

## Section 14

## Glossary



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Acoustic	Producing or related to sound.
Abyssal plain	Flat or very gently sloping areas of the deep ocean basin floor reaching depths between 2,200 and 5,500 m.
Advection	The horizontal transfer of a property such as heat, caused by air movement.
Algae	Photosynthetic mainly aquatic organisms that differ from plants in not having true leaves, roots, or stems; includes the seaweeds.
Amphipods	Small, shrimp-like crustaceans belonging to the order Amphipoda that includes over 7000 described species. Most amphipods are marine. Marine amphipods may be pelagic (living in the water column) or benthic (living on the ocean bottom).
Annulus	The ring of space between the drill stem and the wall of a bore hole.
Appraisal drilling	Drilling carried out after the discovery of a new hydrocarbon reserves to obtain more information on their physical extent, quantities and likely production rates.
Appraisal well	See appraisal drilling.
Archetypal	The original model or form, after which other things are modeled.
Assemblage	A group of organisms living together.
Atlantic Frontier/ Margin	The region to the west of Orkney, Shetland and the Western Isles where the shallow waters of the UK Continental Shelf meet the deeper waters of the Atlantic Ocean.
Baleen whale	Whales of the Suborder Mysticeti. They have plates of whalebone (a baleen) along the upper jaw for filtering plankton from the water.
Ballast	The weight used by ships and offshore drilling rigs near the bottom of their hulls to make them seaworthy and keep them upright. The ballast can be steel, but is often seawater on an offshore rig.
Baseline study	A study carried out to establish the environmental conditions which prevail at a given site before any human activity is introduced. This provides a 'baseline' against which any future changes in conditions can be compared.
Bathyal zone	The bathyal zone begins at the continental slope and reaches a depth of 2,000 metres in oceans.
Bathymetry	The measurement of depths of water in oceans, seas and lakes. Also the information derived from such measurements.
Beaked whales	Medium sized whales of the family Ziphiidae possessing a distinct beak extending from the skull in most species.
Bedload transport	The movement of sediments along the seabed by water currents.
Benthic	Of or relating to the seabed.
Benthic community	The assemblage of organisms living in or on the seafloor.
Benthic storms	Periods of severe sea bed currents, capable of remobilising and dispersing sediments.
Benzene ring	The hydrocarbon benzene forms a closed ring of 6 carbon atoms and can form parts of larger hydrocarbon compounds.



Bioaccumulate	Bioaccumulation is the concentration of a particular substance in a living organism, possibly with harmful effects.
Biocide	A chemical or agent which kills bacteria.
Biodetritic	Detritus of biological origin
Biodiversity	The number and variety of different organisms in a given environment. This includes genetic diversity, species diversity, and ecological diversity.
Biogenic oxidation (of methane)	Oxidation by chemosynthetic bacteria; provides a food source for other organisms.
Biogenic reef	A mass consisting of the hard parts of organisms, or of a biogenically constructed frame enclosing detrital particles, in a body of water; most biogenic reefs are made of corals or associated organisms.
Biogeochemical	Related to the geochemistry of a region and the animal and plant life in that region.
Biomass	The mass of living organisms within a given environment, measured in terms of weight per unit of area.
Biota	The animals, plants, and microbes that live in a particular region.
Biotope	An entity that includes the habitat and the community of organisms living on or within it.
Bioturbation	The disturbance and mixing of sediments by burrowing animals.
Bivalve	A marine or freshwater organism (often a mollusc, but can be from other phyla also) that has its body contained within two shells joined by a hinge.
Blowout	A blowout occurs when gas, oil or saltwater escapes in an uncontrolled manner from a well.
Blow-out preventer stack	Or BOP. A hydraulically operated wellhead device that can be actuated to close a well in order to prevent an uncontrolled release of fluids (a blow-out).
Borehole	The hole drilled by the bit.
Box core	A box shaped sampling device sometimes set in a frame, and used to penetrate and gather sediment samples in offshore environmental surveys.
Bunkering	Re-fuelling a ship or drilling rig.
Bycatch	The harvest of fish or shellfish other than the species for which the fishing gear was set.
cSAC	Candidate Special Area of Conservation (see SAC below). A site that has been proposed as an SAC, and which is awaiting approval from the EU Commission. cSACs retain the same legal protection afforded to fully approved SACs.
Caisson	A water-tight chamber.
Carbonate mounds	Large (up to several hundred metres) sea bed structures comprised of accumulated calcium carbonate CaCO <sub>3</sub> . Can be buried, half emergent or emergent above the sea bed. Carbonate mounds in the northwest Atlantic are partly formed by the complex skeletal remains of cold water corals.
Carcinogen	Any cancer-causing substance or agent.
Casing	Steel lining inserted into a well as drilling progresses to prevent the wall of the hole from caving in. It also prevents the inflow of unwanted fluids from surrounding formations and provides a means of extracting oil (and gas) if a well is productive.

Cephalopods	Any member of the mollusc class Cephalopoda which includes the octopus, squid, and cuttlefish.
Cetacean	A member of the order Cetacea, which are aquatic mammals comprising porpoises, dolphins, and whales.
Chaetognaths	Any of various marine worms of the phylum Chaetognatha, which includes the arrow worms.
Check shot survey	A type of borehole seismic survey designed to measure the seismic travel time from the surface to a known depth
Chlorofluorocarbon	Any of various halocarbon compounds consisting of carbon, hydrogen, chlorine, and fluorine, once used widely as aerosol propellants and refrigerants. Chlorofluorocarbons are believed to cause depletion of the atmospheric ozone layer
Closed chamber well test	A type of drillstem testing conducted with the drillstring in the hole and the surface valve closed to create a closed chamber of known volume into which the reservoir fluid can flow.
Concretions	A solid mass formed by accumulations of encrusting epifauna or seaweeds.
Conductor pipe	First string of casing to be inserted and cemented into the borehole. Its purpose is to prevent the soft formations near the surface from caving in.
Continental shelf	A relatively flat platform covered with shallow water that surrounds the continents. Extends from the beach to the shelf break (sharp change of slope) at a water depth of 200 m.
Continental slope	The ocean bottom slope of 3° to 6° leading from the continental shelf down to the continental rise (peak of accumulated sediment at end of slope).
Contourite	Sandy or muddy deposits from bottom currents that flow in deep waters approximately parallel to bathymetric contours, ie along the slope
Copepods	Small free-living or parasitic crustaceans of the subclass Copepoda, living in marine and fresh waters. The free-living forms are an important constituent of plankton.
Crude oil	A general term for unrefined petroleum or liquid petroleum.
Crustaceans	Any invertebrate of the phylum Crustacea. Mostly aquatic animals, including crabs, lobsters, and shrimps, having hard shells, jointed bodies, and antennae.
Cuttings re-injection	A method for the disposal of drill cuttings where they are mixed with water to form a slurry and pumped at high pressure down a separate injection well.
Deadweight	The displacement at any loaded condition minus the lightship weight. It includes the crew, passengers, cargo, fuel, water, and stores.
Demersal	Living in the water column at or near seabed. Usually in relation to fish.
Dendritic	Resembling a dendrite, with ramifications.
Diatoms	Unicellular planktonic algae with silica shells.
Dinoflagellates	Unicellular planktonic organisms of the Order Dinoflagellata, having two flagella and often bearing a tough cellulose shell (theca).
Discharge	To release a substance into the environment or a substance emitted to the environment.
Doliolids	A small family of ocean tunicates
Dredge spoil	The sediment dredged (removed) from the bottom of a body of water.



Drill cuttings	Rock chips produced by chipping and crushing action of the drill bit.
Drilling mud	Drilling muds are fluids circulated down a well during drilling. They are usually water or oil based and contain clay (bentonite or barium sulphate). The main functions of drilling mud/fluid are to lubricate the drill bit, remove cuttings, and to maintain down-hole pressure.
Dropstone	Larger sediments eg cobbles or boulders that have been transported to and deposited in a particular area by glacial action.
Dynamic position system	A system of computer controlled propulsion units called thrusters that allow the stationing of a vessel without the use of anchors.
Ecological niche	The place or function of a given organism within its ecosystem.
Echinoderms	A large group of marine animals characterised by five-fold symmetry and a skeleton of calcite plates. Includes starfish and sea urchins.
Echolocation	The use of sound, like radar, by ships or animals to locate objects in the surrounding environment.
Eddies	Currents, as of water or air, moving contrary to the direction of the main current, especially in a circular motion.
Elasmobranch	Any of numerous fishes of the class Chondrichthyes characterized by a cartilaginous, non-bony skeleton, including sharks, skates and rays.
Emulsion	An intimate mixture of either oil in water or water in oil.
Endemic	A species that is unique to a place or region, found naturally nowhere else.
Endocrine disruptor	Substances which interfere with the endocrine system by mimicking, blocking or otherwise disrupting the function of hormones.
Endofauna	Same as infauna.
Environmental Authorities	Organisations which, under Irish law, must be consulted over a proposed development. Under legislation relating to the SEA Directive, these are the EPA, DoEHLG and DCENR.
Environmental management system	Or EMS. A management approach which enables an organisation to identify, monitor and control its environmental aspects; usually conforming to International Standard of Organisation 14001.
Epifauna	Animals living on the seafloor or attached to other objects/animals.
Euphausiids	Shrimp-like planktonic marine invertebrates also known as krill.
Eutrophication	Over-enrichment of a water body with nutrients, resulting in excessive growth of organisms and depletion of oxygen concentration.
Exploration drilling	See exploration well. In Ireland, this is subject to an exploration license.
Exploration licence	A Standard Exploration Licence is issued for water depths down to 200 m; a Deepwater Exploration Licence for water depths exceeding 200 m and a Frontier Exploration Licence for areas so specified by the Minister. For Standard and Deepwater Explorations Licences the holder is obliged to carry out a work programme which must include the drilling of a least one exploration well in the first phase. For a Frontier Exploration Licence the holder must commit to at least one exploration well in order to proceed to the second phase. The area of an Exploration Licence shall be expressed in terms of blocks and/or part blocks of the Williams Grid.
Exploration well	A well drilled in an unproven area. Also known as a 'wildcat well'.
Fathometer	A sonar instrument used to measure depths underwater.

Fecundity	The ability to produce offspring, especially in large numbers.
Flare	The burning of produced gas (or sometimes oil) on a flare stack.
Fluid phase	continuous The fluid (liquid) phase of a drilling mud which facilitates lubrication of the drill bit, transport of cuttings and maintenance of hydrostatic pressure.
Footprint	Used in the sense of an area affected by an activity, eg the area of sea bed affected by seismic survey, or by drilling discharges.
Foraminifera	Unicellular largely marine animals, the shells of which are composed predominantly of CaCO <sub>3</sub> .
Foraminiferal ooze	Calcareous sediment composed of the shells of dead Foraminifera.
Formation pressure	The pressure on fluids in a subsurface formation.
Gadoids	Fish belonging to the fish family Gadidae, which includes the cods and the hakes.
Gas condensate	Liquid hydrocarbons of very light crude oil composition that occur as a gas under high temperature and pressure in subsurface reservoirs.
Gas hydrates	Crystalline solids consisting of ice with gas molecules (eg methane) trapped in a cage like structure. Generally known as clathrates.
Gastropods	Any of various mollusks of the class Gastropoda, such as the snail, slug, cowrie, or limpet, characteristically having a single, usually coiled shell or no shell at all, a ventral muscular foot for locomotion, and eyes and feelers located on a distinct head.
Geomorphology	The study of landforms.
Geophysical	Relating to the application of physics and its methods to geological problems such as the search for petroleum.
Gorgonians	Any of various corals of the order Gorgonacea, having a flexible, often branching skeleton of horny material.
Groundfish survey	A survey of bottom dwelling (demersal) fish such as flounder.
Groundtruthing	Survey work designed to confirm the findings of wide-scale remote sensing work. For example, the use of sea bed sampling to confirm information on seabed type derived from sonar surveys.
Gyre	A circular or spiral motion, especially a circular ocean current.
Halocline	A well-defined vertical gradient of salinity in the oceans and seas.
Halons	Compounds in which the hydrogen atoms of a hydrocarbon have been replaced by bromine and other halogen atoms; very stable; used in fire extinguishers although they are thought to release bromine that depletes the ozone layer
Holoplankton	Plankton that remains free-swimming through all stages of its life cycle.
Homogenous	Similar or uniform structure or composition throughout.
Hydrocarbon	A compound containing only the elements hydrogen and carbon. May exist as a solid, liquid or gas. The term is mainly used in a catch-all sense for oil, gas and condensate.
Hydrocarbon drop-out	Incomplete combustion of hydrocarbons during flaring resulting in the introduction of hydrocarbons to the marine environment.
Hydrography	The process of charting or mapping water features and characteristics, based on specific measurements at a point or over a distance or area.



Hydrophobic	Lacking an affinity for, repelling water. Contrast with hydrophilic.
Hydrophone	Microphones used at sea to detect sound energy.
Hydrostatic pressure	The pressure exerted by overlying water.
Iceberg ploughmarks	Ridges of boulders and cobbles formed by the ploughing movement of icebergs through the seabed at the end of the last ice age.
Immiscible	Liquids which are insoluble in one another, eg oil and water.
Infauna	Animals that live within the seabed sediments (see macrofauna and meiofauna).
Injection well	A well used to pump fluid into a subsurface formation in order to dispose of fluid or to maintain/increase subsurface reservoir pressure.
Interfaces	The boundaries between two immiscible fluids such as oil and water.
Interstitial	Pertaining to material in the pores of rock or in the spaces between sediment particles.
Intertidal	Area of the foreshore and seabed that is exposed to the air at low tide and submerged at high tide.
Invertebrate	An animal without a backbone.
Isobath	A line on a map or chart that connects all points having the same depth below the surface of a body of water
Jack-up rig	Essentially a barge with legs that can be lowered to the sea bed.
Krill	Tiny, free-swimming, shrimp-like crustaceans (euphausiids) which occur in huge numbers in the open sea and are a major part of the diet of many baleen whales.
Littoral zone	The area between high and low tide.
Macrofauna	Referring to Defined as those animals retained on a 0.5 mm mesh when a sample is sieved.
Maerl	Maerl is a collective term for several species of calcified red seaweed. It can form extensive accumulations on the sea bed that provides a habitat for a wide diversity of other marine organisms.
Mariculture	Fish farming or aquaculture of marine animals or plants.
Marine riser	A 16 to 20" diameter tube made of several joints that connects the cellar deck of a drillship or rig to the blowout-preventer stack of a subsea well.
Megafauna	Larger seabed animals, normally defined as those which are large enough to be seen on seabed photographs and which can be collected in trawls and dredges.
Meiofauna	Interstitial animals (ie living between sediment grains) that mostly pass through a 0.5 mm mesh.
Meroplankton	Temporary zooplankton, such as the larval stages of some organisms (fishes and crabs, for example).
Methane hydrate	A form of water ice that contains a large amount of methane within its crystal structure. Originally thought to occur only in the outer regions of the solar system where temperatures are low and water ice is common, extremely large deposits of methane hydrates have been found under sediments on the ocean floors of Earth.
Microflagellates	A general term for microscopic planktonic organisms bearing flagella.

Molluscs	Invertebrates of the phylum Mollusca with a soft unsegmented body usually protected by a shell. Many diverse forms including snails, clams and squid.
Morphology	The form and structure of an organism or the study of the form of things.
MPA	Marine Protected Areas (MPAs) are designated under the Oslo Paris Convention to help protect endangered species and habitats.
Natura 2000 sites	Natura 2000 is a European network of protected sites which represent areas of the highest value for natural habitats and rare species (see SAC and SPA).
Natural Heritage Area	Natural Heritage Areas (NHAs) are conservation areas designated for wildlife under the Irish Wildlife Amendment Act (2000).
Nepheloid layer	Particle-rich layer above the ocean floor.
Nephrops	The Norway lobster, <i>Nephrops norvegicus</i> (also called Dublin Bay Prawn or Langoustine); a slim orange-pink lobster.
Odontocetes	Toothed whales belonging to the suborder Odontoceti
Oil-base fluid	Low aromatic and paraffinic oils and those mineral oil-base fluids that are neither synthetic fluids nor fluids of a class whose use is otherwise prohibited.
Organic-phase drilling fluid	A drilling fluid which is an emulsion of water and other additives, in which the continuous phase is a water-immiscible organic fluid of animal, vegetable or mineral origin.
Organometal	One of the forms in which a metal can occur in the sea; contains carbon to metal bonds and therefore has an organic nature.
Parturition	The process of giving birth
Passive acoustic surveys	Or passive acoustic monitoring. The use of hydrophones to detect noise and/or monitor for the presence of marine mammals.
Pelagic	Inhabiting the water column of the sea. Epipelagic: the upper part of the oceanic zone from the surface to about 200 m depth. Mesopelagic: ranging from 200-1,000 m depth. Bathypelagic: at depths of 1,000-4,000 m.
Petrochemical	Pertaining to chemical derivatives of natural gas or petroleum.
Petrogenic	Derived from petroleum.
Photic zone	The layer of the ocean that is penetrated by sunlight; extends to a depth of about 200 metres.
Phytoplankton	Free floating microscopic plants.
Phytoplankton blooms	A phytoplankton bloom is a relatively rapid increase in the population of phytoplankton in an aquatic system.
Pinnipeds	Of, relating to or belonging to the Pinnipedia, an order of aquatic mammals including seals, sea lions, and walrus.
Piscivorous	Feeding on fishes.
Pockmarks	Pockmarks are small depressions in the sea bed associated with areas of soft mud; formed by fluid/gas escape at the sea bed.
Polychaetes	Marine worms with a segmented body and bristled fleshy appendages of the class Polychaeta.
Polychlorinated biphenyls	A group of biologically persistent organic compounds containing chlorine. Also known as PCBs.



Polycyclic aromatic hydrocarbons	Class of large aromatic molecules composed of several benzene rings fused together. Also known as PAHs.
Primary producer	An organism capable of using energy derived from light or a chemical substance to produce organic material.
Propeller cavitation	The formation of partial vacuums in the water surrounding a propeller; generated by its own motion.
Ramsar sites	Ramsar sites are wetlands of international importance particularly for bird species designated under the Ramsar Convention.
Recruitment	Survival of juveniles until they become members of the spawning population.
Remotely operated vehicle	Or ROV. An unmanned submersible vehicle controlled from surface.
Reservoir	A single continuous accumulation of gas and/or oil in the pores of a reservoir rock.
SAC	Special Areas of Conservation (SACs) are protected sites designated under the EC Habitats Directive in order to conserve important habitats and species (excluding birds). Part of Natura 2000 (see above).
Sea mount	Sea mounts are undersea mountains.
Sedimentology	The science of the production, composition, transport, and deposition of sediment.
Seismic air gun	A loud sound source used in seismic surveys which produces a pulse of sound energy.
Seismic array	A geometrical arrangement of seismic sound sources and receivers on streamers towed behind a seismic survey vessel.
Seismic survey	A technique for determining the structure of underground rock formations by sending energy waves or sound waves into the earth and recording the wave reflections. Three-dimensional seismic surveys provide enhanced data for determining well locations.
Sessile	Permanently attached or fixed; not free-moving. Often applied to plants or animals living on the sea bed.
Shelf break	The sharp change in sea bed incline between the continental shelf and the continental slope.
Sidescan survey	A means of obtaining images the seafloor over a wide area, using bursts of high-frequency sound.
SPA	Special Protected Areas (SPAs) are sites designated by the UK Government to protect certain rare, vulnerable, and regularly occurring migratory species of birds. Part of Natura 2000 (see above).
Spawning	The production and release of gametes (eggs or sperm) by animals.
Spherical spreading	Spherical propagation of sound waves
Spud mud	Drilling mud used to drill the initial section (or top hole) of a well; often consisting of sea water and bentonite clay.
Steering Group	A panel of experts representing interested key organisations or stakeholder groups, overseeing the progression of the SEA.
Strata	Layers of sediment or layers of sedimentary rock. The plural of 'stratum'.
Stratification	The accumulation of material in layers or beds.

Stratigraphy	The study of the history, composition, relative ages and distribution of strata.
Streamer	A flexible clear plastic tube containing groups of hydrophones used for marine seismic surveys (see also 'seismic array').
Sublethal	Not sufficient to cause death.
Sublittoral	Below the level of low tide.
Substrata	The sediments or rocks upon which benthic organisms live (singular substratum).
Surface sediment	The top few centimetres of seabed sediment.
Sustainable development	A socio-economic concept, the central tenet of which is: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."
Swimbladder	A gas or oil-filled structure in bony fish that is used to regulate buoyancy.
Synergistic impact	When the interaction of two or more factors has a greater total impact than the sum of their individual effects.
Tectonic activity	Shifting of the Earth's crust as a result of movements within the body of the planet. Gives rise to earthquakes, volcanoes and other seismic phenomena.
Telemetry	The transmission of data collected at a remote location over communications channels to a central station.
Thaliaceans	Any of a small order of tunicates consisting of various aberrant, free-swimming pelagic forms, including those of the genera Salpa and Doliolum.
Thermocline	Or temperature discontinuity. A zone in the water column where temperature changes rapidly with depth forming a boundary between warm water above and cold water below.
Thermogenic	Relating to heat, or to the production of heat
Thruster	An auxiliary propulsion unit used on a drillship or semisubmersible to maintain position.
Top hole	The initial hole or well section drilled in the sea bed into which the conductor pipe is cemented.
Topography	The graphic representation of a surface on a map by the use of contour lines.
Trace element	A chemical found in very small amounts in a given substance. Organisms need certain trace elements to survive.
Tributyltin	A very toxic organic compound containing tin. It was formerly used in antifouling paints on vessels and fixed marine structures.
Turbid	Clouded or opaque with suspended sediment.
Turbidity currents	A quick-moving mixture of water and sediments that travels downslope, scouring the substratum and depositing sediments as it goes.
Upwelling	A process in which cold, often nutrient-rich waters from the ocean depths rise to the surface.
Vagile	Having freedom to move about
Volatile	A substance that will evaporate at a relatively low temperature.
Water column	The open water of the ocean between the surface and the floor.
Water-base fluid/mud	See drilling mud. Drilling mud with water as opposed to oil as the fluid continuous phase.



Weathering	The natural chemical or physical alteration of an object or deposit through time.
Weighting agent (barium sulphate)	A clay additive, also known as bentonite, used to control the density of a drilling mud/fluid.
Wellbore	The hole drilled by the bit.
Wellhead	The portion of an oil well that is above ground or above the sea bed.
Well/poorly sorted	Refers to the extent to which sediments contain particles all of a similar size.
Wetlands	A lowland area, such as a marsh or swamp, saturated with water.
Zonation	Distribution of plants or animals arranged along an environmental gradient such as water depth.
Zooplankton	Free floating mostly microscopic animals.