

UKSeaMap Predictive Map v2025.1 User Guide

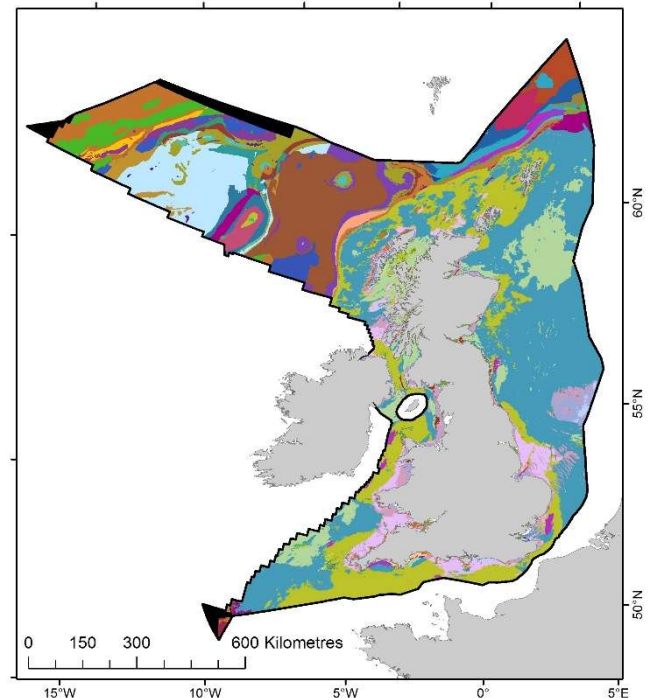
Overview

The UKSeaMap Predictive Map is one of four components of the [UK Atlas of Seabed Habitats \(UKASH\)](#). It is a broad-scale prediction that combines physical models such depth, light, sediment and energy (table 1) to predict the physical seabed habitats for the whole UK seabed, excluding the intertidal zone. It classifies the seabed according to the upper levels of the [Marine Habitat Classification for Britain and Ireland](#) and the [European standard classification system, EUNIS](#).

While more detailed maps exist for specific habitats and local areas, as contained in the UKASH Mosaic of Localised Maps, UKSeaMap offers a seamless and complete geographic coverage of the UK seabed below the low water mark.

Where localised maps are lacking, it is used to fill the gaps in the UKASH Mosaic of Localised Maps in the UKASH Combined Map.

On its own it offers a simple alternative to the UKASH Combined Map, where fine detail and high accuracy is less important.



Updates to this version

- A new updated seabed sediments and rock layer which has reduced uncertainty by removing many areas with multiple uncertain sediment types – one of the main inputs.
- Removal of littoral areas which in previous versions had been incorrectly identified as infralittoral.
- Removal of areas where the model encroaches on the land and removal of incorrectly classified areas such as Morecambe Bay and the Dee Estuary – improved accuracy.



What is included?

The downloadable geodatabase contains 5 datasets:

- **UKSeaMap_Habitats_v2025_1**
 - This is the main UKSeaMap layer which details the predicted habitats based on the habitat descriptor layers detailed below. The schema above outlines the attribute table of this layer.
- **UKSeaMap_Habitat_Descriptor_Seabed_Substrate_v2025_1**
 - This is the Seabed substrate layer used in UKSeaMap 2025. It was created using the British Geological Survey's national broad-scale predictive sediment map - Marchant et al. (2025) and the JNCC-BGS-Cefas national broad-scale predictive rock map (JNCC, 2019). This was combined with the sediment data from EMODnet Geology's seabed substrate layer (EMODnet Geology, 2022) to infill areas not covered by the BGS sediment map.
- **UKSeaMap_Habitat_Descriptor_Salinity_Regime_v2025_1**
 - This layer shows the salinity data which was used as one of the input layers in UKSeaMap 2025. This was created using Coastal Lagoons (areas of variable salinity) and Estuaries (areas of low or reduced salinity) data collated to inform reporting under Article 9a of the UK Habitats Regulations as proxies for salinity data. All other areas were classified as full salinity.
- **UKSeaMap_Habitat_Descriptor_Energy_Regime_v2025_1**
 - This layer is the kinetic energy at the seabed layer used as an input layer in UKSeaMap 2025. This was created using energy from tidal currents and energy from waves. Areas are 'high energy', 'moderate energy' or 'low energy'. This layer does not cover the full UKSeaMap study area.
- **UKSeaMap_Habitat_Descriptor_Biozones_v2025_1**
 - This layer is the biological zones (or biozones) layer used as one of the main input layers in UKSeaMap 2025. This categorises the seabed vertically, from the shallow infralittoral to the abyssal zone depending on specific parameters including influence of light, wave energy and depth.

Data Sources

Variable	Source and version	Spatial resolution	Dataset link
Depth to seabed	Defra, 2024	1 arc-second (~30 m)	https://environment.data.gov.uk/dataset/c7b1df9f-df9f-4a3f-9553-062b31f87554
	EMODnet Bathymetry, 2022	1/16 arc minutes (~110 m)	https://emodnet.ec.europa.eu/geonetwork/srv/eng/catalog.search#/metadata/b79b28b4-182b-4f5d-9cdb-b23fd216cfee
Light attenuation coefficient ($K_d(\text{PAR})$) [m^{-1}]	EMODnet Seabed Habitats, 2019	250 m	https://emodnet.ec.europa.eu/geonetwork/srv/eng/catalog.search#/metadata/f453edec-bc5b-40b8-9063-1de3727b2eaf
Light at surface [$\text{mol. phot. m}^{-2} \cdot \text{d}^{-1}$]	EMODnet Seabed Habitats, 2019	4 km	https://emodnet.ec.europa.eu/geonetwork/srv/eng/catalog.search#/metadata/875f6a42-a759-4682-ad2a-e679ff55fed4
Mean wavelength [m]	ResourceCODE, 2022	100 m	https://www.ums-ops.fr/Donnees/Vagues/sextant#/metadatas/d089a801-c853-49bd-9064-dde5808ff8d8
Energy at the seabed due to waves [Nm^2s^{-1}]	EMODnet Seabed Habitats, 2010	300m near the coast, 12.5km elsewhere	https://emodnet.ec.europa.eu/geonetwork/srv/eng/catalog.search#/metadata/2a2659c4-ce1b-4feb-81cf-a2bcb362a3f
Energy at the seabed due to currents [Nm^2s^{-1}]	EMODnet Seabed Habitats, 2015	1.8km near the coast; 10km elsewhere	https://emodnet.ec.europa.eu/geonetwork/srv/eng/catalog.search#/metadata/d72bfeca-ceb5-4faa-b7b0-e95db8c6310b
Seabed sediment (categorical)	BGS UK Predictive Seabed Sediments, 2025	1/16 arc minutes (~110 m)	https://mapapps2.bgs.ac.uk/geoindex_offshore/home.html
Rock at the seabed (categorical)	JNCC, Cefas, BGS, 2018	1 arc-second (~30 m)	https://www.data.gov.uk/dataset/fee92896-76a9-4718-a576-cd0d42224751/prediction-of-outcrops-or-subcrops-of-rock-in-uk-shelf-seabed-public
Seabed substrate in areas where the BGS 2025 model does not extend (categorical)	EMODnet Geology, 2023	variable	https://emodnet.ec.europa.eu/geonetwork/srv/eng/catalog.search#/metadata/6eaf4c6bf28815e973b9c60aab5734e3ef9cd9c4
Extent of lagoons and estuaries in the UK (categorical)	2025 compilation for Habitat Regulations reporting	variable	Currently unpublished

Attribute table schema

Column Name	Definition
EN_class	The assigned energy class taken from the energy layer created using the energy due to currents and waves inputs.
BZ_class	The assigned biozone classification taken from the biological zones layer, created using the depth, light attenuation coefficient and light at surface and mean wavelength input layers.
SUB_class	The assigned substrate classification taken from the seabed substrate layer
SAL_class	The assigned salinity classification taken from the salinity layer
fulldetail	The full classification applied to that area, assigned by combining all available classifications (salinity class, energy class, biozone class, and sediment class). This was used to assign the habitat types.
MHC_L2	The Marine Habitat Classification for Britain and Ireland v22.04 code at level 2 applied to the area.
MHC_L3	The Marine Habitat Classification for Britain and Ireland v22.04 code at level 3 applied to the area. In some cases, there are 'unknown' or 'uncertain' values, this means the level of detail could not be accurately determined. These are not used to determine the final habitat type but are provided for extra information.
MHC_L4	The Marine Habitat Classification for Britain and Ireland v22.04 code at level 4 applied to the area.
MHC_code	The highest unique Marine Habitat Classification for Britain and Ireland v22.04 classification code which was applied to that area.
MHC_name	The highest unique Marine Habitat Classification for Britain and Ireland v22.04 classification name which was applied to that area.
EUNIS07_L2	The EUNIS version 2007-11 code at level 2 applied to the area, this is the lowest possible level of detail which could be applied to an area.
EUNIS07_L3	The EUNIS version 2007-11 code at level 3 applied to the area, this is the lowest possible level of detail which could be applied to an area.
EUNIS07_L4	The EUNIS version 2007-11 code at level 4 applied to the area, if this is 'unknown' this level of detail could not be accurately determined.
EUNIS_code	The highest unique EUNIS 2007-11 classification code which was applied to that area.
EUNIS_name	The highest unique EUNIS 2007-11 classification name which was applied to that area.

How to cite:

JNCC (2025). "UK Atlas of Seabed Habitats: UKSeaMap Predictive Map v2025.1" JNCC data release. [<https://hub.jncc.gov.uk/assets/202874e5-0446-4ba7-8323-24462077561e>]

What is UKASH?

The UK Atlas of Seabed Habitats (UKASH) is a suite of mapping products, offering the most complete characterisation of seabed habitats in the UK in the [Marine Habitat Classification for Britain and Ireland](#) and the [European standard classification system, EUNIS](#). It has four components:

UKASH Library of Localised Maps: a standardised collection of individual, ground-truthed habitat maps from various sources.

UKASH Mosaic of Localised Maps: a unified, non-overlapping map product that prioritises the most reliable maps from the UKASH Library of Localised Maps.

UKSeaMap Predictive Map: a seamless, full-coverage predictive map of physical seabed habitats

UKASH Combined Map: the UKASH Mosaic of Localised Maps, with gaps filled by the UKSeaMap Predictive Map

For more information, please visit the UKASH page on the [JNCC website](#)

