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<b>Agenda Item</b>	5 - Intergovernmental cooperation and follow up progress in regional MSP
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## Background

In the ClimeMarine project funded by FORMAS, the Swedish Meteorological and Hydrological Institute (SMHI), Swedish Agency for Marine and Water Management (SwAM), Geological Survey of Sweden (SGU), and University of Gothenburg (GU) have worked together to interpret climate scenarios to create new information and knowledge that can be used to improve the Swedish Marine Spatial Planning.

The Swedish cumulative impact assessment tool Symphony, developed and used by the Swedish Agency for Marine and Water management for Marine Spatial Planning, was supplied with data from regional ocean climate model projections to assess climate change impact in relation to pre-existing cumulative impact from current human activities. Two scenarios, RCP4.5 and RCP8.5 (Moss et al. 2010), were considered representing an intermediate and an extreme scenario. The changes were calculated for five parameters: summer averaged surface and bottom water temperature (May-Aug), annual averaged surface and bottom water salinity, and winter averaged sea-ice cover (percentage of lost sea-ice cover days, Nov-April). An expert panel applying the Delphi method developed sensitivity scores for climate change based on the five parameters.

Temperature rise and bottom water salinity reduction were considered the most harmful climate change pressures with more severe effects on benthic habitats, sessile organisms and fish. While seabirds and marine mammals, being airbreathing and mobile, attained comparatively low sensitivities.

The results modelled in Symphony indicate that studied climate change pressures constitute paramount threats to Swedish marine ecosystems, with projected impacts being comparable to the combined impact of all other pressures of today. Because ocean warming and salinity changes permeate the environment across vast areas, the very preconditions for marine life may be altered. This will have fundamental implications for keystone species which live near their physiological tolerance limits like mussel reefs in the brackish Gulf of Bothnia. The results will be published in a peer review scientific article.

In addition a fact sheet on Marine Spatial Planning in a changing climate was developed. The fact sheet presents how salinity, surface water and ice cover may change due to climate change and introduces general principles for considering climate change in MSP. Link to fact sheet:

[https://www.smhi.se/polopoly\\_fs/1.1719261/Fact%20Sheet%20MSP%20in%20a%20Chaning%20Climate\\_210708.pdf](https://www.smhi.se/polopoly_fs/1.1719261/Fact%20Sheet%20MSP%20in%20a%20Chaning%20Climate_210708.pdf)

More information on the ClimeMarine project is available [here](#).

## Action requested

The Meeting is invited to take note of the findings of the ClimeMarine project and share relevant information on current or future projects on climate change.