

Title:	The MESH Translated Habitat Data Exchange Format (DEF)
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Summary:	The MESH Translated Data Exchange Format (DEF) describes the format required for data files that are supplied to the MESH partnership which have been translated to EUNIS habitat types. Specifically it relates to fields in the attribute tables of GIS vector files.
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MESH Translated Habitat Data Exchange Format

The MESH webGIS shows seabed habitat maps which have been converted (translated) to the EUNIS classification scheme¹ from various original habitat classification schemes. The MESH Translated Habitat DEF defines the fields that must be present in the attribute table of a translated habitat map if it is provided to the MESH Partnership. Future plans of MESH involve translation of habitat maps to other habitat types, such as OSPAR priority habitat types and EU Habitats Directive Annex I habitat types. Currently the MESH Translated Habitat DEF has only been used for EUNIS habitat maps, but the fields have been defined so that it can be extended to habitat maps translated to other classification schemes.

The first five fields in the attribute table have the same definitions and content as those in the Original Habitat DEF. Subsequent fields must be added during translation of the habitat map from its original habitat to the target (EUNIS/OSPAR/Annex I) habitat type, to record an audit trail. All MESH partners will use the same version of EUNIS/OSPAR/Annex I types throughout the project.

Data files must be provided as ESRI Shapefiles using geographic coordinates (lat/long) and the WGS84 datum. Use the sequence of attributes as specified below.

MESH Translated Habitat DEF		
Field name	Data type (length)	Description
<i>FID</i>	Number	Feature ID. Internally generated identification number for each polygon (not visible if .dbf file is opened using MS Excel).
<i>Shape</i>	Text (8)	Internally generated text, indicating whether the feature is a polygon, point or line (not visible if .dbf file is opened using MS Excel). This will be 'POLYGON' in the Translated Habitat DEF.
<i>POLYGON</i>	Long integer (Precision 8)	Identification number for each polygon which must be manually created as ascending integers 1,2,3... etc. Do not use the value 0, as this can cause errors on the MESH webGIS. This label for each polygon is necessary to identify the original polygon because the <i>FID</i> field may change during the processing of datasets.
<i>GUI</i>	Text (8)	Globally unique identifier (GUI) of the habitat map. Consists of 2 letter country code (which corresponds to ISO3166-1) plus 6 digits. For example, a dataset from the United Kingdom would be written GB000005. Each GUI must correspond to a record in the metadata catalogue . A metadata template can be downloaded from the MESH website,

¹ <http://eunis.eea.eu.int/habitats.jsp>: The EUNIS Habitat classification is a comprehensive pan-European system to facilitate the harmonised description and collection of data across Europe through the use of criteria for habitat identification; it covers all types of habitats from natural to artificial, from terrestrial to freshwater and marine.

		www.searchmesh.net .
<i>ORIG_HAB</i>	Text (255)	The information identifying the habitat type present in a polygon, either a code or text (the description of the habitat).
<i>HAB_TYPE</i>	Text (20)	This is the code assigned to the polygon after translation. It will either be a EUNIS habitat type, OSPAR priority habitat type or an Annex I habitat type.
<i>VERSION</i>	Text (50)	The target classification scheme/habitat list and publication year of the classification scheme/habitat list. For example, if the 2004 version of the EUNIS habitat classification was used, this should be entered as 'EUNIS_version_2004'.
<i>DET_MTHD</i>	Text (255)	Describe the method by which the target habitat type was determined. For example: manual determination using expert judgement; automatic determination using translation tables; or determination using additional data.
<i>DET_NAME</i>	Text (255)	The name of the person who determined the target habitat type assigned to the polygon during translation. This should be in the format <i>First name Surname</i> (e.g. Neil Golding).
<i>DET_DATE</i>	Date dd/mm/yyyy	The date that the target habitat type of the polygon was determined.
<i>TRAN_COM</i>	Text (255)	Record any comments on the translation from original habitat type to the target habitat type. For example, include brief information from survey reports which justifies the translation decision (especially pertinent if the relationship between the data in the <i>ORIG_HAB</i> field and in the <i>HAB_TYPE</i> field is not clear). Also include reasons for assignment of a particular target habitat type, such as the volume and type of additional data used.
<i>T_RELATE</i>	Text (1) Set list	The translation relationship code details the known relationship between the original habitat type and the target habitat type (see translation relationship symbols below).
<i>VAL_COMM</i>	Text (255)	Record any polygon specific comments resulting from the validation of the translated map using an independent dataset; for example you may judge that there are spatial errors within the map (sublittoral habitat types appearing in the littoral zone and <i>vice versa</i>). Where possible, all translated maps should be

		<p>validated with independent additional dataset(s). It is not possible to know whether inconsistencies are due to errors in the validation data, the original map, or the translation process. However, any suspected errors or disagreements between different datasets should be highlighted.</p>
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The table below shows the set list of translation relationship symbols available for use in the T_RELATE field of the Translated Habitat DEF.

Habitat in original classification	Relationship symbol in T_RELATE field	Habitat in target classification	Translation relationship
X	=	Y	Habitat X is same as Habitat Y.
X	~	Y	Habitat X is nearly the same as Habitat Y.
X	>	Y	Habitat Y is contained within Habitat X: i.e. X has a broader definition than Y.
X	<	Y	Habitat X is contained within Habitat Y: i.e. X has a narrower definition than Y.
X	#	Y	The definition of Habitat X partially overlaps with that of Habitat Y.

Example Translated Habitat Data Exchange Format

The table below is an example attribute table after conversion to the MESH Translated Habitat Data Exchange Format.

FID	Shape	POLYGON	GUI	ORIG_HAB	HAB_TYPE	VERSION	DET_MTHD	DET_NAME	DET_DATE	TRAN_COM	T_RELATE	VAL_COMM
0	Polygon	1	GB000326	PelVS	A1.321	EUNIS_version_2004	Automatic determination using translation tables	Neil Golding	21/06/05	Pel = <i>Pelvetia</i>	=	
1	Polygon	2	GB000326	Pel	A1.311	EUNIS_version_2004	Determination using expert judgement and additional data	Neil Golding	21/06/05	Pel = <i>Pelvetia</i>	<	WFD data suggest this feature is in a variable salinity area
2	Polygon	3	GB000326	Asc	A1.314	EUNIS_version_2004	Automatic determination using translation tables	Neil Golding	21/06/05		=	Bathymetry suggests that polygon lies mainly in the circalittoral

Example of recording OSPAR Priority habitats in the MESH Translated Habitat DEF

The attribute table below shows some example data in its original format, before it has been translated to EUNIS or OSPAR habitats.

FID	Shape	BIOTOPE	SUBSTRATUM	LIFE_FORM
0	Polygon	SpnMeg	Mud	Seapens
1	Polygon	Ost	Coarse sediment	Oyster bed
2	Polygon	Mrl	Coarse sediment	Maerl bed
3	Polygon	LSgr	Sand	Seagrass beds

The attribute table below shows the same data in the Translated Habitat DEF after translation to OSPAR priority habitat types. Note that the ORIG_HAB field contains a EUNIS code, because all habitat polygons must be translated from the original habitat scheme to EUNIS so that the EUNIS codes can be matched accurately with the OSPAR priority habitats.

FID	Shape	POLYGON	GUI	ORIG_HAB	HAB_TYPE	VERSION	DET_MTHD	DET_NAME	DET_DATE	TRAN_COM	T_RELATE	VAL_COMM
0	Polygon	1	GB000315	A5.361	Sea-pen & burrowing megafauna communities	OSPAR_HAB_2004	Automatic determination	Neil Golding	21/06/05	Presence of soft mud and seapens.	=	
1	Polygon	2	GB000315	A5.435	Ostrea edulis beds	OSPAR_HAB_2004	Automatic determination	Neil Golding	21/06/05	Presence of Ostrea edulis at densities of 10 per m ²	<	
2	Polygon	3	GB000315	A5.51	Maerl beds	OSPAR_HAB_2004	Automatic determination	Neil Golding	21/06/05	Diver observation of maerl bed	=	
3	Polygon	4	GB000315	A5.533	Zostera beds	OSPAR_HAB_2004	Automatic determination	Neil Golding	21/06/05	Presence of dense <i>Zostera marina</i>	=	

Example of recording Annex I habitat types in the Translated MESH DEF

The attribute table below shows some example data in its original format, before it has been translated to EUNIS or Annex I habitats.

FID	Shape	BIOTOPE	SUBSTRATUM	LIFE_FORM
0	Polygon	Pid	Bedrock	Faunal turf
1	Polygon	LCR	Bedrock	Algal crusts
2	Polygon	Cv	Bedrock & boulders	Faunal turf
3	Polygon	IFiSa	Sand	Conspicuous fauna

The attribute table below shows the same data in the Translated Habitat DEF after translation to Annex I habitats. Note that the ORIG_HAB field contains a EUNIS code, because all habitat polygons must be translated from the original habitat scheme to EUNIS so that the EUNIS codes can be matched accurately with the Annex I habitats.

FID	Shape	POLYGON	GUI	ORIG_HAB	HAB_TYPE	VERSION	DET_MTHD	DET_NAME	DET_DATE	TRAN_COM	T_RELATE	VAL_COMM
0	Polygon	1	GB000318	A4.23	Reefs	ANNEX_I_1999	Automatic determination	Neil Golding	21/06/05		=	
1	Polygon	2	GB000318	A4.3	Reefs	ANNEX_I_1999	Automatic determination	Neil Golding	21/06/05		<	
2	Polygon	3	GB000318	A4.71	Submerged or partially submerged sea caves	ANNEX_I_1999	Automatic determination	Neil Golding	21/06/05		=	
3	Polygon	4	GB000318	A5.23	Sandbanks which are slightly covered by sea water all the time	ANNEX_I_1999	Automatic determination	Neil Golding	21/06/05		=	