



Oceana proposal for a Marine Protected Area The Sound

INTRODUCTION

The Sound is located between Sweden and Denmark, and forms, together with Little Belt and Great Belt, a connection between the brackish Baltic Sea and the saltier North Sea via Kattegat and Skagerrak. In 1932, a bottom trawling ban was established in the Sound because of heavy traffic in the narrow strait. The ban, which is still in effect, is one of the main reasons why a number of rare and diverse benthic communities are found in the area today. Spatial protection in the Sound is limited to scattered, small, mostly coastal areas, including Natura 2000 sites; the northern part, which in particular has many unique habitats, remains mostly unprotected. Human activities, including dredging, land reclamation, and pollution, continue to threaten marine life in the area.

Effective protection of the area could best be achieved by establishing a single transboundary marine protected area (MPA) across the entire Sound. This large MPA would encompass the existing smaller protected areas and the currently unprotected areas, all under one management plan. Critically, its successful establishment, management, and enforcement would require joint efforts from Denmark and Sweden.

DESCRIPTION OF THE AREA

Oceana's 2011, 2012 and 2013 expeditions studied benthic habitats in both deeper and shallower areas north of Ven (see species lists in Tables 1 to 9). A remotely operated vehicle, scuba divers and bottom sampling were used to study and document marine life.

The Sound is home to many benthic communities, including soft bottom communities like *Modiolus*, *Amphiura*, eelgrass, and sea pens with burrowing megafauna.

One of the most notable communities in the northern part of the Sound is the rare *Haploops* community, named after small habitat-forming amphipods (*Haploops tubicola* and *H. tenius*). *Haploops* spp. live inside small self-built tubes, on muddy sediments at -25 meters or below. Sea urchins, brittle stars and tube worms are also found in this community, which is an important feeding ground for fish such as plaice^{1,2}. Regular sampling has shown that the *Haploops* community is declining in the Sound, partly for reasons which are not fully understood, and there are only a few stable populations recorded in a restricted area north of Ven island¹. In April 2012, while studying a site north of Ven at 28 meters depth that had been known to host a dense *Haploops* community³, we discovered no *Haploops* tubes. Fewer tubes than expected⁴ have also been found in other sampling sites in the same area. Instead, we found different species of brittle stars (Table 2) indicating a change in the community.

The past few decades have also seen a similar decrease in another distinctive community found in the area: beds of horse mussels, *Modiolus modiolus*¹. These beds can occur on different substrates, from cobbles to muddy seabeds. The community forms biogenetic reefs and is one of the more diverse communities in the northern part of the Sound and Kattegat. In the Sound, horse mussels are found on muddy bottoms, where other species, such as barnacles, bryozoans and hydroids, attach themselves to their shells. The horse mussel is particularly sensitive to human disturbance since it grows slowly and does not reach sexual maturity until 5 to 6 years. *Modiolus* beds used to be more common in Kattegat, but have now mostly disappeared, likely because of destructive fishing practices⁵. Despite the existence of the trawling ban, horse mussels in the Sound have decreased over the past few decades¹. Our 2012 survey of an area 30 meters deep that was once rich in this species⁶ showed only a few of this type of mussel and many empty shells. Across the Baltic Sea, *M. modiolus* beds are considered Vulnerable by HELCOM⁷.

Sea pens with burrowing megafauna can be found in the northern part of the Sound and in Kattegat. Slender sea pens (*Virgularia mirabilis*) and phosphorescent sea pens (*Pennatulula phosphorea*) are common sea pens in the area, while Norway lobster (*Nephrops norvegicus*) makes up the majority of the megafauna. In the Sound, sea pens can also be found without burrowing megafauna. The community is found on fine mud mostly in deeper waters, and in the Sound, it is found at different depths, from 20 meters and below (see the species lists). The community is listed as Endangered by HELCOM⁷.

The *Amphiura* community is found at depths ranging from 25 to 30 meters, in muddy sediments in the northern part of the Sound. The *Amphiura filiformis* brittle star lends its name to the community, which includes many other benthic species, such as worms (e.g., *Anobothrus gracillius*) and clams (e.g., *Nuculoma tenuis*). Other animals living in this community include crustaceans like the amphipod *Amplisca tenuicornis*, slender sea pens, and other species of brittle stars (*Ophiura albida*)⁸.

South of Ven, benthic life is less diverse than north of the island. Oceana's surveys in the southern part of the Sound found eelgrass (*Zostera marina*) meadows in very shallow water, while brown algae, including sea lace (*Chorda filum*) and bladderwrack (*Fucus vesiculosus*), were observed in deeper areas (Table 3). Eelgrass is a characteristic and important species in the coastal parts of Kattegat and the Baltic Sea, and exists in several locations on both the Swedish and Danish sides of the Sound. Eelgrass has roots and rhizomes, which make it able to live in sandy areas that would otherwise be barren. With its stabilising and thereby securing effect, eelgrass provides shelter for animals. Its high productivity is also important, as it can help the planet to cope with climate change⁹. Eelgrass meadows are considered Near Threatened by HELCOM⁷.

The Sound is an important area for seals, including harbour seals (*Phoca vitulina*) and grey seals (*Halichoerus grypus*). Important seal areas exist in both Danish waters (the southern part of Saltholm) and Swedish waters (at Falsterbo peninsula) in the southern part of the Sound. The largest colony of seals is found on Falsterbo peninsula at Måkläppen, which is Sweden's oldest nature reserve¹⁰. The area is also important for wintering and migrating bird species.

A bubbling reef was recently identified by the Danish Nature Agency in the southern part of Kattegat, near the border of the Sound. Bubbling reefs are submarine structures, formed through the aggregation of carbonate cement and other particles resulting from the microbial oxidation of gas emissions, mainly methane. Bubbling reefs are found scattered in Kattegat and in the Danish part of Skagerrak, and are protected under the Habitats Directive (Annex I)¹¹. They serve as habitat for a large number of species, including sponges, sea anemones, algae, and crustaceans.

PROPOSAL

The Sound is a prime candidate for protection, both because of its unique set of species and communities, and the worrying state of some key communities, like *Haploops* and *Modiolus*. Our expedition findings support the recommendation¹ that it should be protected and efficiently managed against all forms of impacts to the seafloor, in order to save the last remnants of these communities, as well as other important habitats and species present in the Sound.

In order to best protect marine life in the region, a large transboundary MPA should be established which covers the entire Sound. This MPA would combine the smaller protected Natura 2000 sites, seal sanctuaries, and other small marine reserves, with those areas currently outside protection, and would be jointly managed by Denmark and Sweden under a single, comprehensive management plan.

The small bubbling reef found north of Gilleleje should be protected under the Habitats Directive.

The northern part of the Sound is an important area for Critically Endangered harbour porpoises (*Phocoena phocoena*), which gather there in high numbers during the breeding season in spring and summer¹². The harbour porpoise is listed under the Habitats Directive (Annexes II, IV and V)¹¹, and Denmark and Sweden are legally obliged to provide it with strict protection, including through the declaration of Special Areas of Conservation.

Overall, the Sound includes many rare benthic habitats, communities and species. Many of these (including *Zostera* meadows, *Modiolus* beds, *Haploops* spp., and sea pens with burrowing megafauna), however, are not covered by the Habitats Directive or other regulations, and thus require complementary protection measures.

POSSIBLE THREATS AND MANAGEMENT PROPOSALS

Although the trawling ban has been in place for over 80 years, many other human activities have intensified in the Sound and threaten vulnerable key communities, like *Haploops* and *Modiolus*. These include, for instance, dredging of materials, dredge tipping, oil spills, emissions of pollutants and nutrients. Illegal trawling also occurs in the Sound, although its extent is not known. *Haploops* communities are particularly sensitive to eutrophication, fishing impacts, ecosystem changes and increased water temperature, while specific threats to *Modiolus* beds include fishing impacts (especially bottom trawling), dumping, extension of harbours, dredge tipping, pollution, and depleted oxygen levels at the sea bottom. Sea pens and burrowing megafauna are especially vulnerable to bottom trawling, and oxygen depletion. Trawling and net fishing threaten the bubbling reef, because the very northern part of the Sound is currently not covered by the trawling ban.

There is already strong local interest in protecting the Sound, and some existing cooperation between Sweden and Denmark towards this aim¹³. Two smaller Swedish nature reserves exist inside the proposed area: Knähaken and the more recently protected Grollegrund, which covers both shallow and deeper waters¹⁴. The most important Danish environmental organisations, including Oceana, which form a coalition called *Det Grønne Kontaktudvalg* (“the Green Coalition”), have published a report proposing to protect the entire Sound¹⁵. A Swedish organisation, Öresundsfonden, has also conducted a survey that shows that the majority of Swedish municipalities in the region want to designate the Sound as a MPA.

Establishing a large, transboundary MPA in the Sound is also justified from a management point of view. The same rules and practices should be applied on both the Swedish and Danish sides of the Sound, to make it easier to enforce control and regulation measures. Ideally, this should be done under EU law, to cover all of the fishing fleets and other actors active in the area. Critically, protection of the area should include extending the trawling ban to cover the bubbling reef at the northern extreme of the Sound, and should address the bycatch of harbour porpoises, seals and birds. It should also include joint monitoring activities by the two countries.

REFERENCES

- 1 Göransson P., Bertilsson Vuksan S., Karlfelt J. & Börjesson L. 2010. *Haploops*-samhället och *Modiolus*-smahället utanför Helsingborg 2000-2009. Miljönämnden i Helsingborg. 79 pp.
- 2 Paulomäki H., Abel C. & Aguilar R. 2011. Conservation proposals for ecologically important areas in the Baltic Sea. *Oceana*.
- 3 P. Göransson, pers. comm.
- 4 P. Göransson, pers. comm.
- 5 M. Olesen, pers. comm.
- 6 P. Göransson, pers. comm.
- 7 HELCOM. 2013. Red List of Baltic Sea underwater biotopes, habitats and biotope complexes. *Baltic Sea Environment Proceedings No. 138*. 69 pp.
- 8 The Sound Water Cooperation. Available at: <http://www.oresundsvand.dk/> [Viewed: 8 Nov 2012].
- 9 Rasmussen J.R., Havenhand J. & Grønkjær P. 2013. Ålegræs og klimaforandringer i Kattegat- og Skagerrakområdet. Rapport fra projekt Hav møder Land . Länsstyrelsen i Västra Götalands län.
- 10 Länsstyrelsen Skåne Län. 2008. The Falsterbo Peninsula. Nature reserves in Skåne. Available at: http://www.lansstyrelsen.se/skane/SiteCollectionDocuments/sv/publikationer/2008/The_Falsterbo_Peninsula_2008.pdf [Viewed: 10 Oct 2013].
- 11 Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. *Official Journal L 206, 22.7.1992, pp. 7- 50*.
- 12 Sveegaard S. 2011. Spatial and temporal distribution of harbour porpoises in relation to their prey. PhD Thesis. Dep. of Arctic Environment, NERI. National Environmental Research Institute, Aarhus University.
- 13 The Sound Water Cooperation. Available at: <http://www.oresundsvand.dk/> [Viewed: 8 Nov 2012].
- 14 Göransson P., Rugfelt C., Bengtsson F. & Björling E. 2012. Skötselplan för naturreservatet Grollegrund, Helsingborg stad.
- 15 Blæsbjerg M., Abel C., Andersen S. M., Flensted K. N., Jørgensen H. M., Meltofte H., Moshøj C., Nicolajsen S. V., Sveegaard S., Vikstrøm T. & Winter H. L. 2012. Havets natur – et oplæg til handleplan for Danmarks marine biodiversitet. Det Grønne Kontaktudvalg. 47 pp.

SPECIES LIST FOR THE SOUND

Table 1: List of species recorded north of Ven island in 2011. Threat category is indicated in brackets.

Species	
PORIFERA	
<i>Halichondria panicea</i>	<i>Haliclona limbata</i>
HYDROZOA	
<i>Abietinaria abietina</i>	<i>Kirchenpaureia pinnata</i>
<i>Bougainvillia ramosa</i>	<i>Laomedea flexuosa</i>
<i>Clava multicornis</i>	<i>Obelia geniculata</i>
<i>Eudendrium rameum</i>	<i>Tubularia indivisa</i>
<i>Halecium halecinum</i>	<i>Tubularia larynx</i>
ANTHOZOA	
<i>Alcyoniium digitatum</i>	<i>Urticina felina</i>
<i>Metridium senile</i>	<i>Virgularia mirabilis</i>

Table 1: List of species recorded north of Ven island in 2011. Threat category is indicated in brackets.

Species	
ANNELIDA	
<i>Neoamphitrite figulus</i>	<i>Pygospio elegans</i>
<i>Phascolion strombus</i>	<i>Sabella penicillus</i>
<i>Pomatoceros triqueter</i>	<i>Spirorbis spirorbis</i>
MOLLUSCA	
<i>Aequipecten opercularis</i>	<i>Modiolus modiolus</i> (Vulnerable, HELCOM 2013)
<i>Aporrhais pespelecani</i>	<i>Neptunea antiqua</i>
<i>Bittium reticulatum</i>	<i>Oenopota turricola</i>
<i>Buccinum undatum</i>	<i>Pecten maximus</i>
<i>Cuthona nana</i>	<i>Propebela (Oenopota) (Lora) turricolata</i>
<i>Epitonium clathrus</i>	<i>Tonicella rubra</i>
<i>Hiatella arctica</i>	<i>Tonicella marmorea</i>
<i>Leptochiton</i> sp.	
CRUSTACEA	
<i>Balanus balanus</i>	<i>Haploops tubicola</i> (Vulnerable, HELCOM 2013)
<i>Balanus improvisus</i>	<i>Pagurus bernhardus</i>
<i>Haploops tenuis</i> (Endangered, HELCOM 2013)	<i>Palaemonetes varians</i>
BRYOZOA	
<i>Alcyonidioides mytili</i>	<i>Membranipora membranacea</i>
<i>Electra pilosa</i>	
ECHINODERMATA	
<i>Asterias rubens</i>	<i>Ophiura albida</i>
<i>Crossaster papposus</i>	<i>Ophiura ophiura</i>
<i>Henrica sanguinolenta</i>	<i>Ophiura robusta</i>
<i>Luidia sarsi</i>	<i>Psammechinus miliaris</i>
<i>Ophiocomina nigra</i>	<i>Solaster endeca</i>
<i>Ophiopholis aculeata</i>	<i>Spatangus purpureus</i>
<i>Ophiothrix fragilis</i>	<i>Strongylocentrotus droebachiensis</i>
TUNICATA	
<i>Dendrodoa grossularia</i>	
FISH	
<i>Amblyraja radiata</i> (egg case)	<i>Pleuronectes platessa</i>
<i>Gadus morhua</i>	<i>Pomatoschistus minutus</i>
<i>Gobiusculus flavescens</i>	<i>Scophthalmus rhombus</i>
<i>Limanda limanda</i>	
ALGAE	
<i>Delesseria sanguinea</i>	<i>Palmaria palmata</i>
<i>Halarachnion ligulatum</i>	<i>Phymatolithon lenormandii</i>
<i>Hildenbrandia rubra</i>	<i>Phymatolithon</i> sp.
<i>Laminaria saccharina</i>	<i>Rhodophyllis divaricata</i>

Table 2: List of species documented in the Northern part of the Sound in 2012, by depth. Threat category is indicated in brackets.

Depth (m)	Species
28-35	PORIFERA
	<i>Haliclona urceolus</i>
	CNIDARIA
	<i>Actinia equina</i>
	<i>Alcyonium digitatum</i>
	<i>Bolinopsis infundibulum</i>
	<i>Ctenophora</i> sp.
	<i>Ectopleura larynx</i>
	<i>Halecium halecinum</i>
	<i>Mnemiopsis leidyi</i>
	<i>Urticina felina</i>
	<i>Virgularia mirabilis</i>
	MOLLUSCA
	<i>Abra nitida</i>
	<i>Acanthocardia echinata</i>
	<i>Aequipecten opercularis</i>
	<i>Aporrhais pespelecani</i>
	<i>Arctica islandica</i>
	<i>Astarte elliptica</i>
	<i>Buccinodae</i> sp.
	<i>Buccinum undatum</i>
	<i>Cerastoderma</i> cf. <i>edule</i>
	<i>Corbula gibba</i>
	<i>Modiolus modiolus</i> (Vulnerable, HELCOM 2013)
	<i>Neptunea antiqua</i>
	<i>Nucula nitidosa</i>
	<i>Nuculana pernula</i>
	<i>Nuculoma tenuis</i>
	<i>Pecten maximus</i>
	<i>Pectinidae</i> sp.
	<i>Thyasira flexuosa</i>
	CRUSTACEA
	<i>Ampelisca tenuicornis</i>
	<i>Balanus balanus</i>
	<i>Haploops</i> sp. (Endangered, HELCOM 2013)
	<i>Pagurus bernhardus</i>
	<i>Philomedes brenda</i>
	ANNELIDA
	<i>Anobothrus gracilis</i>
	<i>Goniada maculata</i>
	<i>Lumbrineris [Scoletoma] fragilis</i>

Table 2: List of species documented in the Northern part of the Sound in 2012, by depth. Threat category is indicated in brackets.

Depth (m)	Species
	<i>Maldane cf. sarsi</i>
	<i>Ophelina acuminata</i>
	<i>Pectinaria belgica</i>
	<i>Pomatoceros triqueter</i>
	<i>Sabella penicillus</i>
	<i>Sabellidae sp.</i>
	ECHINODERMATA
	<i>Amphiura chajjei</i>
	<i>Amphiura filiformis</i>
	<i>Asteria rubens</i>
	<i>Echinocardium cordatum</i>
	<i>Echinocardium sp.</i>
	<i>Echinus esculentus</i>
	<i>Ophiocomina nigra</i>
	<i>Ophithrix fragilis</i>
	<i>Ophiura affinis</i>
	<i>Ophiura albida</i>
	<i>Ophiura ophiura</i>
	<i>Ophiura sp.</i>
	<i>Strongylocentrotus droebachiensis</i>
	FISH
	<i>Amblyraja radiata</i>
	<i>Callionymus lyra</i>
	<i>Gadus morhua</i>
	<i>Gobiidae sp.</i>
	<i>Lesueurigobius cf. friesii</i>
	<i>Limanda limanda</i>
	<i>Lumpenus lampreaformis</i>
	<i>Merlangius cf. merlangus</i>
	<i>Platichthys flesus</i>
	<i>Pleuronectes platessa</i>
	<i>Pomatoschistus cf. microps</i>
	<i>Pomatoschistus minutus</i>
	<i>Pomatoschistus sp.</i>
4-18	CNIDARIA
	<i>Aurelia aurita</i>
	<i>Bolinopsis infundibulum</i>
	<i>Laomedea flexuosa</i>
	<i>Obelia geniculata</i>
	BRYOZOA
	<i>Membranipora cf. membranacea</i>

Table 2: List of species documented in the Northern part of the Sound in 2012, by depth. Threat category is indicated in brackets.

Depth (m)	Species
	MOLLUSCA
	<i>Acanthodoris pilosa</i>
	<i>Buccinum undatum</i>
	<i>Littorina littorea</i>
	<i>Modiolus modiolus</i> (Vulnerable, HELCOM 2013)
	<i>Mytilus edulis</i>
	CRUSTACEA
	<i>Balanus cf. crenatus</i>
	<i>Balanus sp.</i>
	<i>Carcinus maenas</i>
	<i>Idotea balthica</i>
	ANNELIDA
	<i>Spirorbis spirorbis</i>
	FISH
	<i>Ctenolabrus rupestris</i>
	<i>Gobiusculus flavescens</i>
	<i>Myoxocephalus scorpius</i>
	<i>Platichthys flesus</i>
	<i>Pleuronectes platessa</i>
	RHODOPHYCEAE
	<i>Delesseria sanguinea</i>
	<i>Hildenbrandia rubra</i>
	<i>Polysiphonia sp.</i>
	PHAEOPHYCEAE
	<i>Fucus serratus</i>
	<i>Fucus vesiculosus</i>
	<i>Halosiphon tomentosus</i>
	<i>Laminaria latissima</i>
	CHLOROPHYCEAE
	<i>Capsosiphon fulvescens</i>

Table 3: List of species recorded in the southern part of the Sound, in Swedish waters 5 to 20 meters deep, in 2011.

Species
MOLLUSCA
<i>Hydrobiidae sp.</i>
<i>Mytilus sp.</i>
CRUSTACEA
<i>Balanus sp.</i>
<i>Carcinus maena</i>
FISH
<i>Zoarces viviparus</i>

Table 3: List of species recorded in the southern part of the Sound, in Swedish waters 5 to 20 meters deep, in 2011.

Species
PHAEOPHYCEAE
<i>Chorda filum</i>
<i>Fucus vesiculosus</i>
CHLOROPHYCEAE
<i>Ulva cf. lactuca</i>
ANGOIOSPERMAE
<i>Zostera marina</i> (Near threatened, HELCOM 2013)

Table 4: List of species recorded at 8 meters depth in Malmö harbour, Sweden, 2013.

Species
MOLLUSCA
<i>Mytilus</i> sp.
CRUSTACEA
<i>Balanus</i> sp.
FISH
<i>Anguilla anguilla</i>
<i>Gadus morhua</i>
<i>Perca fluviatilis</i>
PHAEOPHYCEAE
<i>Laminaria latissima</i>
ANGOIOSPERMAE
<i>Zostera marina</i>

Table 5: List of species recorded in Kullen, Sweden, near the border of Kattegat, at 15 to 17 meters depth. Threat category is indicated in brackets.

Species	
PORIFERA	
<i>Haliclona limbata</i>	
CNIDARIA	
<i>Cyanea capillata</i>	<i>Hydractinia echinata</i>
<i>Cyanea lamarckii</i>	<i>Pennatula phosphorea</i>
<i>Ectopleura cf. larynx</i>	<i>Virgularia mirabilis</i>
ANNELIDA	
<i>Spirorbis spirorbis</i>	
MOLLUSCA	
<i>Arctica islandica</i> (Least concern, HELCOM 2013)	<i>Modiolus modiolus</i> (Vulnerable, HELCOM 2013)
<i>Buccinum undatum</i>	<i>Tonicella marmorea</i>
<i>Littorina littorea</i>	
CRUSTACEA	
<i>Balanus balanus</i>	<i>Nephrops norvegicus</i> (holes)
<i>Carcinus maenas</i>	<i>Pagurus bernhardus</i>

Table 5: List of species recorded in Kullen, Sweden, near the border of Kattegat, at 15 to 17 meters depth. Threat category is indicated in brackets.

Species	
BRYOZOA	
<i>Securiflustra securifrons</i>	
ECHINODERMATA	
<i>Asterias rubens</i>	<i>Astropecten irregularis</i>
FISH	
<i>Callionymus lyra</i>	<i>Platichthys flesus</i>
<i>Ctenolabrus rupestris</i>	<i>Pleuronectes platessa</i>
<i>Entelurus aequoreus</i>	<i>Pomatoschistus pictus</i>
<i>Gadus morhua</i>	<i>Pomatoschistus norvegicus</i>
<i>Gobiusculus flavescens</i>	
RHODOPHYCEAE	
<i>Delesseria sanguinea</i>	<i>Phymatolithon lenormandii</i>
<i>Gymnogongrus cf. granulatus</i>	<i>Polysiphonia sp. cf.</i>
<i>Phymatolithon laevigatum</i>	<i>Phycodrys rubens</i>
PHAEOPHYCEAE	
<i>Chorda filum</i>	<i>Laminaria digitata</i>
<i>Fucus serratus</i>	<i>Laminaria latissima</i>
<i>Halosiphon tomentosus</i>	<i>Pelvetia canaliculata</i>

Table 6: List of species recorded at 13 to 23 meters depth in an area south of Höganäs and north of Grollegrund, in the northern part of the Sound, Sweden, 2013. Threat category is indicated in brackets.

Species	
CNIDARIA	
<i>Cyanea sp.</i>	<i>Virgularia mirabilis</i>
ANNELIDA	
<i>Arenicola marina</i>	
MOLLUSCA	
<i>Arctica islandica</i> (Least concern, HELCOM 2013)	<i>Modiolus modiolus</i> (Vulnerable, HELCOM 2013)
<i>Buccinum undatum</i>	
CRUSTACEA	
<i>Carcinus maenas</i>	<i>Pagurus bernhardus</i>
ECHINODERMATA	
<i>Asterias rubens</i>	
RHODOPHYCEAE	
<i>Delesseria sanguinea</i>	<i>Phycodrys rubens</i>
<i>Desmarestia aculeata</i>	
PHAEOPHYCEAE	
<i>Arthrocladia villosa</i>	<i>Laminaria latissima</i>
<i>Laminaria cf. digitata</i>	
MAMMALIA	
<i>Phocoena phocoena</i> (ANNEX II and V)	

Table 7: List of species recorded north of Gilleleje, Denmark, at 10 meters depth, near the border between Kattegat and the Sound, 2013. Threat category is indicated in brackets.

Species	
PORIFERA	
<i>Halichondria cf. panicea</i>	
CNIDARIA	
<i>Obelia geniculata</i>	<i>Cyanea capillata</i>
<i>Obelia longissima</i>	<i>Cyanea lamarckii</i>
ANNELIDA	
<i>Arenicola marina</i>	
MOLLUSCA	
<i>Buccinum undatum</i>	
CRUSTACEA	
<i>Balanus cf. crenatus</i>	<i>Carcinus maenas</i>
<i>Balanus sp.</i>	<i>Mysidacea sp.</i>
BRYOZOA	
<i>Electra pilosa</i>	
ECHINODERMATA	
<i>Asterias rubens</i>	
FISH	
<i>Ctenolabrus rupestris</i>	<i>Myoxocephalus scorpius</i>
<i>Gadus morhua</i>	<i>Pleuronectes platessa</i>
<i>Limanda limanda</i>	<i>Trachinus draco</i>
<i>Melanogrammus aeglefinus</i>	
RHODOPHYCEAE	
<i>Delesseria sanguinea</i>	<i>Heterosiphonia cf. sp.</i>
<i>Furcellaria lumbricalis</i>	<i>Phycodrys cf. rubens</i>
<i>Gymnogongrus crenulatus</i>	<i>Polysiphonia sp.</i>
PHAEOPHYCEAE	
<i>Halosiphon tomentosus</i>	<i>Laminaria digitata</i>
<i>Fucus serratus</i>	<i>Laminaria latissima</i>

Table 8: List of species recorded at 3 to 11 meters depth in Ålabordarna, Sweden, in 2013. Threat category is indicated in brackets.

Species	
CNIDARIA	
<i>Cyanea capillata</i>	<i>Laomedea flexuosa</i>
MOLLUSCA	
<i>Cerastoderma lamarcki</i>	<i>Mytilus sp.</i>
<i>Hydrobia ulvae</i>	
CRUSTACEA	
<i>Balanus sp.</i>	<i>Idotea granulosa</i>
<i>Idotea balthica</i>	

Table 8: List of species recorded at 3 to 11 meters depth in Ålabordarna, Sweden, in 2013. Threat category is indicated in brackets.

Species	
FISH	
<i>Clupea harengus</i>	<i>Platichthys flesus</i>
<i>Gadus morhua</i>	<i>Pleuronectes platessa</i>
PHAEOPHYCEAE	
<i>Laminaria latissima</i>	
ANGIOSPERMAE	
<i>Zostera marina</i> (Near threatened, HELCOM 2013)	

Table 9: List of species recorded at locations south of Ven from 6 to 22 meters deep, Sweden, in 2013.

Species	
CNIDARIA	
<i>Virgularia mirabilis</i>	
MOLLUSCA	
<i>Mytilus</i> sp.	
ECHINODERMATA	
<i>Asterias rubens</i>	
FISH	
<i>Callionymus lyra</i>	<i>Gobiusculus flavescens</i>
PHAEOPHYCEAE	
<i>Chorda filum</i>	<i>Laminaria latissima</i>

Table 10: List of communities and habitats in the northern part of the Sound in 2011, 2012 and 2013 and threat categories.

Habitats and communities	Red List category
<i>Amphiura</i> community	
Bubbling reef	Critically Endangered (HELCOM 2013)
Coral garden	
Echinoderms	
<i>Haploopsis</i> spp.	<i>Haploopsis tenuis</i> : Endangered (HELCOM 2013) <i>H. tubicola</i> : Vulnerable (HELCOM 2013)
<i>Haploopsis</i> community	Endangered (HELCOM 2013)
<i>Modiolus modiolus</i> beds	Vulnerable (HELCOM 2013)
<i>Mytilus</i> beds	
Macrophyte meadows including kelp	
Sea-pen with burrowing megafauna	Endangered (HELCOM 2013)
<i>Zostera marina</i> meadow	Near Threatened (HELCOM 2013)