

Comments on ornithological aspects of the Swedish "Proposal for Fisheries Conservation Measures in the Marine Protected Areas Fladen, Lilla Middelhgrund, Stora Middelhgrund och Röde bank and Morups bank in the Kattegat"

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Background

On 20 March 2018 the Danish Centre for Environment and Energy (DCE), Aarhus University received a request for ornithological commenting of the Swedish "Proposal for Fisheries Conservation Measures in the Marine Protected Areas Fladen, Lilla Middelgrund, Stora Middelgrund och Röde bank and Morups bank in the Kattegat" from Fiskeripolitisk Kontor, Udenrigsministeriets Departement.

With reference to EU legislation as well as obligations in relation to the HELCOM and OSPAR conventions, this proposal aims to ensure adequate protection of designated habitats and species of birds and marine mammals of the Swedish parts of Kattegat. The measures to ensure such conditions is regulation of fishery activity, partly by "no-take zones" and zones with access for restricted fishing gear as well as a zone with mandatory WMS-registration.

This document solely comment on the proposal in relation to birds.

Comments

In places where high concentrations of diving birds coincide with fishing activity, the fishery activity can potentially affect the birds present in the areas. This can happen as either a direct or an indirect impact. Direct impact could for example be by-catch of birds in fishing gear, leading to direct mortality of individual birds, while the impacts from modification of eco systems can lead to indirect effects. The latter can lead to changed conditions for some birds, which typically does not lead to direct mortality, but rather to altered fitness conditions, and potentially also reduced survival and reproduction rates.

Amongst bird species with low reproduction rates and high annual mortality, extra mortality and/or reduced reproduction rates can have a marked influence on the population size and structure. Many marine bird species, including Razorbills and Common Guillemots, are long-lived bird species with low annual mortality. Therefore, the proposed management protection measures can potentially improve survival and reproduction rates of the populations.

The Swedish proposal could benefit from a clearer segregation between effects of direct versus indirect effects on bird populations.

Descriptions of bird distributions

In the background documents for this proposal (Naturvårdsverket 2010), descriptions of bird distributions are given. In the proposal text it says:

Kattegatts viktigare bankar ingick inte i U2 eftersom de inventerades 2009 i samband med den heltäckande inventeringen av Östersjön, SOWBAS. Vid denna inventering konstaterades betydande mängder sillgrissla och tordmule förekomma vid Stora Middelgrund, medan Lilla Middelgrund och Fladen visade mer måttliga antal. Det förekommer emellertid betydande rörelser i området under vinterhalvåret, vilket innebär mycket varierande förhållanden. Vid tidigare undersökningar inom ramen för projektet "Levande Kattegatt" samt vid den tidigare heltäckande inventeringen av Östersjön, inkl. Kattegatt, konstaterades stora förekomster av bl.a. alkor i området (Durinck et al 1994). Enligt dessa undersökningar ingår åtminstone dessa tre bankar inom de viktiga rast/vinterområdena för alkor och andra sjöfåglar i Kattegatt med centrum i de danska farvattnen. Dessutom går det inte bedöma deras värde utifrån någon

enstaka inventering, eftersom bestånden visar betydande rörlighet. Alla tre bankarna är att betrakta som internationellt viktiga för alkor. För de övriga Kattegattbankarna saknas data vad gäller fåglar. En del sjöfågel kan kanske förekomma här, men grundens betydelse för fågel kan inte fastställas.

In the above text, a number of surveys are referred to, but none of these results can be found in the background report, which would be highly helpful in relation to the assessment of the proposal. A specification of "other seabirds" would be appropriate in the text: "... important wintering areas for Razorbills and other seabirds...".

In Naturvårdsverket (2010) details of the results of bird monitoring are mentioned a number of specific areas not relevant for the present proposal. Results from the concerned areas would strengthen the proposal considerably. In the light of the fact that information on bird concentrations at banks in the Swedish Kattegat area is sparse it seems appropriate with a plan for achieving such data.

From the Danish national monitoring program, NOVANA, concentrations of Razorbills/Common Guillemots are known from the Kattegat area bordering towards the Swedish Kattegat areas. In the winter of 2008 a total of more than 76,000 Razorbills/Common Guillemots were estimated to be present in the inner Danish waters, primarily in Kattegat north of Sjælland (Petersen & Nielsen 2011). From this data set, it was not possible to segregate between the two species of birds. The Swedish proposal mention the highly fluctuating abundances and distribution of these species, which has also been noticed in the Danish parts of Kattegat.

Identification issues

Two species of birds are specifically mentioned in the text, Razorbill *Alca torda* and Common Guillemot *Uria aalge*. These two species are difficult to differentiate to species level when surveying birds from aircraft. Therefore, the two species are often combined to "unidentified Razorbill/Common Guillemot". The wintering ecology of the two species are similar, but the population sizes are very different. While the population of Common Guillemot is huge (with 2,350,000-3,060,000 mature individuals in Europe of a global population of 18,000,000 individuals and an increasing population trend), the Razorbill population counts 979,000-1,020,000 mature individuals and display a decreasing population trend.

Thus, protection of the wintering Razorbill population seems more important than the protection of the population of Common Guillemot. In the Kattegat area Razorbills seems to be far more numerous than Common Guillemots in winter. More information on the numerical relationship between these two species would be desirable, as such data is neither available from Danish nor Swedish sources.

The species on the designation lists

Within the four protected areas, only one area, namely Lilla Middelgrund, has bird species on the designation list. For this site, Razorbill, Common Guillemot and Kittiwake *Rissa tridactyla* are designated for concentrations of the species in the wintering period. The remaining sites have no bird species on the designation lists.

Notably, another protected area, Nordvästra Skånes Havområde (SE0420360, <http://natura2000.eea.europa.eu/> and <http://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=SE0420360>), with common border to the Stora Middelgrund protected area, has 33 bird species on the designation list (Table 1). Of those 19 were diving birds that could potentially be in risk of by-catch in fishing gear. Further, 10 of these species of diving marine birds are likely to be found in the proposed protection areas.

With a general aim to ensure adequate protection of designated habitats and species of the Swedish parts of the Kattegat area it seems appropriate to consider protection measures for parts of this area too..

Table 1. Bird species on the designation list for EU Birds Directive Nordvästra Skånes Havområde, SE0420360. Diving bird species are identified with an “X” in the column “Diving Species”, while diving bird species with an offshore occurrence are marked with an “X” in the column “Offshore occurrence and diving”

Code	Scientific name	English name	Diving species	Offshore occurrence and diving
A001	<i>Gavia stellata</i>	Red-throated Diver	X	X
A002	<i>Gavia arctica</i>	Black-throated Diver	X	X
A005	<i>Podiceps cristatus</i>	Crested Grebe	X	
A006	<i>Podiceps grisegena</i>	Red-necked Grebe	X	
A007	<i>Podiceps auritus</i>	Slavonian Grebe	X	
A017	<i>Phalacrocorax carbo</i>	Cormorant	X	X
A018	<i>Phalacrocorax aristotelis</i>	Shag	X	X
A036	<i>Cygnus olor</i>	Mute Swan		
A038	<i>Cygnus cygnus</i>	Whoopers Swan		
A046	<i>Branta bernicla</i>	Barnacle Goose		
A048	<i>Tadorna tadorna</i>	Shelduck		
A050	<i>Anas penelope</i>	Wigeon		
A053	<i>Anas platyrhynchos</i>	Mallard		
A061	<i>Aythya fuligula</i>	Tufted Duck	X	
A062	<i>Aythya marila</i>	Scaup	X	
A063	<i>Somateria mollissima</i>	Common Eider	X	
A064	<i>Clangula hyemalis</i>	Long-tailed Duck	X	X
A065	<i>Melanitta nigra</i>	Common Scoter	X	X
A066	<i>Melanitta fusca</i>	Velvet Scoter	X	X
A067	<i>Bucephala clangula</i>	Golden-eye	X	
A069	<i>Mergus serrator</i>	Red-breasted Merganser	X	
A070	<i>Mergus merganser</i>	Goosander	X	
A094	<i>Pandion haliaetus</i>	Osprey		
A173	<i>Stercorarius parasiticus</i>	Arctic Skua		
A177	<i>Larus minutus</i>	Little Gull		
A182	<i>Larus canus</i>	Common Gull		
A184	<i>Larus argentatus</i>	Herring Gull		
A190	<i>Sterna caspia</i>	Caspian Tern		
A194	<i>Sterna paradisaea</i>	Arctic Tern		
A197	<i>Chlidonias niger</i>	Blacktern		
A199	<i>Uria aalge</i>	Common Guillemot	X	X
A200	<i>Alca torda</i>	Razorbill	X	X
A202	<i>Cephus grylle</i>	Black Guillemot	X	X

Conclusion

Administrative measures on fishery activities in areas of the Swedish parts of Kattegat can potentially influence populations of birds. Either direct or indirect effects may impact the bird populations. A clearer description of the expected effects of direct and indirect impacts respectively would help the evaluation of the proposal.

The document states that data on bird abundances and distributions in the areas covered by the proposal does exist. Neither in the proposal itself nor in the background report (Naturvårdsverket 2010) contain descriptions of distribution and abundances of marine birds from the area concerned in this proposal. Such descriptions would be highly valuable in an evaluation of the proposal.

Two species of birds, Razorbill and Common Guillemot, are important to the proposal. A reliable differentiation between the two species is difficult when surveyed by aerial surveys. Since the population sizes of the two species is very different, an understanding of the abundance ratios of the two species in the proposal area will be important.

Only one of the four protected areas of the proposal have bird species on the designation list. At the same time, another protected area, Nordvästra Skånes Havområde (SE0420360) is present within the Swedish Kattegat area, and with a long list of bird species on the designation list. Since the aim of the proposal is to ensure adequate protection of designated habitats and species in Swedish Kattegat it seems appropriate to include this area in the proposal.

Literature

Naturvårdsverket 2010. Undersökning av utsjöbankar. Inventering, modellering och naturvärdesbedömning. Naturvårdsverket Rapport 6385. 151 pp. plus appendices

Petersen, I.K. & Nielsen, R.D. 2011. Abundance and distribution of selected waterbird species in Danish marine areas. Report commissioned by Vattenfall A/S. National Environmental Research Institute, Aarhus University, Denmark. 62 pp.