



Koster/Yttre Hvaler - A Potential MPA

briefing

Location

The eastern parts of the proposed area in the northern Skagerrak (Koster-/Väderöfjorden and Singlefjorden) are situated in Swedish territorial waters and the western part (Yttre Hvaler) is situated in Norwegian territorial waters. The central position of Kosterfjorden/Yttre Hvaler is approximately 58°58,70 N and 11°01,60 E.

Potential Reasons for Selection

The Kosterfjorden/Yttre Hvaler area is representative for marine areas in Skagerrak. The area has a very high diversity of marine species and contains many unique habitats and species that can not be found elsewhere in Sweden or this part of Norway. It contains rich and unique deep sea coral reefs dominated by *Lophelia pertusa* and is an important area for a great variety of invertebrates, fishes, sharks and seals. The area also hosts internationally important numbers of seabirds.

Site Description

The area is situated at the north-eastern edge of the deep Norwegian trench connecting the Skagerrak with the Atlantic Ocean. The depth of the area varies from 260 m in the deepest part of the trench to depths of <50 m towards the coast, with the major part of the area being ~200 m deep. The bottom topography is highly varied and the area contains many different marine biotopes such as soft and hard substrates at various depths, kelp beds and shell gravel.

The hydrographic conditions in the Skagerrak are characterised by stratified water masses with highly saline (35‰) bottom water originating from the North Sea and the Atlantic Ocean covered by layers of lower salinities (15 - 33‰), influenced by runoff from the Baltic Sea and local rivers.

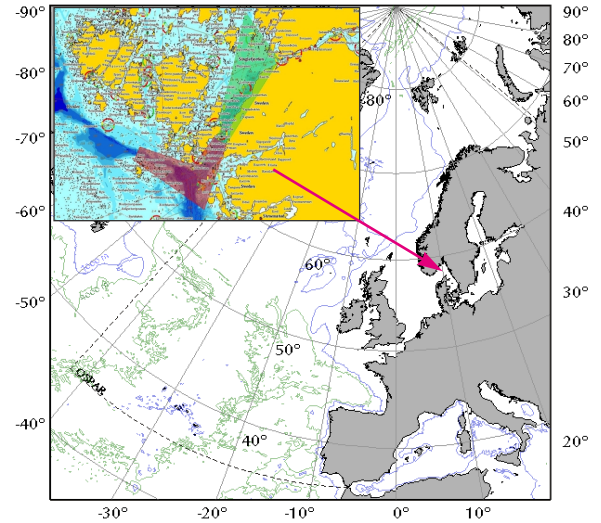


Fig. 1: Location of the proposed Kosterfjorden/Yttre Hvaler transboundary MPA. The detailed map inserted gives an impression of the type and size of the area (courtesy of Tomas Lundälv, Tjärnö Laboratory)

Biological Features

The proposed ensemble of Kosterfjorden/Yttre Hvaler can be considered to be representative for Skagerrak habitats and species. But it also contains many unique traits that cannot be found elsewhere in Sweden or this part of Norway (south and east of Vestlandet), e.g. deep (>200m) soft and hard bottoms, very exposed shallow sediments and rocks and deep water coral reefs, dominated by *Lophelia pertusa*. The species diversity is very high, with ~7000 species recorded to date. Deep water coral reefs dominated by *Lophelia pertusa* are one of Scandinavia's most species-rich environments. Small patches of living *Lophelia pertusa* colonies have long been known to exist in the Swedish Koster-/Väderöfjorden. Only in 2002, a previously unknown coral reef at least 1.2 km long and 200 m wide was found north of Tisler in Yttre Hvaler in Norway, close to the border to Sweden, possibly the largest reef found in inshore waters so far. Living corals were found between 160 and 74 m depth and yellow varieties of *Lophelia pertusa* were documented for the first time. There are at least two more, yet unexplored reefs nearby.



Fig. 2: Yellow variety of *Lophelia pertusa* at Yttre Hvaler © Tomas Lundälv, Tjärnö Laboratory/ WWF Sweden

**Kosterfjorden/
Yttre Hvaler -
a Showcase Example
for the OSPAR System
of Marine Protected
Areas**

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Many invertebrate species have been recorded in the area, e.g. sea-pens, sponges and brachiopods. Lightly trawled fjords like Singlefjorden still contain many species that are sensitive to trawling. The area is known as an important area for reproduction and growth of a lot of commercial fish species, molluscs and crustaceans, but also sharks and rays which, however, have decreased dramatically in recent times. Moreover, the area contains many important feeding grounds for the common seal (*Phoca vitulina*) and, to a smaller extent, the grey seal (*Halichoerus grypus*). The Skagerrak area (48.500km²) is also identified as an Important Bird Area (IBA) by BirdLife International and hosts internationally important numbers of e.g. guillemot (*Uria algae*), herring gull (*Larus argentatus*), great skua (*Catharacta skua*), little auk (*Alle alle*).

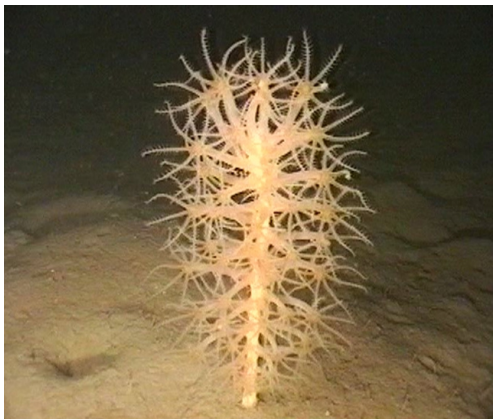


Fig. 3: Fragile epibenthos living on undisturbed soft sediment habitat © Tomas Lundälv, Tjärnö Laboratory/WWF Sweden

Human Impacts

There are many threats to the area, large-scale ones like eutrophication, and local ones, such as fishery, shipping, exploitation for harbours and other constructions. There is a big shipping lane passing right through the area to the harbours in Halden, Sarpsborg and Strömstad and the area is close to the major shipping route to the Oslo fjord. Thus, there is a risk of oil spills and release of toxic chemicals, which particularly endanger the seabirds and the sensitive coral reef biotopes in the area. There is no offshore oil industry in the region, although oil prospecting may be initiated in the Norwegian sector of Skagerrak. The most immediate threat has been considered to be the shrimp fisheries. The shrimp trawling has lasted for almost 100 years and occupies about 80 fishermen and some 50 boats. The Skagerrak shrimp stock is considered stable and is not threatened. Nevertheless, shrimp trawling has negative side effects including both direct mechanical damage on the fauna in deep soft sediments and sensitive biotopes such as coral reefs, and indirect effects of increased sedimentation on deep hard bottoms, caused by re-suspension of seafloor sediments. Observations made at the coral reef in Hvaler indicates that at least 50 % of the living reef has been damaged to a larger or lesser degree. This has caused great concern, not least amongst fishermen, who have reported reduced catches in the areas near to corals after trawling activities.

Existing/Proposed Protection

Koster-Väderöfjorden (~426 km²), in the Swedish part of the area, has already been declared a Natura 2000 area according to the EU Habitats Directive. The County Administration in Västra Götaland is working on a management plan for the area. Since 1999, a working group, consisting of representatives from public authorities, fishing organisations and individual fishermen, has been successfully working to reduce the effects of shrimp trawling on the sensitive marine organisms in the area. Certain gear regulations have been introduced and a number of small areas within the Natura 2000 area are being identified as protected zones where trawling is forbidden. In Norway, the area is listed as a candidate area in the national marine protection plan currently under development. Under this plan, a network of MPAs will be established in Norwegian waters in 2004. The Norwegian 1999 Coral Regulation enables the Ministry of Fisheries to close coral areas to fishing with equipment that may touch the sea floor. The area can also be given the status of a nature reserve or national park under the Norwegian Nature Conversation Act, which has been considered for some time now by the regional authorities with respect to Yttre Hvaler.

Action to be taken

Since the newly found Norwegian reefs lie very close to Swedish coral reefs and other important marine areas, it is proposed to establish a transboundary protected area that includes the present marine protected area, Kosterfjorden-Väderöfjorden, the newly discovered reefs in Yttre Hvaler and parts of the Singlefjord. The whole area should be nominated as an OSPAR marine protected area, to be included in the network of marine protected areas in the North-East Atlantic. Within the area there should be co-operation across the national border regarding protection and administration. Coral reefs and other sensitive or valuable areas should be identified and protected from trawling and other activities. The local and national agencies in both Sweden and Norway have indicated their willingness to create a transboundary MPA in the area, but so far there is no decision.

Text prepared by Åsa Anderson and Andreas Tvetereas

References/Further Reading

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