



Environmental vulnerability profile

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KEY MESSAGES

Distribution of essential nature values (NVs)

- Ten essential benthic macroalgal and invertebrate, bird, and seal species or group of species with different ecosystem functions were selected to represent the NVs of the ecosystem: bladder wrack (*Fucus vesiculosus*), the perennial red seaweed *Furcellaria lumbricalis*, filamentous algae, epibenthic bivalves (*Mytilus trossulus*, *Dreissena polymorpha*), vascular plants (excluding *Zostera marina*), eelgrass (*Zostera marina*), charophytes (*Chara* spp., *Tolypella nidifica*, *Nitella* spp.), infaunal bivalves (*Limecola balthica*, *Cerastoderma glaucum*, *Mya areanaria*), sea birds and seals.

Sensitivity of NVs

- Assessing pressure-specific sensitivity is very challenging because different pressures impact the marine environment simultaneously. A practical approach to this complex problem can be the use of the recovery potential of an environmental value that is measured in time that is needed to recover from a destruction after its impact has ceased. For e.g. the recovery of a reef habitat type with bladder wrack community would require 2-3 years, but a ringed seal population would need more than 10 years to recover.
- Estimations were based on the earlier project, expert opinions and on the literature, combining relevant life history traits, observed time of recoveries and/or (re)colonization capacity of species in the Baltic Sea and/or similar areas.

Not meant to reflect sensitivity to any specific pressures

- EVP is not meant to reflect sensitivity to any specific pressures; it only sums up the spatial distribution of NVs for which we have the distribution data and knowledge on their recovery rates.
- Different pressures may have specific impacts on different ecosystem components mediated by natural abiotic gradients (e.g. depth, seabed substrates, currents, salinity) and EVP was not expected to elucidate such details.

Environmental vulnerability profile (EVP) – a spatial data layer that incorporates the distribution of nature values and their sensitivities to disturbances; higher value indicates a presence of more sensitive nature value.

EVP can be used for ecosystem based marine spatial planning (MSP) processes, in order to find solutions that lead to sustainable use of resources and to improve planning and management of the marine and coastal areas. EVP is meant to help MSP as a starting point for allocating marine areas that host many nature values.

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