SRU German Advisory Council on the Environment

Towards Effective Marine Nature Conservation

Fisheries Management in the Natura 2000 Sites of Germany's Exclusive Economic Zone

Statement

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Contents

1 Introduction

1. This statement sets out the views of the German Advisory Council on the Environment (SRU) on the current discussion about fisheries management in the marine protected areas of Germany's exclusive economic zone (EEZ). In many respects the question of how to balance the conflict between fishery and nature conservation interests, and what importance to attach to the various aspects, is a model example of the challenges of integrating marine conservation in other policies, as urged by the SRU in its Environmental Report 2012 (SRU 2012, Chapter 8). The Marine Strategy Framework Directive 2008/56/EC (MSFD) has given the German government new scope for designing effective marine conservation, even if this scope is basically restricted by the European Union's exclusive decision-making competence in the fisheries sector. Furthermore, Germany is one of the first member states to draw up management plans for the Natura 2000 sites in the EEZ. The design of the measures – especially with regard to fisheries – sets an example for other countries, thereby lending it an importance that extends beyond the German EEZ.

2. As the various uses of marine waters give rise to considerable pressures, the SRU has repeatedly expressed its views on marine environment protection issues (SRU 2004; 2006; 2008; 2011; 2012). Fishing is one of the main factors responsible for pressures and adverse impacts on marine ecosystems. Apart from overfishing, the central pressure factors are discards or by-catch of both target and non-target species and the use of heavy bottom trawls. The current focus is on the two main fields of action which can help to reduce the pressures that marine waters are exposed to as a result of fishing. One is the Common Fisheries Policy (CFP) which is currently being reformed – the SRU recently expressed detailed opinions on this subject (SRU 2011) – and the other is the establishment of marine protected areas (SRU 2012, Chapter 8; Item 5 ff.). Another relevant aspect is the implementation of the MSFD that is currently in progress. The reform of the Common Fisheries Policy must contribute to ensuring that the objectives of the MSFD can be achieved. In addition to the management of fish stocks, other issues under discussion in the context of the CFP reform which could help to protect marine ecosystems include further technical measures and a ban on discards. Furthermore, marine protected areas make a major contribution to protecting marine biodiversity from fishing activities.

3. In recent years a considerable proportion of Germany's marine waters, both within the 12-mile zone (coastal seas) and in the EEZ, have been placed under protection. This is an important step in the conservation of biodiversity in Germany's marine waters. Admittedly, some 45.5 percent of Germany's entire marine waters already consist of Natura 2000 sites, and the proportion of the latter in Germany's EEZ is around 31.5 percent (BfN 2011). In this respect Germany is playing a pioneering role, especially since it is one of the first member states to designate marine protected areas in the EEZ. Another reason is the unusual extent of the German areas. However, one crucial step in the process of protecting marine areas is that of defining the necessary protective measures (see Item 9). This is done by drawing up management plans that govern human activities in the protected areas. A proposal for management plans for the Natura 2000 sites in the German EEZ is to be drawn up by 2013 (see Item 8). The measures laid down must ensure that within the marine protected areas, no human activities take place that conflict with the conservation objectives (Article 3 paragraph 2 Habitats Directive 92/43/EEC and Article 2 Birds Directive 2009/147/EC; see Item 11). Responsible management of fishery activities in the protected areas forms the basis for achieving the conservation objectives in the Natura 2000 sites.

There are already clear signs of conflicts between the interests of the fishing industry and the conservation objectives of the Natura 2000 sites, although the fisheries sector can profit indirectly from the protected areas – e.g. from an increased reproduction rate of fish in restricted-fishing areas (ROBERTS 2012). A first draft of the management plans for the Natura 2000 sites in the EEZ, drawn up by the Federal Office for Nature Conservation (BfN) and the Johann Heinrich von Thünen Institute (vTI), includes proposals for resolving these conflicts (SELL et al. 2011).

4. In view of the special importance of fisheries management in the Natura 2000 sites for marine conservation, the SRU takes a more detailed look below at the main challenges of successful protection. This importance is due partly to the great extent of the Natura 2000 sites, partly to the severity of fishery encroachments on the areas in question, and finally to the fundamental importance indicated by the current conflict. As set out in detail in Chapter 8 "Cross-sectoral Marine Protection" of the SRU's Environmental Report 2012, protection of Germany's marine waters calls for an integrated, cross-sectoral approach to take adequate account of nature conservation interests (SRU 2012, Item 445).

2 The importance of marine protected areas for the conservation of biodiversity

5. In the past, the SRU has repeatedly drawn attention to the special role of marine protected areas as an instrument of marine protection and for conserving marine biodiversity (SRU 2004, Item 229; 2011, Item 24–27; 2012b, Item 497).

As a result of the bans or restrictions on directly harmful anthropogenic activities such as the exploitation of marine resources (especially fishing and raw material extraction), marine protected areas

have – within their boundaries – a positive effect on ecosystems with their characteristic communities and species populations. They offer living creatures a safe place to rest, feed, reproduce and bring up their young (ROBERTS et al. 2005). Protected areas for benthic – i.e. bottom-dwelling – communities, especially for stationary species such as mussels, corals and reef fish, are particularly effective (KAISER et al. 2002). But migratory species also profit from protected areas if the establishment of such areas takes account of aggregation areas, breeding and calving grounds and migration corridors (WEST et al. 2009). Furthermore, protected areas can perform an important function as reference areas for assessing the impacts of anthropogenic activities. For example, the lack of reference areas was one of the factors that prevented successful evaluation of the benefits of the "Plaice Box" – an area measuring about 40 000 km^2 to the north of the Dutch and German Wadden Sea islands and to the west of the Danish coast, which since 1994 has been completely closed to beam trawlers with an engine power in excess of 300 HP (BEARE et al. 2010). On the other hand, it is not possible to prevent certain indirect anthropogenic influences, such as inputs of pollutants and nutrients, from affecting marine protected areas.

Whether a protected area fulfils its function of increasing and maintaining populations depends on a large number of factors, including the following:

- Size: Protected areas must possess a certain size to which the relevant protection objective is geared (GERBER et al. 2003; SUMAILA 1998). The best effects can be expected where protection is provided for 20 to 40 percent of the habitat of a species (GELL and ROBERTS 2003).
- Status: The status of a species population at the time the protected area is designated (e.g. whether it is within or outside safe biological limits) has a major influence on how well the population can recover in the protected area (RODWELL and ROBERTS 2004).
- Age: Depending on the target species in question, the age of a protected area plays a crucial role. Particularly in the case of slow-growing species such as corals, which play a key role as habitats for various fish species, there is a marked time-lag before a positive effect makes itself felt (SELIG and BRUNO 2010).
- Other abiotic factors, such as temperature increase (SELIG et al. 2012), and also the characteristics of the individual species (reproduction cycle, food spectrum, adaptability) also have an influence on the condition of the population.

Function of protected areas for the fisheries sector

6. The function of marine protected areas is not confined solely to conserving endangered species or habitats. Under certain conditions, synergies may arise between the effects of protected areas and those of a sustainable fishing industry based on the ecosystem approach: For example, a sandbank with important ecological functions (e.g. as a feeding habitat for migratory birds) may at the same time be the nursery grounds of a commercially important fish species. The positive side-effects of marine protected areas are known to include the following:

- Spill-over and export: In response to increased population density and the resulting pressure of competition within the protected area, adult animals emigrate from the area and give rise to an increase in population outside the protected areas. Free floating larvae emigrate from the protected area, thereby contributing to population growth outside the protected area (CHRISTIE et al. 2010; GELL and ROBERTS 2003; STELZENMÜLLER et al. 2008).
- Stability of the population and of the ecosystem equilibrium: Areas where fishing no longer takes place permit the emergence of a natural population composition comprising all age classes (AGARDY 1997; SOBEL 1996); this also helps to protect genetic diversity (BOHNSACK 1999; HOLLAND and BRAZEE 1996).

3 Natura 2000 sites in the German EEZ

3.1 Legal background

7. Germany has designated ten protected areas in its exclusive economic zone (von NORDHEIM et al. 2006; Table 1). Under European law the obligation to designate protected areas in the EEZ follows from the Habitats Directive 92/43/EEC and the Birds Directive 2009/147/EC (for details of the requirements of international and European law, see CZYBULKA and BOSECKE 2006). The areas of Community significance under the Habitats Directive and the areas protected under the European Birds Directive together form the Natura 2000 network of protected areas. The goal of the network of protected areas is to conserve and restore biological diversity on land and in the water (Article 2 Habitats Directive, Article 1 Birds Directive). Protected areas in German coastal waters within the 12-mile zone are designated by the federal Länder. The 2002 revision of the Federal Nature Conservation Act *(Bundesnaturschutzgesetz – BNatSchG)* created the legal basis for making the necessary designations in the EEZ adjacent to German territorial waters (up to a maximum of 200 nautical miles). Under Section 58 of the Federal Nature Conservation Act, the Federal Agency for Nature Conservation (BfN) and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) are responsible for selecting, designating and managing the protected areas in the German EEZ.

The bird sanctuaries "Eastern German Bight" in the North Sea and "Pomeranian Bay" in the Baltic Sea were notified to the European Commission in 2005

and thus took effect directly as special protection areas (cf. legal aspects in ELL and HEUGEL 2007). They were subsequently designated as national nature conservation areas by statutory ordinance of the Federal Environment Ministry (Ordinance of 15 September 2005 on the designation of the nature conservation area "Eastern German Bight", and Ordinance of 15 September 2005 on the designation of the nature conservation area "Pomeranian Bay").

The eight Habitats Directive areas in the EEZ which were notified to the European Commission (for details see Table 1) were officially established by the Commission in November 2007 (European Commission decision 2008/23/EC of 12 November 2007 and European Commission decision 2008/25/EC of 13 November 2007) in accordance with the required assessment system (Article 4 paragraph 2(1) Habitats Directive). They thereby acquired the status of sites of Community importance (Article 4 paragraph 2(3) Habitats Directive). Under Article 4 paragraph 4 of the Habitats Directive, Germany is obliged to designate the areas as protected areas as quickly as possible – and within six years at the latest. As soon as an area has been entered in the Commission's draft list of Sites of Community Importance, it is subject to the protection regime of the Habitats Directive, regardless of whether it has been formally designated by the relevant Member State.

8. Germany's legal obligation to take the necessary conservation measures in the Natura 2000 sites of the German EEZ follows from EU legislation (see above); the legal foundation in federal law is Section 56 subsections 1 and 2 in conjunction with Sections 31 ff. of the Federal Nature Conservation Act (for details of the scope and area of application of the Federal Nature Conservation Act in the EEZ, see: KIEß in: SCHLACKE 2012, paragraph 56, marginal note 19–28).

For Habitats Directive areas the obligation arises in part from Article 6 paragraph 1 of the Habitats Directive, which also states that the conservation measures shall, where appropriate, comprise management plans drawn up for the specific areas or integrated in other development plans. There is also a requirement to take such legal, administrative or contractual measures as are commensurate with the ecological requirements of the Annex I habitat types and/or Annex II species that occur in these areas. Article 6 paragraph 2 of the Habitats Directive also includes a general ban on deterioration for special protection areas (as implemented by Section 33 subsection 1 Federal Nature Conservation Act). Under Article 12 paragraph 1 of the Habitats Directive, the member states are also required to take the necessary measures to introduce a strict protection system for the species listed in Annex IV to the Habitats Directive.

For bird sanctuaries the obligation to take conservation measures under European law basically arises from Article 4 of the Birds Directive in conjunction with Annex I thereto, or from Article 3 of the Birds Directive for species not listed in Annex I. The two bird sanctuaries designated in the EEZ serve to protect Annex I species (cf. Ordinance of 15 September 2005 on the designation of the nature conservation area "Eastern German Bight ", and Ordinance of 15 September 2005 on the designation of the nature conservation area "Pomeranian Bay").

9. To satisfy the habitat protection requirements of European nature conservation legislation, the member states must not only design their national nature conservation legislation accordingly, but must also implement the establishment of the network of Natura 2000 sites from an administrative point of view. In Germany the process of satisfying this obligation proved to be a "long and rocky road" (GELLERMANN in: von LANDMANN/ROHMER 2010, before paragraphs 31–36, marginal note 8), and it still has to be fully completed. This can also be seen from the fact that the elaboration of management plans runs into great problems where there is a need to restrict existing uses. In the EEZ, such cases include the fisheries sector (for further conflicts with submarine pipelines, shipping and scientific marine research, see PROELß 2010).

The situation is complicated by the fact that Germany cannot regulate the conservation measures on its own, in so far as these relate to the fisheries sector. This follows from the exclusive competence of the EU under Article 2 paragraph 1 and Article 3 paragraph 1d in conjunction with Article 38 of the Treaty on the Functioning of the European Union in respect of the "conservation of biological marine resources under the Common Fisheries Policy", according to which the EU establishes and implements a common agricultural and fisheries policy. In fisheries legislation, as in nature conservation legislation, there is a legal "cascade system" under which legal requirements arise from international law, European law and national law (CZYBULKA 2011). What is more, in the specific case of restrictions on fisheries measures in Natura 2000 sites, the two fields of legislation (fisheries and nature conservation) impose conflicting requirements (MARKUS 2012).

10. The European Commission is of the opinion that, in view of the exclusive primary-law competence of the EU under Article 3 in conjunction with Article 38 of the Treaty on the Functioning of the European Union (TFEU), the member states are prevented from deciding any measures in marine Natura 2000 sites that are capable of giving rise to restrictions on fishing activities. The European Commission's guideline "Fisheries measures for marine Natura 2000 sites" sets out in detail the formal procedure under which fishery restrictions are laid down by the EU (European Commission 2008). The procedure consists of several steps: Application by the member state to the European Commission, involvement of the Regional Advisory Councils (RACs), consultation with scientific bodies

(International Council for the Exploration of the Sea (ICES) or the Scientific, Technical and Economic Committee for Fisheries (STECF) or both), stakeholder consultation and adoption by the European Council and, if necessary, by the European Parliament (European Commission 2008). It is also necessary to distinguish whether the Natura 2000 area is within the 12-mile zone or the EEZ. Although Articles 8 to 11 of Regulation 2371/2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy provide that member states may take measures which restrict fishery activities, such measures in the EEZ may – in simple terms – only take the form of temporary emergency measures or measures applying exclusively to fishing vessels operating under the flag of the member state. Within the 12-mile zone, by contrast, it is also possible to take permanent measures affecting other states, provided they are non-discriminatory. This is checked by the European Commission in consultation with the member states concerned and the RACs.

11. On the other hand the Habitats Directive first of all requires the member states to take species conservation measures (Article 12 Habitats Directive), such as protecting whales (Cetacea) (Annex IVa to Habitats Directive). Secondly, it calls for the protection of areas (Article 4 Habitats Directive), e.g. sandbanks with poor permanent seawater cover, or reefs (habitat types according to Annex I, criteria in Annex III). Finally, the Birds Directive requires protection of habitats and species for waterbirds (Articles 4 and 5 of the Birds Directive). There are even some who hold the opinion that fishing in Natura 2000 sites involves plans and projects within the meaning of Article 6 of the Habitats Directive, which means that these require a Habitats Directive impact assessment (CZYBULKA 2011, p. 319–320).

12. Thus restriction of fishery activities in Natura 2000 sites is a typical example of a conflicting use which would require an integrated, cross-sectoral approach (SRU 2012, Chapter 8). This arises primarily from the different underlying competence systems and the resulting differences in responsibility at national and EU level, which also give rise to corresponding differences in sectoral objectives. This means that where measures to restrict fishery activities are concerned, the lines of conflict do not run between the EU and the member states, but between the relevant ministries within the member states. This is also due to the fact that the EU currently has no interest in undermining (its own) environmental objectives with the aid of fisheries legislation. In fact it is rather the member states themselves that may not want to restrict their fishery sectors – this applies to the fishing nations in particular. However, the current transposition of the MSFD offers the member states an instrument that can help to develop integrated concepts for managing their marine areas and hence also for developing the relevant protected areas (MARKUS et al. 2011).

3.2 Location, characteristics and objectives of the protected areas

13. Of the ten Natura 2000 sites in Germany's EEZ, four are situated in the North Sea and six in the Baltic Sea (BfN 2012). The first group comprises the sites of community importance "Dogger Bank", "Sylter Outer Reef" and "Borkum Reef Ground", and the special protected area "Eastern German Bight" (see Table 1, Fig. 1 and Fig. 2).

Table 1

Protected areas and their conservation objectives in the German EEZ

Protected area	**Protected under/ Protection status**	**Size**	**Major protection/conservation objectives**
North Sea			
Dogger Bank	Hab. Dir./SCI	1,624 km^2	Conservation and restoration of: 1. specific ecological functions, biological diversity and natural hydro- and morphodynamics; 2. favourable conservation status of the habitat type "sandbanks"[1]; 3. favourable conservation status of the Habitats Directive species harbour porpoise and common seal, and their habitats.
Sylter Outer Reef	Hab. Dir./SCI	5,314 km^2	Conservation and restoration of: 1. specific ecological functions, biological diversity and natural area dynamics; 2. favourable conservation status of the habitat types "sandbanks"[1] and "reefs"; 3. favourable conservation status of the Habitats Directive species harbour porpoise, common seal, grey seal, river lamprey and twaite shad, and their habitats.
Borkum Reef Ground	Hab. Dir./SCI	625 km^2	Conservation and restoration of: 1. specific ecological functions, biological diversity and natural hydro- and morphodynamics of the area; 2. favourable conservation status of the habitat types "sandbanks"[1] and "reefs"; 3. favourable conservation status of the Habitats Directive species harbour porpoise, common seal, grey seal and twaite shad, and their habitats.
Eastern German Bight	Birds Dir./SPA	3,135 km^2	Conservation and restoration of: 1. qualitative and quantitative populations of bird species[2], with special attention to bird species with a negative population trend; 2. the main direct and indirect food bases of the bird species; 3. the elevated biological productivity that is typical of the area; 4. unfragmented habitats in the nature conservation area; 5. the natural quality of the habitats.
Baltic Sea			
Fehmarn Belt	Hab. Dir./SCI	280 km^2	Conservation and restoration of: 1. specific ecological functions, biological diversity and natural hydro- and morphodynamics, especially: – as a corridor for the unimpeded exchange of the waters of North Sea and Baltic Sea, – as a principal migration route for marine fauna and flora elements in the eastern Baltic Sea; 2. favourable conservation status of the habitat types "sandbanks"[1] and "reefs"; 3. favourable conservation status of the Habitats Directive species harbour porpoise and common seal, and their habitats.

Kadet Trench	Hab. Dir./SCI	100 km^2	Conservation and restoration of: 1. specific ecological functions, biological diversity and natural hydro- and morphodynamics of the area; 2. unimpeded exchange of North and Baltic Sea waters and connecting function for the ecosystems of the western and central Baltic Sea; 3. favourable conservation status of the habitat type “reefs”; 4. favourable conservation status of the Habitats Directive species harbour porpoise, and its habitats.
Adler Ground	Hab. Dir./SCI	234 km^2	Conservation and restoration of: 1. specific ecological functions, biological diversity and natural hydrodynamics of the area; 2. favourable conservation status of the habitat types “sandbanks”[1] and “reefs”; 3. favourable conservation status of the Habitats Directive species harbour porpoise and grey seal, and their habitats.
Western Rønne Bank	Hab. Dir./SCI	86 km^2	Conservation and restoration of: 1. specific ecological functions, biological diversity and natural hydrodynamics of the area; 2. favourable conservation status of the habitat type “reefs”; 3. favourable conservation status of the Habitats Directive species harbour porpoise, and its habitats.
Odra Bank	Hab. Dir./SCI	1,101 km^2	Conservation and restoration of: 1. specific ecological functions, biological diversity and natural hydro- and morphodynamics of the area; 2. favourable conservation status of the habitat type “sandbanks”[1]; 3. favourable conservation status of the Habitats Directive species harbour porpoise and twaite shad, and their habitats. 4. Appropriate habitat management for resettlement of the Habitats Directive priority fish species sturgeon (*Acipenser oxyrinchus*).
Pomeranian Bay	Birds Dir./SPA	2,004 km^2	For the protection of various bird species[3] and their habitats it is necessary in particular to observe the following criteria: Conservation and restoration of: 1. the qualitative and quantitative populations of bird species; special attention is to be paid to bird species with a negative trend in the development of their biogeographical population; 2. the main direct and indirect food bases of the bird species; 3. the characteristic properties of the area (especially salinity, freedom from ice and geo-hydromorphological attributes); 4. unfragmented habitats in the nature conservation area, and 5. the natural quality of the habitats.

[1] = which are slightly covered by seawater all the time
[2] = Red-throated diver and black-throated diver, and the key species common tern, arctic tern, sandwich tern, little gull, common gull, lesser black-backed gull, great black-backed gull, black-legged kittiwake, northern gannet and common guillemot
[3] = Red-throated diver, black-throated diver, red-necked grebe, slavonian grebe, eider duck, long-tailed duck, common scoter, velvet scoter, red-breasted merganser, little gull, common tern, arctic tern and black guillemot.
Dir.= Directive
SCI = Site of Community Importance
SPA = Special Protected Area

Source: Federal Agency for Nature Conservation (BfN 2012)

The Dogger Bank protected area – situated in the far north of the German North Sea EEZ (see Fig. 1) – extends protection to the entire German part of the largest sandbank of the same name in this marginal sea. The area is of outstanding importance, partly because of an endofauna (fauna living primarily in substrates) that is adapted to this substrate and its importance as a stepping stone for the diffusion of these fauna elements in the North Sea. It also serves as a feeding ground for seabirds and marine mammals, and as a feeding and breeding ground for fish (BfN 2012; KRAUSE et al. 2011).

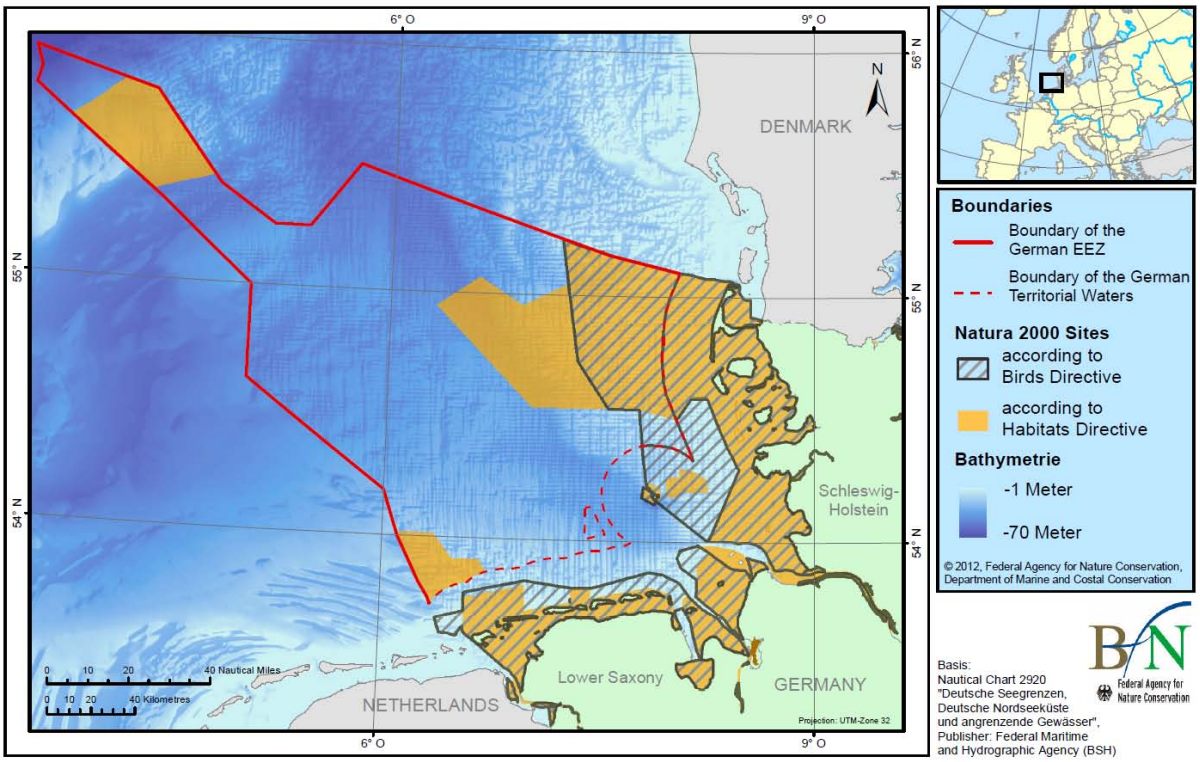
In the central southern part of the EEZ is the "Sylter Outer Reef" protected area, which is characterised by an alternation of food-rich sandbanks and reefs; the latter have a characteristic fauna which includes frilled anemones, sea urchins and sea squirts, for example. These reefs are a special feature in the offshore regions of the North Sea. The protected area is also of great importance for protection of the harbour porpoise (*Phocoena phocoena*) in the North Sea, which reaches its highest density here. It is also of great relevance as a calving and mating habitat for this species (KRAUSE et al. 2011).

Borkum Reef Ground – in the far south-west – is the smallest protected area in the German EEZ of the North Sea. It is characterised by an extensive sandbank interspersed with reef areas. The great biodiversity of the areas results from the close interlocking of typical coarse-sand communities with typical reef fauna, e.g. dead man's fingers (*Alcyonium digitatum*), sea squirts, bryozoa and sponges. The three marine mammal species occurring here – harbour porpoise, grey seal (*Halichoerus grypus*) and common seal (*Phoca vitulina*) – are protected along with the twaite shad (*Alosa fallax*).

The "Eastern German Bight" bird sanctuary adjoins the "Schleswig-Holsteinische Wadden Sea" national park in the east. In the west it borders on or overlaps the "Sylter Outer Reef" protected area (see Fig. 1). It performs an important function in the southern North Sea as a feeding, overwintering, moulting, migratory and resting area for seabird species for which protected areas are required to be established under Annex I of the Birds Directive. This applies for example to the red-throated diver (*Gavia stellata*) and black-throated diver (*Gavia arctica*), which spend the winter here and enjoy special protection, and also to the little gull (*Larus minutus*) and the sandwich tern (*Sterna sandvicensis)* and regularly occurring migratory bird species such as the northern fulmar (*Fulmarus glacialis*) and common guillemot (*Uria aalge*) (BfN 2012).

Figure 1:

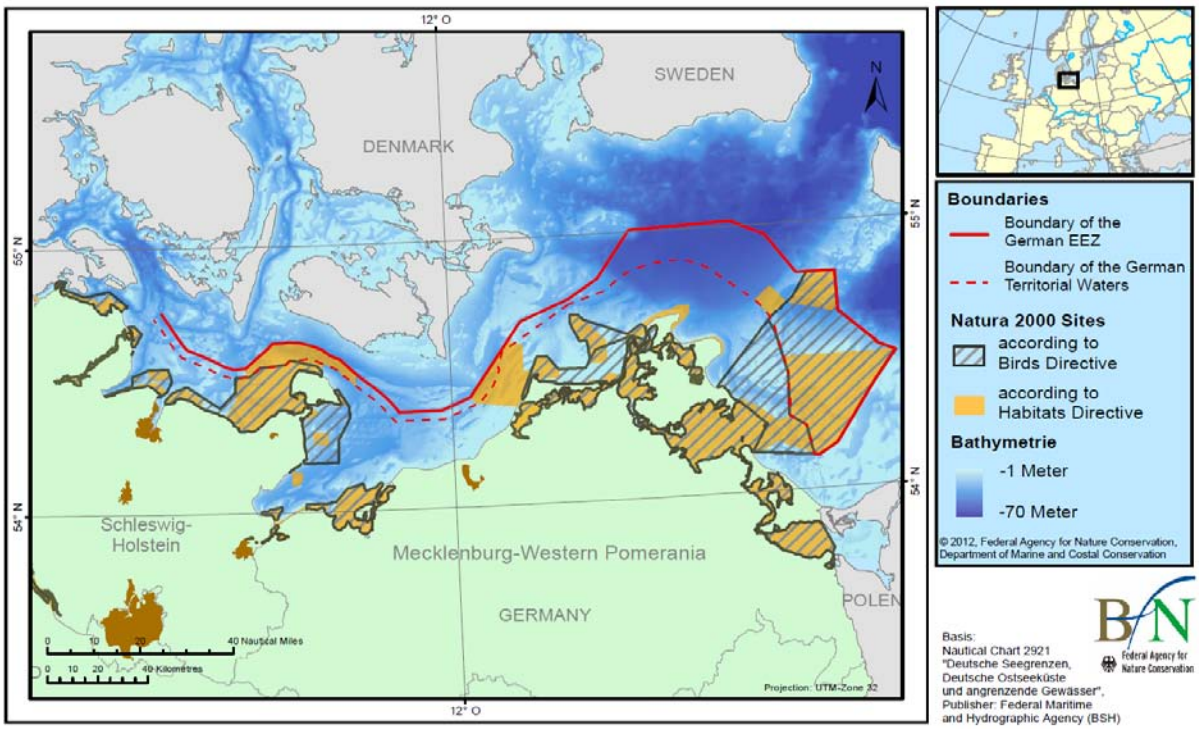
Natura 2000 sites in the territorial waters and the EEZ of the German North Sea



Source: Federal Agency for Nature Conservation (BfN 2012)

Figure 2:

Natura 2000 sites in the territorial waters and the EEZ of the German Baltic Sea



Source: Federal Agency for Nature Conservation (BfN 2012)

14. Five Sites of Community Importance areas and one Special Protected Area have been designated in the German EEZ of the Baltic Sea. The "Fehmarn Belt" protected area situated in the far west (see Fig. 2) also includes the Fehmarn Belt channel, which is of great importance for the exchange of water between the North Sea and Baltic Sea – some 70 percent of the exchange of water takes place via this channel. The delimitation of the area was determined by the existence of sandbanks and reefs, and also the main areas of occurrence of the harbour porpoise. The reefs in the protected area are home to one of the most species-rich communities in the Baltic Sea. Like the Fehmarn Belt channel, the Kadet Trench, which provides the name for the protected area situated to the west of Darß island (see Fig. 2), is of special importance for the inflow of salt-rich and oxygen-rich North Sea water into the Baltic Sea and the outflow of brackish water into the North Sea, and the genetic links between the species occurring in the two seas. The ecological importance of the protected area is determined in particular by the structural variety and species diversity of the reefs found there. Harbour porpoises are regularly found in these waters and are protected as well. In the far east of the German EEZ in the Baltic Sea are the four Natura 2000 sites "Adler Ground", "Western Rønne Bank", "Odra Bank" and "Pomeranian Bay" (see Fig. 2).

The "Adler Ground" protected area is characterised by reefs and sandbanks in particularly shallow water. The species living on the reefs include various seaweed species and common mussels. Together with the mussel communities on the sandbanks, the latter are an important basic food for the seaducks that spend the winter in the protected area. The marine mammal species harbour porpoise and grey seal are also protected (BfN 2012).

The reefs of the "Western Rønne Bank" protected area are admittedly not very rich in species because of the low salinity of the water, but are characterised by a unique flora and fauna rich in individuals. The harbour porpoises which are only found in very low density in the protected area probably belong to the seriously endangered harbour porpoise population of the central Baltic Sea (BfN 2012).

The "Odra Bank" protected area includes all those portions of the sandbank of the same name which lie within the EEZ. This very large and flat sandbank is of special ecological importance for seabirds and young fish. The fauna living on the bottom or in the sediment is not very rich in species and is largely dominated by mussels. The abundance of young fish is an important source of food for many seabird species, including red-throated divers and long-tailed ducks (*Clangula hyemalis*) that spend the winter in the Odra Bank area. Moreover, the protected area also serves as a spawning and breeding ground for various fish species, such as plaice (*Pleuronectes platessa*) (BfN 2012).

The largest protected area in the German EEZ of the Baltic Sea is the "Pomeranian Bay" bird sanctuary, at the eastern end of the EEZ. The protected area plays an outstanding role as a feeding, overwintering,

moulting, migratory and resting area for seabirds and migratory birds that need special protection. For example, more than half a million seaducks call here in the course of a year, and the area serves as an overwintering place for the very rare divers (loons) und grebes (KRAUSE et al. 2011).

15. All in all, it can be said that among the protection and conservation objectives of the Natura 2000 sites in the German EEZ, the focus is on protecting seabirds and marine mammals, especially the harbour porpoise, and their habitats or resting places, and on protecting sandbanks and reefs with their characteristic and endangered communities and species.

4 Conflicts between fishery activities and the Natura 2000 conservation objectives

16. In view of the differences in sectoral policy objectives described above, one can basically expect conflicts between fishery activities and nature conservation to arise when deciding on measures in Natura 2000 sites. As long ago as 2006, the BfN and the ICES set in motion a research project on fisheries management in Natura 2000 sites in the EEZ under the name of EMPAS (Environmentally Sound Fisheries Management in Marine Protected Areas) (PEDERSEN et al. 2009; ICES 2009). One aim of this project was to identify the extent to which fishery activities conflicted with the protection objectives of the Natura 2000 sites. Another was to clarify what management measures could help to reduce the conflicts arising, and how efficient they would be. One aspect of the project was concerned with the spatial distribution of fishery activities in German marine waters. Among other things, the EMPAS project identified the three main fields of conflict between fishery activities and the protection objectives of the Natura 2000 sites in the EEZ (ICES 2009; SELL et al. 2011). They are as follows:

- the impacts of mobile, bottom-contacting fishing gear on the benthic habitat types “sandbanks” and “reefs” and their typical species in the North Sea,
- incidental catching of seabirds in static fishing gear, especially in bottom-set gillnets and tangle nets in the Baltic Sea, and
- by-catching of harbour porpoises in static fishing gear, and primarily gillnets and tangle nets in the North Sea and Baltic Sea.

The remarks that follow are confined to a closer look at these three conflicts and the relevant measures/equipment (mobile, bottom-contacting fishing gear, static nets or gillnets and pingers).

17. First of all, however, it is important to draw general attention to the significance of monitoring. The nature and intensity of fishery activities in the North Sea and Baltic Sea display great differences from one area to another. In Europe, all fishing vessels with a length of more than 12 metres are now basically required to carry satellite-based vessel monitoring systems (VMS) on board (see Article 9 paragraph 2 of Regulation (EC) No. 1224/2009 and Articles 19 ff. of the Commission’s implementation regulation (EU) No. 404/2011). Among other things, VMS data makes it possible to determine the spatial distribution of fishing vessels. In principle, however, even small fishing vessels which do not yet have to operate a satellite-based VMS or keep a logbook (< 10 m, see Article 14 paragraph 1 of Regulation (EC) No. 1224/2009) are also relevant from a monitoring point of view. Furthermore, the monitoring systems must also be capable of identifying illegal fishery activities in the protected areas, some of which are very small. At present the VMS system, as it is used today, does not permit small-scale real-time monitoring of fishery activities. This could however be made possible by means of minor technical modifications, e.g. by reducing the time between the signals transmitted. Coverage of small fishing vessels that are not equipped with VMS is even more difficult (SELL et al. 2011).

Furthermore, adequate monitoring is of central importance, since in the long run the effectiveness of all measures can only be investigated and validated if they are verified accordingly, as shown by the example of the “Plaice Box” (Tz. 22 f.).

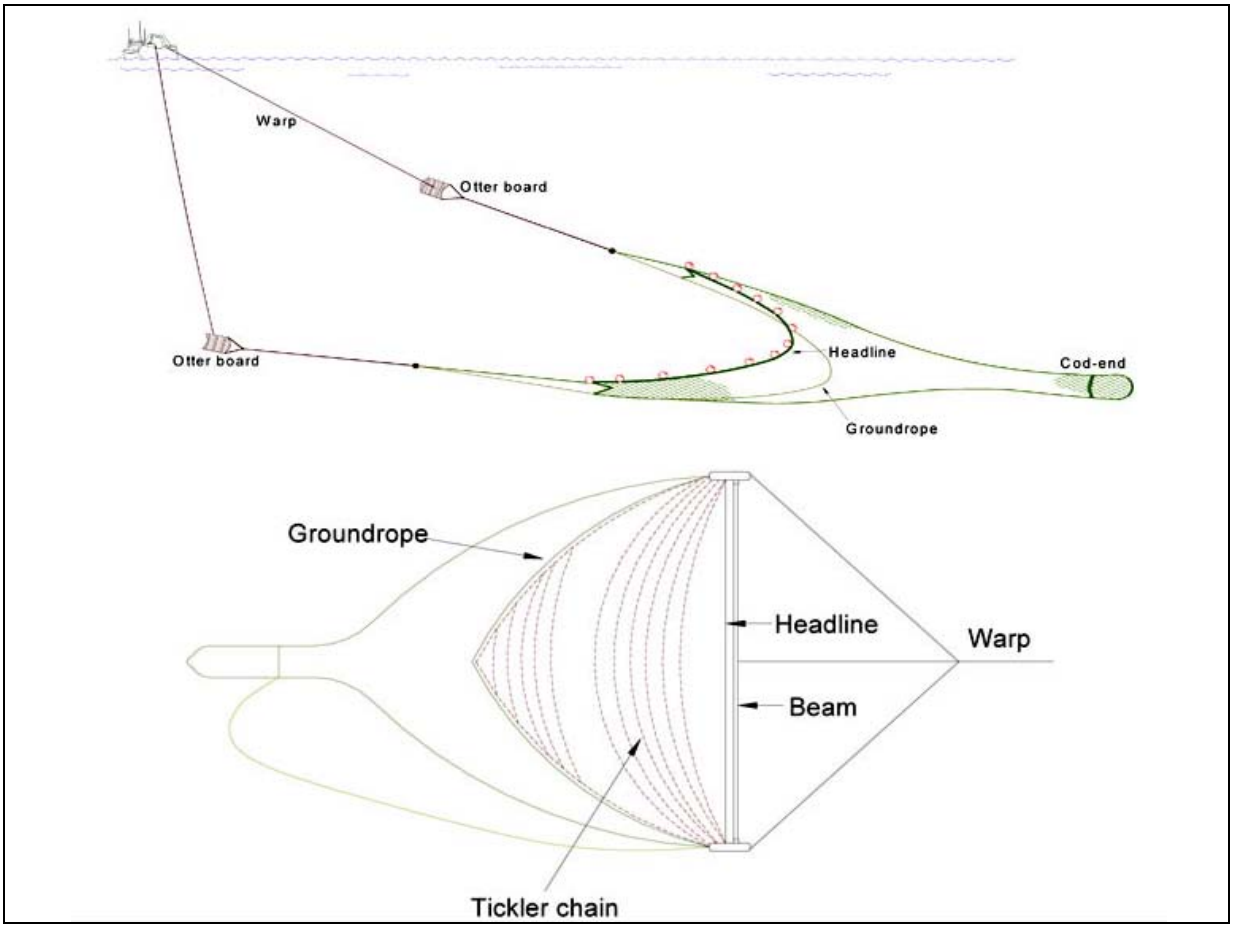
Impacts of mobile bottom-contacting fishing gear on sandbanks and reefs

18. Heavy bottom trawls are used in the North Sea – to an even greater extent than in the Baltic. For example, the use of beam trawls is confined to the North Sea. But even here this catching method cannot be used without restriction. For example, in the “Plaice Box”, an area along the Dutch, German and Danish North Sea coast, there is a ban on using beam trawlers with an engine power of more than 300 horsepower. The reason for this is the protection of young plaice (European Commission 2005). Thus the greatest activity of these fishing vessels takes place to the west of the “Plaice Box”. Small beam trawls are used in coastal waters in particular. In the main, otter trawls are used in the central area of the German North Sea and in the region of the “White Bank”, whereas in the Baltic Sea they are used both in coastal areas and in the open sea (PEDERSEN et al. 2009).

Alternatives to the beam trawls used at present are still under development. One option that has been under discussion for a long time is the use of electrical impulses to stir up fish. This could replace the heavy tickler chains that are particularly harmful to reef and sandbank habitats because of their mechanical action (BMELV 2011; 2012). Another possibility is Icelandic seining, which is increasingly being used in Dutch plaice fishing operations and which is assumed to be less harmful to benthic communities than conventional beam trawling (EkoFish Group, no year).

Figure 3:

Schematic representation of an otter trawl and a beam trawl



Source: LØKKEBORG 2004

19. The use of mobile bottom-contacting fishing gear on reefs and sandbanks results in physical damage to the substrate and damages the organisms living there. This also applies to lightweight net types such as Danish seines, even if considerably less data are available about their impacts on ecosystems. Particularly serious damage is caused by the heavy tickler chains of large beam trawls, which more or less plough through the sediment, and the heavy otter boards of otter trawls, which are dragged over the seabed (Fig. 3). This results in restructuring of the sediment. It also leads to relocation of major structures and especially of structure-forming organisms such as reef-forming tube worms (*Sabellaria alveolata*), which are damaged as a result. For example, small-scale beam trawling for prawns is held to be responsible for damage to such reefs in the North Sea (ICES 2007). The resulting homogenisation of the otherwise very heterogeneous habitat is considered to be one of the most serious consequences (GRAY et al. 2007).

In general, the use of mobile bottom-contacting fishing gear increases the mortality of target and non-target species and of benthic organisms, which are damaged by the net. In the southern North Sea, for example, it has been observed that as a result of bottom trawling, the benthic communities which were previously dominated by mussels are now being dominated by scavengersand predators such as crabs and starfish (RUMOHR and KUJAWSKI 2000; SELL et al. 2011). The larger, more fragile and more sessile the organisms, the more sensitive they are to such impacts. Organisms living on top of the sediment are more seriously affected by the encroachments than organisms living in the sediment (SCHRÖDER et al. 2008). Ultimately the use of bottom trawls results in a shift of communities of bottom-dwelling invertebrates from large, slow-growing organisms to small, fast-growing organisms with a high reproduction rate (PEDERSEN et al. 2009). As can be expected, the greatest biodiversity losses occur when mobile, bottom-contacting nets are used for the first time or after a lengthy period of non-use in an area. By contrast, the community found in and on the sediment changes much less in areas that are regularly affected (SCHRÖDER et al. 2008).

20. In the interests of protecting sandbanks and reefs from mobile bottom-contacting fishing gear, the BfN and the vTI propose that these methods be barred entirely in the protected areas “Western Rønne Bank”, “Adler Ground” and “Borkum Reef Ground”, and banned only in the vicinity of the reefs and sandbanks

in the protected area "Fehmarn Belt" (SELL et al. 2011, p. 146 ff., p. 170 ff. and p. 182 ff.). In the "Sylter Outer Reef" protected area it is recommended that the sandbank be protected by "experimentally" closing the central part to mobile bottom-contacting fishing gear to protect the reefs and the northern half of the Amrum Bank (SELL et al. 2011, p. 62 ff.). In the "Kadet Trench", the catch methods mentioned should not be used in the vicinity of the reefs (SELL et al. 2011, p. 158). For the Dogger Bank, a 50-percent experimental closure is proposed – similar to the Amrum Bank (SELL et al. 2011, p 117 ff.). The experimental closure is envisaged for at least six and at most twelve years with subsequent evaluation. Results from studies of the effects of this experimental closure are then to be used for long-term planning in this protected area. The entire protected area of the Dogger Bank is regularly frequented by fishing vessels as a fishing ground. In particular, they use large beam trawls (for catching flatfish) and otter trawls (for catching sand eels (*Ammodytes* spp.) and sprats (*Sprattus sprattus*)), and also gillnets (SELL et al. 2011). SCHRÖDER et al. (2008) assume that as a result of the high use pressures, the benthic communities in the entire area are much impaired and that the favourable conservation status according to the Habitats Directive does not exist. To achieve the latter it would, in the opinion of SCHRÖDER et al. (loc. cit.), be necessary to make a considerable reduction in fishing operations. The loss of mussel communities in particular is attributed to fishing operations (KRÖNCKE 2011). Despite all these factors, the BfN and vTI proposal, on the lines of the ICES recommendation, recommends an experimental closure of only *half* the area (SELL et al. 2011, p. 117 ff.). The reason given for the proposed experimental closure is that neither the EMPAS project nor the working group was able to clarify conclusively the effects of the mobile bottom-contacting fishing gear on the sandbank habitat type (loc. cit.).

21. In view of the very marked encroachments on benthic communities that arise from mobile bottom-contacting fishing gear, the SRU considers it extremely unlikely that it will be possible to achieve good conservation status for sandbanks and reefs without a ban on these catch methods. It therefore welcomes the proposal by the BfN and vTI to ban these fishing methods in areas with sandbanks and reefs.

The SRU is however unable to understand the recommendations for the Dogger Bank protected area, which do not follow this clear line. The main reason given for the recommendation not to extend the experimental closure to the entire area is scientific uncertainty (SELL et al. 2011, p. 118). This is not convincing, since the relevant studies performed by SCHRÖDER et al. (2008) for the BfN arrive at relatively clear conclusions. Moreover, the changes in sand communities are documented in a large number of studies (GROENEWOLD and FONDS 2000; DUINEVELD et al. 2007; KAISER 1998; KAISER et al. 1998; BERGMAN and van SANTBRINK 2000; KRÖNCKE 2011; 1992; WIEKING and KRÖNCKE 2001). The studies suggest that the changes in the Dogger Bank must also be attributed to fishing operations, since even if the effects of mobile bottom-contacting fishing gear, and especially beam trawls, on soft-bottom communities are less obvious than those on reef habitats, it was nevertheless possible to show marked changes. Even if not all the changes that have occurred in the Dogger Bank region in recent years are due entirely to fishing operations, a closure and ban is justified by the continuing uncertainty about the causes. Admittedly the argument is put forward that even in the event of a closure there would be no certainty that the area would return to its original condition, for example because of climate change. From a precautionary point of view, however, this cannot be sufficient grounds for rejecting at least an experimental closure. In the opinion of the SRU an experimental closure (i.e. a study of how the area would develop completely free from the influence of fishing operations) which applied to half the area can only be justified as a first step in providing protection. However, this must apply for a sufficiently long time. Six years is probably too short a period for this.

In the meantime a steering committee has been set up for the Dogger Bank to ensure international coordination of the protective measures between the various North Sea states – the Netherlands, the United Kingdom and Germany (Denmark primarily as observer only). The ICES has also been requested to express its views on management measures.

For all fishery measures in the Natura 2000 sites that result in the exclusion of fishing operations, the vTI suggests the option of a licensing system to permit fishery operations which are able to show that they do not endanger the conservation subject (SELL et al. 2011). This measure is to be welcomed as an incentive to developing environmentally sound fishing methods, provided suitable evidence with a high degree of plausibility is possible.

Incidental catching of seabirds in gillnets and tangle nets

22. Fishing with gillnets is practised more intensively in the Baltic than in the North Sea. In the offshore region, this applies to the "Adler Ground", the "Western Rønne Bank" and the "Pomeranian Bay". Most set-net fishermen have vessels which are shorter than 15 metres. This means that no VMS data are available for them (see Item 17), and spatial localisation of their activities is not possible without considerable input (PEDERSEN et al. 2009). However, appropriate monitoring would be necessary for a better grasp of the conflict between set net fishing operations and bird protection. To date, little data is available about incidental catching of seabirds by set-net fishing operations in the Baltic Sea. A conflict is highly probable, however, simply as a result

of the overlap between areas where these nets are used and the resting, moulting and overwintering areas of various seabird species (ZYDELIS et al. 2009). The by-catch risk results from the fact that when the seabirds dive for food, they come into contact with the nets, where they get entangled and drown. Thus overlaps between catch areas and the feeding grounds of the seabird species concerned are particularly problematical. Calculations indicate that between 17 345 und 19 841 seabirds are drowned every year in the set nets of fishermen from Mecklenburg/Western Pomerania (BELLEBAUM 2011). These figures are however based on a very small-scale study. Species particularly affected include fish-eating species such as grebes, the common guillemot and cormorant, and also species that feed on macrozoobenthos, such as the long-tailed duck and common scoter (PEDERSEN et al. 2009). The most effective method of preventing such by-catches is to restrict or ban fishing with gillnets or tangle nets.

To prevent by-catching of seabirds in the two bird sanctuaries, the BfN and the vTI jointly propose exclusion of fishery operations with stationary gillnets and tangle nets, to some extent differentiated in terms of space and time (SELL et al. 2011). For example, in the northern part of the nature conservation area "Eastern German Bight" the catch methods mentioned are only to be banned in the winter half of the year, whereas in the southern part they are to be banned all year round. In the "Pomeranian Bay" protected area the proposal envisages all-year exclusion of fishing operations with stationary gillnets and tangle nets in one part of the area, and seasonal closure in two other parts. The reason given for seasonal closures is the great abundance of certain diving seabirds such as divers and auks at certain times of the year only (SONNTAG and GARTHE 2010). Attention is however drawn to the fact that great potential for conflicts between set-net fishing and bird protection exists all the year round in the protected area (SELL et al. 2011). Since the underlying survey data on the occurrence of seabirds is in some cases rated very poor, the SRU recommends initiating a by-catch monitoring programme with the aid of on-board cameras or observers, especially in those areas where no closure to set-net fishing is proposed. If this proves impracticable – in view of high costs or lack of cooperation by fishermen – better investigations would have to be carried out into the occurrence of seabirds in the Natura 2000 site. On the basis of the data obtained, it would then be necessary to examine whether the proposed closures are adequate, or whether other parts of the protected area need to be closed to set-net fishing. Such monitoring is undoubtedly complicated by the fact that the necessary cooperation with fishermen would prove difficult, because of fears that their fishery operations might be discredited by negative results or by documentation of high by-catch levels. Much the same applies to by-catch monitoring of harbour porpoises (see Item 24). Nevertheless, efforts to encourage voluntary cooperation by fishermen already exist and should be maintained (BELLEBAUM 2011).

By-catching of harbour porpoises in gillnets and tangle nets

23. The third central conflict between the conservation subject of the Natura 2000 sites and the fisheries sector is by-catching of harbour porpoises in set nets. The harbour porpoise is one of the species that are subject to general strict species protection under Annex IV to the Habitats Directive (see Article 12 of the Habitats Directive in conjunction with Annex IV). Even if there is still a shortage of information about certain anthropogenic pressures on this species, it may be assumed that the greatest threat in the North Sea and Baltic Sea is that of by-catching in bottom-set gillnets or tangle nets (REIJNDERS et al. 2009; ASCOBANS 2009). This is indicated among other things by the fact that nearly half the harbour porpoises stranded in the southern North Sea and in the Baltic Sea lost their lives in fishing nets (OSPAR Commission 2010; SIEBERT et al. 2006). It has been shown for the German Bight that harbour porpoises occur especially frequently in areas where there is a high density of set nets (HERR et al. 2009). Similar spatial conflicts have been identified for the Baltic Sea as well (SRU 2008). The situation for harbour porpoises is particularly critical in the central Baltic Sea. This sub-population has therefore been classified as in danger of extinction in the Red List of the International Union for Conservation of Nature (IUCN 2008). An urgent need for action on the threat to porpoises from set-net fishing has also been identified at other levels, e.g. in the course of the work on the Helsinki Convention (HELCOM, no year). It is estimated that every year about 57 porpoises are killed in set nets in the western Baltic Sea and some 25 in the central Baltic Sea (RUBSCH and KOCK 2004). For the last-named sub-population, which is estimated to number only about 600 animals, the loss of only two animals per year probably represents a threat to the population (PEDERSEN et al. 2009; HELCOM, no year). The density of the harbour porpoise population in the North Sea is considerably higher than in the Baltic Sea. Local densities of up to five animals per km^3 are found. However, their distribution is subject to marked spatial and seasonal variations and may also change over time (SCHEIDAT et al. 2006). Estimates indicate that there are more than 300 000 harbour porpoises living in the North Sea (REIJNDERS et al. 2009). Particularly high densities have been documented in the spring and summer in the "Sylter Outer Reef" protected area.

24. At a general level, the lack of a monitoring programme for harbour porpoise by-catches must be criticised. According to Article 12 paragraph 4 of the Habitats Directive, the member states are obliged to introduce *a continuous system for monitoring inadvertent catching or killing of the animal species listed in Annex VI, Section a).* For this purpose it would be possible to use on-board observers or

camera systems. On the whole, however, such monitoring would be difficult, partly because cooperation with fishermen would suffer from fears that their fishing operations would be discredited. This fact is another indication of the need for an integrated approach – including stakeholder participation. Moreover, if by-catch estimates are to be improved there is also a need for more data on the occurrence of the animals and the geographical distribution of fishing operations.

25. The most established technical method of preventing by-catching of harbour porpoises in set nets is the use of acoustic deterrent devices or "pingers". The use of pingers in gillnets and tangle nets is now mandatory at European level for all fishing vessels with a length of 12 m or more (see Article 1 paragraph 1 of Council Regulation (EC) No. 812/2004 of 26 April 2004 laying down measures concerning incidental catches of cetaceans in fisheries). It has been shown that this method can effectively reduce incidental catches of porpoises (ICES 2010). However, there are considerable reservations about using acoustic deterrent devices in habitats of importance to cetaceans, since their scaring effect might displace the animals from these areas (OSPAR Commission 2010; CARLSTRÖM et al. 2009; ASCOBANS 2009). A recent study comes to the conclusion that the sounds made by pingers influence harbour porpoises at a distance of at least 1 600 metres (ICES 2011), and another source even speaks of 2.5 to 3 km (REIJNDERS et al. 2009). One possible way of reducing the scaring effect is interactive pingers which only emit sounds when porpoises approach the nets (ASCOBANS 2009). These are only at the trial stage, however. There are also indications that the animals habituate to the pingers (COX et al. 2001; PALKA et al. 2008). Other disadvantages include the fact that they do not completely prevent incidental catches, that monitoring of their effectiveness is very expensive, that they require a constant source of energy, and that they may intensify the conflict between fishing operations and seals, because the sounds attract the seals to the fish in the set nets (KOSCHINSKI et al. 2006; COX et al. 2001; REIJNDERS et al. 2009). Tests are currently in progress on another technology which makes use of the porpoises' warning sounds (PAL – porpoise alarm). It is hoped that this will have a reduced scaring effect ("Schweinswal-Beifänge in der Stellnetzfischerei verringern", press release of 20 September 2012 by Johann Heinrich von Thünen Instute). Another alternative or supplement to pingers that is being investigated is the use of denser net materials that make for improved echo-location of the nets by the porpoises (LARSEN et al. 2002; KOSCHINSKI et al. 2006). Apart from other aspects, however, there is still the open question of whether the porpoises really do have difficulty in registering the presence of the nets, or whether they get caught up in them for other reasons (LOCKYER et al. 2001).

26. In all eight Habitats Directive protected areas in the German EEZ, the aim is to achieve favourable conservation status of the Habitats Directive species "harbour porpoise" and its habitats. To protect porpoises in the Natura 2000 sites where their occurrence is documented, the BfN proposes that set-net fishing be banned or replaced by alternative methods, especially fish traps. The vTI, by contrast, recommends a seasonal ban on fishing operations with gillnets and tangle nets only in the Sylter Outer Reef protected area from 1 May to 31 August, since large numbers of porpoises can be expected here during this period (SELL et al. 2011). It must however be remembered that large parts of the protected area overlap with the bird sanctuary "Eastern German Bight" and that proposals have been made to protect seabirds by closing the northern part of this area to set-net fishing during the winter half year and the southern part all the year round. In all other protected areas the vTI proposal envisages equipping all set nets with pingers. The vTI justifies its recommendation in terms of the problem of relocating fishing operations to areas outside the protected areas, which could lead to porpoise mortality rates that were just as high as if fishing operations continued to be permitted within the protected area – with the exception of the sensitive areas and periods. This is due to the fact that similar or even higher porpoise population densities are found around some protected areas. While the ICES also draws attention to this problem, it nevertheless advocates complete closure of the protected areas "Rønne Bank", "Adler Ground", "Pomeranian Bay", "Odra Bank" and "Sylter Outer Reef" to set-net fishing operations (ICES 2008).

27. The SRU considers that it is neither sensible nor justifiable to permit gillnets and tangle nets in waters where marine mammals, especially porpoises, enjoy special protection. Similarly, the use of acoustic deterrent devices in such protected areas is not compatible with the protection objective, because it involves the risk that the sounds produced by the pingers may put pressure on the animals, or that they displaced from areas where they are supposed to enjoy special protection. In general there are reservations about whether pingers are a suitable long-term measure for by-catch reduction. The argument that relocation of fishing operations could involve negative effects for the porpoise population that are similar to those of fishing operations in the protected area appears to the SRU to be perfectly plausible. This, however, is not sufficient justification for continuing to allow fishing operations within protected areas that affect the conservation subject, or for putting pressure on the porpoises by means of acoustic deterrent devices. Instead, set-net fishing operations should wherever possible be replaced by other methods such as fish traps or long lines.

To avoid relocation effects in particular, it would seem advisable to take measures outside the protected areas in the form of an overall strategy for porpoise protection in German marine waters. Article 12 of the Habitats Directive requires the member states to take the necessary measures to introduce a strict protection

system for species of Community interest requiring special protection (see Habitats Directive, Annex IV Section a) in their natural areas of occurrence. Other obligations of this kind arise from ASCOBANS (Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas), the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention, Annex II), the Fifth International North Sea Conference or HELCOM Recommendation 17/2 (HELCOM 1996).

In relation to harbour porpoises, the measures to be taken should include making a general review of the use of gillnets and tangle nets, and initiating the development and use of nets or catch methods that result in much reduced or non-existent by-catches. This should be done in close cooperation with the fishermen concerned. First projects in this field are being undertaken at the University of Gothenburg (Sweden) and the University of Veterinary Medicine Hanover, for example. The federal Länder should make use of financial assistance facilities provided for switching to alternative catch methods, e.g. from the future European Maritime and Fisheries Fund (EMFF). An overall protection strategy for the harbour porpoise would also have to include measures relating to other human activities in addition to fisheries, such as adequate noise abatement measures in connection with the construction of offshore wind farms.

Although HELCOM passed a recommendation as long ago as 1996 which called upon the signatory states to give the highest priority to preventing porpoise by-catches in the Baltic Sea (HELCOM 1996), and also adopted the Jastarnia Plan (Recovery Plan for Baltic Harbour Porpoises) under ASCOBANS in 2002 to protect this species (ASCOBANS 2009), it unfortunately has to be said that neither of these initiatives has succeeded in preventing a further decline in the two populations in these marine waters or stopping porpoise by-catches in the Baltic Sea. The protective measures described are therefore essential in order to seize the last opportunity of saving the porpoise population in the central Baltic Sea.

5 Summary of recommendations

28. In the opinion of the SRU there is an urgent need to ensure adequate regulation of fishery activities in the Natura 2000 sites of the German exclusive economic zone in order to conserve the endangered populations and habitats. If the conservation objectives are to be achieved, it will be essential to avoid conflicting fishery activities or even prohibit them completely. This applies in particular to set-net fishing in protection areas for cetaceans and bird sanctuaries, and the use of mobile bottom-contacting fishing gear in areas with reefs and sandbanks. Alternative catch methods must be investigated and measures taken to promote them. In the case of the harbour porpoise, measures in the protected areas alone will not be sufficient to ensure successful conservation of this species protected by the Habitats Directive. This will also require an overall protection strategy for harbour porpoises in the German parts of the North and Baltic Seas. There is an urgent need for action to protect the porpoise population in the central Baltic Sea. The SRU has considerable doubts as to whether this population can be conserved without taking far-reaching measures in relation to set-net fishing in particular.

29. In summary, the SRU recommends the German government to include the following points when implementing a successful network of Natura 2000 sites in the German exclusive economic zone, and/or to take them up when elaborating a German position on fisheries management in the Natura 2000 sites of the German exclusive economic zone:

– As proposed by the Federal Agency for Nature Conservation and the Johann Heinrich von Thünen Institute, areas with sandbanks and reefs should be kept free from fishery activities using mobile bottom-contacting fishing gear, so that a favourable conservation status can be achieved in these habitats. From this point of view the “experimental closure” of half the German Dogger Bank should not merely be seen as a short-term measure, but should provide the basis for adopting further measures relating to bottom trawling in the part which is to remain accessible under the proposal.

– Refraining from using static gillnets and tangle nets is an important measure for the protection of diving seabirds. In this connection the SRU welcomes the proposals drawn up by the Federal Agency for Nature Conservation and the Johann Heinrich von Thünen Institute. However, the proposed measures in the “Pomeranian Bay” protected area should as far as possible be reviewed in the light of better data or based on the results of a by-catch monitoring programme in the future, or after the entry into force of the measures.

– In the opinion of the SRU, the use of gillnets and tangle nets, and the use of acoustic deterrent devices in areas intended to protect harbour porpoises, is not compatible with the conservation objective. For this reason, these activities should be banned in the Habitats Directive areas of the German exclusive economic zone and should as far as possible be replaced by alternative methods. Financial assistance to encourage fishermen to switch to such alternative methods should be initiated with the aid of the European Maritime and Fisheries Fund.

– It is absolutely essential to provide the necessary resources and instruments to facilitate monitoring of fishery measures in the Natura 2000 sites of the German exclusive economic zone. This applies, for example, to real-time surveillance of fishing vessels by means of a satellite-based vessel monitoring system (VMS). Monitoring of small fishing

vessels which do not have this technology is a particular challenge here.

Following on from the management of the protected areas, there is a need for an overall strategy for protecting harbour porpoises in the North and Baltic Seas, since this cannot be ensured simply by establishing protected areas. Among other things, this should ensure that a ban on set-net fishing operations in the protected areas does not lead to an agglomeration of such activities outside the areas. This calls for ideas for replacing set-net fishing operations by lower-impact catch methods not only inside, but also outside the protected areas. Other options are the development and improvement of net materials and acoustic deterrent devices, which are still at the experimental stage. The SRU considers the lack of harbour porpoise by-catch monitoring to be particularly unsatisfactory. The data on the occurrence of the species and the geographical distribution of fishing operations are also unsatisfactory. Practicable plans for improving this situation should be drawn up and implemented without delay. Harbour porpoise by-catch surveys with the aid of on-board observers or cameras could possibly be combined with seabird by-catch monitoring programmes. Regardless of this, such initiatives should not be used as an excuse for failing to discharge the obligations arising from the Habitats Directive in the exclusive economic zone.

30. From an over-arching point of view, the present conflict is a prominent example of the kind of challenges presented by the governance of German waters. Whereas in the past the position of protection interests has tended to be relatively weak compared with use interests, the establishment of management plans in the – extensive – protected areas of the exclusive economic zone is making it necessary to take practical decisions to ensure a balance of interests. In the opinion of the SRU these should basically not go against nature conservation. And especially not where technical alternatives are available that would resolve the conflict. First of all, it is the task of the two competent ministries of the German government (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, and the Federal Ministry of Food, Agriculture and Consumer Protection) to adopt an ambitious proposal for management plans without delay. These plans should be coordinated as far as possible with the measures by the coastal Länder, which also have a responsibility to draw up management plans for their Natura 2000 sites in coastal waters.

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List of Abbreviations

ASCOBANS	=	Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas
EEZ	=	Exclusive economic zone
BfN	=	Federal Agency for Nature Conservation
BMU	=	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
BNatSchG	=	Bundesnaturschutzgesetz (Federal Nature Conservation Act)
EMFF	=	European Maritime and Fisheries Fund
EMPAS	=	Environmentally Sound Fisheries Management in Marine Protected Areas
CFP	=	Common Fisheries Policy
HELCOM	=	Helsinki Commission – Commission of the Convention on the Protection of the Marine Environment in the Baltic Sea Area, 1992
ICES	=	International Council for the Exploration of the Sea
IUCN	=	International Union for Conservation of Nature
MSFD	=	Marine Strategy Framework Directive
PAL	=	Porpoise Alarm
RACs	=	Regional Advisory Councils
Dir.	=	Directive
SRU	=	Advisory Council on the Environment
STECF	=	Scientific, Technical and Economic Committee for Fisheries
TFEU	=	Treaty on the Functioning of the European Union
VMS	=	Satellite-based vessel monitoring system
vTI	=	Johann Heinrich von Thünen Institute

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