, and the composition of characteristic biological communities (which includes a reference to the diversity and abundance of species forming part of or inhabiting the habitats) are such as to ensure that they remain in a condition which is healthy and not deteriorating.*

*Any temporary deterioration in condition is to be disregarded if the habitats are sufficiently healthy and resilient to enable recovery. Any alteration of the features brought about entirely by natural processes is to be disregarded.*

*With respect to the* **North Sea glacial tunnel valleys (Swallow Hole)** *within the site, this means that its:*

a) *extent, component elements and integrity are maintained;*
b) *structure and functioning are unimpaired; and*
c) *surface remains sufficiently unobscured for the purposes of determining whether the criteria in paragraphs (a) and (b) are satisfied.*

*Any obscuring of or alteration to the feature/s brought about entirely by natural processes is to be disregarded.*

## Conservation benefits

Maintaining or recovering the protected features of the site at or to favourable condition, will contribute to delivering:

- A network of MPAs around the UK, as outlined under the UK Marine & Coastal Access Act (2009);
- An ecologically coherent network of MPAs which are well managed under the Convention for the Protection of the Marine Environment of the North-east Atlantic OSPAR Convention , specifically OSPAR Region II: Greater North Sea;
- Good Environmental Status under the UK Marine Strategy; and
- Target 3 of The Kunming-Montreal Global Biodiversity Framework, known as the 30by30 target is a global commitment to effectively conserve and manage by 2030 at least 30% of terrestrial and inland water areas, and of marine and coastal areas through an ecologically representative, well-connected and equitably governed systems of protected areas and other effective areas-based conservation measures.

## Ecosystem Services and Natural Capital

MPAs are typically designated for the conservation and/or recovery of specific habitats and/or species. Management measures help maintain or improve feature condition. This condition underpins how features function in the ecosystem and therefore the breadth of benefits they can provide across provisioning, cultural and regulation and maintenance services.

The uASM (universal Asset Service Matrix) evidences linkages between natural assets (habitats and species) and the ecosystem services they potentially provide. Examples of ecosystem services that could be provided by the qualifying feature of Wyville Thomson Ridge SAC's (Reefs) are listed below with the full list of ecosystem services with a "high" or "medium" delivery supply score provided in Error! Reference source not found..

The ecosystem services which available evidence indicates could be delivered by the features of subtidal coarse sediment (A5.1) and subtidal sand (A5.2) are:

**Provisioning services** such as the provision of 'Wild animals (terrestrial and aquatic) for nutrition, materials or energy' and 'the accompanying genetic materials from biota (including seed, spore or gamete production)'.

**Regulation and maintenance services** which include ‘Lifecycle maintenance, habitat and gene pool protection’, ‘Regulation of physical, chemical, biological conditions’ and ‘Regulation of baseline flows and extreme events’.

There are also **cultural services** provided by these habitats such as ‘Intellectual and representative interactions with natural environment (through studying nature)’ and ‘Other biophysical characteristics of species or ecosystems that are appreciated in their own right by people’.

Managing activities to maintain the qualifying features in favourable condition will support the provision of ecosystem services which provide wider benefits to the environment, society and the economy and will help fulfil the policy and legal obligations listed above.

# Protected Feature Condition

**Table 1** below sets out JNCC’s view on the condition of the site’s protected features. This view is based on JNCC’s assessment of protected feature condition using best available information at the time of writing and which is summarised in the SACO available from the conservation advice section of the Site Information Centre on JNCC’s website. The process of determining condition carried out by assessing the effects of pressure associated with activities occurring within the site. The SACO sets out our understanding of the condition of a feature’s attributes as listed in the conservation objective for the site; extent and distribution, structure and function and supporting processes.

In summary, a protected feature is in unfavourable condition either where evidence indicates one or more of its attributes need to be recovered. Conversely, a protected feature is in favourable condition where evidence indicates none of the attributes are being adversely affected.

**Table 1. JNCC’s view on the condition of the protected features in the site.**

| Protected feature | View of condition and protected feature objective |
|---|---|
| Subtidal coarse sediment | Favourable, maintain at favourable condition |
| Subtidal sand | Favourable, maintain at favourable condition |
| North Sea glacial tunnel valleys (Swallow Hole) | Favourable, maintain at favourable condition |

The condition assessment within the Swallow Sand MCZ indicates that the favourable condition of protected features in the site was underpinned by an absence or negligible level of human activities over or in the vicinity of protected features. The pressures of human activities can have distinct impacts on ecosystem service provision, which vary by feature. As the protected feature condition is at favourable level, an assessment of ecosystem service optimisation potential is not required at this time.

The conservation measures listed below set out JNCC's advice regarding management which should be implemented to maintain the protected features of the site to or at favourable condition.

## Conservation measures

Based on JNCC's understanding of the pressures associated with human activities taking place within, or in close proximity to the site and the sensitivity of the protected features to those pressures, we conclude that all of the protected features of the site need to be maintained at favourable condition.

JNCC advise the following conservation measures are adopted to support protected feature conservation at favourable condition and reduce the risk of the site not achieving its conservation objectives to the lowest possible level:

**Subtidal coarse sediment** and **Subtidal sand**

**No new licensable activities** capable of impacting (either directly or indirectly) the protected features; subtidal coarse sediment and subtidal sand, or hindering their recovery, **should be permitted.**

**Variations to existing licenced activities** must seek, as far as is practicable to do so, to **avoid the introduction of additional hard substrata or subsea deposits** in areas where the protected features are recorded within the site. The impact of variations to existing consented activities are to be **considered on a case-by-case basis in consultation with JNCC.**

**Any new activities**, whether located within or outwith the site, must look to avoid, or as far as is practicable to do so, **minimise the introduction of contaminants to ensure**

**compliance with sedimentary and water Environmental Quality Standards** within the site.

There is a significant risk of not maintaining the conservation objectives for the protected features if **mobile bottom contact gears are not managed within the site. Removal of all mobile bottom contact gears from within the site** would reduce the risk of not maintaining the **protected features in favourable condition** to the lowest possible levels.

The use of **static bottom-contacting fishing gear** is occurring within the site**.** It has the potential to impact the protected feature of the site, but our understanding of degree of impact is limited. This is due to limitations around knowledge of the extent and intensity of the fishing activity itself, as well as the impact of this fishing type on the site's protected feature. **More scientific research** and **better fishing effort data is needed**. In the meantime, JNCC advises that **static gear fishing effort within the site is monitored** and the **effects of ongoing use on the conservation status of the protected feature is kept under review**. If monitoring shows evidence of detrimental effects at the scale of the conservation status of the protected feature, additional management may need to be considered.

Under normal operations, use of **pelagic fishing gears** is not expected to interact with any of the protected features within the site. **Therefore, no additional management of this gear type is advised.**

The Advice on Operations for this site is accessible via the conservation advice section of the Site Information Centre. It provides information on the sensitivity of the protected features of the site to pressures associated with activities that JNCC consider may conceivably take place within, or in close proximity to, the site. This should be used when undertaking an initial assessment of whether a proposed plan or project (or ongoing activity) may have an impact on the protected features of the site.

# References

Cordingley A., Anderson L., Matthews S., Beach M., Molloy L., Whittaker L., Van Rein H., McNulty J., Reeve N., Parsons J. & Morgan V. (2023). The universal Asset Service Matrix (uASM). electronic dataset. *Marine Life Information Network. Plymouth: Marine Biological Association of the United Kingdom*. Joint Nature Conservation Committee. [accessed 14th January 2025] Available from https://www.marlin.ac.uk/asm

Potts, T., Burdon, D., Jackson, E., Atkins, J., Saunders, J., Hastings, E. & Langmead, O. (2014). Do marine protected areas deliver flows of ecosystem services to support human welfare? *Marine Policy*, 139-148.

Rees, S.E., Ashley, M., Cameron, A., Mullier, T., Ingle, C., Oates, J., Lannin, A., Hooper, T. & Attrill, M.J. (2022). A marine natural capital asset and risk register. Towards securing the benefits from marine systems and linked ecosystem services. *Journal of Applied Ecology* (4), 1098-1109.

Teixeira, H., Lillebo, A.I., Culhane, F., Robinson, L., Trauner, D., Borgwardt, F., Kuemmerlen, M., Barbosa, A., McDonald, H., Funk, A., O'Higgins, T., Van der Wal, J.T., Piet, G., Hein, T., Arevalo-Torres, J., Iglesias-Campos, A., Barbiere, J. & Nogueira, A. (2019). Linking biodiversity to ecosystem services supply: Patterns across aquatic ecosystems. *Science of The Total Environment* (20), 517-534.

Tempera F., C. Liquete & A.C. Cardoso (2016). Spatial distribution of marine ecosystem service capacity in the European seas. EUR 27843. Luxembourg (Luxembourg): Publications Office of the European Union. doi:10.2788/753996

# Annex 1 – uASM

The uASM (universal Asset Service Matrix) provides a qualitative rating system to assess the level of service provided by a habitat or species and can be used to indicate the wider benefits to the environment, society and the economy that marine protected areas (MPAs) provide. The uASM is a tool, and like all tools, the outputs are only as useful as the evidence and data that is input. Some linkages of ecosystem services and assets, while known in the wider literature, may not yet been included in the tool. There are also geographically specific sources of information that can provide MPA-specific context and evidence for ecosystem services. The tool does not take into consideration the condition of an assets, only their potential to provide ecosystem services. Therefore, the information should be used in conjunction with MPA-specific evidence to provide a rounded view and bespoke advice.

**Table 2** provides the asset ecosystem service linkages for the component habitats of Swallow Sands MCZ; subtidal coarse sediment (A5.1) and subtidal sand (A5.2). The JNCC Level of Ecosystem Service (ES) Supply score is a qualitative rating system to assess the level of service provided by a specific asset. The generated score is unitless and provides a relative comparison only and so cannot be used to quantitatively compare different assets on their ability to provide an ecosystem service. Rather, it is a tool used to quickly identify key linkages between assets and ecosystem services for further investigation. Confidence scores help users to make quick and informed decisions about the available data. The score describes the level of confidence the author has in the asset-to-ecosystem service link. In Table 2 below only the ecosystem services in which we have relatively higher confidence (i.e. medium to high supply level and medium to high confidence) are presented, at CICES level 3.

**Table 2: Bespoke ASM for habitats (EUNIS level 3 sub features) in Swallow Sands MCZ, exported on 20/02/26.** Data extracted from the universal Asset Service Matrix (uASM) (Cordingley et al. 2023, Tempera *et al*., 2016, Rees *et al*., 2022, Potts *et al*., 2014, Teixeira *et al*., 2019, Scottish Natural Heritage). Only the ecosystem services in which we have relatively higher confidence (i.e. medium to high supply level and medium to high confidence) are presented, at CICES level 3, in the table. White boxes are present in the table when the score was low, negligible or data deficient for ecosystem service supply or confidence.

Colour scheme key:

| Confidence ↓ | ES Delivery | |
|---|---|---|
| | High | Medium |
| High | | |
| Medium | | |

| Category | Group | CICES_V5.2 Ecosystem service | A5.1 - Sublittoral coarse sediment | A5.2 - sublittoral sand |
|---|---|---|---|---|
| 1.x.x.x - Provisioning (Biotic/Biophysical) | 1.1 – Biomass | 1.1.6 - Wild animals (terrestrial and aquatic) for nutrition, materials or energy | | |
| | | 1.1.x - Biomass | | |
| | 1.2 - Genetic material from all biota (including seed, spore or gamete production) | 1.2.1 - Genetic material from plants, algae or fungi | | |
| | | 1.2.x - Genetic material from all biota (including seed, spore or gamete production) | | |
| | 1.x.x - Provisioning (Biotic/Biophysical) | | | |
| 2.x.x.x - Regulation & Maintenance (Biotic/Biophysical) | 2.1 - Transformation of biochemical or physical inputs to ecosystems | 2.1.1 - Reduction of nutrient loads and mediation of wastes or toxic substances of anthropogenic origin by living processes | | |
| | 2.2 - Regulation of baseline flows and extreme events | 2.2.3 - Flood and storm surge mitigation | | |
| | | 2.2.x - Regulation of baseline flows and extreme events | | |
| | 2.3 - Regulation of physical, chemical, biological conditions | 2.3.2 - Lifecycle maintenance, habitat and gene pool protection | | |

| | | | | |
|---|---|---|---|---|
| | | 2.3.3 - Pest and disease control | | |
| | | 2.3.4 - Regulation of soil quality | | |
| | | 2.3.5 - Water conditions | | |
| | | 2.3.6 - Atmospheric composition and conditions | | |
| | | 2.3.x - Regulation of physical, chemical, biological conditions | | |
| | 2.4 - Other types of regulation and maintenance service by living processes | 2.4.x - Other types of regulation and maintenance service by living processes | | |
| | 2.x.x - Regulation & Maintenance (Biotic/Biophysical) | | | |
| 3.x.x.x - Cultural (biotic) | 3.1 - Physical and experiential interactions with natural environment | 3.1.1 - Direct, in-situ and outdoor interactions with living systems that depend on presence in the environmental setting, i.e. broadly recreational activities | | |
| | 3.2 - Intellectual and representative interactions with natural environment | 3.2.1 - Studying nature | | |
| | | 3.2.x - Intellectual and representative interactions with natural environment | | |
| | 3.3 - Intellectual and representative interactions with natural environment | 3.3.1 - The things in nature used to make films or to write books | | |
| | 3.4 - Spiritual, symbolic and other cultural interactions with natural environment | 3.4.2 - Other biophysical characteristics of species or ecosystems that are appreciated in their own right by people | | |
| | 3.x.x - Cultural (Biotic/Biophysical) | | | |
| 4.x.x.x - Provisioning (Abiotic/Geophysical) | 4.1 - Water | 4.1.1 - Surface water used for nutrition, materials or energy | | |
| | 4.2 - Non-aqueous natural abiotic ecosystem outputs | 4.2.1 - Mineral substances used for nutrition, materials or energy | | |
| | 5.1 - Transformation of biochemical or physical inputs to ecosystems | 5.1.x - Transformation of biochemical or physical inputs to ecosystems | | |

| | | | | |
|---|---|---|---|---|
| 5.x.x.x - Regulation & Maintenance (Abiotic/Geophysical) | 5.2 - Regulation and maintenance of geophysical | 5.2.1 - Regulation of baseline flows and extreme events | | |
| | | 5.2.x - Regulation and maintenance of geophysical | | |
| 6.x.x - Cultural (Abiotic/geophysical) | Intellectual and representative interactions with geophysical environment | 6.2.1 - Studying nature | | |
| | | 6.3.1 - The things in nature used to make films or to write books | | |
| | 6.4 - Spiritual, symbolic and other interactions with geophysical environment | 6.4.2 - The things in nature that we think should be conserved | | |
| | 6.x.x Cultural (Abiotic/geophysical) | | | |