



Special Aspects of Underwater Topography Naming

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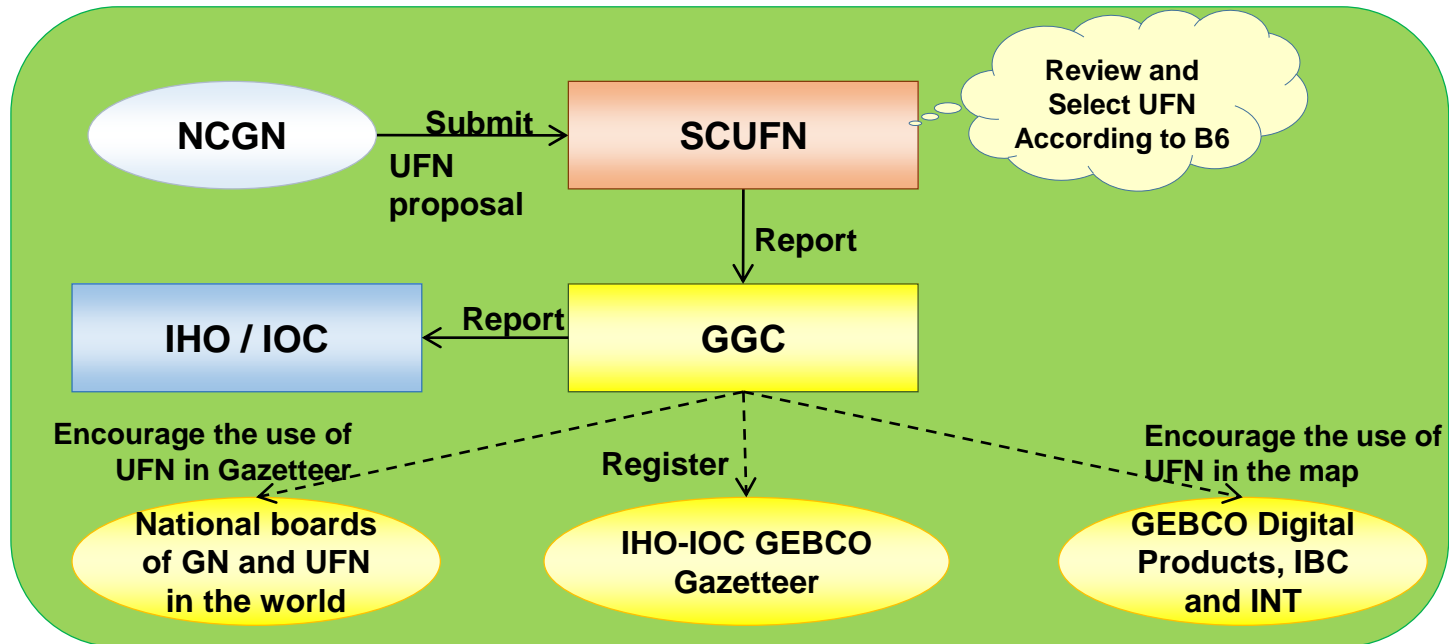
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01. Standardization of Undersea Feature Names and the Procedure for Naming Features

1.1 Standardization of Undersea Feature Names and the Role of International Organizations

The Role of SCUFN in Standardization of Undersea Feature Names



- ◆ NCGN: National Committee on Geographic Names
- ◆ SCUFN: Sub-Committee on Undersea Feature Names
- ◆ B6: IHO-IOC publication; Standardization of Undersea Feature Names
- ◆ GGC: GEBCO Guiding Committee
- ◆ UFN: Undersea Feature Names
- ◆ GN: Geographic Names
- ◆ GEBCO: General Bathymetric Chart of the Oceans
- ◆ IHO: International Hydrographic Organization
- ◆ IOC: Intergovernmental Oceanographic Commission (UNESCO)
- ◆ IBC: International Bathymetric Chart series
- ◆ INT: International Chart series



1.2 Procedures for Naming Undersea Features

GEBCO - SCUFN

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

1. Individuals and agencies applying names to unnamed features located outside the external limit of the territorial sea should adhere to internationally accepted principles and procedures, as detailed in the B6 (STANDARDIZATION OF UNDERSEA FEATURE NAMES, 2013, IHO)
2. It is recommended that new proposals should be submitted on an "Undersea Feature Name Proposal".
3. Prior to the naming of a feature, its character, extent, and position shall have been established sufficiently for identification. Positions should be given as geographic coordinates.



1.2 Procedures for Naming Undersea Features

GEBCO - SCUFN

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4. Where no appropriate national authority exists, permit should be sought through either IHO or the IOC Secretariat, as indicated on the "[Proposal Form](#)".
5. If a national authority decides to change either the specific or generic term of a feature it named originally, information explaining the reason for the change should be circulated to other authorities. If there is opposition to a name change, the involved authorities should communicate with each other to agree on a solution.
6. National authorities approving names of features should regularly publicize their decisions.
7. National authorities naming features within their territorial sea should conform to the principles and procedures stated in B6 (STANDARDIZATION OF UNDERSEA FEATURE NAMES, 2013, IHO)



02. Standardization of Specific Terms

2.1 Specific Terms

GEBCO - SCUFN

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

- 1. Short and simple terms (or names) are preferable.**
- 2. The principal concern in naming is to provide effective, conveniently usable, and appropriate reference.**
- 3. The first choice of a specific term, where feasible, should be one associated with a geographical feature; e.g.: Aleutian Ridge, Aleutian Trench, Peru-Chile Trench, Barrow Canyon; commemoration of persons or ships is a secondary consideration.**



2.1 Specific Terms

GEBCO - SCUFN

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

- 4. Other choices for specific terms can commemorate ships or other vehicles, expeditions or scientific institutes involved in the discovering and/or delineation of the feature, or to honor the memory of famous persons. Where a ship name is used, it should be that of the discovering ship, or if that has been previously used for a similar feature, it should be the name of the ship verifying the feature, e.g.: San Pablo Seamount, Atlantis II Seamounts.**
- 5. Names of living persons will normally not be accepted, in accordance with the recommendation in UNCDSG Resolution VIII/2. In the rare cases where names of living persons are used (surnames are preferable), they will be limited to those who have made an outstanding or fundamental contribution to ocean sciences.**

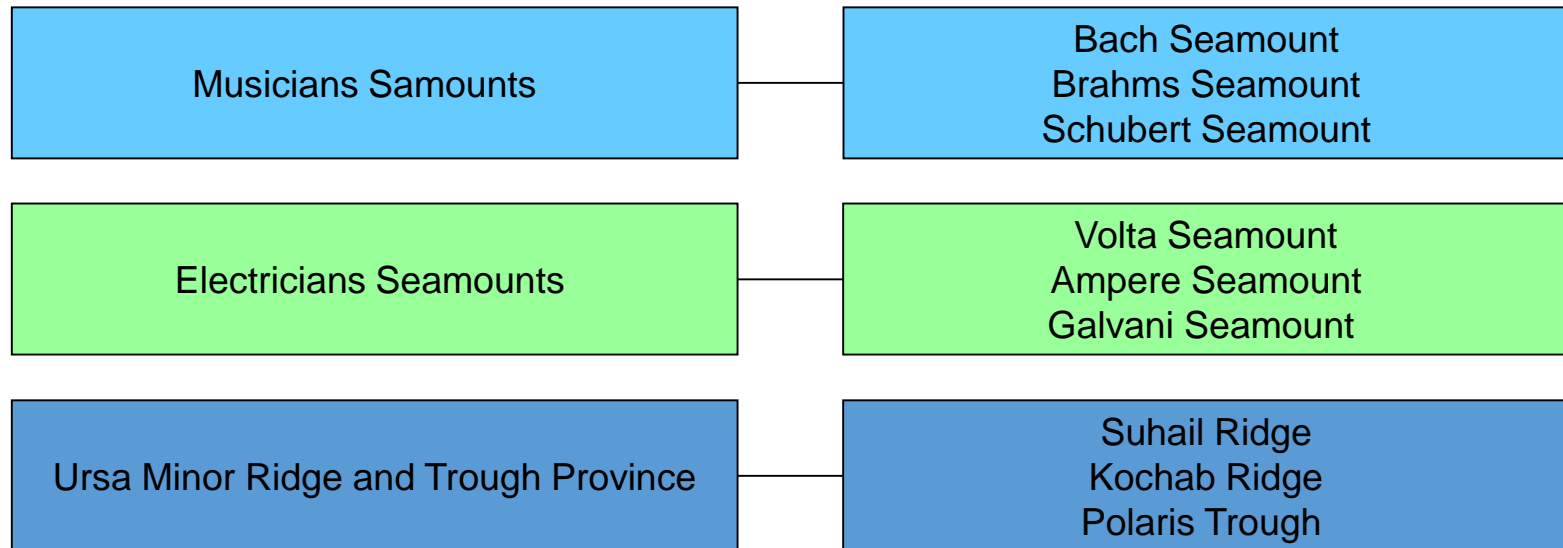


2.1 Specific Terms

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

6. Groups of like features may be named collectively for specific categories of historical persons, mythical features, stars, constellations, fish, birds, animals, etc.

Ex)



2.1 Specific Terms

GEBCO - SCUFN

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

- 7. Descriptive names are acceptable, particularly when they refer to distinguishing characteristics (e.g. Hook Ridge, Horseshoe Seamount). However, caution is prudent unless a characteristic shape has been established by definitive topographic exploration.**

- 8. Names of well-known or large features that are applied to other features should have the same spelling.**

- 9. A specific term should not be translated from the language of the nation providing the accepted name.**



03. Standardization of Generic Terms

3.1 Generic Terms of Undersea Feature Names

* Websites of definition of undersea features (<http://www.scufnterm.org>)

Table 1. Definition of undersea features

#	Terms	Definition
1	ABYSSAL PLAIN	An extensive, flat or gently sloping region, usually found at depths greater than 4000m.
2	APRON	A gently dipping SLOPE, with a smooth surface, commonly found around groups of islands and SEAMOUNTS.
3	BANK(s)	An elevation of the seafloor, at depths generally less than 200 m, but sufficient for safe surface navigation, commonly found on the continental shelf or near an island.
4	BASIN	A depression more or less equidimensional in plan and of variable extent.
5	CALDERA*	A roughly circular, cauldron-like depression generally characterized by steep sides and formed by collapse, or partial collapse, during or following a volcanic eruption.
6	CANYON(s)	An elongated, narrow, steep-sided depression that generally deepens down-slope.
7	DEEP(s)	A localized depression within the confines of a larger feature, such as a TROUGH, BASIN or TRENCH.

※ Generic terms for features that have a genetic implication are marked with an asterisk (*).



3.1 Generic Terms of Undersea Feature Names

Table 1. Definition of undersea features

#	Terms	Definition
8	ESCARPMENT	An elongated, characteristically linear, steep slope separating horizontal or gently sloping areas of the seafloor.
9	FAN	A relatively smooth, depositional feature continuously deepening away from a sediment source commonly located at the lower termination of a CANYON or canyon system.
10	FRACTURE ZONE*	A long narrow zone of irregular topography formed by the movement of tectonic plates associated with an offset of a spreading ridge axis, characterized by steep-sided and/or asymmetrical RIDGES, TROUGHS or ESCARPMENTS.
11	GAP	(See PASSAGE)
12	GUYOT(s)	A SEAMOUNT with a comparatively smooth flat top.
13	HILL(s)	A distinct elevation generally of irregular shape, less than 1000m above the surrounding relief as measured from the deepest isobath that surrounds most of the feature.
14	HOLE	A depression of limited extent with all sides rising steeply from a relatively flat bottom.
15	KNOLL(s)	A distinct elevation with a rounded profile less than 1000m above the surrounding relief as measured from the deepest isobath that surrounds most of the feature.



3.1 Generic Terms of Undersea Feature Names

Table 1. Definition of undersea features

#	Terms	Definition
16	LEVEE	A depositional embankment bordering a CANYON, VALLEY or SEA CHANNEL.
17	MOAT	An annular or partially annular depression commonly located at the base of SEAMOUNTS, islands and other isolated elevations.
18	MOUND*	A distinct elevation with a rounded profile generally less than 500m above the surrounding relief as measured from the deepest isobath that surrounds most of the feature, commonly formed by the expulsion of fluids or by coral reef development, sedimentation and (bio)erosion.
19	MUD VOLCANO*	A MOUND or cone-shaped elevation formed by the expulsion of non-magmatic liquids and gasses.
20	PASSAGE	A narrow break in a RIDGE or a RISE. Also called GAP.
21	PEAK(s)	A conical or pointed elevation at the summit of a larger feature.

※ Generic terms for features that have a genetic implication are marked with an asterisk (*).

3.1 Generic Terms of Undersea Feature Names

Table 1. Definition of undersea features

#	Terms	Definition
22	PINNACLE(s)	A spire-shaped pillar either isolated or at the summit of a larger feature.
23	PLATEAU	A large, relatively flat elevation that is higher than the surrounding relief with one or more relatively steep sides.
24	PROVINCE	A geographically distinct region with a number of shared physiographic characteristics that contrast with those in the surrounding areas. This term should be modified with the generic term that best describes the majority of features in the region, e.g. 'Seamount' in "Baja California Seamount Province".
25	REEF(s)	A shallow elevation composed of consolidated material that may constitute a hazard to surface navigation.
26	RIDGE(s)	An elongated elevation of varying complexity, size and gradient.
27	RIFT*	An elongated depression bounded by two or more faults formed as a breach or split between two bodies that were once joined.
28	RISE	A broad elevation that generally rises gently and smoothly from the surrounding relief.

※ Generic terms for features that have a genetic implication are marked with an asterisk (*).

3.1 Generic Terms of Undersea Feature Names

Table 1. Definition of undersea features

#	Terms	Definition
29	SADDLE	A broad pass or col in a RIDGE, RISE or other elevation.
30	SALT DOME*	A distinct elevation, often with a rounded profile, one km or more in diameter that is the geomorphologic expression of a diapir formed by vertical intrusion of salt. Commonly found in a PROVINCE of similar features.
31	SAND RIDGE*	An elongated feature of unconsolidated sediment of limited vertical relief and sometimes crescent shaped. Commonly found in a PROVINCE of similar features
32	SEACHANNEL(s)	An elongated, meandering depression, usually occurring on a gently sloping plain or FAN.
33	SEAMOUNT(s)	A distinct generally equidimensional elevation greater than 1000m above the surrounding relief as measured from the deepest isobath that surrounds most of the feature.
34	SEAMOUNT CHAIN	A linear or arcuate alignment of discrete SEAMOUNTS.
35	SHELF	The flat or gently sloping region adjacent to a continent or around an island that extends from the low water line to a depth, generally about 200m, where there is a marked increase in downward slope.
36	SHOAL(s)	A shallow elevation composed of unconsolidated material that may constitute a hazard to surface navigation.

※ Generic terms for features that have a genetic implication are marked with an asterisk (*).



3.1 Generic Terms of Undersea Feature Names

Table 1. Definition of undersea features

#	Terms	Definition
37	SILL	A relatively shallow barrier between BASINS that may inhibit water movement.
38	SLOPE	The sloping region that deepens from a SHELF to the point where there is a general decrease in gradient.
39	SPUR	A subordinate RIDGE protruding from a larger feature.
40	TERRACE(s)	A flat or gently sloping region, generally long and narrow, bounded along one edge by a steeper descending slope and along the other by a steeper ascending slope.
41	TRENCH*	A long, deep, asymmetrical depression with relatively steep sides, that is associated with subduction.
42	TROUGH	A long depression generally wide and flat bottomed with symmetrical and parallel sides.
43	VALLEY(s)	An elongated depression that generally widens and deepens down-slope.

※ Generic terms for features that have a genetic implication are marked with an asterisk (*).

3.1 Generic Terms of Undersea Feature Names

* Websites of definition of undersea features (<http://www.scufnterm.org>)

Table 2. Obsolete Generic Terms

#	Terms	Definition
1	ABYSSAL HILL(s)	An isolated small elevation on the deep seafloor.
2	ARCHIPELAGIC APRON	A gentle SLOPE with a generally smooth surface of the seafloor, characteristically found around groups of islands or SEAMOUNTS.
3	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.
4	CHANNEL	(See SEA CHANNEL)
5	CONE	(See FAN)
6	CONTINENTAL MARGIN	The zone, generally consisting of SHELF, SLOPE and CONTINENTAL RISE, separating the continent from the deep seafloor or ABYSSAL PLAIN. Occasionally a TRENCH may be present in place of a CONTINENTAL RISE
7	CONTINENTAL RISE	A gentle slope rising from the oceanic depths towards the foot of a continental SLOPE.



3.1 Generic Terms of Undersea Feature Names

Table 2. Obsolete Generic Terms

#	Terms	Definition
8	CONTINENTAL SHELF	(See SHELF)
9	MEDIAN VALLEY	The axial depression of the MID-OCEANIC RIDGE system.
10	MID-OCEANIC RIDGE	The linked major mid-oceanic mountain systems of global extent.
11	PROMONTORY	A major SPUR-like protrusion of the continental SLOPE extending to the deep seafloor. Characteristically, the crest deepens seaward.
12	SCARP	(See ESCARPMENT)
13	SEA VALLEY	(See VALLEY)
14	SHELF BREAK	(See SHELF-EDGE)
15	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.
16	SUBMARINE VALLEY	(See VALLEY)
17	TABLEMOUNT	(See GUYOT)

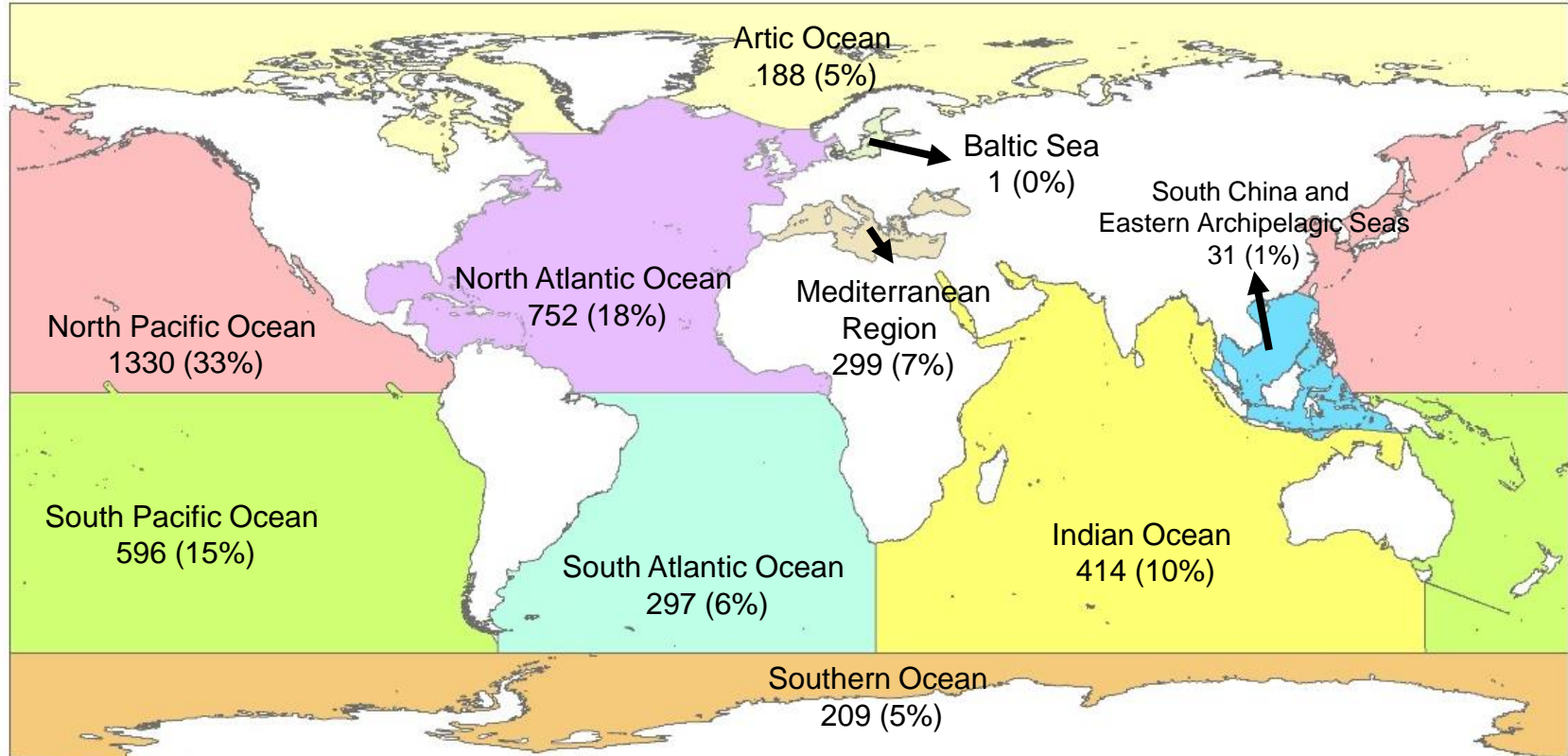
04. Distribution of Undersea Feature Names

4.1 Distribution of Undersea Feature Names

* Gazetteer of undersea feature names (<http://www.ngdc.noaa.gov/gazetteer>)

① Overall trend (Count) Data: GEBCO B-8 (2018)

- Undersea feature names of B-8 are mostly located in the Pacific ocean (48%), followed by the Atlantic Ocean, Indian Ocean, Mediterranean Region, Southern Ocean, etc.



4.1 Distribution of Undersea Feature Names

* Gazetteer of undersea feature names (<http://www.ngdc.noaa.gov/gazetteer>)

① Overall trend (Count) Data: GEBCO B-8 (2018)

- Top-5 Most distributed areas

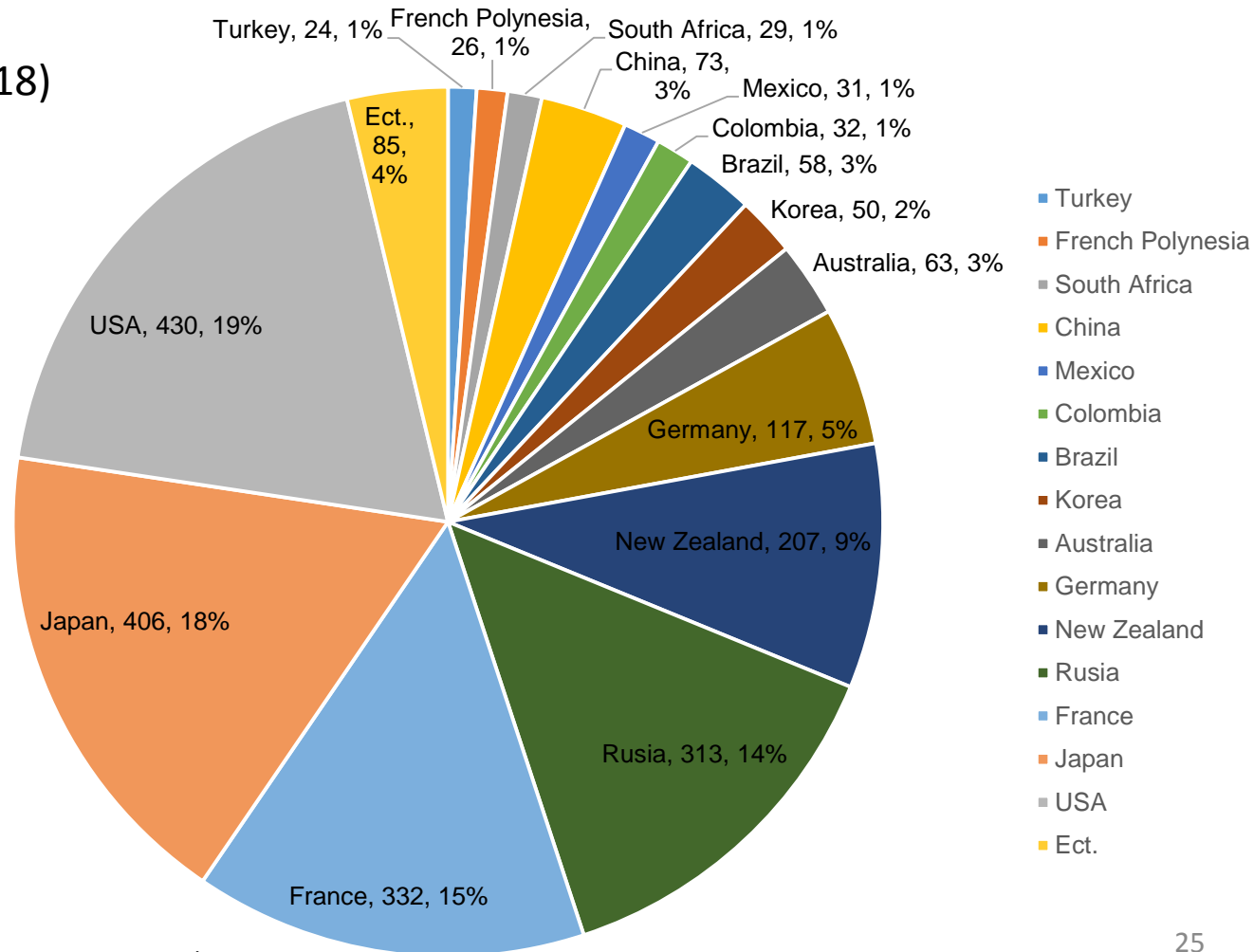
Main Area	Count	Ratio (%)
Pacific Ocean	1926	47.2%
Atlantic Ocean	1009	24.7%
Indian Ocean	414	10.2%
Mediterranean Region	299	7.3%
Southern Ocean	209	5.1%
Etc.	220	5.3%

05. Proposers of Undersea Feature Names

5.1 The Characteristics of Proposers

• The proposers of undersea feature names

Data: GEBCO B-8 (2018)



5.2 B-8 (Gazetteer of Geographical Names of Undersea Features, IHO, 2013)

Table 3. Database of Undersea Feature Name

Ex)

Specific Term	Generic Term	Associated Meeting	Proposer	Year of Proposal	Discoverer	Year of Discovery
Anyongbok	Seamount	SCUFN-20	Korea Committee on Marine Geographical Names (KCMGN), KCMGN, 195 Seohaero, Jung-gu, Incheon, 400-800, Republic of Korea	2007	Korean research vessel "Haeyang 2000"	1997

Origin of Name	Additional Information	Coordinates	Secondary Coordinates
Named after the Korean navigator, An Yong-Bok, who explored Ulleung Do (Ulleung Island) in the 17th century. He also served as a civilian diplomat and dedicated his life to developing fishing industries.	The feature has a circular shape in the plane view and a conical shape in the vertical view.	POINT (131.35833333333333 37.50833333333333)	



5.2 B-8 (Gazetteer of Geographical Names of Undersea Features, IHO, 2013)

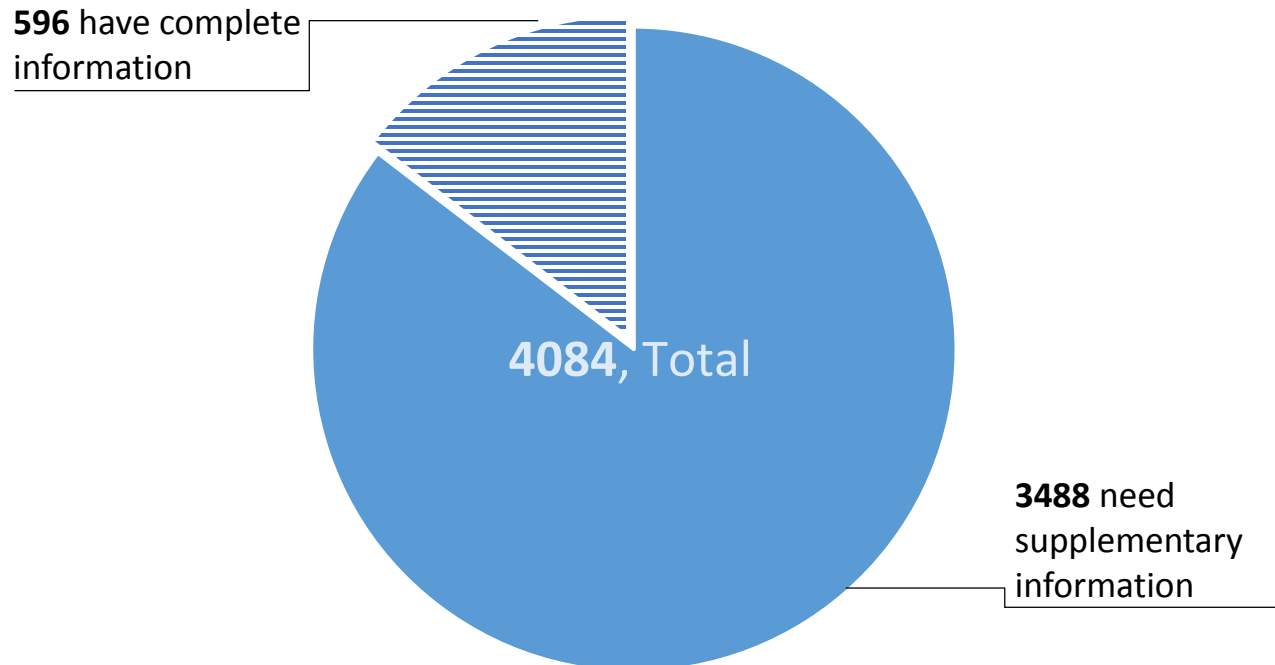
- **GEBCO UFNs are proposed by a total of 38 countries (inc. in IHB, GEBCO, IBCEA, ACUF)**
- **66% of UFNs with Remark and History are proposed by USA, Japan, France and Russia**
- **In B-8 Gazetteer, previous data before 1975 (265) are partly taken from ACUF Gazetteer**
- **In B8 Gazetteer, UFN Data without History and Remark are taken from GEBCO, IBCWIO, Chart, and INT chart**



5.2 B-8 (Gazetteer of Geographical Names of Undersea Features, IHO, 2013)

◆ Discussion ◆

- **Total number of undersea feature name is 4084, of which**
 - **596 have complete information.**
 - **3488 need supplementary information.**



5.2 SCUFN Proposal

- ① **SCUFN Proposal Form**
- ② **Exercise: Making a SCUFN Proposal**



SCUFN Proposal Form

INTERNATIONAL HYDROGRAPHIC ORGANIZATION

ORGANISATION HYDROGRAPHIQUE INTERNATIONALE

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (of UNESCO)

COMMISSION OCEANOGRAPHIQUE INTERGOUVERNEMENTALE

UNDERSEA FEATURE NAME PROPOSAL

PROPOSITION DE NOM POUR UNE FORME DU RELIEF SOUS-MARIN

(See **NOTE** overleaf / Voir **NOTE** au verso)

- Notes:
- Translation in French is provided for convenience. However, the form should be filled in English.
La traduction en français est fournie à titre d'aide. Toutefois, le formulaire doit être rempli en anglais.
 - The boxes will expand as you fill the form.
Les cadres s'élargiront au fur et à mesure que vous remplirez le formulaire.

Name Proposed: <i>Nom proposé:</i>		Ocean or Sea: <i>Océan ou mer:</i>	
--	--	--	--



feature geometri
es_v2-SUNG.xls

Geometry that best defines the feature (Yes/No): <i>Géométrie définissant le mieux la forme (Oui/Non):</i>						
Point <i>Point</i>	Line <i>Ligne</i>	Polygon <i>Polygone</i>	Multiple points <i>Points multiples</i>	Multiple lines* <i>Lignes multiples*</i>	Multiple polygons* <i>Polygones multiples*</i>	Combination of geometries* <i>Combinaison des géométries*</i>

* Geometry should be clearly distinguished when providing the coordinates below.

La géométrie doit être clairement identifiée en fournissant les coordonnées ci-dessous.

	Lat. (e.g. 63°32.6'N)	Long. (e.g. 046°21.3'W)
Coordinates: <i>Coordonnées:</i>		

Feature Description:	Maximum Depth: <i>Profondeur max:</i>		Steepness: <i>Déclivité:</i>	
	Minimum Depth: <i>Profondeur min:</i>		Change: <i>Changement:</i>	

SCUFN Proposal Form

Chart/Map References:

Shown Named on Map/Chart:
Shown Unnamed on Map/Chart:
Within Area of Map/Chart:

Reason for Choice of Name (if a person, state how associated with the feature to be named):

Discovery Facts:

Discovery Date:
Discoverer (Individual, Ship):

Supporting Survey Data, including Track Controls:

Date of Survey:
Survey Ship:
Sounding Equipment:
Type of Navigation:
Estimated Horizontal Accuracy (nm):
Survey Track Spacing:

Proposer(s):

Name(s):
Date:
E-mail:
Organization and Address:
Concurrer (name, e-mail, organization and address):



Thank you
for Your Attention

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