



**Gulf of Finland
Co-operation**

**The Trilateral Gulf of Finland
co-operation
Past, Present, Future**

**Kai Myrberg and Ljudmila Vesikko,
SYKE**

**St. Petersburg, on the 17nd October 2018
Gulf of Finland Science Days**

Once upon a time ...



Gulf of Finland



“Nautilus”, 1903



Admiral Makarov

Science and research

Unknown Gulf of Finland?



Facts

- One of the most heavily trafficked sea areas in the world
- 30% of the runoff to the Baltic comes via the Gulf of Finland
- Over 13 million residents in the drainage basin
- A large brackish water basin, where is unique mixture of fresh water and oceanic species

Threats

- Eutrophication and related loads
- Oil accidents
- Declining trend of biodiversity
- Effects of harmful substances on ecosystem health
- Changes in fish stocks
- Effects of Climate Change on ecosystem functioning

Background of the co-operation



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- Scientific-technological co-operation agreement between Finland and the Soviet Union in 1955
- Gulf of Finland co-operation since 1968 (Leningrad, Helsinki, Tallinn)
- Trilateral Estonian-Finnish-Russian co-operation on the Gulf of Finland since 1992
- First Gulf of Finland Year in 1996





**Gulf of Finland
Co-operation**

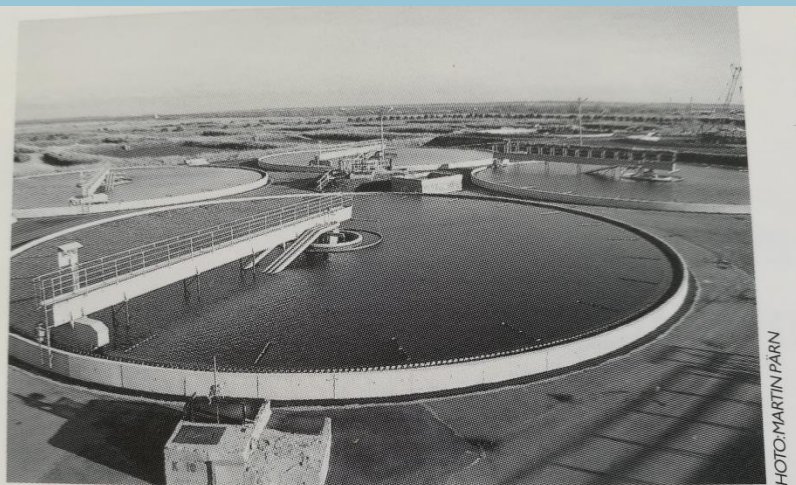


PHOTO: MARTIN PÄRN

The waste water treatment plant of Tallinn has been upgraded into an efficient biological plant. Effluent and nutrient discharges have been remarkably reduced.



PHOTO: KARI MAKINEN

Restoration of the sewage system of St. Petersburg was started in 1994 as a pilot project along the Nevski Prospekt, the main street of the city. The pipes have been repaired with the “non-dig” method.



**Viikinmäki wastewater treatment
plant, 1994**

Long-term co-operation between geologists –the early co-operation



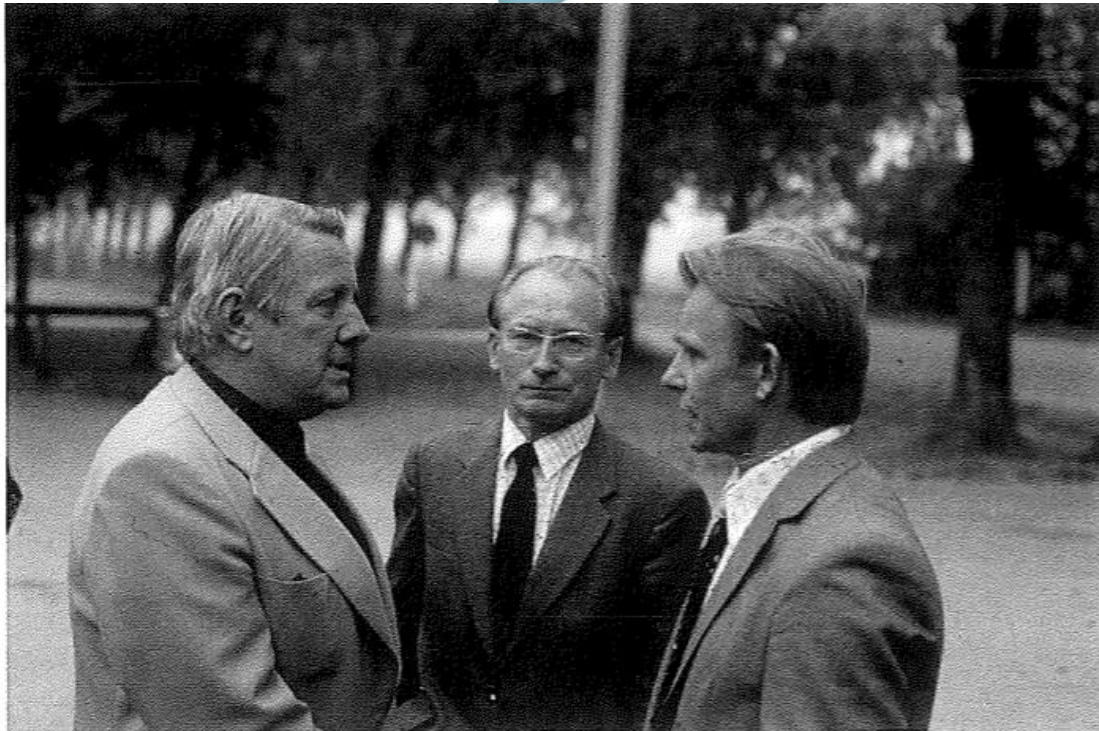
**Dr. Boris
Winterhalter,
GTK**

**Prof. Mikhail
Spiridonov,
VSEGEI**

**Aranda “FYTO 2009 Cruise”
3.-10.8.2009**

Photos: GTK

Estonian partners Harald Velner, Arvi Järvekuulg and Erich Kukk, Pärnu 1981 Biological studies



Gulf of Finland work, true trilateral co-operation.



**Pentti Välipakka (FIN),
Georg Martin (EST),
Alexander
Antsulevich (RUS)
1996**

What is Gulf of Finland Year 2014? Project organisation



International Steering Group

Steering group

Steering group

Steering group

Public Council

RUS

EST

FIN

Network



PARLIAMENT OF FINLAND



Ympäristöministeriö
Miljöministeriet
Ministry of the Environment



MINISTRY FOR FOREIGN AFFAIRS OF FINLAND



REPUBLIC OF ESTONIA
MINISTRY OF THE ENVIRONMENT



Environmental Education

Research

Coastal cities



What was the Gulf of Finland Year 2014?



- A joint programme between Finland, Russia and Estonia to rapidly improve the state of the gulf. **Scientists, decision-makers and citizens work together.**
 - **Scientific co-operation**, comprehensive monitoring of the state of the gulf, an unique joint research programme to support decision making
 - Common **environmental education** programme: youth declaration, beach cleaning campaign and teacher education seminars
 - **Networking** through cities and active stakeholder participation in Public Councils.
 - **Over 250 public events** in cities and coastal areas with the Gulf of Finland as a topic, in Finland over 10 000 participants in main events
- More information:
www.gulfoffinland.fi



How we did it together in 2014?



Scientists, decision-makers and citizens worked effectively together:

- Scientific co-operation according to the common research plan
- Comprehensive joint monitoring of the state of the gulf
- Extensive joint assessment report of the state of the gulf for the first time based on common data base



Photo: J. Bruun

What was done?

Cooperation at various levels in all three countries



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- Openings
- Beach cleaning campaigns
- Baltic Sea Days and scientific forums in Helsinki and Tallinn
- Joint forums with decision-makers



Closing Forums in Sankt-Petersburg and Helsinki



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VSEGEI, Spb



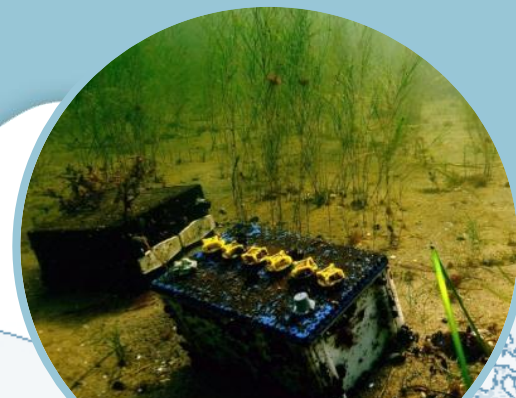
Helsinki



Research as the basis of decision-making:



Fish and fishery



**Pollution and
Ecosystem Health**

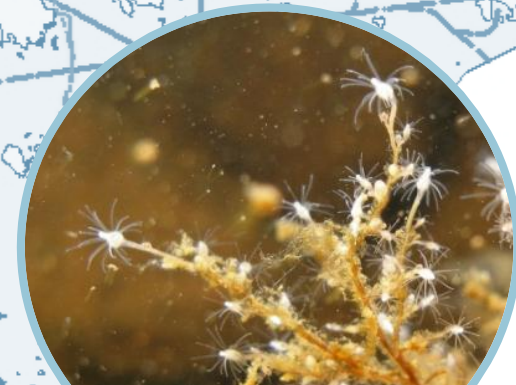


Marine traffic safety

MONITORING

**Maritime
Spatial
Planning**

**Climate change &
Eutrophication**



**Bio- and
geodiversity**

Gulf of Finland assessment published



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Estonian Environment Agency
Estonian Marine Institute, Tartu university
Estonian Ministry of the Environment
Estonian University of Life Sciences
Hoia Eesti Merd
Marine Systems Institute, Tallinn University of Technology
Institute of Cybernetics, Tallinn University of Technology



Finnish Environment Institute
Finnish Geological Survey
Finnish Geospatial Research Institute, Aalto University
Finnish Meteorological Institute
Finnish Transport Safety Agency
Metsähallitus
Natural Resources Institute
University of Helsinki
University of Turku



A.P. Karpinsky Russian Geological Research Institute
Federal State Unitary Research and Production Enterprise for Marine Exploration
Institute of Lake and River Fishery
Institute of Limnology, Russian Academy of Sciences
North-West Interregional Territorial Administration for Hydrometeorology and Environmental Monitoring
Research Institute of Remote Sensing Data for Geology
Russian State Hydrometeorological University
SPb PO "Ecology & Business"
St. Petersburg Branch of institute of Oceanology, Russian Academy of Sciences
St. Petersburg Research Centre, Russian Academy of Sciences
St. Petersburg State University
State Marine Technical University
Zoological Institute, Russian Academy of Sciences

+ Baltic Nest Institute, Stockholm university

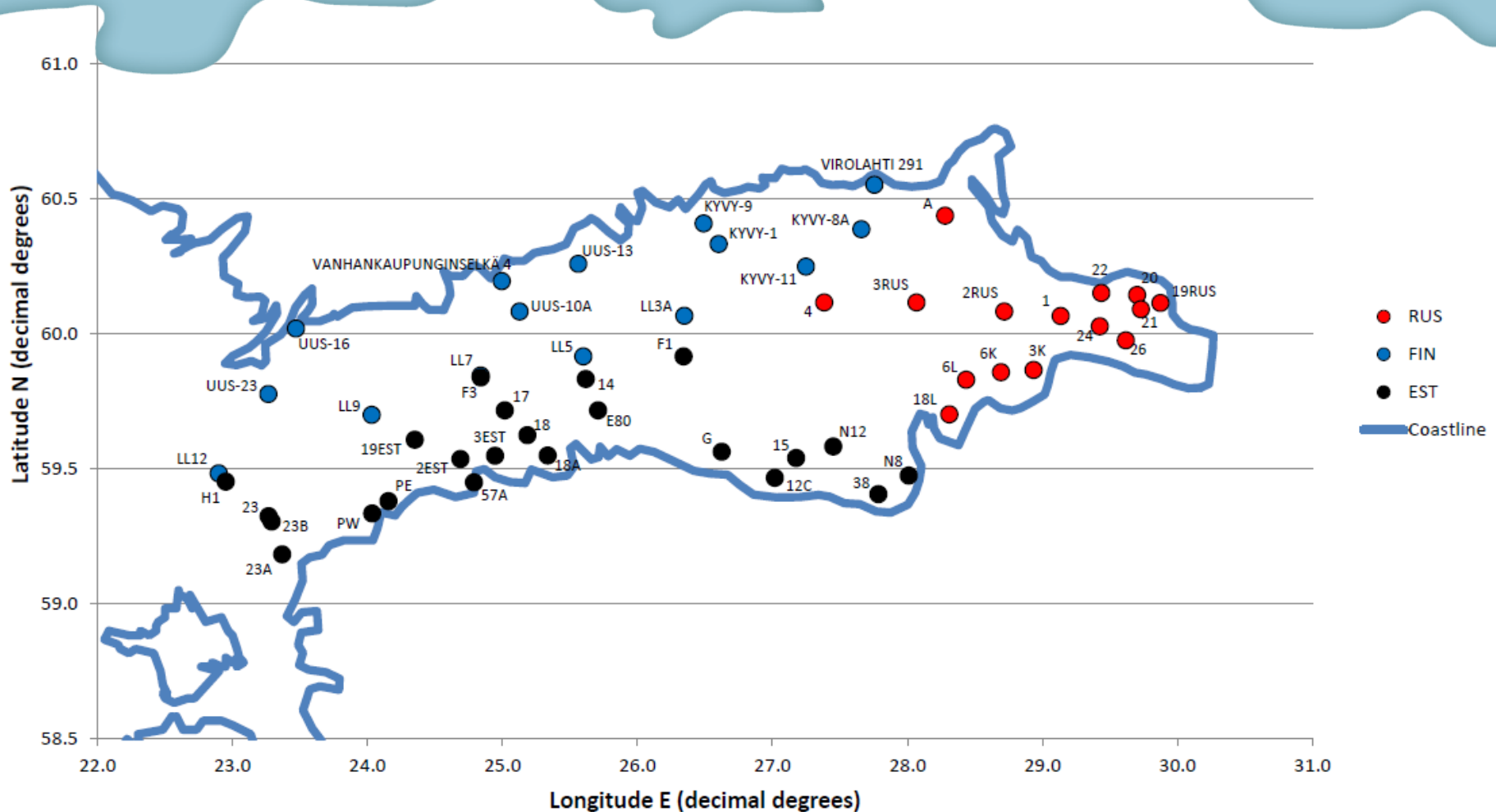


Joint monitoring programme 2014

Monitoring stations of water chemistry and biology



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Eastern Gulf –steps forwards



EUTROPHICATION

Water protection measures carried out in the Gulf of Finland area have reduced the land-based nutrient load.

Phosphorus load into the Gulf has reduced markedly while management of nitrogen load has been challenging.

Rivers bring much nutrients into the Gulf. This scattered load is difficult to control.

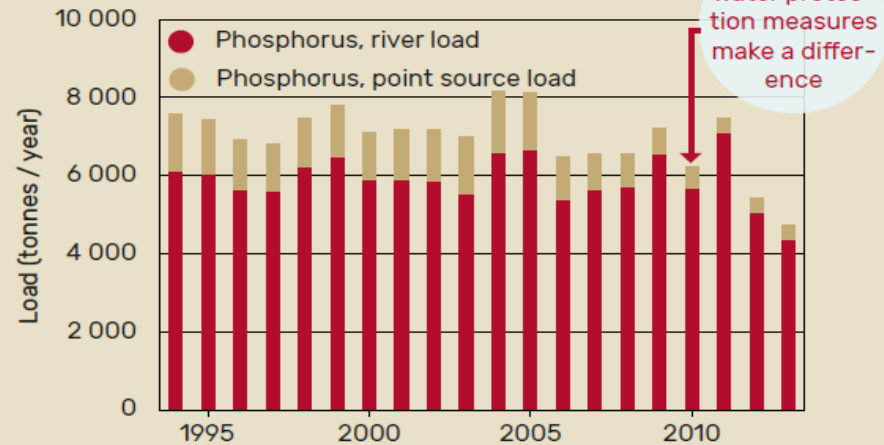
Phosphorus concentration in the Gulf of Finland water is

40%

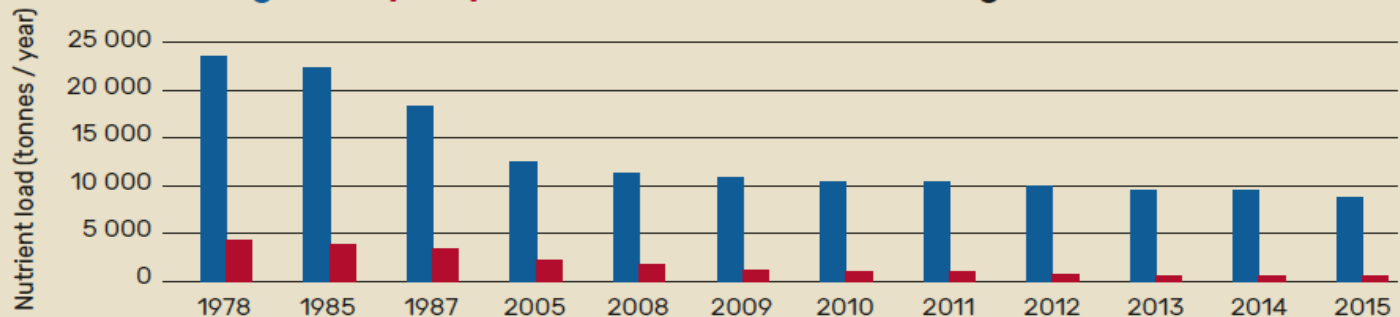
higher than the target level but gradually declining

State of the Gulf of Finland improves - albeit slowly

Phosphorus load into the Gulf of Finland



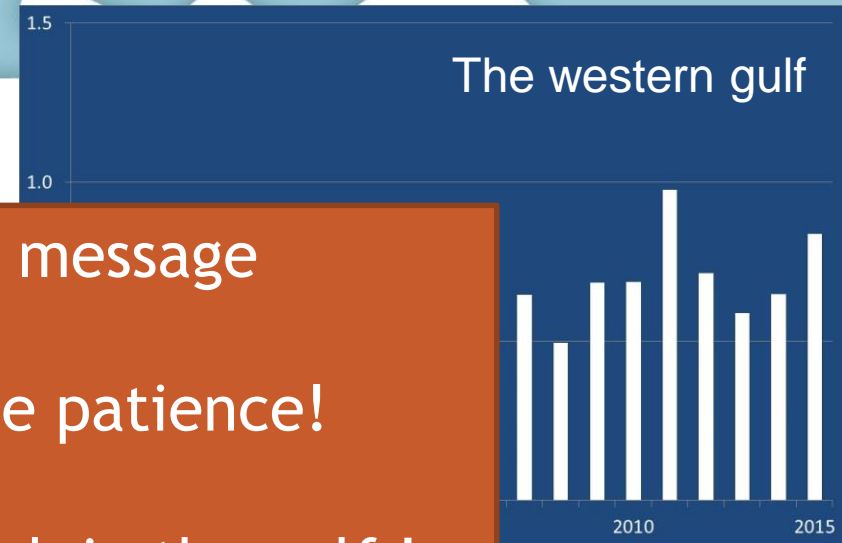
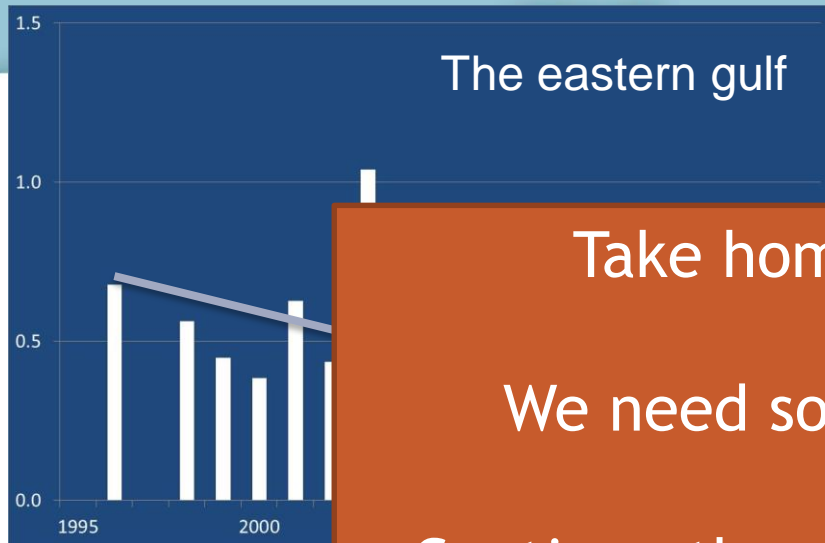
Nitrogen and phosphorus load from St. Petersburg into the Gulf of Finland



Think at the scale of the whole Baltic Sea ...FORGET NOT THE GULF



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Take home message

We need some patience!

Continue the work in the gulf !

Be active in the Baltic Sea scale !

Decrease in land-based phosphorus load into the eastern gulf

Effects are evident there

But not yet elsewhere

Continue reducing all loads into the gulf

GoF declaration 2016



- Declaration signed by the ministers of Environment of Estonia, Finland and Russia in spring 2016
- Declaration:
 - Co-operation program
 - Monitoring program
 - Road Map (regular updates)
- Possible next Gulf of Finland Year
- Co-ordination Committee
- Scientific work (expert group) Network with international bodies including the submission of information with regard to activities carried out in the framework of the trilateral co-operation of the Gulf of Finland



Road Map



Research themes:

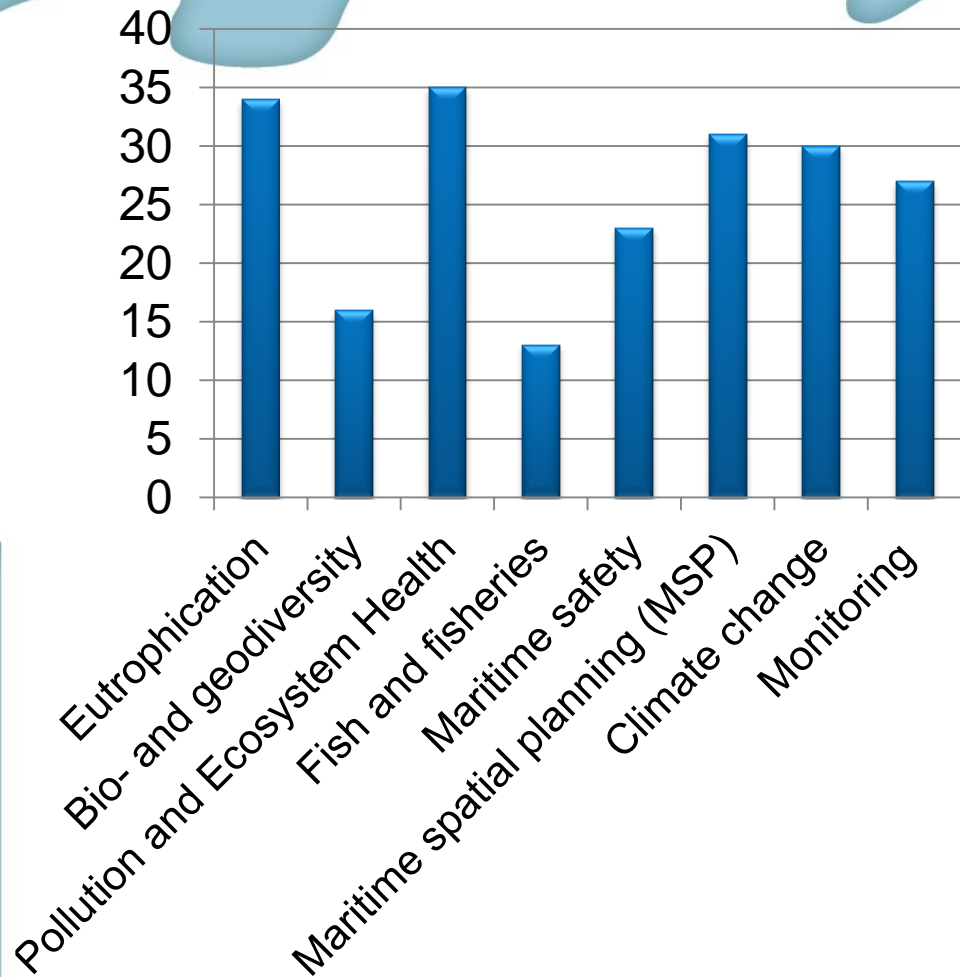
- Eutrophication
- Biological and geological diversity
- Pollution and Ecosystem Health
- Fish and fisheries
- Maritime safety
- Maritime spatial planning
- Climate change
- Monitoring and research

Main findings of the
research themes of
the GOF2014

Recommendations
based on the GOF
assessment (incl.
monitoring)

Road Map
lists the
concrete
steps to
improve
the state
of the GOF

Which are the most interesting themes in the future?



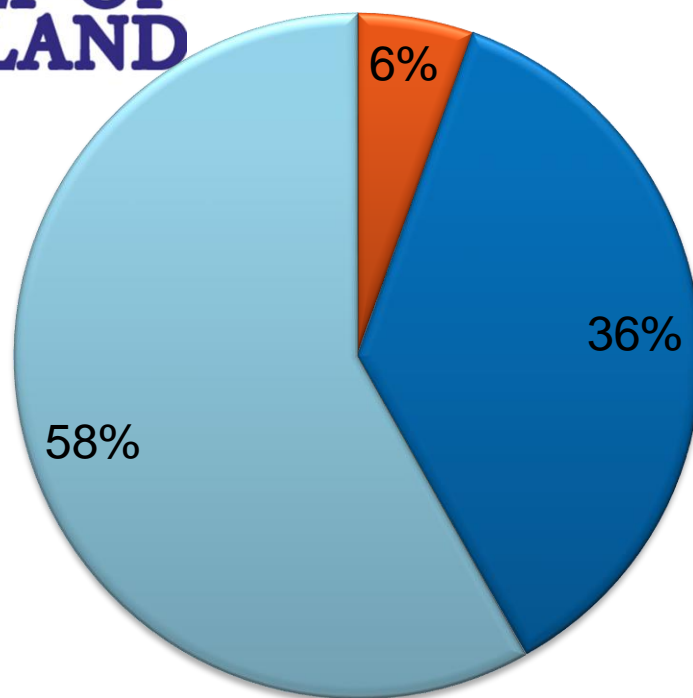
New themes and topics proposed

- ecosystem services
- internal loading
- tourism, economical sector and the Baltic Sea
- micro plastic and its relation to construction materials etc.
- culture and history of the Baltic Sea
- Alg@line to eastern GoF (done!)
- nuclear power & risks

What is your opinion, do we need a new Gulf of Finland Year?



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■ No

■ Yes, 10 or more years from now, when something significant changes take place in the Gulf of Finland

■ Yes, 2021

The Trilateral Co-ordination Committee will, at a later stage, draw up a plan and arrange to organize the third Gulf of Finland Year

Trilateral work in the future- suggestions based on the inquiry



- Common trilateral funding for GoF studies, interaction with young scientists & universities
- Existing network should be kept and strengthened
- Data homogenization and synthesis
- Recommendations to improve the state of the GoF (Road Map) → actions by decision-makers and politicians in at local scale with prioritizations and time tables
- Maritime cultural heritage
- Trilateral GoF co-operation can give additional value to e.g. HELCOM work because it covers a small area with active networking



Trilateral work in the future- authors view



- More work with monitoring and eutrophication studies and about harmful substances (expert group)
- Regular meetings between scientists
- Data collection in the future necessary
- More info about risks and actions
- Material on environmental education
- Keep contact with decision-makers



Photo: M.Sirkka

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FINLAND

