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PROPOSAL FOR THE INCLUSION OF THE BALTIC PROPER HARBOUR PORPOISE, (*Phocoena phocoena)* IN APPENDIX I OF THE CONVENTION*, WHILE MAINTAINING THE EXISTING STATUS OF THE SPECIES IN APPENDIX II

Summary:

The European Union and its Member States have submitted the attached proposal for the inclusion of the Baltic Proper harbour porpoise, *Phocoena phocoena,* in CMS Appendix I, while maintaining the existing status of the species in Appendix II.

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PROPOSAL FOR THE INCLUSION OF THE BALTIC PROPER HARBOUR PORPOISE, (*Phocoena phocoena)* IN APPENDIX I OF THE CONVENTION, WHILE MAINTAINING THE EXISTING STATUS OF THE SPECIES IN APPENDIX II

A. PROPOSAL

Inclusion of the Baltic Proper harbour porpoise, *Phocoena phocoena,* in CMS Appendix I, while maintaining the existing status of the species in Appendix II.

B. PROPONENT: European Union and its Member States

C. SUPPORTING STATEMENT

1. Taxonomy

1.1	Class:	Mammalia
1.2	Order:	Cetacea
1.3	Family:	Phocoenidae
1.4	Species or subspecies:	*Phocoena phocoena* (Linnaeus, 1758); Baltic Proper harbour porpoise
1.5	Scientific synonyms:	No current synonyms
1.6	Common name(s):	Harbour porpoise Denmark: marsvin Estonia: harilik pringel Finland: pyöriäinen, tumlare Germany: Schweinswal, Kleiner Tümmler Latvia: cûkdelfîni Lithuania: paprastoji jūrų kiaulė Poland: morświn Russia: морская свинья (Morskaja svin'ja) Sweden: tumlare

2. Overview

In the Baltic Sea, several strands of evidence including genetics, distributional data, skull morphometrics and contaminant work, are supportive of the existence of two distinct populations or subpopulations of the harbour porpoise, *Phocoena phocoena*. The "Belt Sea" harbour porpoise occupies the southern Kattegat, the Belt Sea and the south-western Baltic Sea, with an eastern summer management border at approximately 13.5°E (Sveegaard et al., 2015). The "Baltic Proper" harbour porpoise inhabits the eastern portion of the Baltic Sea, with a south-western summer management border extending in a diagonal line between the peninsula in Hanö Bay in Sweden and Jarosławiec in Poland (SAMBAH, 2016; Carlén et al., 2018).

The International Council for the Exploration of the Sea (ICES) notes that in the advice on EU request on emergency measures, the term population is used to refer to the Baltic Proper harbour porpoise. ICES also notes that it remains uncertain, whether the Baltic Proper harbour porpoise constitutes a population or a subpopulation; there are, however "significant genetic differences between the Belt Sea and the Baltic Proper harbour porpoises. Thus, the Baltic Proper harbour porpoise should be managed as a separate management unit." In the "COMMISSION DELEGATED REGULATION (EU) 2022/303 of 15 December 2021 amending Regulation (EU) 2019/1241 as regards measures to reduce incidental catches of the resident population of the Baltic Proper harbour porpoise (*Phocoena phocoena*) in the Baltic Sea" it is

stated under recital (3): “The population of Baltic Proper harbour porpoise is genetically significantly different from other populations. The International Council for the Exploration of the Sea (ICES) therefore considers that the resident harbour porpoise population of the Baltic Proper should be managed as a separate population unit (hereinafter ‘Baltic Proper harbour porpoise’).”

The Baltic Proper harbour porpoise appears to be concentrated over a relatively small spatial area in summer, incorporating the Hoburgs and Midsjöbankarna offshore banks in Swedish and Polish waters. The genetic differentiation between the Belt Sea and Baltic Proper populations is maintained by limited gene flow resulting from the spatial separation of the two populations during the summer reproductive season (Carlén et al., 2018). However, in winter the Baltic Proper harbour porpoise appears to be more widespread and very likely overlaps spatially with the Belt Sea population in the south-west Baltic (at least east of 13.0°E, ICES, 2020a, ICES, 2020b), resulting in a complicated scenario for management. The Baltic Proper harbour porpoise has long been of conservation concern, with marked declines noted anecdotally over the last century by many observers, and a Critically Endangered status on both the IUCN Red List (Hammond et al., 2008) and the Baltic Marine Environment Protection Commission Red List (HELCOM, 2013). The first, and only, abundance estimate available for the population was of only 491 individuals in 2011–2013, and had wide confidence limits (95% CI 71–1,105; Amundin et al. 2022). Regular transboundary movements by individuals from the Baltic Proper harbour porpoise are evidenced by spatio-temporal variation in distribution, the spanning of the core summer high density areas across Swedish-Polish borders, and the high mobility of the species in general. Life-history information gained from animals in German waters (outside the main range of the Baltic Proper harbour population) indicates that female porpoises in Baltic Sea waters have a shorter lifespan (3.7 years) than in the North Sea (5.7 years), with only ~27% of females living long enough to produce a calf (Kesselring et al., 2017, 2018). High anthropogenic-related mortality due to bycatch in fisheries (especially in static gear such as gillnets) appears to be the major threat to the Baltic Proper harbour porpoise, and is considered to be unsustainably high (NAMMCO & IMR, 2019; ICES, 2020b). Environmental contaminants may also have contributed to the decline in, and lack of recovery of, Baltic porpoise abundance. Underwater noise from sources including shipping and offshore wind farm construction, may potentially cause displacement and behavioural impacts. The inclusion of the Baltic Proper harbour porpoise on CMS Appendix I would require Range States to provide strict protection by prohibiting takes, conserving habitats, limiting obstacles to migration and controlling other factors that might endanger them, and would strengthen the collaborative effort by all EU Member States bordering the Baltic Proper.

3 Migrations

3.1 Kinds of movement, distance, the cyclical and predicable nature of the migration

The harbour porpoise is a highly mobile, wide-ranging cetacean species that is not limited by national borders (Sveegaard et al., 2015, Nielsen et al., 2018.). The small dorsal fin and elusive nature of this species, and the rarity of the Baltic Proper harbour porpoise, mean that it has not been the subject of either photo-identification or tagging work within the Baltic Proper, which would explicitly demonstrate the movement of individuals from the Baltic Proper harbour porpoise across national jurisdictional boundaries. As noted by Koschinski (2001), little information is available on migrations or movements of the Baltic Proper harbour porpoise, because sightings are so rare. Nevertheless, such movements are strongly implied by:

- The documented summer distribution range of the Baltic Proper harbour porpoise includes all waters eastwards of a line from Hanö in Sweden to Słupsk in Poland (Carlén et al., 2018), while the winter distribution range may extend further westwards to the Arkona basin (Gallus et al., 2012; Benke et al., 2014; ICES 2020a).

By definition, therefore, the Baltic Proper harbour porpoise spans the waters of at least nine countries: Denmark (Bornholm), Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia, and Sweden, eight of which are EU Member States.

- The core area of concentration of the Baltic Proper harbour porpoise during the summer reproductive season incorporates a series of offshore banks that are split between Swedish and Polish waters, and consequently supports frequent movements of porpoises across those national boundaries (Carlén et al., 2018).
- In the winter months, the distribution of the Baltic Proper harbour porpoise seems to expand northwards, eastwards and westwards from the summer core area, with animals regularly occurring in Finnish offshore waters south of the Archipelago Sea and Åland islands, and thus crossing multiple national borders (Carlén et al., 2018).
- Satellite-tracking of tagged porpoises from the Belt Sea population show that porpoises regularly cross national boundaries between Danish, German and Swedish waters (Sveegaard et al., 2011), and similar movements would be expected between countries in the Baltic Proper harbour porpoise. Additionally, data from satellite-tracked harbour porpoises off eastern Canada as well as Greenland demonstrate high travel rates and large utilisation ranges (Read and Westgate, 1997; Nielsen et al., 2018). This high mobility supports a high likelihood of transboundary movements within the semi-enclosed waters of the Baltic Proper.

3.2 Proportion of the population migrating, and why that is a significant proportion

Limited data are available on what proportion of the Baltic Proper harbour porpoise makes regular movements across one or more national jurisdictional boundaries. However, the SAMBAH point abundance estimate east of the summer management border during November-April is approximately 50% of that during May-October (Amundin et al., 2022). Due to the wide confidence intervals, the assessments are not significantly different, but it indicates that a substantial proportion of the population moves out of the May-October management area during November-April. Also, SAMBAH results suggest that the population concentrates in defined areas on the Hoburgs and Midsjöbankarna offshore banks (mainly in Swedish but also Polish waters), and then disperses to wider parts of the Baltic Proper and south-west Baltic Sea during winter (including Finnish, Polish, German and Danish waters; Carlén et al., 2018). Consequently, seasonal transboundary movements by a significant portion of the Baltic Proper harbour porpoise are strongly supported.

4. Biological data (other than migration)

4.1 Distribution (current and historical)

Historic

The historic distribution range of porpoises within the Baltic Sea Region apparently included all of the Kattegat, Skagerrak and the Baltic Sea Proper, and continued northwards to the Gulf of Riga, Gulf of Finland and Kemi in the northernmost part of the Gulf of Bothnia (Koschinski, 2001; HELCOM, 2013; Benke et al., 2014; Loisa, 2016). Sightings were known from Estonia and Latvia during summer and autumn, and some individuals even entered the river Neva at St Petersburg in the innermost Gulf of Finland (Koschinski, 2001). However, during the latter half of the 1900s, porpoise numbers in the Baltic Sea appear to have declined and their range contracted southwards and westwards; sightings in the eastern and northernmost Baltic are now rare (Koschinski, 2001).

Current

A comprehensive assessment of the spatio-temporal distribution of the Baltic Proper harbour porpoise was carried out between May 2011 and May 2013 by the Static Acoustic Monitoring of the Baltic Sea Harbour Porpoise project (SAMBAH, 2016; Carlén et al., 2018), which deployed acoustic devices at 304 positions across Baltic Sea waters from the east end of the Belt Seas north to the Åland Islands (entrance to the Gulf of Bothnia). The Baltic Proper harbour porpoise was found to be spatially distinct from the Belt Sea population during the reproductive period in the summer months (May to October), but with probable mixing of the two populations in the south-west Baltic Sea during the winter (Carlén et al., 2018). This was consistent with earlier acoustic work in the German Baltic (Gallus et al., 2012; Benke et al., 2014), which indicated that the German waters north and east of the island of Rügen (Pomeranian Bay) were occupied by Belt Sea porpoises over the summer (June to August), but that during the winter both the Belt Sea and Baltic Proper harbour porpoises shifted westwards so that the Pomeranian Bay was occupied by Baltic Proper porpoises in winter (January to March). The waters along the south coast of Sweden and around the Danish island of Bornholm, are also likely to be used seasonally by porpoises from both populations. Consequently, the winter distributional limits of Baltic Proper harbour porpoises remain unclear and are complicated by apparent mixing of two populations in the same areas.

Based on the SAMBAH results, Carlén et al. (2018) proposed a summer south-west management border for the Baltic Proper harbour porpoise, in a diagonal line extending approximately between the peninsula in Hanö Bay in Sweden and Jarosławiec near Słupsk in Poland (Figures 1 and 2). This proposed management border was located slightly further east than a previously proposed easternmost summer management border for the Belt Sea population (13.5°E longitude: Sveegaard et al., 2015), highlighting an area of low porpoise occurrence between the two populations during summer. Within their summer range, Baltic Proper harbour porpoises were concentrated over the Hoburgs and Midsjöbankarna offshore banks in Swedish and Polish waters, in an area considered to be an essential core breeding area for the population (Figures 2 and 3; Carlén and Evans, 2021). In winter, the Baltic Proper harbour porpoise was more widespread, with acoustic detections recorded from the south-west Baltic to the Åland Islands at the entrance to the Gulf of Bothnia, including along the coasts of Lithuania, Latvia, and the east coast of Sweden (Carlén et al., 2018).

No detections were recorded in the Gulf of Riga, and only one detection was recorded in the Gulf of Finland by the SAMBAH project, indicating that porpoises in those regions are very scarce (Carlén et al., 2018). However, a sighting campaign launched by the Ministry of the Environment in Finland in 2001, has resulted in around 75 sightings of approximately 125 individuals in Finnish waters between 2000 and 2020, and included a number of sightings from the Gulf of Finland and further north from the Gulf of Bothnia (Loisa, 2016).

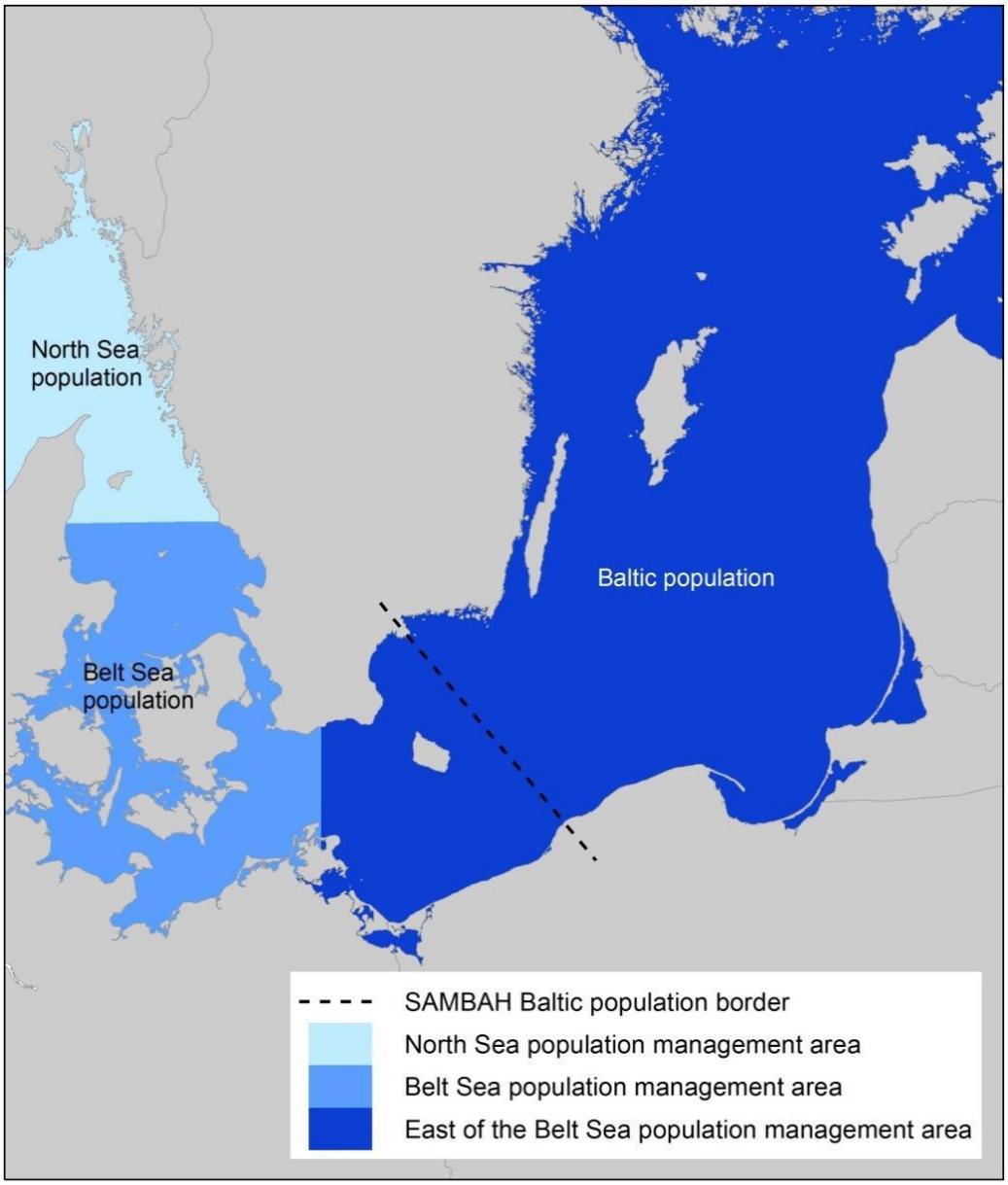

Figure 1. Distribution ranges of harbour porpoise populations in the Baltic Sea Region (from Carlén and Evans 2021). Blue shading indicates the borders proposed for the management unit of the Belt Sea population during May-September by Sveegaard *et al.* (2015), the dotted black line the spatial separation during May-October of the Belt and Baltic populations by SAMBAH (2016a, Carlén et al 2018). All borders are only for the months included in the respective study.

Observations of live harbour porpoises in the May-October management range of the Baltic Proper harbour porpoise are rare, and the species is considered to be virtually extinct in the north-eastern part of the Baltic (Koschinski, 2001). However, there are data on opportunistic bycatch, stranding and sighting records along the Baltic Sea coasts, including occasional observations from the north-eastern part of the Baltic (HELCOM, 2016).

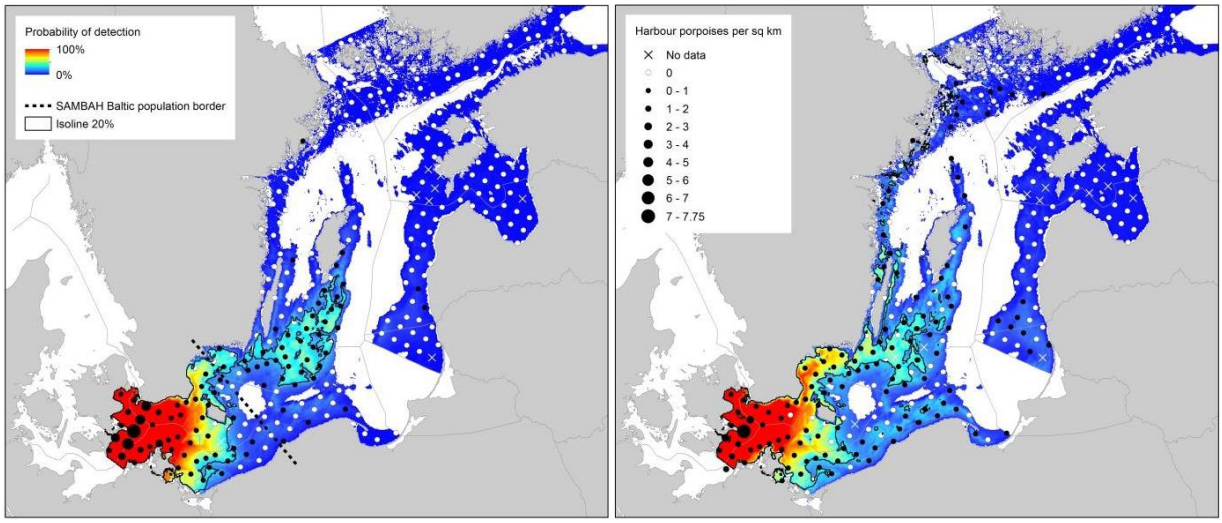

Figure 2. Predicted probability of detection of harbour porpoises per month in the SAMBAH project area during May–October (left) and November–April (right). The black line indicates 20% probability of detection, approximately equivalent to the area encompassing 30% of the population, often used to define high-density areas. The dots or crosses show the estimated density at the SAMBAH survey stations. The border indicates the spatial separation between the Belt Sea and Baltic harbour porpoise populations during May–October, according to Carlén *et al*., 2018. The white areas were not surveyed in the SAMBAH project. From ASCOBANS (2016).

4.2 Population (estimates and trends)

Abundance

The Baltic Proper population of harbour porpoises has declined markedly in density and distribution over the last century (Skòra et al., 1988; Koschinski, 2001; Hammond et al., 2008; ASCOBANS, 2009).

Due to the low density, only acoustic monitoring methods can be used for this population, and the only existing abundance estimate specific to the Baltic Proper harbour porpoise (i.e. covering the core summer occurrence around the offshore banks in the central Baltic Proper) results from the SAMBAH acoustic monitoring in 2011–2013, which generated an overall summer density of 0.00370 (95% CI 0.49-8.62) animals/km^2 and an abundance estimate of 491 individuals (95% CI 71–1105); Amundin et al., 2022).

A recent study in Swedish waters compared passive acoustic monitoring data during May–October (over the breeding season) between the two study periods 2011–2013 and 2017-2020 (Owen et al. 2021). At the three stations with the highest number of detections, log linear regression revealed a yearly increase of 2.4% (-4.4 – 9.6, 95% CI) between 2011 and 2019. The authors state that this may be indicative of the beginnings of population recovery, or simply an indication that the decline has stalled. They further state that the rate of increase is still below what is likely to be possible for porpoise populations, and unlikely to sufficiently buffer against any potential increase in pressures in the future.

Population structure

The most recent information on population structure of the North-east Atlantic subspecies was summarized and discussed at the NAMMCO & IMR harbour porpoise workshop in December 2018 (NAMMCO & IMR, 2019). Two subspecies of harbour porpoise are currently recognised in Europe: the North-east Atlantic nominate subspecies (*P. p. phocoena*) and the Black Sea subspecies (*P. p. relicta*). A third subspecies in this region has been proposed in Iberian and

North-west African waters (*P. p. meridionalis;* Fontaine et al., 2014). In the Baltic Sea Region, the Baltic and North Sea populations were clearly distinguishable, with a transition zone in the Kattegat Sea. Within the Baltic, a further subdivision between one population in the southern Kattegat, Belt Sea and western Baltic and one in the Baltic Proper, could be detected. This division was most clear during the reproductive season, which is consistent with findings from the SAMBAH project (Carlén et al., 2018).The division of the Belt Sea and Baltic Proper populations is also supported by previous genetic work (Tiedemann et al., 1996; Wiemann et al., 2010; Lah et al., 2016), skull morphometrics (Huggenberger et al., 2002; Galatius et al., 2012), contaminant loads (Berggren et al., 1999), and distributional studies using satellite-tracking and static acoustic devices (Sveegaard et al., 2015; Carlén et al., 2018).

4.3 Habitat (short description and trends)

Harbour porpoises occupy cold to temperate waters throughout the northern hemisphere. The Baltic Sea is a semi-enclosed and marginal sea of the Atlantic Ocean, connected to the North Sea via several channels in the Kattegat/Skagerrak region. Within the Baltic Proper, Carlén et al. (2018) reported a higher number of porpoise acoustic detections at low and intermediate bottom topographic complexities, and at water depths of 20–50 m, with only limited use of the deeper areas from 50 to 80 m depth. Berggren (1994) noted that most porpoise bycatches in the Swedish Baltic occurred in shallow waters of ≤10 m depth. It is presumed that this shallow-depth habitat use reflects food availability and the distribution of preferred prey species (Koschinski, 2001). Within the Baltic Proper the presence of winter sea ice and cooling temperatures probably also limits the availability of habitat for porpoises (Koschinski, 2001; Galatius et al., 2012), although porpoises do occur in the northern Baltic Proper (including Finnish and Swedish waters) during the winter as long as they remain ice-free.

4.4 Biological characteristics

The availability of life history information for the Baltic Proper harbour porpoises has been limited by the lack of systematic stranding schemes and necropsies by the Range States (see Section 6.5), as well as by the very limited number of specimens due to the small size of the population. Of the countries bordering the Baltic Proper, Germany, Poland and Sweden have targeted programmes to collect and necropsy stranded porpoises. However, given the low number of Baltic Proper harbour porpoises, there are few strandings that can be attributed to the Baltic Proper harbour porpoise, and hence much of the knowledge below comes primarily from the Belt Sea and North Sea harbour porpoise populations.

Group size

In the German Baltic Sea, average group size was 2.2 animals, with the majority of sightings comprising singletons (30.5%) or pairs (35.8%) of animals (Siebert et al., 2006).

Body size

Harbour porpoises in the Baltic Sea region reach maximum body lengths of 1.9 m (Lockyer, 2003). Some female porpoises reach body weights of up to 89 kg (Lockyer and Kinze, 2003). Size at sexual maturity in North Atlantic populations is approximately 138–152 cm for females and 127–135 for males (Lockyer, 2003), and the weight at sexual maturity is 47 kg and 40 kg for females and males respectively, in Danish waters (Lockyer and Kinze, 2003).

Life history and reproduction

Although porpoises stranded along the German North Sea and Baltic Sea coasts had a maximum longevity of 22 years of age, the majority had much shorter lives with a mean age at death of 4.9 years (Kesselring et al., 2017). Lockyer and Kinze (2003) found that less than 5% of harbour porpoises lived beyond 12 years of age. A subset of 215 female porpoises examined from the German Baltic shore between 1990 and 2016 (outside the main range of

the Baltic Proper harbour porpoise), had an average age at death of 3.7 years, which was significantly lower than that for the German North Sea coast (Kesselring et al., 2017). Stranding and bycatch datasets of harbour porpoises on the German Baltic coasts between 1990 and 2001, revealed an even sex ratio of 1:1 (Siebert et al., 2006). Sexual maturity in female porpoises was reached at 3.63 years in Danish waters (including both North Sea and Baltic Sea: Lockyer, 2003), and 4.95 years (50% threshold) in German waters (including both North Sea and Baltic Sea: Kesselring et al., 2017).

There is a strongly seasonal reproductive period, and females are hypothesised to show site fidelity to calving and mating areas (Tiedemann et al., 1996; Huggenberger et al., 2002). Pregnancy rates in porpoises from various geographic regions are in the range of 0.61–0.986 per year (Sørensen and Kinze, 1994; Lockyer, 2003). The birth period of harbour porpoises in North Sea and Baltic Sea region is between June and August, after a gestation period of approximately 10 to 11 months (Börjesson and Read, 2003; Sørensen and Kinze, 1994; Hasselmeier et al., 2004). Calves are weaned after approximately 8 to 10 months (Lockyer, 2003). Mature females produce a single calf every 1–2 years (Lockyer, 2003), and are thus considered to be a slow-reproducing species (Kesselring et al., 2017). A female with longevity of 20 years might produce a maximum of 11–12 calves in a lifetime (Lockyer and Kinze, 2003). However, a more reasonable longevity of about 10–12 years, would result in only 4–6 calves in a lifetime, and the short 3.7 year lifespans documented for German Baltic animals suggest that only 27.4% of female porpoises in the Baltic Sea had lived sufficiently long to produce any calves (Kesselring et al., 2017, 2018). A theoretical maximum population growth rate has been estimated for harbour porpoises at up to 10%, which is supported by long-term population surveys after an almost complete ban of fisheries causing bycatch (Forney et al., 2020). However, such growth is very vulnerable to any form of removals and can quickly turn into a decline (Lockyer, 2003).

Diet

The stomach contents of 339 stranded harbour porpoises in the western Baltic (outside the main range of the Baltic Proper harbour porpoise) included at least 32 fish species and a small number of invertebrates (Andreasen et al., 2017). Seven main prey species accounted for 91% of the total prey mass: Atlantic cod (*Gadus morhua*), whiting (*Merlangius merlangus*), Atlantic herring (*Clupea harengus*), sprat (*Sprattus sprattus*), sandeels (*Ammodytidae*), eelpout (*Zoarces viviparus*), and gobies (*Gobiidae*). Differences in prey were detectable between adults and juveniles, with adult stomachs mostly containing cod (36%) and herring (34%), while cod (26%), gobies (25%) and herring (18%) were the dominant prey in juvenile stomachs (Andreasen et al., 2017). Seasonal variation was also evident especially in adults, with cod and herring comprising the majority of the diet (>80%) during winter, while eelpout was important (25%) in the autumn.

4.5 Role of the taxon in its ecosystem

Relatively little is known about the ecological influences of small cetaceans, although their high metabolic rates and locally high population densities have the potential to exert considerable top-down control on populations of some prey species (Estes et al., 2016). The harbour porpoise is the only cetacean species that occurs regularly and year-round in the Baltic Sea (Benke et al., 2014), and consequently is one of the top predators in the Baltic marine environment. As such, it contributes to the maintenance and structure of the ecosystem, and is also an important indicator species (Andreasen et al., 2017). A lack of top predators such as cod and porpoises is thought to be allowing numbers of sprat and herring to increase to the extent that it is affecting the nutritional status of those prey species (Carlén and Evans, 2021).

Porpoises forage nearly continuously day and night, and have been estimated attempting to capture up to 550 small (3–10 cm) fish prey per hour, with a high prey capture success rate of >90% (Wisniewska et al., 2016). Andreasen et al. (2017) estimated that harbour porpoises in the western Baltic (outside the main range of the Baltic Proper harbour porpoise) had daily prey consumption rates of between 1.8 and 5.6 kg/day, with average values of 3.6 kg/day for adults and 3.8 kg/day for juveniles. Porpoises in the western Baltic Sea consumed large quantities of cod, which are commercially important in the Baltic fisheries. Andreasen et al. (2017) suggested that increasing the accuracy of prey-specific consumption rates by harbour porpoises would be beneficial for informing the western Baltic Sea multispecies and ecosystem-based models.

5. Conservation status and threats

5.1 IUCN Red List Assessment (if available)

The Baltic Proper harbour porpoise (*Phocoena phocoena*) has been listed as Critically Endangered on the IUCN Red List since 2008 (Hammond et al., 2008, there listed as "subpopulation), meaning that it is considered to be facing an extremely high risk of extinction in the wild. The listing criteria is C2a(ii), based on a population size of fewer than 250 mature individuals, a continuing decline in numbers of mature individuals inferred from bycatch mortality, and population structure of at least 90% of mature individuals in one population. However, the Red List assessment did not specifically recognise the occurrence of more than one porpoise population within the Baltic Sea.

5.2 Equivalent information relevant to conservation status assessment

The more recent HELCOM Red List assessment recognised separate porpoise populations in the Baltic Sea and considered that the Baltic Proper harbour porpoise qualified as Critically Endangered under criterion C1 (HELCOM, 2013), as a population for which the number of mature individuals was then estimated to be less than 250, and a continuing decline of at least 25% within one generation was assumed. Information produced since the IUCN Red List assessment has distinguished between the summer spatial management areas of the Belt Sea and the Baltic Proper populations (Sveegaard et al., 2015; Carlén et al., 2018), and provided for the first time a robust dataset supporting evidence of a limited distribution and low abundance (<500 animals; Amundin et al., 2022) specific to the Baltic Proper management unit. The limited available information indicates that fisheries bycatch of the Baltic Proper harbour porpoise is unsustainable (Section 5.3), and the anecdotal nature of that information is likely to be a minimum representation of contemporary bycatch levels.

5.3 Threats to the population (factors, intensity)

A number of threats, both past and present, are considered to have contributed to the current low abundance of the Baltic Proper harbour porpoise. Prior to the 1940s, targeted hunting of harbour porpoises occurred throughout the Baltic Sea, with several hundreds of animals caught in Polish waters (Skòra and Kuklik, 2003). In Danish waters, several hundreds to thousands were taken annually (Lockyer and Kinze, 2003). However, it is not certain whether the animals hunted in the Danish Straits belonged to the Belt Sea or the Baltic Proper population (or both). Historically, severe winters in the Baltic Proper caused the sea to periodically freeze over, with reports of mass mortality of harbour porpoises during 1928/29, 1939/40 and 1946/47 (Koschinski, 2001; Lockyer and Kinze, 2003), and accounts of bottom trawl fisheries retrieving large numbers of porpoises that had apparently suffocated under the ice (Johansen, 1929). Habitat deterioration due to coastal development and eutrophication, and prey depletion due to over-fishing, have also been presented as factors (Koschinski, 2001; Gallus et al., 2012; Benke et al., 2014). However, the main threats currently affecting the Baltic Proper harbour porpoise appear to be bycatch in fishing gear, environmental contaminants,

and disturbance from anthropogenic noise (ASCOBANS, 2009; Benke et al., 2014). The International Council for the Exploration of the Sea (ICES) Working Group on Marine Mammal Ecology (WGMME) applied a threat matrix to the harbour porpoise in the Baltic Sea, listing bycatch and contaminants in the highest threat category (ICES, 2015). In the medium category, underwater noise from pile driving and shipping, and prey depletion by removal of non-target species were listed.

Fisheries bycatch

Bycatch of harbour porpoises occurs in different types of fishing gear, with static nets including bottom-set gillnets, tangle nets and drifting gillnets responsible for the overall majority of harbour porpoise bycatch, and recognised as the single most serious threat to the Baltic Proper harbour porpoise (Berggren 1994; Skóra and Kuklik, 2003; Koschinski and Pfander, 2009; ASCOBANS, 2009, 2016; HELCOM, 2013; Loisa, 2016, NAMMCO & IMR, 2019, ICES, 2020a). Bycatch has long impacted porpoises in the Baltic Proper; for example, hundreds of animals died annually in nets in the Gulf of Gdansk (Poland) until the end of the 1930s (Skóra and Kuklik, 2003). The introduction of synthetic gillnets into Baltic fisheries along with a concurrent increase in fishing effort during 1950–1970, led to a marked increase in porpoise bycatch (Koschinski, 2001), with drastic declines in numbers noted between the 1960s and 1980s (Berggren et al., 2002). In the region east of Bornholm, since the year 2000, porpoise bycatch has been reported from Swedish (Berggren et al., 2002), Finnish (Loisa, 2016), Latvian (HELCOM-ASCOBANS database), Lithuanian (HELCOM-ASCOBANS database), and Polish (Skora et al., 1988; Skóra and Kuklik 2003; NAMMCO & IMR 2019) waters. Until the recently repealed EC Regulation 812/2004, followed by Regulation 2019/1241 phased-out the fishery in 2008, vessels from Russia, Finland, Sweden, Denmark, Poland and Germany participated in a large-scale pelagic driftnet fishery for salmon in the Baltic Proper which was a significant source of bycatch in Swedish and Polish waters (Berggren, 1994; Berggren et al., 2002; Skóra and Kuklik, 2003). Little or no information is available regarding porpoise bycatch in the eastern Baltic waters of Russia, Lithuania, Latvia and Estonia, but Koschinski (2001) notes that porpoises were caught in salmon nets between Gdansk Bay and Estonia each spring during the early 1900s.

The Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS) has stated that the general aim should be to minimise (i.e. to ultimately reduce to zero) anthropogenic removals. ASCOBANS has provided criteria to assess the sustainability of fisheries bycatch on cetacean populations, stating that ‘‘populations should be kept at or restored to 80% of their carrying capacity’’ with the equivalent of a 1.7% maximum total anthropogenic removal rate from the population annually whereby the immediate precautionary objective is to reduce bycatch levels to less than 1% of the best available population estimate (ASCOBANS Resolution 3.3, 2000; Resolution 5.5, 2006, and Resolution 8.5 (Rev.MOP9), 2016). Unfortunately, crucial information on mortality rates are lacking for the Baltic Proper population and limit any assessment of the level of takes. However, the recent population size estimate for the Baltic Proper harobour porpoise of 491 individuals (Amundin et al., 2022), indicates that the 1% and 1.7% limits proposed by ASCOBANS would amount to only 4.9 or 8.3 animals annually. There is no systematic bycatch monitoring in the gillnet fisheries of most Range States, and consequently any reported incidents must be viewed as a minimal indication of current bycatch levels. However, the reported amounts already exceed the ASCOBANS sustainable bycatch limits (Loisa, 2016). For example, between 1990 and 1999, a total of 45 porpoise bycatches were reported in Polish waters alone, averaging 4.5 animals per annum (Skóra and Kuklik, 2003). For the years 2000-2012, the annual number of bycatch of the Baltic Proper harbour porpoise was estimated to 7 (NAMMCO & IMR, 2019). Bycatch rates are also considered to be unsustainable in parts of the south-west Baltic Sea that are likely to be inhabited by the Baltic Proper harbour porpoise on a seasonal basis (Berggren et al., 2002; Koschinski and Pfander, 2009).

Contaminants

Environmental contaminants are also considered to be a factor in the decline of the Baltic Proper harbour porpoise (Kannan et al., 1993; Koschinski, 2001; HELCOM, 2013; Carlén et al., 2021). High concentrations of organochlorines such as polychlorinated biphenyls (PCB) and dichlorodiphenyltrichloroethane (DDT) have led to reduced fertility and population decline in Baltic seals (Bergman, 1999), and may be expected to accumulate and cause similar effects in other top marine predators including porpoises. In the Swedish Baltic, porpoises were found to have three times the level of PCBs and more than 10 times the level of DDT compared with porpoises from the Kattegat/Skagerrak Seas or Norway (Berggren et al., 1999). This coincides with raised contaminant concentrations in Baltic fish stocks such as herring. Strandberg et al. (1998) found the highest herring-related biomagnification factors in harbour porpoises for chlordane pesticides (accumulated with a factor of up to 25), dieldrin, PCBs and DDTs. Porpoises from the Polish coast had relatively high concentrations of the pesticides aldrin, dieldrin and chlordane, and their blubber also contained mirex, heptachlor and heptachlor epoxide (Kannan et al. 1993; Strandberg et al. 1998). The Baltic Proper harbour porpoises also carry a significant mercury burden (Szefer et al., 1995). The livers of two Polish porpoises had markedly elevated levels of silver, indicating that they had been exposed to point sources of pollution (e.g. harbours or industrial plants).

Disturbance

In addition to continuous noise from shipping, a variety of impulsive anthropogenic sound sources are used in the waters of the Baltic Proper, including acoustic deterrent devices (ADDs or pingers), pile-driving, sonar, airgun arrays, and explosions (Carlén and Evans, 2021; Carlén et al., 2021. In the 2013 HELCOM Declaration, it was agreed that Baltic Sea marine life should not be negatively impacted by noise, and that the use of any potentially harmful sound sources should only be permitted if relevant mitigation measures were in place. To address these aims, the LIFE+ project "Baltic Sea Information on the Acoustic Soundscape (BIAS)" measured continuous ambient noise during 2014 and produced a series of soundscape maps for the Baltic region based on the gathered data and AIS data (Mustonen et al., 2019). Data on impulsive and continuous noise are available through ICES (http://ices.dk/data/data-portals/Pages/underwater-noise.aspx).

Harbour porpoises emit narrow-band high-frequency (NBHF) echolocation clicks, with a hearing range of maximum sensitivity at around 125 kHz (Kastelein et al., 2010, 2015). Sounds occurring at frequencies greater than 200 Hz are within the hearing range of porpoises (Kastelein et al., 2010) and may potentially impact on them both directly (disturbance or hearing loss) and indirectly via changes in their prey species. Currently, low frequency (<1 kHz) shipping noise and pile-driving are considered to comprise the two major sources of underwater noise in the Baltic Sea. There are extensive plans for offshore renewable energy developments across the Baltic Sea, involving all the EU Member States (EC, 2020). Offshore windfarm developments in particular can potentially impact porpoises via construction and operational noise, increased vessel traffic including noise and collision risk, pollutant emissions, and stirred-up bottom sediments. For example, porpoises showed marked changes in habitat use in response to pile-driving operations in Danish and German wind farms respectively, with a marked increase in intervals between harbour porpoise detections during construction of wind farms compared to baseline surveys (Carstensen et al., 2006; Brandt et al., 2018). Overlap between the Baltic Proper harbour porpoise and certain noise-generating anthropogenic activities could therefore be expected to cause changes in their spatio-temporal distribution, which would be especially critical during the summer reproductive period when porpoises occur in more concentrated areas (Carlén et al., 2018). Exposure to noise may also cause disturbance to behaviours such as mating, nursing and foraging, with the potential for long-term fitness consequences (e.g. Wisniewska et al., 2018, Sarnocińska et al., 2020). Other significant noise sources include seismic surveys and underwater ordnance detonation.

5.4 Threats connected especially with migrations

No information. More studies are needed to assess both the migratory movements of the Baltic Proper harbour porpoise and the specific impacts of the identified threats (Section 5.3) on those movements.

5.5 National and international utilisation

Evidence suggests that all countries with a Baltic Sea coastline were engaged in harbour porpoise hunts during the 18th and 19th centuries (Berggren, 1994), with several hundreds to thousands taken annually in Denmark alone (Lockyer and Kinze, 2003). Any such hunts had ceased by the mid-20th century.

6. Protection status and species management

6.1 National protection status

The conservation status of the Baltic Proper harbour porpoises according to national red data books or red lists for Range States is provided in Table 1. Harbour porpoises are fully protected year-round in all Range States (HELCOM, 2013). All EU Member States that have assessed the conservation status of porpoise populations in the Baltic region have described them as having an unfavourable status (Table 1). It has been noted that the status of the Baltic Proper harbour porpoise in the national Red Lists of some countries needs to be updated, for example the Polish Red List status, which does not reflect current knowledge of status (Carlén and Evans, 2021).

Table 1. National conservation status of Baltic Proper harbour porpoises (from ASCOBANS, 2016; Carlèn and Evans, 2021; Hyvärinen et al., 2019; Głowacinski, 2022). Germany provides a single classification and does not currently distinguish between the Belt Sea and Baltic Proper harbour porpoises in its national waters.

Range State	Red List status	Overall conservation status
Denmark	Critically Endangered (CR)	Unfavourable – bad (U2)
Estonia	Data Deficient (DD)	Unfavourable – Inadequate (U1)
Finland	Not Applicable (NA)	Not assessed
Germany*	Endangered (EN)	Unfavourable – bad (U2)
Latvia	Probably Extinct (0)	Unknown (XX)
Lithuania	Not assessed	–
Poland	Vulnerable (VU)	Unfavourable – bad (U2)
Russia	Uncertain status (4)	–
Sweden	Critically Endangered (CR)	Unfavourable – bad (U2)

*In Germany, the harbour porpoise is classified as "Endangered" as it was assessed as a whole. Nevertheless, it was noted in the Red List, that while the North Sea population is stable at a low level but still considered "Vulnerable", the Baltic Proper harbour porpoise must be considered "Critically Endangered".

6.2 International protection status

CITES

The 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival in the wild. Harbour porpoises are listed in Appendix II (species not threatened with extinction, but in danger if their commerce is not subject to restraints).

CMS

The 1979 Convention on the Conservation of Migratory Species of Wild Animals (CMS or Bonn Convention) aims to conserve terrestrial, aquatic and avian migratory species throughout their range. The North Sea and Baltic Sea population of the harbour porpoise is already listed on Appendix II (migratory species that need or would significantly benefit from international cooperation), but is not currently included on Appendix I.

Bern Convention

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) aims to ensure the conservation and protection of wild plant and animal species (listed in four appendices) and their natural habitats, to increase co-operation between Parties, and to regulate the exploitation of the listed species. Harbour porpoises are included in Appendix II, which lists strictly protected species.

EU Habitats Directive

To implement the Bern Convention in Europe, the European Union adopted Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) in 1992. The main aim of the Habitats Directive is to promote the preservation of biodiversity by requiring Member States to maintain or restore natural habitats and wild species listed in the Annexes at a favourable conservation status, and introduce robust protection for those habitats and species of European importance. All cetaceans are included in Annex IV, identifying them as species of European Union interest in need of strict protection, prohibiting all forms of deliberate capture and killing, damage to or destruction of breeding or resting sites, disturbance particularly during the period of breeding, and the possession of, and international trade in, these animals. Harbour porpoises are also listed as priority species on Annex II, requiring Member States to designate Special Areas of Conservation (SACs), which are part of the Natura 2000 network, to protect their populations.

Marine Strategy Framework Directive

EC Council Directive 56/2008 (Marine Strategy Framework Directive, MSFD), which was adopted in 2006, seeks to achieve "good environmental status (GES)" for the marine areas within the EU by 2020. The MFSD provides the framework for implementing the EU Habitats Directive and the Common Fisheries Policy. It specifies requirements for Member States to monitor and report on the status of the marine environment and biodiversity, restore GES, and designate marine protected areas. With regard to the harbour porpoise, this mainly applies via GES descriptors 1, 4, and 11: Descriptor (1) Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions; Descriptor (4) All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity; and Descriptor (11) Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment. Coordinated porpoise monitoring in the Baltic Proper (i.e. SAMBAH, 2016) is one method used to meet the GES requirements of the MSFD.

ASCOBANS

The Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS) entered into force in 1994, and was extended in 2008 (as the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas). ASCOBANS is a regional agreement concluded under the auspices of the CMS, which aims to achieve and maintain a favourable conservation status for cetacean species by obliging Parties to implement measures for threat reduction and mitigation, habitat conservation and management, promote scientific research, evaluate bycatch and strandings data, improve

legislation, and raise public awareness of cetacean conservation. The harbour porpoise is a focal species for ASCOBANS (see Section 6.3), and Resolution 9.2 on the Baltic Proper harbour porpoise was adopted by the 9th Meeting of the Parties to ASCOBANS in 2020.

Helsinki Convention

The Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention, 1992) is an international convention encompassing various measures for the prevention and elimination of pollution in the Baltic Sea. Parties to the Helsinki Convention agree to take all appropriate legislative, administrative or other relevant measures to prevent and eliminate pollution in order to promote the ecological restoration of the Baltic Sea Area and the preservation of its ecological balance. Under the Convention, the Baltic Marine Environment Protection Commission (HELCOM) was formed, whose responsibilities are to implement the Convention, make recommendations to the Parties, define pollution control criteria and objectives, and promote additional measures in co-operation with respective governmental bodies of the Parties. The agreement includes Finland, Latvia, Lithuania, Poland, Sweden, Germany, Denmark, Russia, and Estonia, and the EU represented by the Commission. HELCOM's updated Baltic Sea Protection Action Plan (BSAP) was adopted in October 2021. It aims to achieve a good ecological status in the Baltic Sea by 2030 including several actions relevant to the Baltic Proper harbour porpoise. The Baltic Proper harbour porpoise is listed as Critically Endangered on the HELCOM red list (HELCOM, 2013) and the HELCOM resolution 17/2 on protection of harbour porpoise in the Baltic Sea area was last updated in 2020.

EC Council Regulation No. 2019/1241 (repealed regulation EC Council Regulation 812/2004)
The EU regulates the fishing activities of its Member States through the Common Fisheries Policy (CFP; EC 1380/2013). Cetacean bycatch was specifically regulated via EC Council Regulation 812/2004, which aimed to monitor and reduce the incidental bycatch of cetaceans in certain fisheries, until this regulation was repealed and replaced by Regulation 2019/1241, in 2019. For the Baltic harbour porpoise, relevant regulations on driftnets and pinger use were simply moved to the new regulation without change, meaning that the drift net ban and obligatory use of pingers for vessels >12 m length in certain areas of the Baltic, although mostly not within the Baltic Proper population range, are still in effect. Surface-set semi-driftnets anchored in one end are still used in salmonid fisheries including in Puck Bay in the Baltic (Pawliczka 2018). Regulation 2019/1241 also requires monitoring schemes, to monitor cetacean bycatch on large (≥15 m) commercial fishing vessels in specified fisheries. In addition, Regulation (EU) 2017/1004 of the European Parliament and of the Council requires the monitoring of discards and bycatch (including cetaceans), in certain fisheries in the ICES area.

The European Commission adopted on 21 February 2023 the "EU Action Plan: Protecting and restoring marine ecosystems for sustainable and resilient fisheries", stemming from the EU Biodiversity Strategy for 2030, calling on EU Member States to adopt or recommend measures to minimise by-catch of Baltic Sea harbour porpoise (or reduce it to the level that enables the full recovery of the population).

Data Collection Framework

Under Regulation (EU) 2017/1004 of the European Parliament and of the Council, relating to the EU (fisheries) Data Collection Framework (DCF), there is a requirement for observers to monitor all discards and incidental catches of protected marine fauna in several fisheries in the ICES areas. In 2019, in accordance with Article 3 of the DCF, the Commission Delegated Decision (EU) 2019/910 was adopted to establish a multiannual Union programme for the collection, management, and use of data in the fisheries and aquaculture sectors for the period 2020-2021. This Decision included the collection of data (including absence in the catch) on the incidental bycatch of all birds, mammals, reptiles and fish protected under Union legislation

and international agreements, and in all fisheries. Data can either be collected by scientific observers, or by the fishers themselves through logbooks.

6.3 Management measures

HELCOM

In 1996, HELCOM adopted the Recommendation on protection of harbour porpoises in the Baltic Sea (Recommendation 17/2, updated in 2020), to which all Baltic Sea countries are signatories. This Recommendation acknowledged that the number of Baltic Proper porpoises had declined drastically and that fisheries bycatch, and the degradation and disturbance of habitats, were having an unfavourable effect on the species. The recommendation specifically promotes bycatch reduction, relevant research and consideration of porpoise habitat requirements in the design and management of marine protected areas. The HELCOM Baltic Sea Action Plan, adopted in 2007 and updated in 2021, aims to ensure viable populations of all native species e.g. by inviting competent authorities to immediately implement mitigation measures in the Baltic Proper to significantly reduce bycatch of harbour porpoise with the aim of reaching bycatch rates close to zero; and for the Belt Sea population of harbour porpoise, to implement operational conservation measures such as permanent and/or spatial-temporal closures for relevant fishing metiers in risk areas; promoting effective mitigation measures to minimise bycatch of harbour porpoise in the Baltic Sea *inter alia* via cooperation with Baltic Sea Fisheries Forum (BALTFISH); developing and implementing an effective data collection for more reliable data on incidental by-caught birds and mammals.

ASCOBANS Jastarnia Plan

There has been ongoing focus by ASCOBANS on the conservation of the Baltic Proper harbour porpoise, via the development of a targeted recovery plan aimed at restoring the population to 80% of its native carrying capacity. A draft plan was produced in the Polish town of Jastarnia in 2002, and consequently became known as the Jastarnia Plan. The plan was adopted in 2003 and subsequently revised in 2009 (ASCOBANS, 2009), and 2016 (ASCOBANS, 2016). Since 2005, an expert working group (Jastarnia Group) has met annually to discuss the implementation of the recovery plan and the status of the Baltic Proper harbour porpoise, with the most recent progress report being presented to ASCOBANS Advisory Committee in November 2021 (Carlén and Evans, 2021). The Jastarnia Plan focuses on several priority recovery recommendations, including the reduction of fisheries bycatch, increased research and monitoring to produce the scientific data on population status and threats that are needed to inform management, the establishment of marine protected areas, increasing public awareness, and promoting cooperation between ASCOBANS and other relevant regional and international bodies. The latest version of the Jastarnia Plan (ASCOBANS, 2016) presents an extensive set of monitoring and threat mitigation recommendations. The management area for the Baltic Proper harbour porpoise defined in the current Jastarnia Plan includes all waters east of the Darss and Limhann Ridges (Figure 3). Several studies have noted that the biologically-based boundaries revealed during recent studies do not match the existing ASCOBANS boundaries for the two porpoise Baltic population management plans, and are therefore in need of revision (e.g. Sveegaard et al., 2015; Evans and Similä, 2018). It was agreed at the 17th Meeting of the ASCOBANS Jastarnia Group in May 2021 that when the plans are next updated, the Jastarnia Plan should extend east from 13.0°E and the WBBK Plan should cover the area in the Kattegat and Belt Seas from 56.95°N to 13.5°E, so there would be only a little overlap between the plans, reflecting the movement of populations.

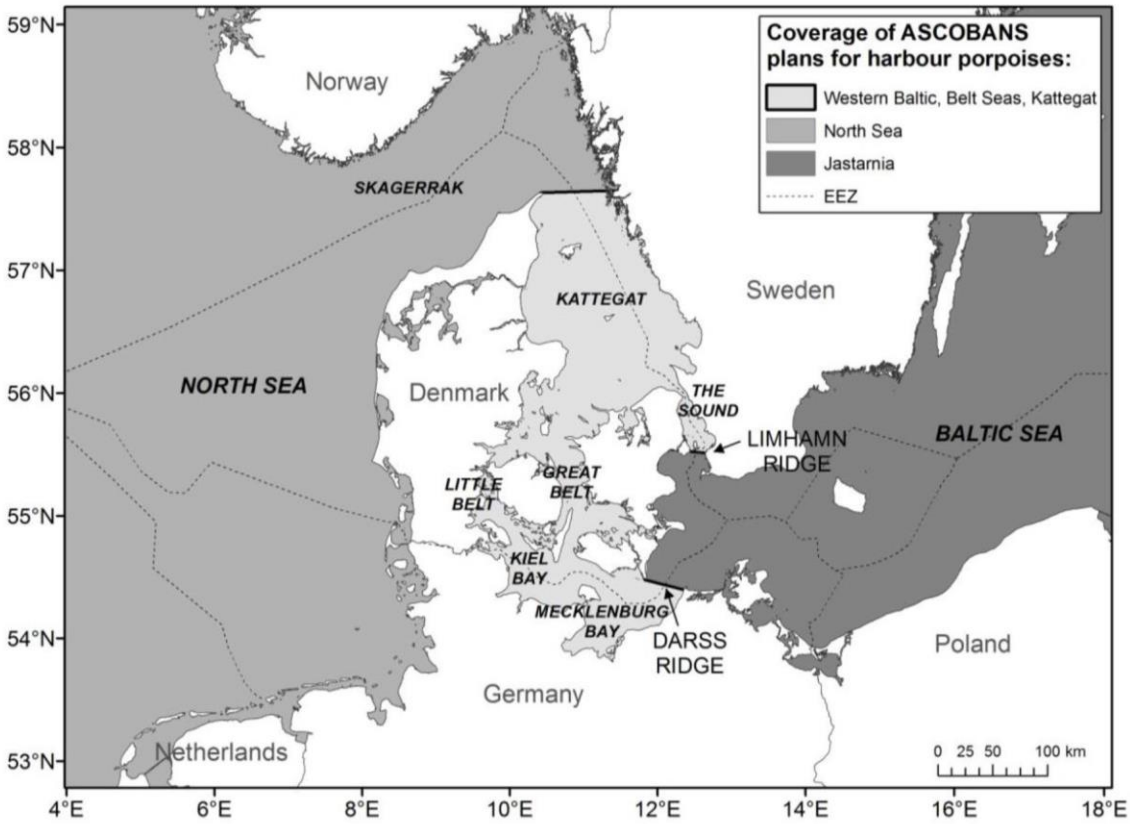

Figure 3. The geographical area covered by the current three ASCOBANS management plans for porpoises in the wider Baltic region. From Carlèn and Evans (2021).

6.4 Habitat conservation

Natura 2000 is a network of sites designated under the EC Habitats Directive, and includes the SACs required for Annex II species to ensure their favourable conservation status. The robust spatio-temporal distribution data that form the basis for the identification of evidence-based marine protected areas, became available for the Baltic Proper harbour porpoise only in 2016 (SAMBAH, 2016; Carlén et al., 2018). Based on those results, the Swedish government designated a large Natura 2000 site ("Hoburgs bank och Midsjöbankarna"; 10,511 km^2) in December 2016, which encompasses most of the core summer high density areas identified for the Baltic Proper harbour porpoise. A management plan is currently being developed for the site (Carlén and Evans, 2021).

In Poland, a small Natura 2000 site ("Zatoka Pucka i Półwysep Helski"; 266 km^2) was designated in 2008, encompassing Puck Bay and surrounding waters. The Baltic Proper harbour porpoise was a qualifying feature for this site, which represents the core area inhabited by porpoises in Polish waters and is of national importance for the species. No management plan currently exists, but pingers will be implemented in static net fisheries in the area as part of the EU delegated act, see below. These are the only Natura 2000 sites currently designated within the summer management area identified by Carlén et al. (2018), with the harbour porpoise listed. Several additional Natura 2000 sites, with the harbour porpoise listed, exist within the winter distribution range of the Baltic Proper harbour porpoise in Swedish, Danish and German waters (for example the Pommersche Bucht, Adlergrund, and Westliche Rönnebank SACs in Germany). Management plans are lacking for many of those sites, but some are in development.

Additionally, a number of marine protected areas (MPAs) have been designated as part of the HELCOM Baltic Sea Protected Area network, which include harbour porpoises from the Baltic Proper population as a qualifying feature (Table 2). The Pommersche Bucht-Rönnebank and Falsterbo Peninsula with Måkläppen MPAs are likely only to be used by the Baltic Proper harbour porpoise on a seasonal basis (winter) and primarily to apply to the Belt Sea population during summer. None of these MPAs have specific management plans in place for harbour porpoises, and several are considered to be too small in size to provide significant benefits for a mobile species such as the harbour porpoise (ASCOBANS, 2009).

In 2020, ICES published special request advice on emergency measures to prevent bycatch of Baltic Proper harbour porpoise (ICES 2020b), including recommendations to close static net fisheries in relevant Natura 2000 sites with the harbour porpoise listed, and one additional area within the range of the Baltic Proper harbour porpoise. Following the ICES advice and discussions within the Baltic Sea regional fisheries body BALTFISH, an EU delegated act on closures of static net fisheries and/or obligatory use of acoustic deterrent devices in relevant Natura 2000 sites in Sweden, Poland, Germany and Denmark came into effect in February, respectively June 2022 (Delegated Regulation (EU) 2022/303). (Figure 4). In accordance with the Recommendation agreed by the BALTFISH, BALTFISH is continuing the work to address harbour porpoises conservation issues outside the areas covered by the delegated regulation referred earlier as well the control aspects.

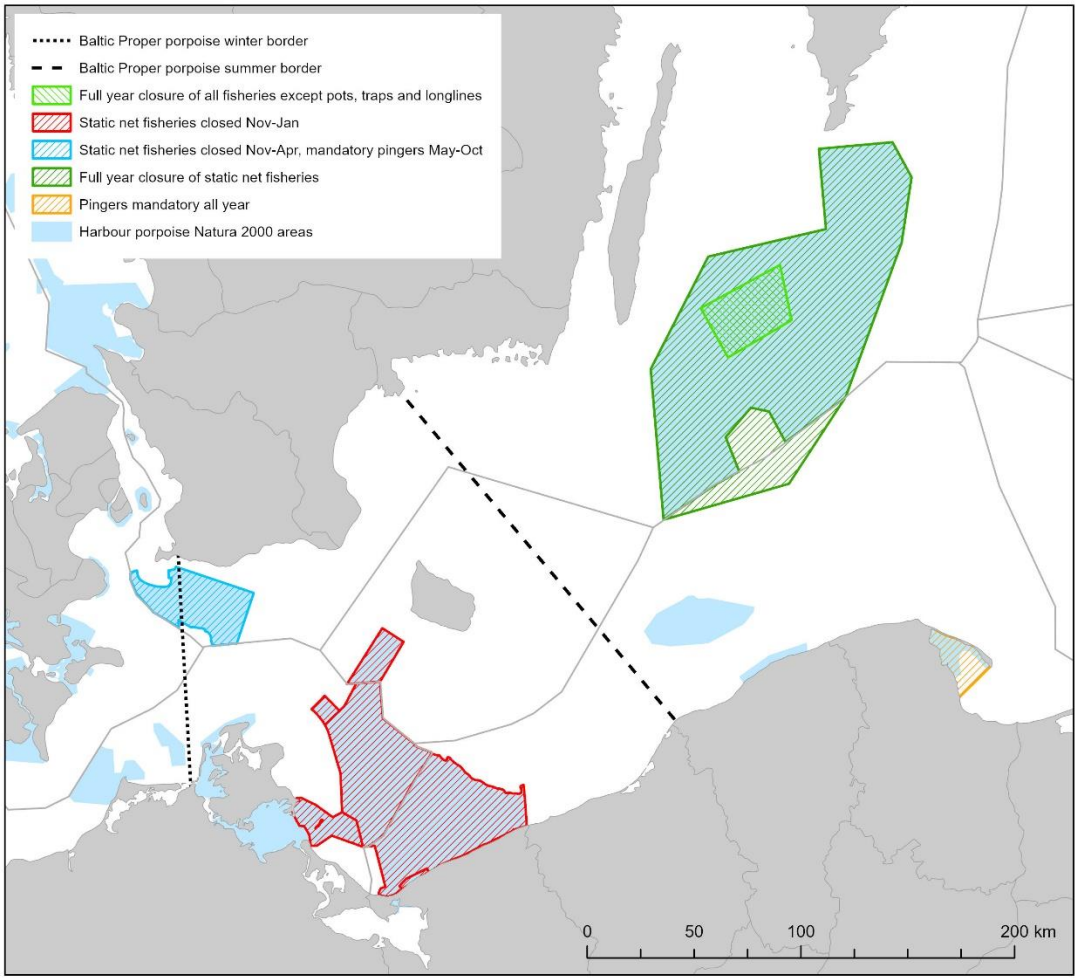

Figure 4. Map of the Baltic Sea region showing the measures specified in the delegated act amending EU regulation 2019/1241, and Natura 2000 areas where the harbour porpoise is listed in the Standard Data Form of the site.

Table 2. HELCOM marine protected areas (MPAs) for which the Baltic Proper harbour porpoise is a qualifying feature (HELCOM MPA database).

Site ID	MPA name	Country	Species status
172	Pommersche Bucht-Rönnebank	Germany	Occasional
84	Zatoka Pucka	Poland	Not reported
85	Ostoja Słowinska	Poland	Not reported
86	Wolin i Uznam	Poland	Not reported
170	Zatoka Pomorska	Poland	Not reported
111	Falsterbo Peninsula with Måkläppen	Sweden	Migratory
115	Hoburgs Bank	Sweden	Not reported

6.5 Population monitoring

Several Baltic Sea countries have opportunistic sighting and stranding reporting schemes in place to record porpoises observed at sea, bycaught or found dead along the shorelines, and HELCOM and ASCOBANS maintain a collaborative database of such records from the Baltic Proper. In the Range States, there are formal stranding and necropsy schemes only in Germany, Poland and Sweden.

Systematic visual monitoring schemes to produce robust abundance estimates for the Baltic Proper have been hindered by the low density of porpoises in the region, which does not yield sufficient sample sizes to facilitate the application of the standard techniques (i.e. boat or aerial line transect surveys). This was the driver for the implementation of acoustic monitoring during the SAMBAH project. Since the completion of the SAMBAH project, Germany has continued and expanded their previously existing acoustic monitoring programme to include SAMBAH stations in German waters, and Denmark, Finland, Poland and Sweden now have continuous or intermittent acoustic monitoring programmes within the Baltic Proper harbour porpoise range. No formal monitoring programmes exist in other eastern Baltic states. There are plans to develop a follow-up to the SAMBAH project to achieve new estimates of abundance and distribution.

The monitoring of porpoise bycatch in fishing gear and the implementation of mitigation measures in the Baltic Proper has varied greatly between countries. The core Baltic Proper harbour porpoise summer (breeding) distribution occurs within ICES Subdivisions 25 and 26 (extending to 27 and 28.2) in the waters of Denmark (Bornholm), Lithuania, Poland, and Sweden which is where bycatch monitoring and mitigation focus is most urgently required. However, no dedicated at-sea observer schemes to monitor porpoise bycatch occur in Poland or Sweden (Carlén and Evans, 2021), although limited pilot schemes have been carried out since 2006 in Poland. In Sweden, some observer effort has been conducted from trawl fisheries, but little in the gillnet fisheries that most affect porpoises. There has been some voluntary use of pingers by Polish and Swedish fishermen. Danish and German bycatch monitoring effort and pinger use are primarily being implemented in the areas inhabited by the Belt Sea harbour porpoise. In Latvia, there has been a national monitoring programme for cetacean bycatch since 2006, including both trawl and gillnet fisheries. However, no porpoise bycatch has been reported and monitoring is likely to cease to reduce expenditure (Evans and Similä, 2018). In Finland, there was a pilot monitoring programme under EU Reg. 814/2004 in 2006-2007. The result of this work was that there were no porpoise by-catch in Finland during the observation period. The reporting of harbour porpoise bycatch has been mandatory according to fishery legislation, since 2016 and there are no active observer programmes or mitigation measures in place at the moment.

7. Effects of the proposed amendment

7.1 Anticipated benefits of the amendment

The CMS aims to conserve migratory species throughout their range via the promotion of concerted action among the Range States, which are encouraged to conclude global or regional conservation agreements. The CMS lays the legal foundation for internationally coordinated conservation measures throughout a migratory range. The North Sea and Baltic Sea populations of harbour porpoises are listed on CMS Appendix II. This proposal is for the inclusion of the Baltic Sea Proper harbour porpoise on Appendix I as a migratory species in danger of extinction throughout all or a significant portion of its range.

Inclusion on Appendix I would require Baltic Sea Range States to provide strict protection by prohibiting takes, conserving habitats, limiting obstacles to their migrations, and controlling other factors that might endanger them. The Baltic Proper harbour porpoise is recognised by the IUCN and HELCOM as Critically Endangered due to the low number of mature individuals, a continued decline and all of the individuals belonging to a single population. Consequently, it is already considered to face the risk of extinction throughout its range, and to represent a high priority for conservation (Carlen et al., 2021). Amundin et al. 2022, conclude that the small abundance estimate strongly supports that the Baltic Proper harbour porpoise is facing an extremely high risk of extinction, and highlights the need for immediate and efficient conservation actions through international cooperation. Sveegaard et al. (2015) noted that it was not sufficient for each country to act individually for the conservation of porpoises, and that collaboration was needed to determine population status. Inclusion on Appendix I would provide the basis for more effective collaborative action by all Range States bordering the Baltic Proper.

7.2 Potential risks of the amendment

None identified.

7.3 Intention of the proponent concerning development of an Agreement or Concerted Action

A relevant legally-binding UN treaty, ASCOBANS, exists (see section 6.2 above). No new Agreement is planned.

Concerted action for the Harbour Porpoise in the Baltic Sea and the Iberian Peninsula was adopted by the CMS COP at its 13th meeting (UNEP/CMS/Concerted Action 13.7).

8 Range States

Denmark (Bornholm), Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russian Federation, and Sweden.

9. Consultations

The 26th Meeting of the ASCOBANS Advisory Committee (8-11 November 2021); Consultations with Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden (2nd May -22nd June 2022).

10. Additional remarks

No additional remarks.

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