

## SHORT COMMUNICATION: DENMARK'S MARINE PROTECTED AREAS ASSESSED ACCORDING TO IUCN'S INTERNATIONAL DEFINITION

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### ABSTRACT

A team of IUCN Commission Members has reviewed Denmark's marine protected areas (MPAs) to assess whether they meet the IUCN international definition for protected areas. Of 332 assessed MPAs, 198 areas were found to fulfil the definition and were assigned an IUCN Management Category, covering 138 'IV Habitat/Species Management' areas, 54 'V Protected Landscape/Seascape' areas, and just a few areas in the remaining management categories. Bottom trawling was found to be a main factor for MPAs not fulfilling IUCN criteria. For Danish waters as a whole, the project estimated that 4.8 per cent fulfil the IUCN definition for protected areas, implying that Denmark is only halfway to meeting Aichi Biodiversity Target 11 to protect at least 10 per cent of coastal and marine areas by 2020.

**Key words:** marine ecology, fishery, management categories, governance types, Aichi Biodiversity Targets, Sustainable Development Goals

### INTRODUCTION

The sea around Denmark amounts to 105,000 km<sup>2</sup>, which is more than twice the total land area. It contains a high variety of marine areas with great natural value, which is reflected in a large number of protected sites including Natura 2000 and Ramsar wetland protection sites.

According to Aichi Biodiversity Target 11 under the Convention on Biological Diversity, at least 10 per cent of the world's coastal and marine areas should be protected by 2020 (CBD, 2011). More recently, the European Commission in its Biodiversity Strategy for 2030, has adopted targets of 30 per cent nature protection, of which 10 per cent should be strictly protected (European Commission, 2020). However, many interests must be taken into account at sea, including those of fisheries, extraction and dredging industries, the shipping sector and offshore energy farms. These interests are not always compatible with effective marine protection.

In Denmark, nature protection at sea is achieved primarily through the designation of Natura 2000 sites,

which also include within them all designations that Denmark has committed to under international conventions such as the Ramsar Convention on Wetlands of International Importance, the OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, and the HELCOM Convention on the Protection of the Marine Environment of the Baltic Sea Area (Woollhead et al., 2020). In addition, several marine areas are designated as conservation areas and game reserves through national legislative means.

Currently, the Danish authorities are in the process of preparing Denmark's first maritime spatial plan as part of the implementation of EU Directive 2014/89/EU establishing a framework for maritime spatial planning (Danish Maritime Authority, 2021). In parallel with this, work is underway to review nature protection at sea, including the identification of new protected areas. In this respect, it is highly relevant to assess the current state of marine protection and to examine how Denmark is performing according to international standards and to the targets set by the UN and EU.

The IUCN has developed guidelines for applying management categories to protected areas that are widely used by experts, governments and NGOs around the world (Dudley, 2008; Dudley et al., 2013). In 2018, these guidelines were used for the first time in Denmark in a large desktop study that revealed that 378 of 1,720 Danish conservation areas, mainly terrestrial, fulfilled the IUCN definition for protected areas (Garn et al., 2019; Woollhead & Petersen, 2018).

From October 2019 to September 2020, a team of Danish IUCN Commission members reviewed Denmark's marine protected areas (MPAs) to assess whether they meet the IUCN international definition for protected areas. The team included members of the World Commission on Protected Areas (WCPA), the Commission on Ecosystem Management (CEM) and the Species Survival Commission (SSC).

The project was designed as a desktop study. The Danish Environmental Portal (Danmarks Miljøportal, 2021), along with relevant governmental and institutional websites, and international websites on marine protection, were used to obtain information about geographic distribution, regulation, management, nature quality, fishery statistics, extractive industries and other industries for all MPAs in Denmark. This provided the information base that was subsequently used in this analysis.

Each MPA was assessed according to the IUCN guidelines for applying management categories for protected areas (Dudley, 2008; Dudley et al., 2013), supplemented with the newly published IUCN guidelines for applying management categories to MPAs (Day et al., 2019). At the start of the project, an assessment sheet was prepared, based on these IUCN guidelines, and both test assessments and full assessments were carried out as described by Garn et al. (2019). If all examined criteria were fulfilled, the MPA was regarded as meeting the IUCN definition for protected areas and therefore could be assigned an IUCN Management Category.

In addition, all MPAs were assigned an IUCN Governance Type on the basis of who holds authority, responsibility and can be held accountable for key decisions for the protected area (Borrini-Feyerabend et al., 2013). The IUCN defines four broad governance types – Governance by government, Shared governance, Private governance, and Governance by Indigenous peoples and local communities. The main types are accompanied by a defined set of sub-types.

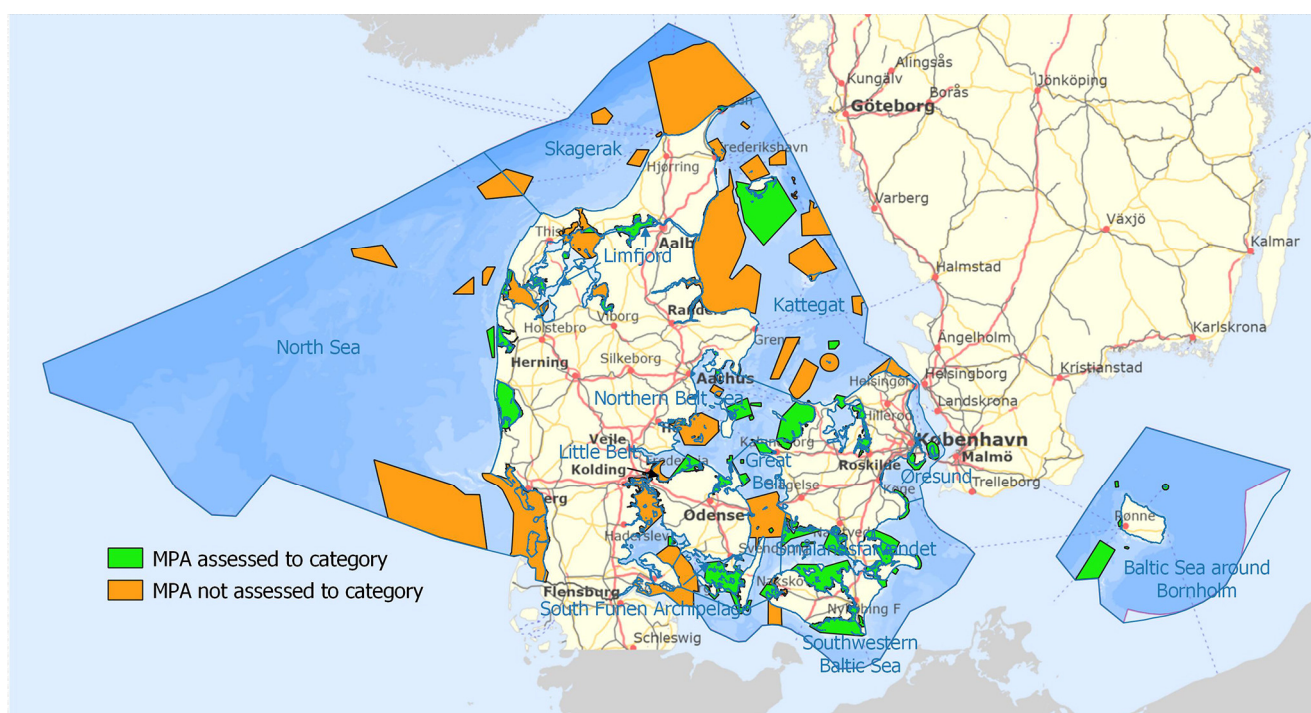
Specialist knowledge from both external experts and project team members on marine ecology, underwater geology, archaeology (e.g., shipwrecks and ancient settlements) and ecosystem services provided supplementary assessments of selected MPAs. In complex questions, supplementary advice was obtained from an international expert (Nigel Dudley; personal communication). For each assessment a quality check was carried out by another team member than the one who did the initial assessment, ensuring that at least one member of WCPA was included in every assessment. Assessments and quality checks were distributed evenly among project team members.

All 332 MPAs that were identified in Danish waters were assessed. The MPAs cover 13 different types of protection, including conservation areas, game reserves, Natura 2000 sites, National Parks, as well as designations through international conventions and organisations such as UNESCO, OSPAR, HELCOM and Ramsar. An in-depth project review and method of assessments can be found in the project's final report (Woollhead et al., 2020).

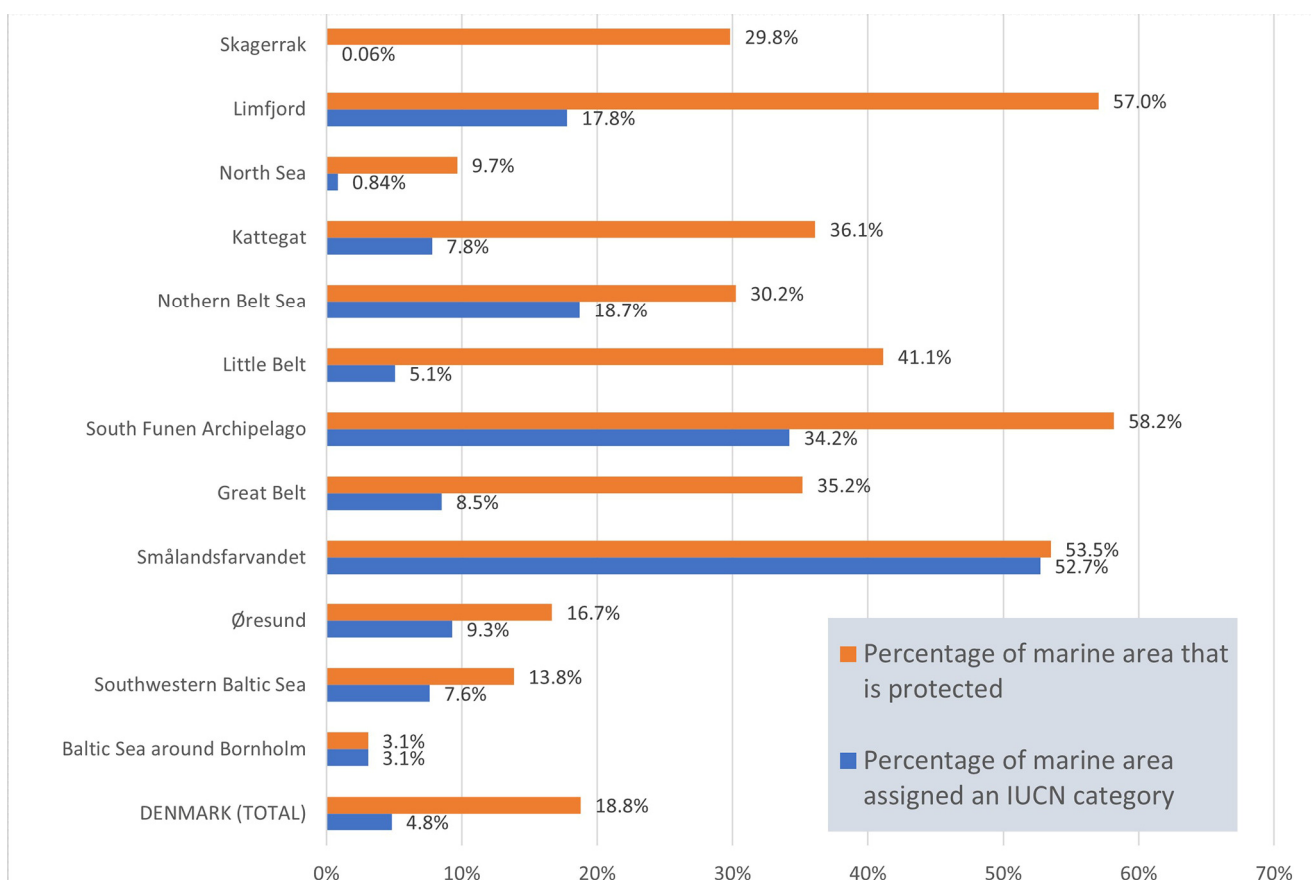
The main conclusion from the project is that 198 of the 332 MPAs fulfil the IUCN definition for protected areas and could be assigned an IUCN Management Category (Table 1). This corresponds to 59.6 per cent of the areas. The MPAs are widely distributed and cover all Danish waters (Figure 1).

**Table 1. Danish MPAs assigned with an IUCN Management Category for protected areas**

IUCN Management Category	Number of sites	%
Ia Strict Nature Reserve	3	0.9%
Ib Wilderness Area	0	0%
II National Park	1	0.3%
III Natural Monument	1	0.3%
IV Habitat/Species Management Area	138	41.6%
V Protected Landscape/Seascape	54	16.3%
VI Protected Area with Sustainable use of Natural Resources	1	0.3%
<b>Areas assigned to an IUCN Management Category</b>	<b>198</b>	<b>59.6%</b>
<b>Areas not assigned to an IUCN Management Category</b>	<b>134</b>	<b>40.4%</b>
<b>Total number of MPAs</b>	<b>332</b>	<b>100%</b>



**Figure 1. Geographical distribution of Denmark's MPAs that were assessed to fulfil (green) or not fulfil (orange) the IUCN definition for protected areas. Some MPAs are so small that they cannot easily be seen on the map.**



**Figure 2. Percentage of marine area designated for nature protection (orange) and percentage fulfilling the IUCN definition for protected areas (blue). Shown for 12 different waters and Denmark as a whole.**





Sea kayaking , Denmark © Anette Petersen

A total of 508,630 ha of marine area has been assessed to fulfil the IUCN definition. As shown in Figure 2, this corresponds to 4.8 per cent of Denmark's total marine area. Of the total marine area allocated for nature protection, about a quarter (25.8 per cent) is hence estimated to meet the IUCN definition. Figure 2 also shows the proportion of marine area in 12 different waters that has been laid out for nature protection and that has been assessed to meet the IUCN definition, respectively.

According to Aichi Biodiversity Target 11 under the Convention on Biological Diversity, which has been confirmed in Target 14.5 under UN Sustainable Development Goal 14, Life Below Water, at least 10 per cent of coastal and marine areas should be protected by 2020. The assessment of the MPAs in this project shows that Denmark with 4.8 per cent is approximately halfway to meeting this global target within its jurisdiction.

Finally, the MPAs were assigned an IUCN Governance Type based on available information on ownership and

management. Of the 332 MPAs, 180 are governed by state (national ministry), 76 areas are governed through transboundary management (characterised by being managed by two or more countries), and 59 areas are governed by collaborative management, where both private and public organisations are in charge.

Of these three types of governance, the collaborative management type has the highest proportion of MPAs fulfilling the IUCN definition, namely, 65.9 per cent. Governance by state follows with 33.6 per cent and transboundary management with 18.4 per cent. For the latter, the low percentage can possibly be explained by the fact that regulation in these areas requires agreement between several countries, both EU and non-EU Member States, and hence effective nature protection may be more difficult to achieve than in solely national matters.

At the web portal, [beskyttetnatur.dk](http://beskyttetnatur.dk), all 332 MPAs can be viewed on a clickable map of Denmark and assessment sheets with detailed information about the MPAs and how they meet the IUCN definition can be downloaded (in Danish).

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Danish Fjord © Anette Petersen

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## RESUMEN

Un equipo de miembros de las Comisiones de la UICN examinó las áreas marinas protegidas (AMP) de Dinamarca para evaluar si cumplen la definición internacional de la UICN para las áreas protegidas. De las 332 AMP evaluadas, se comprobó que 198 áreas se ajustaban a la definición y se les asignó una categoría de gestión, entre ellas 138 bajo la categoría IV (áreas de manejo de hábitats/especies), 54 bajo la categoría V (paisajes terrestres y marinos protegidos), y solo unas pocas áreas en las restantes categorías de gestión. La pesca de arrastre de fondo resultó ser un factor relevante para que las AMP no cumplieran los criterios de la UICN. Para las aguas danesas en su conjunto, el proyecto estimó que el 4,8% cumple la definición de la UICN para las áreas protegidas, lo que significa que Dinamarca está apenas a medio camino de cumplir la Meta 11 de Aichi para la Biodiversidad de proteger para 2020 al menos el 10% de las áreas costeras y marinas.

## RÉSUMÉ

Une équipe de membres de la Commission de l'UICN a examiné les aires marines protégées (AMP) du Danemark afin de déterminer si elles répondent à la définition internationale de l'UICN pour les aires protégées. Sur les 332 AMP évaluées, 198 ont été jugées conformes à cette définition et se sont vu attribuer une catégorie de gestion de l'UICN, dont 138 dans la «Catégorie IV: Aire de gestion des habitats ou des espèces» et 54 dans la «Catégorie V: Paysage terrestre ou marin protégé», plus quelques autres dans les catégories restantes. Le chalutage de fond s'est avéré être un facteur principal de non-conformité chez les AMP qui ne remplissaient pas les critères de l'UICN. Pour les aires marines danoises dans leur ensemble, l'étude a estimé que 4,8 % répondent à la définition de l'UICN pour les aires protégées, ce qui implique que le Danemark n'est qu'à mi-chemin sur la voie d'atteindre l'Objectif 11 d'Aichi pour la biodiversité qui visait à protéger au moins 10 % des zones côtières et marines dès 2020.