APPENDIX 1. SCIENTIFIC CRITERIA FOR IDENTIFYING ECOLOGICALLY OR BIOLOGICALLY SIGNIFICANT MARINE AREAS IN NEED OF PROTECTION IN OPEN-OCEAN WATERS AND DEEP-SEA HABITATS 1/ (Annex I of Decision IX/20)

Criteria	Definition	Rationale	Examples	Consideration in application
Uniqueness or rarity	Area contains either (i) unique ("the only one of its kind"), rare (occurs only in few locations) or endemic species, populations or communities, and/or (ii) unique, rare or distinct, habitats or ecosystems; and/or (iii) unique or unusual geomorphological or oceanographic features	• Irreplaceable • Loss would mean the probable permanent disappearance of diversity or a feature, or reduction of the diversity at any level.	*Open ocean waters* Sargasso Sea, Taylor column, persistent polynyas. *Deep-sea habitats* endemic communities around submerged atolls; hydrothermal vents; sea mounts; pseudo-abyssal depression	• Risk of biased-view of the perceived uniqueness depending on the information availability • Scale dependency of features such that unique features at one scale may be typical at another, thus a global and regional perspective must be taken
Special importance for life-history stages of species	Areas that are required for a population to survive and thrive.	Various biotic and abiotic conditions coupled with species-specific physiological constraints and preferences tend to make some parts of marine regions more suitable to particular life-stages and functions than other parts.	Area containing: (i) breeding grounds, spawning areas, nursery areas, juvenile habitat or other areas important for life history stages of species; or (ii) habitats of migratory species (feeding, wintering or resting areas, breeding, moulting, migratory routes).	• Connectivity between life-history stages and linkages between areas: trophic interactions, physical transport, physical oceanography, life history of species • Sources for information include: e.g. remote sensing, satellite tracking, historical catch and by-catch data, vessel monitoring system (VMS) data. • Spatial and temporal distribution and/or aggregation of the species.

1/ Referred to in paragraph 1 of annex II to decision VIII/24.

Criteria	Definition	Rationale	Examples	Consideration in application
Importance for threatened, endangered or declining species and/or habitats	Area containing habitat for the survival and recovery of endangered, threatened, declining species or area with significant assemblages of such species.	To ensure the restoration and recovery of such species and habitats.	Areas critical for threatened, endangered or declining species and/or habitats, containing (i) breeding grounds, spawning areas, nursery areas, juvenile habitat or other areas important for life history stages of species; or (ii) habitats of migratory species (feeding, wintering or resting areas, breeding, moulting, migratory routes).	• Includes species with very large geographic ranges. • In many cases recovery will require reestablishment of the species in areas of its historic range. • Sources for information include: e.g. remote sensing, satellite tracking, historical catch and by-catch data, vessel monitoring system (VMS) data.
Vulnerability, fragility, sensitivity, or slow recovery	Areas that contain a relatively high proportion of sensitive habitats, biotopes or species that are functionally fragile (highly susceptible to degradation or depletion by human activity or by natural events) or with slow recovery.	The criteria indicate the degree of risk that will be incurred if human activities or natural events in the area or component cannot be managed effectively, or are pursued at an unsustainable rate.	*Vulnerability of species* • Inferred from the history of how species or populations in other similar areas responded to perturbations. • Species of low fecundity, slow growth, long time to sexual maturity, longevity (e.g. sharks, etc). • Species with structures providing biogenic habitats, such as deepwater corals, sponges and bryozoans; deep-water	• Interactions between vulnerability to human impacts and natural events • Existing definition emphasizes site specific ideas and requires consideration for highly mobile species • Criteria can be used both in its own right and in conjunction with other criteria.

Criteria	Definition	Rationale	Examples	Consideration in application
			species. *Vulnerability of habitats* • Ice-covered areas susceptible to ship-based pollution. • Ocean acidification can make deep-sea habitats more vulnerable to others, and increase susceptibility to human-induced changes.	
Biological productivity	Area containing species, populations or communities with comparatively higher natural biological productivity.	Important role in fuelling ecosystems and increasing the growth rates of organisms and their capacity for reproduction	• Frontal areas • Upwellings • Hydrothermal vents • Seamounts polynyas	• Can be measured as the rate of growth of marine organisms and their populations, either through the fixation of inorganic carbon by photosynthesis, chemosynthesis, or through the ingestion of prey, dissolved organic matter or particulate organic matter • Can be inferred from remote-sensed products, e.g., ocean colour or process-based models • Time-series fisheries data can be used, but caution is required

Criteria	Definition	Rationale	Examples	Consideration in application
Biological diversity	Area contains comparatively higher diversity of ecosystems, habitats, communities, or species, or has higher genetic diversity.	Important for evolution and maintaining the resilience of marine species and ecosystems	• Sea-mounts • Fronts and convergence zones • Cold coral communities • Deep-water sponge communities	• Diversity needs to be seen in relation to the surrounding environment • Diversity indices are indifferent to species substitutions • Diversity indices are indifferent to which species may be contributing to the value of the index, and hence would not pick up areas important to species of special concern, such as endangered species • Can be inferred from habitat heterogeneity or diversity as a surrogate for species diversity in areas where biodiversity has not been sampled intensively.

APPENDIX 2. SCIENTIFIC GUIDANCE FOR SELECTING AREAS TO ESTABLISH A REPRESENTATIVE NETWORK OF MARINE PROTECTED AREAS, INCLUDING IN OPEN OCEAN WATERS AND DEEP-SEA HABITATS 2/ (ANNEX II OF DECISION IX/20)

Required network properties and components	Definition	Applicable site specific considerations (*inter alia)*
Ecologically and biologically significant areas	Ecologically and biologically significant areas are geographically or oceanographically discrete areas that provide important services to one or more species/populations of an ecosystem or to the ecosystem as a whole, compared to other surrounding areas or areas of similar ecological characteristics, or otherwise meet the criteria as identified in annex I to decision IX/20.	• Uniqueness or rarity • Special importance for life history stages of species • Importance for threatened, endangered or declining species and/or habitats • Vulnerability, fragility, sensitivity or slow recovery • Biological productivity • Biological diversity • Naturalness
Representativity	Representativity is captured in a network when it consists of areas representing the different biogeographical subdivisions of the global oceans and regional seas that reasonably reflect the full range of ecosystems, including the biotic and habitat diversity of those marine ecosystems.	A full range of examples across a biogeographic habitat, or community classification; relative health of species and communities; relative intactness of habitat(s); naturalness
Connectivity	Connectivity in the design of a network allows for linkages whereby protected sites benefit from larval and/or species exchanges, and functional linkages from other network sites. In a connected network individual sites benefit one another.	Currents; gyres; physical bottlenecks; migration routes; species dispersal; detritus; functional linkages. Isolated sites, such as isolated seamount communities, may also be included.
Replicated ecological features	Replication of ecological features means that more than one site shall contain examples of a given feature in the given biogeographic area. The term “features” means “species, habitats and ecological processes” that naturally occur in the given biogeographic area.	Accounting for uncertainty, natural variation and the possibility of catastrophic events. Features that exhibit less natural variation or are precisely defined may require less replication than features that are inherently highly variable or are only very generally defined.
Adequate and viable sites	Adequate and viable sites indicate that all sites within a network should have size and protection sufficient to ensure the ecological viability and integrity of the feature(s) for which they were selected.	Adequacy and viability will depend on size; shape; buffers; persistence of features; threats; surrounding environment (context); physical constraints; scale of features/processes; spillover/compactness.

2/ Referred to in paragraph 3 of annex II of decision VIII/24

APPENDIX 3. SCIENTIFIC GUIDANCE ON THE IDENTIFICATION OF MARINE AREAS BEYOND NATIONAL JURISDICTION, WHICH MEET THE SCIENTIFIC CRITERIA IN ANNEX I TO DECISION IX/20

1. There has been substantial experience at the national and regional level with the application of some or all of the criteria for identification of ecologically or biologically significant areas (CBD EBSAs) for multiple uses, including protection. While much of the experience is specifically within national jurisdictions rather than in areas beyond national jurisdiction and may not specifically use all the criteria in annex 1 to decision IX/20, the experience gained in national processes, and by other intergovernmental agencies (e.g. the FAO criteria for vulnerable marine ecosystems, FAO 2009) and NGOs provide guidance on the use of these criteria. Lessons learned about scientific and technical aspects of the application of the criteria within national jurisdictions are informative about likely performance of the criteria in areas beyond national jurisdiction, even if the policy and management responses might be developed through different processes.
2. There are no inherent incompatibilities between the various sets of criteria that have been applied nationally and by various IGOs (FAO, International Maritime Organization, International Seabed Authority) and NGOs (e.g., BirdLife International and Conservation International). Consequently, most of the scientific and technical lessons learned about application of the various sets of criteria can be generalized. Moreover, some of the sets of criteria can act in complementary ways, because unlike the CBD EBSA criteria (annex I to decision IX/20), some of the criteria applied by other United Nations agencies include considerations of vulnerability to specific activities.
3. It is important that the process of *identification* of CBD EBSAs is understood to be separate from the processes used to decide on the policy and management responses that are appropriate for providing the desired level of protection to those areas. The *identification* of areas that are ecologically or biologically significant is a scientific and technical step that takes account of the structure and function of the marine ecosystem. The subsequent steps involve the *selection* of policy and management actions that take account of threats and socio-economic considerations as well as the ecological characteristics of the areas.
4. It is important to view the application of the criteria in annex I to decision IX/20 not only as an end in itself, but also as a contribution to a process that addresses the contents of annexes I, II, and III of this decision. In the application of the criteria in annex I to decision IX/20, scientific and technical information, and expertise are central considerations.
5. The application of the criteria should use all the information that is available on the area being considered. "Information" includes scientific and technical data, as well as traditional knowledge and knowledge gained through life-experience of users of the oceans. All information should be subjected to quality assurance methods appropriate for the type of information being considered.

6. Modelling approaches that use ecological relationships quantified in well-studied areas can be applied in more data-poor areas, and these can be an important source of knowledge for application of the criteria.
7. There is likely to be less information available on marine areas beyond national jurisdiction than in many areas within national jurisdiction and differences in the amount of information available between benthic and pelagic portions of particular marine areas and among marine areas around the globe. Recognizing the value of increased information, challenges due to data limitations in marine areas beyond national jurisdiction may be addressed through a range of scientific information, tools and resources. A lack of information should not be used as a reason to defer actions to apply the criteria to the best information that is available. Substantial progress has been made in areas where information was quite incomplete. In all areas, the application of the criteria needs to be reviewed periodically, as new information becomes available.
8. An important lesson from national, regional and international experience is that although the process of applying the criteria needs to be flexible, an orderly and systematic approach to identification of EBSAs in need of protection is superior to an ad hoc approach. A systematic approach makes better use of whatever level of information and scientific and technical expertise is available, and is more likely to identify the areas that are most appropriate for enhanced conservation action, including for inclusion in regional networks of MPAs. Therefore it is advised to take a structured step-wise approach to the evaluation of areas against the EBSA criteria and mapping of them in relation to each other, within a larger process that develops goals, objectives and targets; identifies gaps; considers conservation measures, including networks of protected sites; and has inclusive participation, feedback and revision.
9. Features of benthic and pelagic portions of marine ecosystems may differ in scale, dominant ecological processes and key structural properties, and the coupling of the benthic and pelagic portions of these systems is ecologically important, although often poorly characterized. In addition, there may be different amounts of information available on the benthic and pelagic portions of a system. As a consequence, application of the criteria should, to the extent possible, consider both the benthic and pelagic systems both separately and as an interacting system. Furthermore, ecosystems beyond national jurisdiction can have strong ecological connections to ecosystems *within* national jurisdictions. Evaluation of the CBD EBSAs beyond national jurisdiction needs to consider these connections.
10. The criteria for CBD EBSAs in annex I to decision IX/20 would usually be applied before the steps in annex II to this decision are undertaken. This means that CBD EBSAs generally would be identified before representative areas are selected. This order has two benefits:

    a. Where there is sufficient information to identify CBD EBSAs, selecting representative MPAs that include many significant areas allows more efficiency in management.

    b. Where information is incomplete and there is substantial uncertainty about the location of EBSAs, representative areas included in MPA networks can provide some protection to ecological processes while information is being acquired to allow more targeted protection.

11. The criteria function to rank areas in terms of their priority for protection, and not as an absolute "significant – not significant" choice. As such, an application of absolute thresholds for most criteria is inappropriate.
12. In the subsequent steps of *selection* of areas for enhanced conservation, an area may be in need of protection if it is evaluated as ranking highly on only a single criterion. An area may also be a priority for protection if it ranks relatively highly on multiple criteria, especially if the features which make the areas relatively important are not common elsewhere in the area under consideration. The process of decision-making with multiple criteria is a complex field with a large body of scientific and technical guidance available.
13. It is likely that there will often be insufficient information to use the criteria to delineate the precise boundaries of a CBD EBSA. In such cases, the criteria can at least identify the general area in need of protection, with boundaries determined in the selection steps, applying precaution and taking account of potential threats to the features that meet the criteria.
14. Areas which emerge from application of the criteria as in need of protection at regional scales should be treated as conservation priorities in the selection process, even if at the global scale the area would be evaluated as not as important on these criteria. An area which would be a conservation priority at the global scale should be considered a conservation priority in regional selection processes, even if application of the criterion at a more local scale might not rank the area as a particularly high priority.
15. When applying the criteria at scales where there are very different amounts of information available in different subareas, care should be taken not to bias the evaluation to favour (or discriminate against) the more information-rich parts of the larger region.
16. There may be significant benefits in harmonization of conservation planning and management actions if different bodies with spatially overlapping areas of competence were to coordinate the application of their respective criteria for identification of CBD EBSAs, or areas in need of more risk-averse management. Such coordination would allow all the relevant bodies to start their conservation planning with complementary lists or maps of areas in need of protection.
17. The amount and quality of information that is available about an area, and the degree to which the available information has been brought together systematically affects the time and resources required for scientific and technical experts to apply the criteria. "Expert opinion" processes based on best available knowledge may produce initial indications of ecological values in a given area and can help prioritize the consolidation of available information such that a thorough and systematic planning approach can be taken.
18. In order to achieve consistency in the application of the criteria in annex I to decision IX/20, specific guidance on the use of each criterion is included in appendix 1 of annex VI to document UNEP/CBD/SBSTTA/14/INF/4. This guidance has been consolidated from the experience reported by Parties, IGOs, NGOs and experts who have used these or similar criteria in the identification of EBSAs in marine ecosystems. This body of experience also highlighted some generic issues in the application of these criteria, including: (i) scale; (ii) relative importance/significance; (iii) spatial and temporal variability; (iv) accuracy, precision and uncertainty; and (v) taxonomic accuracy and uncertainty. Guidance on approaches for addressing these issues is provided in appendix 2 of annex VI to document UNEP/CBD/SBSTTA/14/INF/4.