OCEANA | 2014

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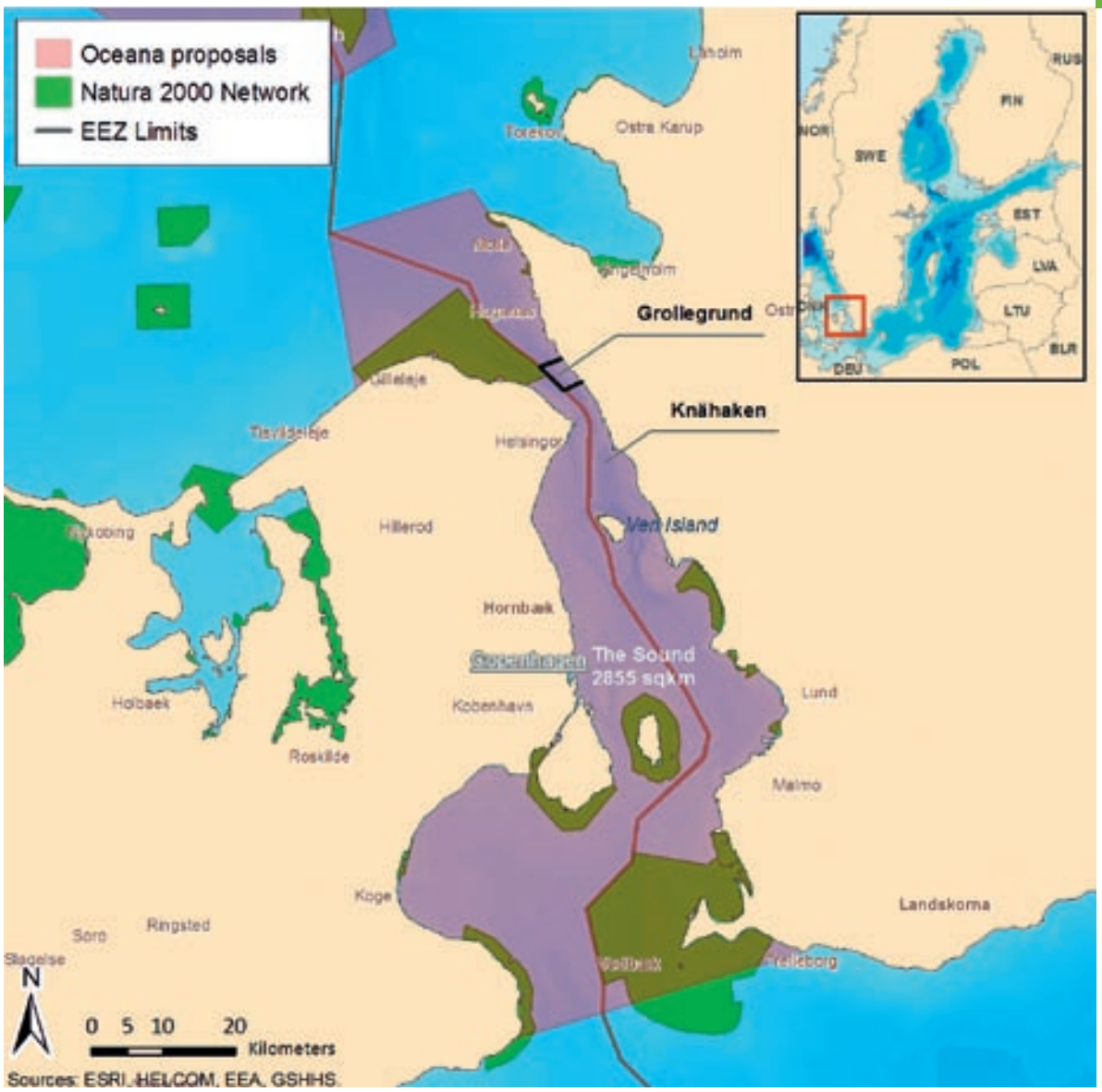
BALTIC SEA PROJECT




# 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. The layering of the water column is strong. The outflowing water from the Baltic Sea towards Kattegat has a low salinity at 10 psu, putting the relatively lighter water at the surface. The saltier water from Kattegat, at 20 psu, is heavier and runs to the Baltic Sea in a south-going bottom stream. A transverse threshold, called Limhamn/Drogden, which is found at less than 10 meters deep at the narrow part in the south of the Sound, acts as a barrier to water exchange between the Baltic Sea and Kattegat.

In 1932, a bottom trawling ban was established in the Sound because of the heavy traffic in the narrow strait. The ban, which is still in effect, is one of the main reasons behind the number of rare and diverse benthic communities found in the area today. Currently, there are a number of small coastal Natura 2000 sites and other small protected areas in the Sound, but the northern part, which in particular has many unique habitats, remains mostly unprotected.

## DESCRIPTION OF THE AREA

Oceana's 2011, 2012 and 2013 expeditions studied benthic habitats in both deeper and shallower areas of the Sound (see species lists in Table 1 to 9). A remote operated vehicle, scuba divers and bottom samplings 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 a small habitat forming amphipods (*Haploops tubicola* and *H. tenius*). *Haploops* spp. live inside a small self-built tube, 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].

The *Modiolus* community is named after the horse mussel *Modiolus modiolus*. *Modiolus* beds can be found on different substrates, from cobblestones to muddy seabeds. The community forms biogenetic reefs and is one of the more species 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 doesn't reach sexual maturity until 5 to 6 years old. *Modiolus* beds used to be more common in the Kattegat, but today they have mostly disappeared, likely because of destructive fishing practices[3]. Despite the existence of the trawling ban, over the past few decades the Sound has seen a decrease in horse mussels[4]. The *Modiolus modiolus* beds are considered as vulnerable by HELCOM[5].

Sea pens with burrowing megafauna can be found in the northern part of the Sound and in Kattegat. Slender sea pens (*Virgularia mirabilis*) or phosphorescent sea pens (*Pennatula phosphorea*) are common sea pens in the area, while the 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 HELCOM[6].

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 (*Anobothrus gracillis* etc.), and clams (*Nuculoma tenuis* etc.). Other animals living in this community include crustaceans like the amphipod *Amplisca tenuicornis*, slender sea pens, and brittle stars (*Ophiura albida*)[7].

South of Ven, the benthic life is less diverse than north of the island. Oceana's surveys into the southern part of the Sound found eelgrass (*Zostera marina*) meadows in the very shallow water, while brown algae, including sea lace (*Chorda filum*) and bladder wrack (*Fucus vesiculosus*) were observed in the deeper parts (Table 3). Eelgrass is a characteristic and important species in the coastal parts of Kattegat, and the Baltic Sea, and exists at several locations in both the Swedish and Danish sides of the Sound. Eelgrass has roots and rhizomes, which make it able to live in sandy areas; areas that would otherwise be barren. With its stabilizing and thereby securing effect, eelgrass provide shelter for animals. The high productivity of eelgrass is also important as it can help the planet to cope climate change[8]. Eelgrass meadows are considered as near threatened by HELCOM[9].

The Sound is an important area for seals, including harbor seals (*Phoca vitulina*) and grey seal (*Halichoerus grypus*) and birds. Important seal areas exist in both in the Danish (southern part of Saltholm) and Swedish (at Falsterbo peninsula) part of the southern part of the Sound, where the largest colony of seals are found at Falsterbo peninsula at Måkläppen island, which is Sweden's oldest nature reserve[10].

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[11]. Bubbling reefs can be found scattered in Kattegat and in the Danish part of Skagerrak, and are protected under the Habitats Directive (1180). They serve as a habitat for a large number of species, such as sponges, sea anemones, algae, crustaceans and more.

## PROPOSAL

The Sound's unique set of species and communities, and the concerning state of some of the life it supports, make it a prime area for protection. Our expedition findings support the view[12] that in order to save the last remnants of the *Haploops* and *Modiolus* communities, as well as other important communities and species present in the Sound, it should be protected from all forms of impacts to the seafloor.

The smaller Natura 2000 (N2000) sites should be combined with seal sanctuaries and other small marine reserves in the Sound, to form a larger, more inclusive area that should either be included into the N2000 network or protected through national legislation.

Regular sampling has shown that the *Haploops* community is declining in the Sound, and there only are few stable populations registered in a restricted area north of Ven island[13]. In April 2012, while studying an area north of Ven at 28 meters depth, known to host a dense *Haploops* community[14], we discovered no *Haploops* tubes. Fewer tubes than expected[15] were found in other sampling spots 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 horse mussels in the Sound[16]. Indeed, our April 2012 survey of an area 30 meters deep that was once rich in this species[17] showed only a few of this type of mussel and many empty shells.

The small bubbling reef found north of Gilleleje, Denmark, which was recently identified by the Danish Nature Agency, should be protected under the Habitats Directive.

The northern part of the Sound is an important area for harbour porpoises (*Phocoena phocoena*), where they gather in high numbers during the breeding season in the spring and summer[18]. The harbour porpoise is listed in the Habitats Directive annexes (Annex II and V), and therefore Denmark and Sweden as EU Member States are legally obligated to protect it through the declaration of Special Areas of Conservation (SAC) under the directive.

Overall, the Sound includes many rare benthic habitats, communities and species. Many of these (including *Zostera* meadows, *Modiolus* beds, *Haploops* spp., and sea pen with burrowing megafauna), however, are not recognized by the Habitats Directive, and thus need to be placed under complementary protection measures.

## POSSIBLE THREATS AND MANAGEMENT PROPOSALS

The biggest threats to the *Haploops* community are eutrophication, fishing, ecosystem changes and increased water temperature. Threats to *Modiolus* beds include fishing (especially bottom trawling), dumping, extension of harbours, dredge tipping, the emission of pollutants, and lack of oxygen in the bottom water. Sea pens and burrowing megafauna are vulnerable to bottom trawling, and oxygen depletion. Even though a trawling ban exists in the Sound, illegal trawling occurs, but its extent is not known[19]. Trawling and net fishing threaten the bubbling reef. Fisheries can threaten harbour porpoises and seals, which are often caught as bycatch. Another threat towards seals, especially to seal pups born at Måkläppen island, is oil spills[20].

There is already cooperation between Sweden and Denmark to protect the Sound[21]. Two smaller Swedish nature reserves exist inside the proposed area: Knähaken and the recently protected area Grollegrund, which covers both shallow and deeper waters[22]. The most important Danish green organizations, including Oceana, which form a coalition called *Det Grønne Kontaktudvalg* (translated into "the Green Coalition"), have recently published a report proposing to protect the entire Sound[23]. A Swedish organisation, Öresundsfonden, working towards a better status of the environment in the Sound, has recently conducted a survey, which shows that a majority of the Swedish municipalities in the region wants to designate the Sound as a MPA. These initiatives suggest that there is a strong local interest to protect the Sound.

Establishing a larger, transnational marine protected area 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. Having the entire Sound managed under one plan would also make it easier to enforce control and regulation measures. Ideally, this should be done under EU law to cover all the fleets and actors active in the area.

A small area in the very northern part of the Sound is currently not covered by the trawling ban, but because of its natural value, in particular bubbling reefs, the ban should be extended to cover it as well. Actions combatting bycatch of harbour porpoises, seals and birds should also be established.

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## SPECIES LIST FOR THE SOUND

**Table 1:** List of species recorded north of Ven island in 2011. Possible threat category indicated in brackets.

| Species | |
|---|---|
| **PORIFERA** | |
| *Halichondria panicea* | *Haliclona limbata* |
| **HYDROZOA** | |
| *Abietinaria abietina* | *Kirchenpaureia pinnata* |
| *Bougainvillia ramosa* | *Laomedea flexuosa* |
| *Clava multicornis* | *Obelia geniculata* |
| *Eudendrium rameum* | *Tubularia indivisa* |
| *Halecium halecinum* | *Tubularia larynx* |
| **ANTHOZOA** | |
| *Alcyoniuym digitatum* | *Urticina feline* |
| *Metridium senile* | *Virgularia mirabilis* |

**Table 1:** List of species recorded north of Ven island in 2011. Possible threat category indicated in brackets.

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

**Table 2:** List of species documented in the Northern part of the Sound in 2012, by depth and threat category.

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

**Table 2:** List of species documented in the Northern part of the Sound in 2012, by depth and threat category.

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

**Table 2:** List of species documented in the Northern part of the Sound in 2012, by depth and threat category.

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

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

| Species |
|---|
| **MOLLUSCA** |
| *Hydrobiidae* sp. |
| *Mytilus* sp. |
| **CRUSTACEA** |
| *Balanus* sp. |
| *Carcinus maenas* |
| **FISH** |
| *Zoarces viviparus* |

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

| Species |
|---|
| **PHAEOPHYCEAE** |
| *Chorda filum* |
| *Fucus vesiculosus* |
| **CHLOROPHYCEAE** |
| *Ulva* cf. *lactuca* |
| **ANGIOSPERMAE** |
| *Zostera marina* (Near threatened, HELCOM 2013) |

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

| Species |
|---|
| **MOLLUSCA** |
| *Mytilus* sp. |
| **CRUSTACEA** |
| *Balanus* sp. |
| **FISH** |
| *Anguilla anguilla* |
| *Gadus morhua* |
| *Perca fluviatilis* |
| **PHAEOPHYCEAE** |
| *Laminaria latissima* |
| **ANGIOSPERMAE** |
| *Zostera marina* |

**Table 5:** List of species recorded in Kullen, Sweden, near the border of Kattegat, at 15 to 17 meters depth. Possible threat categories are indicated in brackets.

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

**Table 5:** List of species recorded in Kullen, Sweden, near the border of Kattegat, at 15 to 17 meters depth. Possible threat categories are indicated in brackets.

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

**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. Possible threat category is indicated in brackets.

| Species | |
|---|---|
| **CNIDARIA** | |
| *Cyanea* sp. | *Virgularia mirabilis* |
| **ANNELIDA** | |
| *Arenicola marina* | |
| **MOLLUSCA** | |
| *Arctica islandica* (Least concern, HELCOM 2013) | *Modiolus modiolus* (Vulnerable, HELCOM 2013) |
| *Buccinum undatum* | |
| **CRUSTACEA** | |
| *Carcinus maenas* | *Pagurus bernhardus* |
| **ECHINODERMATA** | |
| *Asterias rubens* | |
| **RHODOPHYCEAE** | |
| *Delesseria sanguinea* | *Phycodrys rubens* |
| *Desmarestia aculeata* | |
| **PHAEOPHYCEAE** | |
| *Arthrocladia villosa* | *Laminaria latissima* |
| *Laminaria* cf. *digitata* | |
| **MAMMALIA** | |
| *Phocoena phocoena* (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. Possible threat category is indicated in brackets.

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

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

| Species | |
|---|---|
| **CNIDARIA** | |
| *Cyanea capillata* | *Laomedea flexuosa* |
| **MOLLUSCA** | |
| *Cerastoderma lamarcki* | *Mytilus* sp. |
| *Hydrobia ulvae* | |
| **CRUSTACEA** | |
| *Balanus* sp. | *Idotea granulosa* |
| *Idotea balthica* | |

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

| Species | |
|---|---|
| **FISH** | |
| *Clupea harengus* | *Platichthys flesus* |
| *Gadus morhua* | *Pleuronectes platessa* |
| **PHAEOPHYCEAE** | |
| *Laminaria latissima* | |
| **ANGIOSPERMAE** | |
| *Zostera marina* (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** | |
| *Virgularia mirabilis* | |
| **MOLLUSCA** | |
| *Mytilus* sp. | |
| **ECHINODERMATA** | |
| *Asterias rubens* | |
| **FISH** | |
| *Callionymus lyra* | *Gobiusculus flavescens* |
| **PHAEOPHYCEAE** | |
| *Chorda filum* | *Laminaria latissima* |

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

| Habitats and communities | Red list category |
|---|---|
| *Amphiura* community | |
| Bubbling reef | Endangered (HELCOM 2013) |
| Coral garden | |
| Echinoderms | |
| *Haploops* spp. | The habitat is Endangered. Species level: *Haploops tenuis* is Endangered, and *H. tubicola* is Vulnerable. (HELCOM 2013) |
| *Modiolus modiolus* beds | Vulnerable (HELCOM 2013) |
| *Mytilus* beds | |
| Macrophyte meadows including kelp | |
| Sea-pen with burrowing megafauna | Endangered (HELCOM 2013) |
| *Zostera marina* meadow | Near Threatened (HELCOM 2013) |

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Nyhavn 16, 4 sal · 1051 Copenhagen (Denmark) · Phone: +45 33151160 · baltic@oceana.org