

Development of Education Materials for GEBCO Outreach Service

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Contents

1. What is GEBCO ?

2. Type of Undersea Features

3. Marine Mineral Resources



I. Emphasis points

- To improve awareness of GEBCO and Marine Environment through the Web. Visualization
- Intended for the Secondary School levels: Students and Teachers, Also for the SCUFN UFN proposer to understand generic terms of undersea feature names.
- Focus on Audio-visual approach



I. Introduction to GEBCO

1. What is GEBCO ?

2. How do we measure depth in the ocean?

3. How are maps of the ocean floor made?



● Introduction to [_ GEBCO.\GE_API\GEBCO\ch1.kmz](#)

● http://home.ewha.ac.kr/~hhsung/GE_API/GEBCO/GEBCO.html



II. Type of Undersea features : Generic Terms

GEBCO - SCUFN

**(General Bathymetric Chart of the Oceans
- Sub-Committee on Undersea Feature Names)**



Terms		Definition
1	ABYSSAL HILLS	A track of small elevations on the deep seafloor.
2	ABYSSAL PLAIN	An extensive, flat, gently sloping or nearly level region at abyssal depths.
3	APRON	A gently dipping surface, underlain primarily by sediment, at the base of any steeper SLOPE.
4	ARCHIPELAGIC APRON	A gently SLOPE with a generally smooth surface of the sea floor, characteristically found around groups of islands or SEAMOUNTS.
5	BANK	An elevation of the sea floor, over which the depth of water is relatively shallow, but sufficient for safe surface navigation.
6	BASIN	A depression, in the sea floor, more or less equidimensional in plan and of variable extent.
7	BORDERLAND	A region adjacent to a continent, normally occupied by or bordering a SHELF and sometimes emerging as islands, that is irregular or blocky in plan or profile, with depths well in excess of those typical of a SHELF.
8	CALDERA	A collapsed or partially-collapsed SEAMOUNT, commonly of annular shape.
9	CANYON	A relatively narrow, deep depression with steep sides, the bottom of which generally deepens continuously, developed characteristically on some continental SLOPE.

Terms		Definition
10	CONE	see FAN
11	CONTINENTAL MARGIN	The zone, generally consisting of SHELF, SLOPE and CONTINENTAL RISE, separating the continent from the deep sea floor or Abyssal Plain. Occasionally a TRENCH may be present in place of a CONTINENTAL RISE.
12	CONTINENTAL RISE	A gentle slope rising from the oceanic depths towards the foot of a continental SLOPE.
13	CONTINENTAL SHELF	see SHELF.
14	CONTINENTAL SLOPE	see SLOPE
15	ESCARPMENT	An elongated, characteristically linear, steep slope separating horizontal or gently sloping sectors of the sea floor in non-SHELF areas. Also abbreviated to SCARP.
16	FAN	A relatively smooth, fan-like, depositional feature normally sloping away from the outer termination of a CANYON or canyon system. Also called CONE.
17	Fracture Zone	An extensive linear zone of irregular topography, mountainous or faulted, characterized by steep-sided or asymmetrical RIDGES, clefts, TROUGHS or ESCARPMENTS.
18	GAP	see PASSAGE

Terms		Definition
19	GUYOT	A SEAMOUNT having a comparatively smooth flat top. Also called TABLEMOUNT. See also SEAMOUNT.
20	HILL(S)	An isolated (or group of) elevation(s), smaller than a SEAMOUNT. See also ABYSSAL HILLS and KNOLL.
21	HOLE	A small local depression, often steep sided, in the sea floor.
22	KNOLL	An elevation somewhat smaller than a SEAMOUNT and of rounded profile, characteristically isolated or as a cluster on the sea floor. See also HILL(S).
23	LEVEE	A depositional natural embankment bordering a CANYON, VALLEY or SEACHANNEL on the ocean floor.
24	MEDIAN VALLEY	The axial depression of the MID-OCEANIC RIDGE system.
25	MOAT	An annular depression that may not be continuous, located at the base of many SEAMOUNTS, oceanic islands and other isolated elevations.
26	OCEANIC TROUGH	See TROUGH
27	OCEANIC RIDGE	See RIDGE

Terms		Definition
28	OCEANIC RISE	See RISE
29	PASSAGE	A narrow break in a RIDGE or a RISE. Also called GAP.
30	PEAK	A prominent elevation either pointed or of a very limited extent across the summit.
31	PINNACLE	Any high tower or spire-shaped pillar of rock, or coral, alone or cresting a summit.
32	PLATEAU	A flat or nearly flat elevation of considerable areal extent, dropping off abruptly on one or more sides.
33	PROMONTORY	A major SPUR-like protrusion of the continental SLOPE extending to the deep seafloor. Characteristically, the crest deepens seaward.
34	REEF	A mass of rock or other indurated material lying at or near the sea surface that may constitute a hazard to surface navigation.
35	RIDGE	(a) An elongated narrow elevation of varying complexity having steep sides.
		(b) An elongated narrow elevation, often separating ocean BASINS.
		(c) The linked major mid-oceanic mountain systems of global extent. Also called MID-OCEANIC RIDGE.
36	RISE	(a) A broad elevation that rises gently and generally smoothly from the sea floor.
		(b) The linked major mid-oceanic mountain systems of global extent. Also called MID-OCEANIC RIDGE.
37	SADDLE	A broad pass or col, resembling in shape a riding saddle, in a RIDGE or between contiguous elevations.

Terms		Definition
38	SCARP	see ESCARPMENT
39	SEACHANNEL	A continuously sloping elongated discrete depression found in FANS or ABYSSAL PLAINS and customarily bordered by LEVEES on one or both sides.
40	SEAMOUNT(S)	A discrete (or group of) large isolated elevation(s), greater than 1,000m in relief above the sea floor, characteristically of conical form. See also GUYOT.
41	SEAMOUNT CHAIN	A linear or arcuate alignment of discrete SEAMOUNTS, with their bases clearly separated. See also SEAMOUNT(S).
42	SHELF	A zone adjacent to a continent (or around an island) and extending from the low water line to a depth at which there is usually a marked increase of slope towards oceanic depths.
43	SHELF BREAK	see SHELF-EDGE
44	SHELF-EDGE	The line along which there is marked increase of slope at the seaward margin of a CONTINENTAL (or island) SHELF. Also called SHELF BREAK.
45	SHOAL	An offshore hazard to surface navigation with substantially less clearance than the surrounding area and composed of unconsolidated material.
46	SILL	A sea floor barrier of relatively shallow depth restricting water movement between BASINS.
47	SLOPE	The deepening sea floor out from the SHELF-EDGE to the upper limit of the CONTINENTAL RISE, or the point where there is a general decrease in steepness.

Terms		Definition
47	SLOPE	The deepening sea floor out from the SHELF-EDGE to the upper limit of the CONTINENTAL RISE, or the point where there is a general decrease in steepness.
48	SPUR	A subordinate elevation or RIDGE protruding from a larger feature, such as a PLATEAU or island foundation.
49	SUBMARINE VALLEY	see VALLEY
50	SUBMARINE TERRACE	A relatively flat horizontal or gently inclined surface, sometimes long and narrow, which is bounded by a steeper ascending slope on one side and by a steeper descending slope on the opposite side.
51	SUBMARINE CANYON	See CANYON
52	TABLEMOUNT	see GUYOT
53	TRENCH	A long narrow, characteristically very deep and asymmetrical depression of the sea floor, with relatively steep sides.
54	TROUGH	A long depression of the sea floor characteristically flat bottomed and steep sided and normally shallower than a TRENCH.
55	VALLEY	A relatively shallow, wide depression, the bottom of which usually has a continuous gradient. This term is generally not used for features that have CANYON-like characteristics for a significant portion of their extent. Also called SUBMARINE VALLEY or SEA VALLEY.

- Type of Undersea Features [GE_API\GEBCO\ch2.kmz](#)
- http://home.ewha.ac.kr/~hhsung/GE_API/GEBCO/GEBCO.html



III. Marine Mineral Resources

- A manganese nodule
- The sea aggregate
- Oil and natural gas
- Gas hydrate



- Marine Mineral Resource [GE_API\GEBCO\ch3.kmz](#)
- http://home.ewha.ac.kr/~hhsung/GE_API/GEBCO/GEBCO.html



IV. Review and Feedback

- **Comment on Contents and visualization**
- **Supplementary and Additional Images**
- **Develop App. for Smartphone**



Thank you!!!

