



OECMs: Can they contribute to marine conservation?

An evaluation from the perspective of NABU Marine Conservation to the discussion on 'other effective area-based conservation measures'



Overview

Germany's marine areas in the North and Baltic Sea are not in a good ecological state. In order to protect marine species and habitats the Federal Act for the Protection of Nature ("Bundesnaturschutzgesetz") stipulates that legally binding areas should be designated where nature is protected in its entirety or in part and which form a coherent ecological network (Natura 2000). According to the requirements of the UN Convention on Biological Diversity (CBD) and the EU Biodiversity Strategy for 2030 various area-based conservation measures should contribute to improving the state of the seas. The term "area-based measures" is mostly associated with protected areas, but so-called "other effective area-based conservation measures" (OECMs) are also considered to contribute to the conservation of marine biodiversity and count towards the area targets ("30by30"/30% protected area coverage by 2030).

Review of the current debate on OECMs

According to the CBD definition OECMs are:

*"A geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio-economic, and other locally relevant values."*¹

OECMs thus are geographically defined areas that are managed and governed in such a way that they can make a positive and long-term contribution to the protection and conservation of marine biodiversity and have not already been designated as marine protected areas (MPAs). As a result of this definition, when considering the oceans, it is mostly sector-managed areas that are discussed as potential OECMs. Consequently, this discussion is mostly driven by the fisheries, shipping or wind energy. However, stakeholders from the field of nature conservation and climate protection are also

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¹ Convention on Biological Diversity (2018). *Protected areas and other effective area-based conservation measures – Draft recommendation submitted by the Chair*. Canada. ([Online](#))

increasingly highlighting the added value of OECMs. This is happening not least because of the widely known difficulties and insufficient protection of marine biodiversity within MPAs themselves and the need for a geographically and ecologically coherent network of MPAs. Marine protected areas are supposed to protect marine ecosystems from human activities. However, due to various implementation issues, such as insufficient legal framework (see EU CFP §11 and the German Federal Act for the Protection of Nature – BNatSchG §57), this has still not been achieved many years after their designation and protection. Thus, in MPAs there continues to be fishing, the extraction of raw materials and shipping lines are running through them. These shortcomings are often used as arguments to highlight the benefits of OECMs and their contribution to the protection of marine biodiversity.

In many cases, the contribution of OECMs to the protection of marine biodiversity has not been proven but is based on the assumption that excluding certain activities, such as fishing, has a positive impact on biodiversity conservation, without verifying this scientifically. Another supposed advantage of OECMs is that, unlike marine protected areas, they are not designated in a regulatory, sometimes long-lasting process, but instead focus on area-based measures already in place in the oceans and therefore only need to be identified (not designated). Thus, OECMs apparently seem a simple way to achieve national and international area protection goals. But is this path leading in the right direction?

The answer to this question depends on the conditions under which certain areas are recognised as OECMs and how their contribution to the protection and conservation of marine biodiversity can be assessed. Even if the CBD definition appears clear at first glance, the definition of individual terms and formulations is tricky. For instance, the CBD has not yet defined the term "long-term". To achieve clarity here, the International Union for Conservation of Nature (IUCN) developed a screening tool in 2019, which suggests various tests for identifying OECMs based on the CBD definition². Although the screening tool can make an important contribution to the discussion or identification of OECMs in the oceans, it is not used, for instance, within the framework of the OSPAR regional agreement, as the tests formulated there are considered too prescriptive and detailed. As a result, many questions related to OECMs remain unanswered, including:

- How can the long-term nature of the measure be ensured, or what does "long-term" mean in this context respectively?
- How can a potentially positive contribution of OECMs to marine biodiversity be assessed or ensured?
- What happens when OECMs do no longer contribute to the in-situ conservation of biodiversity?
- How can it be ensured that other activities in these areas will not have a negative impact on species or the entire marine biodiversity?
- What role does the location of potential OECMs play in terms of their contribution to the protection of marine biodiversity, and what (nature conservation) requirements do these areas have to meet?
- Who monitors OECMs and provides the respective funding?

² IUCN-WCPA Task Force on OECMs (2019). *Recognising and reporting other effective area-based conservation measures*. Switzerland. ([Online](#))

These and other unanswered questions will be examined in more detail below. Following this, potential OECMs in marine areas will be discussed on the basis of various area-based measures. Finally, recommendations will be given on how to deal with OECMs in relation to marine areas. From the perspective of NABU Marine Conservation, area-based conservation measures can only be considered OECMs if certain criteria are fulfilled. First, an assessment of the need for protection of the area should be conducted and its value for marine biodiversity must be proven by a scientific monitoring programme. Furthermore, the management of the area must define how it contributes to the protection and conservation of marine biodiversity, i.e. which species and habitats will benefit and which might be negatively affected. The compliance and effectiveness of established measures in the areas must be controlled regularly. Moreover, it must be guaranteed that the implemented measures exist in the long-term. Management plans must be developed, which clearly demonstrate how to deal with the area in case a measure runs out. Further damaging impacts on the marine biodiversity in the managed areas must be prohibited or at least restricted.

A comprehensive evaluation of various area-based measures and their potential contribution to the protection of marine biodiversity is given from page 4 onwards.

Requests

In order to prevent uncertainties in the identification or implementation of OECMs, clear guidelines and criteria must be developed at national and international level on the following aspects:

- The "long-term" of OECMs must be oriented at biologically meaningful time periods, i.e. encompassing several generations of relevant species and allowing their recovery and positive development.
- A legally binding framework to sanction violations within OECMs and to prevent further harmful interventions must be developed. Alternatively, standards that determine which harmful activities may not take place in the areas must be developed. These standards must also be implemented by a respective management body.
- Clear guidelines regarding the frequency and scope of monitoring must be created and implemented. An explanation of how to deal with "expired" OECMs must be developed.

Unanswered Questions and Problems regarding the Identification of OECMs at Sea

Long-Term

Thus far, there has been no clear definition of the term 'long-term' in the context of OECMs, i.e. it remains unclear whether this means months, years or decades. In order to contribute to the protection and conservation of marine biodiversity, it is important that these area-based measures last as long as possible. Here it is worth making a comparison with marine protected areas, whose existence is in principle "endless". Only in a few cases is the long-term nature of other area-based measures in the oceans assured. Most area-based measures are regularly evaluated and extended, suspended if necessary or relocated elsewhere in the next spatial planning process. This uncertainty regarding the duration of potential OECMs poses a major risk, as their contribution to marine biodiversity would only be temporary and would disappear once the measure is suspended. Consequently, the conservation contribution of OECMs would have to be 'reviewed' regularly and analyses would have to be carried out afresh with regard to area targets and the ecological coherence of the conservation measures. Consequently, national guidelines must be developed that guarantee the longest possible duration of the measures.

Biodiversity Monitoring

The claim that marine biodiversity is enhanced by OECMs is mostly based on the assumption that regulating human activities in an area will simultaneously increase biodiversity. This can be true, but without regular monitoring of these areas, this cannot be ensured. Other activities in the same area can counteract the supposed effect or lead to only individual species benefitting from certain measures, while other species are additionally burdened. In order to achieve clarity and provide transparency, regular biodiversity monitoring would have to take place. However, who should perform such monitoring and bear the costs? Will state or federal authorities take on these tasks and consequently use taxpayers' money to monitor private-sector measures, e.g. the operation of wind farms? Clear guidelines and funding regulations are needed here. Areas without established biodiversity monitoring should not be considered OECMs, as their contribution to the protection and conservation of marine biodiversity cannot be assured.

Compliance Monitoring

Another important aspect is the question of monitoring potential OECMs with regard to their designation criteria. How can it be ensured that restrictions of human activities are complied with and what happens if they are not? Who will do the monitoring? In some potential OECMs, such as certain fishing exclusion zones or wind farms, monitoring is quite well established, but in most cases there are hardly any sanctions for violating the regulations. As with protected areas, however, compliance or monitoring of certain measures is an important key to success. Areas without established monitoring should not be considered OECMs since compliance with the restrictions cannot be guaranteed.

Need for protection

When designating marine protected areas, their value or need for protection must be proven. This is not yet the case for OECMs. These are already area-based measures, i.e. they could be located in areas where there are no concentrations of special conservation features under the Habitats Directive, the Birds Directive or where there are no habitats worthy of protection. Thus, although these areas can contribute to the protection and conservation of local communities they do not contribute significantly to the protection and conservation of endangered species and habitats. In theory, this does not contradict the definition of OECMs, however, such areas should not be counted towards the area targets, as their practical added value for marine biodiversity might be relatively low.

Species or Biodiversity Conservation

Some area-based measures have a clear positive effect on certain species (groups), as they exclude certain activities that have a hugely negative impact on these species (groups). However, other species (groups) can be very negatively affected by the same area-based measure. Therefore, as also stated in the CBD definition, it is important to consider, above all, species and habitats as a whole (biodiversity) and not to focus only on individual species.

Case Studies on Potential OECMs in the Seas

In the following various area-based measures in German marine areas and their contribution to the long-term protection of marine biodiversity are discussed.

Offshore Wind Farms

Long-Term: Approx. 20-30 years, after which dismantling, decommissioning or repowering take place

Size: 4 - >100 km²

Regulated Activities: Fishing (indirect), shipping, resource extraction

Biodiversity Monitoring:

Not implemented

Surveillance: Automatic Identification System (AIS), radar systems, etc.

Impacts (Construction): Sound emission, introduction of hard substrate, laying of submarine cables

Impacts (Operation): Displacement of seabirds/loss of habitat, birdstrike, disruption of migratory routes, continuous noise, slipstream, increase in shipping and air traffic (maintenance operations), submarine cables



Fig.1: Offshore Wind Energy
(© imageBROKER.com / Markus Keller)

Assessment: In wind farms certain activities are regulated such as fishing and shipping – two of the main pressures on marine biodiversity. Thus, wind farms can make a positive contribution to the conservation of fish stocks, for instance, but the increased construction and maintenance operations are interfering with these supposedly positive effects. Furthermore, the intensity of these activities in other areas increases as a result. Wind farms have a significant impact on the marine environment during their construction and operation phases (see above) and thus also on marine

biodiversity. Changes in wind regimes (slipstream) can, for example, lead to long-term changes in currents and thus to changes in plankton dynamics. Wind farms are often built on sandbanks and similar, soft habitats. The introduction of hard substrates fundamentally alters these habitats and introduces new species, sometimes with significant consequences for naturally occurring communities. Wind farms are able to contribute to the protection and conservation of certain species in the medium term due to their size and relatively long operational lifespan. However, most of the positive effects, such as the banning of fishing and the regulation of shipping, will disappear immediately after the wind farms are decommissioned or dismantled. Other negative impacts of wind farms include the displacement of complete groups of water bird species (total loss of habitat) and the disruption of important bird migratory routes.

Conclusion: Wind farms do not fulfil the criteria for OECMs as they have significant negative impacts on certain species or groups of species and thus do not contribute to the protection and conservation of marine biodiversity as a whole. Moreover, the increase in biodiversity due to the introduction of hard substrates in some areas is rather negative as it alters the natural marine environment and thus the functions of the ecosystem.

Fisheries Exclusion Zones

Long-Term: Are regularly reviewed

Size: Variable

Regulated Activities: Fisheries

Biodiversity Monitoring:

Not implemented

Surveillance: Partial, through AIS and similar systems

Impacts: None

Assessment: The exclusion of fisheries or of certain fishing gear makes a positive contribution to marine biodiversity, as either the exclusion of fisheries protects fish stocks in the area or the exclusion of certain fishing practices (e.g. bottom trawling) protects sensitive habitats from destruction. However, many of these fishing measures are short-term and are reviewed and adjusted regularly, i.e. every 2-5 years. Consequently, the long-term nature of the measure cannot be guaranteed. Moreover, other activities in the area cannot be excluded, meaning they could still have a negative impact on the marine environment in these areas. Although fishing exclusion zones can add an additional level of protection to marine protected areas they are by definition not OECMs, because OECMs cannot be congruent with marine protected areas.



Fig. 2: Fishing Vessel
(© imageBROKER / Wolfgang Diederich)

Conclusion: Designating no-fishing zones outside marine protected areas can add value to marine biodiversity and thus meet the OECM definition. However, this only applies under the conditions that management is guaranteed over a longer period of time, that other harmful activities are prohibited in the areas and that monitoring of the areas is ensured. Instead, fishing exclusion zones should be established primarily as part of marine protected area management and should not be seen as a separate conservation measure.

Shipwrecks and Other Cultural Assets

Long-Term: Basically given

Size: Comparatively very small; usually only a few (hundred) square metres in size

Regulated Activities: Fishing, resource extraction, shipping, possibly tourism

Biodiversity Monitoring:

Not implemented

Surveillance: Partly available

Impacts: Potential introduction of toxic substances



Fig. 3: Ship's Anchor on a Wreck
(© NABU / Wolf Wichmann)

Assessment: Protected historical cultural assets, such as shipwrecks, can have a long-term and positive impact on marine biodiversity. However, shipwrecks are mostly quite small areas and are sometimes located in areas where no hard substrates existed before and where foreign species would consequently settle. Furthermore, it cannot be ruled out that toxic substances, e.g. from ammunition or fuel residues, might be released into the marine environment or that ghost nets or fishing baits might become entangled in them. Monitoring of these areas and biodiversity monitoring are often not established.

Conclusion: Some protected cultural assets or the areas where they are located can be considered OECMs under certain conditions, e.g. excluding possible leakages. However, due to their rather small size, at least in German marine areas, they only play a minor role in terms of achieving area targets and scarcely contribute to the protection and conservation of marine biodiversity.

Shipping Regulations

Long-Term: Comparatively long-term, as shipping regulations can only be changed through intensive processes (International Maritime Organisation)

Size: Several to many square kilometres in size

Regulated Activities: Shipping, resource extraction

Biodiversity Monitoring:

Not implemented

Surveillance: Partial, e.g. by AIS

Impacts: Increased noise, pollution etc. due to concentration of traffic



Fig. 4: Container Ship, Suction Dredger and Launch off Cuxhaven (© imageBROKER.com / Olaf Heil)

Assessment: Shipping is one of the main impacts on the marine environment, because of the introduction of continuous noise and waste, release of pollutants, accidents and collision risk, introduction of neobiota and physical damage caused by anchors. Consequently, areas where (commercial) shipping is restricted could add value to marine biodiversity. However, area-based measures, such as PSSAs (Particular Sensitive Sea Areas) or ABTAs (Areas To Be Avoided) are areas where shipping is not prohibited per se, but where only certain types of ships are allowed and/or speed limits are

imposed. Traffic Separation Schemes (TSSs), on the other hand, 'concentrate' shipping in these areas, meaning the impact of shipping is even more prominent than in other unregulated areas. One advantage of TSSs, is that resource extraction is not permitted for safety reasons. However, fishing is allowed in the TSS zone.

Conclusion: At the current stage shipping regulations cannot be considered as OECMs. Such regulations may reduce negative impacts on the marine environment and e.g. the risk of potential accidents. However, due to their non-binding nature and the continuation of other activities that have been shown to have a negative impact on biodiversity, they do not contribute to a measurable and long-term protection and conservation of biodiversity.

Military Training and Exclusion Zones

Long-Term: Unclear (exercise periods last several months or there are 3-4 shorter exercises per year)

Size: Medium; several (hundred) square kilometres

Regulated Activities: From e.g. cable laying in submarine training areas to potentially all activities (restricted areas)

Biodiversity Monitoring:
Not implemented

Surveillance: Irregular

Impacts: Massive sound emissions (sonar, detonations, etc.), displacement of seabirds, introduction of toxic substances (munition remnants, detonations)



Fig. 5: Military Exercises at Sea
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Assessment: Military training zones are publicly accessible areas where there is hardly any regulation of human activities and therefore do not contribute to the protection of marine biodiversity. Exclusion zones, on the other hand, are areas entirely closed off for the military, but where no long-term protection of marine biodiversity can be guaranteed due to the strong acoustic impact of military manoeuvres on certain species groups (with some sonars reaching peak sound pressure levels of more than 240 dB). Impacts include the scaring of seabirds and the displacement and possibly even death of marine mammals.

Conclusion: Areas used for military purposes could promote the protection and conservation of marine biodiversity at times when no military activities are taking place, but due to the pronounced negative impact on marine species during such exercises, especially military training zones do not fulfil the criteria for OECMs.

Cable Protection

Long-Term: Given

Size: Small-medium, a few to hundreds of kilometres (in length)

Regulated Activities: Bottom trawling, shipping (anchoring ban)

Biodiversity Monitoring: Not implemented

Surveillance: Not available

Impacts: Temperature increase of the sediment, electromagnetic fields



Fig 6: Cables on the Seabed
(© imaginima)

Assessment: Anchoring and fishing is prohibited in the vicinity of submarine cables to protect against accidents. As these are very narrow zones, their contribution to marine biodiversity is negligible. Due to the length of some submarine cables, the total area may be large, but species and habitats will scarcely benefit from them.

Conclusion: Due to the very small area around the cables, the negative impacts during installation and because the cables themselves affect their surroundings, these areas cannot be considered OECMs.

OECMs at the Seas – A Summary

Due to the difficulties and unanswered questions outlined above regarding OECMs, especially in terms of their contribution to the protection and conservation of marine biodiversity, there are hardly any opportunities for the implementation of additional area-based measures in German marine areas that correspond to the current CBD definition of OECMs. However, a solely evaluation of area-based measures is not meaningful, as the respective contribution depends, among other things, on their location, the duration and monitoring of these areas. Therefore, all area-based measures should be assessed on an individual basis.

Discussions on the contribution of OECMs to marine conservation should consider that certain measures, like fisheries exclusion zones, add value not only because enforcing fishing regulations in marine protected areas is legally difficult and requires intensive participation of various stakeholders. The concept of OECMs should therefore not be given enhanced attention merely because most marine protected areas have not been effectively managed. The criteria used for the designation of marine protected areas, the requirements for monitoring and surveillance of these areas as well as proof of their effectiveness are cornerstones of marine conservation and should also be used (possibly in slightly modified form) for the establishment of other area-based conservation measures.

In marine conservation, different stakeholders struggle because user interests are often irreconcilably opposed to each other. The concept of OECMs is attractive in the sense that it could help to bring user groups together to discuss the contribution of certain area-based measures to the protection and conservation of marine biodiversity. In the long term, it would also be possible for all parties involved to make concessions in order to achieve real added value and, at the same time, the contribution of all user groups, if justified, could be emphasised. However, this would require that clear criteria for OECMs are developed at national and international level and that these are demanded by the respective stakeholders. What a binding regulation of this kind

might look like and how it might also be put on a solid legal basis remains entirely unclear so far.

If OECMs are to make a demonstrable contribution to the protection and conservation of biodiversity, the managed areas must be monitored, and the development of biodiversity must be scientifically scrutinised. But marine research and area-wide monitoring is costly and technically challenging. What does this mean in the context of OECMs? Are the state tasks of protecting and monitoring the marine environment to be "transferred" to the private sector? Who will bear the respective costs? For these questions, too, clear rules and guidelines must be developed before other area-based conservation measures can contribute to the conservation of marine biodiversity alongside our marine protected areas. So, whether OECMs are the presumed simple and cost-effective complements to marine protected areas and their objectives remains doubtful. However, certain area-based conservation measures could contribute to our marine protected area networks by providing a migration corridor or a resting place for certain species between the actual marine protected areas. OECMs can thus improve the protection and conservation of individual species, but they are unsuitable for protecting marine biodiversity and should therefore not, or only in well justified individual cases, count towards area targets.