

PROTECT BALTIC

*Human activities, pressures and measures:
a regional threat matrix and measures hierarchy*

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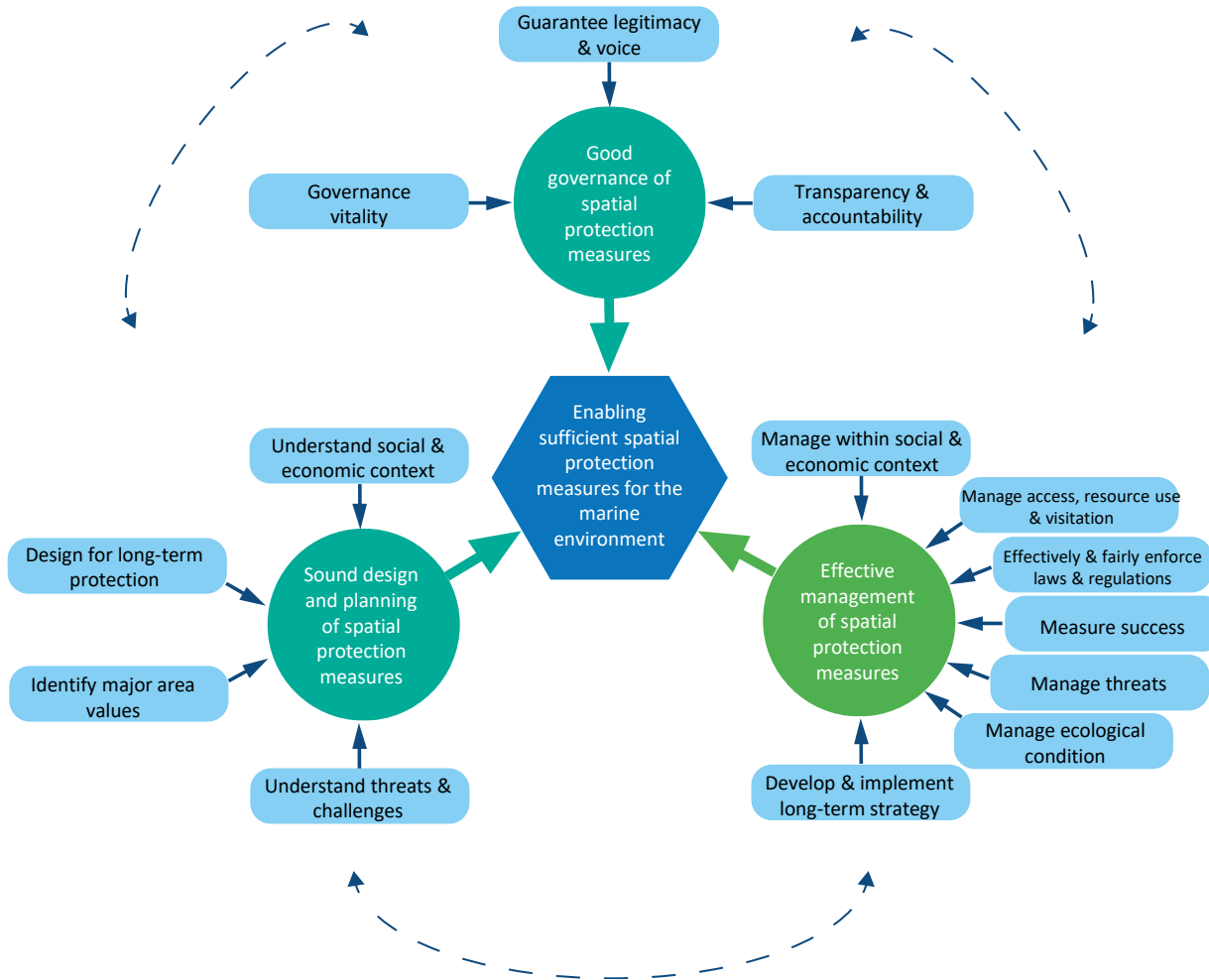
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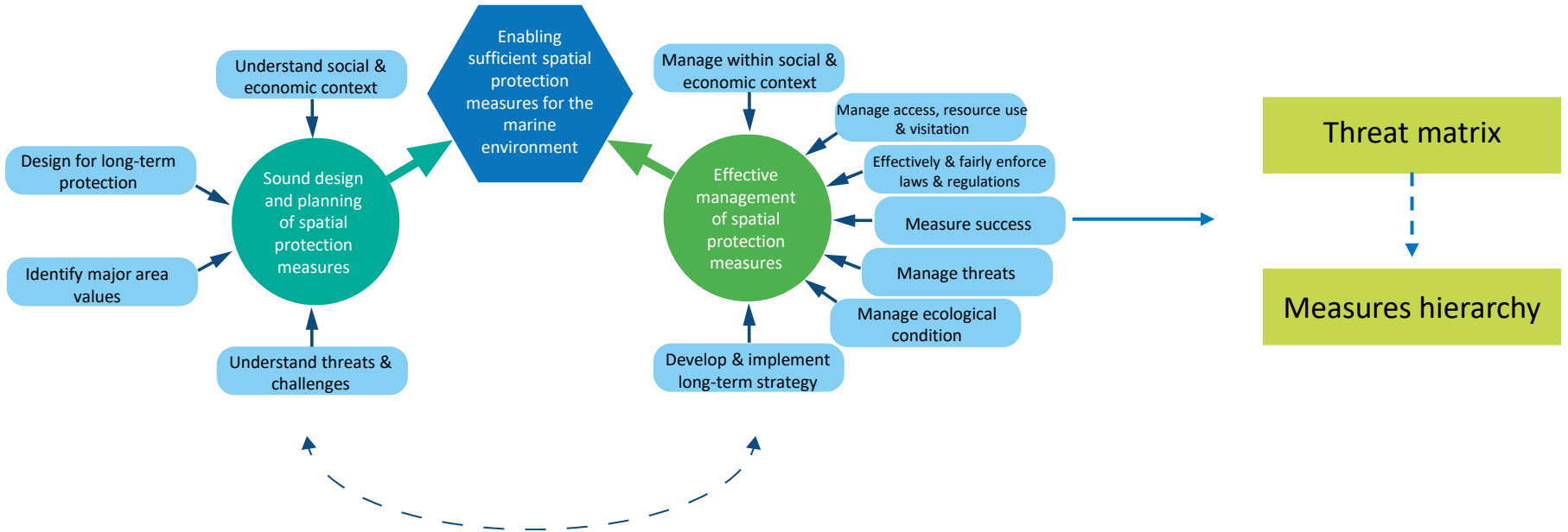
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Management and effective protection

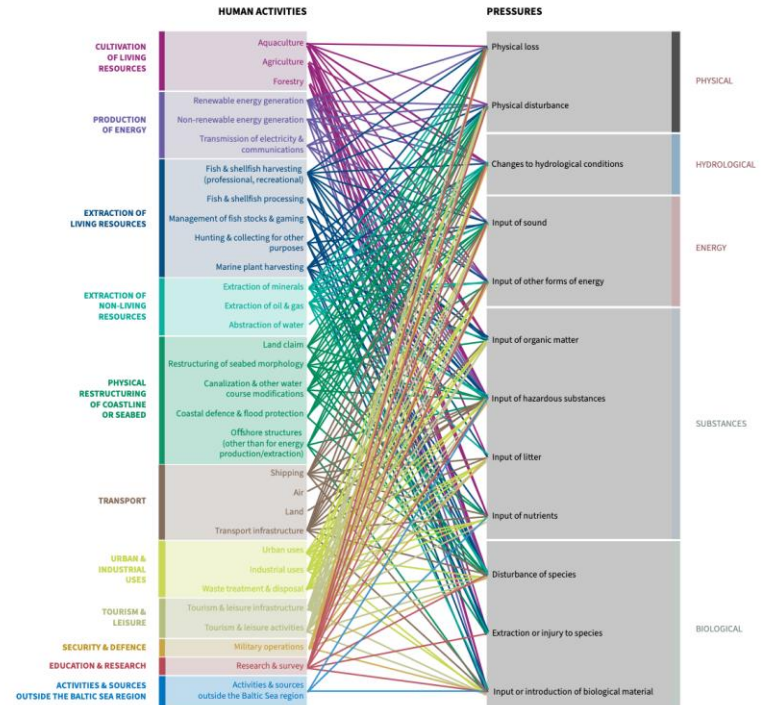


Tools for effective management



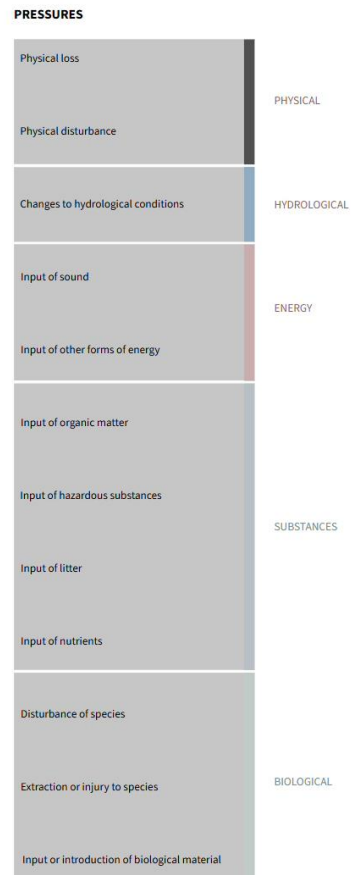
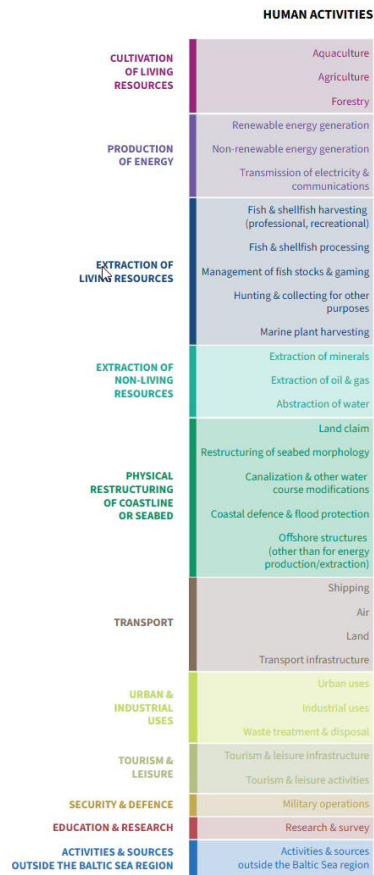
Threat Matrix

An improved threat taxonomy for the Baltic Sea, which identifies clear, causal links between human activities and the pressures that they cause on ecosystems.



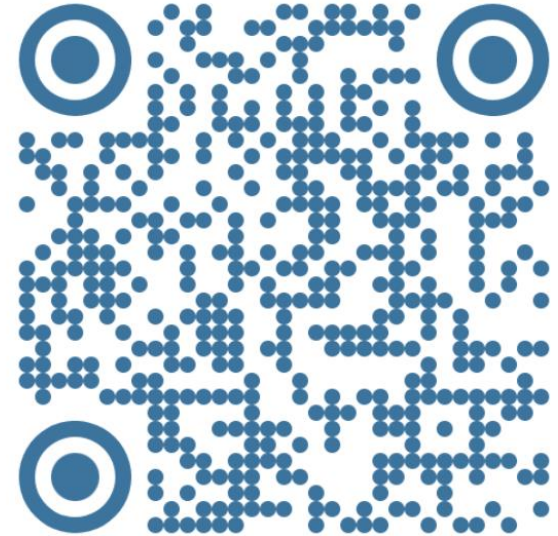
Threat Matrix

- Based on previous work (HASPS and TAPAS projects)
- Human activities list based on MSFD Annex 3
- Confidence of human and pressures links done through literature review and expert input
- Categorized into direct and indirect human activities and pressures
- Three levels for each human activity and each pressure
- More than 600 links have been identified
- The sensitivity of ecosystem components to pressures has also been established through previous work, previous publications and expert input
- Includes restoration human activities



Threat matrix and SPIA tool

- Human activities and pressures distribution layers form part of the SPIA tool, which will inform on the cumulative burden of pressures, i.e. impact, on the Baltic Sea ecosystem, including sensitivity scores for ecosystem components.
- Available as an online tool and a desktop tool
- Ready after 14 August 2026



Threat matrix

Measures hierarchy

A hierarchical measures classification which forms a structured, regionally consistent approach to identify measures and consistently establish their link to pressures and human activities, and by extension their potential to improve environmental status



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What is a measure?

‘A measure is an action that itself brings a direct positive, often measurable, environmental effect.’



Why a hierarchy?

- A common understanding is vital to ensure that measures actually do what they are meant to do
- Transferable across marine sectors and not exclusive to protection
- Identify causal links between measures, pressures and human activities



Measures typology for the Baltic Sea

- Region's first ever hierarchal typology to classify measures affecting the marine environment
- 200 existing measures have been classified
- Measures from more than 1500 management plans are currently undergoing classification
- Up to 9 levels of specificity



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Measure types for the Baltic Sea

Code IDs	Measure Types	Description
PM	Prevention Measures	prevents damages from happening
MM	Mitigation Measures	reduces pressure intensity
AM	Adaptation Measures	changes how activities are done
RPM	Restriction and/or Prohibition Measures	restrictions and or prohibitions, sometimes temporal and/or spatial
CRM	Conservation and/or Restoration Measures	repairs the ecosystem after damage or promotes preservation of healthy habitat components

Conservation measures for the Baltic Sea

Code	Measure Types	Description
PM15	Prevention Measures	Preventing the installation and operation of fossil energy infrastructure
MM18	Mitigation Measures	Reducing and/or eliminating the extraction of non-energy resources
AM	Adaptation Measures	Adapting aquaculture installation and operation
RPM	Restriction and/or Prohibition Measures	Temporal deep-sea/seabed mining restrictions or prohibition

Restoration measures for the Baltic Sea

Code	Level 1 category	Level 2 category
CRM06	Measures on restoration of habitats	Restoring land previously used for agricultural or forestry activities
CRM25	Measures on restoration of habitats	Restoring habitats damaged by residential, commercial, industrial and recreational infrastructure, operations and activities
CRM13	Measures on quality and size of habitats	Increasing native species composition
CRM47	Measures on quality and size of habitats	Improving habitat conditions in order to support the ecological requirements of dependent species
CRM44	Other	Conserving cultural heritage sites, monuments, archaeological remains, and their associated artefacts

Measures hierarchy pathway explorer

This interactive diagram traces how human activities lead to environmental pressures and the management measures used to address them. Select a pathway to animate the sequence from activity to measure and view the corresponding steps in the panel.

Show full description

Level 1



Level 2



Level 3



Level 4



Level 5



Level 6



Level 7



Level 8



Level 9

ACTIVITIES GROUPING

Development and operation of transport systems

ACTIVITIES GROUPING

Tourism and leisure

ACTIVITY

Shipping transport

ACTIVITY

Tourism and leisure activities

ACTIVITY SPECIFICATION

Passage of ships

ACTIVITY SPECIFICATION

Recreational boating and yachting

PRESSURE
Input or introduction of biological material

PRESSURE
Input of sound

PRESSURE
Extraction or injury of species

PRESSURE SPECIFICATION
Input or spread of non-indigenous species

PRESSURE SPECIFICATION
Continuous underwater noise

PRESSURE SPECIFICATION
Non-intentional extraction or injury to species - collisions

MEASURES

Adapting transport infrastructures and operations

MEASURES

Adapting residential, commercial, industrial, recreational infrastructures, operations and activities

MEASURE SPECIFICATION
Increase sampling and analysis of ballast water during port inspections

MEASURE SPECIFICATION
Temporal and/or spatial speeding restrictions

MEASURE SPECIFICATION
In-water inspection of ship's hull

MEASURE SPECIFICATION
Deny port entry if NIS is detected

MEASURE SPECIFICATION
Requirement of hull free of biofouling

Linear pathways

Single cause-effect chains from activity to measure.

Select a linear pathway...

Cumulative pathways

Multiple pressures or responses occurring simultaneously.

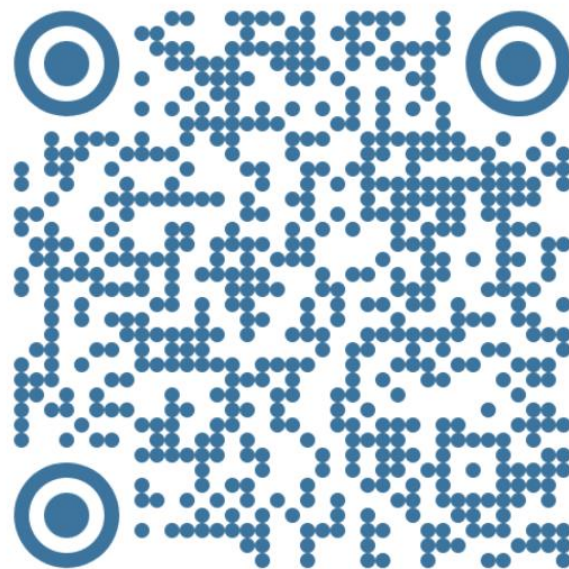
Select a cumulative pathway...

Clear

Select a pathway to view its root-to-leaf sequence here.

Measures hierarchy

- Hierarchy ready after 14 August 2026, but forms part of the methodology for the Sufficiency of Measures (SOM) tool
- SOM tool will be ready in 2028



Measures hierarchy

What is it all for?

By overlaying impact layers with sensitivity scores from the SPIA tool with species and habitat distribution maps, we will get a clear picture of where human activities and pressures have the most impact. The measures hierarchy and SOM tool act as a guide to which measures need to be used where for the best protection outcome.

Thank you!

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