

MARITIME SPATIAL PLAN

2030

ENVIRONMENTAL REPORT, Final version

Summary



EUROPEAN
REGIONAL
DEVELOPMENT
FUND



Ministry of Environmental
Protection and Regional
Development
Republic of Latvia



Co-financed by Interreg Baltic Sea Region Programme project “Baltic LINes: Coherent Linear Infrastructures in Baltic Maritime Spatial Plans”, part of materials used were co-financed by EEA grants.

Riga, April 2019

CONTENT

Abbreviations and Acronyms	2
Introduction.....	3
1. Development process of the Environmental Report.....	4
2. Main objectives and brief outline of the MSP and relationship with other planning documents.....	8
3. International and national environmental objectives, particularly those relating to the content of the planning document	11
4. The relevant aspects of the current state of the environment.....	15
5. Planning document and its possible alternatives.....	18
5.1. 1st version of the MSP and its spatial solutions.....	18
5.2. Balanced development for shipping and energy sectors (Baltic LINes project).....	20
5.3. 2nd version of the MSP and its spatial solutions	21
6. Strategic assessment of scenarios.....	24
7. Areas where the implementation of planning documents may likely significantly affect condition of the environment.....	27
8. Measures to prevent or reduce significant environmental impacts of the MSP implementation	40
9. Assessment of likely transboundary environmental effects of implementing the MSP.....	45
10. Measures envisaged concerning monitoring	51

Abbreviations and Acronyms

CM	Cabinet of Ministers
EC	European Commission
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EU	European Union
GHG	Greenhouse gas
HELCOM	Baltic Marine Environment Protection Commission - Helsinki Commission
LIAE	Latvian Institute of Aquatic Ecology
MAL	Maritime Administration of Latvia
MoEPRD	Ministry of Environmental Protection and Regional Development
MPA/MPAs	Marine protected area/Marine protected areas
MSFD	Marine Strategy Framework Directive
MSP	Maritime spatial plan
MSP WG	MSP working group
NCA	Nature Conservation Agency
SEA	Strategic Environmental Assessment
SEB	State Environmental Bureau of Latvia
VASAB	(Vision and strategies around the Baltic Sea) – the cooperation of 11 states in the Baltic Sea Region in the spatial planning and development. This is put forward by the ministries responsible for spatial planning and development and is led by the Baltic Sea Region’s Spatial Development and Planning Committee

Introduction

The Maritime Spatial Plan (hereinafter - MSP) is a national level long-term spatial development planning document that defines in written and graphical form the conditions for the use of the sea, for the internal waters, territorial sea and exclusive economic zone waters of the Republic of Latvia.

The MSP has been elaborated in accordance with the Spatial Development Planning Law (in force from 01.12.2011) and Cabinet Regulation No. 740 of 30th October 2012 on the Procedures for the Development, Implementation and Monitoring of the Maritime Spatial Plan.

The MSP consists of four parts: explanatory note, strategic section, description of the planned use of the sea and the graphical section.

The task of the Strategic Environmental Assessment (hereinafter - SEA) is to promote a high level of environmental protection and ensure the integration of environmental considerations in the preparation of plans and programmes, with the aim to promote sustainable development. The legal requirements of the SEA are laid down in the EC Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment. These requirements are transposed into the Latvian law, i.e. the law on "Environmental Impact Assessment" and the Cabinet Regulation No 157 "Procedures for Carrying Out a Strategic Environmental Impact Assessment" (in force since 01.05.2004.).

According to the above mentioned law, the Environmental Report is a document which establishes, describes and evaluates the respective planning document as well as the environmental impact of alternatives, taking into consideration the intended place of realisation and scope. Although the SEA for MSP is prepared as a separate document, it is the most closely related to the information included in the "Explanatory Note" of the MSP, its analysis and assessments.

The content of the Environmental Report is prepared according to the requirements established by the Cabinet regulations No 157 "Procedures for Carrying Out a Strategic Environmental Impact Assessment". This is a Summary of the Environmental Report, 2nd version presenting the key components and assessment results.

The public consultation process of the 1st version of the MSP and the Environmental Report took place simultaneously in December 2015 and January 2016. The draft Environmental Report and the summary of the MSP were sent to, and consultations were organised with the competent authorities and the target groups of the neighbouring countries (Lithuania, Estonia and Sweden). Opinions expressed during the public consultation were taken into account in further development of the Latvian MSP and the Environmental Report. More intensive discussions were organised with the key maritime sectors – shipping and energy. Based on the consultation results, the 2nd version of the MSP and the Environmental Report were elaborated. The public consultation on the 2nd versions were launched on 27 July 2018.

The Ministry of the Environmental Protection and Regional Development has contracted the Baltic Environmental Forum-Latvia (BEF) to carry out the SEA.

1. Development process of the Environmental Report

The Environmental Report is prepared in accordance with the law on "Environmental Impact Assessment" and the Cabinet Regulation No 157 "Procedures for Carrying Out a Strategic Environmental Impact Assessment" from March 23, 2004. The law establishes the procedures for the preparation of the Environmental Report, public participation and consultation on the Environmental Report, taking into consideration of the opinions expressed in the decision making on the respective planning document, and publishing information on the taken decision.

Key principles

SEA methodology is based on the conditions that the environmental protection and territorial development planning principles as well as maritime spatial planning principles, including ecosystem-based approach are followed during the development of the MSP. The ecosystem-based approach is defined as a comprehensive, scientifically based and integrated approach to the management of human activities in order to identify adverse impacts on marine ecosystem and make effective measures to reduce such impacts, maintaining ecosystem integrity and sustainability. This definition of the ecosystem-based approach directly reflects the approach used in the SEA of the Latvian MSP.

The ecosystem-based approach is one of the two MSP principles developed by the HELCOM-VASAB joint working group. This principle must be taken into account in the planning process to ensure good environmental status of the Baltic Sea, thus ensuring the supply and demand of the ecosystem services for humans. The new MSP directive 2014/89/EU also emphasises that the ecosystem-based approach will help to promote sustainable development and growth of maritime and coastal industry as well as sustainable use of sea and coastal resources. Thus, the SEA methodology is based on the ecosystem approach in assessing the likely significant effects from implementation of the MSP.

Second important aspect of the SEA is a link between the MSP and the Marine Strategy Framework Directive (MSFD 2008/56/EC) and its goal to achieve of the good environmental status of marine waters by 2021. The MSFD recognises that spatial management measures that influence where and when an activity is allowed to occur shall be identified.

Another important aspect is the operationalisation of the ecosystem service approach in assessment of environmental impacts. Ecosystem services is a comparatively new concept, nevertheless it is increasingly applied in various planning and decision-making processes, thus also applied within the SEA.

Several generally accepted methods are used during development of the SEA: analysis of literature, analysis of environmental information (monitoring and statistical data), results of focus group discussions as well as results of public consultations.

Environmental information

Environmental information plays an important role in the contents of the MSP – both characterisation of the existing situation and trend analysis as well as development of strategic part and justification and description of the planned use of the sea. The information gathered for development of the MSP is used also for elaboration of the Environmental Report ensuring coherence between data sources. Since BEF worked on both 1st versions of the MSP and SEA, this approach was possible. Development of the SEA was launched simultaneously with drafting of the Latvian MSP, recognising that the environmental impact assessment shall be carried out as early as possible.

During the development of the 2nd version of the Environmental Report the environmental information on the state of the marine environment was up-dated by incorporating the HELCOM holistic assessment results on the state of the Baltic Sea¹. The 2nd version of the Environment Report also integrates the relevant information from the “Programme of measures for achieving good marine environmental status 2016-2020” of Latvia².

Time schedule of the SEA

In compliance with the legal requirements, the SEA process was realised according to the following steps (see Fig. 1.1.).

Step 1: Consultations with the competent authorities

With a launch of the SEA, consultations with the State Environmental Bureau of Latvia on information to be included in the Environmental Report and its degree of detail took place in January 2015. At the same time, a letter was sent to the Nature Conservation Agency and an answer with recommendations and conditions with regard to the contents of the Environmental Report and nature conservation issues was received. During the consultations with the SEB the possible ways to organise cross-border cooperation and consultation under the ESPOO Convention and the EC Directive 2001/42/EC were discussed.

Step 2: Assessment of the current state of the marine environment

The Environmental Report shall contain information, indicated in the Article 8 of the Cabinet Regulation No 157, detailed in accordance with the SEB and the NCA. Assessment of the current situation and identification of the main environmental problems in the MSP and the SEA were based on the same data and information sources, including the Latvian Institute of Aquatic Ecology, the Latvian Environment, Geology and Meteorology Centre, the NCA and the HELCOM Secretariat.

The status of the marine waters and the key environmental issues were included in the first regional meetings and the Maritime day event, held in 2015, as they were essential elements for the development of the MSP.

Step 3: Assessment of likely significant effects on the environment

The Environmental Report identified, reviewed and evaluated likely significant effects of the planned use of the sea on the environment and potential alternatives, based on the planning objectives and scope. Environmental impact assessment was implemented based on the defined criteria and indicators. Evaluation of solutions on the planned use of the sea was performed with the same methods as evaluation of the scenarios. The Environmental Report also identifies measures aiming to prevent or reduce likely significant environmental effects from the implementation of the MSP.

Step 4: Improvement of the draft Environmental Report

In accordance with the paragraph 23.⁵ of the law on "Environmental Impact Assessment", the Environmental Report was revised to incorporate the comments and proposals received during the public consultation and the 1st version of the Environmental Report was completed. The draft Environmental Report was sent to the national and regional stakeholders, competent authorities and municipalities.

¹ <http://stateofthebalticsea.helcom.fi>

² <https://likumi.lv/ta/id/283518-par-planu-pasakumu-programma-laba-juras-vides-stavokla-panaksanai-2016-2020-gada>

Step 5: Elaboration of the Environmental Report, 2nd version

As the result of dialogue with shipping and energy sectors, the 1st version of the MSP was revised substantially. Consequently, the 2nd version of the Environmental Report was elaborated including the updates of relevant environmental data and information. The MSP and the Environmental Report is displayed for public to receive opinions on the new version of the documents.

Step 6: Improvement of the Environmental Report, version 2

The final version of the Environmental Report is prepared by integrating the received comments during the second public consultation process. The Report is submitted to the SEB for the statement on compliance with the legal requirements on SEA.

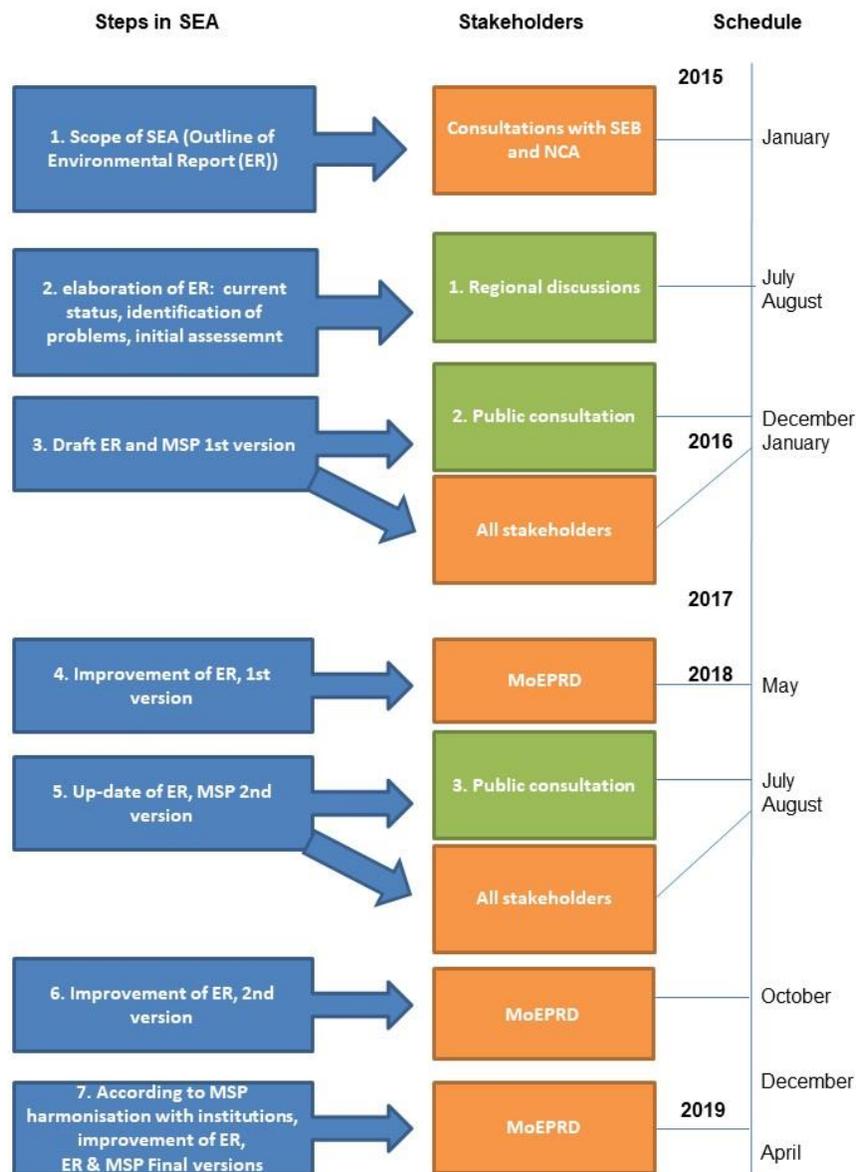


Figure 1.1. Process of SEA and elaboration of the Environmental Report (ER) for the Latvian MSP

Public participation and consultation

Active public participation throughout the process of development of MSP was one of the principles that have been implemented. The aim of public participation was to promote effective, open, inclusive, timely and responsible development of public participation in the development planning process, thereby increasing the quality of the planning process and providing compliance of the planning results with society's needs and interests.

For more efficient public participation, stakeholder and public involvement activities were organised in close cooperation with MSP planners and SEA experts. To support the whole MSP development process, a national intersectoral transdisciplinary MSP working group was established in 2014. The MSP WG was asked for guidance and feedback at all key milestones of the MSP process. More than 400 persons have participated in the various events related to the MSP development. They represent various sectors and governmental levels (see Fig. 1.2.).

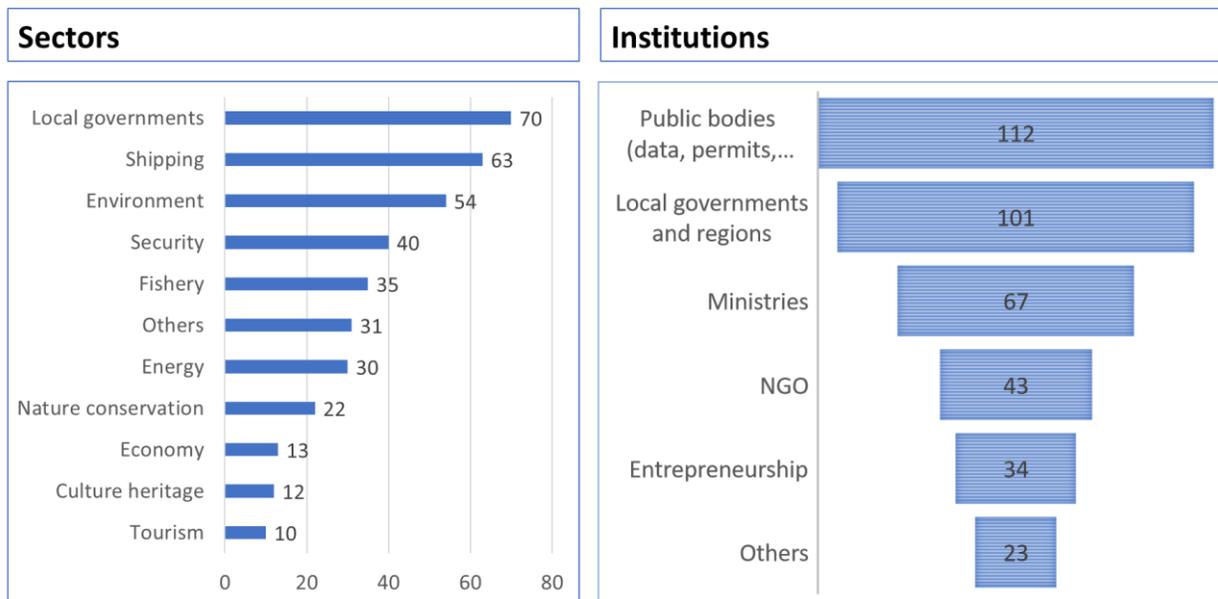


Figure. 1.2. Stakeholder involvement in MSP and SEA.

Public consultation of the draft Environmental Report was organised simultaneously with Public consultation on the 1st MSP draft. During the time period from **December 18, 2015 until January 31, 2016**, everyone could get acquainted with the draft Environmental Report and MSP materials at the internet site www.jurasplanojums.net and geoportal "Ģeolatvija.lv", section "Teritorijas attīstības plānošana".

The second round of public consultation is launched on 27 July, 2018. The 2nd versions of the Latvian MSP and SEA are available at http://www.varam.gov.lv/lat/lidzd/sab_aps/?doc=26281.

2. Main objectives and brief outline of the MSP and relationship with other planning documents

MSP is a national level long-term (12 years) territory development planning document, which defines in written and graphical form the conditions for the use of the sea. The MSP covers all Latvian territorial sea and EEZ, thus the MSP has an importance for the whole Baltic marine ecosystem, its structure and diversity.

The territorial sea of Latvia is regulated by the State Border Law of the Republic of Latvia. The territorial sea of the Republic of Latvia reaches 12 nautical miles (22,2 km) in width, counting from the maximum low-water line. Its external border is an uninterrupted and complete line and the water column corresponding to this line which separates the land and water territory of the Republic of Latvia, the subterranean depths and air space thereof from neighbouring countries and from the exclusive economic zone of the Republic of Latvia (see Fig.2.1.).

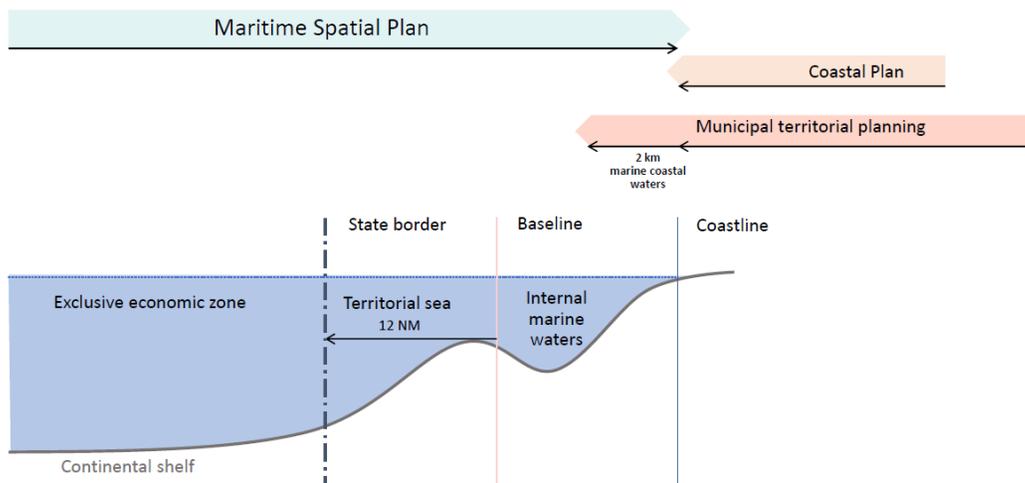


Figure 2.1. Division of Latvian marine space

The continental shelf and EEZ in Latvia is regulated by the Marine Environment Protection and Management Law, which prescribes that the continental shelf of Latvia is the seabed and the subsoil in submarine areas which are a natural prolongation of the land territory of Latvia, and are located immediately beyond the boundaries of the territorial sea of Latvia. The EEZ of Latvia is the territory of the Baltic Sea which is located immediately beyond the territorial sea boundaries of Latvia. According to the law, both territories extend to the sea boundaries, which Latvia has determined in international agreements with Estonia, Lithuania and Sweden (see Fig.2.2.).

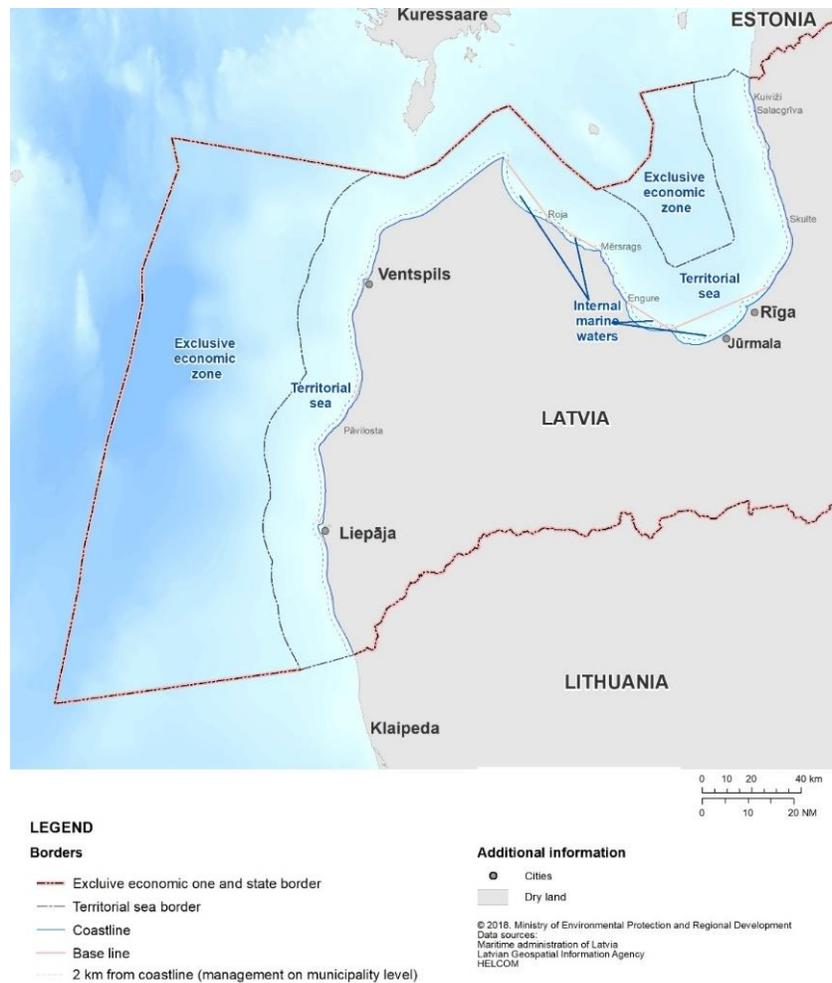


Figure 2.2. Territorial division of Latvian marine waters

The MSP comprises four parts: the explanatory note; strategic section; description of the planned use of the sea and the graphical section.

The explanatory note of the MSP contains the principles of development and methods of the MSP, the connection of the MSP with other development planning documents and legal enactments, a general overview of the existing situation and aquatorial division of the Baltic Sea, marine transport, fishery and marine aquaculture, as well as energy production, national security interests, tourism and recreational development, the extraction and nature of the mineral resources, environmental quality, including climate change, characteristics, information regarding biological diversity and protected nature territories, ecosystem services. Concurrently with the description of the existing use of the sea, the explanatory note also provides an assessment on the existing condition and development trends.

The strategic part of the MSP describes the long-term vision and its priorities.

The part describing the planned use of the sea defines the priority use areas, the functions thereof and the restrictions in the use thereof, as well as the strategic aims and tasks of the MSP.

The graphical part of the MSP includes the following maps: a map of the planned uses of the sea on a scale of 1:200 000, as well as different thematic and schematic maps using relevant scales.

The long-term vision of the sea-use development describes the desired situation by the year 2030 (see Fig.2.3.), by reflecting options for sustainable use of the marine space without jeopardising the viability of the marine ecosystem. A healthy marine environment and resilient ecosystem as well as national security are the main priorities. Marine development and safe shipping, sustainable fisheries and tourism as well as offshore renewable energy production were nominated as priorities from the economic sectors.

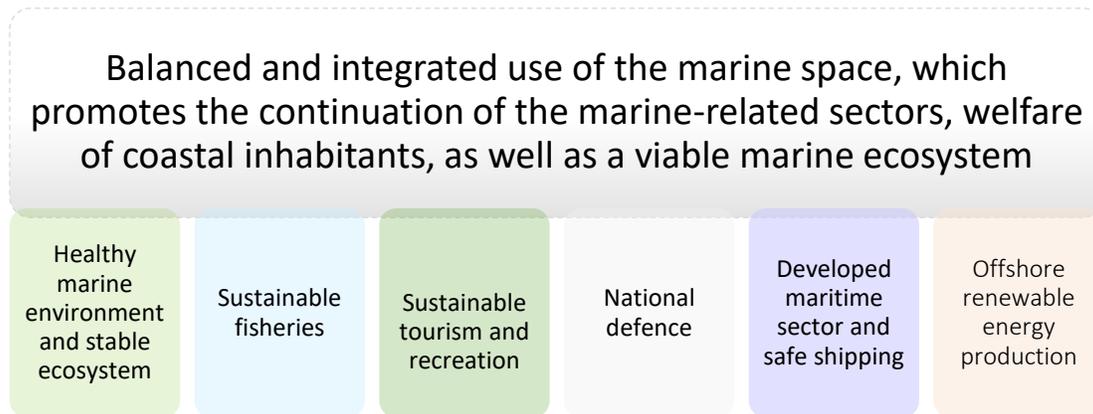


Figure 2.3 Priorities set out in the long-term vision

Planning solutions are provided in the MSP section on the use of the sea space. The MSP sets the **following main conditions** when planning the marine space development:

1. The use of the marine space must be organised in accordance with the natural conditions, ensuring the preservation of the environmental conditions, ecological parameters and the ability of the ecosystem to adapt to changes, furthermore production of favourable conditions for improving the quality of the environmental conditions and marine resources must be ensured;
2. The continuation of the existing, traditionally developed marine uses, which already occupy specific areas of the marine space and thereby affect and set conditions for new economic activities in the sea, must be ensured;
3. The development of the existing economic activities must be supported and the conditions for introducing new activities must be created;
4. Decisions regarding the introduction of new uses including the exploration of resources shall be based on research on the technological and economic justification, the impact on the environment and the marine ecosystem, as well as assessment of the compliance with the national policies and priorities.

Based on the outcomes of the discussions with stakeholders, the long-term development vision and the priorities as well as taking into account the criteria for the use of the marine space, the MSP defines **three categories of the use of marine space**:

1. Priority uses, including the existing and planned uses of the marine space, which are essential for ensuring the spatial interests of the priorities defined in the strategic part.

2. Existing uses and objects, which are connected to the use of the marine space and whose location and management is determined by regulatory enactments.

3. General use, where all uses of the sea are allowed (incl. fishery, shipping, tourism and leisure, scientific research etc.) which do not contravene the restrictions defined in regulatory enactments and do not cause significant negative impact on the marine environment. In order to initiate new uses of the sea, it is necessary to apply for a licence area, obtain a licence for exploration, carry out the EIA procedure and obtain a licence for the construction works or/and exploitation of resources.

Each category contains defined types of the uses of marine space and conditions for use in the space.

The MSP **graphical** part contains a map of the **Allowed Use of the Sea**.

Strategic objectives and tasks have been defined for the implementation of the MSP strategic and spatial priorities. The objectives are as follows:

SO1:: Rational and balanced use of the marine space, preventing inter-sectoral conflicts and preserving free space for future needs and opportunities;

SO2: The marine ecosystem and its ability to regenerate is preserved, ensuring the protection of the biological diversity and averting excessive pressure from economic activities;

SO3: Integrated use of marine and terrestrial areas by promoting development of maritime related businesses and the development of the required infrastructure.

Defined tasks, indicators to measure the progress and responsible institutions have been defined.

3. International and national environmental objectives, particularly those relating to the content of the planning document

In the Latvian Environmental Policy guidelines (EPG) for 2014-2020 international and European Union objectives are incorporated, as well as the national priorities are projected. Therefore, the MSP Environmental Report compares the objectives, established in the Latvian Environmental guidelines, which apply to the content of the MSP document.

The main goal of the MSP, defined in the Strategic part (see the section 1.1 of Environmental Report), corresponds to the main goal of Latvian Environment policy defined in the EPG – to provide the residents with possibility to live in clean and organised environment, through the implementation of sustainable development, ensuring the sustainable use of natural resources, as well as public participation in decision-making and awareness of the environment state.

The EPG 2014-2020 puts forward eight thematic priorities, four of which are directly related to the MSP. Their relation to the MSP is described in table 3.1.

Table 3.1. MSP and environmental policy goals or considerations relating to the environment, taken into account in drawing up the planning documents

Priorities	Policy objective	Main measures and action policies for the achievement of the objective	The way objectives are taken into account in MSP
Nature protection	To ensure the quality of ecosystems, conservation and socio-economic interests, promoting formation of the image of Latvia as a "green" state	<p>Current information on specially protected species and habitats, the objectives of protection and protection status, distribution maps of EU protected species and habitats and development of the guidelines for the management of habitats</p> <p>Improved network of EU protected natural areas Natura 2000, based on the distribution of species and habitat mapping, as well as taking into account the latest scientific research and regular monitoring data</p>	<p>The MSP is developed according to the ecosystem approach, moreover, the MSP aim 2 is directly related to the objectives of the EPG.</p> <p>In addition, the MSP identifies area within EEZ, where research should be carried out regarding possible establishment of marine protected areas.</p> <p>The MSP also highlights the need to assess the distribution and coverage of the marine ecosystem services according to internationally accepted methodology.</p>
Climate change	Promote Latvia's readiness to adapt to the climate change and effects it causes.	Effective implementation of adaptation measures and their integration in the territory development planning and sectoral policies with the aim of reducing the impact of climate change and adapt to them.	During development of the MSP the impacts of climate change on natural resources and ecosystems has been analysed. However, taking into account the term of MSP, separate tasks that focus on adaptation to climate change are not planned, since they more directly are addressed in the State's long-term thematic programming for the Baltic Sea coast.
Water resources and the Baltic Sea	To ensure good state of waters and their sustainable use	Develop marine strategies (measures) under the Marine Environment Protection and Management Law (hereinafter - the marine strategy) int.al. developing and implementing a programme of measures to achieve good state of the sea environment.	<p>The MSP is developed according to the ecosystem approach. Moreover, MSP aim 2 is directly related to the objectives of the EPG.</p> <p>The same indicators and information that describe good state of the marine environment are used in the development of the MSP as well as different assessments on the impact of MSP to the state of environment are carried out.</p> <p>One of the tasks of the MSP also includes promotion of the bathing area development in accordance with the requirements of the "Blue flag" initiative.</p> <p>During the development of the MSP, environmental issues mentioned in the EPG, related to the ship-source marine pollution were examined. It was concluded, however, that the corresponding measures are to be included in the Marine strategy.</p>
Environmental monitoring	Provide timely and comprehensive environmental and climate change data and information collection and comprehensive analysis in	<p>Provide valuable information and analysis on water quality and quantity</p> <p>Provide implementation of land monitoring</p>	<p>During the MSP all available information related to the maritime environment and its use was gathered.</p> <p>However, concluding that the information is not sufficient, one of the tasks of the MSP is to create a maritime data</p>

	order to establish the policy objectives and appropriate measures for improving the environmental situation and timely respond to climate change as well as evaluate existing measures and the efficiency and effectiveness of funding		information system and to ensure effective and timely exchange of the data on the maritime ecosystem between all parties involved.
--	--	--	--

The Marine Environment Protection and Management Law (in force since 18.11.2010.) has an important role in the protection of the marine environment. The law transposes requirements of the Marine Strategy Framework Directive. The law sets the strategic objective – to achieve good environmental status by 2020. The good environmental status (GES) is such a status where ecological diversity and dynamics, cleanness, healthiness and productivity of the sea within the conditions intrinsic to the relevant sea is ensured, and the use of the marine environment is at the level that is sustainable, thus safeguarding the potential for uses by current and future generations. Qualitative descriptors (D) and indicators are used to define the GES. These descriptors reflect on pressures, impacts and the state of the sea.

The status of the marine environment in the Latvian territorial sea and EEZ was initially assessed in 2012³. The results showed that majority of indicator values does not meet the definition of GES and that in several cases the environmental targets and corresponding indicators cannot be set due to the lack of knowledge and information. Therefore, the assessment was not available for many descriptors (D2, D4, D6, D7, D8, D10, D11), while for D1 was assessed only by one indicator which is insufficient to have reliable assessment. Eutrophication (D5) was assessed as “bad” for the whole Baltic Sea.

In 2018, the LIAE prepared a new assessment report on the state of the sea in Latvian waters. It contains new indicators, threshold values, and the status assessment. This information as well as results of other projects are used to prepare the Environmental Report, 2nd version.

In order to achieve the GES, EU member states have developed a Programme of Measures. Latvia also has developed, and the Cabinet of Ministers adopted the plan “Programme of Measures for Achieving Good Environmental Status 2016-2020”. The Programme of Measures has defined seven marine environmental targets (JVM), their relation to the descriptors (D), that provides opportunity to assess pressures and the state of the sea (see Table 3.2.).

Table 3.2. Marine environmental targets and link to the descriptors⁴

Marine targets	Descriptors („D”)	Expected status
JVM1: Human activities have not negatively impacted marine habitats and species	D1 Biological diversity	The impact of human activities on marine habitats and species is at a level that does not have a negative and irreversible effect.
	D2 Non-indigenous species	
	D4 marine food webs	
	D6 Sea-floor integrity	

³ LHEI 2012. Jūras vides stāvokļa sākotnējais novērtējums. D sadaļa. Definētie Latvijas jūras ūdeņu vides stāvokļa mērķa lielumi un aktuālā stāvokļa novērtējums [<http://www.lhei.lv/lv/juras-strategijas-pamatdirektiva>]

⁴ Plāns "Pasākumu programma laba jūras vides stāvokļa panākšanai 2016.-2020.gadā" (apstiprināts 13.07.2016)

Marine targets	Descriptors („D“)	Expected status
JVM2: The use of marine resources is sustainable and does not destroy marine ecosystem	D3 Commercially exploited fish and shellfish	The use of marine resources does not exceed the level at which marine ecosystem degradation occurs. Here the direct and indirect effects of the use of resources should be considered.
JVM3: Eutrophication does not adversely affect the marine environment	D5 Eutrophication	At critical levels of eutrophication, its adverse effects on the marine environment are observed. Eutrophication is permitted at levels that do not cause such adverse effects.
JVM4: Hydrographical conditions are in natural state.	D7 Alteration of hydrographical conditions	No activity is taken at sea that changes the sea's natural hydromorphological state.
JVM5: Concentrations of contaminants are at levels that do not adversely affect the marine environment	D8 Concentrations of contaminants	Reduced pollution loads to levels that ensures concentrations of pollutants in the sea where negative effect on marine organisms are not observed.
	D9 Contaminants in fish and other seafood for human consumption	
JVM6: Marine litter do not cause harm to the coastal and marine environment	D10 marine litter	Distribution and abundance of marine litter is prevented at the level that do not adversely affect marine organisms.
JVM7: Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment	D11 Introduction of energy, incl. underwater noise	Noise or any other energy that is introduced into the marine environment does not reach the level at which its negative impact on the marine ecosystem is observed.

The Programme of Measures contains spatial measures as defined by the MSFD and the Latvian Marine Environment Protection and Management Law. The MSFD emphasises that spatial protection measures shall contribute to coherent and representative networks of marine protected areas, adequately covering the diversity of the constituent ecosystems such as special areas of conservation pursuant to the Habitats Directive, special protection areas pursuant to the Birds Directive, and marine protected areas as agreed by the Community or Member States concerned in the framework of international or regional agreements to which they are parties (MSFD, article 13, point 4.)

The Programme of Measures refers to the MSP 1st version and the identified tasks therein. They are defined as supplementary measures in the adopted Programme of Measures:

1. To carry out research in the EEZ and territorial sea aiming at investigating the distribution of marine protected habitats and species and to develop scientifically sound justification for establishing new marine protected areas as well as to assess spatial distribution of significant fish spawning grounds and nursery areas.
2. To create a maritime information system to ensure efficient and timely exchange of data on the marine ecosystem among involved stakeholders.
3. To develop methodology for evaluation of spatial cumulative impacts from the use of the sea using good environmental status indicators and to ensure application of the methodology within the EIA process.

4. The relevant aspects of the current state of the environment

The 1st version of the MSP, part "Explanatory note" provides a comprehensive characteristic of the state of the environment, pressures and the natural value of the marine ecosystem, landscape and cultural heritage. The environmental information is gathered by the Latvian Institute of Aquatic Ecology (LHEI), based on the initial assessment of the marine environment, as well as supplementing it with the latest available data. Fish resource assessment is provided by the experts of the Institute of Food Safety, Animal Health and Environment "BIOR", by gathering information on the main commercial species in the Latvian part of the Baltic Sea. When developing the second version of the MSP and the SEA, the key environmental information was reviewed and updated.

As described in the Chapter 3, good environmental status (GES) is defined according to descriptors, criteria and indicators. The MSFD has defined 11 Descriptors used for assessing the significance of human pressure and progress towards achieving the targets. In 2017, the European Commission issued the Decision on criteria and methodological standards on good environmental status of marine waters (2017/848/EU) which defines more precise criteria and indicators, according to which the assessment of the marine environment is carried out. Descriptors, criteria and indicators established in the EC decision 2017/848 related to the marine space and development of MSP were examined during development of the MSP and the SEA. Those on which the necessary information is available, were selected (see Table 4.1). The target values refer to the existing policy targets of Latvia.

In addition to the MSFD descriptors, the table 4.1. also includes the indicators derived from the nature conservation policy and targets. Several different indicators have been developed for the characterisation of the environmental status in the sub-basins of the Baltic Sea, which might be contradictory to each other, therefore appropriate interpretation of each indicator is essential. The indicators characterising the status of the Latvian marine waters that have been assessed in relation to the MSP are provided in table 4.1. However, it should be stressed that environmental trends are the best evaluated by a developing special methodology for aggregation and interpretation of data related to the set of the Baltic Sea environmental indicators.

Table 4.1. Indicators representing the state of marine environment (source: LIAE, 2018; MoEPRD, 2014)

Descriptors	Indicators	2012 (value in the initial status assessment)	2018 (value in the recent status assessment)	Target value of GES in 2020 <i>Target value in other policy documents (in italic)</i>
Biodiversity (D1)	Share of marine protected areas from all marine waters (%)	15% (2014, MoEPRD) ⁵	-	<i>No target</i>
	Conservation status of protected habitat types	Unfavorable (2013, NCA) ⁶	-	<i>Good (EU CBD 2020)</i>
	Conservation status of grey seal and ringed seals	Favourable for grey seal; unfavourable - bad for ringed seal (2013, NCA) ⁶	-	<i>Favourable for both species (Habitat Directive)</i>
	Integrated biodiversity status assessment for seals (includes grey and ringed seals assessment: abundance and trends, spatial distribution, nutritional status, reproductive status):	-	0.2-0.4 (GoR) 0.4-0.6 (BP)	>0.6 (GR) >0.6 (BP)

⁵ VARAM. 2014. Vides politikas pamatnostādnes. 2.pielikums.

⁶ NCA. 2013. Report to European Commission on the conservation status of species and habitats in Latvia.

Descriptors	Indicators	2012 (value in the initial status assessment)	2018 (value in the recent status assessment)	Target value of GES in 2020 <i>Target value in other policy documents (in italic)</i>
	Gulf of Riga (GoR) and Baltic Proper (BP)			
	Integrated assessment of water birds	-	0,72	>0.6
	Integrated pelagic and benthic fish assessment: coastal fish	-	0.6-0.8	>0.6 (PK)
	Benthic Quality Index BQI: Gulf of Riga (GoR) - Baltic Sea photic zone sand - Baltic Sea aphotic zone sludge deposits - Baltic Sea aphotic zone sand - Baltic Sea aphotic zone mixed substrate Baltic Proper (BP): - Baltic Sea photic zone coarse-grained sediments - Baltic Sea photic zone sand - Baltic Sea photic zone mixed substrate - Baltic Sea aphotic zone sand	-	2,9 (GoR) 2,0 (GoR) 3,0 (GoR) 2,8 (GoR) 3,3 (BP) 4,6 (BP) 4,4 (BP) 3,8 (BP)	3.2 (GoR) 4.3 (BP) (2020, LIAE)
Population of commercial fish and shellfish (D3)	Integrated pelagic and benthic fish species assessment: Gulf of Riga (GoR) Baltic proper (BP)	-	0.2-0.4 (GoR) 0.4-0.6 (BP)	>0.6 (GoR) >0.6 (BP)
Elements of marine food webs (D4)	Zooplankton mean size vs. total stock (GoR)	-	Average (lowest 99% level): 615 (98) 4.40 (2.55)	276.93 (TS (mg m ⁻³)) 3.033 (MS (µg ind ⁻¹))
Eutrophication (D5)	Pollution load produced by Latvia, normalised against river discharges for the periods. (t/year)	2007-2011: 43444 (N, GoR) 10106 (N, BP) 1115 (P, GoR) 346 (P, BP)	2012-2016: 37167 (N, GoR) 9799 (N, BP) 1038 (P, GoR) 298 (P, BP)	
	Summer chlorophyll <i>a</i> concentration in GoR: - west coast; - open part; - east coast; - transitional waters In Baltic Proper: - open waters; - coastal waters	4.21 (GoR) 3.96 (GoR) 10.43 (GoR) 5.72 (GoR) 3.54 (BP) 4.29 (BP)	3.55 (GoR) 4.2 (GoR) 4.89 (GoR) 5.26 (GoR) 2.43 (BP) 4.79 (BP)	2.7 mg m ⁻³ (RL) 2.7 mg m ⁻³ (RL) 2.7 mg m ⁻³ (RL) 3.0 mg m ⁻³ (RL) 1.9 mg m ⁻³ (BJ) 1.8 mg m ⁻³ (BJ)
	Depth distribution of <i>Fucus vesiculosus</i> (GoR) and <i>Furcellaria lumbricalis</i> (BP)	-	4,7 (GoR) 14,8 (BP)	7 m (GoR) 20 m (BP)
Contaminants (D8)	Concentrations of Hg in biota (mkg/kg wet muscles weight (Baltic herring in open waters, perch – coastal waters)“ In Gulf of Riga - west coast; - open part; - east coast; - transitional waters In Baltic Proper: - open waters;	45 (GoR) 20 (GoR) 57 (GoR) 58 (GoR) - (BP)	49 (GoR) 18.8 (GoR) 59 (GoR) 68 (GoR) 24 (BP)	20 (Directive 2013/39/EU)

Descriptors	Indicators	2012 (value in the initial status assessment)	2018 (value in the recent status assessment)	Target value of GES in 2020 <i>Target value in other policy documents (in italic)</i>
	- coastal waters	55 (BP)	60 (BP)	
	Concentrations of Cd in biota (mkg/kg wet muscles weight (Baltic herring in open waters, perch – coastal waters)” In Gulf of Riga - west coast; - open part; - east coast; - transitional waters In Baltic Proper: - open waters; - coastal waters	46 350 87 72 - 41	44 328 95 69 303 36	325 (Baltic herring) 236 (perch) <i>(based on OSPAR, 2010)</i>
Marine litter (D10)	Average number of waste items found on the beach	-	15 out of 38 beach stretches are in GES (average values: 46- 561 items/100m)	130 items/100m of beach stretch

5. Planning document and its possible alternatives

Several scenarios and alternatives were developed during the drafting of the MSP and the SEA aiming at: i) to identify the possible alternatives of maritime spatial solutions; ii) to carry out the strategic evaluation of them; iii) to create optimal and the most acceptable spatial solutions for stakeholders and public. The alternatives are as follows:

- 1) Four radically different development scenarios (developed within drafting 1st version of MSP);
- 2) 1st version of the MSP and its spatial solutions;
- 3) Shipping and Energy Development Solutions (in the frame of Baltic LINes project)
- 4) 2nd version of the MSP and its spatial solutions.

When developing the 2nd version of the Environmental Report, the 2); 3) and 4) alternatives were assessed. The alternative 1) is included as an Annex of the full Environmental Report.

5.1. 1st version of the MSP and its spatial solutions

The four main categories for planned uses of the sea are proposed by the 1st version of MSP based on the discussion results with stakeholders representing the maritime economy sectors and public interests, the vision for long-term maritime development and related priorities and goals as defined in the Strategic Part of the MSP, as well as defined spatial criteria for planned uses of the sea:

- **Areas of priority interest** – the category includes the existing and potential uses of the sea essential to ensure the achievement of the priorities as defined in the Strategic Part (healthy marine environment and stable ecosystem; national security; developed maritime affairs and safe navigation; sustainable fishery and tourism). The areas are established for these types of uses of the sea by excluding or setting restrictions to activities which can cause disturbances or damage to their existence or development.
- **Areas of potential development** – the category includes the potential uses of the sea (renewable energy; maritime tourism and aquaculture) for which the suitable areas are identified, taking into account limiting natural conditions, possible impact to marine ecosystem, as well as potential conflicts with other sea uses. In order to start projects on the use of renewable energy resources or establishment of aquaculture farm, a developer shall obey existing legal procedures on proposing an area of interest, receive a licence for investigation, to perform EIA and to receive a licence for utilisation of buildings in accordance to the regulations of Cabinet of Ministers No. 631). The EIA procedure and related permits is necessary also for developing of new yacht ports.
- **Other types** of the uses of the sea and marine features that have an informative character or its location and uses are defined by the existing regulation.
- **Areas of general use**, where all uses of the sea are allowed, including fishery, shipping, tourism and leisure, research, etc., as long as they are in line with exiting legal requirements and not causing significant negative impact to marine environment. In order to start new sea use projects the developer shall obey existing legal procedures on proposing an area of interest, receive a licence for investigation, to perform EIA and to receive a licence for utilisation of buildings (according to requirements set in the regulations of CM No. 631) or use of earth subterranean depths in the sea (according to requirements set in the regulations of CM No.633).

See the proposed spatial solutions of MSP 1st version in the Fig. 5.1.

5.2. Balanced development for shipping and energy sectors (Baltic LINes project)

Discussion on the planned use of the sea with key maritime sectors was continued after the 1st version of the MSP was completed. The discussion was supported by the activities of the Interreg project “Baltic LINes”. Two sets of future scenarios (4 for shipping and 4 for energy sector) were created in the period May-September 2017. Based on these sets, 4 combined scenarios were built-up: energy dominance, balanced development, shipping dominance, stagnation. The common understanding of the sector representatives is that, until 2030 and until 2050, the combined scenario of balanced development is preferable for both sectors⁷. This scenario was also used to enhance the 2nd version of the MSP and its spatial solutions (see Fig.6.2.).

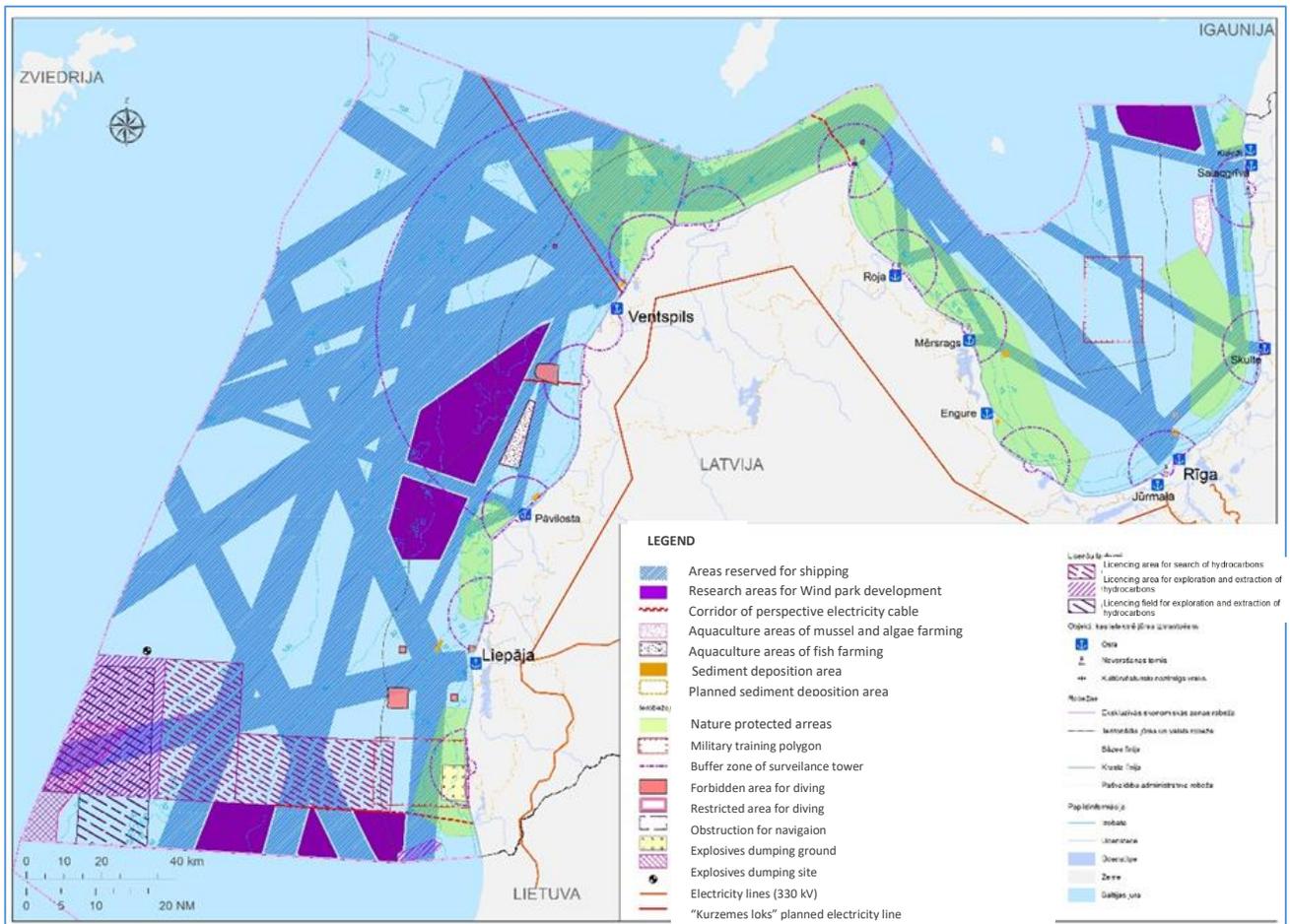


Figure 6.2. Balanced development scenario for shipping and energy sectors (Baltic LINes project)

The preferable development of the shipping sector in the future will be characterized by the development of large ports and optimal shipping conditions, including a significant increase of cargo turnover, number of serviced vessels, ferry and cruise ships and yachting. The shipping sector will need to pay more attention to the maritime safety aspects, the sector will seek to reduce ship-generated emissions, and therefore Latvian ports will have to adapt to technological development. Latvian ports have no experience in

⁷ Baltic LINes. 2017. Kuģniecības un enerģētikas nozaru nākotnes scenāriji un nozaru kritiskie jautājumi: Priekšlikumi rezultātu integrēšanai Jūras telpiskajā plānojumā. Līguma atskaite.

servicing offshore wind parks and are cautious; they call on the energy sector to provide them with economically sound estimates of the contribution of this economic sector to the development of ports.

The preferable development of the energy sector in the maritime space shall be seen in the context of the expected small increase in electricity consumption and a significant increase in the share of electricity produced from renewable energy sources. The use of offshore wind potential is intended to provide optimal solutions that do not limit the development of shipping and will allow the exploration of wider areas in order to find the most economically advantageous solution for the location of offshore wind parks with the least effect on other sectors.

5.3. Final version of the MSP and its spatial solutions

The three main categories for the planned uses of the sea are proposed by the Final version of MSP based on the discussion results with stakeholders representing the maritime economy sectors and public interests, the vision for long-term maritime development and related priorities as well as defined spatial criteria for planned uses of the sea:

1. Priority uses – includes existing and planned uses of the marine space, which are essential for ensuring the spatial interests of the priorities defined in the strategic part.

2. Existing uses and objects, which are connected to the use of the marine space and whose location and management is determined by regulatory enactments.

3. General use, where all uses of the sea are allowed (incl. fishery, shipping, tourism and leisure, scientific research etc.) which do not contravene the restrictions defined in regulatory enactments and do not cause significant negative impact on the marine environment. In order to initiate new uses of the sea, it is necessary to apply for a licence area, obtain a licence for exploration, carry out the EIA procedure and obtain a licence for the construction works or/and exploitation of resources.

Each category comprises own defined type of use of the marine space and conditions for use, as well as recommendation for determining the most suitable areas for marine use.

Until the exploration of *areas of nature values*, the issuing of licences for new uses (incl. offshore wind parks, wave energy stations, hydrocarbon extraction platforms, aquaculture areas) that could potentially endanger habitats and species, is not permitted.

Taking into account that the installation of a offshore wind parks conflicts with the interests of other sectors and existing uses, *when issuing a licence for a research area for wind park development*, the following aspects shall be considered:

- It is important to evaluate the impact of a WPP on the coastal landscape. In particular, a negative impact is anticipated in the places with a natural landscape or places that have been altered little by human activity, as well as places of cultural significance. WPPs that are visible from the shore may reduce the touristic attractiveness, therefore it is recommended to situate WPPs at least 8 km from the coast, but in areas next to bluffs (for example Jurkalne) the optimal distance would be up to 20 km.
- The installation of a WPP may cause damage to or destroy underwater biotopes, in particular, the biotopes formed in the rocky bottoms (limestone and boulders, as well as mixed bottoms). Therefore, WPPs are not permitted in areas designated for the protection of underwater biotopes or areas where protected biotopes may be found.

- Where possible, WPPs should also be located outside the wintering grounds of migratory birds (loons, long-tailed ducks, common scoters, velvet scoters, black guillemots, little gulls), their migration routes, as well as their resting and feeding places during migration;
- In areas where WPPs are installed, fishing and the extraction of mineral resources shall be restricted, therefore, when determining the most suitable place, the interests of these sectors shall also be taken into account, where possible excluding areas which are important for fishery or that might potentially be used for the extraction of mineral resources. If it is not possible to agree on a mutually convenient solution, the existing practice of compensation shall be used.
- In areas for which a licence has already been issued for the exploration and extraction of hydrocarbons, or other economic activities including aquaculture production, the issuing of a WPP licence is not possible.

In order to ensure the balanced and coordinated use of the marine space, **recommendations** are included in the MSP for the designation of new types of use. Therefore, when determining the most suitable areas for marine use, along with availability of resources, it is also important to assess the impact on the environment, national security, navigation and other interests of marine use, as well as to take into account the various limiting factors. The recommendations particularly outline the likely significant impacts on environment and possible prevention or mitigation measures.

6. Strategic assessment of scenarios

Strategic impact assessment of the scenarios was carried out in qualitative way, using multi-criteria analysis method. Impacts of the scenarios were evaluated and mutually compared within the context of long-term marine use development vision and marine spatial use priority areas, which was developed in accordance with the suggestions of the interested parties during the regional MSP development meetings in March 2015. To assess how the specific scenarios would ensure implementation of long-term vision, 3-5 criteria for each of the groups of effects were defined. To assess the impact on the environment, the following essential criteria were selected:

- Nutrient load reduction on the marine ecosystem and provision of good marine environmental status (indicators: N and P pollution load, summer chlorophyll a and concentrations of toxic algae, zooplankton size, spawning stock biomass);
- Provision of biodiversity and ecosystem stability (MPA network, species distribution, fish landing spatial distribution, macrozoobentos index);
- Proportion of renewable energy in the total energy consumption;
- Trend in GHG emissions (related to maritime sectors).

Whereas the environmental aspects are also important for cross-border context, the environmental effects of alternatives in the evaluation report also contains one of the cross-border criteria: "Ecological balance". The criteria reflect on establishment of MPAs, their preservation and management; maintenance of "blue corridors" for species migration, maintenance of fish resources.

Degree of influence of scenarios was assessed in a comparative scale (-2: significant adverse effects; -1: slight negative effect; 0: no effect; 1: slight positive effect; 2: substantial positive effect), based on expert evaluation and development trend indicators used for characterisation of scenarios. See assessment results in the Table 6.1.

According to the selected criteria and indicators for the strategic assessment, the main conclusion is that implementation of both 1st and final (improved 2nd) version can have likely positive impact on environment and marine ecosystem.

Table 6.1. The environmental impact assessment of the three scenarios based on selected criteria and indicators

Criterion	MSP, 1st version		Balanced development for shipping and energy sectors		MSP, Final version	
	Value	Explanation	Value	Explanation	Value	Explanation
Reduction of nutrient load to the marine ecosystem and provision of good marine environmental status	1	Likely positive effect - because planning and implementation of mussels, seaweed, and integrated aquaculture production helps to reduce nutrient load. This may have positive impact on the size of zooplankton, the reduction of nutrient (N) and algae concentration.	0	Anticipated activities do not influence eutrophication, as the scenarios do not cover activities that would lead to increase or decrease in pollution loads.	0	Anticipated activities do not influence eutrophication. The final MSP version has not identified areas suitable for aquaculture based on algal and mussel farming.
Provision of biodiversity and ecosystem stability	1	The 1 st version of the MSP provides investigation areas for nature values with a total area of ~ 1350 km ² , which could contribute to conservation of biodiversity. The location of wind parks does not interfere with the migration of birds and does not endanger protected benthic habitats. The areas designated for fish farming can have a negative impact on all benthic habitats, while algae and mussels aquaculture (or integrated multi-trophic aquaculture) can have more negative impact on photic habitats in coastal areas.	-1	The scenario does not foresee new investigation areas for nature or biodiversity values supporting marine species and habitats protection. The research areas of the wind park development will spatially overlap with potentially important areas of biodiversity, thus having a likely negative impact on benthic habitats, bird species and related ecosystem services.	1	The Final version of the MSP provides investigation areas of nature values with a total area of ~ 1350 km ² , which could contribute to biodiversity conservation. At the same time, three of the five designated investigation areas overlap with research areas for energy development, thus creating a potential conflict of interest. However, the MSP stipulates that the issuance of licenses for the launching of new types of sea uses that could potentially endanger protected benthic habitats and species is not allowed.
Proportion of renewable energy in the total energy consumption.	1	The area for wind parks has been allocated - a total area of ~207 km ² , which may increase the share of energy from renewable sources in gross final energy consumption. The allocated areas are sufficient taking account the potential connection capacity of the power transmission network until 2030.	2	The area available for wind parks has been allocated - a total area of 1590 km ² , which may lead to an increase in the share of energy from renewable sources in total gross final energy consumption. However, the limitations in available connection & transmission capacity till 2030 should be taken into account. Therefore, investments in power transmission infrastructure is also important	2	The area available for wind parks has been allocated - a total area of 1 766 km ² , which may result in an increase in the share of energy from renewable sources in gross final energy consumption. However, the limitations in available connection & transmission capacity till 2030 should be taken into account. Therefore, investments in power transmission infrastructure is

	MSP, 1st version		Balanced development for shipping and energy sectors		MSP, Final version	
Criterion	Value	Explanation	Value	Explanation	Value	Explanation
				precondition for wind energy development.		also important precondition for wind energy development.
Trend in GHG emissions	-1	Increase of shipping could also lead to higher GHG emissions from maritime transport. However, it will not increase substantially, as it is expected that the instead of increase in number of vessels the carrying capacity of ships will be larger. In addition, ships are expected to use more environmentally-friendly fuels.	-1	Increase of shipping could also lead to higher GHG emissions from maritime transport. However, they will not increase substantially, as it is expected that the instead of increase in number of vessels the carrying capacity of ships will be larger. In addition, ships are expected to use more environmentally-friendly fuels.	-1	Increase of shipping could also lead to higher GHG emissions from maritime transport. However, they will not increase substantially, as it is expected that the instead of increase in number of vessels the carrying capacity of ships will be larger. In addition, ships are expected to use more environmentally-friendly fuels.
Total value	2		0		2	
Ecological balance (Cross-border effect)	2	Network of existing protected marine territories is maintained, as well as new investigation areas are proposed, that potentially would lead to establishment of new MPAs in EEZ. Connectivity with created ecological (blue) corridors in northern part of Lithuanian sea water with the Latvian side would be ensured. Fishing intensity remains unchanged, within the limits of available resources. Algae and mussels' aquaculture development can positively affect fish stocks, as well as the level of eutrophication in the Baltic Sea.	0	Network of existing protected marine territories is maintained. Fishing intensity remains unchanged, within the limits of available resources. Anticipated activities do not influence eutrophication.	2	Network of existing protected marine territories is maintained, as well as new investigation areas are proposed, that potentially would lead to establishment of new MPAs in EEZ. Connectivity with created ecological (blue) corridors in northern part of Lithuanian sea water with the Latvian side would be ensured. Fishing intensity remains unchanged, within the limits of available resources.

7. Areas where the implementation of planning documents may likely significantly affect condition of the environment

To ensure the implementation of the ecosystem-based approach in the MSP development, the impact of each type of economic activity on natural values used and marine ecosystem services was assessed also spatially, including the following steps:

Degree of potential impacts was mapped for those nature assets for which the spatial data sets were available (benthic habitats, areas important for commercially important fish species and important bird species concentration areas), including the following steps:

- Development of an impact matrix based on the expert judgement: the experts (hydrobiologists, ornithologists, ichthyologists) assessed the level of impact of the human activities in a relative scale (-2: significant adverse effects; -1: slight negative effect; 0: no effect; 1: slight positive effect; 2: substantial positive effect) in relation to respective nature assets.
- Development of the assessment maps in ArcGIS software by overlaying nature assets and ecosystem service data layers with planned sea uses as defined by scenarios. The areas where significant negative impact on marine nature assets and ecosystem service provisioning is likely to be caused were identified spatially.
- Interpretation of the mapping results on the possible environmental impacts and drawing up the MSP solutions.

Iterative process was implemented to assess the proposed alternatives as well as the MSP solution on the planned use of the sea. The created maps illustrate the expected impact of human activities on important areas for benthic habitats, birds, seals, commercial fish species and ecosystem service supply. Furthermore, the indicators of the MSFD (see Table 4.1) are also used to assess the potential impact.

Here we present the main findings of the assessment of the final (improved 2nd) version of the MSP.

Impacts on benthic habitats

The degree of a negative impact depends on the type of habitats and related economic activity, this being reflected in the maps (see Fig. 7.1). Any type of marine use, which is mechanically disturbing or destructing sea bottom or sediments, has an impact on benthic habitats. This may be caused by dredging works, creating new shipping routes, or by dumping the excavated sand in the sea. Any construction works in the sea, for example, installation of wind parks, mining of natural mineral resources, can directly destroy habitats. Hydrotechnical structures at the shore (for example, breakwaters, piers or boat or vessel dock) can also affect the flow of sediments, which in its turn can cause the accumulation of sand and reef burial.

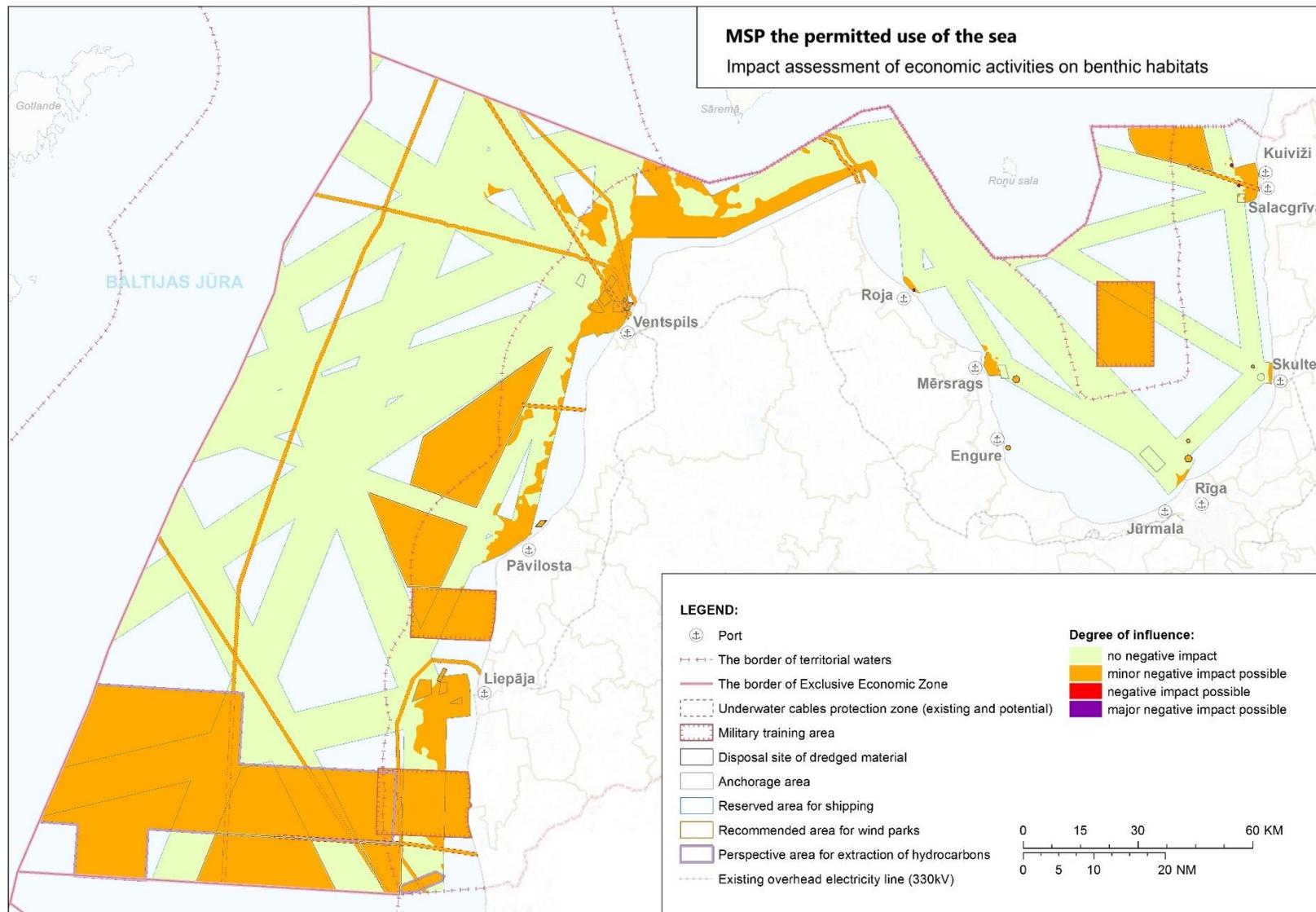


Figure 7.1. Impact assessment of planned use solutions on benthic habitats (the 2nd version of the MSP)

Impact on sea birds

In order to assess the impact of planned sea use solutions, information about important bird areas is insufficient, especially in the Baltic Sea Latvian EEZ. Therefore, the impact assessment cannot be performed on all Latvian EEZ and territorial waters (see Fig. 7.2.).

The abundance of birds as well as sustainability of their wintering and resting areas depends on the sufficiency of nutrient base. All protection measures which provide preservation of marine habitats and fish resources also contribute to diversity of bird species and stability of the abundance. Therefore, it is important to ensure the availability of these resources and mitigate any cause for disturbance or threat to death of specimens.

Wind park construction and operation within the favourite feeding area or migration routes would lead to the habitat loss and in long-term to the deterioration of the status of the population. Water birds during migrations usually avoid the wind parks, therefore their effects occur primarily as habitat loss. Small passerine birds and birds of prey, unable to change the direction rapidly (a kinglet flies where the wind carries him) can die in a direct collision with the windmills. The MSP anticipates to wind park development outside territorial sea. Due to the lack of data on these areas, it is impossible to carry out impact assessment on the water birds. Better information on bird distribution and abundance is available for the Gulf of Riga. In case a wind park would be built in a research area in front of Ainaži, it could potential conflict with interests of preservation of bird species. Therefore, these territories shall be additionally investigated before issuance of the licence.

Direct death of waterfowl can be caused by oil spills (including insignificant amounts) from ship routes and the mining area of hydrocarbons research sites. The more time any of the species spend flying and diving (pacific loon, ducks, guillemots), the more endangered they are by the oil spills (Williams et al 1994⁸, Oil Vulnerability Index).

Even the best food resources may remain unused in case of disturbance by human activities. Each time the bird is forced to leave the feeding site, it is losing energy. Birds react differently to the size, speed and frequency of appearance of the ships or boats (including leisure boats), depending on the species and energy demand (Mathews 1982⁹).

It is observed that regular moderate intensity boat movement disturbs the birds less than rare trips or very intensive movement and birds suffer more from small fast boats than regular movement of larger ships (int. al. fishing) in the common routes. Different species of birds are showing different levels of tolerance. Black scoters leave their feeding sites even in 2 km distance from a vessel or aircraft (Kaiser 2006¹⁰). Loons are the next most nervous species. Guillemots are rated as moderately timid but different gulls endure the

⁸ Williams, J.M., Tasker, M.L., Carter, I.C. & Webb, A. (1994) A method of assessing seabird vulnerability to surface pollutants. *Ibis*, 137, S147–S152.

⁹ Mathews M.V.T. 1982. The control of recreational disturbance. In: D.A.Scott (ed.) *Managing wetlands and their birds, a manual of wetland and waterfowl management*. Proc.3rd techn. meeting on Western Palearctic Migratory Bird Management, pp.325-330.

¹⁰ Kaiser M., Galanidi M., Showler D. A., Elliott A. J., Caldow R. W. G., Rees E.I.S., Stillman R. A., Sutherland W.J. 2006. Distribution and behaviour of Common Scoter *Melanitta nigra* relative to prey resources and environmental parameters. *Ibis* 148: 110-128.

presence of human best (Garth, Húppop 2004¹¹). Pacific loons are very shy and sensitive to the different vertical elements.

Impact on areas important for commercially important fish species

Fishing in the Baltic Sea is based on catches of four fish species - sprat, herring, cod and flounder. Coastal fishing is dominated by herring catches. Most of the herring is caught in the Gulf of Riga.

Spatial distribution of each of commercially significant fish catch in relation to significant impacts of marine use types is considered while assessing the possible significant impact of planned use of the sea on fish species (see Fig. 7.3). All economic activities have likely negative impact on fish resources. The degree of impact depends on the amount of fish landing and its spatial distribution.

Impact on seals

There are two seal species in the marine waters of Latvia – grey seal (*Halichoerus grypus*) and ringed seal (*Phoca hispida bottnica*). Since the Latvian authorities do not carry out regular monitoring of the seals population, the information provided by HELCOM is used to describe the abundance of the population.¹²

Climate is an essential natural factor affecting the seals population and its reproduction. The breeding of ringed seal is restricted by the availability of suitable sea ice. The ringed seal needs compact and very close pack ice where snow can accumulate, which makes it particularly sensitive to climate change.¹³ The number of seals is influenced by fishery, which is competing for feed resources and causing a risk of by-catch¹⁴.

The impacts of the wind farms on the seals population are expected to be small. However, special impact studies on seals are needed to provide a proper impact assessment. Such studies have not been carried out in Latvia. The same is concluded in Estonia during development of the Pärnu District MSP on SEA. The environmental impact assessment of wind parks needs to be performed, considering the impacts in both the construction and operational phases of wind parks.

The military training area in the Gulf of Riga may have a negative impact on the seal population. According to the Estonian Fund for Nature, any use of munition and projectiles would be undesirable, since underwater explosions or the use of heavy-duty (military) hydrolocators are a disturbing factor for the seal population, which is sensitive to noise pollution in water.

¹¹ Garthe S., Húppop O. 2004 Scaling possible adverse effects of marine wind farms on seabirds: developing and applying a vulnerability index. *Journal of Applied Ecology* 41: 724-734.

¹² <http://helcom.fi/baltic-sea-trends/indicators/distribution-of-baltic-seals/>

¹³ Sundqvist, L., T. Härkönen, C.J. Svensson, K. & Harding (2012): Linking climate trends to population dynamics in the Baltic ringed seal: Impacts of historical and future winter temperatures. *Ambio* 41: 865-872.

¹⁴ Vanhatalo J, Vetemaa M, Herrero A, Aho T, Tiilikainen R (2014) By-Catch of Grey Seals (*Halichoerus grypus*) in Baltic Fisheries—A Bayesian Analysis of Interview Survey. *PLoS ONE* 9(11): e113836. doi:10.1371/journal.pone.0113836

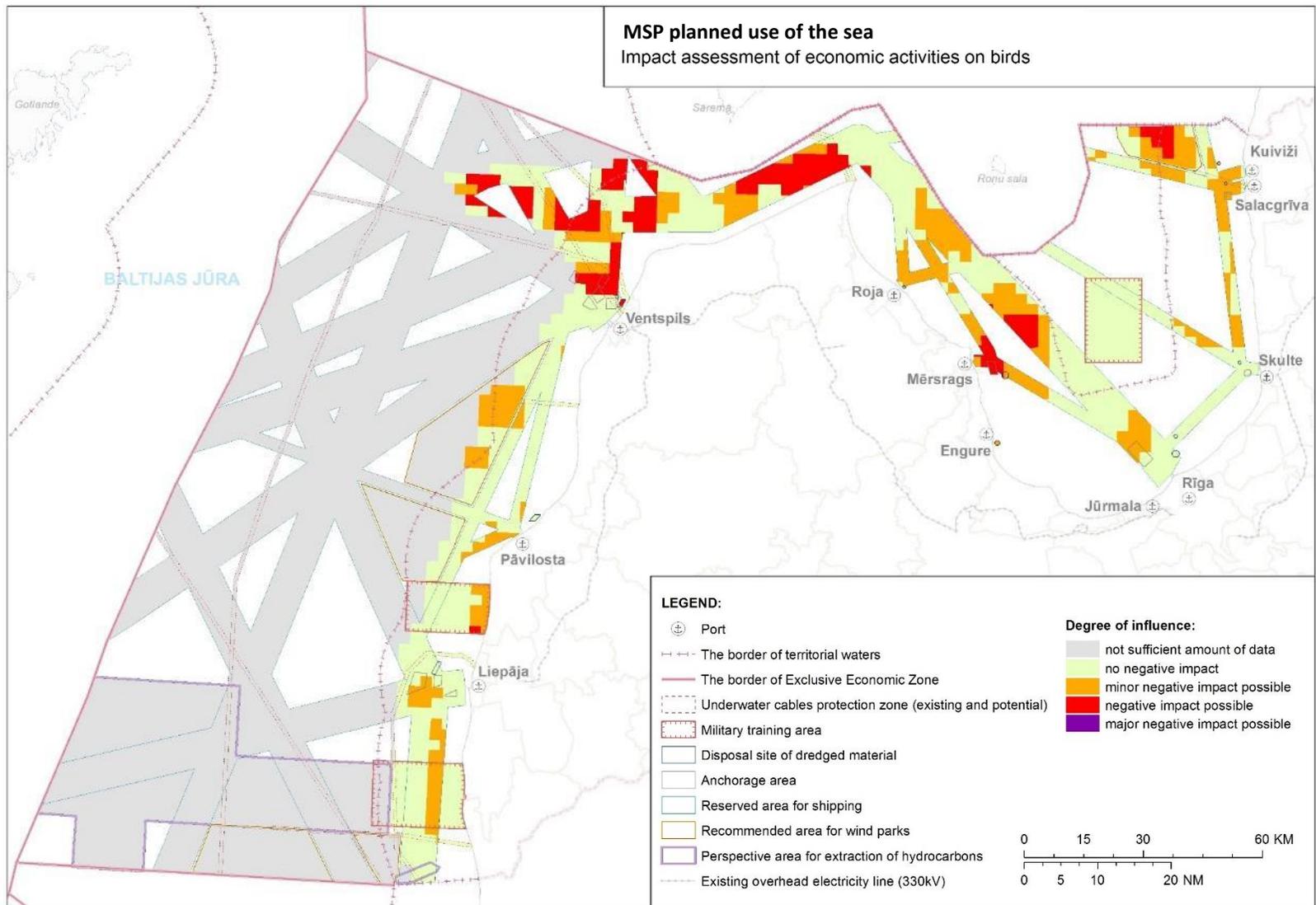


Figure 7.2. Impact assessment of planned use solutions on birds

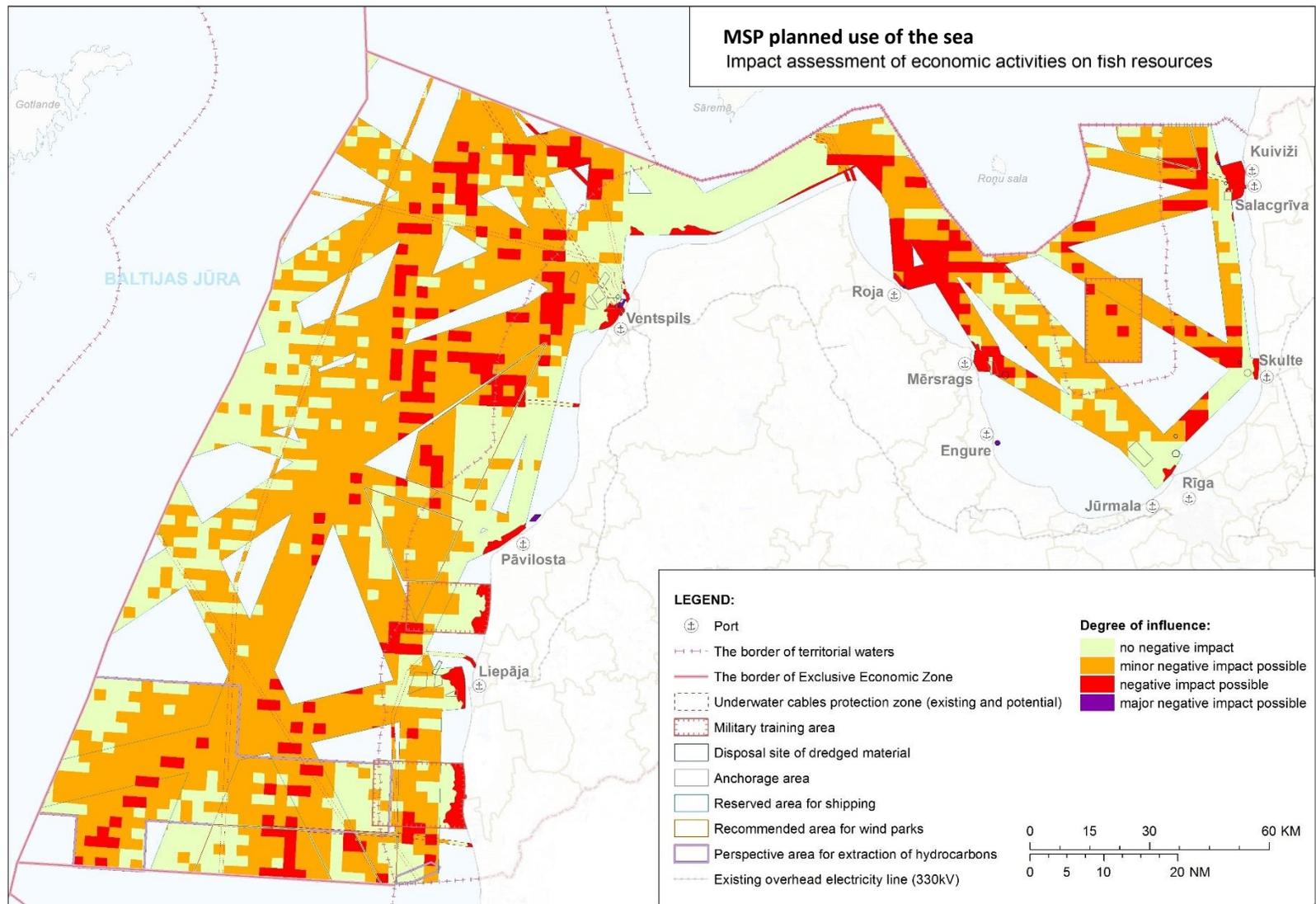


Figure 7.3. Impact assessment of planned use solutions on areas significant for fish species

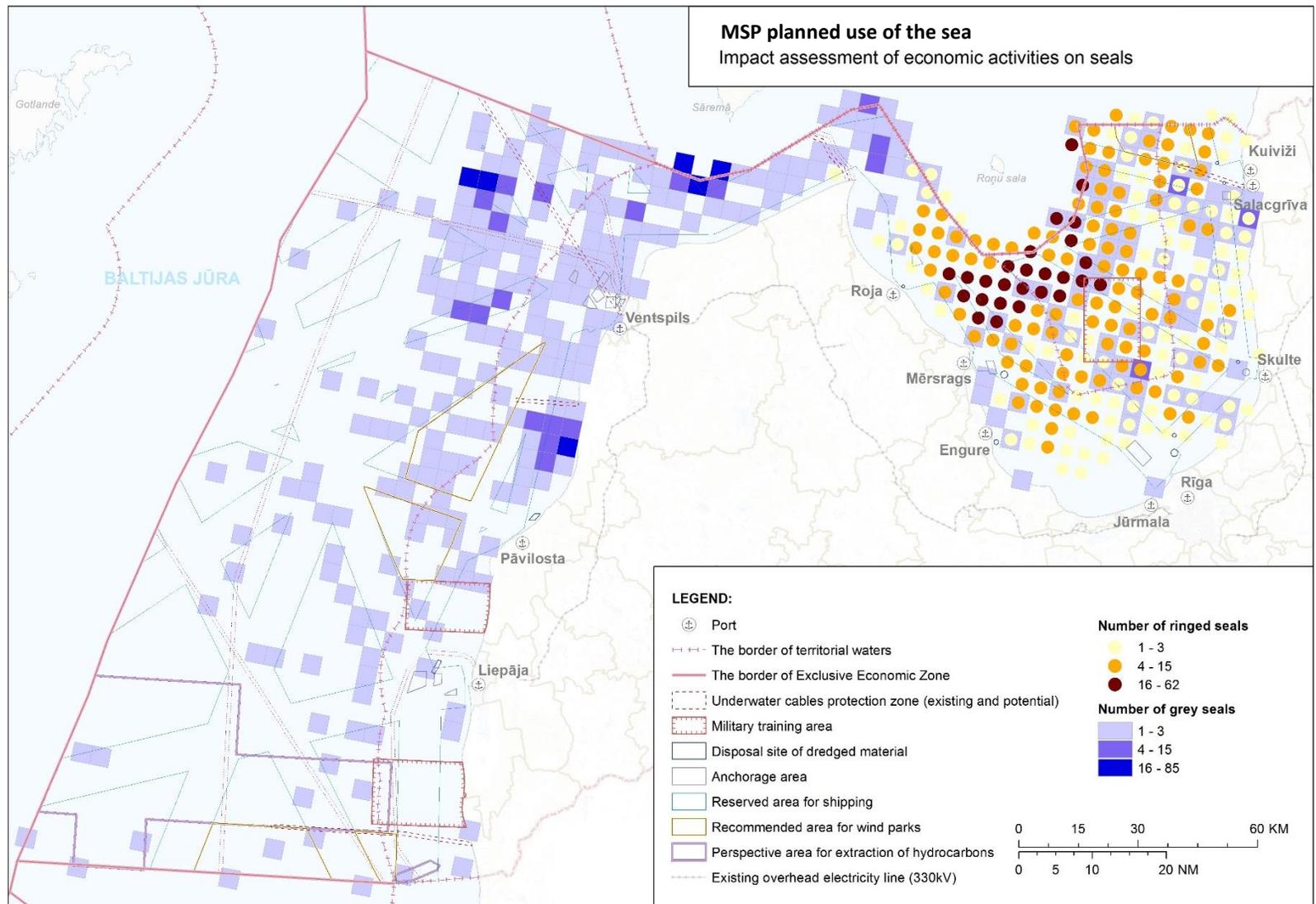


Figure 7.4. Impact assessment of planned use solutions on areas significant for seals

Impact on ecosystem services (ES)

Regulating services provided by benthic habitats (see Fig. 7.5)

The regulation services were mapped using the benthic habitat map - the ecosystem services supply by each habitat type were assessed based on expert knowledge (binary assessment: does the particular habitat type provide the particular service – yes/no) thus using the habitat types as proxy for distribution of the ecosystem service. The following ES were mapped: bio-remediation by micro-organisms, algae, plants, and animals; Storage/accumulation by micro-organisms, algae, plants, and animals; maintaining nursery populations and habitats; global climate regulation by reduction of greenhouse gas concentrations. The impact assessment map illustrates the cumulative effect of possible negative impacts of economic sectors on regulating services provided by benthic habitats.

New type of the use of the sea like offshore wind energy might cause minor negative effects as these areas provide 2-3 regulating ES essential for human well-being. Higher negative cumulative impact is assessed with regard to areas licenced for exploration and exploitation of hydrocarbons. Therefore, Environmental Impact Assessment (EIA) studies specific for proposed technologies shall be carried out to assess the anticipated significance of the negative effects on the environment.

Provisioning service – potential supply of red algae *Furcellaria lumbricalis* (see Fig.7.6)

Provisioning service – algae and their outputs - the red algae *Furcellaria lumbricalis* beds were mapped as a potential resource, which can be used in the food industry, pharmacy, microbiology, etc. The expert knowledge was used to identify the benthic habitats that are related to distribution of the *Furcellaria lumbricalis* and this information was combined with data from field surveys, which partly cover the possible species' distribution area and provides information on coverage of algae beds within defined spatial units. The assessment results are presented on a scale from 1 to 3, where 1 refers to habitats suitable for distribution of the species, but no occurrence so far detected; 2 – low occurrence detected; 3 – high occurrence detected. The red algae are mainly distributed in coastal area where fishing and tourism activities occur. The new type of the use of the sea are planned within EEZ, thus no negative impact is anticipated.

Provisioning service – fish resources (see Fig. 7.7.)

Fish for food is the only provisioning ES that is presently directly assessable in a quantitative way. The impact assessment map illustrates degree of likely negative impact on the fish resources depending on the importance of each commercial fish species in the landing. The map represents the assessment in the open sea in the Gulf of Riga and Baltic proper (>20 m depth).

The proposed offshore wind park research areas are mainly with low or very low fish landing. Higher negative impacts (if wind park building would be permitted) might be anticipated in the designated research area in the Gulf of Riga, bordering Estonia. Therefore, EIA studies specific for proposed technologies shall be carried out to assess the anticipated significance of the negative effects on the environment.

Areas that are already licenced for exploration and extraction of hydrocarbons occupy a larger share of space and assessed ES. Decisions on licencing these areas were taken before the launch of the MSP process and thus are not rescinded despite the potential significant impact on identified ES. The current legislation does not allow termination of the issued licences therefore the SEA could only recommend that mitigating

measures be considered during the planning phase of any up-coming development proposal and related environmental impact assessment.

Cultural services – suitability of the coastal areas for marine tourism and leisure (see Fig. 7.8.)

An indicator of marine tourism and leisure opportunities along the coast was selected to assess cultural services. The indicator was computed based on expert judgement and empirical data from 2015. The indicator combined several criteria: i) number of visitors; ii) suitability of the area (or best place) for a particular tourism or leisure activity (e.g. angling, bird watching, kiteboarding, etc.); iii) accessibility – presence of parking lots and public access roads near the coast; and iv) data on settlement pattern and population size. Each criterion was scored on a scale of 1-3. The scores of the criteria were summed for the ES assessment on a scale of 1 to 5, where 1 means very low suitability for tourism and leisure activities and 5 – very high suitability.

Areas assessed high and very high can be seen as priority areas for marine tourism development. This means that future development of public infrastructure can be targeted to these areas having potentially higher social benefits. The new type of the use of the sea are planned within EEZ, thus no negative impact is anticipated. Moreover, MSP sets the condition that impact of an offshore wind park on the coastal landscape shall be carried out. A negative impact is anticipated in places with a natural landscape or places that are little altered by human activity, as well as places of cultural significance. Wind turbines that are visible from the shore may reduce the touristic attractiveness, therefore it is recommended to situate wind parks at least 8 km from the coast, but in areas next to bluffs (for example Jurkalne) the optimal distance would be up to 20 km.

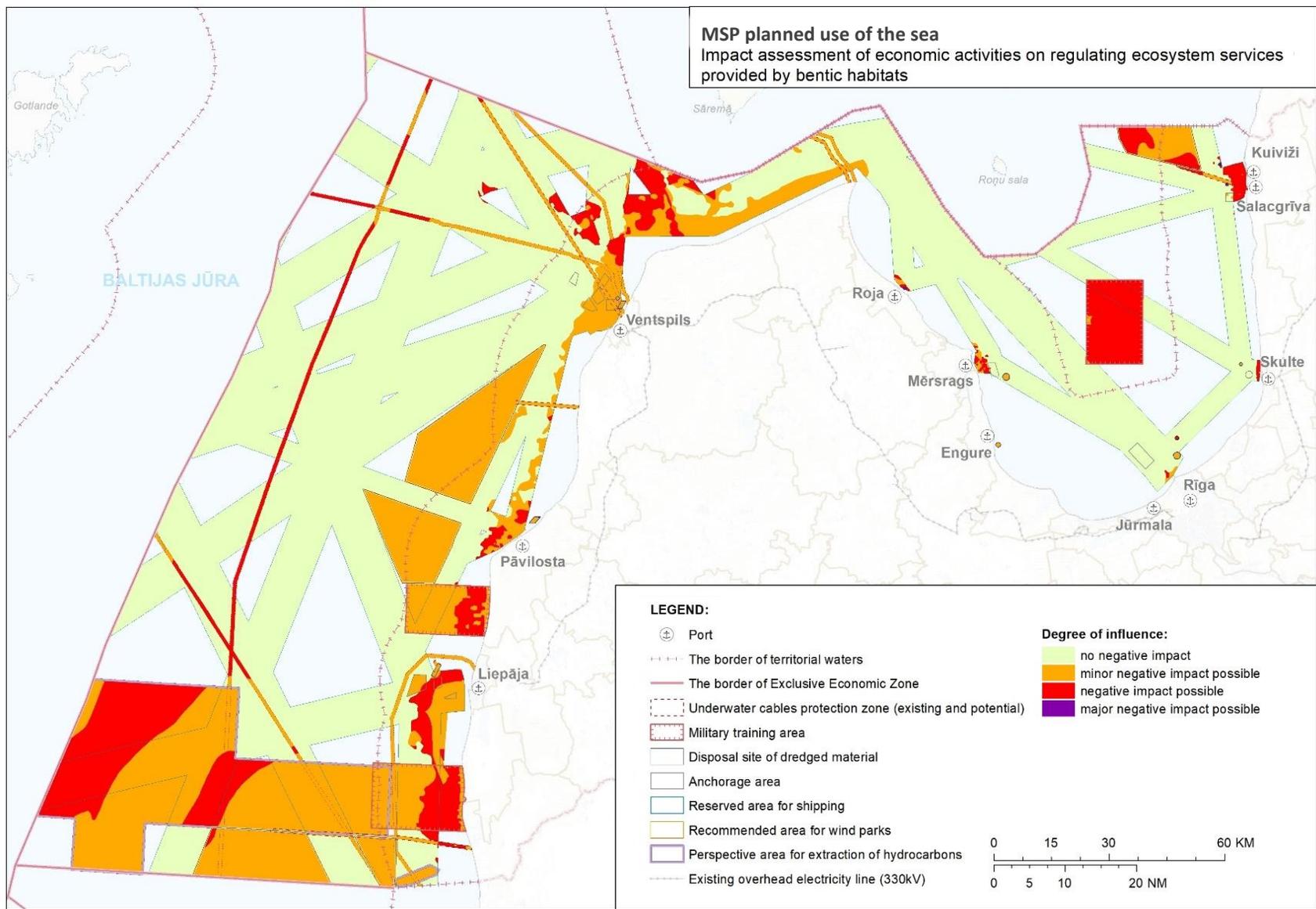


Figure 7.5. Impact assessment of planned use solutions on regulating services provided by benthic habitats

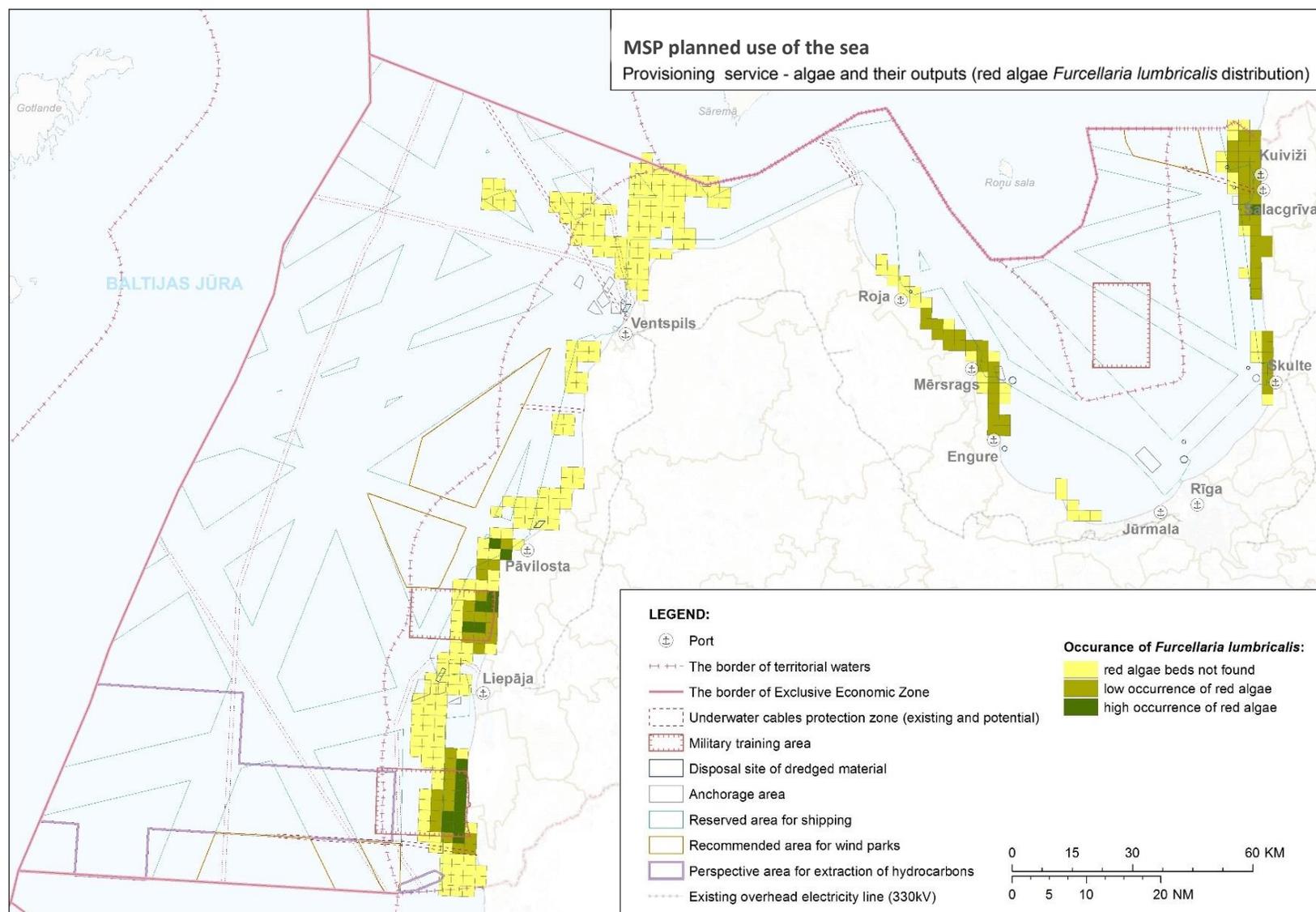


Figure 7.6. Impact assessment of planned use solutions on provisioning service – algae and their outputs – potential supply of red algae *Furcellaria lumbricalis*

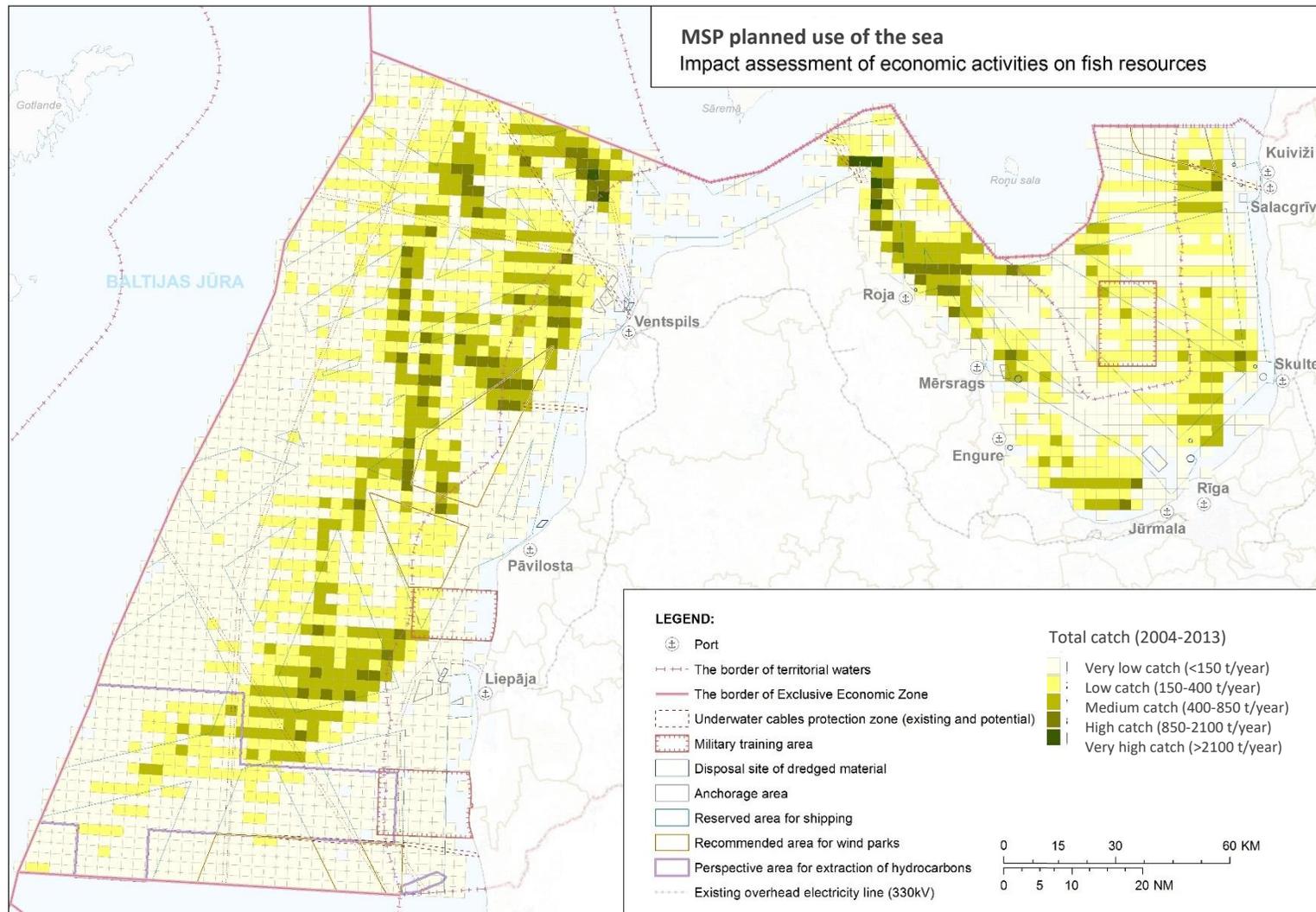


Figure 7.6. Impact assessment of planned use solutions on provisioning service– fish for food

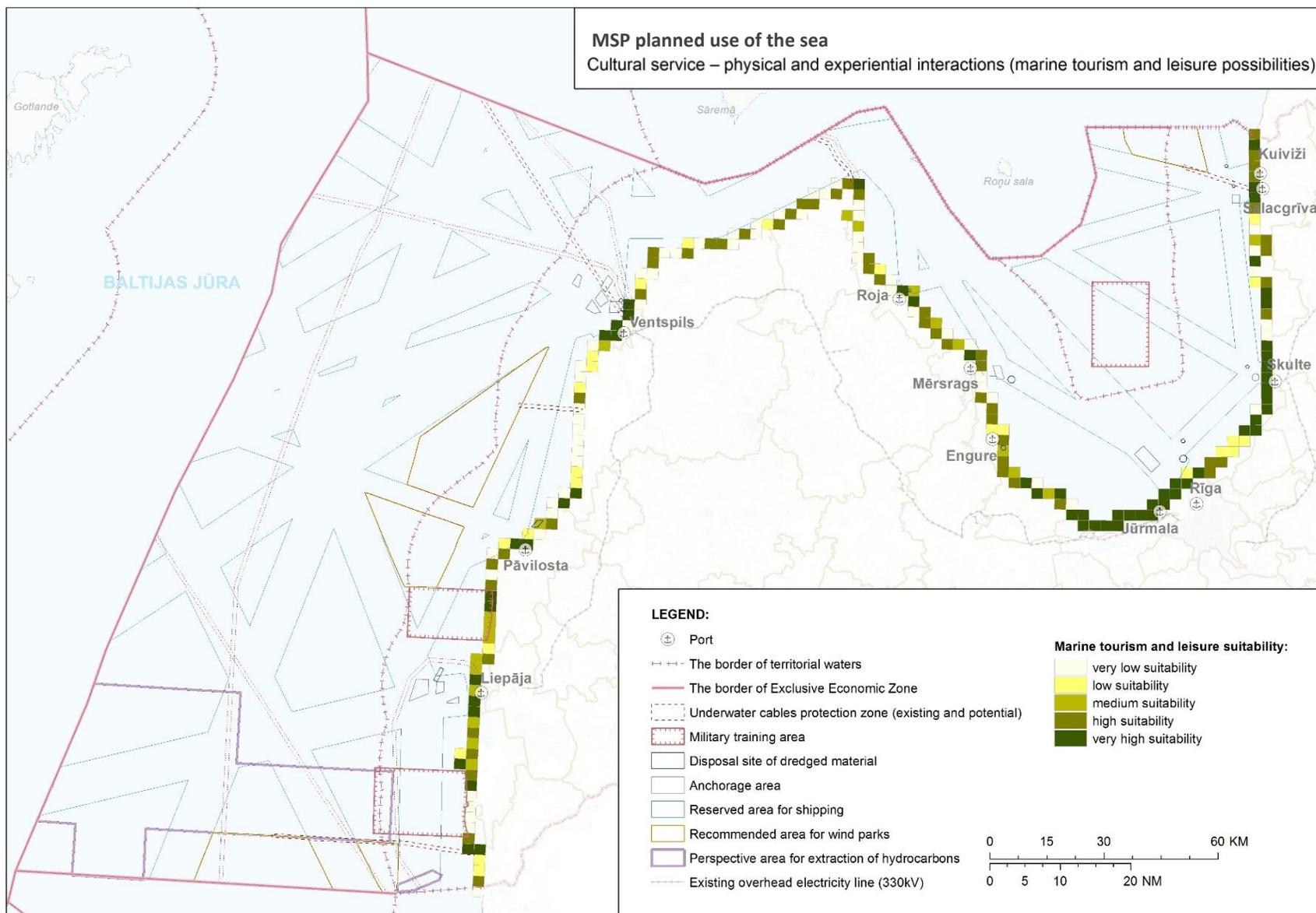


Figure 7.7. Impact assessment of planned use solutions on cultural services suitability for marine tourism and leisure

8. Measures to prevent or reduce significant environmental impacts of the MSP implementation

Spatial planning guidelines and recommendations were already developed during drafting the 1st version of MSP and spatial solutions. These guidelines were applied defining allowed use of the sea in the 1st version of MSP, as well in revision phase for developing the 2nd version of MSP.

Strategic approach of planning the spatial use of the sea is aimed to ensure achievement of the MSP long-term vision and defined priorities (see Chapter 2). One of the six priorities is “healthy marine environment and resilient ecosystem”. Furthermore, one of the strategic goals for implementation of the MSP is “the marine ecosystem and its ability to regenerate is preserved, ensuring the protection of biological diversity and averting excessive pressure from economic activities”. Therefore, when choosing spatial solutions, the possibility of conflict with strategic objectives was assessed.

The strategic part also provides guidelines for development of the marine space including the internationally agreed maritime planning principles, as well as guidelines for integration of priorities, goals and objectives during the MSP. One of the main conditions is that the marine space should be organised according to natural conditions, providing preservation of resilient ecosystem as well as creating favourable conditions for the improving the state of environment and marine resources. This condition has been complied with, taking into account the existing knowledge on the marine environment, ecosystems and their carrying capacity.

In order to prepare the solutions for allowed use of the sea, the criteria for use of the sea were developed. The criteria are included in the MSP part "Justification and description of allowed use of the sea". Since MSP is created on the basis of ecosystem approach, nearly all the criteria directly or indirectly are related to the environmental interests. The criteria are divided into **two categories**:

- 1) **Exclusion criteria for use of the sea** – obligatory conditions that shall be respected when defining space for the particular sea use:
 - Compliance of planned types of use with the regulatory framework: assessment whether the particular type of marine use is not in contrary with the environment or nature protection legislation. For example, the activities are not prohibited or restricted in marine protected areas as defined by the relevant regulations.
 - Factors restricting economic activity:
 - resource availability (fish resources, wind/wave energy, hydrocarbons, etc.) – this criterion most likely determines at which locations the particular activities cannot be carried out because the necessary resources are not available in sufficient quality or quantity.
 - preservation of particularly sensitive or ecologically valuable areas - this criterion particularly refers to the preservation of valuable habitat, spawning grounds, preventing mechanical destruction or substantial disturbance.
- 2) **Compliance/coordination criteria for use of the sea** – conditions that shall be taken into account to ensure the application of the ecosystem-based approach in the MSP process as well as sustainable use of the marine space and resources:

- Maintaining the ecosystem integrity, ensuring the connectivity of functionally related areas, and respecting the Baltic Sea as one ecosystem:
 - to avoid fragmentation of benthic habitats as much as possible;
 - to ensure maintenance of areas important for preservation of species diversity and their distribution respecting their lifecycle and areas important in different development stages;
 - to maintain „blue corridors” for ensuring species migration possibilities.
- Rational use of the marine space and cross-sectoral conflict minimisation, ensuring enough free space for the potential future development needs.

The criteria for determining the use of the sea are defined for each type of the sea use. The regulatory restrictions on the use of the sea, natural conditions and other factors limiting economic activity, potential conflicts with other sectors, as well as the conditions imposed by the sector for the use of the space are prescribed in the list of criteria.

The final version of MSP contains also conditions with regard to impact on environment which shall be considered when planning activities in the respective areas. Special conditions are set for licencing research for wind energy development.

The MSP has defined as one of the types of the sea uses – investigation areas for nature values (see Fig. 8.1.). These are the five areas in the Latvian EEZ, where the field surveys are necessary to determine the compliance with the criteria for establishment of protected areas. Therefore, the MSP includes a proposal that prior to investigation of the territory, activities that could potentially endanger the protected underwater habitats and species (int.al. wind parks, wave energy stations, hydrocarbon extraction platforms, aquaculture areas, fishing with bottom trawls) are not allowed.

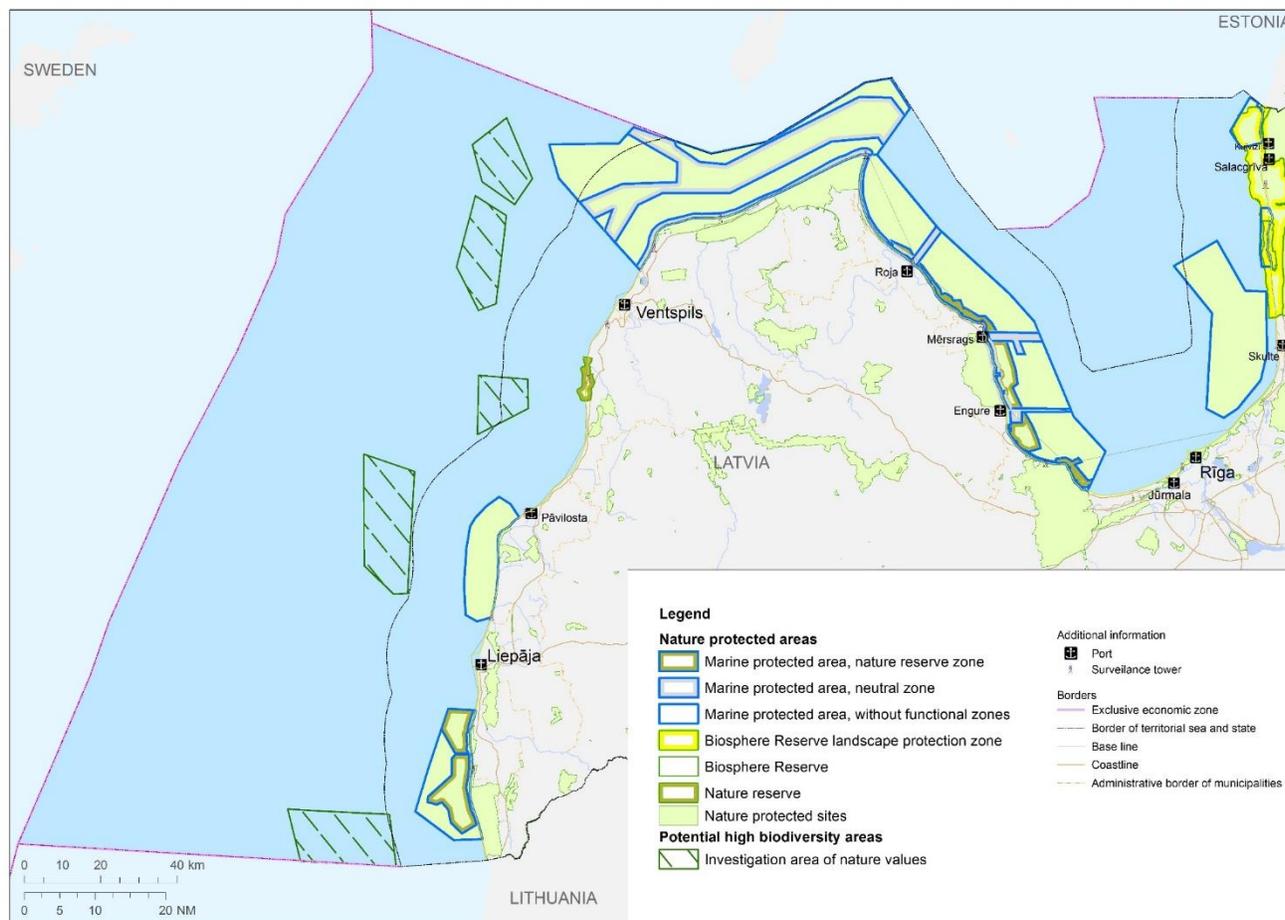


Figure 8.1. Existing protected areas and proposed investigation areas of nature values to determine the compliance with the criteria for establishment of MPA

One of the essential legal instruments, which may also affect the state of the environment, is **the Cabinet Regulation No 631 "Construction Regulations for Structures in the Internal Waters, Territorial Waters and Exclusive Economic Zone of the Republic of Latvia"** from 2014. The procedure established by the Regulation governs the order for establishing license areas in the sea; tender procedure on the rights to use the license area in the sea, as well as procedure for construction at the sea. The responsible Ministry which has received a submission with a suggestion to establish the area in the sea assesses the application, information and documents annexed thereto satisfy the legislative requirements for environmental protection and use of the sea.

Cabinet Regulations No 631 also includes general environmental conditions:

- Construction work shall be organised and performed so that there is as little environmental damage as possible. Construction work in restricted sanitary and safety zones for the protection of environmental and natural resources, shall be organised and performed in compliance with the restrictions and requirements laid down in the laws and regulations. The consumption of natural resources must be economically and socially justified.
- When performing renovation, reconstruction or demolition of the structure, where possible, recycling and recovery of waste caused during construction shall be performed. All waste caused

during construction shall be managed in conformity with the laws and regulations in the field of waste management.

With regard to the prospection, exploration and extraction of hydrocarbons, environmental protection requirements are established in **the Cabinet Regulation No. 805 "Regulations on prospecting, exploration and extraction of hydrocarbons"** (in force since 12.01.2016.). The regulation stipulates that, in order to perform hydrocarbon prospecting, exploration and extraction, an environmental impact assessment must be carried out in accordance with the Law on Environmental Impact Assessment. To carry out the extraction of hydrocarbons, a permit for polluting activities must be obtained in accordance with existing regulations.

The Regulations also contain expanded requirements for activities in the sea, including the licensing of a safety and environmental management system. The system must ensure that the measures for controlling major-accident risks are sufficient and effective. In addition, Chapter XVII requires that the equipment of the drilling tower for hydrocarbon exploration or production activities offshore shall meet the requirements of Regulation 39 of Annex I to the International Convention for the Prevention of Pollution from Ships of 1973, as modified by the Protocol of 1978 (hereinafter - the MARPOL 73/78). In addition, it is prohibited to discharge into the sea any waste, including polluted waters and residues which are created during the operation of a vessel or platform, but are not cargo residues, and which are subject to Annex I, IV and V to the MARPOL 73/78, as well as any waste related to vessel's cargo, which are provided for in the guidelines for the implementation of Annex V to the MARPOL 73/78. It is prohibited to discharge into the sea any chemicals included in the list of harmful substances included in Paragraph 1.2 of Annex I to the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area, and any materials containing chemicals. It is prohibited to discharge into the sea drilling mud and any waste thereof.

The Law on Environmental Impact Assessment require that an assessment should apply to the projects for the extraction of hydrocarbons for commercial purposes; the construction of wind power plants, if their number is 15 power plants and more or their total capacity is 15 megawatts or more; projects for the introduction of wild species not typical to Latvia. In addition, the law provides that an initial assessment is required for the following sea-related activities: for the recovery of marine areas; installation and use of boreholes, incl. geothermal drilling, hydrocarbon exploration and extraction bores; construction of wind power plants in the territorial sea and EEZ of the Republic of Latvia; construction of ports and berths, including fishing ports (all activities not covered by Annex 1 to this Law); construction of dams, piers and other structures at sea where coastal changes are possible, except for the maintenance of existing infrastructure; coastal defence measure; sediment deposition in protected marine areas, except for protected marine areas "Nida-Pērkone" and "West Coast of the Gulf of Riga; installation of yachts and other small-sized berths, if they are intended to accommodate more than 5 smaller vessels at the same time.

Important risk prevention and management instrument is **"National Contingency Plan for Cases of Pollution of Oil, Hazardous or Harmful Substances in the Sea"** (adopted on 25.04.2017. by the Cabinet of Ministers) developed according to Maritime Administration and Marine Safety Law. The Plan lays down the procedures for measures for alerting, pollution assessment, situation control, operational management and liquidation of consequences of an emergency in case of unforeseen discharge of oil, hazardous or harmful substances. The Plan shall apply to any incident in the sea that causes or threatens to cause pollution in the Latvian waters outside the port area. The State Environmental Service shall be

responsible for the coordination of implementation of the Plan. The National Armed Forces Naval units, which ensure coast guard, shall take the measures to eliminate the consequences of emergencies and incidents of floating craft, consequences of oil spillage, hazardous or harmful substances discharged into the sea, and coordinate the works related to liquidation of consequences in the Latvian waters.

9. Assessment of likely transboundary environmental effects of implementing the MSP

Maritime cross-border context is assessed in relation to the existing and planned maritime use in neighbouring countries, as well as the prospects of development in the Baltic Sea region. The assessment has been prepared in cooperation with Lithuanian and Estonian MSP and SEA experts. The projects “Baltic Scope” has ensured experience and information exchange with Swedish and Estonian parties on information used in the MSP, including environmental issues.

Latvia has a sea border with Lithuania, Estonia and Sweden, therefore within the planning process Latvian interests have been examined with regard to interests of the neighbouring countries that impacts the marine spatial use.

- Marine Spatial plan of the Republic of **Lithuania** (Comprehensive Plan of Maritime Territory of the Republic of Lithuania) has been elaborated from 2012 to 2013 by Coastal research and Planning Institute, Klaipeda University, Atkulos projektai (eng., Atkulos Projects) and Valstybės žemės fondas (eng., The State Land Fund). The plan was adopted by the Lithuanian Parliament on June 11, 2015.
- The Republic of **Estonia** Pärnu district maritime spatial plan, the elaboration of which started in October 2012 (developer Hendrikson & KO). Cross-border consultation with Latvian side was carried out in autumn 2015. The plan was approved in April 2017. At the moment, Estonia is developing the national MSP and the transboundary consultations with the Baltic Seas countries are taking place from April to July 2019.
- **Swedish** Agency for Water and Marine Management develops three separate marine spatial plans, one of them for the Baltic Sea (Gulf of Bothnia, Skagerrak and Kattegat). In June 2018 a draft Baltic Sea MSP and SEA report were published for consultation. The updated MSP proposal is planned to be submitted to the government in winter 2019.

Solutions of the allowed use in the context of the Baltic Sea region are assessed using criteria based on priorities mentioned in the EU Strategy for the Baltic Sea Region, for implementation of economic potential related to goods and services provided by the marine ecosystem. The proposed criteria focus on creation of common approach among the Baltic Sea countries, promoting cross-border cooperation as a precondition for increase of resident well-being which is dependent on sustainable use of environmental resources, as well as highlighting the economic factors relevant for the region's growth, safety and ecological status of the Baltic Sea.

The criteria proposed for the joint development of the Baltic Sea region include:

- Ecological balance provided by the network of protected territories, preservation of "blue corridors" to ensure migration of species, possibilities of maintaining fish resources;
- Continuity of types of use in respect of ship routes and infrastructure corridors;
- Attractiveness of the region provided by the yacht and recreational boat berths and port network as well as opportunities for sailing along the coast, attractive tourism services and opportunities for observation of underwater cultural heritage;
- Safety based on appropriate training of the national military forces and operation possibilities as well as development of renewable energy sector;
- Economic potential based on the development of the port and maritime-related entrepreneurship.

With regard to **cross-border environmental impacts**, the allowed sea uses are assessed by criteria whether the dedicated space for planned activities ensure **ecological balance**. Using criterion, solutions proposed by MSP are assessed in a comparative scale (-2: significant adverse effects; -1: slight negative effect; 0: no effect; 1: slight positive effect; 2: substantial positive effect).

The assessment of the transboundary environmental effects concludes that the proposed solutions of allowed use will have **likely significant positive impact on** the provision of the ecological balance of the Baltic Sea. The MSP provides that the existing network of protected territories is maintained, as well as identifies areas important for nature values to be investigated for their compliance with the criteria for establishment of the marine protected areas. Creation of new marine protection areas within EEZ would ensure that the ecological (blue) corridor, established along the Lithuanian coastal waters, would continue in the Latvian waters. The Latvian MSP provides that the fishing intensity remains unchanged, i.e. within the limits of the available resources.

In the cross-border context the coherence of proposed allowed use of the sea by Latvian, Lithuanian and Estonian MSP with respect to the possible impact on the environment is assessed separately.

Marine protected areas (MPAs) and ecosystem integrity

MPAs are established in order to protect habitats and species as well as feeding and wintering grounds of water birds. MPAs forms the EU wide network of protected areas called Natura 2000 (see Fig. 9.1.).

The Convention on Biological Diversity sets the specific targets for 2020 (Aichi targets). One of them is that at least 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes. Latvia achieved this target in 2010 by establishing new MPAs. However, these areas mainly are situated in territorial waters while areas in EEZ are not sufficiently investigated.

Baltic Sea fish resources are essential component of ecosystem therefore preservation of spawning and nursery areas is essential for all Baltic Sea countries, to ensure sustainable use of fish resources. The Gotland basin is important area for Latvian EEZ as eastern Baltic cod is spawning there. However, in last decades the spawning of cod has been impacted by unfavourable hydrological and environmental conditions. Cod spawning occurs below halocline, which is from 20-70 m depth in the Latvian. The coastal areas of the Gulf of Riga and the open Baltic Sea EEZ are very important for fish (herring and flounder) spawning, too.

Solutions proposed by Latvian MSP	<p>Solutions of allowed use include investigation areas for nature values in the Latvian EEZ, which contributes to potential establishment of new MPAs in Latvian EEZ. This also include cross-border territory on the border with Lithuania.</p> <p>The areas identified as research areas for wind park development are located outside of the coastal waters which are important for fish spawning.</p>
-----------------------------------	--

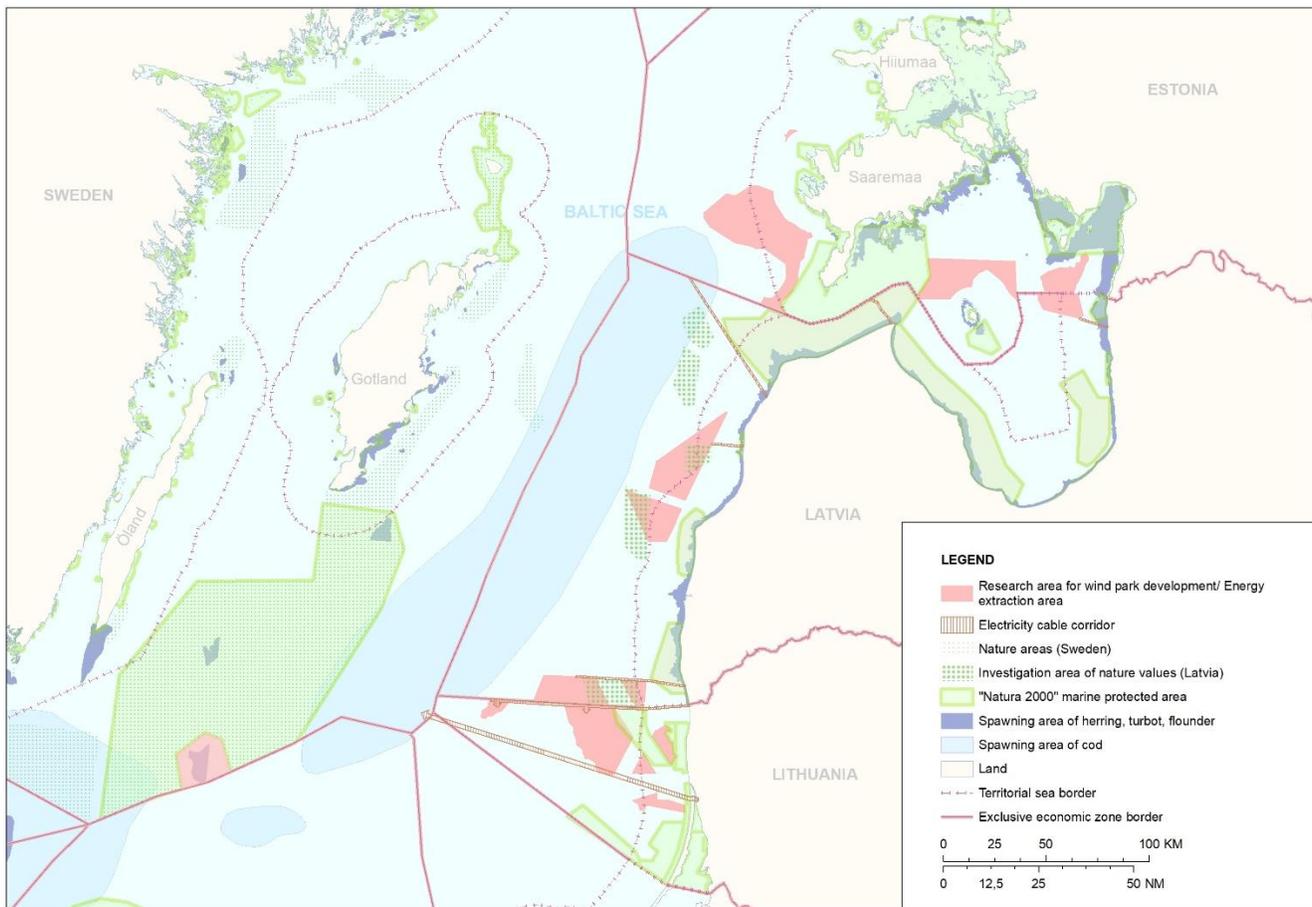


Figure 9.1. Transboundary context: biodiversity protection and offshore wind energy
 (data sources: Natura 2000 Access data base, published by EEA: <https://www.eea.europa.eu/data-and-maps/data/natura-9>,
 MSP of Lithuania, Sweden's and Estonia's draft MSP data of Spring 2019)

<p>Coherence with the spatial solutions offered by Estonia</p>	<p>At Irbe Strait MPAs are designated both in the territory of Latvia and Estonia. Both countries have established similar management solutions for these areas that include environmental protection and shipping and do not conflict with solutions of allowed use of the sea. Latvian MSP identifies research area for wind park development next to the Estonian border in Pärnu district, that is also bordering potential wind park area defined by the Pärnu district MSP. The designated research area for wind park development is not adjacent to any Estonian MPA.</p>
<p>Coherence with the spatial solutions offered by Lithuania</p>	<p>Lithuanian MSP provides for creation of protected territories at the Latvian border, thereby continuing creation of "blue corridor" based on the environmental parameters, which connect the protected areas in the coastal zone of Lithuania and adjacent waters. Since adoption of the Lithuanian MSP, these areas have already been designated as MPA Natura 2000)¹⁵.</p>

¹⁵ <http://www.natura2000info.lt/lt/zemelapis-2.html>

	Investigation areas for nature values planned on the Latvian side near to the border with Lithuania conform with "blue corridor" concept and promotes continuity of mutually interconnected natural values and protection in the Latvian coastal waters as well. However, the southern investigation areas also overlap with identified offshore wind park research areas in the Latvian MSP, although it sets several conditions for wind park development (see Chapter 5.3).
Coherence with the spatial solutions offered by Swedish draft MSP	<p>Draft Swedish MSP for Baltic Sea has defined spatial interest category "Nature" (see Fig. 10.1.). The zoning covers:</p> <ul style="list-style-type: none"> • protected according to the Natura 2000 legislation, • areas where marine area protection is planned, • areas that are covered by other marine area protection, • or areas that are covered by national interest claims for nature values. <p>The area near to Latvian EEZ border is designated to be with particular consideration to high nature values. The area is also important for Blue mussels, <i>Mytilus edulis/trossulus</i> as a "shelter" due to climate change. Latvian MSP will not negatively impact the designated "Nature" area.</p>

Wind energy and underwater cables

Offshore wind energy production is one of the potential renewable energy resources that ensures energy independence of Latvia. The use of renewable energy reduces potential GHG emissions and necessity to use fossil energy thus supporting achievement of climate policy targets. Offshore wind energy production is planned in all Baltic Sea countries and in many countries wind parks are already built and operating (e.g., Denmark, Sweden, Germany). As offshore wind parks impact environment, several guidelines have been developed to support impact assessment studies¹⁶. One of the key aspects is that wind parks are occupying large space to ensure that the project is cost-efficient. Moreover, it is important to recognise different type of pressures during building phase and operating and electricity generating.

The Latvian MSP has identified areas for wind park development also near to the Lithuanian and Estonian potential wind park areas, therefore it is essential to assess cumulative impact of such cross—border wind-park areas in total. Cross-border biodiversity and nature investigation projects are of high importance to ensure that scientists and researchers from respective countries cooperate in assessment of likely significant effect of such large scale development initiatives.

As research areas for wind park development are also designated in the border areas with Lithuania and Estonia, it is essential to assess cumulative impacts from wind parks. In order to do this, cross-border biological value research projects are needed, where scientists in the respective fields of both countries would cooperate in assessing potential impacts. These studies should pay particular attention to migratory species: seals, fish, birds and bats.

Solutions proposed by Latvian MSP	Solution of allowed use provides research areas for wind energy, as well as underwater cable lines for connection with land electric power transmission network on the Latvian coast (see Fig.10.1.). Power transmission interconnections with neighbouring countries
-----------------------------------	---

¹⁶ <http://www.vpvb.gov.lv/lv/strategiskais-ivn/informacija>

	<p>are provided from Ventspils to Sweden, as well as from Kolka to Saaremaa island in Estonia.</p> <p>Territories chosen for wind energy generation are located outside MPAs, as well as outside areas important for bird and fish resources.</p>
Coherence with the spatial solutions offered by Estonia	<p>One of the identified research areas for wind energy is located in the Gulf of Riga and borders with designated wind park area in the Pärnu district MSP. The proposed power transmission interconnections from Kolka and Ventspils can be interconnected with Estonian power transmission network and planned wind parks in the Estonian sea waters, thus positively affecting interconnection of Latvian - Estonian power network (energy security and market) as well as development of wind energy production.</p> <p>The designated research area for wind park development is not adjacent to any Estonian MPA. The corridor of perspective electricity cable is planned, considering the proposals expressed during cross-border consultation meetings.</p>
Coherence with the spatial solutions offered by Lithuania	<p>Planned wind energy acquisition possibilities in the southern part of Latvian EEZ conform to similar planning concept in the Lithuanian side, thus creating favourable conditions for the implementation of joint projects in this maritime economy field. The available wind resources and a relatively low level of occupancy of the border areas also create good preconditions. Infrastructure corridors are intended on the Lithuanian side which would include underwater cables and would ensure their connection with the power transmission on land, as well as promote creation of power transmission network for wind power stations in the South-Eastern part of the Baltic Sea. The lack of interconnections between Latvian and Lithuanian wind parks offshore makes this Baltic Sea wind energy network segment concept not feasible.</p>
Coherence with the spatial solutions offered by Swedish draft MSP	<p>The proposed corridor of a perspective electricity cable from Ventspils to Sweden is not in line with current draft Swedish MSP solutions; however, it could be considered as one of the potential solutions in future.</p>

Mining of mineral resources

The Baltic Sea is a vulnerable ecosystem with a small number of species, so leakages or accidents that would result from oil extraction would have a particularly negative impact. The specified oil extraction opportunities in Latvian waters, as well as the interests of other neighbouring countries in oil extraction, may have a cumulative effect on the Baltic Sea waters. Therefore, there is a need for joint research and cooperation between the countries on the risks that would arise directly for the Baltic Sea ecosystem, as the production of hydrocarbons would be planned.

Solutions proposed by Latvian MSP	Planned use of the sea includes the existing license areas for exploration and production of hydrocarbons. The extraction of other mineral resources is not anticipated by 2030.
-----------------------------------	--

<p>Coherence with the spatial solutions offered by Estonia</p>	<p>Since the possible locations of hydrocarbons are located at a significant distance from the Estonian waters, no direct impact on the interests of Estonia and its environment is anticipated. However, Estonia is interested in careful management and prevention of the potential risks (oil pollution, accidents) and impact on the ecosystem of the Baltic Sea during the production of hydrocarbons.</p>
<p>Coherence with the spatial solutions offered by Lithuania</p>	<p>The license areas are deployed along the borders of Latvia and Lithuania, where also are found major oil reserves of both countries. Extraction of hydrocarbons and related industrial development can be beneficial to both parties. The use of the energy resources at suitable locations also supports the EU security policy. Although the use of oil resources can cause competition between countries, however, there is also good cooperation possibilities (research, labour market and industrial development), which can also contribute to political decision-making on establishing of sea border between Latvia and Lithuania.</p> <p>Before launching the extraction of hydrocarbons, any risk for potential oil pollution and incidents shall be assessed in order to prevent potential damage to the Baltic marine ecosystem. The assessment shall take into account the important habitat areas (in particular, reef habitat) located in the border area of Latvia and Lithuania, as well as important bird areas. Any likely impact on fish resources shall be prevented.</p>
<p>Coherence with the spatial solutions offered by Swedish draft MSP</p>	<p>The Swedish Geological Survey has outlined the geological structure of the Baltic Sea in the south eastern part of the Baltic Sea (Dalders) as an important site for oil extraction. There is no Swedish interest in or legal possibility to propose the extraction of fossil fuels in Swedish territorial waters or EEZ at the moment. In 2009, the Government rejected a request for an extension of exploration permits for prospecting of oil in the south-eastern Baltic Sea.</p> <p>The hydrocarbon deposits are near to the areas where hydrocarbon exploration and production areas have already been identified on the Latvian side. This part of the territory is important for Latvia, Sweden and Lithuania, therefore, cooperation in solving various issues, including additional environmental requirements, is recommendable.</p> <p>Mining of gravel and sand in Swedish waters has high interest as land resources are limited. Latvian MSP does not plan to extract these materials.</p>

10. Measures envisaged concerning monitoring

Necessity of the MSP implementation monitoring is established by the Cabinet regulations No 157 "Procedures for Carrying Out a Strategic Environmental Impact Assessment", Section VIII. Monitoring shall be carried out with the purpose to establish direct or indirect impacts on the environment of the MSP implementation and to determine the necessity for amendments.

In accordance with the Cabinet of Regulations No 740 "Procedures for the Development, Implementation and Monitoring of the Maritime Spatial Plan ", Article 30, the MoEPRD shall, at least once every six years, in co-operation with the LIAE and the Maritime Administration prepare an informative report on the implementation of the MSP and submit it to the Cabinet of Ministers for examination. The Cabinet Regulation also established that the informative report shall be prepared (if possible, concurrently with revision of the programme of measures in accordance with the laws and regulations regarding protection and management of the maritime environment):

- taking into account the MSP;
- on the basis of the current information provided by the State and local government institutions;
- if necessary, by including proposals for amendments to the MSP.

The "Programme of Measures for Achieving Good Environmental Status 2016-2020" was adopted on 13 July 2016, and the status of implementation is also regularly monitored and assessed. Marine status is assessed according the Marine Environment Protection and Management Law and Cabinet of Ministers regulations No 1071 "Requirements for the Assessment of the Marine Environmental Status, Determination of a Good Marine Environmental Status and the Development of the Marine Environment Targets" (in force since 08.12.2010.). The initial assessment was prepared in 2012, the recent assessment report is published in July 2018. These assessments were integrated in the MSP and the SEA.

Same as development of the MSP, its implementation monitoring should be based on the environmental indicator approach, which is used extensively in the evaluation of the state of the marine environment in the European Union, the Baltic Sea and in Latvia. The indicator approach is also used in the preparation of the Environmental Report (see Chapter 4). For monitoring of the implementation of the MSP, one must use mainly marine environmental monitoring data, data of distribution of fish species and fish resources as well as other information that will be available to the MoEPRD and the other State institutions involved in the use of marine resources.