Glossary of specific terms

Biological 'traits' are arranged by 'category'. For example, the category 'growth form' includes traits such as 'radial' or 'conical', while the category 'characteristic feeding method', includes traits such as 'predator' and 'surface deposit feeder'. BIOTIC also includes some free text fields that include traits that do not easily lend themselves to standardised terms.

Due to the syntax of database field names, the trait categories are abbreviated in the downloadable CSV files. The abbreviated name for the trait categories (is given in brackets after each category name if different from their respective category name. The abbreviated category names are listed in alphabetical order at the end of this glossary.

General Biology

Fragility

Trait	*Definition*
Fragile	Likely to break, or crack as a result of physical impact; brittle or friable.
Intermediate	Liable to suffer minor damage, chips or cracks as result of physical impacts.
Robust	Unlikely to be damaged as a result of physical impacts, e.g. hard or tough enough to withstand impact, or leathery or wiry enough to resist impact.

Habit

Trait	*Definition*
Attached	Adherent to a substratum.
Bed forming	Forming a dense aggregation that visually dominates the seabed or shore.
Burrow dwelling	Living within a burrow.
Ectoparasitic	Parasitic on the outer surface of its host (adapted from Lincoln *et al.*, 1998).
Encrusting	To cover with a crust or thin coating (OED, 1990).
Erect	Upright.
Free living	Living without attachment or restriction.
Reef building	Forming an elevated structure on the seabed through chemical precipitation or concretion (adapted from Hiscock, 1996).
Tubicolous	Tube dwelling (Barnes *et al.*, 1993).

Method of bioturbation (bioturbator)

Trait	*Definition*
Diffusive mixing	Vertical bioturbation as a diffusive transport process resulting from the activities of e.g. free-living polychaetes, subsurface deposit feeders and carnivores, and burrow excavating species such as crustaceans (Pearson, 2001).
Surface deposition	Deposition of particles at the sediment surface resulting from e.g. defecation or egestion (pseudofaeces) by e.g. filter and surface deposit feeding tubicolous polychaetes and sedentary bivalves (Pearson, 2001).
Conveyer belt transport	Translocation of sediment from depth within the sediment to the surface during subsurface deposit feeding or burrow excavation (Pearson, 2001).
Reverse conveyer belt transport	The subduction of particles from the surface to some depth by feeding or defecation (Pearson, 2001).

Dependency

Trait	*Definition*
Independent	Any organism not relying on another for food (except as prey), environment or livelihood.
Parasite on/in	An organism that lives in or on another living organism (the host), from which it obtains food and other requirements. The host does not benefit from the association and is usually harmed by it.
Mutualist with/on/in	A partner in a symbiosis where both organisms benefit, frequently a relationship of complete dependence. (Lincoln *et al.*, 1982).
Inquilinist with/on/in	A partner in a symbiotic association which lives in close association with another, generally in the tube or burrow or actually within a body chamber of the host (Brusca, 1980).
Commensal with/on/in	A partner in a symbiosis in where one species derives benefit from a common food supply, whilst the other species is not adversely affected (Lincoln *et al.*, 1982).
Host	Any organism that provides food or shelter for another organism, e.g. the definitive host of a parasite (for mature or developmental stages), or a symbiont (commensal, mutualist or inquilinist) (adapted from Lincoln *et al.*, 1998).

Sociability

Trait	*Definition*
Solitary	Living alone, not gregarious (Thompson, 1995).
Gregarious	Living in groups or communities, growing in clusters (Thompson, 1995).
Colonial	Descriptive of organisms produced asexually which remain associated with each other; in many animals, retaining tissue contact with other polyps or zooids as a result of incomplete budding (Barnes *et al*., 1993).

Toxicity (toxic)

Code	*Trait*
1	Toxic / poisonous
0	Non-toxic / poisonous

Environmental position (envpos)

Code	*Trait*	*Definition*
1	Epifaunal	An animal living on the surface of the substratum.
2	Epifloral	A plant living on the surface of the substratum.
3	Infaunal	Benthic animals which live within the seabed.
4	Interstitial	Relating to the system of cavities and channels formed by the spaces between grains in a sediment (interstitial space).
5	Demersal	Living at or near the bottom of a sea or lake, but having the capacity for active swimming (from Lincoln *et al.*, 1998).
14	Pelagic	Inhabiting the open waters of the sea or ocean, excluding the bottom layers.
16	Insufficient information	
17	Not relevant	
18	Not researched	
19	Epibenthic	Living on the surface of the seabed.
20	Epilithic	Growing on the surface of rock or other hard inorganic substrata.
21	Epiphytic	Growing on the surface of a living plant but not parasitic upon it.
22	Epizoic	Growing or living on the exterior of a living animal but not parasitic upon it.
23	Neustonic	Living on or under the surface film of open water.
24	Pleustonic	Living permanently at the water surface due to their own buoyancy, normally positioned partly in the water and partly in the air.
25	See additional information	
26	Lithotomous	Relating to an organism that burrows into rock.
28	Hyperbenthic	Living above but close to the substratum (from Lincoln *et al.*, 1998).

Characteristic feeding method (feedingmethod)

Code	*Trait*		*Definition*
1	Photoautotroph		An organism that obtains metabolic energy from light by a photochemical process such as photosynthesis (e.g. seaweeds, phytoplankton).
2	Suspension feeder: Any organism which feeds on particulate organic matter, including plankton, suspended in the water column (from Lincoln *et al.*, 1998).	Active	Catching food on a filter from water by actively sweeping (e.g. *Porcellana platychelyes*) or pumping (e.g. sea squirts, many bivalve molluscs).
3		Passive	Catching food on a filter held into flowing water (e.g. hydroids, sea fans, sea pens), or collecting the 'rain' of detritus on sticky apparatus other than a filter (e.g. *Cucumaria frondosa*).
4	Deposit feeder: Any organism which feeds on fragmented particulate organic matter from the substratum; detritivores (from Lincoln, *et al.,* 1998).	Surface	Obtaining food from the surface of the substratum (e.g. *Corophium volutator*).
5		Sub-surface	Obtaining food from within the substratum (e.g. *Echinocardium cordatum*).
8	Omnivore		Animal which feeds on a mixed diet including plant and animal material (from Lincoln *et al.*, 1998).
10	Herbivore		An organism which feeds on plants, including phytoplankton.

Characteristic feeding method (feedingmethod) cont.

Code	*Trait*	*Definition*
11	Scavenger	Any organism that actively feeds on dead organic material (e.g. crabs, whelks).
12	Symbiont contribution	Where some dietary component(s) are provided by symbiotic organisms (e.g. *Anemonia* with zooxanthellae).
14	Insufficient information	
16	Not relevant	
17	Field unresearched	
19	Planktotroph	Feeding at least in part on materials captured from the plankton (Barnes *et al.*, 1993).
20	Chemoautotroph	An organism that obtains metabolic energy from oxidation of inorganic substrates such as sulphur, nitrogen or iron (e.g. some microorganisms).
21	See additional information	
22	Predator	An organism that feeds by preying on other organisms, killing them for food (Lincoln *et al.*, 1998).
23	Interface feeder	An organism that feeds at the interface between the water column and underlying substratum.
26	Grazer (grains / particles)	Animals which rasp benthic algae (or sessile animals, such as bryozoan crusts) from inorganic particles e.g. sand grains.
27	Grazer (fronds / blades)	Animals which rasp benthic algae (or sessile animals, such as bryozoan crusts) from the surface of macroalgal fronds and blades.
28	Grazer (surface / substratum)	Animals which rasp benthic algae (or sessile animals, such as bryozoan crusts) from the substratum.
29	Detritivore	An organism that feeds on fragmented particulate organic matter (detritus)(Lincoln *et al*., 1998).

Growth form

Code	*Trait*	*Definition*
1	Boring	Makes an excavation (through physical or chemical action) in which to live.
2	Crustose hard	Forming or resembling a crust (Thompson, 1995) that is solid or resistant to touch or pressure e.g. the encrusting coralline algae or sea mats such as *Umbonula littoralis*.
3	Crustose soft	Forming or resembling a crust (Thompson, 1995) that yields to the touch or pressure e.g. the gelatinous colonies of *Botryllus schlosseri* or soft cushions of sponges such as *Halichondria* sp.
5	Flaccid	Soft, limp, flabby (Brusca, 1980).
6	Massive	Bulky (Homes, 1979).
7	Cushion	A mass or pillow of soft material.
8	Turf	The lowest stratum of erect branching or filiform species.
9	Foliose	Bearing leaves or leaf-like structures; having the appearance of a leaf.

Growth form cont.

Code	*Trait*	*Definition*
10	Shrub	Having a very short stem with branches near the ground (Thompson, 1995).
11	Arborescent / Arbuscular	Having the shape or characteristics of a tree.
12	Forest	A large number or dense mass of vertical objects (Thompson, 1995).
13	Algal gravel	Maerl; twig-like unattached (free-living) calcareous red algae, often a mixture of species and including species which form a spiky cover on loose small stones - 'hedgehog stones'.
16	Accretion	Build up or accumulation of sediment.
17	Mat	A dense mass which blankets the substratum.
18	Faunal beds	Dense aggregation of animals that visually dominate the seabed or shore such as brittlestars (e.g. *Ophiothrix fragilis*) or mussels (e.g. *Mytilus* edulis).
19	Radial	Symmetrical about any plane passed perpendicular to the oral/aboral axis (Barnes *et al.*, 1993).
20	Stellate	Arranged like a star.
21	Whiplike	In the form of a whip.
22	Straplike / Ribbonlike	In the form of a strap or ribbon.
23	Filiform / Filamentous	Slender and thread-like (Kozloff, 1996).
25	Vermiform unsegmented	Wormlike but lacking true segments although annuli may be present, e.g. roundworms (Nematoda) and ribbon worms (Nemertea).
26	Vermiform segmented	Wormlike with the body divided into semi-independent, serially repeated units (Barnes *et al.*, 1993) e.g. Annelida.
27	Vermiform annulated	Wormlike where the external surface is divided into a chain of rings or 'annuli' by furrows giving the appearance of segments (Barnes *et al.*, 1993).
28	Digitate	Having parts arranged like fingers on a hand (Holmes, 1979).
29	Lanceolate	Lance shaped and usually elongate (Brusca, 1980).
30	Penicillate	Brush like (Prescott, 1969).
31	Pinnate	Branching like a feather – an elongate main axis with lateral branches or lobes (Prescott, 1969).
32	Capitate / Clubbed	Enlarged or swollen at the apex, with a 'head', clubbed. (Prescott, 1969).
33	Clathrate	Latticed (Holmes, 1979).
34	Reticulate	In the form of a mesh or net (Prescott, 1969).
35	Funnel shaped	In the shape of a funnel.
36	Dendroid	Branching irregularly – similar to that of a root system (Prescott, 1969).
37	Flabellate	Shaped like a fan, fanlike (Brusca, 1980).
39	Tubicolous	Tube dwelling (Barnes *et al.*, 1993).
40	Medusiform / Medusoid	Disk, bell or umbrella shaped and often gelatinous (Barnes *et al.*, 1993).
41	Cylindrical	With straight sides and a circular section (Thompson, 1995).
42	Globose	Spherical / ovoid / globular (Brusca, 1980).
43	Bullate / Saccate	Balloon or sac-like (Prescott, 1969).
44	Articulate	Jointed, arthrous (Holmes, 1979).

Growth form cont.

Code	*Trait*	*Definition*
45	Bivalved	Characteristically a shell of two calcareous valves joined by a flexible ligament.
46	Turbinate	Whorled (Brusca, 1980).
47	Pisciform	Fishlike.
48	Insufficient information	
50	Not relevant	
51	Not researched	
52	Conical	Cone shaped e.g. limpet -shaped, patelliform, (adapted from Stachowitsch, 1992).
53	See additional information	
54	Tadpole	Having the body form of a tadpole i.e. consisting of a round head with a tail.

Mobility

Code	*Trait*	*Definition*
4	Swimmer	An organism that moves through the water column via movements of its fins, legs or appendages, via undulatory movements of the body or via jet propulsion (e.g. *Gadus*, *Loligo*).
5	Crawler	An organism that moves along on the substratum via movements of its legs, appendages or muscles (e.g. *Carcinus*).
6	Burrower	An organism that lives or moves in a burrow (e.g. *Arenicola*).
7	Drifter	An organism whose movement is dependent on wind or water currents (e.g. *Aurelia*).
8	Temporary attachment	Temporary / sporadic attachment. Attached to a substratum but capable of movement across (or through) it (e.g. *Actinia*).
10	Permanent attachment	Non-motile; permanently attached at the base (Lincoln *et al.*, 1998)(e.g. *Caryophyllia*).
11	Insufficient information	
13	Not relevant	
14	Field unresearched	
15	See additional information	

Is the species a host for another species? (isHost)

Code	*Trait*
1	Yes, it is a host
0	No, it is not a host

Reproduction

Regeneration potential? (regeneration)

Code	*Trait*
1	Yes
0	No

Reproductive frequency (ReprodFreq)

Trait	*Definition*
Semelparous	Breeding only once then dying (Barnes *et al.*, 1993).
< Biannual	Breeds less frequently than every two years.
Biannual episodic	Breeds every second year but in one or more discrete periods initiated by some trigger (for example a lunar cycle).
Biannual protracted	Breeds once every two years over an extended or drawn out period.
Annual episodic	Breeds every year but in one or more discrete periods initiated by some trigger (for example a lunar cycle).
Annual protracted	Breeds every year over an extended or drawn out period.

Developmental mechanism (devmech)

Code	*Trait*	*Definition*
1	Planktotrophic	Feeding at least in part on materials captured from the plankton (Barnes *et al.*, 1993).
2	Lecithotrophic	Development at the expense of internal resources (i.e. yolk) provided by the female (Barnes *et al.*, 1993).
3	Direct development	Development without a larval stage (Barnes *et al.*, 1993).
8	Oviparous	A type of reproduction in animals in which the fertilized eggs are laid or spawned by the mother.
9	Ovoviviparous	A type of reproduction in animals in which the embryo(s) develop in persistent membranes and hatch within the maternal body. No nutrition is derived from the mother.
10	Viviparous (parental care)	A type of reproduction in animals in which the embryo(s) develop within and derive nourishment from the maternal body.
11	Viviparous (no care)	
12	Insufficient information	
14	Not researched	
15	Not relevant	
16	Spores (sexual / asexual)	A plant reproductive cell capable of developing into a new individual, directly or after fusion with another spore. Spores may be produced either by meiosis or mitosis (Lincoln *et al.* 1998).
18	See additional information	
19	Brooding	The incubation of eggs either inside or outside the body. Eggs may be brooded to a variety of developmental stages. Males or females may be responsible for brooding (adapted from Ruppert & Barnes, 1994).

Reproductive type (reprodtype)

Code	*Trait*		*Definition*
7	Budding		A form of asexual multiplication in which a new individual begins life as an outgrowth from the body of the parent. It may then separate to lead an independent existence or remain connected or otherwise associated to form a colonial organism (Barnes *et al.*, 1993).
8	Parthenogenesis		A form of asexual multiplication in which the ovum develops into a new individual without fertilization (Barnes *et al.*, 1993).
9	Fission		A form of asexual multiplication involving division of the body into two or more parts each or all of which can grow into new individuals (Barnes *et al.*, 1993).
10	Permanent hermaphrodite		Capable of producing both ova and spermatozoa either at the same time (Barnes *et al.*, 1993).
11	Protandrous hermaphrodite		A condition of hermaphroditism in plants and animals where male gametes mature and are shed before female gametes mature (Holmes, 1979).
12	Protogynous hermaphrodite		A condition of hermaphroditism in plants and animals where female gametes mature and are shed before male gametes mature (Holmes, 1979).
13	Gonochoristic		Having separate sexes (Barnes *et al.*, 1993).
16	Insufficient information		
18	Not relevant		
19	Not researched		
20	Vegetative		Development by somatic growth. Vegetative reproduction is, therefore, an asexual processes occurring as a result of fragmentation, division or budding from the parent organism.
21	Self-fertilization		Selfing or autogamy. Fertilization of a female gamete by a male gamete produced by the same individual.
22	Alternation of generations		The alternation of generations, in the life cycle of an organism, that exhibit different modes of reproduction; typically sexual (diploid) and asexual (haploid) phases. Also termed metagenesis (Lincoln *et al.,* 1998).
23	Gamete type	Isogamous	Having gametes of similar size, shape and behaviour. (Lincoln *et al.*, 1998).
24		Anisogamous	Having flagellate gametes of different size, shape or behaviour (from Bold, 1977 and Lincoln *et al.*, 1998).
25		Oogamous	Having large, non-motile eggs and small motile sperm. Usually applied to algae (Lincoln *et al.*, 1998).
26	See additional information		

Distribution and Habitat

Migration pattern (migratory)

Trait	*Definition*
Non-migratory / resident	Remaining within the same area (from Lincoln *et al.*, 1998).
Seasonal (feeding)	A seasonal migration for the purpose of following or moving to suitable feeding grounds.
Seasonal (reproduction)	A seasonal migration in order to reproduce.
Seasonal (environment)	A seasonal migration in order to remain within suitable environmental conditions.
Diel	Daily, pertaining to a 24 hour period.
Passive	A migration undertaken through the effects of tide, current or wind.
Active	A migration undertaken by active movement across the substratum or through the water column.

Biological Zone (biozone)

Code	*Preference*	*Definition (Hiscock, 1990 unless otherwise stated)*
1	Supralittoral	The lower terrestrial zone, characteristically dominated by orange and white-to-grey lichens on hard substrata with scattered salt-tolerant higher plants and mosses.
2	Upper littoral fringe	This is colonized by *Verrucaria maura* with *Littorina saxatilis* and *Littorina neritoides* often present. May include saltmarsh species on shale/pebbles in shelter.
3	Lower littoral fringe	The *Pelvetia/Porphyra* belt with patchy *Verrucaria maura* and *Fucus spiralis* (on sheltered shores). *Fucus distichus* and *Fucus spiralis nana* occurs on extremely exposed shores in the NE. *Verrucaria mucosa* present above the main barnacle population. May also include saltmarsh species on shale/pebbles in shelter.
4	Upper eulittoral	Barnacles and limpets present in quantity with *Fucus vesiculosus* and *Ascophyllum* although often this belt has only sparse algal cover compared with the lower eulittoral.
5	Mid eulittoral	Barnacle - limpet dominated, sometimes mussels, with *Fucus vesiculosus* and *Ascophyllum nodosum*. *Mastocarpus stellatus* and *Palmaria palmata* patchy in lower part. Usually quite a wide belt.
6	Lower eulittoral	*Fucus serratus*, *Mastocarpus stellatus*, *Himanthalia elongata* and *Palmaria palmata* present; sparse barnacles. Patchy *Alaria*.
7	Sublittoral fringe	Dominated by *Alaria esculenta*, *Laminaria digitata* or *L. saccharina* with sparse barnacles and encrusting Rhodophycota.
8	Upper infralittoral	Kelp forest.
9	Lower infralittoral.	Sparse or no kelp, dominated by foliose algae except where grazed.
10	Upper circalittoral	Dominated by animals with sparse foliose algae except where grazed.
11	Lower circalittoral	Dominated by animals with no foliose algae but encrusting Rhodophycota patchy in grazed areas.
13	Insufficient information	
15	Not relevant	
16	Field unresearched	
17	Circalittoral offshore	Typically occurs below 50-70 metres away from the influence of wave action. Aphotic with animal communities in stable or stenothermal and stenohaline conditions. Open sea (Connor *et al.*, 1997).
18	Bathyal	Below 200 metres. Animal communities in stable conditions. Open sea with deep water.
19	See additional information	

Physiographic features (physpref)

Code	*Preference*	*Definition (derived from Hiscock, 1996)*
1	Open coast	Any part of the coast not within a marine inlet, strait or lagoon, including offshore rocks and small islands. This includes MNCR types; Linear coast, Islands / Rocks and Semi-enclosed coast.
2	Offshore seabed	Seabed beyond three miles (5 km) from the shore.
3	Strait/Sound	Channels between the mainland and an island or between two islands which are open at both ends to the open coast (it does not refer to similar features or narrows within marine inlets).
5	Sea loch	Glacially formed inlets (fjords, fjards) of western Scotland and Ireland; typically elongate and deepened by glacial action with little freshwater influence. Often with narrows and sills dividing the loch into a series of basins.
6	Ria/Voe	Drowned river valleys of south-west Britain (ria) and Shetland (voe). Often with a greater presence of rock and more marine in character than estuaries.
7	Estuary	Downstream part of a river where it widens to enter the sea; often with significant freshwater influence and predominantly comprising sediment habitats.
8	Isolated Saline Water (Lagoon)	Enclosed bodies of water, separated or partially separated from the sea by shingle, sand or sometimes rock and with a restricted exchange of water with the sea, yielding varying salinity regimes.
9	Enclosed Coast / Embayment	Any other sort of enclosed coast not covered by the definitions above such as harbours or marinas.
15	Insufficient information	
17	Not relevant	
18	Field unresearched	
20	See additional information	

Salinity

Code	*Preference*	*Definition (adapted from Hiscock, 1996)*
1	Full salinity	30-40
2	Variable salinity	18-40
3	Reduced salinity	18-30
4	Low salinity	<18
6	Insufficient information	
8	Not relevant	
9	Field unresearched	
10	See additional information	

Substratum

Code	*Preference*	*Definition*
1	Bedrock	Any stable hard substratum, not separated into boulders or smaller sediment units. Includes soft rock-types such as chalk, peat and clay.
2	Large to very large boulders	>512 mm. Likely to be stable.
3	Small boulders	256 - 512 mm. May be unstable.
4	Cobbles	64-256 mm. May be rounded to flat. Substrata that are predominantly cobbles.
5	Pebbles	16-64 mm. May be rounded to flat. Substrata which are predominantly pebbles.
6	Gravel / shingle	4 -16 mm. Clean stone or shell gravel including dead maerl. >80% gravel.
7	Maerl	Live maerl. *Phymatolithon calcareum* and *Lithothamnion corallioides* in Britain and Ireland.
8	Muddy gravel	50 - 80 % gravel, 20 - 50 % mud.
27	Coarse clean sand	0.5 - 4 mm. > 80 % sand.
28	Fine clean sand	0.063 - 0.5 mm. >80 % sand.
29	Sandy mud	50 - 80 % mud, 20 - 50 % sand
30	Muddy sand	50 - 80 % sand, 20 - 50 % mud.
31	Mud	<0.063 mm (silt / clay fraction). >80% mud.
32	Mixed	Mixtures of a variety of sediment types, composed of pebble / gravel / sand / mud. This category includes muddy gravels, muddy sandy gravels, gravelly muds, and muddy gravelly sands.
35	Algae	Macroalgae surfaces, such as *Laminaria* spp., or fucoids.
37	Other species	The surface of other species, e.g. shells or carapace.
38	Biogenic reef	An elevated structure on the seabed built by calcareous or other concretion-forming organisms, or by chemical precipitation (Hiscock, 1996). For example by *Modiolus modiolus* or *Sabellaria alveolata.*
39	Artificial	E.g. wood, metal or concrete structures.
40	Water column	Pelagic.
41	Strandline	A line on the shore composing debris deposited by a receding tide; commonly used to denote the line of debris at the level of extreme high water (Lincoln *et al.*, 1998).
42	Salt marsh	A flat, poorly drained coastal swamp inundated by most high tides (Lincoln *et al.*, 1998).
43	Seagrass	Habitat associated with seagrass bed communities.
44	Rockpools	A pool of water among rocks left behind by the ebbing tide.
45	Under boulders	Habitat associated with the underside of boulders.
46	Caves	A large hollow in the side of a vertical rock face or cliff.
47	Crevices / fissures	Narrow openings (Thompson, 1995).
48	Overhangs	An overhanging part of a rock formation (Thompson, 1995).
50	Not relevant	
51	Insufficient information	
53	Field not researched	
54	See additional information	
55	Muddy fine sand	
57	Clay	**1)** Sediment particles less than 0.004 mm in size (Wentworth, 1922). **2)** A soft very fine-grained sedimentary rock composed primarily of clay-sized particles.

Substratum cont.

Code	*Preference*	*Definition*
58	No preference	
59	Sandy gravel	50 -80% gravel, 20 -50% sand.
60	Muddy sandy gravel	50 -80% gravel, 20 -50% mud and sand
61	Gravelley sand	50 -80% sand, 20 -80% gravel.
62	Muddy gravelly sand	50 -80% sand, 20 -50% mud and sand
63	Sandy gravelly mud	50 -80% mud, 20 -50% sand and gravel.
64	Gravelly mud	50 -80% mud, 20 -50% gravel.

Water flow rate (waterflow)

Code	*Preference*	*Definition (from McLeod, 1996)*
1	Very strong	> 6 knots (>3 m/sec.)
2	Strong	3 to 6 knots (1.5-3 m/sec.)
3	Moderately strong	1 to 3 knots (0.5-1.5 m/sec.)
4	Weak	< 1 knot (<0.5 m/sec.)
5	Very weak	negligible
7	Insufficient information	
9	Not relevant	
10	Field unresearched	
11	See additional information	

Wave exposure (waveexp)

Code	*Preference*	*Definitions (from Hiscock, 1990)*
1	Extremely exposed	Open coastlines which face into the prevailing wind and receive both wind-driven waves and oceanic swell without any offshore obstructions such as islands or shallows for several thousand kilometres and where deep water is close to the shore (50 m depth contour within about 300 m).
2	Very exposed	1) Open coasts which face into prevailing winds and which receive wind-driven waves and oceanic swell without any offshore obstructions for several hundred kilometres, but where deep water is not close to the shore (50 m depth contour further than about 300 m). 2) Open coasts adjacent to extremely exposed sites but which face away from prevailing winds.
3	Exposed	1) Coasts which face the prevailing wind but which have a degree of shelter because of extensive shallow areas offshore, offshore obstructions, or a restricted (less than 90°) window to open water. These sites are not generally exposed to large waves or regular swell. 2) Open coasts facing away from prevailing winds but with a long fetch, and where strong winds are frequent.
4	Moderately exposed	Generally coasts facing away from prevailing winds and without a long fetch, but where strong winds can be frequent .
5	Sheltered	Coasts with a restricted fetch and/or open water window. Coasts can face prevailing winds but with a short fetch (< 20 km) or extensive shallow area offshore, or may face away from prevailing winds.
6	Very sheltered	Coasts with a fetch less than about 3 km where they face prevailing winds or about 20 km where they face away from prevailing winds, or which have offshore obstructions such as reefs or a narrow (< 30°) open water window.
7	Extremely sheltered	Fully enclosed coasts with a fetch of no more than about 3 km.

Wave exposure (waveexp) cont.

Code	*Preference*	*Definitions (from Hiscock, 1990)*
8	Ultra sheltered	Fully enclosed coasts with a fetch measured in tens or at most a few hundred metres.
10	Insufficient information	
12	Not relevant	
13	Field unresearched	
14	See additional information	

List of abbreviated category names

Abbreviated name	**Category**	**Field format**
bioturbator	Bioturbation method	Single-select
biozone	Biological zone preference	Multi-select
devmech	Developmental mechanism	Multi-select
DispPotAdult	Dispersal potential of adult	Single-select
DispPotLarvae	Dispersal potential of larvae	Single-select
envpos	Environmental position	Multi-select
feedingmethod	Characteristic feeding method	Multi-select
flexibility	Body flexibility	Single-select
isHost	Is the species a host species?	yes/no
LarvalSettlePeriod	Larval settlement period	Text field
LarvalSettlingTime	Time larvae spend in plankton	Single-select
maturity	Age at sexual maturity	Single-select
migratory	Migration pattern	Single-select
migratory	Migration pattern	Single-select
physpref	Physiographic preference	Multi-select
regeneration	Can the animal regenerate body parts?	yes/no
ReprodFreq	Reproductive frequency	Single-select
ReprodLocation	Reproductive location	Single-select
ReprodSeason	Reproductive season	Text field
reprodtype	Method of reproduction	Multi-select
toxic	Is the animal toxic?	yes/no
waterflow	Tidal strength preference	Multi-select
waveexp	Wave exposure preference	Multi-select

References

Barnes, R.S.K., Calow, P. & Olive P.J.W., 1993. *The invertebrates: a new synthesis.* Oxford: Blackwell Science Ltd.

Bold, H.C., 1977. *The Plant Kingdom (4th ed.).* New Jersey: Prentice-Hall Inc.

Brusca, R.C., 1980. *Common intertidal invertebrates of the Gulf of California*. University of Arizona Press.

Connor, D.W., Brazier, D.P., Hill, T.O. & Northen, K.O., 1997. Marine Nature Conservation Review: marine biotope classification for Britain and Ireland. Volume 1. Littoral biotopes. Version 97.06. Joint Nature Conservation Committee, Peterborough, *JNCC Report,* no. 229.

Connor, D.W., Allen, J.H., Golding, N., Howell, K.L., Lieberknecht, L.M., Northen, K.O. & Reker, J.B., 2004. The Marine Habitat Classification for Britain and Ireland. Version 04.05. Joint Nature Conservation Committee, Peterborough. Available from: <www.jncc.gov.uk/MarineHabitatClassification>

Hiscock, K. (ed.), 1996. *Marine Nature Conservation Review: rationale and methods.* Peterborough: Joint Nature Conservation Committee. [Coasts and seas of the United Kingdom. MNCR series.]

Hiscock, K., 1990. Marine Nature Conservation Review: methods. *Joint Nature Conservation Committee, Peterborough,* Nature Conservancy Council, CSD Report, No. 1072. (Marine Nature Conservation Review Report, No. MNCR/OR/5.).

Holmes, S., 1979. *Henderson's dictionary of biological terms*. 9th ed. London: Hendersons.

Kozloff, E.N., 1996. *Marine invertebrates of the Pacific Northwest*. Seattle: University of Washington Press.

Lincoln, R., Boxshall, G. & Clark, P., 1982. *A dictionary of ecology, evolution and systematics.* Cambridge: Cambridge University of Press.

Lincoln, R., Boxshall, G. & Clark, P., 1998. *A dictionary of ecology, evolution and systematics* (2nd ed.). Cambridge: Cambridge University of Press.

McLeod, C.R., 1996. Glossary of marine ecological terms, acronyms and abbreviations used in MNCR work. In *Marine Nature Conservation Review: rationale and methods,* (ed. K. Hiscock), *Appendix 1*, pp. 93-110. Peterborough: Joint Nature Conservation Committee. [Coasts and seas of the United Kingdom, MNCR Series].

OED, 1990. *The Shorter Oxford English Dictionary.* Oxford: Clarendon Press

Pearson, T.H., 2001. Functional Group Ecology In Soft-Sediment Marine Benthos: The Role Of bioturbation. *Oceanography and Marine Biology. Annual Review*, **39**, 233-267.

Prescott, G.W., 1969. *The algae: a review*. Sunbury-upon-Thames: T. Nelson and Sons Ltd.

Ruppert, E.E. & Barnes, R.D., 1994. *Invertebrate zoology* (6th ed.). Fort Worth, USA: Saunders College Publishing.

Stachowitsch, M., 1992. *The invertebrates: an illustrated glossary.* Chichester: John Wiley & Sons Inc.

Thompson, D., (ed.) 1995. *The Concise Oxford Dictionary of Current English.* 9th ed. London: Oxford University Press.

Wentworth, C.K., 1922. A scale of grade and class terms for clastic sediments. *Journal of Geology, 30,* 377-392.