

Agenda Item 4.3

Review of New Information on Bycatch

Document 4-17

**Strategies for the Prevention of
Bycatch of Seabirds and Marine
Mammals in Baltic Sea Fisheries**

Action Requested

- Take note

Submitted by

Secretariat



NOTE:
IN THE INTERESTS OF ECONOMY, DELEGATES ARE KINDLY REMINDED TO BRING THEIR
OWN COPIES OF DOCUMENTS TO THE MEETING

Strategies for the Prevention of Bycatch of Seabirds and Marine Mammals in Baltic Sea Fisheries

Study based on information compiled with regard to German fisheries



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Part I: Fisheries, bycatch and alternative fishing methods

1 INTRODUCTION

Fishermen do not intend to capture seabirds and marine mammals, yet large numbers of these animals perish in gill nets, fyke and pound nets. In the German part of the Baltic Sea, set net fishery for cod and flatfish is the most common fishing method, accounting for 55 % of fishing effort in the year 2005 (over 2,000 km in the German federal state of Mecklenburg-Western Pomerania alone¹) (Schulz & Dolk 2007). It is, however, also the fishing method that causes the greatest number of bycatches of marine mammals and birds. However, pound and fyke net fisheries, which are generally considered to be ecosystem friendly, can also cause bycatch of birds or young grey seals (*Halichoerus grypus*).

Nearly all shallow water areas in the German Baltic Sea are protected under the European Habitats or Birds Directives. The Fehmarn Belt and Kadet Trench are migration areas for harbour porpoises and have been declared Special Areas of Conservation (SAC) under the Habitats Directive. Nevertheless, intense set net fishery is taking place in particular in these marine Natura 2000 areas, causing considerable bycatches of marine mammals and diving ducks (ERDMANN *et al.* 2005).

Reliable data concerning fisheries-related losses of harbour porpoises (*Phocoena phocoena*) are not available. However, scientists agree that current fisheries practices are preventing a recovery of the severely decimated harbour porpoise populations in the Baltic Sea.

A multitude of publications cover the topic of 'bycatch'. Most of these focus primarily on marine mammals rather than on seabirds. For many species of seabirds, however, bycatch is one of the most frequent causes of death and it actually has a major impact on populations. Thus far, the general public is largely oblivious to the heavy bycatch of seabirds and public awareness therefore needs to be raised.

In order to adequately examine the situation, both species groups need to be considered to develop concrete recommendations that will ensure the protection of both groups. This also helps to avoid burdening fishermen with parallel but unharmonised new regulations.

This study aims to provide an overview of the current state of knowledge concerning bycatch of marine mammals and birds in the Baltic Sea, with a particular focus on the German part of the Baltic Sea. In particular, this paper examines the species and fisheries concerned (Chapters 3 and 4) and the results of the most recent studies on bycatch mitigation (Chapter 5) and alternative fishing methods (Chapter 6), primarily from the Baltic Sea region. Based on the relevant literature and information provided by experts, technical solutions for ecosystem-friendly alternative fishing methods will be presented and, to the extent possible, their environmental friendliness will be assessed.

This study also reviews whether existing **fishery certification programmes** can be used to promote bycatch-free alternative fishing methods which are conducive to sustainable Baltic Sea fisheries.

¹ According to information provided by Mr. Momme from the Ministry of Agriculture, the Environment and Rural Areas of the federal state of Schleswig-Holstein (MLUR) no such statistics concerning the length of nets exist for this federal state, however the limits of EU Regulation 2187/2005 apply.

Legal aspects of the bycatch issue are examined to provide a background for concrete recommendations for action aimed at nature protection institutions and organisations, consumers, public authorities and policy makers Part II). Part III contains **recommendations for action**.

2 BALTIC SEA FISHERIES

German, Danish and Swedish vessels account for the majority of fish landings in the Baltic Sea. The most important commercial fish species are herring (*Clupea harengus*), cod (*Gadus morhua*), sprat (*Sprattus sprattus*) and various species of flatfish. The most important fishing methods are trawl nets (otter trawls, pelagic trawls) and gill nets. Purse seines, fish traps and longlines are of minor importance (INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA 2008b).

Fisheries in the German Baltic Sea can be subdivided into small-scale maritime fishery and coastal fishery using vessels of various sizes, targeting various fishing grounds and spending different amounts of time at sea. Since it is impossible to differentiate clearly between these two sectors, they are often examined jointly. By contrast, the different legal frameworks governing the EEZ (covered by the Common Fisheries Policy—CFP—of the EU) and the waters within the 12-mile zone (covered by the fisheries laws of the federal states of Mecklenburg Western-Pomerania (MWP) and Schleswig-Holstein (SH)) allow for a clearer differentiation.

Fishermen along the German Baltic Coast² are organised into 17 fishery cooperatives. In accordance with EU regulations there are 8 producer organisations that distribute subsidies and quotas to their members. In Schleswig-Holstein (SH) these organisations are identical to the 4 fishery cooperatives, whereas in Mecklenburg-Western Pomerania (MWP) the 13 fishery cooperatives are organized into 4 producer organisations.

In addition to full-time professional fishermen (SH: 228 vessels. MWP 343 vessels³) there are part-time fishermen (SH 388 vessels. MWP 144 vessels) and recreational fishermen (SH: approx. 800. MWP: 231⁴). Since 1996, part-time fishermen are required to undergo vocational training.

According to Council Regulation (EC) No. 2187/2005, vessels of up to and including 12 m in length are allowed to deploy 9 km of gill nets, vessels with an overall length of more than 12 m may deploy 21 km of set nets. This rule applies to full-time and part-time fishermen alike.

In SH, recreational fishermen are allowed to use longlines with 100 hooks, four single or two double fykes, whereas the use of gillnets is prohibited. In MWP a maximum of 100 m of gillnets, longlines with 100 hooks and 8 eel fykes are permitted.

3 CURRENT SITUATION

3.1 Harbour Porpoises

Between 2000 and 2009, the number of harbour porpoise carcasses found along the German Baltic Sea coast multiplied sixfold from 25 to 152 (figure 1). In 47% – 86.5%

² Primarily one-man operations, civil law partnerships or family enterprises.

³ Data refer to the Baltic Sea, not including the Bodden, SH as at: 31 December 2008, MWP: Coastal fisheries only.

⁴ Data refer to the Baltic Sea not including the Bodden.

of those carcasses that are relatively well preserved, bycatch can be identified as the cause of death (Herr *et al.* 2009; Koschinski & Pfander 2009), due to net marks and missing fins. In one case, a brick had actually been tied to the animal's fluke (figure 2). However, many of the carcasses are in such an advanced state of decomposition that the cause of death can no longer be determined with certainty.

The reasons for this noticeable increase remain unclear. Gillnet fisheries may have increased and trawling decreased due to high fuel prices (vgl. Haelters & Camphuysen 2009) or there may have been an increase in fishing effort as a result of the simultaneous decrease in stocks of commercially viable fish species. There is, however, no proof of an increase in the number of set nets since log books do not contain entries concerning the number of nets deployed (Wern, BLE Hamburg, personal communication). Nor is there any indication of an upward trend in harbour porpoise populations.

The bycatch rate documented by the number of carcasses found on the German Baltic Sea coast alone exceeds the assumed maximum rate of increase of 4 % (cf. Berggren *et al.* 2002b), making a continuous population decline likely. The strandings data currently available and current bycatch rates in connection with the most up-to-date population estimates (Gilles *et al.* 2007) and related to the figure of 1% respectively 1.7% of a population used to define unacceptable interaction (International Whaling Commission 2000; ASCOBANS 2000) clearly testify to the urgent need for action. Based on 2009 bycatch, Table 1 indicates a bycatch rate of between 3.9% and 15.2% of the local population⁵. Based on different data, SCHEIDAT *et al.* (2008) indicate a rate of 1.8 to 18 %.

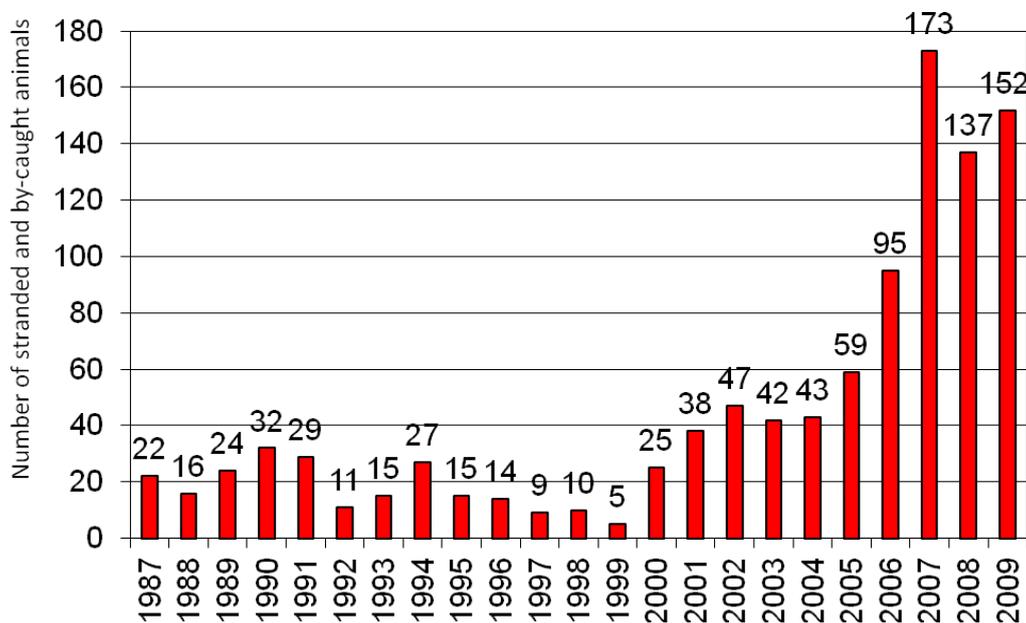


Figure 1: Harbour porpoise carcasses found on the German Baltic Sea coast between 1987 and 2009

⁵ Assumption: 47 % bycatch, population 466 (April 2006) to 1839 individuals (August 2003).

Survey	Abundance	Lower limit 95% - confidence interval	Upper limit 95% - confidence interval	Bycatch	Proportion of population
October 2002	1.001	104	2.752	71 (2009)	7,1 %
December 2002	728	0	2.174	71 (2009)	9,8 %
August 2003	1.839	366	5.027	71 (2009)	3,9 %
September 2004	1.580	639	3.480	71 (2009)	4,5 %
June 2005	879	143	2.756	71 (2009)	8,1 %
September 2005	1.498	312	3.578	71 (2009)	4,7 %
April 2006	466	61	1.297	71 (2009)	15,2 %
Mean⁶	799			71 (2009)	8,9 %

Table 1: Calculation of bycatch as a proportion of the population in German waters, based on the number of carcasses, the population survey of the MINOS Project (Gilles et al. 2007) and the percentage (47%) of bycaught individuals among fresh carcasses according to Herr et al. (2009). Further surveys in June 2003, January 2005 and January 2006 yielded no sightings so that the population is given as 0, rendering calculations for these periods superfluous.

Harbour porpoises used to be common throughout the Baltic Sea. Nowadays, they very rarely occur east of the Gulf of Gdańsk. Harbour porpoises are regularly recorded in very low numbers in particular in Puck Bay, mostly as bycatches (K. Skora, Hel Marine Station, personal communication). The decline of the species in the Baltic Sea began in the late 19th century due to hunting. Later, numbers were further reduced by pollution and bycatch (Koschinski 2002). This trend appears to be continuing. According to a recent study, the population in the western Baltic Sea (Skagerrak, Kattegat, Belt Sea western Baltic Sea) dropped by 61%⁷ between 1994 and 2005, from 27,767 to 10,865 animals (Sveegaard 2011).

The situation of the separate eastern Baltic population, whose summertime range is assumed to be limited to waters east of the Darss Sill is even more dramatic. There are probably fewer than 600 individuals left, meaning they are acutely threatened with extinction. This small population continues to be threatened by continuously high bycatch rates. Thus, between 1986 and 2006 an average of 5 porpoises per year were bycaught in Poland, especially in so-called semi-driftnets (nets held in place at one end and used primarily in salmon fisheries) and bottom-set cod gillnets in the Gulf of Gdańsk (International Council for the Exploration of the Sea 2008b, K. Skora, personal communication). 80% of the bycatch victims were less than two years old. Victims of bycatch were also regularly found in eastern Mecklenburg-Western Pomerania. Since 60 of the individuals inhabiting German waters might belong to the eastern population, each incident of bycatch is one too many. The so-called Jastarnia Plan (ASCOBANS 2002; ASCOBANS 2010) formulates the aim of reducing bycatch of harbour porpoises belonging to the entire eastern population to a maximum of two per year to ensure survival of the population. In winter, migrating animals from the eastern population can also be found off the coast of Schleswig-Holstein (Koschinski 2002).

⁶ Taking into account the blank values for 2003, January 2005 and January 2006.

⁷ Due to the wide range of 95% confidence intervals this difference is 'not significant'.



Figure 2: Pictures such as this suggest that many bycatches are not reported. Photo: A. Pfander.

3.2 Seabirds

Bycatch of seabirds in gillnets and fyke nets is also a cause for considerable concern. An estimated 100,000 to 200,000 seabirds are bycaught in the Baltic Sea and North Sea (with highest bycatch numbers in the Baltic Sea, 80%) each year (Zydellis *et al.* 2009). The majority of these bycatches are recorded between the months of December and March (over 60 %; Erdmann 2006). Bycatch rates in the bottom set gillnet fishery for cod, flounder and salmonids were 5 times higher between November and April compared to summer months (Bellebaum 2011). Bycatch is the leading cause of death, ahead of oiling (Zydellis *et al.* 2009). 77 % of all stranded bird carcasses in Poland and 25% of those stranded in Mecklenburg-Western Pomerania show typical signs of bycatch (Bellebaum & Schulz 2006).

Since the majority of fishing vessels are not required to carry observers due to their small size, official bycatch statistics do not exist. Data from a pilot project in MWP with automatic cameras aboard small fishing vessels are not yet available. Not even precise records of fishing effort are maintained. According to various exemplary studies, bycatch rates in winter amount to 0.3 to 3.7 birds per net per day⁸ (Zydellis *et al.* 2009). It is not unusual for fishing vessels to carry 9 km of gillnets (vessels > 12 m may carry up to 21 km of gillnets).

The risk of being bycaught is highest for piscivorous species such as auks, divers and grebes, as these species pursue their prey by diving horizontally along the seafloor (Zydellis *et al.* 2009). But diving ducks and sea ducks, which dive to the bottom of shallow water areas and feed on molluscs and other benthic species are also highly vulnerable to bottom-set gillnets.

⁸ The following extrapolations illustrate possible bycatch rates: Based on the figure of approximately 2,000 kms of set nets off the coast of Mecklenburg-Western Pomerania, daily bycatch would amount to 600 to 7,400 birds. The bycatch rate of 1.2 birds per kilometer of net given for the waters surrounding Fehmarn would lead to a total bycatch rate of 2,400 birds per day. To date, however, reliable data do not exist.

The current bycatch-related mortality rate is considered to be a threat to all birds that dive for food (International Council for the Exploration of the Sea 2008b). The situation of species with low reproduction rates, small or declining populations and species with high local concentrations is a particular cause for concern. The following species are cited by way of example specifically for the Pomeranian Bay: black-throated diver, red-throated diver, long-tailed duck, horned grebe, red-necked grebe, common guillemot, razorbill, common scoter, velvet scoter.

The exact impact of bycatch on these populations is unclear since data concerning reproduction rates as well as mortality rates due to causes other than bycatch do not exist for most of these species. With respect to the greater scaup and the common guillemot, Zydalis et al. (2009) found indications that populations are threatened by fisheries. Also, the European Commission regarded bycatch as one of the major threat to scaups in the Baltic Sea and gave bycatch-reducing measures a high priority (European Commission 2009)

Ducks

The majority of birds wintering on the German Baltic Sea coast and bycaught there are ducks. Baltic Sea-wide, long-tailed ducks suffer the greatest number of bycatches, with several tens of thousands of animals falling prey to bycatch. (Zydalis et al. 2009).

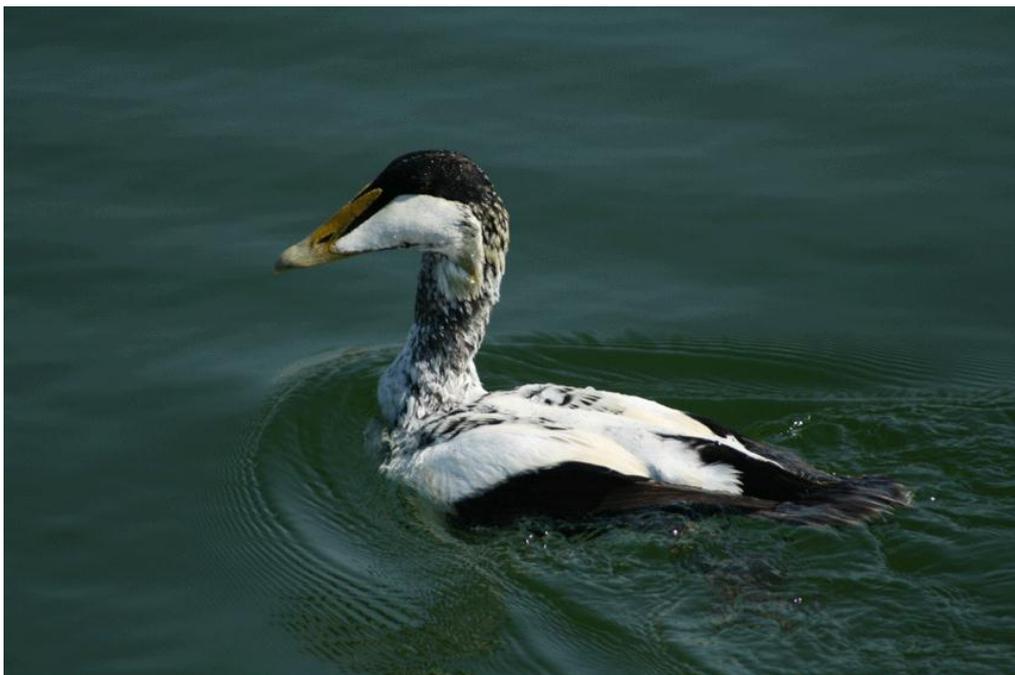


Figure. 3: Diving eiders frequently perish in gillnets

Erdmann et al. (2005) cite the following reference populations for German Baltic Sea waters: long-tailed duck, 596,000 individuals; eider, 242,000 individuals; common scoter, 177,000 individuals; greater scaup, 111,000 individuals. Along the southern Baltic Sea coast long-tailed ducks, velvet scoters and common scoters most frequently fall prey to bycatch in bottom set gillnets, whereas in the Belt Sea the majority of bycaught birds are eiders and greater scaups. Depending on the type and intensity of fisheries, a considerable number of wintering birds can be affected. The situation is also precarious in neighbouring countries. In the Gulf of Gdańsk alone,

17,500 birds are bycaught each year, primarily in bottom set gillnets and semi-driftnets (International Council for the Exploration of the Sea 2008b).

The highest bycatch rates for bottom set gillnets have been registered in shallow water areas, which are much frequented by fisheries while also constituting important resting areas for wintering ducks (International Council for the Exploration of the Sea 2008b).

Scientific studies demonstrate that in some areas bottom-set gillnet fishing occurs precisely in areas of high bird concentration such as bays and bodden areas or shallow water areas, which provide food for mollusc-eating diving ducks and sea ducks. It is unclear what happens to the bycaught ducks. Most likely, they are discarded at sea (Zydulis *et al.* 2009; International Council for the Exploration of the Sea 2008b).

Auks

Bycatch poses the greatest threat to the population of common guillemots in the Baltic Sea. Up to 50% of ringed carcasses documented are birds that were killed in nets (Österblom *et al.* 2002). The majority is caught in salmon driftnets⁹ and bottom set gillnets used in cod fisheries. At 4 individuals per year, annual bycatch off the German Island of Usedom¹⁰ appears insignificant in terms of absolute numbers. However, according to Erdmann *et al.* (2005), the reference population only comprises some 700 animals so that bycatch in this small area alone amounts to 0.6% of the wintering population in German Baltic Sea waters if the bycatch number can be extrapolated to the whole area. The proportion of bycatches in other parts of the German Baltic Sea is unknown.

Sea divers

The situation of sea divers in the southern and western Baltic Sea is precarious. The annual catch of red-throated divers off the Island of Usedom¹¹ alone amounts to 2.4% of the wintering population in German waters (Erdmann *et al.* 2005). A proportion of unidentified sea divers (red-throated diver and black-throated diver: 1.2 %) and the bycatches from other regions, whose magnitude is unknown, must be added to this.

4 WHICH FISHING METHODS CAUSE BYCATCH?

4.1 Harbour porpoises

Harbour porpoises are most frequently caught in large-mesh bottom set gillnets with diagonal mesh sizes of 10 to 27 cm (Vinther 1999). These nets are primarily used to catch cod, turbot and plaice. To some extent, the harbour porpoise populations are also threatened by lump fish fisheries (for the production of so-called “German caviar”) and coastal salmon fisheries using semi-driftnets, e.g. in Poland and Sweden (Koschinski 2002; ASCOBANS 2002). It is unknown to what extent pelagic salmon driftnet fishing—which is meanwhile prohibited in the EU waters of the Baltic Sea—may have contributed to bycatch. While trawl fisheries seem to be causing massive losses of small cetaceans in the North Atlantic, bycatches of Baltic Sea harbour

⁹ Prohibited in the EU since 1 January 2008 (Council of the European Union 2004a).

¹⁰ No reliable data available for other parts of the German Baltic Sea.

¹¹ No reliable data available for other parts of the German Baltic Sea.

porpoises in these nets appear to be rare exceptions (cf. Vinther 1999). The majority of animals bycaught appear to be younger and inexperienced animals (A. Pfander, personal communication).

4.2 Seals

Bycatches of grey seals in pound nets and set gillnets in German Baltic Sea waters are occasionally reported (Schwarz *et al.* 2003; Harder 2007). Due to the rareness of these species in German waters, these bycatches can negatively affect the recovery of the populations and the recolonisation of the species into the German Baltic Sea. In the northern Baltic Sea there is regular interaction between harbour seals and fishing gear. While systematic studies on bycatch do not exist, scientists estimate that up to 1,000 harbour seals may be bycaught in some years (Harding *et al.* 2007). Mainly fyke and driftnets are dangerous to seals. These kill younger and inexperienced animals in particular.

4.3 Seabirds

Most seabirds are also bycaught in bottom set gill nets and driftnets with large mesh sizes (Erdmann *et al.* 2005). German fishermen use these nets primarily to catch cod and flatfish. Information on seabird bycatch in herring set nets with small mesh sizes used close to the surface is contradictory. Whereas in Latvia bycatch rates are lower compared to large mesh sizes (International Council for the Exploration of the Sea 2008b; Zydalis *et al.* 2009), bycatch of long-tailed ducks and red-throated divers is exceptionally high in the Greifswalder Bodden and East of the island of Rügen, due to the coincidence of high bird abundance during spring migration and the herring fishery (Bellebaum 2011). Salmon drift nets several kilometres long used around Bornholm and also deployed by German fishermen have been prohibited since 1 January 2008. Small-scale salmon fisheries using set gillnets kept close to the surface and semi-driftnets still exist especially in southern Sweden and the Gulf of Gdańsk. Despite the relatively small significance of these fisheries, they have high bycatch rates for seabirds.

In addition to mesh size, bycatch is influenced by the depth of the water, the season, the location, the time of day and the soak time of the nets. Due to the limited diving depths of seabirds, most bycatches are registered in waters under 20m (Zydalis *et al.* 2009). The time of day and the turbidity of the water also play an important role as they determine whether birds, which mostly rely on visual orientation under water, can detect the nets.

In some regions, high bycatch rates are also registered in fyke and pound nets. Cormorants in particular may be attracted by potential prey in the fyke net aft ends¹² and find their way into the trap in the same way as the fish they pursue. While they can escape upwards from pound nets,¹³ they frequently drown in fyke nets (Erdmann *et al.* 2005). In addition, ghost nets (lost fishing gear) continues to catch fish and non-target species such as marine mammals and seabirds (Erdmann *et al.* 2005).

Worldwide, longline fisheries pose a considerable problem for seabirds (especially tubenoses such as albatrosses and petrels), which dive for the bait when the lines are deployed and are then dragged under water. However, comprehensive data

¹² Catch chamber.

¹³ However, some pound nets are equipped with fyke net aft ends which are used to empty the pound net. Birds can get caught in these (cf. Chapter 6.4).

regarding bycatch by longlines in the Baltic Sea are not available (International Council for the Exploration of the Sea 2008a; 2008b). Test fisheries by Mentjes & Gabriel (1999) showed that longlines do indeed catch some birds¹⁴ but so far do not cause major bycatch in this region (e.g. due to the currently limited significance of this fishing method and a different composition of avian fauna). Since this fishing method under certain circumstances (at the bottom in deeper water) is considered a possible alternative to set net fishing, its potential risks are examined separately in chapter 6.3. Bycatch of birds in trawls appears to be rare (Erdmann *et al.* 2005).

5 PROVEN METHODS FOR PREVENTING BYCATCH IN SET GILLNETS

5.1 Pingers

Acoustic deterrents (pingers) are a tested and effective measure for preventing harbour porpoise bycatch. Currently, two different types using different source levels and frequencies are approved for EU waters: a 10 kHz pinger and a pinger using variable ultrasonic frequencies. In trials, bycatch was reduced by approx. 90% without reduced catch rates for target fish species (Kraus *et al.* 1997; Trippel *et al.* 1999; Larsen *et al.* 2002b). Therefore, pinger use is mandatory for certain fishing vessels in some parts of the Baltic Sea (Council of the European Union 2004b). However, EU Regulation 812/2004, adopted in 2004, is not achieving its aims because it is not applicable to the Baltic Sea coast of Schleswig-Holstein and east of Warnemünde it applies only to fishing vessels of over 12 m. Therefore, only some 35 of over 1,300 fishing vessels on the German Baltic Sea coast are obliged to use pingers, although they all use the same types of nets. Only a few fishermen with vessels smaller than 12 m use pingers voluntarily. While these measures may save some individuals from becoming entangled in nets, their success at the population level is questionable. It is impossible to achieve the adopted bycatch reduction targets of a maximum of 1 %, respectively 1.7% of the population (cf. chapter 3.1) using pingers.

The use of pingers is also problematic for a number of other reasons:

- Insufficient endurance of some models in practical use (SEAFISH 2003; 2006)
- Insufficient maintenance leads to acoustic gaps which may suggest safe passages to porpoises (cf. Berggren *et al.* 2002a)
- Habituation (Cox *et al.* 2001; author's own, unpublished data)
- Habitat exclusion (cf. Culik *et al.* 2001)
- Marine noise pollution.

Due to the acute threat to the population and given the fact that in Poland, as in Germany, no progress whatever has been made concerning the application of bycatch mitigation measures, large stretches of the north-western part of the Gulf of Gdańsk (Puck Bay) have recently been closed off with a chain of pingers (International Council for the Exploration of the Sea 2008b). This prevents harbour porpoise from accessing their hereditary habitat. Without any knowledge of their exact habitat needs and suitable alternative habitats such measures should only be considered as an absolute last resort in attempting to protect harbour porpoises.

¹⁴ Presumably in the Baltic mainly fish feeding species (Bellebaum 2011).

Pingers do not constitute a solution to the problem of seabird bycatch. Only in the case of common guillemots did the use of pingers (of an unknown frequency) lead to a reduction of bycatch by approximately 50%, whereas even in species closely related to the common guillemot no reduction could be detected (MELVIN *et al.* 1999).

5.2 Reflective nets

The use of acoustically reflective nets can increase the detectability of nets by the harbour porpoises' biosonar. Reflectivity is increased by adding barium sulphate or iron oxide.¹⁵ A noticeable reduction of harbour porpoise bycatch was registered in various experiments. It is, however, unclear whether this is the result of the increased reflectivity of the nets or their higher stiffness. Research results are partially contradictory (Larsen *et al.* 2002a; Trippel *et al.* 2003; Trippel & Shepherd 2004; Koschinski *et al.* 2006; Mooney *et al.* 2007; Trippel *et al.* 2008).

An 80% reduction in shearwater bycatches in these nets in Canada (Trippel *et al.* 2003) is undoubtedly related to the stiffness or better daytime visibility of the nets rather than their acoustic reflectivity. It is therefore impossible to make any general statement as to the potential of these nets to reduce seabird bycatch. Due to considerable knowledge gaps they are not yet ready for practical use. Research results do, however, demonstrate their possible potential. A clearer picture could possibly be gained through further research.

5.3 Further modifications of fishing gear

Bycatch could be reduced to some extent by modifying set gillnets. Thus, bycaught harbour porpoises and birds could surface along with the net and therefore breathe if surface gillnets used in salmon and sea trout fisheries were no longer equipped with lead weights (Erdmann *et al.* 2005). This would, however, also influence the catchability. Exclusion grids and otter escapes could help birds and European otters.

The Ministry of Agriculture, the Environment and Rural Areas of the Federal State of Schleswig Holstein (MLUR) has limited the height of bottom set gillnets to 1.3 m as a protective measure for harbour porpoises (a regulation to this effect applicable to the whale protection area west of the island of Sylt is contained in the Coastal Fishery Ordinance of Schleswig Holstein). However, this is due to a misinterpretation of the source this regulation is based on (Vinther 1999)¹⁶. Pfander (2010) reported 5 out of 10 harbour porpoise bycatches from the Eckernförde Bight area in 2007 and 2008 in set nets with a height of 100 to 120 cm, whereas the remaining occurred in nets 140 to 200 cm high. Bycatch reduction for birds can probably not be achieved by this modification either as ducks feed on the seafloor and piscivorous species hunt just above the seafloor (vgl. Zydulis *et al.* 2009). Modifications of set nets therefore do not constitute a solution to the problems of seabird and marine mammal bycatch.

5.4 Closures and gear restrictions

Time-area closures for set nets and driftnets promise the greatest degree of success (cf. National Marine Fisheries Service 2006). However, this presupposes precise

¹⁵ These substances have a significantly higher acoustic impedance than water.

¹⁶ According to this paper, no harbour porpoise bycatch was registered in Danish North Sea common sole fisheries, whereas 21 porpoises were bycaught in plaice nets. In Denmark, nets used to fish common sole are approximately 1.30m high. However, the fisheries examined also differed in terms of location, time of year, mesh size, duration of fishing effort and number of samples taken. The determining factor for the differences in bycatch is unclear.

knowledge of the distribution patterns of marine mammals and birds. The greatest amount of knowledge exists with regard to concentrations of wintering seabirds. The deployment of set gill nets should be avoided under any circumstances at times (time of year, time of day) and in locations of major bird concentrations, which depend on the depth of the water, the state of the seafloor and the density of food organisms (International Council for the Exploration of the Sea 2008b). However, national regulations to this effect cannot currently be adopted on account of the Common Fisheries Policy of the EU. In Germany it has been proposed that as part of the management plans for conservation areas in the frame of the EU Bird Directive gill nets should be excluded from those Natura 2000 areas (Sell *et al.* 2011).

6 ALTERNATIVE FISHING METHODS

There are a number of alternative fishing methods that offer potential for considerable bycatch reductions if used economically in fisheries.

A literature study on alternatives to bottom set gillnets produced by the Danish Food Industry Agency DFFE (Blaesbjerg 2007) examines longline fishery and fish traps in addition to area closures and modifications to bottom set gillnets (cf. chapter 5). Furthermore, there are a number of other methods such as jigging reels, Bundgarn (a certain type of pound net commonly used in Denmark) and Stucki eel traps, or fish pots (cf. Schulz & Dolk 2007).

Effective bycatch reduction can only be achieved by closures (chapter 5.4) and the complete replacement of large mesh gill nets by other fishing methods. Below, the possibility of using baited pots (Chapter 6.1), jigging reels (chapter 6.2), Bundgarn (chapter 6.4) and longlines (chapter 6.3) will be discussed.

6.1 Baited pots

In a number of countries, pots are already being used to catch various species of cod-like fish, e.g. Atlantic cod (*Gadus morhua*) and cusk (*Brosme brosme*) in Norway (Furevik & Løkkeborg 1994), or Pacific cod in Alaska (Walsh *et al.* 2006). In the German Baltic Sea baited pots are suitable for Baltic cod only (Schulz & Dolk 2007). However, applicability of this fishing method to sandy bottom areas off the German Baltic Sea coast has yet to be demonstrated.

The Norwegian Refa Frøystad group¹⁷ offers a standard version of a two-chambered trap, which is easy to modify and adapt to the demands and needs of Baltic Sea fisheries. At approximately 150 € per piece, these traps are also reasonably cheap (Schulz & Dolk 2007).

¹⁷ Refa Frøystad Group AS, Frøystadvåg, 6095 Bølandet, Tel. 0047 700 800 00, www.rfg.no, post@rfg.no

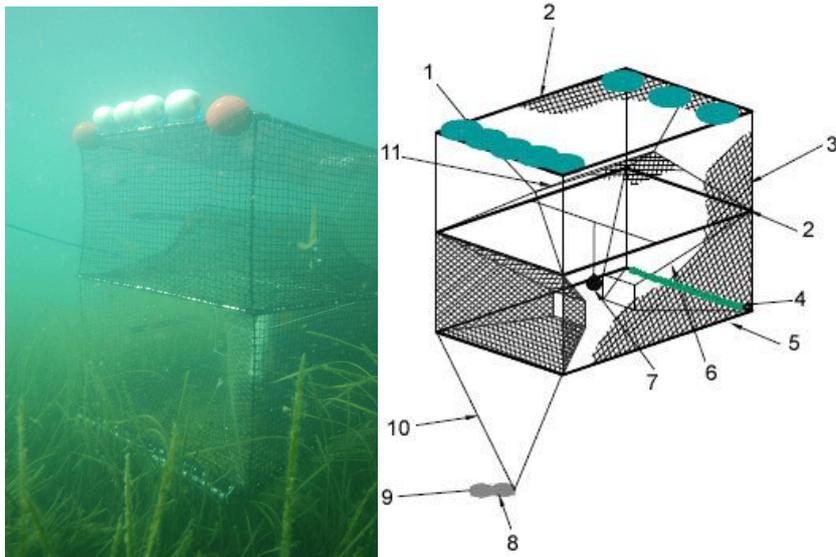


Figure 4: Baited pot (Ljungberg 2007). Left: baited pot in use off the south-eastern coast of Sweden. Right: 1 Floats, 2 Aluminium frame 10 mm, 3 Net 28,5 mm, 4 Balance weights 400 g, 5 Glass-fibre frame 14 mm, 6 Net entrance 25 mm Monofile, 7 Bait bag, 8 Lead weight 2 kg, 9 Bottom line, 10 Rope with hook, 11 Inner entrance, the upper chamber can be opened with a zipper, mesh size is variable with respect to different target species and fish size; copyright: Swedish Board of Fisheries, Peter Ljungberg

The variability of their design is a major advantage of pots over other methods. The traps can easily be modified to improve size selectivity. Undersized fish can be released through larger mesh sizes in the upper holding chamber, while modifications of the entrance (e.g. exclusion grids) can prevent large fish¹⁸, seabirds and marine mammals from entering the traps (Karl Lundström, Swedish Board of Fisheries, personal communication). Fish caught in the traps stay alive and remain fresh for several days,¹⁹ which greatly increases the quality of the catch (Walsh *et al.* 2006; Ljungberg 2007). Higher quality fish achieve higher prices at fish auctions. In addition, the pots are considered seal-proof²⁰ and therefore suitable for areas with higher grey seal populations, such as the northern Baltic Sea.

The catchability of pots depends on numerous factors, such as the bait used, the shape and size of the trap, the time of day, the depth of the water, the state of the seafloor and various biotic and abiotic factors. In an experiment an increase in mesh size also had a positive effect on catchability. This unexpected effect was possibly due to a saturation effect, i.e. the probability of cod entering the pot may be negatively correlated to cod density in the pot (Ovegård *et al.* 2011). All these variables can be used to optimise this fishing method and improve selectivity and profitability. The fact that it enables profitable fishing elsewhere does not automatically guarantee that this fishing technique can be used profitably along the German Baltic Sea coast. Field trials involving motivated fishermen should be undertaken to demonstrate whether and with what adaptations this method could be employed there.

¹⁸ Large Baltic cod produce more eggs than smaller individuals. Protection of large individuals could promote stock recovery.

¹⁹ Even if traps are not emptied for several weeks (e.g. due to a storm), the fish are in good condition (Walsh *et al.* 2006; Schulz & Dolk 2007).

²⁰ In the northern Baltic sea fishing gear is frequently damaged by grey seals (Lunneryd *et al.* 2003).

6.1.1 Results of trial studies for baited pots

Trials of baited pots were carried out in various fisheries. Key results of and problems identified in these studies are shown in Table 2.

Study	Results	Problems
North Sea, Hvide Sande (Danmarks Fiskeriforeningen 1998)	<p>Caught various gadoids</p> <p>Catch size varied considerably (0.2 to 6.8 kg per catch)</p> <p>High quality catch</p> <p>Small size of fish</p> <p>Best catches near wrecks compared to more open bottoms</p> <p>Best bait: Herring</p>	<p>Yields not economically viable</p> <p>Bait eaten by isopods at depths > 50m (suggested solution: bait bags)</p> <p>Warm water causes rapid decomposition of bait</p> <p>Catch can be reduced by availability of sufficient prey</p> <p>Pots placed on the seafloor are overturned by tidal currents</p> <p>Pots dragged away by trawl fishers</p>
Canadian Atlantic Coast (Walsh <i>et al.</i> 2006)	<p>Catch varied considerably depending on pot design (cod)</p> <p>Size selectivity comparable to gill nets</p> <p>In autumn, catch per unit effort (CPUE) is greater than with gillnets</p> <p>Highest quality fish, all fish survived</p>	<p>In summer, catch per unit effort (CPUE) is lower than in gillnets, but problems with quality of fish caught in gillnets</p>
Baltic Sea: Skillinge and Kåseberga (Ljungberg 2007)	<p>Caught only Baltic cod, 1.27 kg per 100 m line (= per 1.7 pots)</p> <p>25 % less catch compared to set nets during same handling time (optimization possible)</p> <p>Optimum soak time: 3 days</p> <p>Best bait: herring</p>	<p>High bycatch of undersize fish (47.2%) (suggested solution: bigger mesh size in holding chamber)</p>
Baltic Sea: Skillinge and Kåseberga (Ovegård <i>et al.</i> 2011)	<p>Increased mesh size has a positive effect on catchability</p>	
Baltic Sea: Nienhagen artificial reef (Schulz & Dolk 2007)	<p>Catches varied considerably depending on construction of trap (0.3 to 79 kg per project year)</p> <p>Very low bycatch of non-target species</p> <p>Average size highly variable depending on type of pot and mesh size (31 to 41 cm), undersize fish survived</p> <p>Best bait: herring</p>	<p>Yields not economically viable</p> <p>Sample size too small</p> <p>Study does not permit direct comparison with set nets</p>
Baltic Sea: Adlergrund and Oderbank Plateau (Lorenz & Schulz 2009)	<p>Caught twice as much Baltic cod as indicated by Schulz & Dolk (2007) due to continuous use of herring as bait</p> <p>10 pots along 200m of line: 12.7 Baltic cod (Weight: 12.6 kg) per day, 200 m of set nets: 11.5 Baltic cod (Weight: 12.8 kg) per day</p> <p>Caught 25 % less fish than gillnets in the same handling time</p>	<p>Bycatch of undersize fish in pots used was 25% higher than in set nets (27% compared to 9,2 %). However, contrary to undersize fish caught in gillnets, it was possible to release those caught in the pots.</p>

Table 2: Results of and problems identified in studies of baited pots

Due to lack of experience with pots, initial trials in the North Sea conducted by the Danish Fishermen's Association were not overly successful (Danmarks

Fiskeriforeningen 1998). However, ongoing trials conducted by “*Fisch und Umwelt e.V.*” (Schulz & Dolk 2007; Lorenz & Schulz 2009) and “*Fiskeriverket*”, the Swedish Board of Fisheries (Ljungberg 2007), demonstrate the considerable potential of this fishing technique. Based on the ongoing Swedish study there are reasons to be highly optimistic about the potential of pots to alleviate the bycatch problem (birds, marine mammals) while also enabling economically viable small-scale coastal fisheries. So far, no bird and mammal bycatch has been registered in the course of the project (Karl Lundström, *Fiskeriverket*, personal communication) and the catch amounted to 75% of the catch per handling time achieved in bottom set gillnet fisheries conducted in parallel. The study optimistically assumes that 100% could be achieved by optimizing fishing vessels and work processes and thereby reducing the handling time. The catch per boat was variable over the season. Whereas in the first half year (Feb-Jun) gillnet boats had higher cod landings than pot boats, the opposite result was found in the second half of the year. Over the full year, catch of pot boats outnumbered the catch of net and hook boats (S. Königson, *Fiskeriverket*, personal communication).

Given the appropriate design, the catch per pot can also be increased (Walsh *et al.* 2006). The initial problem of insufficient size selectivity (47.2% undersize fish²¹), which occurred at the beginning of the Swedish project has been solved by using bigger mesh sizes²² in the upper holding chamber (Ovegård *et al.* 2011). Species selectivity with regard to Baltic cod is in fact higher than in bottom set gillnet fisheries. Frozen herring has been identified as the ideal bait. The best catches were achieved in Swedish small-scale coastal fisheries using three sets (which were emptied alternately following a three-day rhythm) with 7 lines of 8 pots, i.e. a total of 168 pots (Ljungberg 2007).

In 10-day tests carried out in Germany using 10 pots and 200m of bottom line²³ the pots achieved the same yield as 200m of set nets (Lorenz & Schulz 2009). Since more time is needed to set the traps than to deploy nets, this amounts to a reduction in catch of approximately 25% in relation to handling time (Norbert Schulz, *Fisch und Umwelt e. V.*, Rostock, personal communication). This means the results are comparable to those of the Swedish study (Ljungberg 2007).

6.2 Jigging machines

In the German Baltic Sea hobby anglers fishing from boats or angling vessels using pilkers and flashers catch considerable numbers of cod every year. These catches amount to approx. 40% of commercial landings in the same area (Bundesforschungsanstalt für Fischerei 2007). In German commercial fisheries, the use of automated angling techniques based on the same principle is still largely unknown. Due to the effectiveness of handheld fishing rods, jigging machines are a promising fishing method. In European cod fisheries, jigging machines are primarily used in France, Iceland, Norway, and the United Kingdom. Among others, Belitronic and DNG offer fully automatic jigging reels. Four of these devices with three to six hooks each can be operated by a single person. Jigging machines require little space and can therefore also be used on the small fishing vessels typical of Baltic Sea

²¹ Contrary to other fishing methods, however, the fish caught in pots survived. By comparison, the discard rate in trawl fisheries is 10% -35%, and 8%-20% in bottom set gillnet fisheries (Ljungberg 2007).

²² Mesh size during initial trials: 28,5 mm.

²³ The pots were placed much closer together (20 m) than in the Swedish experiment (60 m).

coastal fisheries (Ronas Sigtsyggsson, DNG Reykjavik, personal communication; www.belitronic.com; www.oilwind.fo). The fish caught in this way are of very high quality and can be sold at high prices at fish auctions. At the same time, angling is among the fishing methods with the lowest fuel consumption per tonne of fish caught (www.dng.is). At between 10,000 and 12,000 €, refitting of fishing vessels (using 4 jigging reels) is relatively cheap.

6.3 Longlines

In the Baltic Sea, longlines (Figure 5) are primarily used for eel and cod fisheries, occasionally also for flatfish (Schulz & Dolk 2007). In German Baltic Sea fisheries, however, longlines have thus far been of minor importance. Only 1% of cod landed in Germany is caught using longlines (as at 2005; Sweden: 8%, Poland: 3%) (Schulz & Dolk 2007). Fishermen usually use a “box system”, i.e. lines are kept in fish boxes and deployed manually.

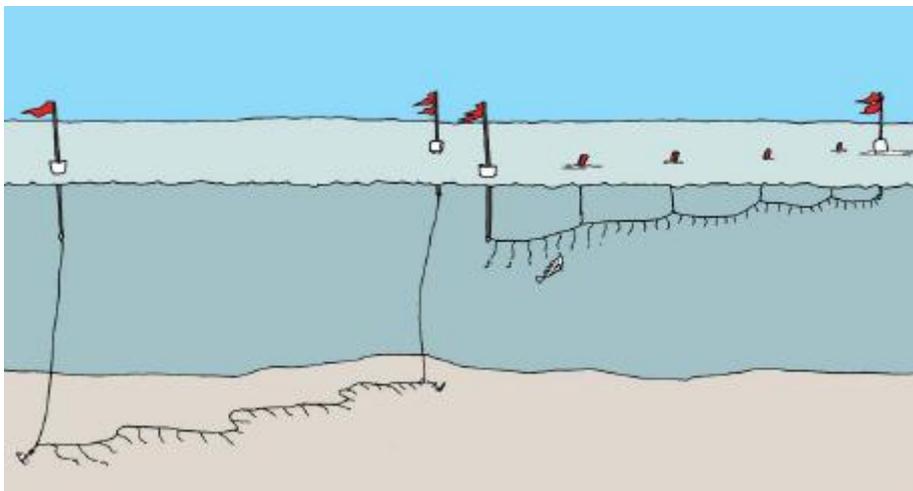


Figure 5: Longline fishery on the seafloor (left) and in the water column (right) (Diagram: Andersen *et al.* 2006) Illustration: Niels Knudsen, Fisheries and Maritime Museum, Esbjerg, DK

Partially automatic longline systems with random baiters (also suitable for smaller vessels), which can achieve baiting rates²⁴ of between 80% and 90% using optimal bait were able to achieve a workload relief (Stamer *et al.* 1990; Stamer & Gabriel 1996). German studies undertaken in the 1990s did not lead to the development of commercial systems.

Automatic systems such as the Select Fish system produced by the Norwegian company Mustad²⁵ were able to further reduce the workload. However, 2 to 3 persons were needed to operate such an automatic longline system and the entire system weighs 1,400 kg²⁶. Due to their high weight and the considerable financial investments required, these systems are only suitable for larger fishing vessels (> 11 m), which make up only a small part of the German Baltic Sea fishing fleet (21 out of 1,331 vessels registered for passive fishing, as at 2009; T. Goldner, BLE, personal communication).

²⁴ Low baiting rates, i.e. a high number of unused hooks are one of the main points of criticism concerning automated longline systems.

²⁵ http://www.mustad-autoline.com/longlining/index_eng.php

²⁶ http://mustad-autoline.com/filer/Produkt/Produktark/SelectFish_System_productsheet_ENG_des2011.pdf

Recently, smaller and less expensive systems have been introduced. The baiting systems weigh only about 50 kg. The hydraulic driven winch hauls, coils and cleans the line, strips the fish off the hooks and stores the hooks in magazines. Depending on the system this unit weighs between 100 and 200 kg. These coastal systems are suited even for small vessels (> 8 m)²⁷ and thus could be used to equip a high number of fishing vessels.

Longlines have clear advantages over other fishing methods. Using the right hook size, longline fishing is very size-selective, the fish are of high quality and fuel consumption is low (SCHULZ & DOLK 2007). Another advantage of longlines (as in the case of baited pots, cf. chapter 6.1) is related to the reproductive biology of cod (*Gadus morhua*). Cod on the verge of spawning do not feed, are therefore not attracted to the hook, survive and can thus contribute to maintaining the stock. During the spawning period of cod from March to April, Norwegian fishermen use only longlines and no nets.²⁸

Longline fisheries can cause considerable bycatch of birds, particularly in southern seas and the North Atlantic. Bycatch rates in longline fisheries can, however, be drastically reduced using simple methods (CCAMLR 2005). There is no comprehensive information regarding bycatch of birds in Baltic Sea longline fisheries and it is unclear to what extent a switch from set nets to longlines might actually cause a new bycatch problem (Österblom *et al.* 2002; Zydalis *et al.* 2009).

Given the experience in other EU waters, gulls are most likely to be high-risk species for this type of fishery in the Baltic Sea as they habitually follow fishing vessels due to the high number of discards. Feeding habits of northern fulmars would make this species vulnerable for bycatch, but these tube-nosed birds do not inhabit the Baltic Sea. Auks, terns, cormorants and other fish-eating species are also likely to be at risk (International Council for the Exploration of the Sea 2008a; Bellebaum 2011). Prior to large-scale introduction, this fishing method should be intensively studied and employed only at depths that cannot normally be reached by diving bird species, in order to avoid ingestion of bait by seabirds. Shallow areas and the use of longlines close to the surface should therefore generally be avoided. During deployment, security measures must be taken by using “bird lines” and covering the lines during reeling (CCAMLR 2005).

Catch rates in longline fisheries depend on many different factors. These include the bait used, the shape and size of the hooks, the time of day, the depth of the water, state of the seafloor etc. Accordingly, there are many correcting variables that allow this method to be optimised. Despite the fact that some fishermen are making good profits using this method, this need not necessarily be the case along the entire German Baltic Sea coast. Field trials with motivated fishermen should be undertaken to demonstrate whether this method is practically viable, produces no bird and mammal bycatch and can be used profitably.

6.4 Large fish traps (pound nets, pontoon traps)

Bundgarn (Figure 6) is a type of pound net used in Danish, German and Swedish Baltic Sea fisheries (GABRIEL *et al.* 2005). For some 110 years, this type of net has been used in Danish coastal waters to catch fish migrating along the coast, such as herring, mackerel, cod, garfish and eel (ANDERSEN *et al.* 2006). In principle, bundgarn

²⁷ <http://www.oilwind.fo/default.asp?menu=285>; http://mustad-autoline.com/products/coastal_system/

²⁸ http://www.merkur.de/2008_31_Fischzucht_fuer_d.29391.0.html?&no_cache=1

can be used to fish year round. In winter there is, however, a risk of wooden fyke net aft ends, piles or nets being damaged by ice or storms. In summer, large numbers of algae get caught in the nets. For these reasons, in Denmark they are used primarily during the spring fishing season (late March to June, target species: herring, garfish, sometimes eel) and the autumn fishing season (August to November, target species: primarily eel but also cod and garfish).

The use of bundgarn is limited to shallow water and is very labour-intensive. Piles need to be driven into the seafloor and nets attached. In summer, algae need to be removed. The installations have to be dismantled to avoid damage by drifting ice. Shipworms (*Teredo navalis*) are increasingly causing problems as they bore into the piles and destroy them from the inside. Another drawback is that cormorants and herons are attracted by high concentrations of fish in the catching chambers, which are open at the top (ANDERSEN *et al.* 2006). Birds can help themselves to the catch and increase the economic risk for fishermen. At the same time this poses a bycatch risk to birds if the ends of the pound nets are equipped with fyke net aft ends (Fig. 6) used to haul in the catch, in which birds can drown (ERDMANN *et al.* 2005). This type of bycatch can, however, largely be avoided by means of escape windows allowing otters and birds to return to the surface. Harbour porpoises can surface in the catch chamber so that bycatch in pound nets generally does not harm them. In Denmark, harbour porpoises caught in bundgarn were equipped with satellite transmitters and contributed considerably to increasing our knowledge of harbour porpoise distribution and migration (TEILMANN *et al.* 2008). All things considered, it can be assumed that bycatch of marine mammals as well as birds in appropriately equipped pound nets would be significantly lower than in set gillnets.

Push-up pontoon traps have been developed to resolve a conflict between seals and fisheries in Sweden (Hemmingsson *et al.* 2008). This type of fish trap consists of leaders and wings directing salmon, perch or whitefish into a large fish chamber made out of rigid material in order to prevent damage by seals. A pontoon underneath the fish chamber is filled with compressed air in order to lift the chamber above the surface to retrieve the fish. Exclusion grids can keep mammals and birds from entering the fish chamber. Traps can be retrieved in time before heavy algal blooms or ice formation, which is considered a problem in the German pound net fishery, occurs. Possibly, the pontoon trap has the potential not only to replace the labour intensive pound nets in German coastal waters but also gillnets used for the herring fishery. Field trials should be undertaken to demonstrate whether this method is practically viable and reaches a good selectivity.

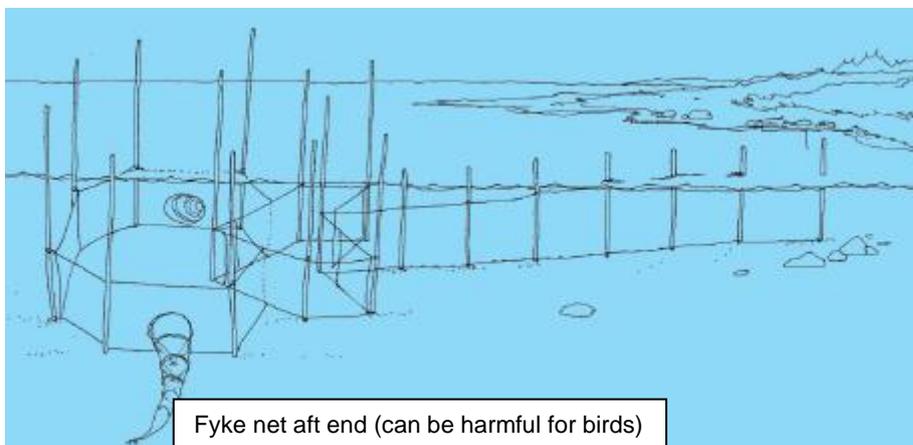


Figure 6: Bundgarn (Diagram: Andersen *et al.* 2006) Illustration: NIELS KNUDSEN, Fisheries and Maritime Museum, Esbjerg, DK

6.5 Other methods

Stucki or Apollo traps are pots without leaders. They can be used to catch eels. The Stucki trap is based on a simple principle. During the day, eels look for hiding places, which the body of the trap provides. The trap can therefore be used with or without bait. Its catchability increases the more it grows over. Stucki traps are a very inexpensive fishing method (price per trap: 38 Euros upwards, www.engel-netze.de). There is no known bycatch in Stucki traps. Since the traps serve as hiding places for eels, birds are unlikely to be attracted. The traps are too small for marine mammals to get caught in.

Anchor seines (Figure 7) are used to catch sole and other flatfish on sandy seafloors (Danish: snurrevod, Andersen *et al.* 2006). A conical seine net with two long wings and a fish collecting bag is hauled in by a fishing vessel lying at anchor. In the process, flatfish are encircled and herded into the net by the motion of wires attached to the net wings along the bottom, so-called warps. The hauling process takes approx. 3 hours. While the mesh size of the seines is 10.5 cm and therefore large enough for seabirds and marine mammals to become entangled in, this fishing method is likely to cause considerably less bycatch than set gillnets as the presence of the fishing vessel may scare away certain birds and marine mammals, fishing operations are carried out during the day and in shallow water and the nets used are considerably thicker than set gillnets, making them easier for birds and harbour porpoises to detect. Moreover, the nets are left in the water for a much shorter time than set gillnets. Nature conservation organizations rightly point out the disadvantages of trawls, such as the destruction of benthic habitats. However, these are probably less problematic in the case of anchor seines, as they do not possess otterboards, which are responsible for much damage to benthic habitats. Further, warps of anchor seines move slower and do not cut as deeply into the seafloor. One of the drawbacks of anchor seining is that it cannot be carried out everywhere and is suitable only for certain areas and certain seasons. Therefore, it can only fill a niche in fisheries. Nevertheless, anchor seine trials should be carried out in the German Baltic Sea to determine whether this type of fishery could at least partially replace set netting. These tests should be accompanied by scientific studies investigating the impact on benthic organisms and catch selectivity/by-catch.

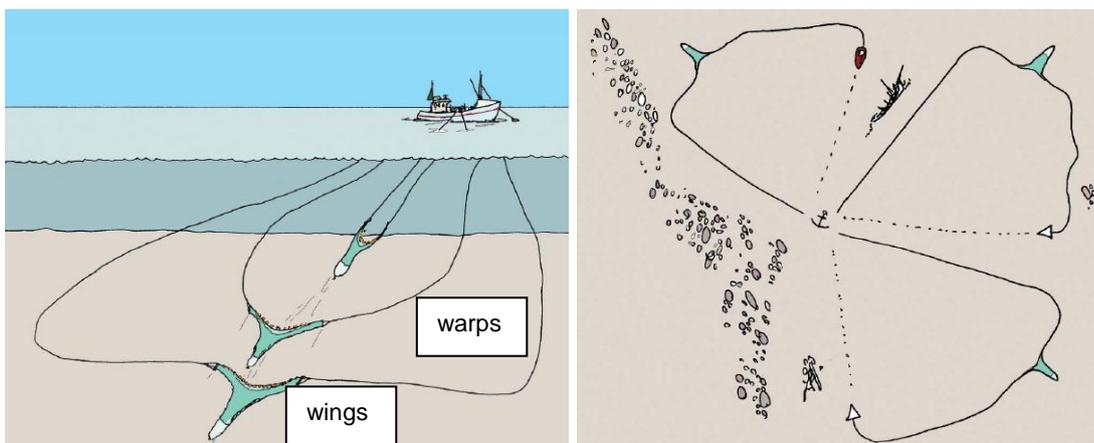


Figure 7: Anchor seines (Diagrams: Andersen *et al.* 2006) Illustrations: Niels Knudsen, Fisheries and Maritime Museum, Esbjerg, DK

7 NECESSARY REGULATIONS

At the EMPAS²⁹ Workshop organised by the International Council for the Exploration of the Sea, scientists formulated very concrete regulatory measures aimed at reducing bycatch of harbour porpoises and seabirds (INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA 2008b). Furthermore, harbour porpoises are covered by the Jastarnia Plan, which was developed in 2002 and revised in 2009 and has been adopted by all ASCOBANS Parties. However, the political and administrative implementation of these recommendations and decisions has yet to take place.

The EMPAS Workshop developed the following recommendations on bird bycatch in protected areas:

1. A reduction of bird bycatch in the Pommeranian Bay Special Protection Area (SPA) can be achieved by means of time/area closures for static fishing gear, a reduction of set gill nets to near zero can be achieved by using alternative fishing gear such as fish traps (cf. chapter 6.1).
2. An alternative measure would be the reduction of fishing effort. It is proposed to reduce fishing effort to such an extent that bycatch is limited to less than 1% of each bird species in the SPA. This requires comprehensive and reliable monitoring of fishing effort and bycatch.
3. An action plan on bycatch reduction for all types of fishery (Community Plan of Action, ECPOA) needs to be elaborated immediately. It should be based on the FAO's International Plan of Action (IPOA-Seabirds), which, however, covers only longlines. The Plan of Action must comprise the following elements: Introduction of a programme of independent observers on board fishing vessels combined with interviews of fishermen, testing and introduction of preventive measures and determination of current fishing effort. On small vessels, video surveillance can be an alternative to observers.

The necessary measures to ensure the conservation of protected species must also be taken outside of protected areas. The participants of the EMPAS workshop agreed that the current use of set gillnets is incompatible with Article 12 of the Habitats Directive (Chapter 13.2.1.2.2), which requires protection measures throughout the entire range of a species (International Council for the Exploration of the Sea 2008b). Moreover, they came to the conclusion that effective protection measures must not be made dependent on the acceptance of certain alternative fishing methods. Concrete measures required to ensure a good conservation status of Baltic Sea harbour porpoises are listed. These are also contained in the Jastarnia Plan for the protection of harbour porpoises in the Baltic Sea, which has also been adopted by the Federal Republic of Germany, the implementation of which has, however, hardly begun. Regulatory measures include:

1. Limitation of bycatch to 1% of the best available abundance estimate by means of appropriate measures such as the prohibition to use set gill nets in certain areas, replacement of set gill nets by alternative fishing gear such as fish traps (cf. chapter. 6.1) or mitigation measures such as e.g. pingers
2. Phasing out of set gillnet fisheries in the eastern Baltic Sea by 2010 and in the western Baltic Sea by 2012

²⁹ Environmentally Sound Fisheries Management in Marine Protected Areas.

3. As interim measures: closure of the Fehmarn Belt for set gillnet fisheries (spring and summer) and mandatory pinger use on all set gillnets irrespective of vessel size, accompanied by an effective monitoring scheme.

In addition, nature conservation organisations feel that the following key points will need to be part and parcel of the reform of the Common Fisheries Policy scheduled for 2013 (http://ec.europa.eu/fisheries/reform/docs/society_for_dolphin_conservation_de.pdf):

1. Integration of the principle of sustainability in all fisheries legislation
2. Drastic reduction of fleets and fishing effort and drastic sanctions in case of non-compliance. Any increase in catch efficiency must lead to additional limits in capacity, monitoring must take place at short intervals
3. Immediate implementation of all available technical measures and modifications for bycatch reduction (e.g. pingers to reduce harbour porpoise bycatch in all set gillnets and semi-driftnets in the North Sea and the Baltic Sea)
4. Sea areas with known high concentrations of seabirds must be kept free of set gillnets under any circumstances
5. Prohibition of dangerous fishing gear in part-time fisheries. The number of licences should be reduced and future licences should apply only to fishing methods that are proven to significantly reduce bycatch of seabirds and marine mammals
6. Immediate prohibition of semi-driftnets, which cause extremely high bycatches of seabirds and, moreover, threaten the eastern population of Baltic Sea harbour porpoises
7. No resumption of driftnet fishery in the Baltic Sea
8. Introduction of effective monitoring of fishing effort and bycatch³⁰ accompanied by severe sanctions for not landing bycaught mammals or birds
9. Fishing bans adapted to the aims of Natura 2000 areas, possibility for Member States to adopt effective fisheries-related protection measures for SACs and SPAs that are binding on all Member States (cf. Gellermann *et al.* 2007, cf. also part II)
10. Coupling of all EU and Member State subsidies in the fishing sector with comprehensive ecological standards.

Environmentally friendly fishing methods can only become established if incentives are created for fishermen to use these methods. Generally, direct subsidies are not suited to ensuring this. A better possibility would be to grant fishermen using environmentally friendly fishing methods preferential access to certain fishing grounds³¹ or to grant them additional quotas. This 'preferential access' incentive scheme is very successful in the United States.

³⁰ For example by independent on-board observers for larger vessels and cameras on board smaller vessels, as well as additional obligations to keep log books.

³¹ In particular, certain fishermen could be allowed access to protected areas where destructive fishing methods would then be banned.

8 CERTIFIED FISHERIES

The certification of responsible fisheries is a forward-looking instrument of fisheries management. Certification is aimed at producing and marketing fish in ways that are both ecologically and socially sound. As a rule, responsible consumers are prepared to pay more for such products than for mass production. To date, only approximately 6% of all fish intended for human consumption is certified worldwide (www.msc.org), in particular for the MSC label (cf. chapter 8.1). Recently, however, the German EDEKA retail chain announced that in the future it would offer MSC-certified fish only.

The various certificates do not contain regulations as to the level of bycatch of seabirds and marine mammals considered acceptable in certified fisheries. Usually, they are based on fairly general regulations concerning the protection of ecosystems and compliance with these regulations with regard to bycatch can be monitored in the framework of the process. Where data do not exist, the certifying institution can require the producer to undertake scientific studies.

In the future, demand for certified fish is expected to rise markedly, leading many fisheries to undergo a certification process. In Europe, this primarily means MSC certification. In the past, the MSC label has repeatedly been criticised for merely promoting an unwanted “inflation” of certified products, which only certify the status quo in fisheries rather than improvements. It remains to be seen whether and to what extent this will be the case (cf. chapter 8.1).

8.1 Marine Stewardship Council (MSC)

The MSC itself claims that products receiving its seal are the most environmentally friendly seafood on the market. Certificates are granted for a period of 5 years, with annual follow-up audits. All certified fisheries receive an action plan containing targets for improvement. MSC-certified fisheries must fulfil a number of standards, and compliance is monitored by independently accredited certifiers. Fisheries must achieve a score of at least 60% for each of three criteria—sustainable fish stocks, management systems and environmental impact—and an overall score of 80 % on all three. The fact that only a 60% score is required for the individual criteria has given rise to criticism (Greenpeace (2004) in: Döring *et al.* 2005). Critics feel that the required score needs to be raised to at least 80% and accompanied by strict obligations to achieve further improvements. Critics also demand greater stakeholder involvement in the decision-making processes. According to the MSC, the assessment is carried out by 2 independent scientists (usually resident experts at research institutions) who conduct targeted interviews with stakeholders they consider relevant (Marnie Bammert, MSC Berlin, personal communication).

It is also being criticised that environmentally damaging fishing methods such as bottom trawls are not generally excluded³² and fishing of overfished stocks³³ is permitted. Critics feel that this amounts to non-compliance with the basic standards of the FAO³⁴ (www.fair-fish.ch). The MSC is of the opinion that any type of fishery can be conducted sustainably and there are therefore no fisheries that are automatically excluded from certification (Marnie Bammert, MSC, personal communication). However, the certification of fishing methods that have thus far

³² Up to 30% of MSC-certified products are fished using bottom trawls (www.fair-fish.ch).

³³ Up to 75% of MSC-certified products consist of overfished species (www.fair-fish.ch).

³⁴ Code of Conduct for Responsible Fisheries. Cf. *infra* 12.7.

clearly proved to be environmentally damaging, such as bottom trawls, or the Canadian swordfish fishery, which is producing a high bycatch of marine turtles and sharks, clearly testifies to the need to critically examine eco labels.

8.2 Friend of the Sea (FOS)

The FOS label, granted by the eponymous Italian-based NGO since 2005, developed out of the SAFE control programme for dolphin-safe tuna established by the Earth Island Institute in California. Currently, FOS claims to be the world's leading fish label, covering 10% of global catches and over 350,000 tonnes of seafood produced by aquaculture (as at 2009). FOS certifies fish of all species from non-endangered stocks that are fished using methods causing little damage to the environment or sustainably farmed.

According to the definition of FOS, sustainable fisheries must primarily meet the following criteria:

1. All products must be derived from species that are not overexploited (according to FAO, IUCN etc.)
2. The fishing method used must not damage the seafloor
3. Only selective fishing methods are certified (max. 8% bycatch of non-target fish species).
4. Compliance with legal regulations (catch quotas etc.).

According to FOS, the certification process takes considerably less time and the overall certification criteria are stricter than with the MSC. Stakeholder involvement is also expressly provided for. However, like the MSC, the FOS does not in principle exclude the certification of bottom trawling.

8.3 Fair-fish

The guidelines applied to the label granted by fair-fish, based in Winterthur, Switzerland, are similar to those of FOS (cf. chapter 8.2). In addition to demanding a high level of sustainability, these guidelines also contain comprehensive animal welfare-related criteria which can, as a rule, only be met by artisanal fisheries. Thus, fish may remain in the net or on the hook for only a short period of time, must be killed immediately using specified methods and may not suffocate. All things considered, fair-fish appears to be a trustworthy label with strict guidelines, which are, however, presumably not practicable for most fisheries. This label might, however, be suitable for fisheries using jigging reels.

8.4 Naturland

The Naturland label primarily certifies fish that is sustainably produced by aquaculture. However, Naturland has also been certifying seafood caught in the wild for some time. The key element of certification by Naturland is a "round table" composed of fisheries representatives, scientists and conservationists who are able to take transparent, science-based decisions. Comprehensive stakeholder involvement is therefore guaranteed. As in the case of other certificates, Naturland has not formulated explicit regulations concerning bycatch of marine mammals and seabirds, which is assessed along with the influence of the fisheries concerned on the ecosystem.

8.5 Possible options for certifying German Baltic Sea fisheries using alternative fishing methods

Generally speaking, in order to be affordable, all certification schemes need to strike a balance between the demands of nature conservation and economic viability (vgl. Döring *et al.* 2005). Elaborate and costly certification procedures are only affordable if the fisheries concerned achieve a certain minimum revenue. Consequently, ways to enable small-scale fisheries to have their environmentally friendly operations certified need to be found.

Whether higher quality fish can achieve higher prices depends on the future behaviour of consumers. Presumably fish certified to have been “caught by angling” or “caught in fish traps” could be sold at higher prices if target group-specific marketing measures were taken. Whether certification by itself will suffice to increase sales revenues remains to be seen, as the big labels may become the standard of the future, giving certified seafood an aura of “mass production”.

Assuming that consumers are willing to pay more for ecosystem-friendly or bycatch-free fish, it will need to be ensured that this additional revenue actually reaches the fishermen instead of being skimmed off by the seafood industry or retailers. “Fair trade” might be an additional incentive for fishermen. Considerations related to certification should therefore always involve alternative marketing schemes as well. A good example of alternative marketing (not considering sustainability criteria so far) is the project “*Fisch vom Kutter*” where a number of German and Danish small-scale coastal fishermen sell their catch directly to consumers (www.fischvomkutter.de). This enables them to generate a higher income than they could achieve by supplying big marketing organisations or retail chains.

Bycatch-free fish from small-scale fisheries should therefore differentiate itself from mass production and marketing schemes should strongly tout quality criteria such as “angling” or “fish traps”. However, a big label would likely not be able to garner sufficient appreciation for fish that is regionally produced and caught in an environmentally friendly way (and of the highest quality). In the case of a specific regional label, however, the question arises as to who would guarantee its verification. One option might be to entrust this task to nature conservation organisations. Existing labels such as fair-fish or Naturland might be another possibility. This question can only be answered by extensive case-by-case studies, which are beyond the scope of this paper.

9 RECOMMENDATIONS FOR ACTION

Many processes expressly invite stakeholder involvement and the EU is increasingly holding internet consultations on specific topics. It is, therefore, important for nature conservation organisations to become involved in existing or future networks on fisheries/tourism/nature conservation (e.g. OCEAN 2012, FLAG's: fisheries local action groups in the framework of EU-“Active Regions” etc.) and participatory processes.

One of the key results this study is intended to achieve is to induce the competent federal ministries (Ministry of Food, Agriculture and Consumer Protection, Ministry for the Environment, Nature Conservation and Nuclear Safety) and ministries of federal states to undertake trials with alternative fishing methods. These should be accompanied by scientific institutions (e.g. Johann Heinrich von Thünen-Institut). The possibility of obtaining funding from the European Fisheries Fund, the species aid

programme of the federal state of Schleswig-Holstein or the fishing taxes levied by the federal states should be explored.

In concrete terms, applications for trials using longlines and jigging reels and expansion of ongoing research concerning fish traps should be filed. The aim should be to establish a significantly broader trial programme involving motivated Baltic Sea cod fishermen in order to optimize fish traps. Cooperation with Swedish trap fishermen is desirable as this could help improve this method in German waters, based on the knowledge they gained in the past years. The practicability and economic potential of these methods should be examined. A pilot project conducted for instance by the Johann Heinrich von Thünen-Institut would be useful to determine whether jigging reels are suitable for practical use and promise commercial viability in the Baltic Sea (SCHULZ & DOLK 2007).

Existing, fishing methods that have been proven to be environmentally should be promoted, for instance in workshops involving fishermen. Fishermen successfully employing these methods in neighbouring countries could familiarise their colleagues with these techniques. These workshops could also serve to further develop and optimise the fishing methods concerned if scientists and fisheries technicians took part. This concerns longlining and anchor seine fisheries in particular. Ministries would need to create incentives to participate in such workshops. In the United States, for example, participation in some workshops of this kind is compulsory for fishermen wishing to obtain or renew certain licenses. Nature conservation organisations should submit proposals of this sort to the competent fisheries authorities and ministries and support implementation by contributing their expertise.

No fisherman likes catching seabirds or harbour porpoises. They are unwilling to land bycaught animals for fear of damaging their image and being subjected to additional obligations. It is therefore necessary to strive for cooperation with fishermen.

Thus far, the general public is scarcely aware of the bycatch of seabirds and harbour porpoises in set gillnets in the German Baltic Sea. This topic must figure more prominently in the media relations activities of conservation organisations so that bycatch can become an issue that influences consumer choice. The idea is, however, not to pillory fishermen, but rather to focus on promoting constructive cooperation and jointly developing solutions. Only where the conservation organisations' initiatives to cooperate do not meet with any willingness on the part of the fishing sector to do so should the organisations consider publicly pointing fingers at those responsible.

In the Gulf of Gdańsk, bycatch rates for birds³⁵ are extremely high and bycatch of harbour porpoises, especially in bottom set gillnets and semi-driftnets poses a severe threat to the population. Therefore, it would make sense for NGOs to address this issue jointly with Polish partners. Hel Marine Station has successfully made considerable efforts to raise public awareness in Poland. Synergies should be leveraged to implement a joint public awareness project. The substantial administrative effort required to file applications for and implement EU projects is the greatest obstacle in this context. It will be necessary to partner with an additional player offering experience in this field.

³⁵ Where approximately 17,500 birds are bycaught every winter.

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Part II: Legal, political and institutional basis

11 INTRODUCTION

Marine environmental protection is a complex issue. Accordingly, the Baltic Sea too is covered by a complex system of international, supranational and national regulations, institutions and processes which—explicitly or implicitly, directly or indirectly—serve to protect the world’s largest brackish sea and its inhabitants. Depending on their geographical scope of application, international agreements and institutions can be classified as either global or regional instruments. The norms and institutions of the European Union, which are regional in scope but supranational in character, constitute a special case. At all levels it is, moreover, possible to differentiate between regulations that are at least partially intended to protect the species covered by the present study and others which only offer protection as a ‘side effect’. However, not all of these legal instruments are relevant with regard to the subject of this study, i.e. the prevention of bycatch. Chapters 2 - 4 therefore provide an overview only of those instruments that are of relevance in this context. Based on this, chapter 5 formulates recommendations for action for environmental NGOs.

12 INSTRUMENTS OF INTERNATIONAL LAW AND INTERNATIONAL INSTITUTIONS

12.1 The United Nations Convention on the Law of the Sea (UNCLOS)³⁶

In a manner of speaking, the United Nations Convention on the Law of the Sea,³⁷ which has been referred to as a ‘constitution for the oceans’,³⁸ delineates the framework of international marine environmental law. The convention was opened for signature in 1982 and entered into force in 1994. It is a global framework agreement establishing a legal regime for all oceans and seas and largely codifies customary international law.³⁹ One of the important elements of UNCLOS which profoundly influences the law of the sea is the establishment of maritime zones. Starting from the baseline, which corresponds to the low-water line along the coast, waters are divided into the territorial sea, the contiguous zone, the so-called exclusive economic zone (EEZ) and the high seas (Article 5). Waters landward of the baseline, and bays up to a breadth of 24 NM are internal waters of the coastal state (Article 10). The contiguous zone extends from the outer limit of the territorial sea up to 24 NM from the baseline (Article 33). In the German Baltic Sea there is no contiguous zone. The exclusive economic zone extends up to 200 NM from the baseline (Article 57). The high seas are waters beyond the EEZ. There are no high seas in the Baltic Sea. The convention also regulates the rights of the coastal state in respect of the seafloor below the EEZ. Pursuant to Article 76, the continental shelf ‘comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout

³⁶ Unless otherwise indicated, the provisions cited in this section refer to UNCLOS.

³⁷ www.un.org/Depts/los/convention_agreements/texts/unclos/closindx.htm

³⁸ Cf.: Remarks by Tommy T.B. Koh, Singapore, President of the Third United Nations Conference on the Law of the Seas, http://www.un.org/depts/los/convention_agreements/texts/koh_english.pdf; Time Magazine, Sept. 08 1980, www.time.com/time/magazine/article/0,9171,924405,00.html; Graf Vitzthum, Section 5, Marginal no. 142

³⁹ Cf.: Herdegen, §31, Marginal no. 2.

the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.’

The rights of coastal states differ depending on the respective maritime zone and decrease the further seaward the zone is located. Coastal states enjoy full sovereignty and jurisdiction over their internal waters. Their sovereignty also extends to the territorial sea, however vessels of other states have the right of innocent passage through the territorial sea (Articles 17ff.). In the EEZ, the coastal state possesses sovereign rights with respect to economic exploitation and limited sovereignty for certain other activities. Thus, the coastal state has ‘sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil’ (Article 56 (1) (a)). Among other things, these sovereign rights extend to ‘the protection and preservation of the marine environment’ (Article 56 (1) (b) (iii)).

Although UNCLOS is not an environmental convention it contains regulations on the protection and preservation of the marine environment. Part XII of the convention is of central importance in this context. According to Article 192, ‘states have the obligation to protect and preserve the marine environment.’ They are obliged to cooperate at the global and regional levels. This is a comprehensive obligation which also comprises an obligation to preserve biodiversity, as clarified by Article 194 (5), according to which the measures taken in accordance with Part XII ‘shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.’⁴⁰

Further regulations concerning environmental protection can be found in those parts of the convention dealing with the various marine zones. Articles 61 – 65 concerning the EEZ are of particular relevance in the present context. These regulations stipulate that the coastal state ‘shall ensure through proper conservation and management measures that the maintenance of the living resources in the exclusive economic zone is not endangered by over-exploitation’ (Article 61 (2)) and ‘take into consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened’ (Article 61 (4)). The protection of marine mammals is given particular attention in Article 65, according to which ‘Nothing in this Part restricts the right of a coastal State or the competence of an international organization, as appropriate, to prohibit, limit or regulate the exploitation of marine mammals more strictly than provided for in this Part. States shall cooperate with a view to the conservation of marine mammals and in the case of cetaceans shall in particular work through the appropriate international organizations for their conservation, management and study’. This implies the right of coastal states to reduce the allowable catch or the optimal optimum yield to zero if this is required to prevent bycatch of marine mammals.⁴¹

⁴⁰ Czybulka/Kersandt, p. 380; cf. also Weiß, p. 11; regarding a possible UNCLOS Implementation Agreement and other mechanisms that might be needed in the framework of UNCLOS, cf. Lundin/Gjerde, p. 39.

⁴¹ Weiß, p. 49.

The nature of UNCLOS as a framework convention is clearly reflected in Article 237 (1), which refers to other legal instruments and according to which the provisions of Part XII 'are without prejudice to the specific obligations assumed by States under special conventions and agreements concluded previously which relate to the protection and preservation of the marine environment and to agreements which may be concluded in furtherance of the general principles set forth in this Convention'. Paragraph 2 of the same provision stipulates that 'specific obligations assumed by States under special conventions, with respect to the protection and preservation of the marine environment, should be carried out in a manner consistent with the general principles and objectives of this Convention'. Conventions within the meaning of this provision are all agreements that serve to protect the marine environment, irrespective of whether or not this is their primary aim. Such conventions are applicable alongside UNCLOS.⁴²

12.2 Convention on Biological Diversity (CBD)⁴³

The Convention on Biological Diversity is one of the three so-called Rio Conventions that were opened for signature at the United Nations Conference on the Environment and Development (UNCED), held in Rio de Janeiro Brazil, in 1992 or created in the wake of the conference.⁴⁴ Article 1 defines the objectives of the convention as 'the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.' Biological diversity is defined as 'the variability among living organisms...and the ecological complexes of which they are part' (Article 2).

To achieve these aims, the convention imposes a number of obligations on its Parties. They are, *inter alia*, obliged to develop national biodiversity strategies (Article 6 (1)), to integrate the conservation and sustainable use of biological diversity into relevant sectoral or cross- sectoral plans (Article 6 (2)), and to undertake *in situ* and *ex situ* conservation (Articles 8 and 9). Pursuant to Article 8 (a) Parties shall, as appropriate, 'establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity.' Furthermore, they are obliged to engage in research and training and in public education and awareness-raising (Articles 12 and 13) and to carry out environmental impact assessments (Article 14). Parties are also subject to reporting obligations (Article 26).

Concerning the relationship between CBD and UNCLOS the following applies: As explained, UNCLOS is a framework convention that builds on and integrates special regulations. Article 22 of CBD, on the other hand, states that parties 'shall implement this Convention with respect to the marine environment consistently with the rights and obligations of States under the law of the sea.' While the CBD does not contain an explicit regulation to this effect, the term 'law of the sea' is understood to refer in particular to UNCLOS.⁴⁵ The two conventions are therefore mutually supportive and complementary. Consequently, CBD, consistently with UNCLOS, is applicable to those marine zones in which coastal states enjoy some measure of jurisdiction—i.e.

⁴² On this issue and generally on the subject of collision between UNCLOS and other international conventions cf. Castringius, p. 190 ff., p. 194.

⁴³ The provisions cited in this section refer to the CBD.

⁴⁴ In addition to CBD: the Convention to Combat Desertification (UNCCD) and the United Nations Framework Convention on Climate Change (UNFCCC), cf. www.unccd.int und www.unfccc.int

⁴⁵ Cf. de Fontaubert/Downs/Agardy, p. 58f.

internal waters, the territorial sea and the EEZ. Beyond these zones, only UNCLOS applies.⁴⁶

Accordingly, activities for the conservation of marine biodiversity are being carried out within the framework of CBD. To better understand how CBD and the conventions described below function, we will begin by briefly examining the structure of CBD and other multilateral environmental agreements. These agreements would remain static and lifeless without an institutional structure designed to implement and further develop them. While the agreements differ in detail, they usually comprise a number of similar agreement bodies. These include a decision-making body which meets at regular intervals (the Conference or Meeting of the Parties), one or several advisory bodies or bodies with limited decision-making authority (e.g. Standing Committee, Scientific or Technical Committee, Specialised Committees, Steering Groups etc.⁴⁷) and a secretariat dealing with coordination, administrative and political and diplomatic tasks.⁴⁸ It should be noted that while the agreements are binding under international law, their decisions, resolutions, recommendations, declarations, programmes etc. are not. These are considered 'soft law'⁴⁹, which is politically and morally but not legally binding.

The 1995 Jakarta Mandate adopted within the framework of CBD is a programme of action for marine and coastal biodiversity based on the following key elements: ecosystem approach, precautionary principle and solid scientific basis. The 7th Conference of the Parties to CBD (COP 7), held in Kuala Lumpur Malaysia in 2004, adopted another decision of importance to marine conservation. This decision reaffirms an agreement by the 2002 Johannesburg World Summit on Sustainable Development, WSSD⁵⁰ and calls on Parties to establish a comprehensive system of marine protected areas within their EEZs and on the high seas. These marine protected areas should be effectively managed and ecologically representative and should be established at the national and regional levels by 2012.⁵¹ The annexes to a further decision⁵² adopted by the 9th Conference of the Parties to CBD (COP 9), held in Bonn, Germany, in 2008, contain a catalogue of scientific criteria for identifying ecologically or biologically significant marine areas (Annex I) and scientific guidelines for their selection (Annex II). Germany and other Baltic Sea states contribute to the creation of the envisaged system of marine protected areas by establishing Natura 2000 sites under EU law and so-called Baltic Sea Protected Areas under the Helsinki Convention.⁵³

⁴⁶ Cf. Castringius, p. 172, cf. also Guruswamy/Hendricks, p. 106: CBD for terrestrial biodiversity, UNCLOS for marine biodiversity.

⁴⁷ Cf. UNEP Negotiator's Handbook, Marginal no., 2.4.9 – 2.4.11. (pp. 2-20 – 2-21).

⁴⁸ Cf. For instance CBD Article 23 – 25.

⁴⁹ Cf. For instance Graf Vitzthum, Section 1, Marginal no. 68; Herdegen, Völkerrecht, 4th edition, Munich 2005, § 20, Marginal no. 4; Koch, § 1 Marginal no. 31 ff.; Erbguth/Schlacke, § 8 Marginal no. 5, Marginal no. 17.

⁵⁰ See *infra* 2.7.

⁵¹ COP Decision VII/28.

⁵² COP Decision IX/20.

⁵³ Further information on Natura 2000 and BSPAs *infra* 3.2.1.2, 2.5 and 2.7.

12.3 Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)⁵⁴

The Convention on Wetlands of International Importance especially as Waterfowl Habitat is also of relevance in the present context. Under Article 2 of the so-called Ramsar Convention, each Party ‘shall designate suitable wetlands within its territory for inclusion in a List of Wetlands of International Importance’. Wetlands within the meaning of the convention ‘may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six metres at low tide lying within the wetlands, especially where these have importance as waterfowl habitat.’ (Article 1 (1)). Parties shall ‘promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the List or not, and provide adequately for their wardening.’ (Article 4 (1)). However, Article 2 (1), which refers to wetlands ‘within the territory’ of the Parties, limits the scope of the convention to the territorial sea and excludes the EEZ.

12.4 Convention on the Conservation of Migratory Species of Wild Animals (UNEP/CMS) and relevant regional agreements

12.4.1 Convention on the Conservation of Migratory Species of Wild Animals (UNEP/CMS)⁵⁵

The Convention on the Conservation of Migratory Species of Wild Animals (also referred to as UNEP/CMS or the Bonn Convention⁵⁶) was adopted in Bonn, Germany in 1979 and entered into force in 1983. It aims to conserve migratory species of wild animals across their entire range. According to Article I (1) (a), migratory species ‘means the entire population or any geographically separate part of the population of any species or lower taxon of wild animals, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries’. Article III and Article IV differentiate between species listed in Appendix I and species covered by Appendix II. The latter shall be the subject of Agreements (Article IV). Appendix I lists species which are endangered (Article III (1)), whereas Appendix II refers to ‘species which have an unfavourable conservation status and which require international agreements for their conservation and management, as well as those which have a conservation status which would significantly benefit from the international cooperation that could be achieved by an international agreement’ (Article IV (1), cf. Table 3). If necessary, a species can be listed in both appendices (Article IV (2)). Only Appendix II is relevant in the present context. In addition to the harbour porpoise (*Phocoena phocoena*) it includes the grey seal (*Halichoerus grypus*), the common seal (*Phoca vitulina*) and various species of waders and seabirds.

⁵⁴ The provisions cited in this section refer to the Ramsar Convention.

⁵⁵ The provisions cited in this section refer to the Convention on the Conservation of Migratory Species of Wild Animals.

⁵⁶ See www.cms.int with links to the various regional agreements.

Red-throated diver	<i>Gavia stellata</i>
Black-throated diver	<i>Gavia arctica</i>
Red-necked grebe	<i>Podiceps grisegena grisegena</i>
Horned grebe	<i>Podiceps auritus</i>
Common pochard	<i>Aythya ferina</i>
Tufted duck	<i>Aythya fuligula</i>
Greater scaup	<i>Aythya marila</i>
Eider	<i>Somateria mollissima</i>
Long-tailed duck	<i>Clangula hyemalis</i>
Common scoter	<i>Melanitta nigra</i>
Velvet scoter	<i>Melanitta fusca</i>
Common goldeneye	<i>Bucephala clangula</i>
Smew	<i>Mergellus albellus</i>
Common Merganser	<i>Mergus merganser</i>
Red-breasted Merganser	<i>Mergus serrator</i>

Table 3: UNEP CMS Appendix II bird species of relevance in the context of bycatch

To date, seven legally binding regional agreements have been concluded under the auspices of the Bonn Convention. Two of these also aim to protect marine mammals, respectively sea birds in the Baltic Sea: the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (UNEP/ASCOBANS)⁵⁷ and the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (UNEP/AEWA), whose secretariats are co-located with the secretariat of the parent convention, UNEP/CMS, in Bonn, Germany.

12.4.2 Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (UNEP/ASCOBANS)⁵⁸

According to Article 2 (1), the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas, which entered into force in 1994, is to 'achieve and maintain a favourable conservation status for small cetaceans'. 'Small cetaceans' are defined as 'any species, subspecies or population of toothed whales *Odontoceti*, except the sperm whale *Physeter macrocephalus*' (Article 1 (2) (a)). ASCOBANS is therefore relevant with regard to the harbour porpoise, the only cetacean species native to the Baltic Sea. Parties to ASCOBANS 'undertake to cooperate closely' in order to achieve the Agreement's objectives (Article 2 (2)). Each party 'shall apply within the limits of its jurisdiction and in accordance with its international obligations, the conservation, research and management measures prescribed in the Annex' (Article 2 (2)). ASCOBANS therefore applies to the internal waters, the territorial sea and the EEZ of its parties. The Annex referred to in Article 2 (2) contains a conservation and management plan which calls for measures concerning the conservation and management of small cetacean habitat, surveys and research, use of bycatches and strandings, legislation and activities related to information and education. Since the Agreement's entry into force, parties have adopted numerous resolutions to concretise and underpin these aims. Resolution No. 3 of the 3rd Meeting of the Parties, held in Bristol, United Kingdom in 2000 (MOP 3)

⁵⁷ Formerly Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas. Name changed upon entry into force of the extension of the Agreement in February 2008.

⁵⁸ The provisions cited in this section refer to the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas.

and Resolution No. 5 of the 5th Meeting of the Parties (MOP 5, Egmond aan Zee/The Hague, Netherlands, 2006) are among the most relevant resolutions adopted by ASCOBANS. According to these resolutions, the aim of ASCOBANS is 'to restore and/or maintain biological or management stocks of small cetaceans at the level they would reach when there is the lowest possible anthropogenic influence'. They define a short-term objective of restoring and/or maintaining stocks/populations to/at 80% or more of the carrying capacity and draw the limit for 'unacceptable interactions' at 1.7% of the best available abundance estimate.

In the present context, the ASCOBANS Recovery Plan for Baltic Harbour Porpoises (Jastarnia Plan) is of particular importance.⁵⁹ The plan was originally developed in 2002 but was only 'noted and supported' by the 4th Meeting of the Parties (MOP 4, Esbjerg, Denmark, 2003)⁶⁰. At the 6th Meeting of the Parties (Bonn, 2009), a revised version of the plan was adopted.⁶¹ According to the Jastarnia Plan, ASCOBANS parties should take immediate precautionary measures to ensure that harbour porpoise bycatch in the plan's area of application⁶² is reduced to fewer than 2 individuals per year. The respective measures include a reduction of fishing effort, the replacement of fishing methods known to be associated with high porpoise bycatch with less damaging methods and the implementation of a pinger programme on a short-term basis. The plan also envisions a further expansion of the network of marine protected areas and the elaboration of harbour porpoise management plans for these areas.

12.4.3 Agreement on the Conservation of African-Eurasian Migratory Waterbirds (UNEP/AEWA)⁶³

Parties to the African-Eurasian Migratory Waterbird Agreement,⁶⁴ which entered into force on 1 November 1999, undertake to 'take coordinated measures to maintain migratory waterbird species in a favourable conservation status or to restore them to such a status' (Article II (1)). The agreement covers over 255 species and more than 500 populations of birds 'that are ecologically dependent on wetlands for at least part of their annual cycle' (cf. Table 4)). Parties are obliged to take the protection measures prescribed in Articles III and IV in conjunction with the Action Plan appended as Annex 3 to the Agreement. Among other things, parties shall implement remedial measures concerning human activities likely to be problematic for the species concerned (Article III (2) (e)). Paragraph 4.3.7. of the Action Plan moreover urges them to 'take appropriate action at the national level or through the framework of Regional Fisheries Management Organisations (RFMOs) and relevant international organisations to minimise the impact of fisheries on migratory waterbirds and where possible cooperate within these forums, in order to decrease the mortality

⁵⁹ Downloadable from the ASCOBANS website.

⁶⁰ Cf. MOP 4 Res. No.6: 'The Meeting of the Parties to ASCOBANS...Supports the Jastarnia Plan...'

⁶¹ Cf. MOP 6 Res. No. 1.

⁶² The area of application is not defined in the plan itself. It is, however, generally understood to cover the central and eastern Baltic Sea, i.e. the waters contained in ICES Area III d east of the Darss-Limhamn ridge. The report of the 6th meeting of the Jastarnia Group (Hel, Poland, February 2010) and ASCOBANS AC 17/ Doc. 5-07 (S) provide an overview of discussions concerning an extension of the plan to cover waters to the west and north-west of the current area.

⁶³ The provisions cited in this section refer to the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (UNEP/AEWA).

⁶⁴ www.unep-aewa.org

in areas within and beyond national jurisdiction; appropriate measures shall especially address incidental killing and bycatch in fishing gear including the use of gillnets, longlines and trawling’.

Red-throated diver	<i>Gavia stellata</i>
Black-throated diver	<i>Gavia arctica</i>
Great crested grebe	<i>Podiceps cristatus</i>
Red-necked grebe	<i>Podiceps grisegena grisegena</i>
Horned grebe	<i>Podiceps auritus</i>
Black-necked grebe	<i>Podiceps nigricollis</i>
Cormorant	<i>Phalacrocorax carbo</i>
Common pochard	<i>Aythya ferina</i>
Tufted duck	<i>Aythya fuligula</i>
Greater scaup	<i>Aythya marila</i>
Eider	<i>Somateria mollissima</i>
Long-tailed duck	<i>Clangula hyemalis</i>
Common scoter	<i>Melanitta nigra</i>
Velvet scoter	<i>Melanitta fusca</i>
Common goldeneye	<i>Bucephala clangula</i>
Smew	<i>Mergellus albellus</i>
Common merganser	<i>Mergus merganser</i>
Red-breasted merganser	<i>Mergus serrator</i>
Eurasian coot	<i>Fulica atra</i>
Great black-backed gull	<i>Larus marinus</i>
Lesser black-backed gull	<i>Larus fuscus</i>
European herring gull	<i>Larus argentatus</i>
Black-headed gull	<i>Larus ridibundus</i>
Common guillemot	<i>Uria aalge</i>
Razorbill	<i>Alca torda</i>
Black guillemot	<i>Cepphus grylle</i>

Tab. 4: UNEP/AEWA bird species of relevance in the context of bycatch

12.5 Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)⁶⁵

The Bern Convention⁶⁶ is also intended to protect species and habitats in European waters, including the Baltic Sea. In force since 1982, it is the first European nature conservation agreement. Its aim is ‘to conserve wild flora and fauna and their natural habitats, especially those species and habitats whose conservation requires the cooperation of several States, and to promote such cooperation’ (Article 1 (1)). The convention gives particular emphasis to endangered and vulnerable species, including the respective migratory species (Article 1 (1) and (2), Article 10), which are to be maintained or adapted to ‘a level which corresponds in particular to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements and the needs of sub-species, varieties or forms at risk locally’ (Article 2).

The convention has four Annexes, of which Annex II and III are of relevance here. The former concerns strictly protected species and applies to the harbour porpoise and numerous seabirds such as auks, grebes, divers and various species of ducks. The grey seal and the harbour seal are covered by Annex III. According to Article 6 of

⁶⁵ The provisions cited in this section refer to the Bern Convention.

⁶⁶ www.coe.int/t/dg4/cultureheritage/convention/Bern/default_eu.asp;

the convention, each party shall take the appropriate legislative and administrative measures to ensure the special protection of the species listed in Annex II. In particular, it is prohibited to deliberately capture, keep or kill the species concerned (Article 6 (a)). Likewise, parties have to adopt the appropriate legislative and administrative measures to ensure the protection of species covered by Annex III. Since the use of Annex III species is not prohibited (unlike the species covered by Annex II) the respective provisions lay down provisions concerning their exploitation, which must be regulated in such a way as not to endanger the populations. Measures prescribed by the convention include closed seasons and the temporary or local prohibition of exploitation in order to restore satisfactory population levels (Article 7 (3) (a), (b)). Furthermore, Article 4 of the convention requires parties to take the appropriate legislative and administrative measures to ensure the conservation of species of wild flora and fauna, especially those listed in Annex I and II, and to ensure the conservation of endangered natural habitats. Under paragraph 3 of the aforementioned article, parties 'undertake to give special attention to the protection of areas that are of importance for the migratory species specified in Appendices II and III'. Article 4 (4) moreover requires parties to coordinate their efforts to this effect.

Article 9 provides for exceptions to the provisions of Articles 4, 5, 6, and 7 and to the prohibition of the use of the means mentioned in Article 8. Exceptions are permissible only given certain circumstances and in the absence of other satisfactory solutions and if they are not detrimental to the survival of the population concerned. Under Article 9 (1) the exception must either be in the interest of the protection of fauna and flora, property, public health and safety or serve the purpose of research and education, repopulation, reintroduction or necessary breeding or 'permit under strictly supervised conditions, on a selective basis and to a limited extent, the taking, keeping or other judicious exploitation of certain wild animals and plants in small numbers'. Insofar as exceptions are made, the parties concerned must report on these exceptions every two years to the Standing Committee (Article 9 (2)). Both with regard to the capture and killing of species listed in Appendix III and with regard to exceptions under Article 9 parties are to prohibit the use of 'all means capable of causing local disappearance of, or serious disturbance to, populations of a species' (Article 8). The prohibition to resort to these means is, however, also subject to the exceptions laid down in Article 9.

Finally, the Emerald Network launched in the framework of the Bern Convention in 1998 should be mentioned. Parties and observer states to the convention are to establish a system of protected areas, so-called Areas of Special Conservation Interest (SCI). For EU countries, Emerald Network areas are identical to the areas protected under the Natura 2000 network.⁶⁷

12.6 Convention on the Protection of the Marine Environment of the Baltic Sea (Helsinki Convention)⁶⁸

The first convention aimed at preventing pollution of the Baltic Sea was concluded in 1974 and entered into force in 1980. Following the revolutionary political developments of the early 90s, all Baltic Sea States and the European Community joined forces in concluding a new Convention on the Protection of the Marine Environment of the Baltic Sea, which entered into force on 17 January 2000,⁶⁹ while

⁶⁷ See *infra*, 3.2.1.2.2.

⁶⁸ Unless otherwise indicated, the provisions cited in this section refer to the Helsinki Convention.

⁶⁹ www.helcom.fi

the previous convention of the same name simultaneously ceased to be in force. Contrary to its predecessor, which was primarily intended to prevent and combat pollution in the Baltic Sea, the current Helsinki Convention focuses on all aspects of the protection of the entire marine environment of the Baltic Sea region. Article 3 (1) defines the convention's aim as follows: 'To prevent and eliminate pollution in order to promote the ecological restoration of the Baltic Sea Area and the preservation of its ecological balance'. Parties 'shall individually or jointly take all appropriate legislative, administrative or other relevant measures' to achieve this. Guiding principles are the precautionary principle, the polluter pays principle, as well as the principles of best environmental practice and best available technology (Article 3 (2) – (4)). Article 15 contains specific obligations concerning the protection of nature and biodiversity. Individually and jointly, parties are to 'take all appropriate measures with respect to the Baltic Sea Area and its coastal ecosystems influenced by the Baltic Sea to conserve natural habitats and biological diversity and to protect ecological processes. Such measures shall also be taken in order to ensure the sustainable use of natural resources within the Baltic Sea Area'.

The HELCOM Secretariat, which deals with the practical day-to-day administration of the Convention, is based in Helsinki (Article 21 (3) f.). The Helsinki Commission (HELCOM), consisting of representatives of the parties and meeting once per year is the convention's decision-making body (Articles 19 ff.). Five main Working Groups deal with various aspects of the protection of the Baltic Sea and support the Commission. One of these groups is the Nature Protection and Biodiversity Group (HELCOM HABITAT). The Ad hoc Seal Expert Group (HELCOM SEAL) and HELCOM Fisheries and Environmental Forum established in 2008 also play an important role in the present context.

HELCOM has adopted over 200 recommendations on various issues of Baltic Sea protection. Two of these, Recommendation 17/2 on the protection of harbour porpoises in the Baltic Sea Area (1996) and Recommendation 27-28/2 on the conservation of seals in the Baltic Sea area (2006) are particularly relevant to the protection of Baltic Sea marine mammals. The former stipulates that contracting parties give highest priority to avoiding bycatches and consider the establishment of marine protected areas for harbour porpoises in the framework of the system of Baltic Sea Marine Protected Areas (BSPAs) established under HELCOM (see *infra*). Recommendation 27-28/2 recommends that parties 'take effective measures for all populations in order to prevent illegal killing, and to reduce incidental bycatches to a minimum level and if possible to a level close to zero'. Parties are also invited to 'fund the development and application of bycatch reduction measures, including alternative fishing gear and methods, as well as to compensate for losses of catch and fishing gear'.

Recommendation 15/5, which was adopted in 1994, concerns the establishment of a system of coastal and marine Baltic Sea Protected Areas and is also highly relevant to the protection of birds and marine mammals in the Baltic Sea region. At the first joint ministerial meeting of the Helsinki Convention and the Convention for the Protection of the Environment of the North-East Atlantic (OSPAR), held in Bremen, Germany in 2003, the two conventions developed a joint work programme on marine protected areas in their respective convention areas, which was intended to ensure the establishment of a coherent network of well-managed MPAs in the areas of both

conventions by 2010.⁷⁰ Moreover, in 2005 HELCOM HABITAT adopted Management Guidelines for the BSPAs.⁷¹

While HELCOM has repeatedly acknowledged that the system has not yet achieved the required degree of coherence⁷² and ecological coherence between the BSPAs and those Natura 2000 Areas that have not been designated BSPAs is also still lacking,⁷³ it should be noted that there are meanwhile 159 such BSPAs across the region.⁷⁴ Baltic Sea EU Member States (meaning all Baltic Sea states with the exception of the Russian Federation) have predominantly designated Natura 2000 sites⁷⁵ as BSPAs. This dual nature of these areas is relevant since Article 7 of the Management Guidelines clarify that with regard to Natura 2000 sites that are also reported as BSPAs, 'Contracting States should be under no obligation to take any further action. Where management plans for NATURA 2000 sites exist, they will be sufficient'.

At its Ministerial Meeting in Cracow, Poland in 2007, HELCOM adopted a Baltic Sea Action Plan⁷⁶ aimed at restoring the good environmental status of the Baltic Sea marine environment by 2021. The plan promotes an ecosystem approach based on clearly defined ecological principles, the realisation of which would lead to the achievement of the desired good ecological status. Biodiversity and nature conservation are among the four main focus areas of the plan. HELCOM did not, however, seek to reinvent the wheel in this area. Rather the plan is oriented towards existing international and European regulations and instruments for the protection of biodiversity and nature such as CBD, the Bonn Convention, the Bern Convention, the Habitats and Birds Directives or the EU Marine Strategy⁷⁷ and is also intended to contribute to their implementation. Reference is made to CBD with regard to the targets to be met in achieving a favourable status for biodiversity in the Baltic Sea. The plan defines concrete interim targets and indicators for achieving this: establishment of a coherent network of BSPAs, Natura 2000 and Emerald Network sites by 2010; establishment, by 2012, of spatial/temporal and permanent closures of fisheries of sufficient size and duration throughout the Baltic Sea area; improved conservation status of species included in the HELCOM lists of threatened and/or declining species (which include numerous waterbirds as well as the harbour porpoise and all species of seals occurring in the Baltic Sea) and habitats of the Baltic Sea area by 2015, with the final target of reaching and ensuring a favourable conservation status for all species; restoration of all elements of the marine food webs, to the extent that they are known, to their 'natural and robust abundance and diversity' by 2021. The plan also expressly contains the following interim target: 'By 2015 by-catch of harbour porpoise, seals, waterbirds and non-target fish species has been significantly reduced with the aim to reach by-catch rates close to zero'.

⁷⁰ Annex 7 to the report of the Joint Ministerial Meeting.

⁷¹ www.helcom.fi/Recommendations/guidelines/en_GB/guide1_15_5mgt/

⁷² According to the definition used by HELCOM, coherence encompasses the following four criteria: adequacy, representativity, replication, connectivity, cf. HELCOM 2010, p. 7.

⁷³ See *infra* 13.2.1.2.

⁷⁴ As at February 2010, cf. Ministerial Declaration (*supra*, footnote 47).

⁷⁵ Cf. *infra* 13.2.1..

⁷⁶ www.helcom.fi/BSAP/en_GB/intro/

⁷⁷ See *infra* (13.2.1 and 13.2.2).

12.7 Non-legally binding instruments and relevant political processes

A number of non-legally binding but politically relevant international instruments and processes are also worthy of mention in the context of this study.

One of the declarations adopted by the United Nations Conference on Environment and Development (UNCED), held in 1992 in Rio de Janeiro, Brazil, is **Agenda 21**, which contains two chapters that are relevant to marine conservation. Chapter 15 is dedicated to the protection of biodiversity, chapter 17 concerns the 'Protection of the oceans, all kinds of seas, including enclosed seas, semi-enclosed seas and coastal areas and the protection, rational use and development of their living resources'. Among other things, this chapter calls for sustainable use of marine living resources in waters under national jurisdiction. Ten years after Rio, the World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa, adopted a Johannesburg Declaration and a Plan of Implementation. The summit called for implementation of chapter 17 of Agenda 21 and formulated the aims of achieving a significant reduction in the rate of biodiversity loss by 2010 and of establishing a network of marine protected areas by 2012. The Baltic Agenda 21 process, initiated in 1996 in Saltsjöbaden, Sweden, is an initiative intended to promote sustainable development in the Baltic Sea region and based on Agenda 21. Adopted in Nyborg, Sweden, in 1998, Baltic Agenda 21 calls, *inter alia*, for measures to promote the sustainable use of Baltic Sea fish stocks and freshwater fish, based on an ecosystem approach.⁷⁸

The **United Nations General Assembly** (UNGA) also regularly deals with issues of marine conservation and has adopted a number of related resolutions. UNGA deliberations concerning ocean affairs and the law of the sea are informed by the United Nations Informal Consultative Process on Oceans and the Law of the Sea (UNICPOLOS) established by UNGA Resolution 54/33.⁷⁹ Resolution 46/215, which was adopted on 21 December 1991 and reaffirms two previous resolutions (Resolutions 44/225 and 45/197), is of particular relevance in the context of this paper as it calls upon 'all members of the international community' to implement resolutions 44/225 and 45/197 by taking a number of actions. These include ensuring that 'a global moratorium on all large-scale pelagic drift-net fishing is fully implemented on the high seas of the world's oceans and seas, including enclosed seas and semi-enclosed seas, by 31 December 1992'. However, this resolution is non-binding 'soft law'.⁸⁰ In the EU, the Baltic Sea was the last region for which a driftnet ban was enacted, as driftnet fishing was prohibited only as of 1 January 2008 by Regulation 812/2004.⁸¹

Another global instrument of at least theoretical relevance to the conservation of marine species in the Baltic Sea is the **Code of Conduct for Responsible Fisheries** adopted in 1995 by the Food and Agriculture Organization of the United Nations (FAO). Its objectives include the establishment of 'principles, in accordance with the relevant rules of international law, for responsible fishing and fisheries activities, taking into account all their relevant biological, technological, economic, social, environmental and commercial aspects' (Article 2 (a)). Article 6.1 underscores the

⁷⁸ www.baltic.21.org

⁷⁹ www.un.org/Depts/los/consultative_process/consultative_process.htm

⁸⁰ Concerning the generally non-binding character of UNGA Resolutions cf. Brownlie, p.15. Concerning the concept of 'soft law' in international environmental law. Cf. Birnie/Boyle, p. 17, p. 25.

⁸¹ See *infra* 3.2.3

obligation to fish in a responsible manner allowing for the effective conservation and management of living aquatic resources and urges states and users of living aquatic resources to conserve aquatic ecosystems. Article 6.2 expressly stipulates that fisheries management measures 'should not only ensure the conservation of target species but also of species belonging to the same ecosystem or associated with or dependent upon the target species'. However, a recent study demonstrated that adherence to the principles of the fisheries code is extremely limited. None of the states concerned fully comply with the code and only nine countries fulfil more than 50% of its requirements. Norway, the United States and Canada achieve the highest scores.⁸²

Based on Article 2 (d) of the code, FAO adopted an International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries, IPOA-SEABIRDS) in 1999.⁸³ This plan, which is also not legally binding, concerns states in whose waters longline fishery is being carried out either by their own or foreign vessels or whose vessels engage in longline fishing in the EEZ of other states or on the high seas. According to the plan, states should assess whether and to what extent problems exist in their fisheries with respect to seabird bycatch and, if such problems do occur, adopt the mitigation measures outlined by the plan (Article 11 ff. IPOA-SEABIRDS). In addition to technical measures these also include the adoption of national seabird action plans. The Best Practice Guidelines adopted by the FAO Committee on Fisheries at its 28th meeting in 2009 now also extend the applicability of the IPOA-Seabirds to trawls and gillnets.

13 EUROPEAN POLICIES AND LEGISLATION

13.1 Overview

In the European Union, the protection of marine species is governed by a number of interrelated and, in some cases, poorly aligned or even conflicting policies. The political framework comprises European environmental policy (in the narrow sense), marine policy, fisheries policy and regional policy as well as their respective implementing legislation.

European Union law consists of so-called primary and secondary law. The former comprises the treaties establishing the European Communities and the European Union, i.e. the Treaty establishing the European Coal and Steel Community, the Treaties of Rome (Euratom Treaty and the Treaty establishing the European Economic Community) and the Maastricht Treaty on European Union and the declarations and protocols annexed to these treaties; the amending treaties (Treaty on the merger of the executive institutions etc., Single European Act, Treaty of Amsterdam, Treaty of Nice and Treaty of Lisbon) and the declarations and protocols annexed to these treaties, as well as the Treaties of Accession of those countries that were not among the founding members of the European Communities. Article 288 of the Treaty on the Functioning of the European Union (TFEU)⁸⁴ lists the following sources of secondary law: regulations, directives, decisions, recommendations and opinions. Regulations are binding in all their parts on the

⁸² cf. Fischereikodex stoppt Plünderung der Meere nicht, in Focus No. 7, 2009

⁸³ www.fao.org/fishery/ipoa-seabirds/2/en

⁸⁴ The Treaty of Lisbon entered into force on 1 December 2009. It amends the former Treaty on European Union and the former Treaty Establishing the European Community (TEC), which has been renamed Treaty on the Functioning of the European Union (TFEU).

Member States and are directly applicable in all Member States. Directives are binding with regard to the aims they seek to achieve, however they are not directly applicable and must be transposed into national law by the Member States within the time frame indicated in the directive. Member States are free to choose the appropriate ways and means of implementing a directive. Decisions are intended to regulate individual cases and are directly applicable to those to whom they are addressed. As indicated by the terms, recommendations and opinions are non-binding. European Commission Communications, which are not mentioned in the TFEU, are primarily used to initiate political discussions. Green Papers by the European Community give a broad overview of potential policies or legislative projects and are intended to stimulate discussions.

There is a clear division of powers between the European Union and its Member States. In accordance with the principle of conferral enshrined in Article 5 (1) and (2) of the Treaty on European Union (TEU), the Union has only those competences that are conferred upon it by the Treaties, while the Member States possess exclusive competence for all other areas. Certain policy areas fall into the exclusive competence of the European Union. Under Article 2 (1) TFEU only the Union may legislate in areas of 'exclusive EU competence', whereas Member States may do so only if empowered by the Union or in order to implement European Union acts. In areas of so-called shared competence, Member States may legislate insofar as European Union legislation does not exist (Article 2 (2) TFEU). Article 5 (3) TEU states that the Union may act 'only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States, either at central level or at regional and local level, but can rather, by reason of the scale or effects of the proposed action, be better achieved at Union level' (principle of subsidiarity). Article 3 TEU lists the areas of exclusive EU competence. These areas include, *inter alia*, the conservation of marine biological resources under the common fisheries policy (Article 3 (1) (d) TEU).⁸⁵

13.2 The Political Framework

13.2.1 European Environmental Policy

13.2.1.1 Introduction

In 1972, the heads of state and government of the European Economic Community decided to establish a European environmental policy. It was not until the adoption of the Single European Act in 1987, however, that a separate title on environmental policy was introduced into the EC Treaty. The Treaty of Maastricht (1992) established environmental protection as a principle of European policy. Following the reforms of Maastricht and Amsterdam (1997), Articles 174 – 176 of the EC Treaty formed the basis of European environmental policy. Following the entry into force of the Treaty of Lisbon on 1 December 2009, the pertinent regulations are now contained in Articles 191 – 193 TFEU. Article 191 (2) TFEU states that the environmental policy of the European Union shall be based on the precautionary principle, on the principle of preventive action, on the principle that environmental damage should be rectified at the source and on the polluter pays principle. Article 3 (3) TEU defines 'a high level of protection and improvement of the quality of the environment' as one of the main aims of the EU. Article 11 TFEU stipulates that 'Environmental protection requirements must be integrated into the definition and

⁸⁵ Cf. *infra*, 4.3

implementation of the Union policies and activities, in particular with a view to promoting sustainable development' (Integration Principle).

The environmental policy priorities of the European Union for the period from 22 July 2002 to 21 July 2012 are defined by the 6th Environmental Action Programme of the European Community (6th EAP).⁸⁶ Nature and biodiversity is one of the four priority areas defined by the 6th EAP. According to Article 2 (2) of the Decision laying down the 6th EAP, the programme aims at 'protecting, conserving, restoring and developing the functioning of natural systems, natural habitats, wild flora and fauna with the aim of halting desertification and the loss of biodiversity, including diversity of genetic resources, both in the European Union and on a global scale'.⁸⁷ The 6th EAP references the Community's biodiversity strategy (cf. *infra* 13.2.1.2.) and the relevant action plans and defines their implementation as a priority action. Articles 3 and 6 contain provisions specifically concerning the protection of the marine environment. Article 3 (10) lists the promotion of 'effective and sustainable use and management of land and sea taking account of environmental concerns' as one of the strategic approaches to meeting environmental objectives. Among the objectives and priority areas for action on nature and biodiversity, Article 6 lists the 'conservation, appropriate restoration and sustainable use of the marine environment, coasts and wetlands'. Article 6 (2) (g) requires the promotion of 'sustainable use of the seas and conservation of marine ecosystems, including sea beds, estuarine and coastal areas, paying special attention to sites holding a high biodiversity value'. The following means of achieving this objective: 'promoting greater integration of environmental considerations in the Common Fisheries Policy,⁸⁸ taking the opportunity of its review in 2002; a thematic strategy for the protection and conservation of the marine environment⁸⁹ taking into account, *inter alia*, the terms and implementation obligations of marine Conventions, and the need to reduce emissions and impacts of sea transport and other sea and landbased activities; promoting integrated management of coastal zones'; further promoting the protection of marine areas, in particular with the Natura 2000 network⁹⁰ as well as by other feasible Community means'.

13.2.1.2 Protection of Biodiversity

13.2.1.2.1 *The EU Biodiversity Strategy*

In 1998, the European Community (EC) adopted a biodiversity strategy aimed at fulfilling its commitments under CBD. The Strategy was based on four main themes corresponding to the four priority areas of the convention. One of these is the conservation and sustainable use of biodiversity. At the Gothenburg European Council, held in 2001, the heads of state and government committed themselves to halting the loss of biodiversity by 2010. Also in 2001, the EU biodiversity strategy was

⁸⁶ Decision no. 1600/2002/EG of the European Parliament and the Council of 22 July 2002, laying down the sixth Community Environment Action Programme.

⁸⁷ Cf. Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions on the sixth environment action programme of the European Community, 'Environment 2010: Our future, Our choice, OJ C 154 E of 29 May 2001, p. 218 ff..

⁸⁸ See *infra* 13.2.3.

⁸⁹ See *infra* 13.2.2.

⁹⁰ See *infra* 13.2.1.

complemented by action plans in the areas of agriculture, development and economic cooperation, conservation of natural resources and fisheries, outlining measures for the implementation of the strategy in the various areas concerned.⁹¹ With the exception of the action plan for agriculture, all plans contain passages that are relevant for the conservation of marine species. The Action Plan for the Conservation of Natural Resources defines the aim of maintaining and restoring, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest and identifies the following actions needed to achieve this: full implementation of the Habitats Directive, as well as the Birds Directive; supporting the establishment of a network of designated areas, particularly the EU Natura 2000 network, and providing adequate financial and technical support for their conservation and sustainable use; development of management plans for selected threatened species and some huntable species. The Action Plan for fisheries identifies measures intended to maintain or restore biodiversity in areas threatened by fisheries or aquaculture. The actions described include measures to reduce the impact of fisheries activities on non-target species and on marine and coastal ecosystems. In 2004, the conference to assess the EC Biodiversity Strategy, held in Malahide, Ireland, adopted a report containing 18 priority targets for fighting the loss of biodiversity.⁹² In 2006 the European Commission published a communication⁹³ noting that problems in conserving key habitats persisted. Among other points, the communication stressed the insufficient coverage of marine areas by Natura 2000 sites. The action plan annexed to the communication therefore sets the objective of conserving and restoring biodiversity and ecosystem services in the wider marine environment of the EU.

Nevertheless, in its 2008 Environment Policy Review, published in June 2009,⁹⁴ the European Commission noted that ‘EU biodiversity continues to be degraded. A 2008 mid-term review of the Biodiversity Action Plan⁹⁵ found that, despite progress, it is highly unlikely that we will achieve the goal to halt biodiversity loss by 2010 with current efforts.’ In 2010, this unfavourable assessment was echoed in a further communication from the Commission, entitled ‘Options for an EU vision and target for biodiversity beyond 2010’.⁹⁶ In May 2011, the Commission adopted a new EU biodiversity strategy to 2020, based on the vision that ‘By 2050, European Union biodiversity and the ecosystem services it provides—its natural capital—are protected, valued and appropriately restored for biodiversity’s intrinsic value and for their essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided’. In the light of the EU’s failure to achieve the 2010 target, this new strategy pushes back the target date for halting the loss of biodiversity by ten years by formulating a so-called ‘2020 headline target’ according to which the loss of biodiversity and the degradation of ecosystem services in the EU should be halted by 2020.⁹⁷

⁹¹ COM/2001/162 final, not published in the OJ.

⁹² ‘Message from Malahide’, http://ec.uropa.eu/environment/nature/biodiversity/policy/pdf/malahide_message_final.pdf

⁹³ COM/2006/216 final.

⁹⁴ COM (2009) 304 final, p. 6.

⁹⁵ Cf. COM (2008) 864 final, p. 12.

⁹⁶ COM (2010) 4 final.

⁹⁷ COM (2011) 244, p. 2.

13.2.1.2.2 *Habitats Directive and Birds Directive*

The Birds Directive⁹⁸ and the Habitats Directive⁹⁹ constitute the 'backbone' of species conservation in the European Union. There is no longer any doubt as to their applicability to the EEZ.¹⁰⁰

Under Article 1 (1), the **Birds Directive** covers the protection, management and control of all species of wild birds naturally occurring in the European territory of the EU Member States and regulates their exploitation. Article 3 obliges the Member States to 'take the requisite measures to preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds referred to in Article 1.' More detailed regulations are contained in Articles 5 – 8 of the Directive. Moreover, Article 4 provides for special habitat conservation measures to safeguard the survival and reproduction of birds covered by Annex I of the Directive and migratory species not mentioned in Annex I but regularly occurring in EU territory. In particular, these measures include classifying the most suitable territories in terms of number and size as Special Protection Areas (SPAs), which must be protected from degradation and in which birds are to be protected from harassment. Furthermore, Article 10 obliges Member States to promote research required as a basis for the protection, management and use of the bird populations covered by Article 1 of the directive. Under Article 12 (1) they are required to submit implementation reports to the European Commission every three years.

Two provisions are of particular importance with regard to the protection measures to be undertaken by Member States. On the one hand, Article 14 authorises them to adopt stricter measures than those provided for under the Directive. On the other hand, Article 9 allows them to derogate from the requirements of the Directive if there is no other satisfactory solution. Among other reasons, Member States may deviate from the standards established by Articles 5 – 8 in the interest of public health and safety, air safety, to prevent serious damage to crops, livestock, forests, fisheries and water and for the protection of flora and fauna (Article 9 (1) (a)).

The **Habitats Directive** extends the scope of species protection in the EU beyond the protection of birds. It covers other species of animals, plants and certain types of habitats in order to safeguard biodiversity by maintaining or restoring a favourable conservation status for natural habitats and species of wild flora and fauna of EU interest (Article 2 Habitats Directive). The Directive is based on a two-tiered approach. Article 3 provides for the establishment of Special Areas of Conservation (SACs) for the habitat types listed in Annex I and the species listed in Annex II. In addition, Article 12 obliges Member States to establish a system of strict protection for the animal species listed in Annex IV (a), irrespective of whether they inhabit a protected area. The grey seal, the harbour seal and the harbour porpoise are listed in Annex II, the harbour porpoise is also covered by Annex IV (a).

⁹⁸ Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds, OJ L 20/7 of 26 January 2010.

⁹⁹ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

¹⁰⁰ Cf. Schwarz p. 6 ff. with further references.

The establishment of SACs is intended to create a coherent European ecological network of Special Areas of Conservation under the title of Natura 2000 (Article 3 (1)). In addition to the protected areas to be established under the Habitats Directive this network also comprises the SPA set up under the Birds Directive. Protected areas under the Habitats Directive are established in accordance with the 3-stage procedure laid down in Article 4. Stage I consists in the selection of suitable sites by each Member State. The list of these sites is transmitted to the European Commission. In stage II the Commission assesses the proposed sites and draws up a list of sites of Community importance (SCI). If the Commission feels that the coverage of a certain region is insufficient it can instruct the Member State concerned to propose further sites. Once a site has been adopted as an SCI by the Commission, the Member State is obliged to designate that site as a special area of conservation as soon as possible and within six years at most and ensure appropriate protection of the site. The timeline for designating the sites provided for in the directive (finalisation of lists of proposals by Member States by 1995, finalisation of list of SCIs by the Commission by 1998¹⁰¹) was, however, not met.

With respect to the SACs, the Habitats Directive lays down a number of obligations for Member States. Article 6 is of central importance. It defines the framework for the protection and conservation of the areas concerned (Article 6 (1)), requirements for the prevention of deterioration of the areas and the species occurring in those areas (Article 6 (2)) and procedural rules for plans and projects. Article 6 is also relevant with regard to the Birds Directive. To some extent the two directives are consistent with each other and interlinked. According to Article 3 (1) of the Habitats Directive the SPAs designated under the Birds Directive are considered part of the Natura 2000 network. Pursuant to Article 7 of the Habitats Directive, Article 6 (2) to (4) is also applicable to SPAs. Article 6 (1) of the Habitats Directive corresponds to Article 3 of the Birds Directive, according to which 'Member States shall take the requisite measures to preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds referred to in Article 1'. Although management plans are not explicitly mentioned in the Birds Directive, they are also among the measures concerned. Insofar as the areas of an SAC and an SPA are wholly or partially identical it is sufficient to develop one single integrated management plan for both areas.¹⁰²

Under Article 6 (1) of the Habitats Directive, Member States are obliged to take the necessary conservation measures for the SPAs. These measures are geared to achieving the directive's overall aim, i.e. safeguarding biodiversity by establishing a favourable conservation status for the natural habitats and wild plant and animal species in the territory of the Member States. The term favourable conservation status (regarding a natural habitat or a species) is defined in Article 1 (e) respectively 1 (i) of the Habitats Directive.

The measures provided for in Article 6 (1) of the Habitats Directive include the development of management plans (either specifically for the SACs or in the framework of other development plans), as well as statutory, administrative and contractual measures. It should be noted that there is no formal obligation to establish management plans, which should be developed 'if need be'. By contrast, statutory, administrative and contractual measures are obligatory even in those

¹⁰¹ Cf. Article 4 (1) and (3) of the directive.

¹⁰² Cf. Ellwanger/Schröder/Ssymank, p. 10, p. 12.

cases where the Member State does not see the need for a management plan. It is left to the Member State's discretion whether it wants to apply all or only some of these measures to a given area and whether it wants to develop a management plan. Member States are, however, obliged to implement at least one type of measures. There is no hierarchy between the three categories of measures.¹⁰³ However, while there is no legal obligation to establish management plans, conservation experts consider it recommendable to do so in a number of cases:

- '...for areas comprising habitat types and/or species with an unfavourable conservation status;
- for areas comprising habitat types and/or species whose populations are likely to be unstable in the long term,
- in case of conflicting conservation objectives for one and the same area,
- for areas located in catchment areas for which management plans are required under the Water Framework Directive;
- if ongoing or foreseeable projects could have detrimental effects on an area;
- for areas which have already been negatively impacted and therefore require measures to ensure a favourable conservation status;
- for areas close to national or international borders if management plans have been established for the contiguous areas of the respective neighbouring state or states.¹⁰⁴

It has been argued that '...for the majority of Natura 2000 areas the establishment of management plans is recommendable. In case of limited financial and human resources, clear priorities should be set in doing so.'¹⁰⁵

Article 6 obliges Member States to 'take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated'. This provision is based on the precautionary principle and obliges Member States to continuously take the appropriate measures. 'It can concern past, present or future activities or events (for instance, in the case of a toxic spill affecting a wetland, this article would mean that all preventive measures should have been taken to avoid the spillage, even if its location is distant from the wetland). If an already existing activity in an SAC causes deterioration of natural habitats or disturbance of species for which the area has been designated, it must be covered by the necessary conservation measures foreseen in Article 6(1). This may require, if appropriate, that the negative impact is brought to an end either by stopping the activity or by taking mitigating measures. This can include economic compensation'.¹⁰⁶ This provision applies not only to intentional acts but also to chance events. Deterioration is absolutely

¹⁰³ Cf. EU Commission, Managing NATURA 2000 Sites, pp. 20 f.

¹⁰⁴ Cf. Ellwanger/Schröder/Ssymank, p. 12 f. (author's translation).

¹⁰⁵ Cf. Ellwanger/Schröder/Ssymak, p. 12 f. (author's translation).

¹⁰⁶ Cf. EU Commission, Managing NATURA 2000 Sites, p. 24. More in depth: Gellermann/Stoll/Schwarz/Wolf, p. 52 ff.

prohibited.¹⁰⁷ However, while deterioration must be prevented under any circumstances and irrespective of its gravity, this applies to disturbances only if they could jeopardise the aim of the directive. It is important to note that the measures concerned must be aimed at preventing a deterioration of or disturbance in a protected area but do not necessarily have to be taken in the SAC. Rather, it may be necessary to adopt measures outside of an SAC if external factors could result in deterioration or disturbance in that SAC.¹⁰⁸

Article 6 (3) of the Habitats Directive provides for environmental impact assessments for all plans and projects that could negatively affect a protected area. In principle, national authorities may agree to the plan or project only if it has been ascertained that it will not adversely affect the site. Exceptionally, however, a plan or project may be authorized despite a negative environmental impact assessment for ‘imperative reasons of overriding public interest’ (Article 6 (4)) if no alternative exists. In this case ‘the Member State concerned shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected’. Article 6 explicitly lists reasons of a social or economic nature among the possible imperative reasons. However, there is a seeming exception to this exception insofar as a priority habitat or a priority species—such as the grey seal, the harbour seal or the harbour porpoise—is concerned. In this case, Article 6 (4) stipulates that ‘the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.’ Needless to say, the catch-all clause ‘other imperative reasons of overriding public interest’ is open to very ‘flexible’ interpretation.

The creation of protected areas is one facet of protection under the Habitats Directive. The second aspect is the establishment of a system of strict protection for the animal species listed in Annex IV (a), which include all species of cetaceans. In addition to all forms of deliberate capture or killing the directive also prohibits any deliberate disturbance and the deterioration or destruction of breeding sites or resting places of the species concerned (Article 12 (1)). Moreover, under Article 12 (4), Member States are obliged to establish a system to monitor the incidental capture and killing of the animal species listed in Annex IV (a). This implies an obligation to regularly monitor and record marine mammal bycatch.

Article 16 of the directive contains a number of exceptions to the prohibitions laid down in Article 12 (1) and (2). Notably this concerns Article 16 (1) (c) which largely reflects the elements of Article 6 (1) (c), in particular with regard to derogations ‘in the interests of public health and public safety, or for other imperative reasons of overriding public interest’. However, Article 15 defines a clear limit as it prohibits the use of all indiscriminate means capable of causing local disappearance of, or serious disturbance to, populations of such species’ even in case of derogations in accordance with Article 16. In particular, Article 15 (a) refers to the means of capture and killing listed in Annex VI of the directive, which include ‘nets which are non-selective according to their principle or their conditions of use’.

¹⁰⁷ Cf. EU Commission, *Managing NATURA 2000 Sites*, p. 24. More in depth: Gellermann/Stoll/Schwarz/Wolf, p. 49 with further references.

¹⁰⁸ Cf. EU Commission, *Managing NATURA 2000 Sites*, p. 24. More in depth: Gellermann/Stoll/Schwarz/Wolf, p. 49, Footnote No. 121 with further references.

The Habitats Directive also obliges Member States to monitor the conservation status of the natural habitats and species referred to in Article 2 of the directive with particular regard to priority natural habitat types and priority species.’ (Article 11). Pursuant to Article 17 of the directive, Member States are obliged to report on implementation measures every six years.

13.2.2 European Marine Environmental Policy¹⁰⁹

According to the European Commission, the Marine Strategy Framework Directive adopted in June 2008¹¹⁰ ‘provides the basis for achieving good environmental status in the marine environment and improved conservation status for the EU’s marine biodiversity’¹¹¹. It is now largely up to the Member States to implement the strategy.

The Marine Strategy is based on Sixth Community Environment Action Programme (6th EAP). Article 6 (2) (g) of Decision No. 1600/2002/EC, which lays down the Sixth Community Environment Action Programme, demands the development of a thematic strategy for the protection and conservation of the marine environment taking into account, *inter alia*, the terms and implementation obligations of marine Conventions, and the need to reduce emissions and impacts of sea transport and other sea and land-based activities’. This was based on the realisation that the state of the European marine environment was continuing to deteriorate while the institutional framework and the knowledge in Europe were insufficient to meet this challenge.¹¹² Article 1 (1) states that the Directive ‘establishes a framework within which Member States shall take the necessary measures to achieve or maintain good environmental status in the marine environment by the year 2020 at the latest.’ The Directive subdivides European seas into four marine regions: the Baltic Sea, the North-East Atlantic Ocean, the Mediterranean Sea, and the Black Sea (Article 4 (1) (a)). A definition of good environmental status in the marine environment is contained in Article 3 (5). Article 3 (5) (a) explicitly states that good environmental status requires that ‘marine species and habitats are protected, human-induced decline of biodiversity is prevented and diverse biological components function in balance’. Under Article 3 (1) (a), the Directive is applicable to those marine areas where a Member State ‘has and/or exercises jurisdictional rights, in accordance with the UNCLOS’, i.e. in internal waters, the territorial sea and the EEZ.

In order to achieve a good status in the marine environment by 2020, the Directive obliges Member States to enact a number of measures. Under Article 5 (1), each Member State is to develop a marine strategy for its marine waters. This strategy must be implemented in accordance with the timelines set out in Article 5 (2) (a) and (b). Article 26 requires Member States to transpose the Directive into national law by 15 July 2010 at the latest. During the preparatory phase described in Article 5 (2) (a),

¹⁰⁹ Unless otherwise indicated, the provisions cited in this section refer to the Marine Strategy Framework Directive.

¹¹⁰ Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), OJ L 164 of 25 June 2008, p. 19.

¹¹¹ Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions – A Mid-Term Assessment of Implementing the EC Biodiversity Action Plan, COM/2008/864 fin., p. 5.

¹¹² Cf. Communication from the Commission to the Council and the European Parliament – Thematic Strategy on the Protection and Conservation of the Marine Environment COM (2005) 504 fin, p. 5.

Member States have to take the following steps by 15 July 2012: undertake an initial assessment of the current environmental status of their waters in accordance with Article 11 (1), define good environmental status for those waters in accordance with Article 9 (1), and establish environmental targets and associated indicators in accordance with Article 10 (1). By 15 July 2014 they are obliged to set up a monitoring programme for the ongoing assessment and regular updating of the environmental targets in accordance with Article 11 (1) and a programme of measures for the achievement of these aims must be developed by 2015 and operational by 2016 (Article 5 (2) (b)). It should be noted that according to Article 6 Member States are to use existing regional institutional cooperation structures, including regional seas conventions to achieve the aims of the Directive. This establishes a potential interface between European legislation and instruments of international law, opening options for Member States to take concrete measures to protect certain species and habitats.

The European Commission Greenbook on Reform of the Common Fisheries Policy (CFP) underscores the need to integrate the CFP with the EU's broader maritime policy. The paper explicitly states: 'An ecosystem approach to marine management, covering all sectors, is being implemented through the Marine Strategy Framework Directive... The future CFP must be set up to provide the right instruments to support this ecosystem approach. This is also in the interest of the fishing sector because this approach will address the impacts of other sectors on fisheries resources in a proportionate and coherent way.'¹¹³ It is therefore essential to ensure that this European Commission position will not be watered down in the future CFP and that it is reflected and enshrined in the relevant future legislation.

13.2.3 The EU Common Fisheries Policy

Bycatch poses a threat to biodiversity. Consequently, legislation and organisations aimed at protecting biodiversity are relevant in this context. The root cause of the problem, however, is fishing and fisheries-related measures are therefore required to address this issue. The EU Common Fisheries Policy is vitally important in this context.

Following the entry into force of the Treaty of Lisbon, the regulations governing the Common Agricultural Policy (CAP) and the Common Fisheries Policy are found in Articles 38 – 43 TFEU. For the first time, Title III TFEU (ex Title II TEC) now explicitly refers to fisheries and Article 38 (1) TFEU now contains the following introductory passage: 'The Union shall define and implement a common agriculture and fisheries policy.'¹¹⁴

First steps towards a CFP were taken in 1970 when a common organisation of the market and structural policy for the fisheries sector was established. Fishermen from all coastal states were granted equal access to the waters of all other Member States, with the exception of a narrow coastal strip, which was reserved for the local fishermen of the respective coastal state.¹¹⁵ The measures were initially intended to

¹¹³ COM/2009/ 163 Final p. 19.

¹¹⁴ Originally, the CFP was based on the provisions governing the Common Agricultural Policy, i.e. Articles 38-43 of the Treaty of Rome, Articles 32-38 of the TEC as amended by the Treaty of Amsterdam.

¹¹⁵ 3 nautical miles from the baseline, cf. Article 4 of Regulation (EEC) 2141/70 of the Council of 20 October 1970 laying down a common structural policy for the fishing industry.

prevent fishing-related conflicts between Member States. In the course of the accession of Denmark, Ireland and the UK in 1973, Member States agreed to place the conservation and management of their fishery resources and the representation of their related interests in the hands of the European Community, to which they transferred the competency for fisheries policy. After many years of negotiations, Regulation (EEC) 170/83 establishing a Community system for the conservation and management of fishery resources was adopted in 1983. The Regulation confirmed the right to an EEZ of 200 NM, and introduced the principle of relative stability, Total Allowable Catch (TAC) and fishing quotas.

The first review of the CFP took place in 1992. Regulation 3760/92,¹¹⁶ which replaced the old Regulation 170/83, expressly noted that despite the measures taken in the framework of the CFP a number of stocks both in Community and non-Community waters had continued to decline and Article 2 (1) consequently defined the general aim of the CFP as follows: 'To protect and conserve available and accessible living marine aquatic resources, and to provide for rational and responsible exploitation on a sustainable basis, in appropriate economic and social conditions for the sector, taking account of its implications for the marine eco-system, and in particular taking account of the needs of both producers and consumers'. Among other things, the new regulation introduced the concept of fishing effort¹¹⁷ (with a view to reestablishing and maintaining a balance between fish stocks and fishing activities) and introduced a licencing system.

In its 2001 Green Paper on the Future of the Common Fisheries Policy, the Commission clearly acknowledged that despite the 1992 review the CFP was not a full success and once again in need of reform.¹¹⁸ Thus, the paper stated 'The CFP has still much to do to integrate the environmental dimension into policymaking...The CFP has not managed to sufficiently integrate the environmental problems into all management considerations in a proactive manner. The problem has been exacerbated by a lack or insufficiency of knowledge about the functioning of marine ecosystems and the side-effects of fishing.'¹¹⁹

In its Communication setting out a Community Action Plan to integrate environmental protection requirements into the Common Fisheries Policy (2002),¹²⁰ the Commission lists a number of priority measures, including improving fishing methods with a view to reducing discards, incidental bycatch and impact on habitats, and explicitly refers to the protection of cetaceans and sea birds in this context. Consequently, the following, further reform led to a further 'greening' of the CFP. According to Article 2 (1) of the relevant Regulation 2371/2002,¹²¹ adopted in December 2002, the CFP

¹¹⁶ Council Regulation (EEC) No 3760/92 of 20 December 1992 establishing a Community system for fisheries and aquaculture, OJ L389 of 31 December 1992, pp. 1 ff.

¹¹⁷ Article 3 (f) defines fishing effort as follows: "Fishing effort` of a vessel is the product of its capacity and its activity, and fishing effort of a fleet or group of vessels is the sum of the fishing effort of each individual vessel."

¹¹⁸ COM/2001/135 final.

¹¹⁹ Ibid., p. 9.

¹²⁰ COM/2002/186 final.

¹²¹ Council Regulation (EC) No 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy, OJ L 358 of 31 December 2002, pp. 59 ff.

aims to ensure a sustainable exploitation of aquatic resources, based on the precautionary principle. Moreover, Article 2 (2) (d) lists consistency with other Community policies as one of the guiding principles of the CFP, explicitly citing environmental policy. To date, however, true consistency between the two policy sectors has yet to be achieved. The Regulation establishes a longer-term fisheries management and enhances stakeholder involvement by creating the Regional Advisory Councils (RACs). The 2002 reform established the framework for the CFP up to a further review, scheduled to take place before the end of 2012 (cf. Article 35).

Regulation 2371/2002 provides for a number of measures to achieve its aims. Article 4 lists measures such as adopting recovery plans and management plans, establishing targets for the sustainable exploitation of stocks, limiting catches regulating the number and type of authorised fishing vessels, limiting fishing effort and adopting technical measures. These measures can include regulations on the structure and use of fishing gear, zones and/or periods in which fishing activities are prohibited or restricted and specific measures to reduce the impact of fishing activities on marine ecosystems and non target species. Moreover, the Regulation provides for emergency measures by the Commission in the event that 'there is evidence of a serious threat to the conservation of living aquatic resources, or to the marine eco-system resulting from fishing activities and requiring immediate action'. The duration of such measures is limited to six months, with the possibility of extension by a further six months (Article 7 (1)). Member States may take emergency measures, the duration of which may not exceed three months (Article 8 (1)). Needless to say, the limitation of such measures to 'serious threats requiring immediate action' places serious constraints on the Commission or Member States wishing to enact such measures. Moreover, the six-month limit is hardly conducive to long-term protection of the habitats concerned and the species occurring there.

In accordance with the priority measures outlined in the Communication setting out a Community Action Plan to integrate environmental protection requirements into the Common Fisheries Policy, bycatch reduction was addressed in the framework of the 2002 CFP reform. Regulation 812/2004 laying down measures concerning incidental catches of cetaceans in fisheries was adopted in April 2004.¹²² The Regulation provides for three types of measures to achieve its objective: banning of driftnets in the Baltic Sea, use of acoustic deterrents ('pingers') and a monitoring programme. Member States are obliged to deliver annual reports on pinger use and implementation of the monitoring programme to the Commission. The annual reports must include estimates of overall cetacean bycatch in fisheries (Article 6).

The Regulation stipulates that driftnets had to be phased out step by step starting in 2005, with a total ban taking effect on 1 January 2008 (Article 9 (2) and (3)).¹²³ The definition of drift nets proved problematic however, as it did not cover the semi-drift nets used especially in the central Baltic Sea. This problem was addressed by

¹²² Council Regulation (EC) No 812/2004 of 26.4.2004 laying down measures concerning incidental catches of cetaceans in fisheries and amending Regulation (EC) No 88/98, OJ L 150 of 30 April 2004, pp. 12 ff.

¹²³ Council Regulation (EC) No 2187/2005 of 21 December 2005 for the conservation of fishery resources through technical measures in the Baltic Sea, the Belts and the Sound, amending Regulation (EC) No 1434/98 and repealing Regulation (EC) No 88/98, OJ L 349 of 31 December 2005, p. 1 led to a number of changes concerning the timeline though not the date of entry into force of the driftnet ban.

Regulation 809/2007,¹²⁴ which introduced the following definition into Regulations 894/97, 812/2009 and 2187/2005: “Drift net” means: any gillnet held on the sea surface or at a certain distance below it by floating devices, drifting with the current, either independently or with the boat to which it may be attached. It may be equipped with devices aiming to stabilise the net or to limit its drift’.

Article 2 of the regulation concerns the use of acoustic deterrent devices for harbour porpoises. The use of these ‘pingers’ is compulsory for vessels of 12 m or more in overall length using the fishing gear defined in Annex I of the Regulation and fishing in the areas, for the periods, and as from the dates indicated in the Annex (Article 2 (1)). The effect of Regulation 812/2004 is greatly diminished by the size limit it contains since only a small portion of fishing vessels operating in the Baltic sea exceeds the length of 12 m. While Annex I defines the starting dates for compulsory pinger use, it contains no indication as to the duration and possible end of these measures. There is, therefore, a significant discrepancy between the regulation and the ASCOBANS Jastarnia Plan, which limits the use of pingers to three years.

Regulation 812/2004 imposes a number of research, monitoring and reporting duties on Member States. Under Article 2 (4) they are required to conduct scientific studies or pilot projects to monitor and assess the effects of pinger use over time in the fisheries and areas concerned. Article 4 (1), moreover, stipulates that Member States ‘shall design and implement monitoring schemes for incidental catches of cetaceans using observers on board the vessels flying their flag and with an overall length of 15 m or over, for the fisheries and under the conditions defined in Annex III. The monitoring schemes shall be designed to provide representative data of the fisheries concerned’. The size limit is, however, problematic for similar reasons as the 12 m limit for pinger use. For vessels under 15 m in length, member states are obliged to collect scientific data on bycatch by means of scientific studies or pilot projects (Article 4 (2)). Article 5 (2) and (3) of the Regulation define the tasks and required qualifications of observers, who must be ‘independent, properly qualified and experienced’. Their task consists in monitoring cetacean bycatch, collecting the data necessary to extrapolate the bycatch observed to the whole fishery concerned and transmitting these data to the flag Member State of the respective vessel. Under Article 6, flag Member States are required to submit a comprehensive annual report on the implementation of the Regulation.

It is worthy of notice that a more recent piece of relevant EU legislation, Regulation 199/2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy,¹²⁵ passed in 2008, does not contain a size limit for the vessels subjected to observer schemes. Article 11 of Regulation 199/2008 obliges Member States to implement at-sea monitoring of recreational fisheries ‘where necessary’ and irrespective of the size of the vessels concerned.

It seems clear that the obligations laid down in Regulation 812/2004 will not suffice to put an end to bycatch. The fact that Member States are failing to fully meet even these obligations is, moreover, exacerbating the problem. The European Commission is aware of and has repeatedly acknowledged the insufficient

¹²⁴ Council Regulation (EC) No 809/2007 of 28 June 2007 amending Regulations (EC) No 894/97, (EC) No 812/2004 and (EC) No 2187/2005 as concerns drift nets, OJ L 182/1 of 12 July 2007.

¹²⁵ Council Regulation (EC) No 199/2008 of 25 February 2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy OJ L 60/1 of 5 March 2008.

implementation of this regulation. In its 2009 report on implementation of the regulation, the Commission stated: 'It has become evident to the Commission that most Member States appear to have difficulties with the implementation of (EC) Regulation 812/2004...The reporting on the measures implemented under (EC) Regulation 812/2004 shows that only a few Member States are making sufficient efforts to enforce this Regulation. It is clear that its implementation requires a great commitment and effort from Member States, and most of them have not been able to comply with it... The Commission can conclude that the reduction of cetacean-fisheries conflicts is still in an early stage of commitment.'¹²⁶ In its most recent Communication on the same subject, the Commission notes: 'The Regulation has been in place for 6 years, and despite...improvements it is still not fully meeting its objective of preventing the accidental capture of cetaceans in fishing gears'. The Commission goes on to suggest that monitoring and mitigation should be targeted in the areas and for the species most threatened and this could possibly be achieved by incorporating mitigation and monitoring efforts into the new technical measures framework, respectively the data collection framework (DCF) to be developed as part of the reform of the Common Fisheries Policy, thus allowing Regulation 812/2004 to be repealed.¹²⁷

Finally, it should be noted that despite the positive example set by FAO in 1999¹²⁸ and repeated appeals from various quarters to develop a European Action Plan for reducing seabird bycatch, no such action plan is in place to date. The Commission did, however, request an assessment of the situation in EU waters from the International Council for the Exploration of the Sea (ICES) and initiate a consultation procedure with stakeholders and the general public in mid-2010. In October 2011, Lowri Evans, Director General of the European Commissions Directorate-General for Maritime Affairs, announced that the Commission was planning to adopt the European Seabird Action Plan (NPOA-Seabirds) by the end of 2011.

Meanwhile, the renewed reform of the CFP provided for in Regulation 2371/2002 is in full swing. The process kicked off at an informal Ministerial Conference held in Brussels on 29 September 2008. At this meeting, the European Commission presented a working paper on CFP¹²⁹ reform that clearly reflected the shortcomings of the present CFP and identifies necessary action in the course of a CFP reform. In April 2009, the Commission presented a Green Paper on Reform of the Common Fisheries Policy,¹³⁰ which explicitly states: 'However, the objectives agreed in 2002 to achieve sustainable fisheries have not been met overall.'¹³¹

¹²⁶ Communication COM (2009) final, from the Commission to the European Parliament and the Council Cetacean incidental catches in Fisheries: Report on the implementation of certain provisions of Council Regulation (EC) No 812/2004 and on a scientific assessment of the effects of using in particular gillnets, trammel nets and entangling nets on cetaceans in the Baltic Sea as requested through Council Regulation (EC) No 2187/2005, pp. 4, 5.

¹²⁷ Communication COM (2001) 598 fin from the Commission to the European Parliament and the Council on the implementation of certain provisions of Council Regulation (EC) No 812/2004 laying down measures concerning incidental catches of cetaceans in fisheries and amending Regulation (EC) No 88/98, p. 9.

¹²⁸ Cf. *supra* 12.7.

¹²⁹ Download: http://ec.europa.eu/fisheries/publications/factsheets/legal_texts/reflection_cfp_08_en.pdf

¹³⁰ COM/2009/163 final, cf. *supra* footnote 30.

¹³¹ *Ibid.* p. 7.

Reinhard Priebe, formerly Director, Conservation Policy in the European Commission's Directorate General Maritime Affairs and Fisheries chooses slightly more drastic wording. Priebe attributes the fact that fish stocks failed to recover despite previous reforms of the CFP to a lack of political will, insufficient implementation and outdated political management and notes: 'Cynics might say that it will take a catastrophe to actually bring about change.'¹³² The Commission strikes a more positive note and develops a vision for the future: 'The above vision for the future is a far cry from the current reality of overfishing, fleet overcapacity, heavy subsidies, low economic resilience and decline in the volume of fish caught by European fishermen. The current CFP has not worked well enough to prevent those problems.'¹³³ The Green Paper therefore develops a package of measures which the Commission feels would help achieve the aims of a reformed CFP. These include addressing the overcapacity in the European fishing fleet, a stronger orientation of the CFP towards healthy, sustainable and economically viable fish stocks, improvements in fisheries management, increased involvement of the fishery sector in the implementation of the CFP, the development of a culture of compliance, and greater coherence between the CFP and other EU policies. The Green Paper served as the basis for public consultation by the Commission, the results of which were summarized in a synthesis report on CFP reform consultation published in April 2010. In July 2011, the European Commission put forward legislative proposals for a new Regulation on CFP and a new Market Policy, a Communication on the external dimension of the CFP, and a Communication explaining the links between the legislative proposals. Conclusion of the legislative process and entry into force of the new CFP is envisioned for 1 January 2013..

13.2.4 Regional Policy

The EU also seeks to address the issue of bycatch mitigation in the framework of its regional policy for the Baltic Sea area. On 10 June 2009, following an invitation by the European Council in 2007 and an online consultation in 2008, the European Commission presented a European Union Strategy for the Baltic Sea region. The Strategy was adopted by the Council in October 2009. It consists of a Communication, an Action Plan and a Working Document of the European Commission outlining the background, approach and the content of the strategy.¹³⁴ The objectives of the Strategy are to enable a sustainable environment, to enhance the prosperity of the region, to increase its accessibility and attractiveness and to ensure safety and security in the region. The Strategy unequivocally states that the environment is foremost among the four key challenges identified for the region. The Action Plan proposes numerous actions aimed at bringing the strategy to life. One of the the environmental aims of the Action Plan is to preserve natural zones and biodiversity, including fisheries and one of the strategic actions the Plan lists in this context is to reduce the negative effects of fishing on the Baltic ecosystem. The Action Plan opens the door to action at the Member State level by stating, 'In addition to implementing regulations and measures taken at EU level to minimise the impacts

¹³² Priebe, pp. 15, 16 (authors' translation).

¹³³ COM/2009/163 final, p. 5.

¹³⁴ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions concerning the European Union Strategy for the Baltic Sea Region, COM/2009/248 final. Action Plan: SEC (2009) 712.

of fishing activities on marine ecosystems, such as the Pingers Regulation and certain technical measures, Member States can adopt national measures to minimise the effect of fishing on the marine ecosystems within their territorial waters and for fishing vessels flying their flag in line with, or more stringent than the existing Community legislation. This should be especially stressed for the protection of the critically endangered Baltic harbour porpoise population.¹³⁵

14 NATIONAL IMPLEMENTATION OF EUROPEAN LAW

According to Article 3 (1) (d) TFEU, the EU has the exclusive competence for the conservation of marine biological resources under the CFP. This raises the question as to whether and to what extent EU law allows national legislators to regulate and possibly restrict fisheries within their waters. In this context, it should be noted that EU fisheries legislation applies to commercial fisheries only and does not cover recreational fisheries. Member States therefore have full authority to enact legislation restricting recreational fisheries.¹³⁶ This is relevant, given the acknowledged contribution of recreational fisheries to bycatch in the Baltic Sea region. Thus, with regard to bycatches of seabirds, the Baltic Sea RAC recently stated: ‘All efforts must be taken to ensure that recreational fishing is also included in assessments and naturally also targeted for actions. This is particularly important in the Baltic Sea since the recreational (simply defined as everything outside commercial, licensed fishing) fishing is widespread and occurs in shallow coastal areas, constituting important feeding grounds, and in areas with seasonal bird concentrations.’¹³⁷

As stated above,¹³⁸ under Article 17 (2) of Regulation 2371/2002, Member States can regulate fisheries in their coastal waters (i.e. the waters up to 12 NM from baselines under their sovereignty or jurisdiction) and restrict fishing to their own vessels and those of neighbouring Member States traditionally fishing in the waters concerned.¹³⁹ In waters under their sovereignty or jurisdiction, Member States may, furthermore, take emergency measures lasting up to three months in case of serious and unforeseen threats to the conservation of living aquatic resources, or to the marine ecosystem resulting from fishing activities if any undue delay would result in damage that would be difficult to repair. Obviously, short-term measures of this sort can only have a limited effect. However, in light of the exclusive competence of the EU for fisheries policy, there is a widespread view that European fisheries law prevents national legislators from taking more far-reaching, long-term measures.¹⁴⁰ According to this opinion, the competence for the establishment of marine Natura 2000 sites rests with the Member States, whereas the EU alone is allowed to restrict fisheries to

¹³⁵ SEC (2009) 712, p. 13.

¹³⁶ Cf. Weiß, p. 59; Gellermann/Stoll/Schwarz/Wolf, p. 62.

¹³⁷ Baltic Sea RAC response to the Commission consultation paper on an EU Action Plan for Reducing Incidental Catches of Seabirds in Fishing Gears, p. 2 (http://ec.europa.eu/fisheries/partners/consultations/seabirds/contributions/baltic_sea_regional_advisory_council_en.pdf).

¹³⁸ 13.2.2.

¹³⁹ Cf. also Castringius, p. 266 f.

¹⁴⁰ Cf. E.g. Hix in: Schwarze, EU-Kommentar, Article 37 EGV, Marginal no. 25 with further references. See further references in Gellermann/Stoll/Schwarz/Wolf, *loco citato*, p. 62, fn. 146, 147.

ensure adequate protection of species and habitats within these areas. This is the position the European Commission adheres to.¹⁴¹

This opinion is, however, not uncontested. Some authors voice fundamental doubts as to the exclusive EU competence as such, assuming instead a 'limited shared competence'.¹⁴² According to this view, the Union's exclusive competence extends only to measures aimed at conserving marine resources and therefore concerns fishery conservation measures but not activities under Art 6 (2) of the Habitats Directive, since the focus of that provision is on nature conservation. Consequently, Member States would only be barred from taking such measures insofar as the EU had fully exercised its shared competence. According to the proponents of this position, this is, however, not the case, since certain provisions of secondary law, such as Art 8 (1) of Regulation 2371/2002 or, indeed, Article 6 (2) of the Habitats Directive, explicitly authorise Member States to take action. They argue that the latter provision actually obliges Member States to protect the species or habitats concerned against deterioration and, by extension, to take action to prevent fishery-induced damage.¹⁴³

Other authors¹⁴⁴ take a different approach and assume that while the Union possesses exclusive competence for fisheries policy, this does not preclude Member States from adopting fisheries-related conservation measures. Citing the integration principle enshrined in Article 11 TFEU, according to which environmental protection requirements must be integrated into the definition and implementation of the Union's policies and activities, these authors argue that environmental concerns must be taken into account in the framework of the CFP and related measures must be considered part and parcel of an increasingly green CFP itself.¹⁴⁵ They also maintain, however, that the integration principle must not be used to undermine the principle of conferral of competences (according to which the Union can only act within the limits of the competences conferred on it). Accordingly, the EU cannot simply base all environment-related legislative acts on the respective policy area in conjunction with Article 11 TFEU. Rather, the legal basis for environmental policy and environmental protection measures is to be found in Articles 191 ff. TFEU. In accordance with a consistent line of European Court of Justice (ECJ) case law, the legal basis for measures relating to more than one policy area must be selected based on the main focus of the measures, which can be deduced from their content and objective. In case of multiple objectives, the legal basis is determined by the predominant objective. Even if they imply restricting fisheries, measures taken to implement the Birds or Habitats Directives are predominantly environmental policy-related. The Directives were based on Article 130s TEC (now Article 192 TFEU). Therefore, the proponents of this view argue that exclusive competence for such regulations rests with the Member States, irrespective of the fact that they may contain provisions

¹⁴¹ Cf. Communication from the Commission to the Council and the European Parliament - Elements of a Strategy for the Integration of Environmental Protection Requirements into the Common Fisheries, COM/2001/143 final.

¹⁴² Schwarz pp. 16 ff., cf also Gellermann/Stoll/Schwarz/Wolf, p. 63 f.; cf. Kopp in Streinz, Marginal no. 21f., cf. Geiger, Marginal no. 8.

¹⁴³ Gellermann/Stoll/Schwarz/Wolf, p. 64 f.; cf. Schwarz, pp. 22 ff.

¹⁴⁴ Cf. E.g. Castringius, S. 267ff.; cf. also Gellermann/Stoll/Schwarz/Wolf, pp. 65 ff, cf. Also Owen in Ritterhoff/Gubbay/Zucco (Eds.), Marine Protected Areas and Fisheries, p. 61, pp. 63ff.

¹⁴⁵ Gellermann/Stoll/Schwarz/Wolf, p. 66.

regulating fisheries. It is also argued that it would run counter to the intention behind Article 11 TFEU—aimed at strengthening environmental protection by ensuring that environmental considerations are duly taken into account in other policy areas—to curtail the competence of Member States in environmental policy. Consequently, it would not make sense if the extension of EU competency to cover an interface between fishery policy and environmental policy were to prevent Member States from adopting their own—possibly more far-reaching—environment-related regulations.¹⁴⁶

Regardless of which of the two interpretations outlined above the reader chooses to follow, it appears clear that in the present context Member States do have some leeway to adopt fisheries-related legislation and restrict fisheries.

15 RECOMMENDATIONS FOR ACTION

In light of the legal and institutional situation described above, NGOs can pursue a variety of options in seeking to mitigate bycatch in the Baltic Sea, with varying prospects of success.

With regard to the instruments of international law described above it should be noted that while the conventions and agreements themselves are legally binding their decisions and resolutions merely constitute 'soft law'¹⁴⁷. This does not render them irrelevant. Rather, they are 'legally relevant without creating legal rights and obligations'.¹⁴⁸ They concretise legal norms and contribute to their further development. They are politically, though not legally binding and states adopting them must expect to be reminded of their moral obligation to implement their own decisions. Also, decisions adopted in the framework of multilateral environmental agreements may be a first step in the creation of customary international law or lay the groundwork for future legally binding acts. NGOs should therefore seek to leverage their full potential to influence the decision-making processes of multilateral environmental agreements and to monitor the implementation of the decisions adopted. This can be achieved indirectly by lobbying the respective national authorities. In addition, some multilateral agreements allow NGOs to participate directly in the meetings of their decision-making bodies. While NGOs are only granted observer status and therefore do not have the right to vote, these meetings provide a platform where civil society representatives can interact directly with government delegates, push for the necessary protection measures and, to a certain extent, mobilise public opinion.

However, the vital importance of European law and EU processes for nature conservation in the Baltic Sea region also necessitates action on the part of NGOs to influence relevant developments at the EU level. A case in point is the ongoing reform of the Common Fisheries Policy which must lead to a further greening of the CFP and effective measures to mitigate the negative environmental impact of fisheries. Stronger controls and more effective enforcement of environmental requirements in the framework of the future CFP must also be ensured. NGO initiatives should target both the European institutions and the competent national authorities. Moreover, NGOs should continue to approach Members of the European Parliament through their offices in Brussels and make them aware of the inconsistencies between nature conservation and fisheries policy at the EU level.

¹⁴⁶ Vgl. Gellermann/Stoll/Schwarz/Wolf, pp. 66 ff.; Schwarz, p. 12 ff.

¹⁴⁷ Cf. *Supra*, Fn. 79.

¹⁴⁸ Herdegen, § 2.1, marginal no. 4 (author's translation).

Due account must be taken of the Birds and Habitats Directives and contradictions need to be resolved.

Finally, NGOs need to work towards radical conservation measures at the national level. This can imply activities based strictly on national law as well as measures aimed at complying with and implementing EU law or international legal instruments. The adequate protection of Natura 2000 sites, the development of management plans for these sites and the designation of additional Baltic Sea Protected Areas in the framework of HELCOM with a view to enhancing the connectivity of the BSPA network are relevant fields of action. NGOs should also push for stringent implementation of Regulation 812/2004 (while it remains in force) and a strong emphasis on conservation in implementing the Marine Strategy Framework Directive.

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