# Habitat Matrices for the Marine Habitat Classification for Britain and Ireland version 15.03

*(This document is available from https://mhc.jncc.gov.uk/resources#habitatmatrices. Edited June 2019)*

## Contents



## Overview

The primary habitat matrices (sections 8 & 9) at the end of this document provide a general framework for the classification and shows the level 2 and 3 types. In addition, more detailed matrices (sections 1 to 7) have been created for each of the broad habitats in the shallow section of the classification (LR, LS, IR, CR, SS) showing the distribution of individual biotopes and sub-biotopes (levels 5 and 6) in relation to key habitat factors. For the **rocky habitats**, biotopes are shown in relation to energy levels, whereas for **sediment habitats**, biotopes are shown in relation to sediment type using a modified Folk triangle approach (Folk 1954[1]).

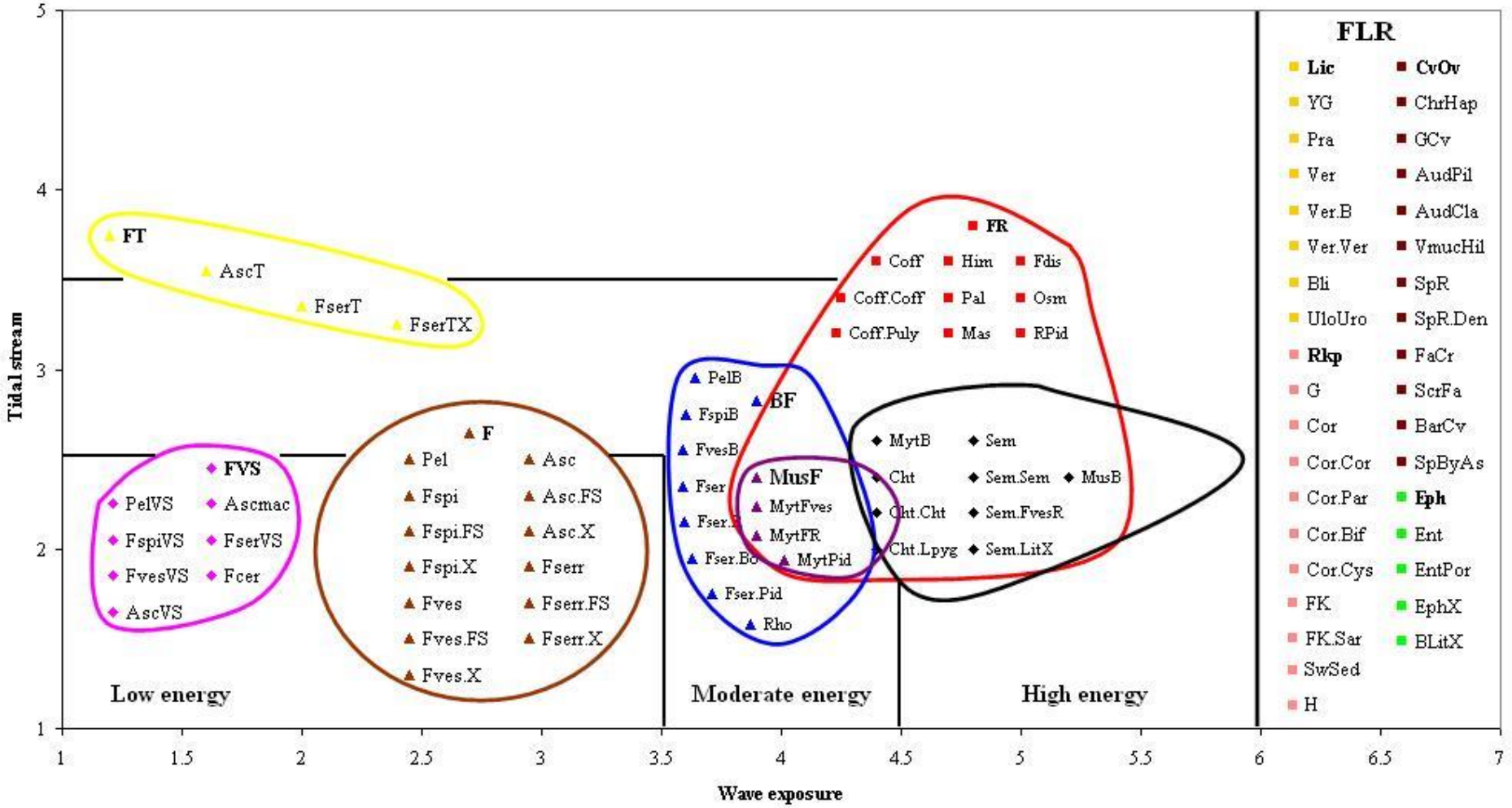
The detailed matrices aim to provide a rapid indication of the range of biotopes that could occur under certain habitat conditions, e.g. moderate energy infralittoral rock or intertidal sandflats. They can be used to indicate which closely related biotopes should be considered before determining to which type a sample record should be assigned.

Presentation of the biotopes and sub-biotopes within these matrices has several benefits:

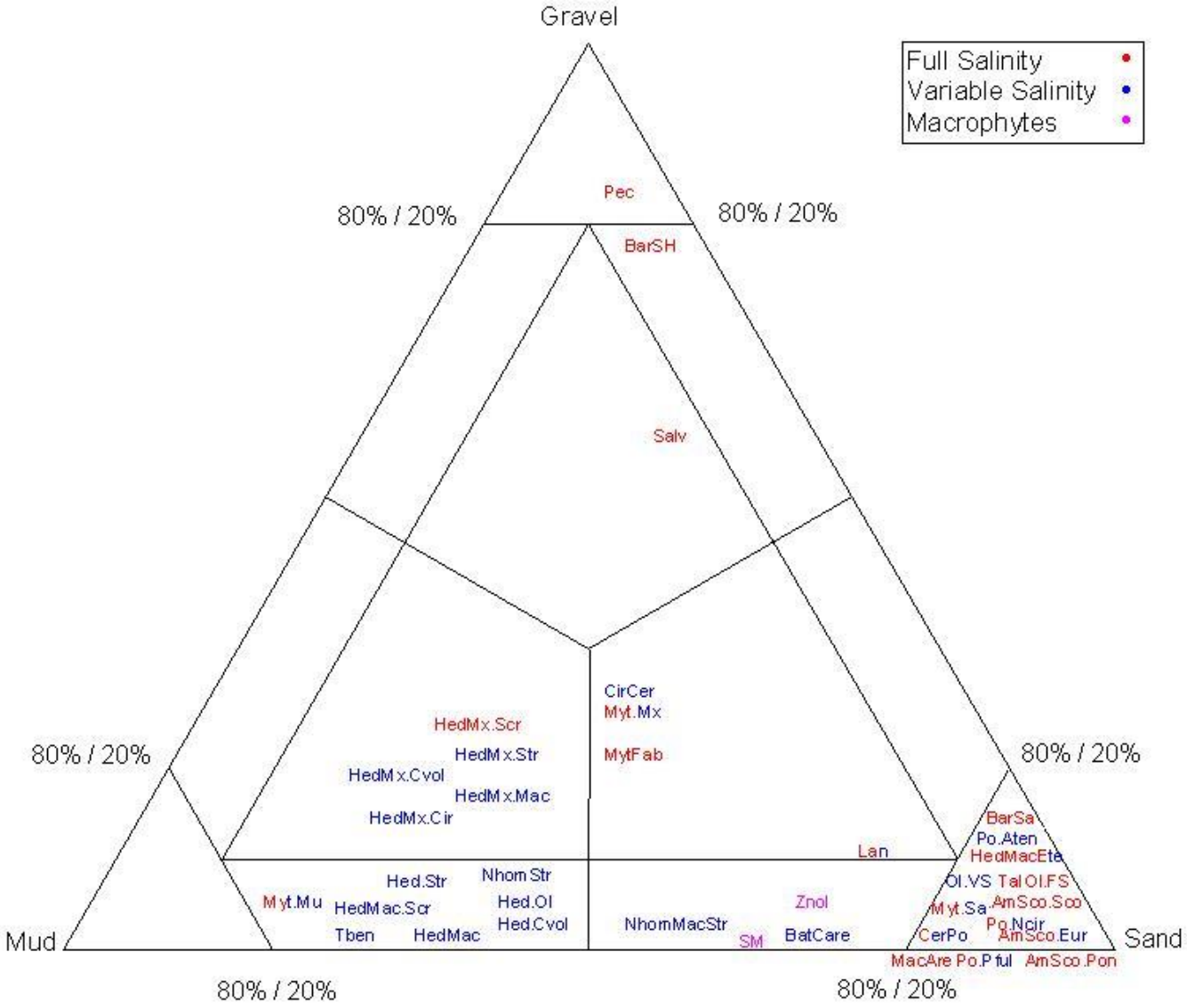
1. It helps to display the relationship of a biotope to other closely related types and to clarify the main habitat parameters which contribute to its structure. These relationships are less clear in a more conventional listing of types (e.g. the hierarchical listing).
2. It enables the identification of dissimilar communities within apparently similar physical environments. Here, although there may be subtle physical factors which drive such differences in biological composition, other factors such as seasonal change, chance recruitment, grazing pressures or pollution effects may account for the differences and allow such communities to be linked within the classification.
3. It also facilitates the undertaking of new ecological survey in a more structured manner, by enabling the full range of habitats in an area to be identified and sampled.

[1] Folk, R. L. 1954. The distinction between grain size and mineral composition in sedimentary nomenclature. Journal of Geology, 62, 344-359.

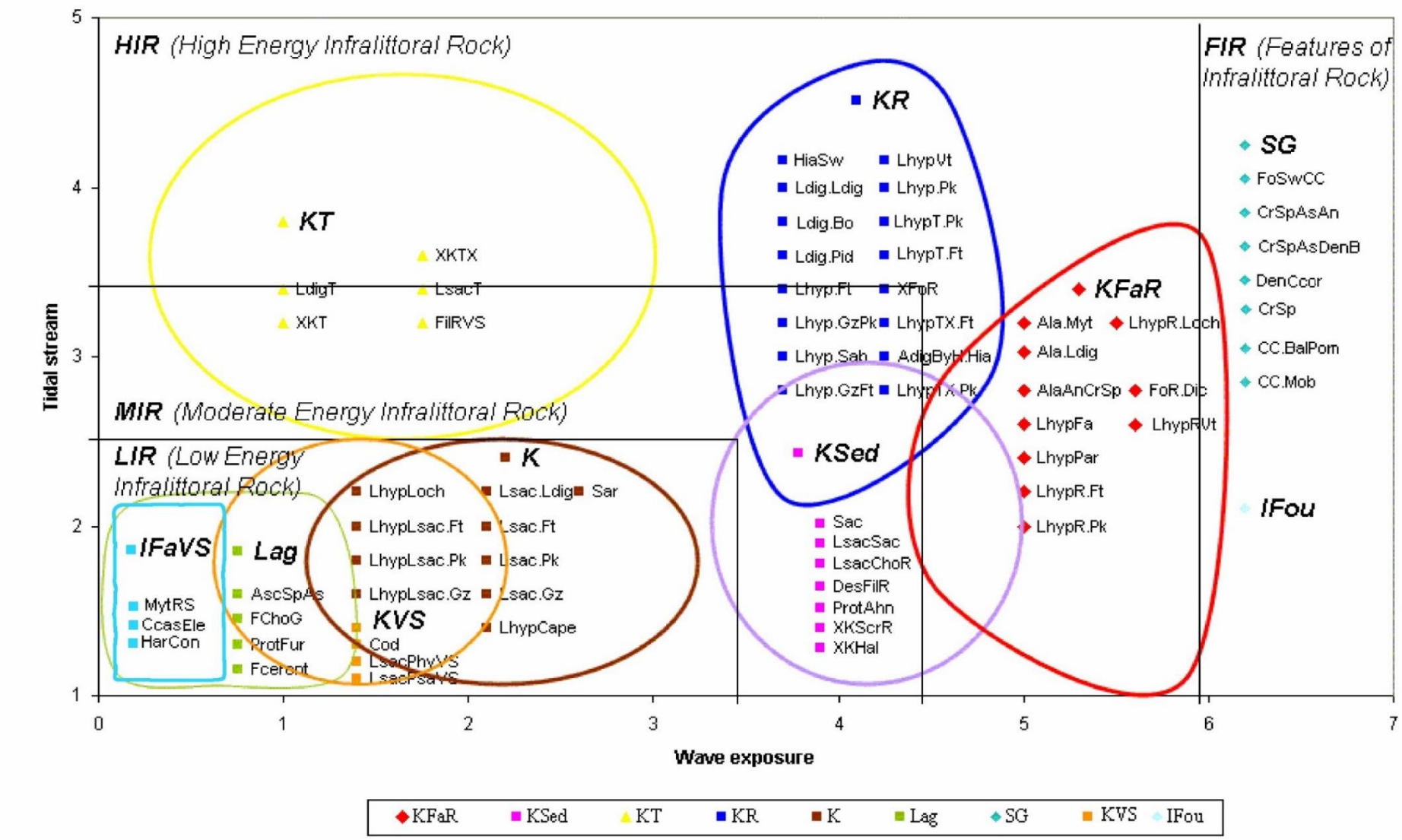
# 1 Detailed matrix for LR – littoral rock



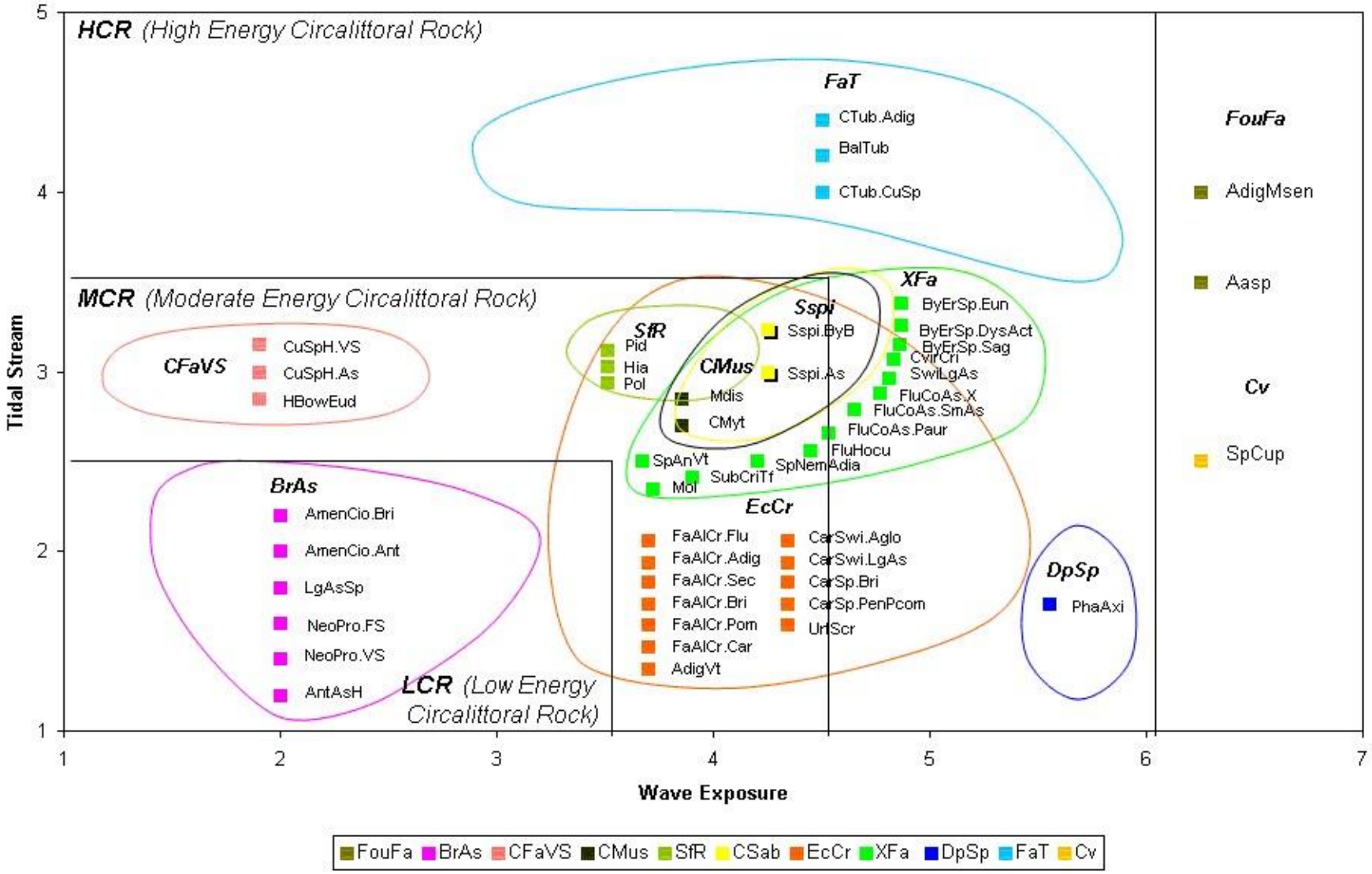
## 2 Detailed matrix for LS – littoral sediment



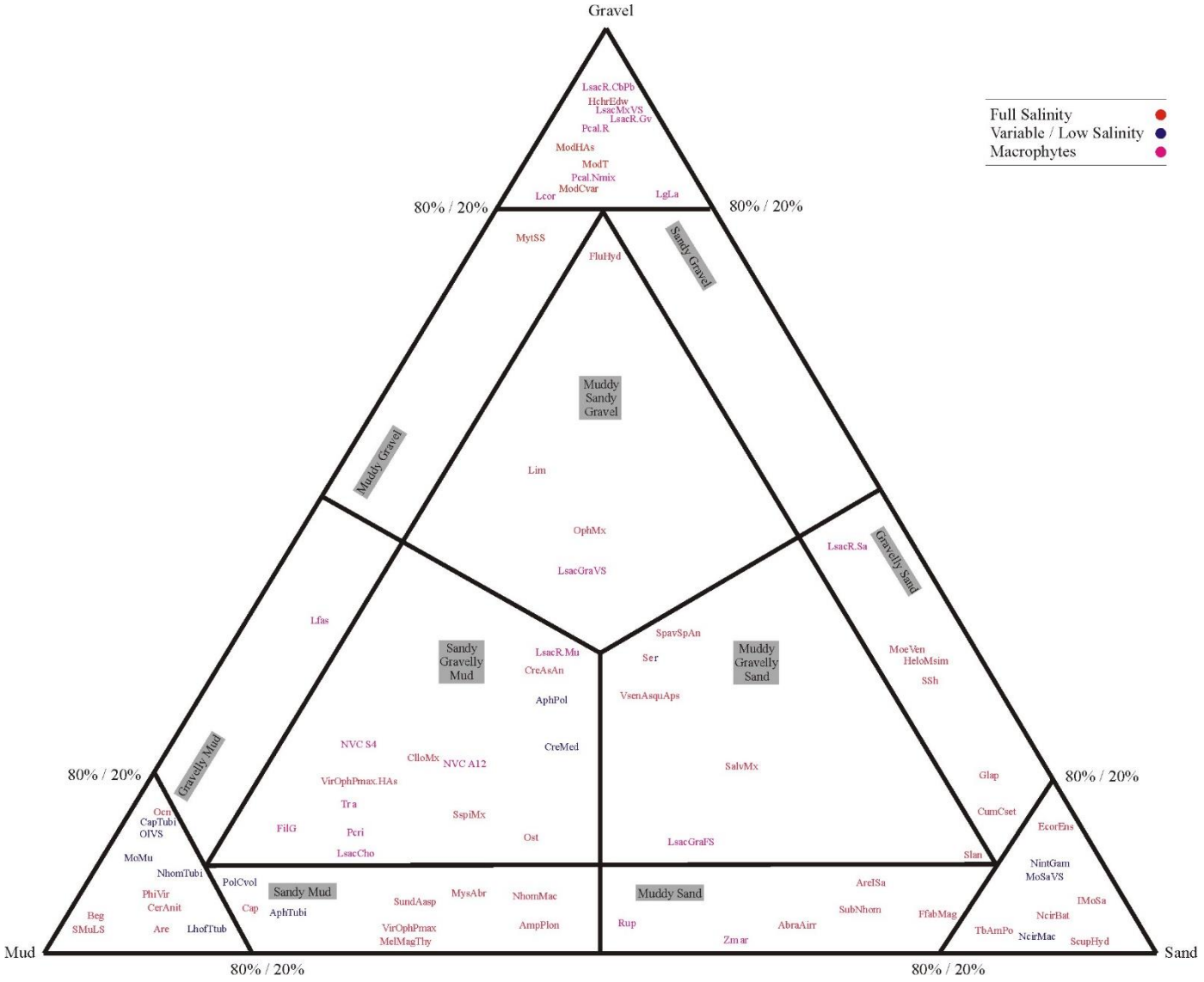
## 3 Detailed matrix for IR – infralittoral rock



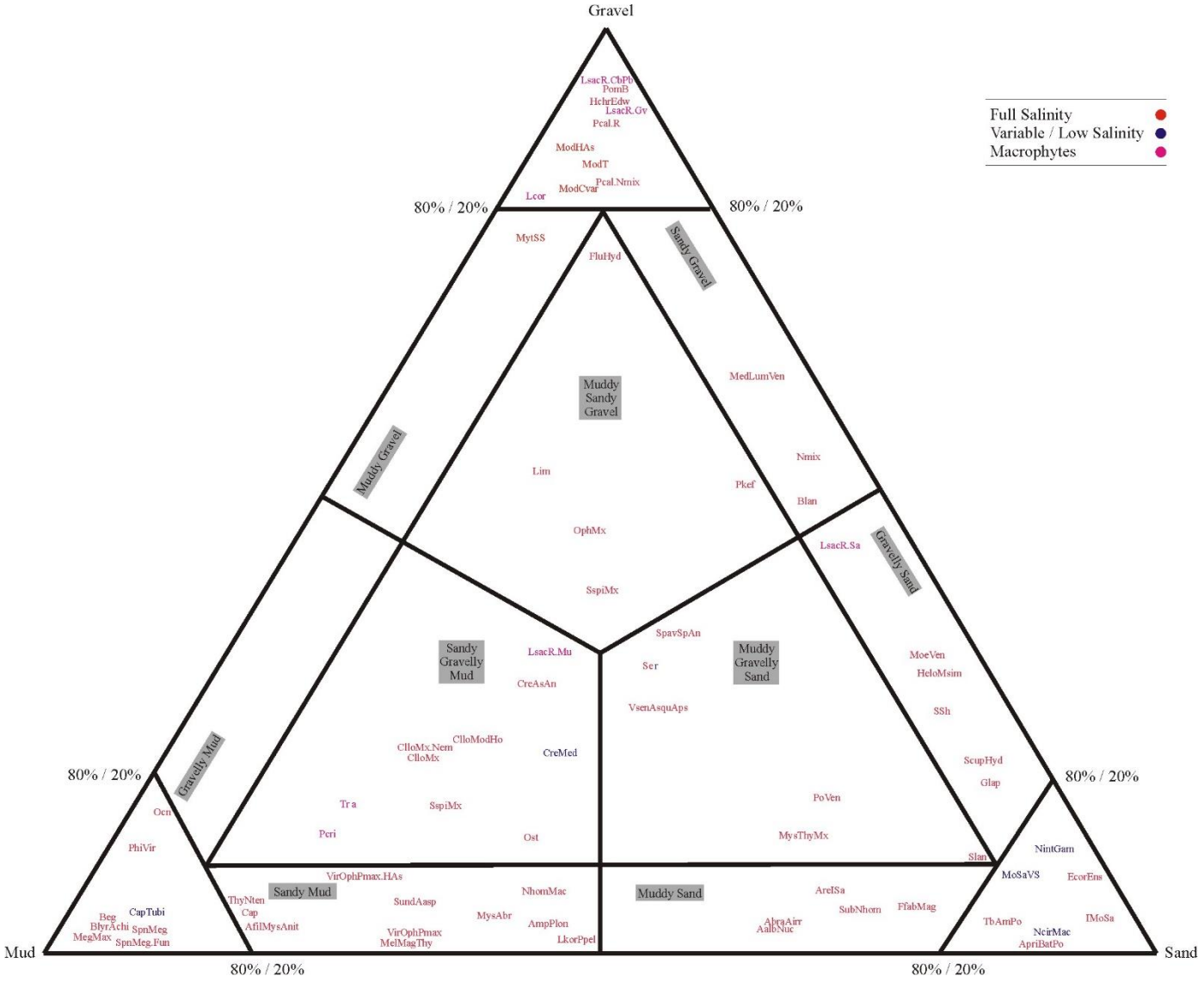
# 4 Detailed matrix for CR – circalittoral rock



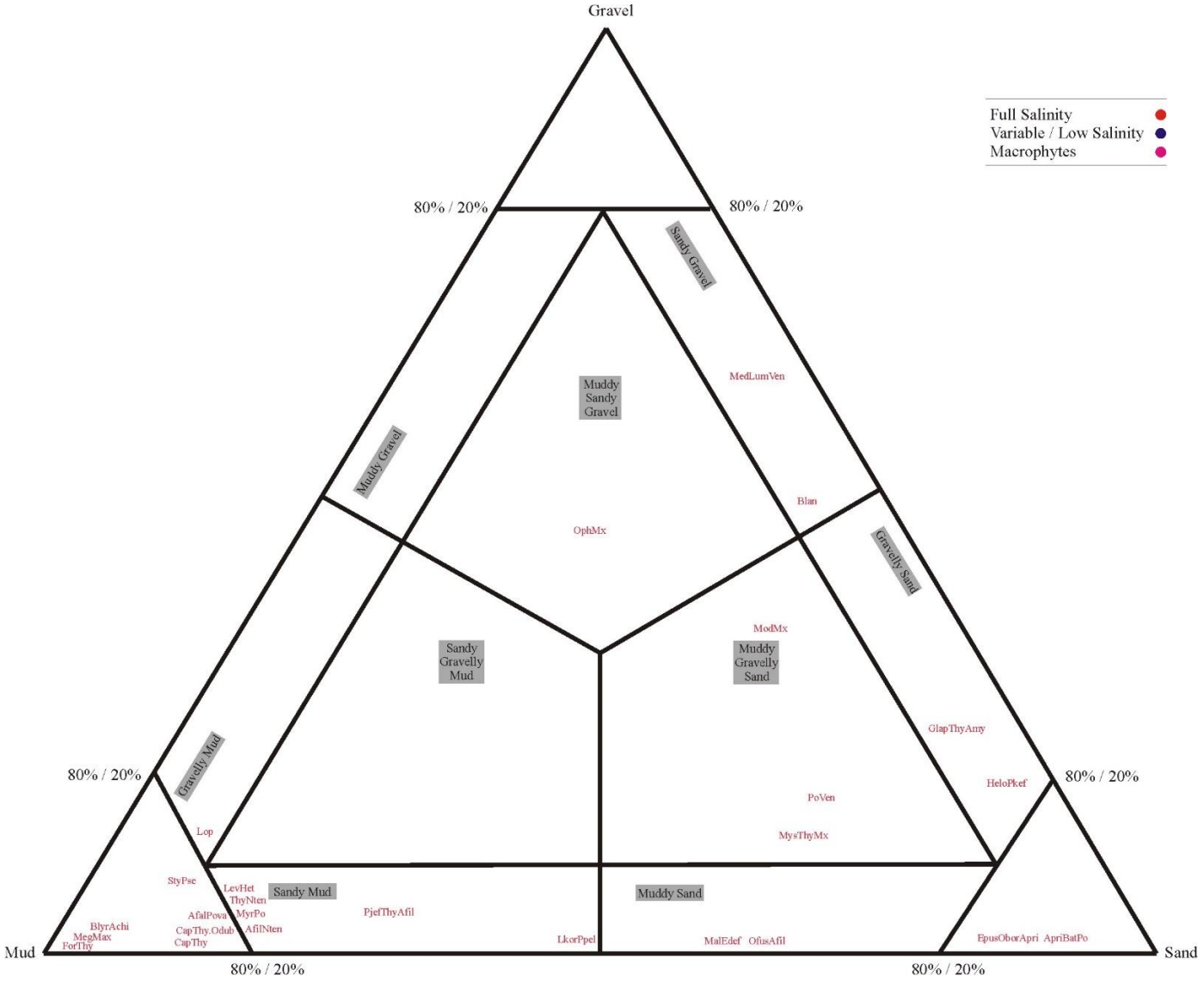
# 5 Detailed matrix for SS – sublittoral sediment 0-10 metres



# 6 Detailed matrix for SS – sublittoral sediment 10-30 metres



# 7 Detailed matrix for SS – sublittoral sediment 50-200 metres



# 8 The primary matrix – shallow

Taken from Table 3 (page 22) of Connor et al (2004)

| SUBSTRATUM / ZONE | | ROCK | | | | SEDIMENT | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **High energy rock [H*R]** (wave exposed or very tide-swept) | **Moderate energy rock [M*R]** (moderately wave-exposed or tide-swept) | **Low energy rock [L*R]** (wave sheltered and weak tidal currents) | **Features on rock [F*R]** (rockpools, caves) | **Coarse sediment [CS]** Mobile cobble & pebble, gravel, coarse sand | **Sand [Sa]** Clean sands & non-cohesive muddy sands | **Mud [Mu]** Cohesive sandy muds & muds | **Mixed sediment [Mx]** Heterogeneous mixtures of gravel, sand & mud | **Macrophyte-dominated sediment [Mp]** | **Biogenic reefs [BR]** |
| LITTORAL | **LITTORAL [L]** (splash zone, strandline & intertidal) | High energy littoral rock [HLR] | Moderate energy littoral rock [MLR] | Low energy littoral rock [LLR] | Features on littoral rock [FLR] | Littoral coarse sediment [LCS] | Littoral sand [LSa] | Littoral mud [LMu] | Littoral mixed sediment [LMx] | Littoral macrophyte-dominated sediment [LMp] | Littoral biogenic reefs [LBR] |
| SUBLITTORAL [S] | **INFRA-LITTORAL [I]** (shallow subtidal) | High energy infralittoral rock [HIR] | Moderate energy infralittoral rock [MIR] | Low energy infralittoral rock [LIR] | Features on infralittoral rock [FIR] | Sublittoral coarse sediment [SCS] | Sublittoral sand [SSa] | Sublittoral mud [SMu] | Sublittoral mixed sediment [SMx] | Sublittoral macrophyte-dominated sediment [SMp] | Sublittoral biogenic reefs [SBR] |
| | **CIRCA-LITTORAL [C]** (nearshore deeper and offshore subtidal) | High energy circalittoral rock [HCR] | Moderate energy circalittoral rock [MCR] | Low energy circalittoral rock [LCR] | Features on circalittoral rock [FCR] | | | | | | |

# 9 The primary matrix – deep

| | ZONE | ROCK [Ro] | SEDIMENT Coarse sediment [Co] Mobile cobble & pebble, gravel, coarse sand | Sand [Sa] Clean sands & non-cohesive muddy sands | Mud [Mu} Cohesive sandy muds & muds | Mixed sediment [Mx] Heterogeneous mixtures of gravel, sand & mud | Biogenic [Bi] |
|---|---|---|---|---|---|---|---|
| DEEP SEA | **ATLANTIC UPPER BATHYAL [M.AtUB]** | Atlantic upper bathyal rock or reef [M.AtUB.Ro] | Atlantic upper bathyal coarse sediment [M.AtUB.Co] | Atlantic upper bathyal sand [M.AtUB.Sa] | Atlantic upper bathyal mud [M.AtUB.Mu] | Atlantic upper bathyal mixed sediment [M.AtUB.Mx] | Atlantic upper bathyal biogenic structure [M.AtUB.Bi] |
| | **ATLANTIC MID BATHYAL [M.AtMB]** | Atlantic mid bathyal rock or reef [M.AtMB.Ro] | Atlantic mid bathyal coarse sediment [M.AtMB.Co] | Atlantic mid bathyal sand [M.AtMB.Sa] | Atlantic mid bathyal mud [M.AtMB.Mu] | Atlantic mid bathyal mixed sediment [M.AtMB.Mx] | Atlantic mid bathyal biogenic structure [M.AtMB.Bi] |
| | **ATLANTIC LOWER BATHYAL [M.AtLB]** | Atlantic lower bathyal rock or reef [M.AtLB.Ro] | Atlantic lower bathyal coarse sediment [M.AtLB.Co] | Atlantic lower bathyal sand [M.AtLB.Sa] | Atlantic lower bathyal mud [M.AtLB.Mu] | Atlantic lower bathyal mixed sediment [M.AtLB.Mx] | Atlantic lower bathyal biogenic structure [M.AtLB.Bi] |
| | **ATLANTIC UPPER ABYSSAL [M.AtUA]** | Atlantic upper abyssal rock or reef [M.AtUA.Ro] | Atlantic upper abyssal coarse sediment [M.AtUA.Co] | Atlantic upper abyssal sand [M.AtUA.Sa] | Atlantic upper abyssal mud [M.AtUA.Mu] | Atlantic upper abyssal mixed sediment [M.AtUA.Mx] | Atlantic upper abyssal biogenic structure [M.AtUA.Bi] |
| | **ATLANTIC MID ABYSSAL [M.AtMA]** | Atlantic mid abyssal rock or reef [M.AtMA.Ro] | Atlantic mid abyssal coarse sediment [M.AtMA.Co] | Atlantic mid abyssal sand [M.AtMA.Sa] | Atlantic mid abyssal mud [M.AtMA.Mu] | Atlantic mid abyssal mixed sediment [M.AtMA.Mx] | Atlantic mid abyssal biogenic structure [M.AtMA.Bi] |
| | **ATLANTIC LOWER ABYSSAL [M.AtLA]** | Atlantic lower abyssal rock or reef [M.AtLA.Ro] | Atlantic lower abyssal coarse sediment [M.AtLA.Co] | Atlantic lower abyssal sand [M.AtLA.Sa] | Atlantic lower abyssal mud [M.AtLA.Mu] | Atlantic lower abyssal mixed sediment [M.AtLA.Mx] | Atlantic lower abyssal biogenic structure [M.AtLA.Bi] |
| | **ATLANTO-ARCTIC UPPER BATHYAL [M.AAUB]** | Atlanto-Arctic upper bathyal rock or reef [M.AAUB.Ro] | Atlanto-Arctic upper bathyal coarse sediment [M.AAUB.Co] | Atlanto-Arctic upper bathyal sand [M.AAUB.Sa] | Atlanto-Arctic upper bathyal mud [M.AAUB.Mu] | Atlanto-Arctic upper bathyal mixed sediment [M.AAUB.Mx] | Atlanto-Arctic upper bathyal biogenic structure [M.AAUB.Bi] |
| | **ARCTIC MID BATHYAL [M.ArMB]** | Arctic mid bathyal rock or reef [M.ArMB.Ro] | Arctic mid bathyal coarse sediment [M.ArMB.Co] | Arctic mid bathyal sand [M.ArMB.Sa] | Arctic mid bathyal mud [M.ArMB.Mu] | Arctic mid bathyal mixed sediment [M.ArMB.Mx] | Arctic mid bathyal biogenic structure [M.ArMB.Bi] |
| | **ARCTIC LOWER BATHYAL [M.ArLB]** | Arctic lower bathyal rock or reef [M.ArLB.Ro] | Arctic lower bathyal coarse sediment [M.ArLB.Co] | Arctic lower bathyal sand or muddy sand [M.ArLB.Sa] | Arctic lower bathyal mud [M.ArLB.Mu] | Arctic lower bathyal mixed sediment [M.ArLB.Mx] | Arctic lower bathyal biogenic structure [M.ArLB.Bi] |
| | **ARCTIC UPPER ABYSSAL [M.ArUA]** | Arctic upper abyssal rock or reef [M.ArUA.Ro] | Arctic upper abyssal coarse sediment [M.ArUA.Co] | Arctic upper abyssal sand [M.ArUA.Sa] | Arctic upper abyssal mud [M.ArUA.Mu] | Arctic upper abyssal mixed sediment [M.ArUA.Mx] | Arctic upper abyssal biogenic structure [M.ArUA.Bi] |