



GULF OF FINLAND DECLARATION

ANNEX 3: Gulf of Finland Road Map for the period 2016-2020

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During the Gulf of Finland Year 2014 (GOF2014), a scientific research programme was carried out according to a common plan. Furthermore, a comprehensive trilateral assessment of the state of the Gulf of Finland (GOF) was compiled within the frames of the GOF2014. This document is based on the analysis of the main findings under each of the research themes and recommendations included in the assessment, as well as the subsequent work by the trilateral expert groups.

This document is a common view of the scientific community. The main findings and recommendations are listed here thematically. This document is a living document and will be updated annually by the trilateral environmental collaboration.

Eutrophication

Although the adverse eutrophication process of the GOF has decelerated in the 2000s it is still the most severe environmental problem of the GOF. The GOF can be restored to an ecologically sustainable state if we implement the agreed nutrient reduction targets and use the GOF in a sustainable manner. Furthermore, nutrient load reductions into the Baltic Proper are important not only for the state of the main basin of the Baltic Sea, but also regarding the state of the GOF. Recommendations with respect to eutrophication:

- Reduction of the nutrient load from municipal waste waters continues to be important. Waste water treatment plants should be able to remove 70 % of the nitrogen present in waste water from urban areas with more than 10 000 residents, and 90 % in the case of larger cities whenever being economically and technically feasible. In Russia, special emphasis should be paid to waste water management of smaller towns and enhanced phosphorus removal
- In Agriculture:
 - The use fertilizers in field cultivation should not exceed nutrient requirements of crop. Recycling of nutrients (optimal use of manure as fertiliser)
 - Studies on new technical practices to decrease nutrient loading (e.g., gypsum treatment of fields) should be developed
 - In Estonia and Finland, the agri-environmental support system should be promoted
 - The development and implementation of sustainable manure management of the large poultry and animal farms should be promoted especially in Russia
- Maritime nitrogen emissions to the Baltic Sea should be reduced, for example, by increasing the use of liquefied natural gas (LNG) as ship fuel

Biological and geological diversity

The habitats and species in the GOF are threatened by human activities affecting the state of the GOF ecosystem. Biological diversity and geological resources in the GOF region can, however, be sustained.

Recommendations with respect to biological and geological diversity:

- The coherence of the marine protected area network should be assessed, taking into account the national parks, HELCOM MPAs, EU Natura 2000 areas, and other types of protected areas, such



- as Ramsar areas (wetlands of international importance) and important bird areas. The goal is a trilateral view of an ecologically effective, well connected, and properly managed network of MPAs that increases the level of protection of various components of the GOF ecosystem
- The major ongoing and planned construction projects, as well as plans for utilization of the major geological resources in GOF should be reviewed to assess the consequences of these activities to the GOF ecosystem, and help to design measures to avoid degradation of habitats and species due to these activities
 - Potential geological hazards (e.g., coastal erosion, landslides) should be assessed and mapped as an instrument of integrated coastal zone management and coastal risk prevention
 - Practices used in the environmental assessments in Estonia, Finland, and Russia should be reviewed. Then, common principles and best practices could be agreed
 - HELCOM Ministerial Declaration 2013, concerning the critical situation of the ringed seal in the Eastern part of the GOF, should be implemented
 - Areas, habitats, and species particularly sensitive to human disturbance in each country should be identified. A jointly-designed information campaign directed to the general public could be launched with a goal to reduce interference by humans
 - Monitoring programmes targeted to invasive organisms should be introduced in the vicinity of ports
 - General knowledge of and data sharing concerning non-indigenous species should be increased

Pollution and Ecosystem Health

Chemical pollution is a key component in the assessment of the health status of ecosystems. Awareness and concern over hazardous substances and their effects on the GOF marine ecosystem have again increased after being largely overshadowed by problems related to eutrophication. Recommendations with respect to pollution and ecosystem health:

- Reduced emissions of hazardous substances to air, land, and water
 - More accurate emission inventories of hazardous substances are needed, enabling cost-efficient targeting of emission reduction measures
 - More information on the use, emissions, and occurrence of hazardous substances with regard to industrial and other activities needing an environmental permit is required to clarify possible associated risks
 - Better technologies for hazardous substance removal should be introduced for wastewater treatment plants and from diffuse sources (rainwater, agriculture)
- Improved monitoring of hazardous substances by public and private sector
 - An official trilateral expert group for the harmonisation and optimisation of monitoring activities should be established. The group could deal with, e.g.,
 - The methods used for the assessment of biological effects should be harmonised
 - Assessment threshold values (environmental quality standards) for hazardous substances and their effects should be compared with the aim to develop mutually-agreed values that enable harmonised status assessments
 - A set of regional priority substances for the monitoring of both “old” and “emerging” substances is needed
 - A joint open-access database for the available monitoring data should be developed



- Targeted research on pharmaceuticals and microplastics for risk assessment and risk reduction measures should be carried out: ecotoxicity, emission sources and pathways, environmental levels and impacts, and cost-efficiency of emission reduction measures
- Dredging of contaminated sediments to be minimized and performed in an environmentally acceptable manner
 - Resuspension of hazardous substances from bottom sediments to the GOF food web should be minimised during dredging and disposal of materials
 - Ecotoxicity of sediments should be assessed prior to dredging and disposal activities
 - Various clean-up measures should be evaluated

Fish and fisheries

Recommendations with respect to fish and fisheries:

- River-spawning of migratory fish stocks could be re-established and safeguarded using
 - Fisheries management and prevention of illegal fishing
 - Removal of unnecessary dams from rivers
 - Restoration of spawning and nursery areas in rivers
- Atlantic salmon should be re-established in the four historically most significant rivers of the GOF for salmon: Neva, Narva, Luga and Kymi
- Management of construction, pollution loads, fisheries, and other anthropogenic actions should consider the maintenance of productive fish stocks and health of the GOF environment
- Alternative methods for assessing and the managing the commercial fish stocks in the GOF should be introduced in order to safeguard the sustainable exploitation of the local stocks
- Coastal fisheries should be monitored and freshwater fish stocks in coastal areas of the GOF should be assessed and managed to preserve local fish stocks

Maritime safety

Maritime traffic in the Baltic Sea is expected to increase by 30% in 2010–2030. More and more diesel oil, LNG, and biofuels will be transported due to the new legislative drivers affecting on use of oils. More traffic means a higher risk of accidents, despite the advanced risk management measures. Recommendations with respect to maritime safety:

- It is important to take the human factor into closer consideration when developing the safety at sea, because a ever-growing number of maritime accidents are caused by human error. Thus:
 - Appropriate training and occupational well-being of crew at sea should be ensured
 - Further analysis of and consideration for the human factor should be included in the maritime traffic risk forecasting system to make the forecasts more reliable
- Taking into consideration the intensive navigation in the GOF, the authorized state institutions should
 - Look into the possibility to continue the joint oil combatting and preparedness exercises at regular intervals
 - Continue their work in order to carry on establishing an oil spill response and testing centre
 - Continue to control and prevent intentional illegal oil spills from the vessels
 - Develop new observation methodologies, such as continuous monitoring of hazardous substances and oil in the water column on board merchant ships



- Future needs of oil combatting capacity should be mapped and operational functionality of oil-combatting operations should be ensured regardless of season
- One of the most promising model of the trilateral collaboration would be the joint use of icebreakers in the future. There is a new contract between Russia and Finland for the use of icebreakers in the GOF. This service needs to be improved and joint procedures to be developed following the model existing between Finland and Sweden in the Gulf of Bothnia

Maritime spatial planning

Recommendations with respect to maritime spatial planning:

- The GOF needs a joint maritime spatial plan covering the waters of all three countries so that the natural resources in the GOF could be used in a sustainable manner, and the detrimental effects of human activities on the GOF ecosystem could be minimised. In order to accomplish this goal, national and regional planning authorities should commence cross-border planning cooperation and support an increased interplay between science and planning officials. This requires official EU-Russia collaboration
- The best available technologies should be used to minimise the adverse effects of large-scale construction projects (such as land reclamation for port facilities). Information of the project plans, as well as their environment impact assessments, should be shared trilaterally, and, when appropriate, monitoring of the cross-border effects could be trilaterally agreed upon
- Bio- and geodiversity hot-spot areas should be identified. The extent of human-induced stress in these areas should be determined, and measures should be designated to reduce the stress in the most affected areas
- The authorized state institutions and organizations should continue encouraging sound planning, increased contacts, cooperation, and training amongst authorities of large ports and oil terminals
- Past and present human activities should be identified to obtain understanding of cumulative environmental effects, especially regarding hazardous substances

Climate change

Anthropogenic climate change is projected to increase surface temperature, decrease salinity, and increase land-based nutrient load in the Baltic Sea area. Such changes would threaten GOF biodiversity and worsen eutrophication. It is not clear how these changes will interact with other human-induced changes in the GOF ecosystem. Recommendations with respect to climate change:

- Targeted research is needed for
 - Having enhanced future projections of temperature, salinity, oxygen, and other crucial oceanographic parameters affecting the state of the GOF ecosystem
 - Determining the influence of climatic variations, and associated environmental changes, on the state of the GOF ecosystem, and relate these with human-induced eutrophication
- The effects of the rising sea level to coastal building and functioning of harbours should be identified
- The effects of a slowly-reducing ice cover for species inhabiting the GOF should be identified
- A strategy for human adaptation to different climate change scenarios should be prepared, aiming to reduce deterioration of the ecological state of the GOF

Monitoring and research



Recommendations with respect to monitoring and research:

- Reliable nutrient load estimates require comprehensive monitoring of riverine fluxes and point source discharges. For that to happen:
 - Monitoring of riverine nutrient loads into the GOF should be improved based on both conventional sampling and automation
 - A growing share of river basins should be incorporated into the continuous monitoring programme, and the rivers contributing substantially to the national nutrient load should be monitored at least monthly.
 - More information on both point and non-point source loads in the river catchments is needed to ensure better reliability of load estimates. Monitoring of point and non-point source loads should be developed so that source apportionment of national loads can be reliably carried out according to HELCOM/PLC guidelines
- Monitoring approaches
 - The operational monitoring on board merchant ships should be extended to cover the eastern GOF
 - Regular wintertime monitoring in all parts of the GOF is a prerequisite for reliable state assessment
- In order to ensure the reliability of the monitoring data, it is important that the countries will use high-quality environmental analytics and fully comparable monitoring methods that are in line with the HELCOM guidelines. Analytical inter-calibration exercises should be continued to carry out in order to continue testing and unifying the methods used
- Results of the joint monitoring should regularly be reported by the GOF trilateral collaboration. In order to make this process operational, we need a coherent trilateral monitoring database for scientific work
- As the exchange of nutrients between the GOF and the Baltic Proper and between water and sediments in the GOF play an important role in the overall trophic state of the GOF, the magnitude and dynamics of these processes should be subject to a special research and assessment effort