

A suggestive list of deep-water VMEs and their characteristic taxa (table extracted from ICES VME Workshop report (ICES, 2016))

PROPOSED VME HABITAT TYPE (VME DATABASE FIELD: "VME_HABITATTYPE")	PROPOSED VME HABITAT SUBTYPE (VME DATABASE FIELD: "VME_HABITATSUBTYPE")	REPRESENTATIVE TAXA	CORRESPONDING VME INDICATOR (VME DATABASE FIELD: "VME_INDICATOR")
Cold-water coral reef	<i>Lophelia pertusa/Madrepora oculata</i> reef	<i>Lophelia pertusa</i> <i>Madrepora oculata</i>	Stony coral
	<i>Solenosmilia variabilis</i> reef	<i>Solenosmilia variabilis</i>	Stony coral
Coral garden	Hard bottom coral garden	(See below)	Black coral Gorgonian Stony coral Stylasterids
	<p>Note - you can also assign records to a more detailed sub-type</p> <p>Hard bottom coral garden: Hard bottom gorgonian¹ and black coral gardens</p>	ACANTHOGORGIIDAE <ul style="list-style-type: none"> • <i>Acanthogorgia armata</i> ANTHOTHELIDAE CHRYSOGORGIIDAE CORALLIIDAE ISIDIDAE, KERATOISIDINAE <ul style="list-style-type: none"> • <i>Acanella arbuscula</i> • <i>Acanella spp.</i> • <i>Isidella spp.</i> • <i>Keratoisis spp.</i> • <i>Lepidisis spp.</i> PARAGORGIIDAE <ul style="list-style-type: none"> • <i>Paragorgia arborea</i> PLEXAURIDAE <ul style="list-style-type: none"> • <i>Paramuricea biscaya</i> • <i>Paramuricea placomus</i> • <i>Paramuricea spp.</i> • <i>Swiftia pallida</i> PRIMNOIDAE <ul style="list-style-type: none"> • <i>Callogorgia verticillata</i> • <i>Primnoa resedaeformis</i> 	Gorgonian Soft coral Black coral

¹ *Gorgonian* is now not a recognised taxonomic term. However, as many deep-sea biologists are familiar with this term, this VME Indicator was retained.

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		ALCYONIIDAE <ul style="list-style-type: none"> <i>Anthomastus grandiflorus</i> ANTIPATHIDAE <ul style="list-style-type: none"> <i>Stichopathes cf gravieri</i> LEIOPATHIDAE <ul style="list-style-type: none"> <i>Leiopathes spp.</i> SCHIZOPATHIDAE <ul style="list-style-type: none"> <i>Bathypathes spp.</i> <i>Parantipathes hironnelle</i> <i>Parantipathes spp.</i> <i>Stauropathes arctica</i> 	
	Hard bottom coral garden: Colonial scleractinians on rocky outcrops	<i>Lophelia pertusa</i> <i>Madrepora oculata</i>	Stony coral
	Hard bottom coral garden: Non-reefal scleractinian aggregations	<i>Enallopsammia rostrata</i> <i>Lophelia pertusa</i> <i>Madrepora oculata</i>	Stony coral
	Hard bottom coral garden: Stylasterid corals on hard substrata	STYLASTERIDAE <ul style="list-style-type: none"> <i>Pliobothrus symmetricus</i> <i>Pliobothrus spp.</i> <i>Stylaster spp.</i> 	Stylasterids
	Soft bottom coral garden	(See below)	Gorgonian Soft coral Black coral Cup coral
	Note - you can also assign records to a more detailed sub-type		
	Soft bottom coral garden: Soft bottom gorgonian ¹ and black coral gardens	ALCYONIIDAE <ul style="list-style-type: none"> <i>Anthomastus grandiflorus</i> ANTIPATHIDAE <ul style="list-style-type: none"> <i>Stichopathes cf gravieri</i> CHRYSOGORGIIDAE <ul style="list-style-type: none"> <i>Radicipes gracilis</i> <i>Radicipes spp.</i> ISIDIDAE	Gorgonian Soft coral Black coral

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		<ul style="list-style-type: none"> • <i>Acanella arbuscula</i> • <i>Acanella spp.</i> • <i>Isidella spp.</i> 	
	Soft bottom coral garden: Cup-coral fields	CARYOPHYLLIIDAE <ul style="list-style-type: none"> • <i>Caryophyllia spp.</i> • <i>Stephanocyathus moseleyanus</i> FLABELLIDAE <ul style="list-style-type: none"> • <i>Flabellum macandrewi</i> • <i>Flabellum angulare</i> • <i>Flabellum alabastrum</i> • <i>Flabellum spp.</i> 	Cup coral
	Soft bottom coral garden: Cauliflower Coral Fields	NEPHTHEIDAE <ul style="list-style-type: none"> • <i>Duva florida</i> • <i>Drifa glomerata</i> • <i>Gersemia spp.</i> 	Soft coral
Deep-sea sponge aggregations	Soft bottom sponge aggregations	GEODIIDAE <ul style="list-style-type: none"> • <i>Geodia barretti</i> • <i>Geodia macandrewi</i> • <i>Geodia atlantica</i> ANCORINIDAE <ul style="list-style-type: none"> • <i>Stryphnus ponderosus</i> • <i>Stelletta spp.</i> PACHASTRELLIDAE <ul style="list-style-type: none"> • <i>Thenea spp.</i> ROSSELLIDAE <ul style="list-style-type: none"> • <i>Caulophacus arcticus</i> PHERONEMATIDAE <ul style="list-style-type: none"> • <i>Pheronema carpenteri</i> 	Sponge ²
	Hard bottom sponge aggregations	AXINELLIDAE <ul style="list-style-type: none"> • <i>Axinella infundibuliformis</i> 	Sponge ²

² Data providers should ensure that only sponge records of species representative of deep sea habitats are submitted (see representative taxa)

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Seapen fields		<ul style="list-style-type: none"> • <i>Phakellia</i> spp. MYCALIDAE POLYMASTIIDAE <ul style="list-style-type: none"> • <i>Polymastia</i> spp. TETILLIDAE ROSSELLIDAE <ul style="list-style-type: none"> • <i>Caulophacus arcticus</i> PHERONEMATIDAE <ul style="list-style-type: none"> • <i>Pheronema carpenteri</i> 	Sea-pen
Anemone aggregations	Soft bottom anemone aggregations	ANTHOPTILIDAE <ul style="list-style-type: none"> • <i>Anthoptilum murrayi</i> • <i>Anthoptilum</i> spp. PENNATULIDAE <ul style="list-style-type: none"> • <i>Pennatula phosphorea</i> FUNICULINIDAE <ul style="list-style-type: none"> • <i>Funiculina quadrangularis</i> HALIPTERIDAE <ul style="list-style-type: none"> • <i>Halipterus</i> sp KOPHOBELEMNIDAE <ul style="list-style-type: none"> • <i>Kophobelemnon stelliferum</i> PROTOPTILIDAE UMBELLULIDAE <ul style="list-style-type: none"> • <i>Umbellula encrinus</i> • <i>Umbellula huxleyi</i> • <i>Umbellula lindahli</i> • <i>Umbellula</i> spp. VIRGULARIIDAE <ul style="list-style-type: none"> • <i>Virgularia mirabilis</i> 	Anemones

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	Hard bottom anemone aggregations	ZOANTHARIA (Order)	Anemones
Mud and sand emergent fauna		BOURGETCRINIDAE ANTEDONTIDAE HYOCRINIDAE XENOPHYOPHORA <ul style="list-style-type: none"> • <i>Syringamina fragilissima</i> • <i>Reticulammina spp.</i> HYALONEMA (Stalked sponge)	Stalked crinoids Xenophyophores Sponge ³
Bryozoan patches			
Hydrothermal vents/fields		ACTINOSCPHIIDAE ALVINOCARIDIDAE <ul style="list-style-type: none"> • <i>Alvinocaris spp.</i> ANTONBRUNNIDAE BYTHOGRAEIDAE GALATHEIDAE <ul style="list-style-type: none"> • <i>Munidopsis spp.</i> GERYONIDAE LUCINIDAE MYTILIDAE PORTUNIDAE SIBOGLINIDAE SOLEMYIDAE THYASIROIDAE <ul style="list-style-type: none"> • <i>Thyasira spp.</i> VESICOMYIDAE	Chemosynthetic species (seeps and vents)

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Cold Seeps		ACTINOSCPHIIDAE ALVINOCARIDIDAE <ul style="list-style-type: none"> • <i>Alvinocaris spp.</i> ANTONBRUNNIDAE BYTHOGRAEIDAE GALATHEIDAE <ul style="list-style-type: none"> • <i>Munidopsis spp.</i> GERYONIDAE LUCINIDAE MYTILIDAE PORTUNIDAE SIBOGLINIDAE SOLEMYIDAE THYASIROIDAE <ul style="list-style-type: none"> • <i>Thyasira spp.</i> VESICOMYIDAE	Chemosynthetic species (seeps and vents)