
**Background Document for the Draft Voluntary Guidelines on
Peer-Review Processes for the Description of Areas Meeting the Criteria for
Ecologically or Biologically Significant Marine Areas (EBSAs)
and Other Relevant Compatible and Complementary Scientific Criteria**

Note from the Secretariat:

This document is only for background information, not for peer-review

Introduction

This document aims to provide background for the draft voluntary guidelines on peer-review processes for the description of areas meeting the criteria for ecologically or biologically significant marine areas (EBSAs) and other relevant compatible and complementary scientific criteria. As such, it provides further explanation and context for the elements of the draft guidelines, which can also inform discussions on the draft guidelines by the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA).

In decision 16/16, the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) adopted new modalities for the description of EBSAs and the modification of EBSA descriptions. Decision 16/16 highlights, among other issues, the importance of a robust scientific basis and transparency when developing submissions of EBSA descriptions or modifications to EBSA descriptions. In the same decision, the COP requested the CBD Secretariat to develop voluntary guidelines on peer-review processes for the description of areas meeting the EBSA criteria and other relevant compatible and complementary scientific criteria. The CBD EBSA process includes certain elements that are aimed at providing opportunities for peer-review, including a six-month open comment period and the convening of regional workshops, in addition to the requirement of submissions to be considered by SBSTTA and COP before they are included in the EBSA repository.¹ In addition, submissions of EBSA descriptions or modifications to EBSA descriptions can also undergo peer-review before being provided to the CBD Secretariat and undergoing the formal steps of the CBD EBSA process in order to strengthen their scientific quality.

Purpose of the voluntary guidelines

The purpose of the voluntary guidelines is to identify and characterize actions that can contribute to effective, robust, equitable and transparent expert review of areas that are being proposed for recognition as significant, particularly with respect to areas meeting the EBSA criteria and other relevant compatible and complementary scientific criteria. As such, the guidelines may also be applicable to a wide range of other processes that use criteria that may be compatible with and complementary to the EBSA criteria, some of which are referenced in this document.

A wide variety of processes exist for identifying and describing marine areas of significance, operating in many different contexts and serving different purposes. As such, these guidelines are not intended to be applicable to all different circumstances, nor are they meant to be prescriptive or dictate specific requirements for such processes.

Furthermore, the voluntary guidelines focus strictly on expert peer-review as a quality assurance exercise that engages individuals in their expert capacity, contributing to the scientific and technical review of information; in the case of experts from indigenous peoples and local communities, such contributions may also include advice based on traditional knowledge. The guidelines are not intended to address broader stakeholder consultation, for which expert peer-review is not a substitute.

¹ Please refer to decision 16/16 for information on how these elements are reflected across the different pathways of the EBSA modalities.

Background and context

Various processes exist across the global, regional, national and local levels focused on identifying and describing areas of significance in marine and coastal areas, including the description and mapping of areas meeting the EBSA criteria. These processes take different approaches that reflect a range of objectives, contexts and priorities. They can focus on special characteristics related to biodiversity, productivity, uniqueness, naturalness, cultural heritage or other specific properties. They can also focus on specific types of habitats, species or processes in the ocean or be applicable to a wide range of features.

Such processes can be coordinated by intergovernmental or governmental entities or by non-governmental organizations or initiatives. They can also be linked with management measures, with certain designations requiring specific management actions. If not directly requiring such actions, they can be used as a source of information to inform decisions for such action.

CBD EBSA process

Under the CBD, work to describe areas meeting the EBSA criteria has been underway since 2010. This work is based on a set of scientific criteria adopted by the CBD COP in 2008. When COP adopted the EBSA criteria², it also urged Parties and invited other Governments and relevant organizations to apply, as appropriate, the EBSA scientific criteria and the scientific guidance to identify ecologically or biologically significant and/or vulnerable marine areas in need of protection (see Box 1).

² The Conference of the Parties to the Convention on Biological Diversity has stressed that description, and modification of the descriptions, of ecologically or biologically significant marine areas is strictly a scientific and technical exercise. It does not imply the expression of any opinion whatsoever concerning the legal status of any country, territory, city or area, including maritime zones, or of their authorities, or concerning the delimitation of its boundaries, and it does not have any economic or legal implications. It has further stressed that any action or activity carried out on the basis of the outcomes of the EBSA process shall be without prejudice to, and shall not be relied upon as a basis for asserting or denying any claims to, sovereignty, sovereign rights or jurisdiction, including in respect of any disputes relating thereto.

Box 1. Criteria and characteristics of EBSAs

An EBSA is an area of the ocean recognized for its unique ecological and/or biological features, such as essential habitats, food sources or breeding grounds for specific species. An EBSA is an area that meets at least one of the seven internationally agreed scientific criteria, known as the “EBSA criteria”, which have been designed to be broad and applicable to a wide range of marine systems:

1. Uniqueness or rarity
2. Special importance for life history stages of species
3. Importance for threatened, endangered or declining species and/or habitats
4. Vulnerability, fragility, sensitivity or slow recovery
5. Biological productivity
6. Biological diversity
7. Naturalness

These areas can vary greatly in size and location, ranging from coastal waters to the high seas and from the ocean surface to the seabed. EBSAs encompass a wide range of species, habitats and oceanographic features, including dynamic and ephemeral phenomena, as well as areas that are important seasonally or throughout the year. EBSAs have included features such as seamounts, hydrothermal vents, coral reefs, migratory corridors, seasonal fish spawning areas and coastal upwellings, among many other types of ecosystems.

EBSA descriptions provide scientific information about the ecological and biological features of specific marine areas. They do not prescribe management measures, such as the establishment of marine protected areas, nor do they characterize threats or recommend specific restrictions on human activities. Decisions on any such measures or policies are purely a matter for States and competent intergovernmental organizations.

To support Parties in their efforts in identifying EBSAs, the COP requested the CBD Secretariat to work with Parties and other Governments as well as competent organizations and regional initiatives, such as regional seas conventions and action plans and regional fisheries management organizations, to organize a series of regional workshops to facilitate the description of EBSAs. This request initiated a global process of regional workshops that has engaged an enormous number of experts from governments, global and regional organizations, academia and civil society, has catalyzed partnerships and capacity building to improve conservation and sustainable use of biodiversity, and, importantly, has identified more than 300 EBSAs all around the world.³

From 2011 to 2022, the CBD EBSA process was driven by these regional workshops, the outputs of which were formally considered by the CBD SBSTTA and COP. The descriptions of all formally identified EBSAs are available on the EBSA repository (<https://www.cbd.int/ebsa/repository>). At its sixteenth meeting in 2024, the COP adopted new modalities for the EBSA process, which include several changes to the previous approach. While regional workshops and consideration by SBSTTA and COP are still key steps prior to inclusion in the EBSA repository, the process is now initiated through submissions from

³ <https://www.cbd.int/marine/ebsa/booklet-ebsa-impact-en.pdf>

States to the Secretariat. These submissions are then publicly posted for a six-month open comment period before undergoing subsequent steps in the process.⁴

Other intergovernmental processes focused on identifying and describing areas of significance

In addition to the EBSA process, a number of other mechanisms aim to identify and describe important marine areas at the global, regional and national levels. While these processes have varying degrees of similarity with the EBSA process, they differ with respect to the criteria used for identification and in the intended use of the resulting scientific information (e.g., whether the designation requires or is intended to lead to the adoption of any specific management measures). Such mechanisms include other intergovernmental processes, international initiatives focused on particular taxa, and national-level EBSA or EBSA-like processes.

Global mechanisms that identify important marine areas through their respective intergovernmental processes include Vulnerable Marine Ecosystems (VMEs) implemented through Regional Fisheries Management Organizations, Particularly Sensitive Sea Areas (PSSAs) under the International Maritime Organization (IMO), Areas of Particular Environmental Interest (APEIs) under the International Seabed Authority (ISA), World Heritage marine sites under the United Nations Educational, Scientific and Cultural Organization (UNESCO), and wetlands designated as Ramsar Sites under the Ramsar Convention, among others.

The identification and designation of these areas is sometimes sector-specific or oriented toward managing particular human activities, often entailing the subsequent application of specific types of management measures. For example, VMEs are ecosystems vulnerable to significant adverse impacts from fishing activities, and the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas⁵ recommend specific conservation and management measures to prevent such impacts. PSSAs, areas considered significant for ecological, socio-economic, or scientific reasons, need special protection from the impacts of maritime activities and specific measures can be employed to further regulate such activities in the area.⁶ APEIs entail protection of the seabed from future exploitation of mineral resources in areas beyond national jurisdiction, protecting the marine environment.⁷ World Heritage Sites and Ramsar Sites, when designated, require planning, conservation and management measures by the Parties.

The criteria used to identify many of these areas are very similar to the EBSA criteria.⁸ Importantly, these exercises are highly complementary to the EBSA process, which has, in turn, allowed for important synergies among these processes.

Key Biodiversity Areas and taxa-based initiatives

In addition to intergovernmental processes, there are various independent global initiatives that focus on identifying important places for biodiversity and specific taxa, though they are not embedded within intergovernmental processes. These include Key Biodiversity Areas (KBAs), Important Bird and Biodiversity Areas (IBAs), Important Marine Mammal Areas (IMMAs), Important Shark and Ray Areas (ISRAs), and Important Marine Turtle Areas (IMTAs), each coordinated by different organizations and

⁴ This specific step must be undertaken for submissions for areas within national jurisdiction for inclusion into the repository, and for areas beyond national jurisdiction. For more information on the EBSA process, please consult decision 16/16 and the EBSA Handbook, available at <https://www.cbd.int/marine/ebsa/ebsa-handbook-en.pdf>

⁵ FAO (2009) International Guidelines for the Management of Deep-sea Fisheries in the High Seas. Rome, 90pp. Available at <https://openknowledge.fao.org/items/c552376c-a207-46a1-a49a-91a79c213989>

⁶ Resolution A.982(24). Revised guidelines for the identification and designation of Particularly Sensitive Sea Areas

⁷ <https://www.isa.org.jm/protection-of-the-marine-environment/regional-environmental-management-plans/ccz/>

⁸ Secretariat of the Convention on Biological Diversity (2021). Special Places in the Ocean: A Decade of Describing Ecologically or Biologically Significant Marine Areas. P. 58, Table 3.

entities. These initiatives are often regarded as complementary to the EBSA process. Notably, marine IBAs, coordinated by BirdLife International, have provided valuable information for the EBSA process, including data on the habits and distribution of seabirds which have been key to EBSA descriptions around the world.⁹

While each initiative has its own procedures for identification, monitoring, and updating, they generally identify important areas based on specific criteria. The identification processes often involve expert technical workshops and robust expert review before such areas are approved and added to their respective databases and maps. Their purpose is to provide a robust scientific basis for prioritizing conservation and management actions, to ensure that efforts are targeted at the most critical places for biodiversity. Results of these exercises can be used by governments, intergovernmental organizations, indigenous peoples and local communities, conservation groups, general public, and other stakeholders, as appropriate.

National-level efforts

A number of countries have developed their own EBSA or EBSA-like processes at the national level, including Australia, Canada, Japan, Norway and others. Australia designates Biologically Important Areas for protected marine species (BIAs) to inform the designation of protected areas, conservation plans and decisions on activities that may impact those species.¹⁰ Furthermore, Australia's Key Environmental Features (KEFs) have been used to inform the planning of the national Australian Marine Park system, and to identify areas of concern for environmental impact assessments in the context of potential development activities. Norway's Particularly Valuable and Vulnerable Sea Areas are identified using the seven EBSA criteria and are used to inform management plans for national sea areas. Japan has also applied the EBSA process in its waters, where it has informed the national process for marine protected areas and marine conservation policies, while catalyzing funding for deep-sea scientific research and monitoring activities.¹¹ In Canada, national EBAs have been designated through the Canadian Science Advisory Secretariat's (CSAS) peer review process, using criteria closely aligned with the CBD EBSA criteria. Canada uses EBSA information in various marine management processes, particularly for marine planning, environmental assessments and guiding marine-based activities.¹² National processes might also include and recognize EBSA-like processes used by indigenous peoples and local communities to identify important areas for biodiversity, habitat and specific species, relying on scientific information as well as traditional knowledge.

Peer-review in the context of the draft voluntary guidelines

In decision 16/16, the CBD COP emphasized that, in developing submissions of EBSA descriptions or modifications to EBSA descriptions, proponents should consider, at an early stage, "the need for a strong scientific basis with sufficient information, as well as the importance of transparency." The importance of a strong information basis and robust review is a common factor among such processes. In this regard, peer-review is also a common factor of success. Peer-review can take different forms, but is always focused on the same objective—providing an opportunity for experts in a field to evaluate work in order to ensure its quality and validity.

Peer review is generally understood as a quality control process in which experts evaluate the validity, significance, and originality of work—such as research articles, grant proposals, or policy reports—before it is published or approved. The primary goals are generally to ensure that work meets certain standards, to

⁹ Secretariat of the Convention on Biological Diversity (2021). Special Places in the Ocean: A Decade of Describing Ecologically or Biologically Significant Marine Areas.

¹⁰ <https://www.dcceew.gov.au/environment/marine/bias>

¹¹ Secretariat of the Convention on Biological Diversity (2021). Special Places in the Ocean: A Decade of Describing Ecologically or Biologically Significant Marine Areas.

¹² <https://open.canada.ca/data/en/dataset/d2d6057f-d7c4-45d9-9fd9-0a58370577e0>

improve the quality of submissions through constructive feedback, and to prevent the dissemination of flawed or biased work.¹³ While peer-review may be most well-known in the context of academic publications, it can also be used in other types of processes, in particular those that have, or are intended to have, a strong basis in science and the use, and interpretation, of technical information. For example, the government of Canada has a specific office, the Canadian Science Advisory Secretariat (CSAS), that coordinates scientific peer review and science advice for Fisheries and Oceans Canada (DFO) and publishes departmental scientific advice and information on issues such as fish stock dynamics, species at risk, invasive species, marine protected areas, and aquaculture.¹⁴

Given that submissions for the description of new EBSAs or the modification of EBSA descriptions must be provided by States, it would seem likely that such peer-review processes would generally be coordinated by, or at least with the heavy involvement of, governmental agencies. As such, there are also expectations of transparency in such work that may negate the possibility of certain types of peer-review that rely more on confidentiality. In addition, peer-review processes in the context of EBSA or EBSA-like initiatives may also generally need to reflect a broad range of expertise. This includes experts from various disciplines and from various stakeholder groups, which can help ensure that all relevant knowledge sources are included in the process and that all relevant types of expertise have been utilized. Engaging a wide range of experts in the peer-review process not only strengthens the robustness of the proposal in question but it can also facilitate stronger stakeholder support in any potential actions taken on the basis of the work being reviewed.

The draft guidelines are oriented towards processes related to the designation of marine areas of significance, as per the COP decision. However, given that there are different types of processes for identifying and describing marine areas of significance, and many different contexts in which these operate, it is not possible to provide one comprehensive set of guidelines that will be completely applicable to all different circumstances. As such, the guidelines are not meant to dictate any specific requirements for such processes, and the absence of the elements discussed here and/or in the guidelines does not imply that a given process may be inadequate. Rather, they are meant to be a reference point to help those coordinating and involved in such processes.

Background related to elements of the draft voluntary guidelines

This section aims to provide relevant background and explanation for the elements of the draft voluntary guidelines. It addresses key overarching elements of the draft guidelines, which are, in many cases, reflected across multiple elements of the guidelines.

It is also important to understand where the guidelines apply in the context of processes for the designation of marine areas of significance. The COP has specifically requested the guidelines to focus on “peer-review processes”. As such, these guidelines are intended to apply in cases where work has already been done to develop the draft analysis and justification for why a given area(s) meets the criteria for a specific designation and this analysis is undergoing review by experts in the field to evaluate its scientific quality and validity.

Information regarding the designation status for which the area is being proposed

In order for a peer-review process to be effective, those involved must have a full understanding of the context and objectives regarding the designation status for which the area is being proposed, and how the

¹³ Tennant, J. P., et al. (2017). A multi-disciplinary perspective on emergent and future innovations in peer review. *F1000Research*, 6, 1151. <https://doi.org/10.12688/f1000research.12037.3>

Lee, C. J., Sugimoto, C. R., Zhang, G., & Cronin, B. (2013). Bias in peer review. *Journal of the American Society for Information Science and Technology*, 64(1), 2–17. <https://doi.org/10.1002/asi.22784>

¹⁴ <https://www.dfo-mpo.gc.ca/csas-sccs/about-sur/index-eng.html>

analysis was developed. They must also have an overall picture of the steps of the process and where their input and engagement factors into this process.

A foundational element of this is a clear understanding of the designation being sought/addressed in the process. Different designations of significance have different criteria and are meant to be applied in certain circumstances. For example, designations such as vulnerable marine ecosystems (VMEs), Particularly Sensitive Sea Areas (PSSAs) and Areas of Particular Environmental Interest (APEIs) are applied with respect to specific sectors (i.e., fishing, shipping and deep-sea mining, respectively). Others may only apply to specific taxa, such as Important Marine Mammal Areas. Furthermore, some designations have the same or similar criteria, but have different interpretations of those criteria. It's important to provide clear information on the designation being sought/addressed, including the steps of the process and all requirements, criteria and/or thresholds that the area(s) in question must meet for the designation, and any guidance or standards for applying and interpreting the criteria being used. This would assure those involved in the peer-review process that the designation is relevant to the area in question and will give them a sound foundation on which to assess whether the area actually lives up to the criteria.

Furthermore, it is important to understand whether the area in question is, or has been, associated with any designations. First, and most obvious, is whether the area already has the designation being addressed and if this process is related to any update or modification. Also, many areas of significance have multiple designations, reflecting their importance in different contexts. For example, many CBD EBSAs are also designated as Ramsar sites, among many other designations. It should also be clear whether the area has had any designations in the past which it no longer has. Finally, the information provided to peer-reviewers should ideally clarify, if possible, whether any relevant designations have been sought in the past but not accorded to the area in question, and, if so, why the effort was unsuccessful. This information would not only give proper context to the peer-review, but would also provide a valuable source of information for analyses relevant to the process that can avoid duplication with past efforts.

It is also critical to understand whether the designation being sought would require any specific actions (e.g., specific management measures) to be taken after the designation is accorded. EBSAs are not management measures and do not prescribe any management approaches. They also do not state what human activities should or should not take place in the area. However, other types of designations do carry certain responsibilities with them. RAMSAR sites, for example, are expected to have a management plan for the sites (Article 3.1 of the Convention on Wetlands). It is important for those involved in the peer-review process to understand whether any such action is required or expected following the designation.

The above issues are reflected in the following elements of the draft voluntary guidelines:

- *Full overview of the steps of the process for seeking the designation in question, including the steps of the process that had been completed thus far*
- *The nature of the designation status that is being sought, and all requirements, criteria and/or thresholds that the area(s) in question must meet in order to be given this status*
- *Whether the area(s) in question is associated with any other formal designation, including any previous recognitions which it no longer has, and whether any designation have been sought in the past but not accorded*
- *Whether any specific actions (e.g., specific management measures) are expected to be taken after the designation is accorded*

Clear justification for why the area(s) meets the criteria for the designation status being sought

The expert review process is focused on ensuring that a proposal is of high scientific quality, and as such, peer-reviewers should be provided with sufficient information regarding the scope of the exercise and the

area in question, and explaining why the features of the area(s) in question are relevant to, and meet the criteria for, the designation being sought.

First, they must be provided with a clear geographical delineation of the area using maps and coordinates. This can help inform discussions regarding spatial information that may or may not be relevant to the exercise and help reviewers to identify whether any other issues may come into play, such as jurisdictional concerns. The scope of the process that led to the proposed designation or modification should also be clear, both from the geographic perspective as well as regarding the types of features addressed. In many cases, the designation of areas of importance will emerge from an exercise that looked at a range of different features across a certain geographic space. For example, great care was taken in the context of past CBD regional EBSA workshops to delineate the geographic scope of the workshop so that the bounds of the exercise were clear. Understanding which areas and features were included in the scope of the exercise will help those involved in the peer-review to better understand the proposal and to identify potential gaps in the exercise. This is especially important for areas that have not yet been extensively studied, are of a complex or heterogeneous nature, such as a marine area with multiple stakeholders and users as well as a diverse range of habitats and species and seasonal oceanographic features. With respect to the scope of features addressed in the exercise, this may also be limited by the type of designation sought. While the EBSA criteria allows for consideration of all types of ecological and biological features, other designations may be limited to certain types of taxa or certain areas of the ocean (e.g., deep-seabed). Depending on the amount and complexity of the geographical information to be included and presented, the proponent might consider the use of a Geographical Information System (GIS) with which to portray the various datasets and geographic boundaries of the area, which will also aid in interpreting any interactions between key biological, political, socio-economic and geographical features.

The above issues are reflected in the following elements of the draft voluntary guidelines:

- *Clear geographic delineation of the area(s) in question*
- *Geographic scope of the exercise/analysis that led to the proposal to describe the area(s) in question as significant*
- *Whether the process that led to the proposal was limited to and/or specifically focused on certain types of features, habitats, processes or species*

Finally, and perhaps most importantly, it needs to be clear why and how the features/characteristics of the area justify the designation of the area under the criteria in question. This issue links to the above section that highlights the need to ensure that the designation being sought is relevant to the area(s) in question, as some features will simply not be relevant for a given designation. Once confirmed that the designation is indeed relevant, it needs to be clearly demonstrated that the area meets the criteria required by the designation. Different designations may approach this in different ways, perhaps have certain thresholds that must be met or being limited to certain types of data/knowledge. With respect to EBSAs, any feature(s) can potentially be described as an EBSA and there are no explicit limitations to the types of information that can be used to explain how these features meet the criteria. The only core requirement is that the feature(s) meet at least one of the seven EBSA criteria. And, although the criteria are described in relatively general terms and without specific thresholds, some guidance and experience has emerged regarding the application of the criteria and different ways that they can be met. In fact, the decision IX/20 in which COP adopted the EBSA criteria also contains, for each of the seven criterion, rationale, examples and consideration in applying the respective criterion. As well, the CBD Secretariat prepared a training manual for the description of EBSAs that aims to provide guidance and advice in types of information that could be used.¹⁵

¹⁵ <https://www.cbd.int/doc/meetings/sbstta/sbstta-16/information/sbstta-16-inf-09-en.pdf>

There are a wide range of different types of information that could potentially be used to make the case for how an area meets the criteria for the designation being sought. These may include:

- Peer-reviewed literature
 - Academic or scholarly work—like journal articles—that has been evaluated by independent experts (peers) in the same field before being published. This process ensures that the research is credible, accurate, relevant and meets academic standard
- Grey literature
 - Research produced and published by organizations that are outside of academic or traditional commercial publishing and distribution channels, such as industry and governmental or intergovernmental bodies. For areas where published peer-reviewed data sources are few or non-existent, the proponent may need to resort to grey literature as the main source of information in the proposal for a marine area of special importance.
- Traditional knowledge of indigenous peoples and local communities
 - Given the importance of species, habitats, and areas to indigenous peoples and local communities, (IPBES, 2018), they have valuable information and knowledge that can be used in designation processes. Of course, such traditional knowledge must only be obtained and used with their free, prior and informed consent,¹⁶ in accordance with relevant national legislation and international instruments.
- Maps, nautical charts and other types of geospatial information
 - Various data and/or image formats exist, though vector and shape files are the most commonly used, which allows different data layers to be incorporated. Digital versions of charts and maps can now be purchased and incorporated into a geographic information system (GIS) to develop maps tailored for the proposal. Emphasis should be on the use of accessible material from credible sources. There are many global-scale datasets and national/regional scale datasets from which some information relevant to most areas is expected. Such data are often open-access or held by government or academic institutions. Global datasets can be based upon nationally collected data, though resolution can be very coarse. Alternatively, some datasets are built using modelled data, in which case the accuracy will need to be assessed before using it for a specific area.
- Photos or videos
 - Inclusion of photographs, including recent (and, where possible, historical) photographs, of features that match all or some of the criteria of the designation being sought can also help to strengthen proposals for marine areas of special importance. Digital images could be embedded in the proposal documents, though old cellulose-based imagery (negatives and slides) might still be relevant. Similarly, video footage may also be considered, for example from aerial surveys, or underwater transects, either as whole sequences, or from which snapshots can be extracted. The relevance, year of image and resolution are the main aspects to consider.

Regardless of the type of knowledge used, the need to ensure that the information is high-quality, timely and relevant is a common thread of peer-review processes. The International Council for the Exploration of the Sea (ICES), an intergovernmental organization that provides science advice to governments and intergovernmental processes primarily in the North Atlantic, has a specific set of principles that guide its work. Among these are the following principles¹⁷:

¹⁶ “Free, prior and informed consent” refers to the tripartite terminology of “prior and informed consent”, “free, prior and informed consent” and “approval and involvement”.

¹⁷ ICES. 2023. Guide to ICES advisory framework and principles. In Report of the ICES Advisory Committee, 2023. ICES Advice 2023, section 1.1. <https://doi.org/10.17895/ices.advice.22116890>

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- “The best-available science and quality-assured data are used. ICES selects and applies relevant methods for any analysis, including the development of new methods. The methods are peer reviewed by independent experts and clearly and openly documented”
 - “Data are findable, attributable, researchable, reusable, and conform to ICES data policy. Data flows are documented”

Different types of information differ in the level of scrutiny they undergo. For example, grey literature often does not go through the same peer-review process as an academic publication. As such, data validation and complementing or supplementing certain types of information with supporting information can prove useful.

For many marine areas, the available knowledge, especially on biodiversity and environmental features, may be somewhat limited. As a result, data gaps, which can be significant in some cases, persist. Situations where there are gaps in important datasets, such as seasonal or annual omissions of the presence of specific species or measurement of physiochemical parameters of a body of water, require strategies to overcome the missing data (see Box 2).¹⁸ More commonly, knowledge gaps refer to the absence of information on a particular aspect or feature of the area in question, but may also be due to reliance on specific types of knowledge or information. In such cases, proponents may need to conduct specific field visits or surveys, consider other knowledge sources, or make specific assumptions and extrapolations from other equivalent areas. Here too, proposals should include explanations of strategies adopted to overcome constraints related to such data gaps. These may include conducting dedicated field visits or making specific assumptions and extrapolating from other equivalent areas, documentation of other knowledge sources, or modelling using existing data.

Johnson *et al.* (2018) conducted a review of reports resulting from the first 12 regional EBSA workshops, from which they found that approximately 30 per cent of all EBSA descriptions recorded “No information” against at least one criterion. EBSA descriptions from the North Pacific, the Wider Caribbean and Western Mid-Atlantic, and the Arctic regions had the fewest information gaps, with “No information” scores recorded in ≤ 20 per cent of EBSAs. Conversely, the North-West Atlantic, Western South Pacific and North-East Indian Ocean regions had the greatest gaps in information, with 57–60 per cent of EBSAs recording “No information” against at least one criterion. The need for more research in deep-sea habitats to identify specific “hot spots” and target further site-specific studies and baseline surveys was also widely acknowledged.¹⁹

¹⁸ Bax, N.J., Cleary, J., Donnelly, B., Dunn, D.C., Dunstan, P.K., Fuller, M. and Halpin, P.N. 2016. Results and implications of the first global effort to identify ecologically or biologically significant marine areas. *Conserv Biol*, 30 (3): 571–581.

¹⁹ Johnson, D.E., Froján, C.B., Turnera, P.J., Weaver, P., Gunn, V., C. Dunn, D.C., Halpin, P., Bax, N.J. and Dunstan, P.K. 2018. Reviewing the EBSA process: Improving on success. *Marine Policy* 88: 75–85.

Box 2. Lessons learned on data accessibility and important data gaps

Bax *et al.*, (2016) provides a review and assessment of the process under the CBD to facilitate the description of ecologically or biologically significant marine areas (EBSAs), including with respect to data accessibility and data gaps.

The assessment found that synthesis and mapping of scientific data by the technical teams was challenging in all of the nine workshops assessed, regardless of region. The absence of a common global data network made it difficult to identify data sets, which were typically identified through existing scientific networks and additional contacts identified prior to the workshops. It is likely that important data sets were missed in the first round of regional workshops, underscoring the need for a continuing process with improved data infrastructure. Also, the assessment found that some scientists are unwilling to provide access to data, especially before publication, even if the data collection was supported by public funds.

Groups that have collaborated to provide global data sets, for example, on seabirds, seamounts, biodiversity, or geomorphology, had more influence on the choice of EBSAs and their boundaries than, for example, turtle or marine mammal researchers, where global analyses were lacking.

The assessment found significant data gaps and deficiencies resulting from low levels of data collection or poor data sharing, including for the open ocean and southern hemisphere. Furthermore, biogeographic classifications used to support spatial planning have been developed for the ocean surface and seabed environments, based primarily on physical data (e.g., UNESCO's Global Open Oceans and Deep Seabed (GOODS) – biogeographic classification, 2009), but data have been so sparse for the pelagic water column below 200 m depth that these areas are only rarely included in monitoring and management schemes or in conservation planning. Data from the Census of Marine Life and other national and international efforts are now contributing to a biogeographic classification for the mesopelagic (approximately 200–1000 m) and helping scientists identify major patterns in the bathypelagic (>1000 m). The authors report that globally consistent biological data collections are starting to become available, however, although areas such as seamounts, shallow reefs and the continental shelves have been studied more than other areas, there is little information on hadal and abyssal regions.

The authors suggest the need to improve scientists' capacity and willingness to share data, recognizing authors of data, and that filling the data gaps in the open ocean and southern hemisphere is a high priority that requires new resources and effort.

The Canadian Science Advisory Secretariat advises that, with respect to data gaps, a minimum standard for the application of spatial data should be used in the definition of EBSAs. For example, if species are widespread, but data do not cover the complete study area, the data can be extrapolated to larger areas, provided the area of data origin is determined to be representative of the complete area. This extrapolation must be clearly documented with the associated level of uncertainty indicated both in the metadata and on the resulting map products. If species distributions are clustered and data come from a partial area, it is not acceptable to extrapolate from one small sampling area to the larger Large Ocean Management Areas (LOMAs) or equivalent area, unless appropriate statistical models of distribution patterns are first validated and then applied.²⁰

²⁰ DFO, 2011. Ecologically and biologically significant areas – lessons learned. DFO Can. Sci. Advis. Rep. 2011/049.

Qualitative mathematical models can provide a formal representation of an ecosystem based on a general description of its biological and environmental processes.²¹ Such models have been used, for example with respect to vulnerable marine ecosystems. Whichever method is used, explanations and justifications should be provided regarding the strategies adopted to overcome constraints related to limited data availability.

Proponents will most certainly need to engage specialists and knowledge-holders if there are large volumes of information generated from engaging with indigenous peoples and local communities. In cases where there are large volumes of scientific data, typically from grey literature such as fisheries statistics reports, or from dedicated surveys that need to be validated, specialist inputs may also be important. The names and profiles of experts and/or institution(s) that verified and/or validated the data/knowledge and their contact details should also be reported, as there is need to ensure their credibility and appropriateness.

It should also be clear what types of methods/techniques were used to process and statistically analyse the data presented, ideally using the latest, most relevant, and appropriate analytical tools. The names and profiles of expert(s) and/or institution(s) that analysed the data/knowledge and their contact details would also be needed to ensure the credibility and appropriateness of experts who analysed the data used in the proposal.

The above issues are reflected in the following elements of the draft voluntary guidelines:

- *Clear explanation of the features of the area(s) relevant to the designation being sought and justification as to how these features contribute to the area meeting the relevant designation criteria, using the best available information and knowledge*
- *Any gaps or uncertainties that may exist in the information/knowledge being used*
- *Full references/citations for all information/knowledge being used*
- *Applicable permissions for all information/knowledge being used, including the best available science and traditional knowledge of indigenous peoples and local communities respecting their free, prior and informed consent*

Experts engaged in peer-review process

A key element of any peer-review process, as a quality assurance exercise, is ensuring that appropriate experts in the field are involved. These experts will be engaged in the process to review the work already conducted to analyze if, and how, a given area meets the designation in question. Traditional approaches to peer-review, such as for academic journals, are based primarily or solely on a small number of experts providing expert scrutiny and review, with the identities of these experts often withheld from those who produced the work. However, designation processes are of a different nature than work done through academic journals and require different considerations and approaches, including more transparency and engagement of experts with a broad range of knowledge and expertise.

Of prime importance is that those engaged in the peer-review are experts that have relevant knowledge in the specific area in question and/or knowledge and expertise regarding the analysis and interpretation of the data related to the area and any assessment methodologies used to justify the area meeting the criteria for the designation in question. Some academic journals have produced guidance and criteria for the selection of experts to be invited to contribute to peer-review. For example, Gates Open Research, a platform for open access publication of peer-reviewed research, outlines certain criteria for selecting expert peer-reviewers that focus on identifying whether a given individual has the required expertise. These

²¹ Dunstan, P.K., Bax, N.J., Dambacher, J.M., Hayes, K.R., Hedge, P.T., Smith, D.C., and Smith, A.D.M. 2016. Using ecologically or biologically significant marine areas (EBSAs) to implement marine spatial planning. *Ocean & Coastal Management* 121: 116-127.

include having a doctorate and being the lead author on at least three published articles relevant to the topic.²² Similarly, SAGE journals has provided guidance on selecting reviewers for journal articles that stress the importance of confirming the reviewer's field of study and emphasis (including through publication records) and that they are familiar with all aspects of the topic addressed in the article being reviewed.²³

The above-noted guidance, however, is specific for academic journals and might not be directly applicable to the types of peer-review addressed in the draft guidelines that this document is addressing. For example, there may be highly qualified experts with valuable information to contribute that do not focus on publishing articles in academic journals. And, there may be relevant types of knowledge that are not accessible in any publications, but rather are held by indigenous peoples and local communities, for example. As such, experts involved in the peer-review may come from a wide range of backgrounds and disciplines. For example, some may be experts from academia or scientific institutions, whereas some experts may come from stakeholder groups. Stakeholders can be individuals, groups or organizations in some way connected with, and having interests in, the area under consideration. Typically, stakeholders associated with a potential marine area of special importance will include, but not be limited to, international, national, regional, local and/or governmental and non-governmental entities, associations, indigenous peoples and local communities, marine and coastal resource users, private sector representatives and academia. As there are numerous types of stakeholders associated with both coastal areas and remote deep-sea and open ocean areas, it is crucially important that a stakeholder analysis and mapping exercise is undertaken at the start of the development of a proposal for a marine area of special importance, so that all relevant experts and key informants are identified, and that no vital information is omitted.

However, the critical element is that the individuals involved are indeed experts and have relevant knowledge and experience and that the knowledge and experience represented by those experts can cover all elements of the issues that require expert review (i.e., that all substantive elements of the submission can undergo review by qualified experts and there are no gaps in expertise in the peer-review process).

As these experts may have very differing backgrounds, interests and knowledge, they will likely provide different types of input. As such, they should be engaged in a way that maximizes the input they can provide primarily focusing on strengthening the scientific quality and validity of the proposal. These individuals should also clearly understand the type of input that is being expected from them and how this will fit into the overall process. This can not only enhance the input provided by them, but also reduce potential misunderstandings or misperceptions.

The above issues are reflected in the following elements of the draft voluntary guidelines:

- *Engagement of the appropriate level and number of experts (which includes experts from various, rightsholder and stakeholder groups), with a clear rationale for their engagement, including (but not limited to):*
 - *Individuals with sufficient knowledge in the types of features, habitats, processes or species being discussed*
 - *Individuals with sufficient expertise in the methodological approaches used in the analysis*
 - *Representatives from indigenous peoples and local communities in relation to their traditional knowledge subject to their free, prior and informed consent*
- *Clear explanation of the types of input expected from those involved, which may vary for different types of experts*

²² https://gatesopenresearch.org/for-authors/tips-for-finding-referees?utm_source=chatgpt.com

²³ https://us.sagepub.com/sites/default/files/reviewer_selection_handbook.pdf?utm_source=chatgpt.com

Another important element of engaging experts, including from various stakeholder groups in the process is to understand, as much as possible, their perspectives, interests, concerns and biases. These should factor into various other elements addressed in this document. One key element of this is to understand actual or potential conflicts of interest of those involved in the peer-review.

Conflicts of interest arise when an individual or organization has multiple interests, and one may undermine the impartiality or integrity of their professional actions.²⁴ These can be financial, ideological, political, and institutional biases, among others.²⁵ Various typologies exist to differentiate various types of conflicts of interest, which helps organizations recognize subtle or emerging conflicts. Lo and Field (2009) differentiate between individual and institutional conflicts of interest, and actual, perceived, and potential conflicts of interest.²⁶

There are also different ways in which conflicts of interest can be disclosed by those entities. The traditional approach is to request individuals to self-report conflicts of interest. However, some studies have shown that traditional self-disclosure mechanisms often fall short in environmental policy, especially when actors are unaware of their own biases or fail to disclose non-financial ties.²⁷ Studies show that structured disclosure forms, particularly those with specific prompts rather than open-ended questions, are more effective.²⁸

Some institutions have developed specific policies or guidelines around conflicts of interest. For example, the Canadian Science Advisory Secretariat (CSAS), referenced earlier in this document, has a specific policy on conflicts of interest that outlines how CSAS defines, identifies and manages real, perceived or potential conflicts of interest of all participants, employees and external participants throughout all stages of their science peer review processes.²⁹ This includes specific courses of action to be taken when conflicts of interest are identified, including

- Deeming an individual ineligible to participate in all or part of the CSAS science advisory process;
- Recusing a participant during a particular section(s) of a science peer review meeting; or
- Deeming a participant ineligible to participate in future CSAS peer review processes pertaining to the topic under scientific peer review.

This topic has also been a topic of discussion under the CBD. In 2018, the CBD COP adopted decision 14/33 that outlined procedures for avoiding or managing conflicts of interest in expert groups.

The above issues are reflected in the following elements of the draft voluntary guidelines:

- *Understanding, and disclosure, of actual or potential conflicts of interests and motivating factors that experts may have in engaging in the process*

²⁴ Thompson, D. F. (2005). Understanding financial conflicts of interest. *New England Journal of Medicine*

²⁵ Newig, Jens & Fritsch, Oliver (2009). *Environmental governance: participatory, multi-level — and effective?* Environmental Policy and Governance, 19(3), 197-214.

²⁶ Lo, B., & Field, M. J. (2009). *Conflict of Interest in Medical Research, Education, and Practice*. National Academies Press

²⁷ Boehmer-Christiansen, S. (2005). Global climate protection policy: The limits of scientific advice. *Global Environmental Change*

²⁸ Emanuel, E. J., & Steiner, D. (2008). Transparency, integrity, and scientific publishing. *JAMA*

²⁹ <https://www.dfo-mpo.gc.ca/csas-sccs/process-processus/conflict-conflict-eng.html>

Setting-up and carrying out the peer-review process

The peer-review process itself must be constructed and implemented carefully and in a manner that ensures trust in the process and the integrity of the outcomes. Moffat and Zhang (2014) highlight how perceived transparency and fair process are critical to building trust, especially in the context of projects or initiatives that may be controversial or may lead to negative outcomes for certain stakeholders.³⁰

Of prime importance are the means and modalities through which the peer-review is conducted. There are a wide range of modalities that could potentially be used, including individual review, in-person or virtual workshops and meetings, one-on-one meetings and visits to local communities or surveys/questionnaires, among others. These all come with their respective pros and cons. Box 3 gives an example of how the Marine Stewardship Council evaluates and selects its approaches to peer-review. Some approaches may be very costly and time-intensive (e.g., visits to local communities) but could generate stronger engagement by key experts. Approaches that may be cost-effective (e.g., virtual meetings) may not stimulate the level of engagement required for robust peer-review. Engagement strategies of experts should be context-sensitive, and methods that work in one setting (e.g., digital surveys) may not translate effectively elsewhere (e.g., in rural or marginalized communities).^{31,32}

³⁰ Moffat, K., & Zhang, A. (2014). The paths to social license to operate: An integrative model. *Resources Policy*

³¹ OECD (2017). *Engaging stakeholders in the co-creation of public services*

³² Newig, J. et al. (2018). The environmental performance of participatory and collaborative governance: A framework of causal mechanisms. *Policy Studies Journal*

Box 3. The Marine Stewardship Council's peer- review system on fisheries

Brown *et al.* (2020) reviewed several peer-review approaches related to fishery management systems and found that the diversity of approaches demonstrates that there is no one ideal way to implement peer review, and that there are trade-offs inherent in designing a peer-review system. The case study below is extracted from their review paper, focusing on the approach adopted by the Marine Stewardship Council (MSC).

The MSC is an independent, global, non-profit organization that provides the standard and framework for third-party audits by Conformity Assessment Bodies (CABs) for evaluating the sustainability of fisheries. The evaluation process involves assessing whether fisheries are achieving minimum standards related to the status of the target stocks, impacts of fishing gears and governance, among other factors. Neither the CABs nor the peer reviewers in the MSC system provide actual reviews of stock assessments as performed by different national systems, such as Canada and Australia, or regional fisheries management organizations. Rather, the peer review in this case is an important part of the assurance framework built into the MSC assessment and certification process. As a component of the MSC certification process, CABs review stock assessments to determine if they meet the MSC standard.

To ensure that CABs perform to the level required to assess fisheries accurately and consistently, the MSC developed two checks in a quality control system: 1) an annual review of CAB performance by an outside auditor, Accreditation Services International (ASI), and technical oversight, consisting of peer review by non-MSC experts and an oversight review by an MSC internal fishery team conducted prior to fishery certification; and 2) a second follow-up stage of peer review when the reviewers are invited to comment again on the responses of the CAB teams to their initial comments. The CABs also include their second response in the final draft report released into the “objections stage” of the certification process.

In 2014 the MSC decided to develop a Peer Review College to add independence and rigour to the peer review of the MSC certifications, increase the pool of peer reviewers, ensure consistency and effectiveness in the inputs, and monitor and improve the speed and efficiency of peer reviews. The Peer Review College started voluntary pilots in 2016, which were formalized for all new fisheries in late 2017. A designated MSC team runs the College and is responsible for liaising with the CABs and peer reviewers. The MSC team manages the peer-review system, recruits and contracts peer reviewers, ensures that peer reviewers do not have conflicts of interest, and provides a quality check on peer reviews. Conflict of interest criteria include financial and employment factors for the potential reviewers and their immediate families, advocacy and perceived conflicts. The MSC team is supported in these regular activities by up to three independent third-party experts. The Peer Review College Oversight Committee, comprising up to five representatives from the MSC Stakeholder Advisory Council and one from the Technical Advisory Board, provides input on the College procedures and guidelines, and reviews the College's ongoing and overall performance. ASI works with the Peer Review College to review conflict of interest procedures, evaluating any potential conflicts, and investigating stakeholder concerns about conflicts. The MSC process has a public consultation stage on the shortlist of peer reviewers to be included in each fishery review. Any conflicts of interest raised by stakeholders are considered by the Peer Review College Team in collaboration with ASI, and the candidate peer reviewer can be removed from the shortlist, if appropriate.

The engagement modalities are especially important for experts from indigenous peoples and local communities. The livelihoods of indigenous peoples and local communities are often strongly intertwined with the use of wild species.³³ Consequently, indigenous peoples and local communities are key partners for national governments and international agencies seeking to safeguard biodiversity through conservation measures or regulatory interventions. Many cultures, identities, traditional knowledge and oral histories from indigenous peoples and local communities are inextricably linked to the lands and waters on which they live and the natural resources on which they depend. These lands, waters and resources may be sacred or spiritually significant. Use of sacred sites and other places of cultural significance may have important

³³ IPBES, 2018. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Sixth session, Medellin, Colombia, 18–24 March 2018 IPBES/6/INF/8.

functions for the conservation and sustainable use of the natural resources upon which indigenous peoples and local communities rely for their livelihoods and well-being. Furthermore, customary use of coastal land and marine resources refers to patterns of long-standing community land and resource use in accordance with customary laws, values, customs and traditions, including seasonal or cyclical use, rather than formal title to land and resources issued by the state. Thus, it is important to understand any claims to coastal land and marine resources not owned under national law.

Of course, indigenous peoples and local communities may also initiate and/or lead the development of a given proposal for designations or even be the designating authority. Indigenous peoples and local communities are particularly vulnerable if their lands and resources are transformed, encroached upon, or significantly degraded. Their languages, cultures, religions, spiritual beliefs and institutions may also come under threat.³⁴

In situations where indigenous peoples and local communities are not initiating and/or leading proposal writing, it is important to foster good faith and engage them when proposed sites for designation are or include traditional or customary coastal land/or coastal and marine habitats and areas. Information that contributes to the completeness and credibility of the proposal can often be best obtained through consulting these groups³⁵. The CBD training manual on the incorporation of traditional knowledge into the description and identification of EBSAs is one of an increasing number of guides that address the challenges and proposes methods to improve the engagement of indigenous peoples and local communities in the process of describing significant marine areas, ensuring that their knowledge is incorporated to the greatest extent possible, with their full and effective participation.³⁶ It also provides explanations on how traditional knowledge can, through participatory methodologies, be integrated into EBSA-like processes.

The above issues are reflected in the following element of the draft voluntary guidelines:

- *The use of effective and equitable modalities that are appropriate to facilitate robust review of the proposal, which may include a combination of different approaches*

Many institutions have developed a set of principles that peer-review processes must follow and have an array of guidelines and policies for how they are to be conducted. ICES has published a specific advisory framework and set of principles that guide its work in providing science advice.³⁷ Likewise, the Government of Canada, developed a set of principles for the use of science advice in making policy and regulatory decisions, known as the “SAGE” principles.³⁸

³⁴ IFC PS7, 2012. Performance Standard 7: Indigenous Peoples. Performance Standards on Environmental and Social Sustainability. International Finance Corporation, Washington DC, U.S.A

³⁵ Young, J.C., Rose, D.C., Mumby, H.S., Benitez-Capistros, F., Derrick, C.J., Finch, T., Garcia, C., Home, C., Marwaha, E., Morgans, C., Parkinson, S., Shah, J., Wilson, K.A. and Mukherjee, N. 2018. A methodological guide to using and reporting on interviews in conservation science research. *Methods in Ecology and Evolution*, 9 (1).

³⁶ UNEP/CBD 2016. Training manual on the incorporation of traditional knowledge into the description and identification of EBSAs. 2016 SBSTTA-20-INF-21, 8 April 2016.

³⁷ https://ices-library.figshare.com/articles/report/Guide_to_ICES_advisory_framework_and_principles/22116890/1?file=39303008

³⁸ <https://www.dfo-mpo.gc.ca/csas-sccs/about-sur/index-eng.html#SAGE>

To further guide their work, ICES and Canada have also developed a range of guidelines and policies, including for issues such as participation in peer-review meetings, observers in meetings, consensus, publication of documents and the roles of reviewers in the process.^{39,40}

Given the wide range of different types of designation processes that are embedded in very different contexts, it's not possible to prescribe sets of rules and guidelines that all must follow. What is important, however, is that the process operates on a set of clear rules and guidelines that all participants understand or at least accept, and that these are enforced and adhered to, to the greatest extent possible. And, when there are deviations from any of the rules, guidelines, steps or timelines, these should be made clear to those engaged in the peer-review process.

The above issues are reflected in the following elements of the draft voluntary guidelines:

- *Clear steps and expected timelines that are adhered to, and clear explanations of any deviations*
- *Clear rules of procedure and code of conduct set out, explained to all involved and adhered to throughout the process, including rules for issues such as:*
 - *How the discussions and information provided during the process are to be captured in any public documentation (e.g., Chatham House Rule)*
 - *When consensus is expected/required and steps to be taken when consensus is not possible*
- *Clear plans for how the input received through the process will be incorporated and reflected*
- *Ensuring adherence to any rules, procedures, timelines and expectations articulated at the outset of the process*

³⁹ <https://www.dfo-mpo.gc.ca/csas-sccs/process-processus/index-eng.html>

⁴⁰ https://www.ices.dk/advice/Pages/technical_guidelines.aspx