Nordic Biodiversity Framework

Supplementary material

Denmark
Status and implementation of Targets 1-8 of the Global Biodiversity Framework (GBF)

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Targets 1-3. 1. Plan and Manage all Areas to Reduce Biodiversity Loss, 2. Restore 30% of all Degraded Ecosystems & 3. Conserve 30% of Land, Waters and Seas

Recent political plans and initiatives to promote biodiversity in Denmark

This is an annotated list of selected reports and political initiatives relevant to describe the national status of Denmark in relation to the Kunming-Montreal Global Biodiversity Framework. Given that the overarching issue for Denmark to achieve the targets is land-use (which affects both land and ocean), the focus is on reports and initiatives that relate to targets 1-3 on areal planning/management, restoration and conservation. These targets are also intimately connected to target 7 ("Reduce Pollution to Levels That Are Not Harmful to Biodiversity"), as a main threat to marine biodiversity, e.g. nitrate emissions from agriculture, is pollution due to land-use. Each headline refers to specific documents followed by internet links and a few relevant comments. For an non-comprehensive overview of specific environmental laws and regulations related to individual targets, see the appendixes.

Denmark's 5th (2014) and 6th (2019) country report to the CBD

These reports refer to the Aichi-targets that were the goals until 2022. The two reports should be read together, because the 6th report is about the initiatives taken since the 5th report. In relation to Target 11 (17 % protected areas on land 10 % on the sea), only the Natura 2000 areas (designated in accordance with EU legislation) were reported, resulting in about 8 % protected on land and 18 % on the sea (see discussion below). Other protected areas (under national legislation) are mentioned under targets 14 and 15 on nature restoration, but without specifying the areas.

National reporting 2023 to EU on the EU biodiversity strategy for 2030[1]

This is the most recent reporting on the targets in the EU biodiversity strategy. It states that 14.8% of the land area is protected. At sea, 18.3 % is protected, increasing to 29 % when existing plans and pledges are implemented. 4 % is considered strict protection. The reported areas

[1] Homepage of the Danish Ministry of Environment

include all protected areas in Denmark designated in accordance with both EU and national legislation. However, the figures have been disputed by the Danish Biodiversity Council, which finds that not all these areas should be counted in, if the relevant criteria for protection are considered (see discussion below).

Marine Spatial Plan 2023

In June 2023, all the political parties in the Danish parliament voted in favour of an agreement on a new Maritime Spatial Plan (Havplan) which concerns certain strategic marine areas (about 6% of the total marine area). Although a main focus of this plan was to double the area that can be used for sustainable energy projects (offshore wind farms), biodiversity and nature conservation was also included. The agreement promises to gradually increase the extend of protected zones within the marine strategic area to cover 30% by 2028 of which one third (i.e. 10%) is to be strictly protected by 2030, which are targets from the EU biodiversity strategy for 2030. The plan also mentions that benthic trawling is likely not compatible with ordinary protection, which is a positive sign, but so far, only a few areas have been designated as bottom-trawling free zones and these have mostly been in areas in which bottom-trawling was already not practiced so the full effects will depend on further implementation. The marine spatial plan also includes the possibility of experiments of ecosystem restoration of ecosystems by, for example, planting eelgrass which can benefit biodiversity.

Denmark's National Biodiversity Strategy and Action Plan 2024

The document is Denmark's National Biodiversity Strategies and Action Plan (NBSAP) submitted to the CBD in October 2024. Prior to submission a Danish draft was circulated for comments among Danish NGOS and experts with the title "National Handlingsplan for Biodiversitet 2024" (National Action Plan for Biodiversity 2024). The document lists many of the national and international initiatives that relate to the 23 global targets, but it doesn't actually describe any new initiatives as it is mostly a compilation of already existing plans from before the KMGBF. It does contain an appendix that indicates which of the existing initiatives relate to the specific GBF targets but no details are given about the progress made towards each target. Considering Target 3 in KMGBF (30% protected areas on land and sea) the report refers to the above reporting to EU, i.e. an existing 15 % protection on land and 29 % on the sea, which are disputed numbers (see discussion below). Furthermore, the report refers to the goal that "at least 20 % of the land area should be protected nature", which is also included in the recent political "Agreement on a Green Denmark" (see below). It is worth noting that, to our knowledge, this is the first time Denmark reports an official target on this, however there are no concrete details about how to achieve this goal or whether there are plans of increasing the area further from 20 % to the 30% required in the KMGBF. As this is an interim report, we hope more concrete reporting will emerge later.

Discussion: Report from the Biodiversity council

In 2020, the Danish parliament voted on an agreement ("Natur og Biodiversitetspakken", see below) that established an advisory Biodiversity Council (Biodiversitetsrådet) which is an independent, government-funded, research-based expert body (see more below). Based on their interpretation of the relevant EU-guidelines on protected areas combined with targeted area analyses, the Biodiversity Council estimates that only 1.6 % of the Danish land area and 1.9% of the sea can currently be counted as protected with certainty while another 5.5% of land and 0.5% of the sea could potentially be considered protected depending on further assessment of specific areas and their management. No areas at land or sea in Denmark currently qualifies as strictly protected but the council estimates that the already protected areas could eventually achieve that status. There is thus an immense discrepancy between this interpretation and the areas reported as protected by the Danish government. The reason for this discrepancy is the lack of agreement on what counts as "protected". Many areas in Denmark with and official status of "protected" (including the Natura 2000 areas) are only legally protected against specific activities, or only specific species or habitats are protected. In most areas the protection schemes does not include a general protection of the biodiversity and natural ecosystems. Another issue is that, some officially "protected areas" in Denmark at land are subject to agriculture and forestry, or include areas with summer cabins or permanent human settlements. The Biodiversity council argues that such areas should not count as "protected nature". The same counts for formally protected areas that are subject to destructive benthic trawling[2].

There is thus no consensus on, nor any official definition of, the meaning of the word "protection". This is not merely a Danish issue but a general European tendency of lax national implementation of EU nature laws. For example, destructive fishing is prevalent inside the Natura 2000 network and bottom trawling occurs in 86% of the European area officially designated to protect bottom habitats[3]. We expect that the battle over definitions will continue in Denmark and recognize that there are signs in both government statements, civil society and science-based policy documents towards giving more content to the concept "nature protection" in Denmark, as can be seen in the following segment.

Agreement on Nature and Biodiversity ("Natur og Biodiversitetspakken") and the establishment of the Biodiversity Council 2020

The Nature and Biodiversity Agreement was an important political agreement in the Danish parliament. Even though the land areas of the initiatives are rather small compared to the international goals, it represented some important steps forward. For example, a key point of

[2] See the exposé of the poor protection in some of these areas in https://www.berlingske.dk/indland/p-pladser-boldbaner-og-ploejemarker-fylder-op-i-vores-mest-unikke-natur

[3] https://europe.oceana.org/press-releases/eu-celebrates-30-years-natura-2000-ngos-call-these-areas-be-actually/

the agreement was that 75.000 ha of what is mainly production forest today should be set aside as unmanaged forest to promote biodiversity. Furthermore, 15 so-called “Nature national parks” (as opposed to the less defined National Parks) were to be established and be subject to “rewilding” efforts with large herbivores, restoration of natural hydrology and include both unmanaged forest and open natural landscapes. However, even together, the two initiatives only cover about 1.5 % of the land area.

Finally, the parties agreed to establish the Biodiversity Council (Biodiversitetsrådet) as an independent research-based advisory board to guide governmental policies (see above), which was an important contribution to the capacity building for the advancement of scientific knowledge, public awareness and policy implementation (targets 21 and 22) for future initiatives. The Biodiversity Council consists of nine experts appointed by the universities, among their scientific researchers within different aspects of biodiversity. The Biodiversity Council is tasked with creating annual reports on the status of nature and biodiversity as well as recommendations for policies, and to evaluate legislative proposals, as well as with providing research-based contributions to the public debates and ideas for the private sector and the public. In addition to the council has also established a “Dialogue Forum for Biodiversity” in which a number of civil society organisations and other interested parties can comment on the work of the council and engage in dialogues on how to create synergies between the parties.

In November 2022, the Biodiversity Council submitted their first report “From Loss to Progress” (Fra Tab til Fremgang), which is a detailed analysis of the status Danish nature protection with a number of research based recommendations for how the status can be improved[4]. These recommendations include improving both the quantity (total area) of protected nature and the quality (i.e. what “protection” means) as well as recommendations for management with an emphasis on the “low hanging fruit” that would create the most immediate benefits for nature and biodiversity. Examples of the latter include the decommissioning of agriculture in low-lying soils, which are often former wetlands that have been drained, as these are among the least productive areas for agriculture and the restoration of wetlands could contribute significantly to biodiversity. Interestingly, a similar conclusion was made by the Danish Climate Council in its 2024 report on “Scenarios of Future Land Use in Denmark” (Danmarks Fremtidige Arealanvendelse)[5] which analyzed the connections and synergies between land-use, biodiversity and climate, and noted that significant achievements could be made towards climate mitigation by focusing on biodiversity and ecosystem health; for example, restoring low-lying soils to forests or wetlands would not only benefit biodiversity but also store greater amounts of carbon. Denmark thus have a strong research-based capacity for policy recommendations and initiatives that are available to use by decision-makers and managers. As illustrated by the following, some of these recommendations have led to policies.

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[4] https://www.biodiversitetsraadet.dk/pdf/2022/12/Biodiversitetsraadet-2022-Fra-tab-til-fremgang-Final-hjemmeside.pdf

[5] Report in Danish: https://klimaraadet.dk/da/analyse/danmarks-fremtidige-arealanvendelse
English summary at: https://klimaraadet.dk/en/analysis/scenarios-future-land-use-denmark

Agreement on a Green Denmark ("Aftale om et grønt Danmark" in Danish, also referred to as Den Grønne Trepart)[6]

In January 2024, the Danish government called for so-called tripartite negotiations between the government, the lobby and interest group for agricultural industries, some labour unions, the Danish association of municipalities, the largest organisation of employers, and one environmental NGO (Danmarks Naturfredningsforening). Despite there being more than three parties, it was referred to as the Green Tripartite ("Den grønne trepart"). The purpose of the negotiations was to come to a comprehensive agreement on the future of agricultural land-use in Denmark, including plans for how to decrease both nitrate and greenhouse gas from agriculture for the benefit of coastal biodiversity and climate and how to convert areas currently used for farming into natural resources that would benefit biodiversity. A premise for the negotiations was an international independent report (referred to as the "Second Opinion") on the scientific and legal basis for nitrogen reductions in Danish coastal waters, which presented models for three different scenarios[7]. In June 2024, the parties came to an agreement called the "Agreement on a Green Denmark" (Aftale om et grønt Danmark) which was still subject to modifications as the legal proposal was to be negotiated in parliament. On November 18, the parliament approved the final version called "Agreement on Implementation of a Green Denmark" (Aftale om Implementering af et Grønt Danmark).

This agreement could potentially be the most important piece of legislation affecting biodiversity and environment in Denmark in the near future, and it is certainly presented as such to the public, but the practical consequences and implications of its implementation are still uncertain and will hopefully become clearer in the future. A goal of the final agreement, as approved by the parliament, is to reduce nitrogen emissions by 13,780 tons by 2027, and as such it directly addresses target 7 in the GBF. It is worth noting that this goal is consistent with the most ambitious scenario presented by the "Second Opinion" report while the initial agreement reached by the tripartite negotiations landed closer to the Natur og Biodiversitetspakkene least ambitious models in the report; it was thus the political opposition parties that increased the ambitions from those reached by the government negotiation. The agreement also targets carbon emissions and biodiversity. To achieve these goals, significant changes to land-use and agriculture are necessary (thus addressing targets 1-3 in the GBF). The agreement therefore proposes to decommission 140,000 ha of existing agricultural land in carbon-rich low-lying soil (by 2030), the establishment of 250.000 ha new forest by 2045 of which 40% is to be "untouched" forest (i.e. forest that benefits biodiversity, as opposed to production forests and plantations), and restoration of wetlands, all of which requires changes or decommission of about 15% of the area of Danish farmland and close to 10% of the total

[6] https://mim.dk/media/5jsoi3se/aftale-om-et-groent-danmark.pdf
and final text as agreed by parliament at
https://regeringen.dk/aktuelt/publikationer-og-aftaletekster/aftale-om-implementering-af-et-groent-danmark/

[7] https://edit.mst.dk/media/ttncxuyv/911-second-opinion-on-the-need-for-reduction-of-nitrogen-in-the-third-rbmp-for-2021-2027-phase-i.pdf

Danish land area. As this requires action by private landowners, the agreement sets aside 44 bn DKR for a new “Green Area Adjustment Fund” (Den Grønne Arealfund”) for public purchase of land and for private initiatives for land changes. Furthermore, the agreement introduces a GHG tax on agriculture and animal production (of effectively 120 DKR per ton CO2-equivalent starting in 2030 going up to 300 DKR per ton in 2035; the rates are to be reevaluated in 2032) which, to our knowledge is the first of its kind in the world. There are several other points in the agreement, such as the affirmation of the establishment of 21 “nature national parks” with various forms of rewilding, and the establishment of financial supports for agricultural transitions.

It is yet too early to do any form of comprehensive analysis of this agreement. Much of the emphasis is on voluntary actions taken by individual farmers/landowners who can apply for financial support or compensation and if that does not work, the government can look into more substantial enforcement and incentives in later years. This aspect means that how it will be implemented is still an open question. From a biodiversity perspective, one could be concerned that isolated changes in land-use taken by individual landowners might not provide the coherent and connected natural areas needed for thriving ecosystems without some form of integrated spatial planning, but the agreement does not preclude that transitions could be carried out with the guidance of such plans at the local or national level. There has also been critique by NGOs and scientists that the GHG taxes are too low and contain too many loopholes, that the reduction in nitrate emissions are not enough to restore life in the fjords, and that the reliance of voluntary actions is not a strong guarantee of implementation. Furthermore, any benefit for biodiversity on land depends on the quality of protection and an upgrading of the definition (see previous discussion). We withhold any such judgements until the future when implementations and outcomes can be seen. We do though, find it interesting and positive that this plan indicates a more comprehensive “systems approach” to tackle the integrated issues of climate, pollution, biodiversity, land-use and agriculture, rather than treating them as separate issues, and that the political process was conducted by bringing some of the relevant parties together to encourage them to come to an agreement – a process that is somewhat aligned with the principles of the Ecosystem Approach, although a consistent adherence to this approach would have included more societal actors and interests.

Founding Document of the Government Coalition (Regeringsgrundlag) 2022

This is the document that established the political cooperation between the three parties that formed the Danish government coalition in December 2022 and which is meant to be the basis of their policies for the parliamentary period (i.e. the four years or until the next election). We have already mentioned some of the policies proposed in parliament by this government but draw attention to the fact that this political document includes the statement that *“The government will introduce a unified law on nature and biodiversity with goals and funds for a*

greener Denmark. The aim is to contribute to the EU's biodiversity strategy for 2030, which aims for 30 per cent of the EU's land and sea area must be protected nature, of which 10 per cent must be strictly protected nature." (our translation). A concrete proposal for this law has not yet been put forward. The Biodiversity Council has discussed and proposed scope and content of this law in their 2023-report (see above). However, this is on their own initiative and the government has no obligation to consider these recommendations nor any obligation to follow through on its founding document. We mention it here to illustrate that the topic is on the agenda and that there might be more policies proposed in the future.

Other targets (4-8)

As mentioned in the introduction to this chapter, the primary obstacle for biodiversity in Denmark is related to intensive land-use, which also affects the coastal waters and ocean due to agricultural pollutants. Thus, the focus in Denmark, and the focus of this report, has been on the targets related to land-use (targets 1-3) as well as the issue of pollution (target 7) as it relates to land-use. Furthermore, we have highlighted that Denmark does have a relatively strong institutional structure for scientific capacity building and knowledge transfer (targets 20-21. In the following, we give a brief overview of some of the other targets that are the focus of this project (target 1-8 and 21)

Target 4: Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts

Denmark has maintained a national Red List of endangered species since 1990 but starting 2010 the national criteria were updated to be in accordance with international guidelines from the IUCN. Since then, two extensive surveys (2010 and 2019) of species have been conducted resulting in updated red lists (2010 and 2019) and the current evaluation will cover the period 2020-2030[8]. The first results of the ongoing survey, published in October 2023, show that 4,635 species, or 41.3% of all evaluated species, belong on the Red List in various degrees of vulnerability. This number is virtually unchanged from the results of previous Red List surveys[9]. Legally, the protection of species and their habitats is covered in the Danish Administrative Order on the Protection of Species (Artsfredningsbekendtgørelsen[10]), the Nature Protection Law[11], especially §3 on endangered habitats), as well as the European Union's Habitats Directive[12], and the Birds Directive[13] which together form the basis of the Natura 2000 network of protected areas of which there are 250 in Denmark[14]. Protected habitats and ecotopes in Denmark include heath lands, freshwater meadows, salt marches, pastures, streams, bogs, and

[8] https://ecos.au.dk/forskningraadgivning/temasider/redlist
[9] https://ecos.au.dk/forskningraadgivning/temasider/redlist/roedliste-2030
[10] https://www.retsinformation.dk/eli/lta/2018/1466
[11] https://www.retsinformation.dk/eli/lta/2019/240
[12] https://environment.ec.europa.eu/topics/nature-and-biodiversity/habitats-directive_en
[13] https://environment.ec.europa.eu/topics/nature-and-biodiversity/birds-directive_en
[14] https://mst.dk/erhverv/rig-natur/naturindsatser/natura-2000

lakes of a certain size. These ecotypes are considered protected by default all over Denmark, and significant changes to them (such as draining or construction) is illegal, as is – since 2022 – fertilization and the use of pesticides[15]. The degree of protection of these habitats is not guaranteed equally and it is possible to apply for dispensations. As a general rule, all wild mammals and birds (except for those species that are explicitly permitted to hunt and are covered by the hunting law[16], are minimally protected in Denmark. This means it is illegal to kill and collect them except for the purpose of population management. All amphibians and reptiles have the status of special protection[17].

As for the management of human-wildlife conflict, there have repeatedly been conflicts between fishers in Denmark and the Cormorant and seals both of whom are blamed for reducing the population of fish[18]. Both animals are protected in Denmark and through decades there have been political pressure to allow for the killing of these by political parties and lobby groups. The most recent, and increasingly concerning, source of human-wildlife conflict relates to the return of wolves to Northern Europe. Wolves were eradicated in most of Europe during the 18th and 19th Century but has slowly been regaining a foothold since being protected by the EU Habitat Directive in 1992. The first wolf in recent times was spotted in Denmark in 2012 and today several wolf families have established a permanent presence (current estimates: 30-40 adult and breeding adults). According to scientific estimates, there should be room in Denmark for a wolf population of 11-30 families, or 77-210 individuals, without exceeding the ecological carrying capacity[19]. Nevertheless, this small recent wolf population has given rise to significant conflict and controversy, caused both by general cultural anxiety and real incidents where wolves have killed farmers' sheep. There is a small but growing antagonism towards wolves and one incident have been reported of illegal killings of wolf in Denmark. In 2014 a management plan for wolf in Denmark established a compensation scheme, ensuring that farmers could be compensated for loss of animals and subsidies for fences to keep wolves out of their farmland, and a systematic surveillance of the wolf population was established[20]. The governmental approach is the total opposite when it comes to the wild boar. This species, which is native to all of Europe including Denmark and can be an important species for ecosystems and biodiversity, is deliberately being eradicated as a matter of state policy: hunters are allowed and encouraged to kill wild boars[21] and in 2019 an "anti-boar fence" was erected along the Danish-German border. This single reason for this policy of extinction is the financial interests of the Danish industrial pig industry as it is feared that wild boars might carry diseases that could spread to the pig factories, which, in turn, would affect the export. A final, and increasingly concerning, cause of human-wildlife conflict is related to the ongoing efforts to improve biodiversity by the use of "rewilding" and extensive year-round grazing which has

[15] https://mst.dk/erhverv/rig-natur/naturbeskyttelse/3-beskyttede-naturtyper/beskyttelse-af-3-naturtyper
[16] https://www.retsinformation.dk/eli/lta/2007/747
[17] https://mst.dk/erhverv/rig-natur/artsforvaltning/beskyttede-arter
[18] For a scientific report on conflicts between seals and fishing in Denmark, see https://dce2.au.dk/pub/sr184.pdf
[19] https://dce.au.dk/fileadmin/dce.au.dk/Udgivelser/Notater_2023/N2023_41.pdf
[20] https://mst.dk/media/n4id5igx/forvaltningsplan-for-ulv-2014.pdf
[21] https://naturstyrelsen.dk/aktiviteter-i-naturen/vildtforvaltning/regulering-af-vildsvin

already been used in some areas for nature management purposes (such as the Mols Laboriatory) and is planned to be included in some of the coming “nature national parks”. Often, just declaring an area “protected” is not enough to preserve ecosystems and biodiversity, if those areas have been significantly disturbed by prior human activities. Some may therefore benefit from positive interventions such as active hydrological restoration or the reintroduction of keystone species to restore ecosystem functioning. The latter is done in several enclosed areas in Denmark, where large grazing mammals are used for ecosystem management and live with minimal human intervention. This has caused serious troubles when domestic species are used, which are associated with human activities and sometimes emotional bonding – specifically horses. In recent years, these sites have been subject of intensive debate and harassment, including sabotage, by campaigners for “animal welfare.”

Target 5: Ensure Sustainable, Safe and Legal Harvesting and Trade of Wild Species

Illegal poaching and trade of wild species on land are not great problems in Denmark. Denmark and the European Union are signatories to the CITES treaty to protect endangered plants and animals from the threats of international trade and given that this is a matter of international trade and logistics, it is best addressed within the framework of the European trade and customs policy[22]. The absolutely overarching issue regarding legal and illegal harvest of wild species as well as the sustainability thereof is fishing. Danish commercial fishing is regulated by EU agreements, Danish laws as well as decisions by the Agency of Fisheries under the Ministry of Food, Farming and Fishery, and the scientific recommendations by The International Council for the Exploration of the Sea (ICES). Together these agencies determine the rules for harvest, set quotas for catch and bycatch, etc. But besides official regulations, there is also the question of how they are enforced and whether they are followed by the primary users. This topic is too large and complex for this project as it requires detailed knowledge of formal laws as well as both formal and informal practices, which would require more resources than we have available at this stage, and the sustainability of agriculture, fishing and forestry is further addressed in Target 10, which is beyond the scope of this project.

As an example, the population of cod in the Danish waters has been near the brink of collapse for several years and ICES has called for drastic reductions in allowed catch[23]. One question is whether the official Danish quotas follow the recommendations by ICES but this question becomes less pertinent when we consider the non-intentional bycatch of cod. Such bycatch must, theoretically be reported and included in the existing quota, but it is well-known that fishers are not always reporting their bycatch and that enforcement mechanisms are very lax. Measures can be taken, such as the mandatory use of cameras on the fishing vessels, an initiative that was introduced in certain Danish waters in recent years and which was proven to be effective. But this initiative was abandoned by the ministry in 2024 and replaced with a

[22] https://mst.dk/borger/natur-og-fritid/handel-med-truede-arter-cites
[23] https://doi.org/10.17895/ices.advice.27874953

voluntary measure[24] which makes it extremely difficult to know whether there is any coherence between official catch limits and actual practices. Furthermore, we must note that benthic trawling, which is both responsible for large quantities of bycatch and is extremely destructive to marine ecosystems, is practiced in most of the Danish marine areas (although a few local prohibitions have been established recently) and organisations such as the Biodiversity Council and the The Danish Society for Nature Conservation (Dansk Naturfredningsforening) have called for Denmark to ban pelagic trawling in Marine Protected Areas[25]. Currently both Denmark and several other European nations allow benthic trawling within the Natura 2000 areas. In conclusion, this topic needs much further work and needs to be taken seriously at all levels.

Target 6: Reduce the Introduction of Invasive Alien Species by 50% and Minimize Their Impact

A fairly comprehensive action plan on invasive species was adopted in 2017 (Handlingsplan mod invasive arter[26]) and has regulations on the prevention and handling of the introduction and spread of invasive species[27,28] . Much of the regulation on this are covered by EU regulations but practical implementation is done at both national and local levels. In 2024 there are 101 species classified as invasive in the Danish laws: 88 from the EU list and 13 additional on the national list. There are rules for handling and transport of these. Only one species is classified to be eradicated (Giant Hogweed) and citizens and municipalities are legally required to take steps when this species is reported. The Environmental Portal (a partnership between the state and local governments) has a guide to citizens about what to do if they observe invasive species[29] and the Environmental Agency has a website where citizens can look up invasive species and register their observations which will be verified by experts[30]. Furthermore, a partnership has been established with a range of private institutions (“modtageraftaler”) who have committed to receive specific non-native species[31]. That being said, the efforts to control invasive species in Denmark are less successful at sea than at land. Despite being a signatory to the United Nation’s Convention on Ballast Water[32] and other treaties regulating the marine traffic of invasive species, invasive species are still an increasing problem in Danish waters due to heavy shipping traffic[33]. This issue is likely to be affected by climate change and is a cause of concern.

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[24] https://fiskeristyrelsen.dk/erhvervsfiskeri/kontrol/monitering-og-overvaagning/kameradokumenteret-fiskeri
[25] https://www.biodiversitetsraadet.dk/viden/anvendelse-af-bundslaebende-fiskeredskaber-i-beskyttede-havomraader-notat, https://www.stopbundtrawl.dk
[26] https://mst.dk/media/41tkwk35/handlingsplan-mod-invasive-arter-2017.pdf
[27] https://www.retsinformation.dk/eli/lta/2018/1285
[28] An overview of regulations on invasive species can be found at: https://mst.dk/erhverv/rig-natur/artsforvaltning/invasive-arter/regler-om-invasive-arter
[29] https://support.miljoeportal.dk/hc/da/articles/360020229377-Arter-dk-Registr%C3%A9r-invasive-arter
[30] https://arter.dk/invasiv
[31] see list at https://mst.dk/erhverv/rig-natur/artsforvaltning/invasive-arter/regler-om-invasive-arter
[32] https://www.imo.org/en/MediaCentre/HotTopics/Pages/Implementing-the-BWM-Convention.aspx
[33] https://mst.dk/nyheder/2022/maj/havets-uoenskede-arter-i-fremmarch

Target 7: Reduce Pollution to Levels That Are Not Harmful to Biodiversity

The issue of pollution in general was another topic that this project decided was too big to cover adequately as it requires extensive knowledge on biochemistry, industrial safety, legislation and ecology. Instead, we focus on a few selected aspects of pollution that are directly related to biodiversity: the pollution of aquatic systems that are a danger to life and ecosystems in rivers, freshwater and coastal areas. A large source of this pollution is nitrate from industrial agriculture. This has been a known problem for several decades but has received a high degree of attention in recent years as large swaths of Danish coastal waters have been reported as virtually "dead zones" due to hypoxia which is primarily caused by agricultural emissions. To solve this problem, extensive transitions in agricultural practices and general land-use are necessary, and the Danish government has recently started several initiatives intended to move towards such transitions. These initiatives, which directly address targets 1-3 and are intimately connected to target 7, are described in more detail in the previous chapter.

Other sources of aquatic pollution include wastewater – a problem that has gradually become smaller as treatment of wastewater has become increasingly better[34]. Similarly, environmental legislations and mechanisms for mitigation of other sources of pollution have also improved over the decades, although they remain a problem. For example, air quality has improved: a 2018 report shows a 40% drop in the negative effects of air pollution on human health since 1990[35] but even with that improvement the estimated annual human deaths due to air pollution remains around 4,200 (in the period 2016-2018) with many more instances of negative health effects. If this is the case for humans, then we must assume it also has negative effects on other lifeforms and thus affect biodiversity in general. While environmental legislation has improved, Denmark is also affected by pollution from the past such as toxic soil with pollutants leaking into streams and groundwater basins from past industrial sites, landfills etc. A 2023 investigation conducted by the association of municipalities of 400 out of 1200 at-risk sites found PFAS, ammonium, pesticides, heavy metal, and other pollutants above legal limits in several of these areas and in 6 out of 10 cases it was determined that the pollution has contaminated nearby water sources[36].

Meanwhile new pollutants (or newly discovered ones) such as microplastics and PFAS have been added, the consequences and amount of which are still unknown. Thus, the according to the ministry of environment the annual emissions of microplastic in Denmark is anywhere between 5,500 and 13,900 ton, with the vast majority of it (over 60%) being released from car tires, illustrating another problem that cannot be solved without substantial changes to society, planning, land-use and modes of transportation (this is true for all the countries). PFAS is also widely found in the Danish environment, including in the drinking water and other water sources

[34] A historical comparison of pollution from wastewater since 1970 can be seen at: https://naturenidanmark.lex.dk/Vandl%C3%B8benes_forurening
[35] https://dce2.au.dk/pub/SR360.pdf
[36] https://backend.miljoeogressourcer.dk/media/lix/5435/ofv-rap-201223.pdf

at amounts way above the recommended limits[37], and is known to accumulate in ecosystems, organisms and organs, thus constituting a threat to human health and biodiversity. One source of PFAS is agricultural pesticides, which again links this topic to the initiatives mentioned in the previous chapter. The regulation and reduction of microplastic and PFAS are some of the main challenges regarding pollution in the coming years in Denmark and elsewhere.

Target 8: Minimize the Impacts of Climate Change on Biodiversity and Build Resilience

Climate change and biodiversity loss are not two problems, which can be tackled separately; they are intrinsically connected. Biodiversity is both the foundation for life and the foundation for the chemical processes that constitute our planet's climate. At the same time, anthropogenic climate change threatens to upset the patterns of biodiversity, which has the potential to further exacerbate climate change. Climate mitigation strategies that harm biodiversity will therefore be ineffective in addressing climate change, and vice versa. Target 8 of the GBF therefore requires that member nations emphasize nature based solutions to climate change that do no harm existing biodiversity, and take efforts to protect ecosystems from the effects of climate change. In other words, climate and biodiversity must be thought of as integrated problems in a whole-systems approach. This is a relatively new approach within the political way of thinking – for example, there are no mentions of biodiversity or nature-based approaches in the Danish Climate Law of 2020[38] - but we notice that there are signs of such an approach being considered in Denmark. For example, the marine spatial plan of 2023 addresses both climate mitigation, biodiversity and ecosystem health (as well as economic interests and national security), and the Agreement on a Green Denmark of 2024 is another attempt at addressing the interactive aspects of pollution, biodiversity and greenhouse gas emissions as well as the socio-political issue of land use and agricultural practices. Both show a political tendency towards a more integrated systems approach – although there is also the risk of such multifaceted political negotiations to merely be a compilation of different interests without a comprehensive strategy for how they can support each other. Denmark is in a good position to develop such a comprehensive strategy, as there is already a strong foundation of institutionally supported capacity building where research-based analyses are translated into policy briefs to support the political system. For example, the report from the Climate Council on "Scenarios of Future Land Use in Denmark" concludes that "measures to improve the aquatic environment and increase biodiversity will result in significant climate-related benefits" and provides concrete measures politicians can take to integrate these goals in the climate mitigation strategies[39].

[37] https://www.dn.dk/vi-arbejder-for/pfas
[38] https://www.retsinformation.dk/eli/lta/2021/2580
[39] Report in Danish: https://klimaraadet.dk/da/analyse/danmarks-fremtidige-arealanvendelse
English summary at: https://klimaraadet.dk/en/analysis/scenarios-future-land-use-denmark