

## PRINCIPLES AND APPLICATIONS OF OCEAN FEATURE NOMENCLATURE

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### **Abstract**

*Undersea feature naming, meeting the requirements of the International Hydrographic Organization (IHO) and the Intergovernmental Oceanographic Commission (IOC, of UNESCO), is taken care by the GEBCO Sub-Committee on Undersea Feature Names (SCUFN). GEBCO (General Bathymetric Chart of the Oceans) is a joint IHO-IOC ocean-mapping project for the world ocean. SCUFN's mandate includes defining the nomenclature of ocean bottom features, e.g. seamounts, ridges or fracture zones, and attributing names to newly identified, or unnamed, features lying in international waters. Two IHO-IOC publications are related to SCUFN's work: B-6 "Standardisation of Undersea Feature Names" and B-8 "Gazetteer of Undersea Feature Names".*

*This paper describes the IHO-IOC standardisation work on undersea feature naming.*

### **1. HISTORICAL BACKGROUND**

The International Hydrographic Organization has had an interest in geographical place names from the very beginning of its existence in 1921. This was due to its quest for uniformity in nautical charts and publications, in which different countries used different languages and the need for charts and publications to be understood by international mariners. This is reflected in the IHO Convention, which says that one of the main objectives of the IHO is *"to bring about the greatest possible uniformity in nautical charts and documents"*.

Even before the Organization was formed, the need to use consistent terminology for submarine relief was recognized. The 7th International Geographical Congress, held in Berlin in 1899 had appointed a committee on the "Nomenclature of Sub-oceanic Features". A list of definitions and terms was subsequently adopted at the 8th International Geographical Congress in 1904. This included terms such as seamount, ridge and canyon. Following a proposal by Italy in 1924, the IHO adopted standard terminology in the various languages for such submarine and topographical features that would be useful in the compilation of Sailing Directions and Charts. An IHO List of Terms and Definitions, in English and French, was drawn up from the one adopted by the 1904 International Geographical Congress.

The development of the GEBCO project, at the beginning of the XXth century, gave rise to a need for a consistent policy in the naming of undersea features. As information on the bathymetry of the world's oceans improved, more and more features were discovered and defined and it was important that they be named in a consistent and unique manner. This concern is still valid nowadays and there are two points to be considered. One is a consistency in the generic naming of undersea features and the other is to ensure that the proper names used are designated to a single international policy.

Over the years interest in geographical place names has developed, as the need for more detailed maps, charts and written publications describing the oceans grew. The pursuit of this interest has not been without contention in spite of the Organization's mandate to avoid political issues<sup>1</sup>.

## 2. INTERNATIONAL STANDARDIZATION OF GEOGRAPHIC NAMES

Paralleling the developments of Lists of Terms and Definitions for undersea features, has been the interest in the international standardization of geographic names. These matters have now been resolved and are published as the following IHO Technical Resolution:

A 4.2 International standardization of geographic names.

This is attached in Annex 1 to this paper. This resolution recommends that the IHB co-operate with the United Nations Group of Experts on Geographical Names with the object of achieving international standardization of names of maritime and undersea features. This association can be traced back to 1967 when the first UN Conference on the International Standardization of Geographical Names was held.

The UN Group of Experts on Geographical Names hold meetings every two years, and an IHO report on activities related to geographical names, prepared at the International Hydrographic Bureau (IHB - Secretariat of the IHO), is presented at each of these meetings.

## 3. UNDERSEA FEATURE NAMES

During the Ninth Session of the "Joint IOC-IHO Guiding Committee for the GEBCO" in 1983 the IHB was requested to prepare a Gazetteer of the geographical names of undersea features shown on the GEBCO 5th Edition and on the IHO Small-scale International Chart Series (1:2 250 000 and smaller). The IHB developed this Gazetteer and published it in 1988, as IHO-IOC Publication B-8. The Gazetteer provides an alphabetical list of geographical names with their geographical coordinates. The IHB also issued IHO-IOC Publication B-6 "Standardization of Undersea Feature Names", which includes guidelines for the standardization of the names (see Annex 3) and definitions of the terminology for generic features. Several bilingual versions of B-6 have been published, with English in common, including in French, Spanish, Russian, Chinese and Japanese. New editions of Publications B-6 and B-8 are published from time to time. They are available from the GEBCO website ([www.ngdc.noaa.gov/mgg/gebco/](http://www.ngdc.noaa.gov/mgg/gebco/)).

The IHO Technical Resolution A 4.3 (see Annex 2) "Naming of Undersea Features" asks Member States to encourage marine scientists and other persons in their country wishing to name undersea features to take account of the gazetteer and the guidelines on naming undersea features.

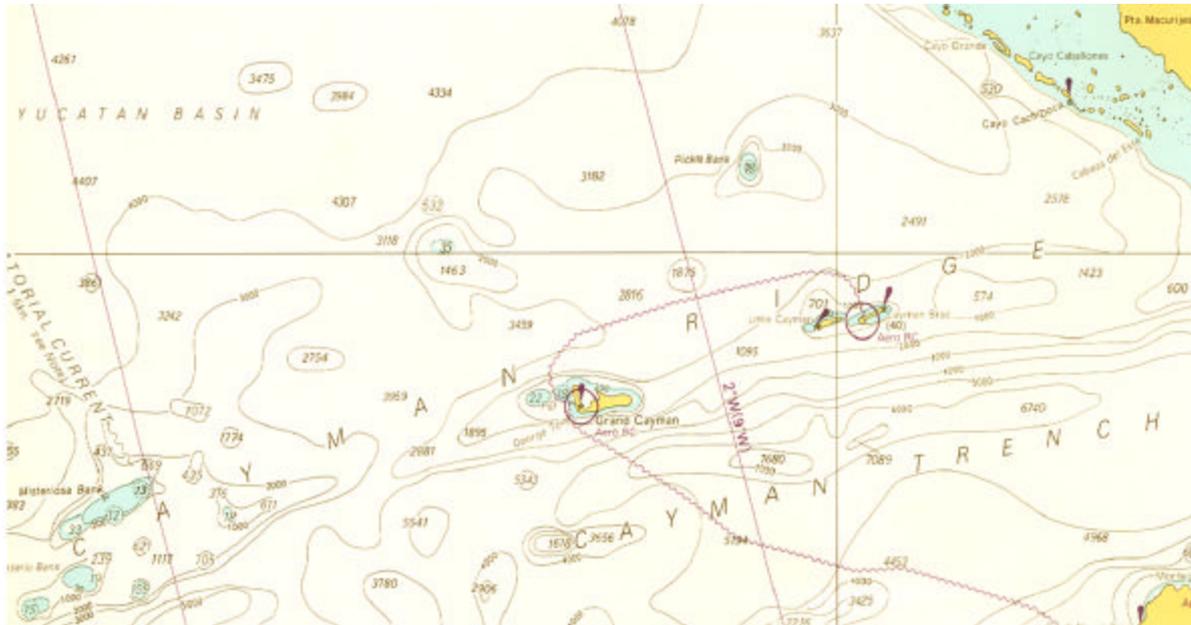
In the Guidelines at Annex 3, taken from the above publication B-6, it is stated that international concern for naming undersea features is limited to those features entirely or mainly outside waters under the jurisdiction of states. This must infer that the responsibility for naming within the jurisdiction rests only with the coastal state. Paragraph E of the Guidelines states: *"In the event of conflict, the persons and agencies most directly involved should resolve the matter. When two names have been applied to the same feature, the older name generally should be accepted. When a single name has been applied to two different features, the feature named first generally should retain the name."* It would seem that the guidelines are just that and do not provide an authority.

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<sup>1</sup> It is stated in IHO basic documents that the Organization shall have a consultative and purely technical nature and that its activities shall not include matters involving questions of international policy.

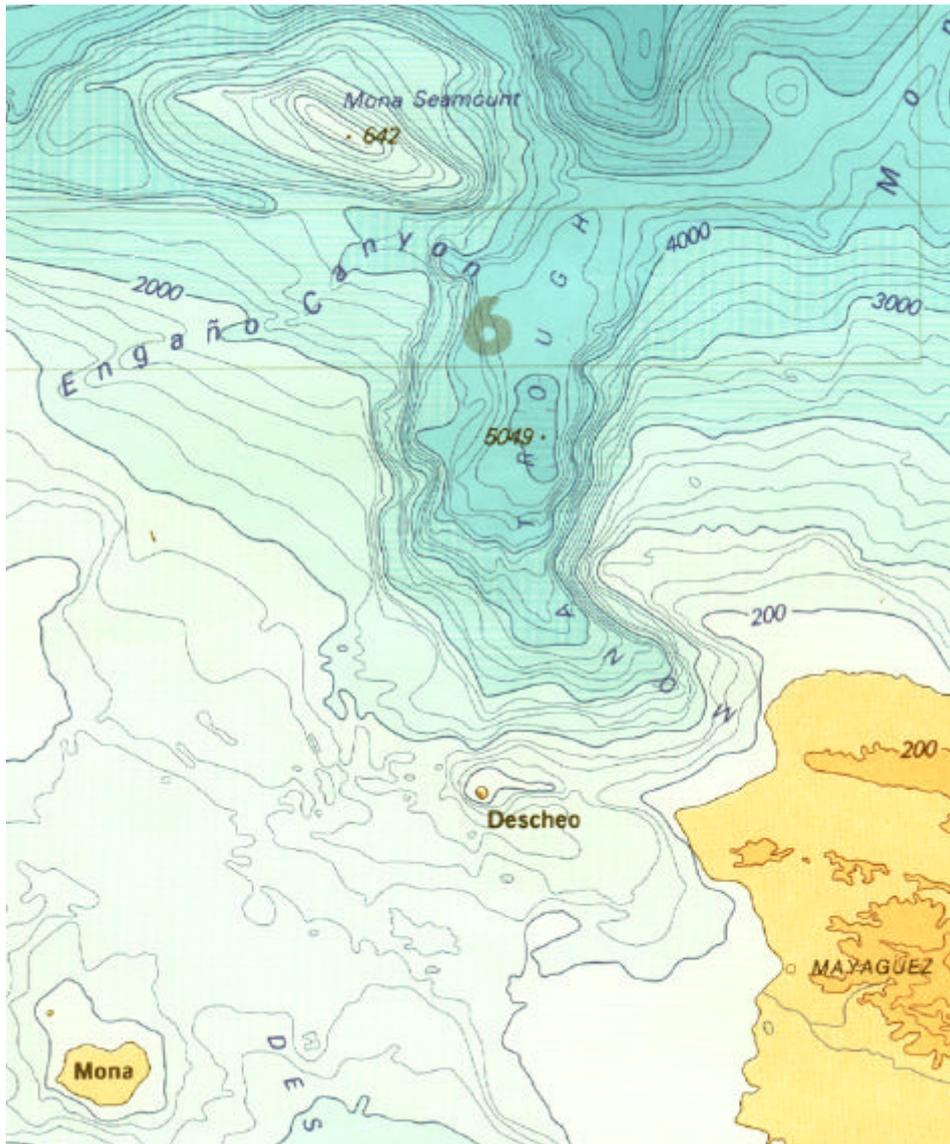
#### 4. GEBCO SUB-COMMITTEE ON UNDERSEA FEATURE NAMES

International undersea feature naming is monitored by the GEBCO Sub-Committee on Undersea Feature Names (SCUFN), acting on behalf of the IHO and the IOC. It was established as a standing Sub-Committee in 1974 by the IOC-IHO GEBCO Guiding Committee, in anticipation of a fifth edition of GEBCO, the first under the joint aegis of IOC and IHO, to oversee the standardization of seafloor topographic usage on GEBCO sheets.



**Figure 2. Undersea Feature Names on an INT Chart**

SCUFN is responsible for selecting those undersea feature names which will appear on INT Charts at small scales, GEBCO bathymetric maps, the GEBCO Digital Atlas, and bathymetric maps of the International Bathymetric Chart projects (e.g. IBCCA for the Caribbean area). Naming proposals are received at the SCUFN Secretariat at the IHB. They are usually submitted by scientists in oceanographic institutions, by ocean mapping project leaders or by Hydrographic Offices. The proposals are then considered by SCUFN Members, either by correspondence or at formal meetings, and decisions are taken accordingly. Examples of undersea feature names shown on an INT Chart and a bathymetric chart are given in Figures 2 and 3. Terms of Reference for SCUFN are reproduced in Annex 4.



**Figure 3. Undersea Feature Names on a Bathymetric Map**

SCUFN enjoys good relationship with the Advisory Committee on Undersea Features (ACUF) of the U.S. Board of Geographic Names (BGN), and the Secretary of ACUF usually attends SCUFN meetings as a welcome expert voice and to ensure close liaison between the two groups. In addition, mutual exchange of meetings' reports is a standard practice.

The IHO resolution recommending that the IHB co-operate with the United Nations Group of Experts on Geographical Names (UNGEGN) (Section 2 above) is further strengthened by SCUFN's Term of Reference 3 (ix): "The Sub-Committee shall maintain close liaison with the UN Group of Experts on Geographical Names and national authorities concerned with the naming of undersea features". The bilaterally-negotiated Resolution 22 of the 3<sup>rd</sup> UN Conference on the Standardization of Geographical Names (1977 – see Annex 5) and the SCUFN Terms of Reference (1993) outline the basis mandate under which SCUFN carries out its duties. It results that, as a practical matter, most of the solicitations/reception of names proposals, distribution of decisions and publication of the GEBCO Gazetteer are now undertaken directly through IHO-IOC auspices and facilities. It is felt that providing UNGEGN Chairman/Secretary with copies of minutes of SCUFN meetings as well as any new editions of products issued under SCUFN responsibility e.g. GEBCO Gazetteer; Guidelines for Standardization of Undersea Feature Names, in addition to the provision of a brief report on SCUFN activities to UNGEGN meetings/conferences, as has been done so far, meets the requirement for maintaining close liaison with UNGEGN.

In the Guidelines at Annex 3, Paragraph 5 states that names of living persons should be limited to those who have made an outstanding or fundamental contribution to ocean sciences. However, it has been noted in recent years that names were frequently given to undersea features in international waters by national bodies, after living persons who did not appear to meet the above criteria. As a result, SCUFN expressed its concern over such practices at its 1997 Meeting through the following statement: *"The Sub-Committee viewed with concern the frequent en bloc proposal and acceptance by national authorities of many names of persons having marginal qualifications or barely demonstrated relationship to oceanic exploration or development. One particular facet of this concern is directly related to the increasing submission of proposals for the names of living agency employees, or contractors, upon retirement. Such a practice, if it spreads internationally, could overwhelm or skew the orderly processes of seafloor nomenclature. The Sub-Committee considers that there is a need to be very selective, and recommends this approach to national authorities"*. It is hoped that this recommendation will halt such incorrect practices.

Finally, it should be noted that the generic terminology for undersea features has assumed considerable political importance in recent years, not only because of the need to be consistent, but in the interpretation of the Law of the Sea Convention in such articles where this terminology is used. Article 76 on the Continental Shelf is particularly noted in this respect.

## 5. CONCLUSIONS

Both IHO and IOC organisations have long recognized the importance of having consistent policies for the assignment of undersea feature names. The IOC-IHO GEBCO Sub-Committee on Undersea Features was set as their necessary instrument for definition, monitoring and dissemination of seafloor terminology. SCUFN's aims are being achieved by employing geographical, geomorphologic and historical expertise, authorising names free of duplication and worthy of competence. This has resulted in fairly consistent seafloor names shown on GEBCO products, IBC sheets and INT charts. However even such a seemingly innocent task as trying to agree on unique and consistent nomenclature in the interest of marine science and maritime safety may sometimes lead to perplexity, acrimony and controversy, or even contention between states concerned about the sovereignty of their adjacent offshore waters. The increasing level of exploitation of the oceans in recent years may aggravate this situation but the IOC-IHO GEBCO-SCUFN must strive to consider only the technical issues.

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## References:

1. Kerr, A.J., 1997. *The International Hydrographic Organization and its Involvement with Geographic Place Names*. presented to the "East Sea Conference", Seoul University, Republic of Korea, June 1997.
2. Fisher, R.L., 2002. *GEBCO's Role in Seafloor Terminology*, in "The History of GEBCO 1903-2003", March 2003, pp. 107-111. GITC, Lemmer, The Netherlands, 140p.
3. IHO Technical Resolutions, Publication M-3, 2002, IHB, Monaco.
4. GEBCO Guidelines, IOC-IHO Publication B-7, 2003, IHB, Monaco.
5. Standardization of Undersea Feature Names, IOC-IHO Publication B-6, 2001, IHB, Monaco.
6. Fifteenth Meeting of the GEBCO Sub-Committee on Undersea Feature Names, Monaco, October 2002. Summary Report, Doc. IOC-IHO/GEBCO SCUFN-XV/3, Section 8. IHB, Monaco.

## IHO TECHNICAL RESOLUTIONS A 4.2

### A 4.2 International standardization of Geographical Names

1.- It is resolved that the IHB should maintain continuous contact with the United Nations Organization, and specifically with the United Nations Group of Experts on Geographical Names, for all studies or actions relating to geographical names involving or affecting hydrographic publications. The Bureau should insure that actions previously taken on hydrographic matters, with respect to names, within the IHO are brought to the attention of appropriate United Nations Conferences or working groups. The Bureau also promulgate to Member States information on all significant developments on this subject as they occur.

2.- It is recommended that, since national standardization of geographical names is an essential preliminary to international standardization, Hydrographic Offices encourage and support the establishment of national names authorities, following the principles and procedures recommended by the resolutions on this subject adopted by the United Nations Conferences on Geographical Names.

3.- It is recommended that the IHB Co-operate with the United Nations Group of Experts on Geographical Names with the object of achieving international standardization of names of maritime and undersea features.

4.- It is further recommended that co-operation should, in particular, be extended in the under-mentioned activities of the United Nations Group of Experts:

- (a) Study of existing national and international practices concerning the delineation and naming of oceans and seas, including their integral sub-divisions, beyond the limits of national jurisdiction, with a view to recommending improvements in current nomenclatural practices and procedures.
- (b) Drawing up a system for naming undersea features beyond a single sovereignty and proposing it as a basis for preparing an international convention on the subject.
- (c) Standardizing the definitions of undersea feature "terms and definitions" in order to promote their acceptance and use by names authorities.
- (d) Developing procedures for international standardization of naming new undersea features as they are discovered, defined and identified in the future.

5.- It is recommended that when Hydrographic Offices produce gazetteers or geographical dictionaries, these publications be standardized as far as possible in accordance with resolutions on the subject adopted by the United Nations.

6.- It is recommended that where two or more countries share a given geographical feature (such as, for example, a bay, a strait, channel or archipelago) under a different name form, they should endeavour to reach agreement on fixing a single name for the feature concerned. If they have different official languages and cannot agree on a common name form, it is recommended that the name forms of each of the languages in question should be accepted for charts and publications unless technical reasons prevent this practice on small scale charts. e.g. English Channel/La Manche.

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**Annex 2**

**IHO TECHNICAL RESOLUTION A 4.3**

**A 4.3 Naming of Undersea Features**

1.- It is agreed that Member States should strongly encourage marine scientists and other persons in their country wishing to name undersea feature to:

- a) check their proposals with published Gazetteers of Undersea Feature Names, including the IHO/IOC Publication B-8, "Gazetteer of Geographical Names of Undersea Features" shown (or which might be added) on the GEBCO and on the IHO small scale International Chart Series and its supplements of Geographical Names included on larger scale Regional International Bathymetric Chart Series;
- b) take into account the guidelines in the IHO/IOC Publication B-6 "Standardization of Undersea Feature Names", including the use of the Undersea Feature Name Proposal Form contained therein;
- c) submit all proposed new names for clearance either to their appropriate national authority or, where no such national authority exists, to the IHB or IOC for consideration by the GEBCO Sub-Committee on Undersea Feature Names, which may advise on any potential confusing duplication of names.

2.- It is agreed that Member States invite publishers of ocean maps and editors of scientific journals in their country to require compilers and authors to provide written evidence of such clearance before accepting for publication any maps or scientific articles containing new names for undersea features.

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## **GUIDELINES FOR THE STANDARDIZATION OF UNDERSEA FEATURE NAMES**

### **I. GENERAL**

- A.** International concern for naming undersea features is limited to those features entirely or mainly (more than 50%) outside waters under the jurisdiction of states, i.e. outside territorial waters, usually limited to 12 miles from the straight baseline, in agreement with the United Nations Convention on the Law of the Sea.
- B.** "Undersea feature" is a part of the ocean floor or seabed that has measurable relief or is delimited by relief.
- C.** Names used for many years may be accepted even through they do not conform to normal principles of nomenclature.
- D.** Names approved by national names authorities in waters beyond national limits (i.e. international waters) should be accepted by other states if the names have been applied in conformance with internationally accepted principles. Names applied within the territorial limits of a state should be recognized by other states.
- E.** In the event of a conflict, the persons and agencies involved should resolve the matter. Where two names have been applied to the same feature, the older name generally should be accepted. Where a single name has been applied to two different features, the feature named first generally should retain the name.
- F.** Names not in the writing system of the country applying the names on maps or other documents should be transliterated according to the system adopted by the national authority applying the names.
- G.** In international programmes, it should be the policy to use forms of names applied by national authorities having responsibility for the pertinent area.
- H.** States may utilize their preferred versions of exonyms.

### **II. PRINCIPLES FOR NAMING FEATURES**

#### **A. Specific terms**

- 1. Short and simple terms (or names) are preferable.
- 2. The principal concern in naming is to provide effective, conveniently usable, and appropriate reference; commemoration of persons or ships is a secondary consideration.
- 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.
- 4. Specific terms for other features can be used to commemorate ships or other vehicles, expeditions or scientific institutes involved in the discovering and/or delineation of the feature, or to honour 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. If names of living persons are used (surnames are preferable), they should be limited to those who have made an outstanding or fundamental contribution to ocean sciences.
6. Groups of like features may be named collectively for specific categories of historical persons, mythical features, stars, constellations, fish, birds, animals, etc. Examples are as follows:

Musicians Seamounts	Bach Seamount Brahms Seamount Schubert Seamount
Electricians Seamounts	Volta Seamount Ampere Seamount Galvani Seamount
Ursa Minor Ridge and Trough Province	Suhail Ridge Kochab Ridge Polaris Trough

7. Descriptive names are acceptable, particularly when they refer to distinguishing characteristics (i.e. 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. Specific elements of names should not be translated from the language of the nation providing the accepted name.

## **B. Generic terms**

1. Generic terms should be selected from the following list of definitions to reflect physiographic descriptions of features.
  2. Generic terms applied to features appearing on charts or other products should be in the language of the nation issuing the products. In those cases where terms have achieved international usage in a national form, that form should be retained.
  3. It should be recognized that as ocean mapping continues, features will be discovered for which existing terminology is not adequate. New terms required to describe those features should conform to these Guidelines.
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**GEBCO SUB-COMMITTEE ON UNDERSEA FEATURE NAMES (SCUFN)****Terms of Reference**

- (1) The Sub-Committee on Undersea Feature Names reports to the Guiding Committee as its designated authority for all matters concerning undersea feature names.
- (2) It is the function of the Sub-Committee to select those names appropriate for use on GEBCO graphical and digital products, on the IHO small-scale INTERNATIONAL chart series, and on the IOC regional international Bathymetric Chart series.
- (3) The Sub-Committee shall:
  - (i) select undersea feature names on the basis of:
    - a) undersea feature names provided by national and international organizations concerned with nomenclature;
    - b) names submitted to the Sub-Committee by individuals, agencies and organizations involved in marine research, hydrography, etc.;
    - c) names appearing in scientific journals or on appropriate charts and maps, with valid supporting evidence.

Such names will be reviewed before they are inputted into the Gazetteer.

- (ii) define when appropriate the extent of named features;
- (iii) provide advice to individuals and appropriate authorities on the selection of undersea feature names in international waters and, on request, in waters under national jurisdiction;
- (iv) encourage the establishment of national boards of geographical names and undersea features, and when such a board does not exist for a given coastal state, co-operate in the naming of seafloor features related to those national waters;
- (v) prepare and maintain international gazetteers and supplements of undersea feature names;
- (vi) encourage the use of undersea feature names shown on GEBCO products, on other maps, charts, scientific publications, and documents by promulgating them widely;
- (vii) prepare and maintain internationally agreed guidelines for the standardization of undersea feature names and encourage their use;
- (viii) review and address the need for revised or additional terms and definitions for submarine topographic features.
- (ix) maintain close liaison with the UN Group of Experts on Geographical Names and international or national authorities concerned with the naming of undersea features.

*Reference: Document IOC-IHO/GEBCO - XIV/3. Summary Report of the 14th Session of the Joint IOC-IHO Guiding Committee for the GEBCO, La Jolla, USA, 4-6 May 1993.*

## Annex 5

**THIRD UN CONFERENCE ON THE STANDARDIZATION OF GEOGRAPHICAL NAMES  
Athens, 17 Aug - 7 Sept 1977 (UN Publication E/CONF.69/3/Add.7)****Resolution 22. UNDERSEA FEATURE NAMES****I**

*The Conference,*

*Recalling* resolution 26 of the Second United Nations Conference on the Standardization of Geographical Names<sup>1</sup>),

*Considering* the increased activity in ocean research, and the need to develop names to identify a rapidly growing number of newly discovered undersea features,

*Recognizing* that such names are required for certain hydrographic publications and/or bathymetric charts or related material used for research documentation,

*Noting* that a set of procedures developed by the United Nations would, if implemented to all member nations, lead to a desirable degree of uniformity in naming new features, while also establishing a mechanism for resolving conflicts over, or duplication of, names,

*Realizing* the interest of the International Hydrographic Organization (IHO) and the Intergovernmental Oceanographic Commission (IOC) in standardizing not only procedures for naming but also the names themselves,

*Recommends* that the principles and policies, as well as the name proposal form put before the Conference, be submitted to the IHO for the purpose of developing an agreed statement to meet requirements for an internationally acceptable set of guidelines designed to ensure maximum standardization of undersea feature names.

**II**

*The Conference,*

*Noting* that national and international organizations may employ different terms and definitions for undersea features,

*Realizing that* the United Nations Group of Experts on Geographical Names has elaborated a list of terms and definitions that differ from those approved and submitted to the Conference by the International Hydrographic Organisation (IHO),

*Recommends* that the Group of Experts, in collaboration with the IHO, develop a joint list of terms and definitions for undersea features for international use.

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<sup>1</sup> Second United Nations Conference on the Standardization of Geographical Names, Volume I, Report of the Conference (United Nations Publication, Sales No. E.74.I.2, p. 14).