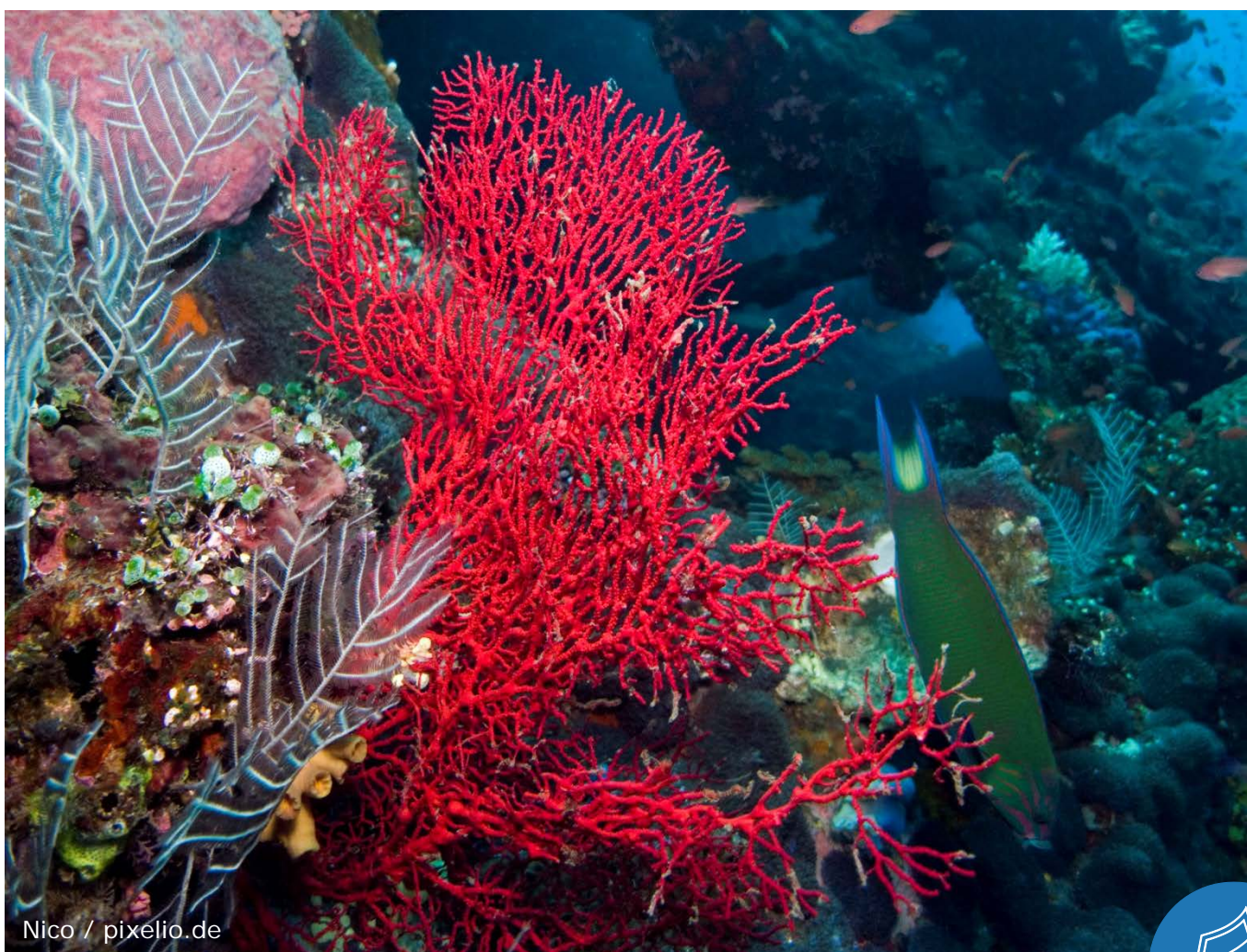


The Conservation of Marine and Coastal Biodiversity

NeFo CBD Fact Sheet in preparation of CBD-SBSTTA-20, 9/2016



Dr. Elisabeth Marquard

Helmholtz Centre for
Environmental Research - UFZ
lisa.marquard@ufz.de
www.biodiversity.de

museum für
naturkunde
berlin

 **HELMHOLTZ**
CENTRE FOR
ENVIRONMENTAL
RESEARCH - UFZ

SPONSORED BY THE



Federal Ministry
of Education
and Research



DLR Projektträger

The Conservation of Marine and Coastal Biodiversity

The world's oceans cover approx. 70 % of the Earth's surface. They are huge – but they are also hugely under threat. At its 20th meeting, the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) to the CBD will consider several aspects of and measures for the conservation of marine and coastal biodiversity. Here, the following issues are briefly presented: **EBSAs**, **underwater noise**, and **marine debris**.

BACKGROUND

Overexploitation, pollution, habitat destruction and fragmentation, non-native species invasions, and global climate change are among the pressures that severely endanger the integrity and functioning of marine and coastal ecosystems¹. Hypoxia in coastal waters, marine debris and underwater noise pollution are further worrisome phenomena that occur increasingly and worldwide. And Although marine and coastal ecosystems are of paramount importance as habitats of innumerable species, as sources of food, medicines and other materials for humans as well as in global water- and element cycling and climate regulation, only few percent of marine ecosystems have been designated as protected (approx. 0.8 % of the oceans and 6 % of territorial seas², compiling to approx. 3 % in total³). This is in contradiction to the global commitment for the conservation and sustainable use of marine and coastal biodiversity that is expressed in several Aichi Targets of the Convention on Biological Diversity (CBD), in particular in Targets 6, 8, 10, and 12⁴.

¹ See e.g. http://www.marbef.org/wiki/Threats_to_Marine_Biodiversity

² <https://www.cbd.int/ebsa/about>

³ IUCN and UNEP-WCMC (2013), The World Database on Protected Areas (WDPA) Cambridge, UK: UNEP- WCMC; see http://www.protectplanetoccean.org/official_mpa_map

⁴ **Target 6:** By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems

1. EBSAs

Ecologically or biologically significant areas (EBSAs) are “special areas in the ocean that serve important purposes, in one way or another, to support the healthy functioning of oceans and the many services that it provides”⁵. Criteria for their selection are (CBD Decision IX/20, Annex 1)⁶:

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

However, EBSAs are not to be mistaken for Marine Protected Areas (MPAs): The recognition of a geographic entity as an EBSA does not grant any protection status *per se*. Based on information compiled by SBSTTA and the outcomes of several regional workshops convened by the Executive Secretary of the CBD, the CBD COP decides whether a particular marine area should be classified as an EBSA and therefore included in the CBD EBSA repository⁷.

impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

⁵ See <https://www.cbd.int/ebsa/about>

⁶ A definition of these criteria can be found at <http://gobi.org/faqs>.

⁷ <https://www.cbd.int/ebsa>

In such a case, the CBD informs the UN General Assembly and other relevant countries and organisations about this new entry in the repository which may be interpreted as a call for enhanced protection. EBSAs can be situated within and beyond areas of national jurisdiction and they may also cut across jurisdiction boundaries.

In 2014, the twelfth CBD-COP had encouraged the CBD member states to make use of the EBSA concept in spatial planning and in the development of representative networks of marine protected areas. Meanwhile, EBSAs or EBSA criteria have been considered in several global processes, for example in resolutions of the UN General Assembly, in activities by the Food and Agriculture Organization of the UN (FAO), the International Maritime Organization (IMO) or the Convention on Migratory species (CMS). Furthermore, several regional and subglobal processes have considered EBSAs, for example in order to find measures to protect marine habitats (for more details, see UNEP/CBD/SBSTTA/20/3). Insofar, the EBSA concept has proven to have some effect. However, they are certainly only a first step toward more comprehensive marine conservation systems⁸. SBSTTA 20 will likely recommend to the 13th CBD-COP to include further areas identified using the abovementioned EBSA criteria in the EBSA repository.

2. UNDERWATER NOISE

Hearing spectrum and comfort thresholds vary among organisms but the sharp increase in anthropogenic underwater noise that occurred within the last century is of serious concern. Scientific studies have shown adverse effects of underwater noise on marine mammals, these include "death and serious injury caused by brain hemorrhages or other tissue trauma; strandings and beachings; temporary and permanent hearing loss or impairment; displacement from preferred habitat and disruption of feeding, breeding, nursing, communication, sensing and other behaviors vital to the survival of these species"⁹.

⁸ Dearden P. & Topelko K. (2005): Establishing criteria for the identification of ecologically and biologically significant areas on the high seas. Background Paper. Available at: <http://www.cbd.int/doc/meetings/mar/ewsebm-01/other/ewsebm-01-dearden-en.pdf>

⁹ The Ocean Mammal Institute, see: <http://www.oceanmammalinst.com/aboutunp.html>

However, large gaps in knowledge still remain relating in particular to fishes, invertebrates, turtles and birds as well as to the characteristics of major sound sources and the potential cumulative impacts of multiple sources of noise (CBD Decision XII/23, para 2). Sources for anthropogenic noise pollution include:

Vessels: Ships, oil tankers and other vessels are highly significant sources of noise, their noise levels are positively correlated with their size and with the speed at which they travel. However, even small boats can emit substantial noise, e.g. if they are powered by large outboard engines.

Acoustic Deterrents: These are devices used to deter marine mammals from entering certain areas, e.g. to prevent them from being caught in fishing nets, or from approaching aquaculture facilities.

Offshore Oil Exploration and Recovery / Mining: In marine environments, one method to detect deposits of crude oil, natural gas, and minerals is seismic surveying whereby an air gun fires highly compressed air bubbles into the water that transmit seismic wave energy into the subsurface rock layers. The reflection and refraction of the seismic waves is measured and transformed into (visual) information about the seabed structure, its rock layers and potential drilling targets. Furthermore, the oil drilling itself and other resource extraction activities produce substantial noise levels. Additionally, these activities are usually accompanied by significant traffic of oil tankers and drilling vessels and when drilling is stopped, noise is emitted during the decomposition of oil platforms.

The CBD-COP has acknowledged that there are severe threats to marine life associated with underwater noise and has encouraged the member states of the CBD to take appropriate measures to minimise and mitigate the potential adverse impacts on marine and coastal biodiversity. SBSTTA 20 will likely recommend to the 13th CBD-COP to encourage the CBD member states and other governments and relevant organisations to make use of the information that SBSTTA gathered in the updated report entitled "Scientific synthesis of the impacts of underwater noise on marine and coastal biodiversity and habitats" (contained in document UNEP/CBD/SBSTTA/20/INF/8).

3. MARINE DEBRIS

Marine debris is “usually defined as any persistent, manufactured or processed solid material discarded, disposed of, lost or abandoned in the marine and coastal environment. This includes materials transported into the marine environment from land by rivers, drainage or sewage systems or winds. Marine debris originates from a range of sea- and land-based sources” (UNEP/CBD/SBSTTA/20/5, Annex). In particular, various forms of plastic pose a high risk for a wide range of marine fauna. For example, animals entangle in, ingest or inhale pieces of debris, possibly leading to intoxication, internal or external injuries or death. By way of ingestion, particles of plastic or other material may also enter the food chain and may therefore threaten also human health. In this context, pieces smaller than 5 mm (‘Microplastics’) are of particular concern. They are either produced at such a small size (e.g. for their use in cosmetics or as pre-production pellets) or they result from the break-down of larger plastics. Microplastics are present in all marine habitats and are likely to increase in abundance.

Further knowledge is needed on the amount of marine debris and its sources, as well as on its degradation and fragmentation rates under a range of conditions. There is also a need for more knowledge on the consequences of the uptake of debris for marine species.

SBSTTA has developed practical guidance on preventing and mitigating the impacts of marine debris on marine and coastal biodiversity and habitats (UNEP/CBD/SBSTTA/20/5, Annex). At its 20th meeting, SBSTTA will likely recommend to the 13th CBD-COP to endorse this guidance suggesting that – in the long run – the best way to counteract the pollution of the marine and coastal habitats by solid particles is by preventing the discard, disposal, loss or abandonment of any persistent, manufactured or processed solid material in these environments. SBSTTA does not recommend any specific policy actions for achieving this goal but speaks only of “a broad range” of “instruments and policy responses, including economic incentives, market-based instruments and public private partnerships” that could be used.

Furthermore, SBSTTA 20 will likely recommend the following priority actions (the

full list can be found in UNEP/CBD/SBSTTA/20/5):

- Identify baseline data on sources, quantities and impacts of marine debris
- Promote structural economic changes that would reduce the production and consumption of plastics, support the production and development of alternative materials, recycling and reuse
- Strengthen, as necessary, the existing legal framework that regulate the production and use of microplastics
- Improve waste management system of countries
- Identify options to address key waste items from the fishing industry and aquaculture
- Promote and undertake education activities on marine debris
- Promote good clean-up practices in beaches and coastal environments, pelagic and surface sea areas, ports, marinas and inland waterways
- Implement incentives to encourage local communities to prevent the pollution of the introduction of waste into the environments
- Undertake ecological and socioeconomic research on the sources and consequences of marine debris

Given the increasing pressure on the Earth's marine and coastal ecosystems, urgent action is needed to maintain and restore their biodiversity and their ecological and biogeochemical functioning. At the intergovernmental level, one recent response to the troubling developments that threaten the world's oceans is to initiate a new multilateral treaty “to better protect and sustain the marine environment and marine life in the two thirds of the ocean beyond national boundaries”¹⁰. The UN adopted a roadmap for establishing such a new treaty under the UN Convention on the Law of the Sea (UNCLOS) in April 2016¹¹.

¹⁰ See: https://www.iucn.org/about/work/programmes/marine/marine_our_work/marine_governance/?22659/UN-takes-significant-step-towards-a-new-treaty-to-serve-marine-life-beyond-boundaries

¹¹ ibd.

IMPRESSUM

The Network-Forum for Biodiversity Research Germany (NeFo) is a project funded by the German Federal Ministry of Education and Research (BMBF) and is mainly carried out by the Helmholtz Centre for Environmental Research – UFZ and the Museum für Naturkunde Berlin.



For more information about the NeFo-Project and the NeFo-Team visit www.biodiversity.de.