



Accessing and developing the required biophysical datasets and data layers for Marine Protected Areas network planning and wider marine spatial planning purposes

Report No 7: Task 1B. Translation of Habitat Maps (Phase 1)

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Report No 7: Task 1B. Translation of Habitat Maps

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Executive Summary

A team led by ABPmer in association with EMU, MarLIN, POL, Cefas and a number of related experts have been contracted by Defra to deliver the biophysical datalayers for Marine Conservation Zone (MCZ) network planning (Contract No. MB0102) project. The overall aim of the project is to ensure that the necessary biophysical datalayers are delivered for MCZ network planning (and equivalent Marine Protected Areas in Scotland). This project has been divided into a number of tasks to assist in the production of these datalayers. The aim of this work package (Task 1B) is to translate a series of habitat maps from their current habitat classification to their appropriate EUNIS 2007 type and process them to the Mapping European Seabed Habitats (MESH) data exchange format. This report provides a documented record of the steps that have been undertaken in the first phase of Task 1B.

1. Introduction

- 1.1 A team led by ABPmer in association with EMU, MarLIN, POL, Cefas and a number of related experts have been contracted by Defra to deliver the biophysical datalayers for Marine Conservation Zone (MCZ) network planning (Contract No. MB0102) project. The overall aim of the project is to ensure that the necessary biophysical datalayers are delivered for MCZ network planning (and equivalent Marine Protected Areas in Scotland). This project has been divided into a number of tasks to assist in the production of these datalayers. The aim of this work package (Task 1B) is to translate a series of habitat maps from their current habitat classification to their appropriate EUNIS 2007 type and process them to the Mapping European Seabed Habitats (MESH) data exchange format.
- 1.2 Task 1B has been divided into two phases, with a total of 43 maps to be translated and formatted in the first phase and an as yet undetermined number in the second phase. This report provides a documented record of the steps that have been undertaken in the first phase of Task 1B. MarLIN were responsible for the habitat translation and formatting elements of the work (Section 2). ABPmer provided a confidence assessment of the habitat maps based on the methodology provided within MESH (Section 3).

2. Habitat Translation Method

- 2.1 MarLIN were supplied with 43 shapefiles of habitat data (see Appendix A). Each distinct original habitat was extracted from the shapefiles provided and put into a Microsoft Access database. The Access database also contained the data specification outlined in the Translated MESH Data Exchange Format (DEF) including detailed translation and validation comments. The original reports for each survey were collated and used to supplement the information provided in the GIS legends. Each original habitat was manually checked, via the process outlined in Figure 1.
- 2.2 In some cases, particularly coarse scale 'life form' classifications from acoustic surveys, the original habitat type represented a number of European Nature Information Systems (EUNIS) habitats. It was not appropriate in most cases to create new interim EUNIS codes for these habitats as they did not represent a true habitat mosaic. In such cases the EUNIS level habitats that represented all habitats outlined in the data was selected. Where the mix of habitats was such that only a EUNIS level 1 code (A) was possible the EUNIS code was not assigned.
- 2.3 The translations involved a considerable amount of interpretation and as such ten percent of records were Quality Assured (QA) by a marine biotope expert. The focus of QA was on habitats that were only identified to a coarse level (levels 2-4) as the translation of level 4-5 habitats was more straightforward.
- 2.4 Following the QA process the data was transferred into the shapefiles supplied to MarLIN and translated data added. Where present overlapping polygons were identified.

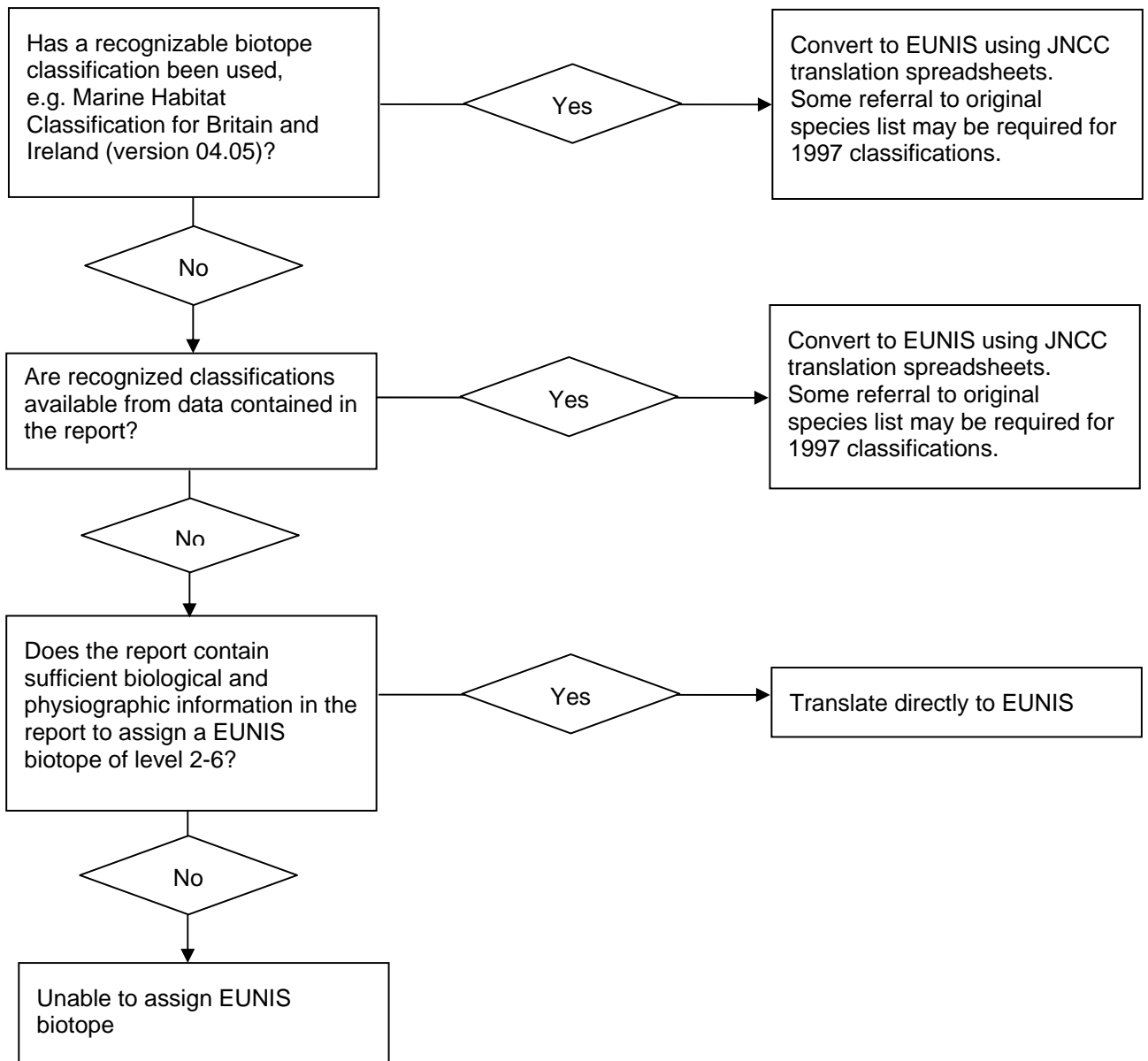


Figure 1: Flow chart showing the process of habitat translation

3. Confidence Assessment Method

- 3.1 The confidence assessment used the methodology that has been developed within the MESH project (www.searchmesh.net). The MESH project has developed a confidence assessment methodology where the evaluation process addresses three main questions:
1. How good is the remote sensing?
 2. How good is the ground truthing?
 3. How good is the data interpretation?
- 3.2 A guide to the development and use of the confidence assessment can be found within the outputs of the MESH project website (www.searchmesh.net).
- 3.3 The confidence assessment can only be undertaken if there is sufficient supporting information to accompany the habitat map. This includes a documented record of the survey techniques, post processing and analysis as well as any QA steps that have been undertaken. This limited the number of maps for which a confidence assessment could be undertaken within Task 1B to 34.
- 3.4 The confidence assessment scores that have been assigned to each of the 34 habitat maps can be found in Appendix B.

4. Conclusions

- 4.1 This technical report provides a record of the habitat maps that have been translated and formatted in the first phase of Task 1B. The methodologies that have been used to produce the revised habitat maps have also been documented along with details of the confidence assessment process. In addition the outputs of the confidence assessment have been recorded within this document.
- 4.2 The report will be extended at the end of the second phase of Task 1B to maintain a full record of all of the habitat maps that are processed within this project.

Abbreviations

ABPmer	ABP Marine Environmental Research Ltd
Cefas	Centre for Environment, Fisheries and Aquaculture Science
cSAC	candidate Special Areas of Conservation
DEF	Data Exchange Format
Defra	Department for Environment Food and Rural Affairs
EMU	EMU Ltd
EUNIS	European Nature Information Systems
GIS	Geographic Information System
HabMap	Habitat Mapping for Conservation and Mapping of the Southern Irish Sea
JNCC	Joint Nature Conservation Committee
MarLIN	The Marine Life Information Network
MCZ	Marine Conservation Zone
MESH	Mapping European Seabed Habitats
MNCR	Marine Nature Conservation Review
POL	Proudman Oceanographic Laboratory
QA	Quality Assured
TCCT	Torbay Coast & Countryside Trust

Reference

MESH Website: <http://www.searchmesh.net/>

Acknowledgements

Helpful and informative discussions are acknowledged with Natalie Coltman and Beth Stoker of JNCC.

Appendix A. Habitat Maps Translated in Phase 1 of Task 1B

Globally unique ID	Dataset title	Geographic location of dataset
GB000215	Broadscale remote survey mapping of sublittoral habitats and biota of the Small Islands, West Wales: major lifeforms	Irish Sea; Celtic Sea
GB000223	Mapping survey of the intertidal biotopes of the Berwickshire coast	Northern North Sea
GB000227	Broad scale biological mapping of Lundy Marine Nature Reserve with particular reference to reefs.	Celtic Sea
GB000229	Plymouth Sound and Estuaries substrate map	Western Channel
GB000230	Solent and South Wight: mapping of intertidal and subtidal marine cSACs - littoral habitats, the Solent	Eastern Channel
GB000235	Saltmarshes in Wash and North Norfolk Coast	Southern North Sea
GB000244	Dungeness survey	Eastern Channel
GB000248	Ribble survey	Irish Sea
GB000268	Broadscale survey and mapping of the seabed and shore habitats and biota: St Kilda cSAC: subtidal lifeforms	Scottish Continental Shelf
GB000272	Broadscale survey and mapping of seabed and shore habitats and biota, Lochs Duich, Alsh and Long.	Minches & West Scotland
GB000273	Broad scale survey and mapping of seabed and shore habitats and biota, Papa Stour Shetland.	Scottish Continental Shelf
GB000277	Broad scale survey and mapping of the seabed and shore habitats and biota: Vadills cSAC Shetland - shore types	Scottish Continental Shelf
GB000281	MNCR Area Summaries - South-east Scotland & north-east England	Northern North Sea
GB000282	MNCR Area Summaries - Inlets in eastern England	Southern North Sea
GB000283	MNCR Area Summaries - Inlets in the western English Channel	Western Channel
GB000284	MNCR Area Summaries - Inlets in the Bristol Channel and approaches	Celtic Sea
GB000285	MNCR Area Summaries - Cardigan Bay and north Wales; scar	Irish Sea
GB000286	MNCR Area Summaries - Liverpool Bay and the Solway Firth; Wigtown and Kirkcudbright Bays	Irish Sea
GB000287	MNCR Area Summaries - Sealochs in the Clyde Sea	Irish Sea
GB000288	MNCR Area Summaries - Sealochs in west Scotland	Minches & West Scotland
GB000289	MNCR Area Summaries - Sealochs in the Outer Hebrides	Scottish Continental Shelf
GB000290	MNCR Area Summaries - Sealochs in north-west Scotland	Minches & West Scotland
GB000291	MNCR Area Summaries - Lagoons in Shetland and Orkney	Scottish Continental Shelf
GB000292	MNCR Area Summaries - Lagoons in the Outer Hebrides	Scottish Continental Shelf
GB000297	Northern Ireland broadscale habitat mapping: Ards Peninsula	Irish Sea
GB000310	Irish Sea Pilot: North Channel Peaks: Peaks Area	Irish Sea
GB000326	Exe Estuary Habitat Mapping	Western Channel
GB000330	Langstone Harbour & Chichester Harbour mudflats	Eastern Channel
GB000356	Broadscale survey & mapping of seabed biota in Loch Creran, Argyll	Minches & West Scotland
GB000359	Broadscale mapping of sublittoral habitats in the Sound of Barra: south east of South Uist	Minches & West Scotland
GB000360	Broadscale mapping of sublittoral habitats in the Sound of Barra: north east of Barra	Minches & West Scotland
GB000371	Mapping of the benthic biotopes in the proposed Sound of Arisaig Special Area of Conservation	Minches & West Scotland
GB000374	MNCR Area Summaries - Sealochs in the Clyde Sea	Irish Sea
GB000375	MNCR Area Summaries - Sealochs in west Scotland	Minches & West Scotland
GB000376	MNCR Area Summaries - Lagoons in the Outer Hebrides	Scottish Continental Shelf
GB000377	MNCR Area Summaries - Lagoons in mainland Scotland and the Inner Hebrides	Minches & West Scotland
GB000470	Isle of Man sandbank	Irish Sea
GB000498	Isles of Scilly subtidal biotope map	Celtic Sea
GB000588	Survey of Reef Habitat around Eddystone Reef, Plymouth	Western Channel
GB000646	MNCR Area Summaries - Shetland	Scottish Continental Shelf; Northern North Sea
GB000923	Seagrass distribution map for Torbay TCCT 2006 Survey	Western Channel
GB000945	Sound of Harris - Biotopes	Minches & West Scotland
GB100093	Beadnell (Northumberland): lifeforms map	Northern North Sea

Appendix B. Confidence Assessment Scores

Globally unique ID	Remote technique	Remote coverage	Remote positioning	Remote stds applied	Remote vintage	Bgt technique	Pgt technique	Gt positioning	Gt density	Gt stds applied	Gt vintage	Gt interpretation	Remote interpretation	Detail level	Map accuracy	Remote score	Gt score	Interpretation score	Overall score
GB000215	3	2	3	3	2	2	2	3	2	3	2	2	3	2	2	87	77	75	79
GB000223	3	1	2	3	1	3	2	2	2	3	1	2	3	2	1	67	77	67	70
GB000227	3	3	3	3	1	2	1	3	2	3	1	2	3	2	2	87	68	75	77
GB000229	3	1	3	2	1	3	3	3	2	2	1	3	3	2	1	67	80	75	74
GB000230	2	1	2	1	1	3	3	2	2	2	1	3	3	2	1	47	75	75	66
GB000235	No report available																		
GB000244	No report available																		
GB000248	No report available																		
GB000268	3	1	3	2	1	3	1	3	2	2	1	2	3	1	1	67	73	58	66
GB000272	3	1	3	2	1	3	3	3	2	2	1	3	3	2	1	67	80	75	74
GB000273	2	3	1	2	1	3	1	1	2	2	2	2	3	2	1	60	68	67	65
GB000277	0	0	0	0	0	3	0	1	3	2	2	3	0	2	1	0	70	50	40
GB000281	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
GB000282	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
GB000283	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
GB000284	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
GB000285	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
GB000286	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
GB000287	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
GB000288	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
GB000289	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
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GB000292	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
GB000297	3	2	3	2	2	2	2	3	2	2	2	2	3	2	2	80	72	75	76
GB000310	No report available																		
GB000326	No report available																		
GB000330	No report available																		
GB000356	3	2	3	3	2	3	3	3	2	3	2	2	2	2	1	87	90	58	78
GB000359	3	3	3	3	2	3	3	3	2	3	2	2	3	2	2	93	90	75	86
GB000360	3	3	3	3	2	3	3	3	2	3	2	2	3	2	2	93	90	75	86
GB000371	3	3	3	3	1	3	3	3	2	3	1	3	3	2	1	87	85	75	82
GB000374	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
GB000375	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
GB000376	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
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GB000588	3	3	3	2	3	2	2	3	2	2	3	3	3	2	2	93	77	83	84
GB000646	0	0	0	0	0	3	3	2	2	2	1	3	0	2	1	0	75	50	42
GB000923	No report available																		
GB000945	3	3	3	2	3	3	3	3	2	2	3	3	3	2	2	93	90	83	89
GB100093	No report available																		