

# **SYKE** **Finnish Environment** **Institute** **Marine Research Centre**

Paula Kankaanpää, Director





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# THE OCEAN CONFERENCE



## OUR OCEANS, OUR FUTURE: PARTNERING FOR THE IMPLEMENTATION OF SUSTAINABLE DEVELOPMENT GOAL 14

### 5 - 9 JUNE, 2017, NEW YORK

#### ABOUT



#### CONFERENCE 5-9 JUNE 2017

- About
- Programme
- Information note for participants
- List of Participants of the Partnership Dialogues



#### NEWS

9 JUN 2017 - Countries set to agree on decisive and urgent actions to restore marine world to health as Ocean Conference concludes



8 JUN 2017 - Facebook live interview. Joint efforts to #SaveOurOcean



#### FEATURED VIDEOS

Our Ocean, Our Future



The Ocean and Us, BBC Earth



UNFAO headquarters in Rome lights up in blue to mark World Oceans Day



HELP #SAVEOUREOCEAN  
REGISTER YOUR VOLUNTARY COMMITMENT

OCEAN CONFERENCE

REGISTER COMMITMENT

#SaveOurOcean

OCEAN CONFERENCE

Voluntary Commitments At a glance

1229 Total Commitments

**SYKE****the Finnish Environment  
Institute**

- The expert and research agency for Finnish government and administration
- Director General Lea Kauppi
- Staff 550
- Ministry of the Environment
- Finland's hub for environmental data and information
- Finland's environmental laboratories
- Terrestrial, marine and freshwater environmental science
- Sustainable consumption and production
- Circulation economy and environmental policy



S Y K E



Ympäristöministeriö  
Miljöministeriet  
Ministry of the Environment



MAA- JA METSÄTALOUSMINISTERIÖ

# SYKE Marine Research Centre Resources

- Staff: 95 researchers and experts
  - 55 % men; 45 % women
  - 40 % PhDs
- Budget: almost 9 m€
- External funding: 70 %



# SYKE Marine Research Centre International co-operation



The Global Ocean Observing System



EuroGOSS  
European Global O...

BONUS  
FOR A BETTER FUTURE OF THE BALTIC SEA REGION





**SYKE Marine Research Centre  
for Finnish Government on  
marine environmental laws and regulations**

# **Holistic Assessment of the state of marine environment**

**Every 6<sup>th</sup> year  
Next: 2018  
together with  
the 10 Baltic States**

According to EU Marine Strategy Directive

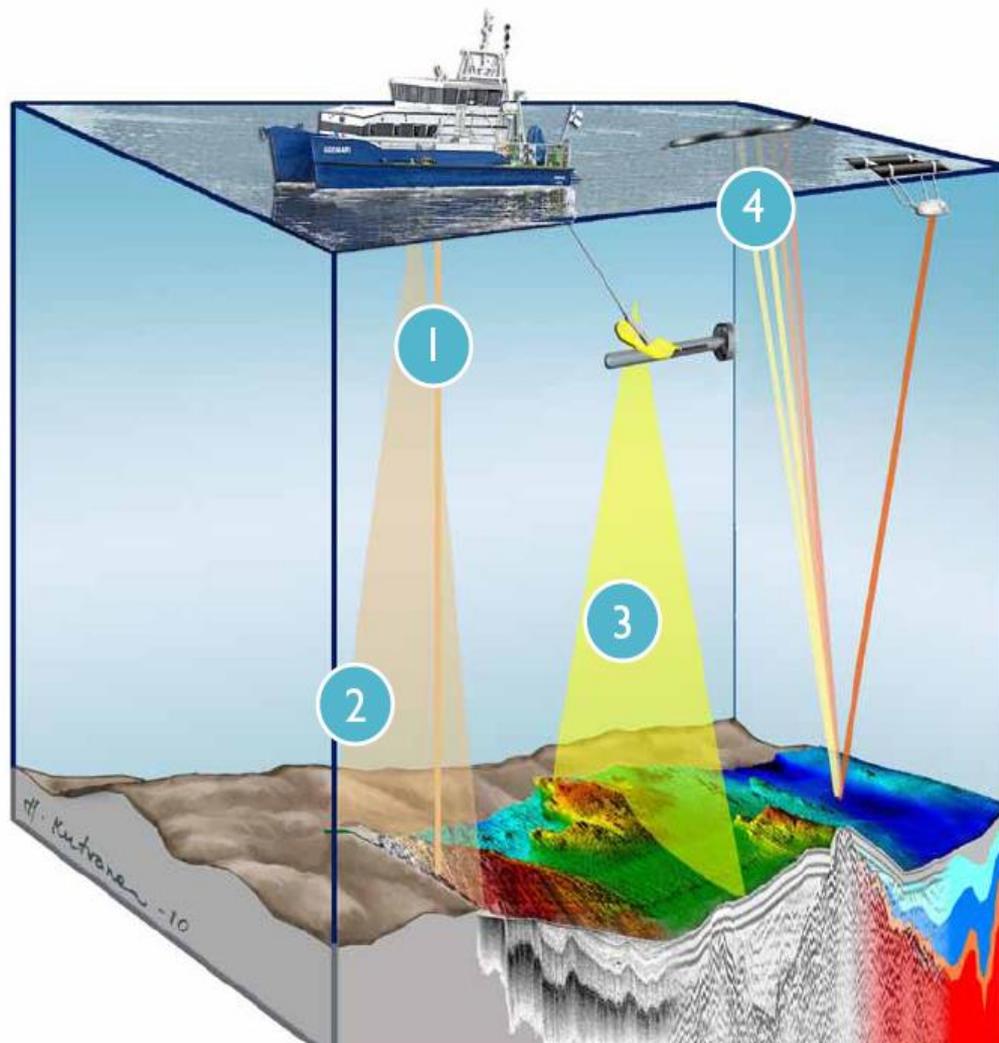
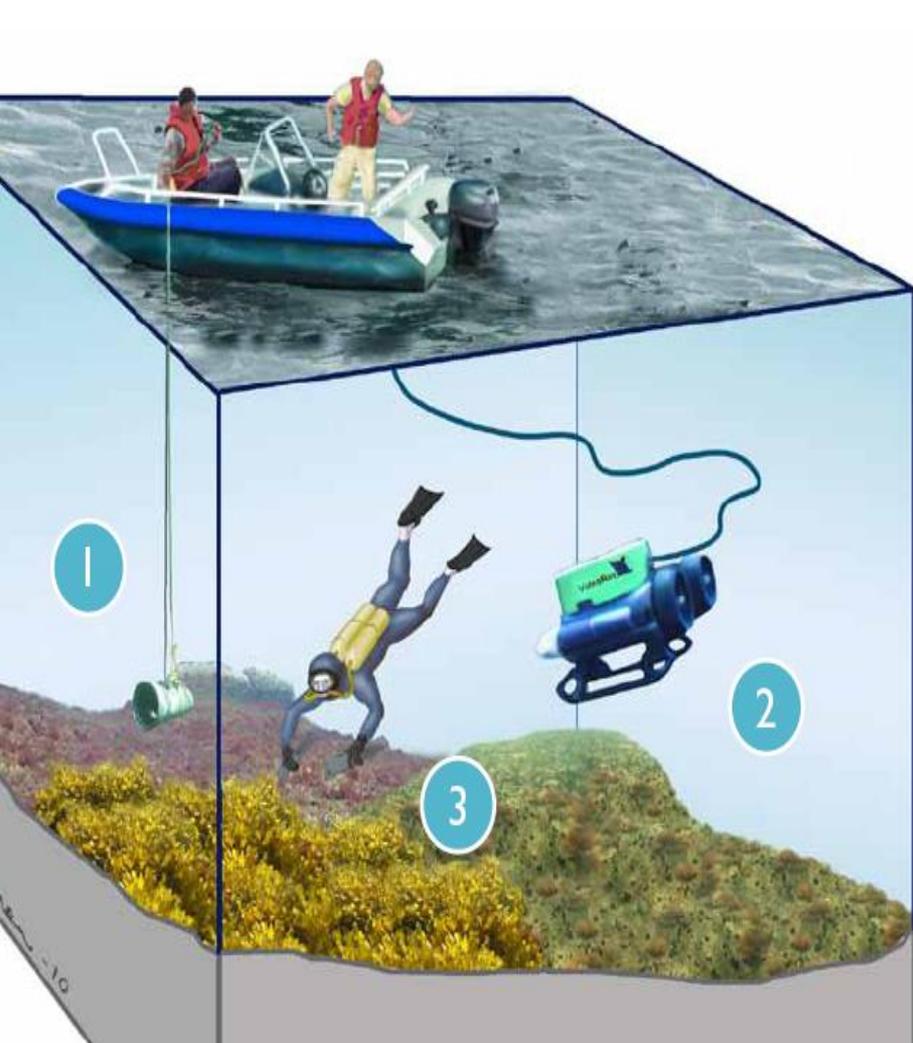
[www.peda.net](http://www.peda.net)

# **SYKE Marine Research Centre**

- **Research of ecosystems**
- **Effects of human actions on marine environment**
- **Development of methods**

# The Finnish Inventory of Submarine Environment

Surveys of underwater nature & Geological mapping



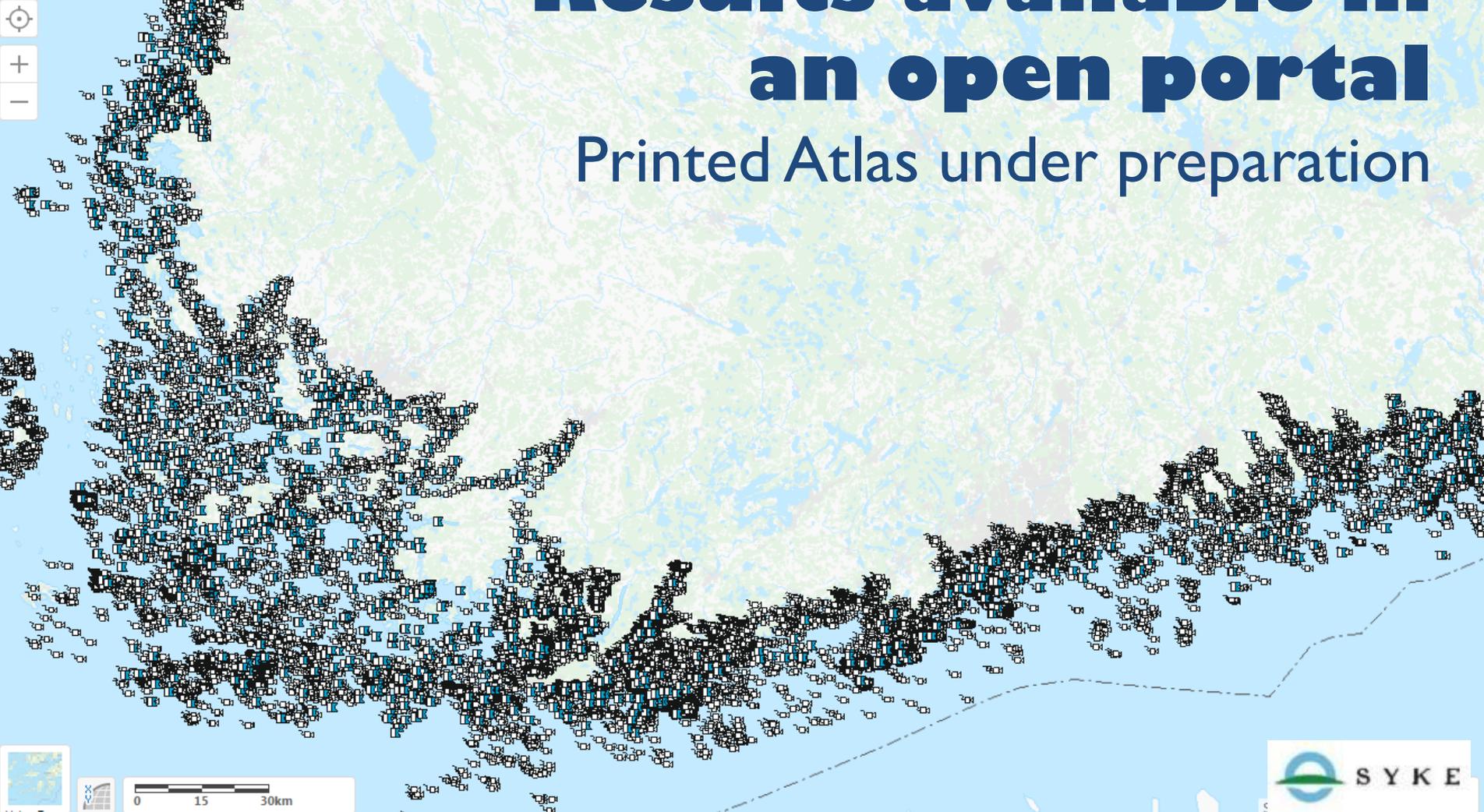
Siirrä Lähennä Loitonna Kokoalueen rajaus Alkuperäinen rajaus Edellinen rajaus Seuraava rajaus Tunnista kohde Alueen kohteen tiedot

Navigointi Tunnista kohteet

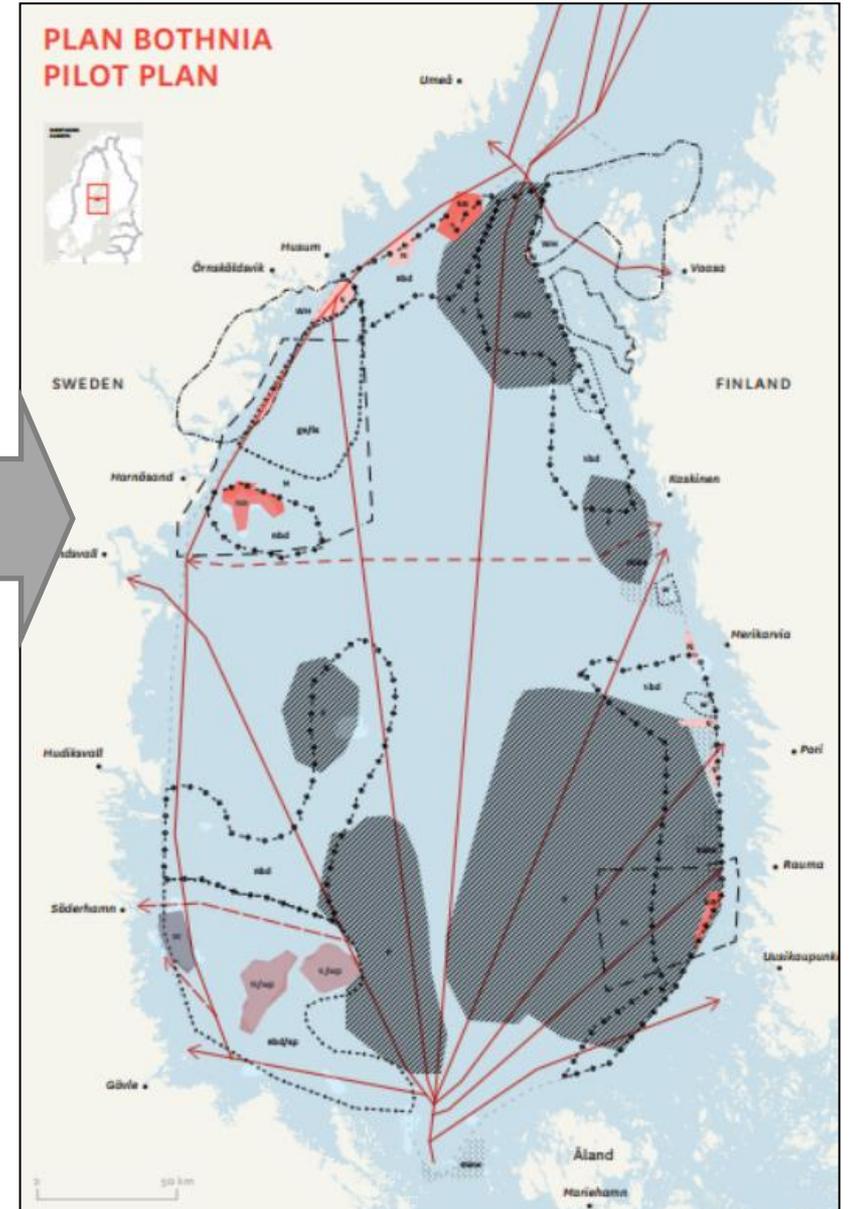
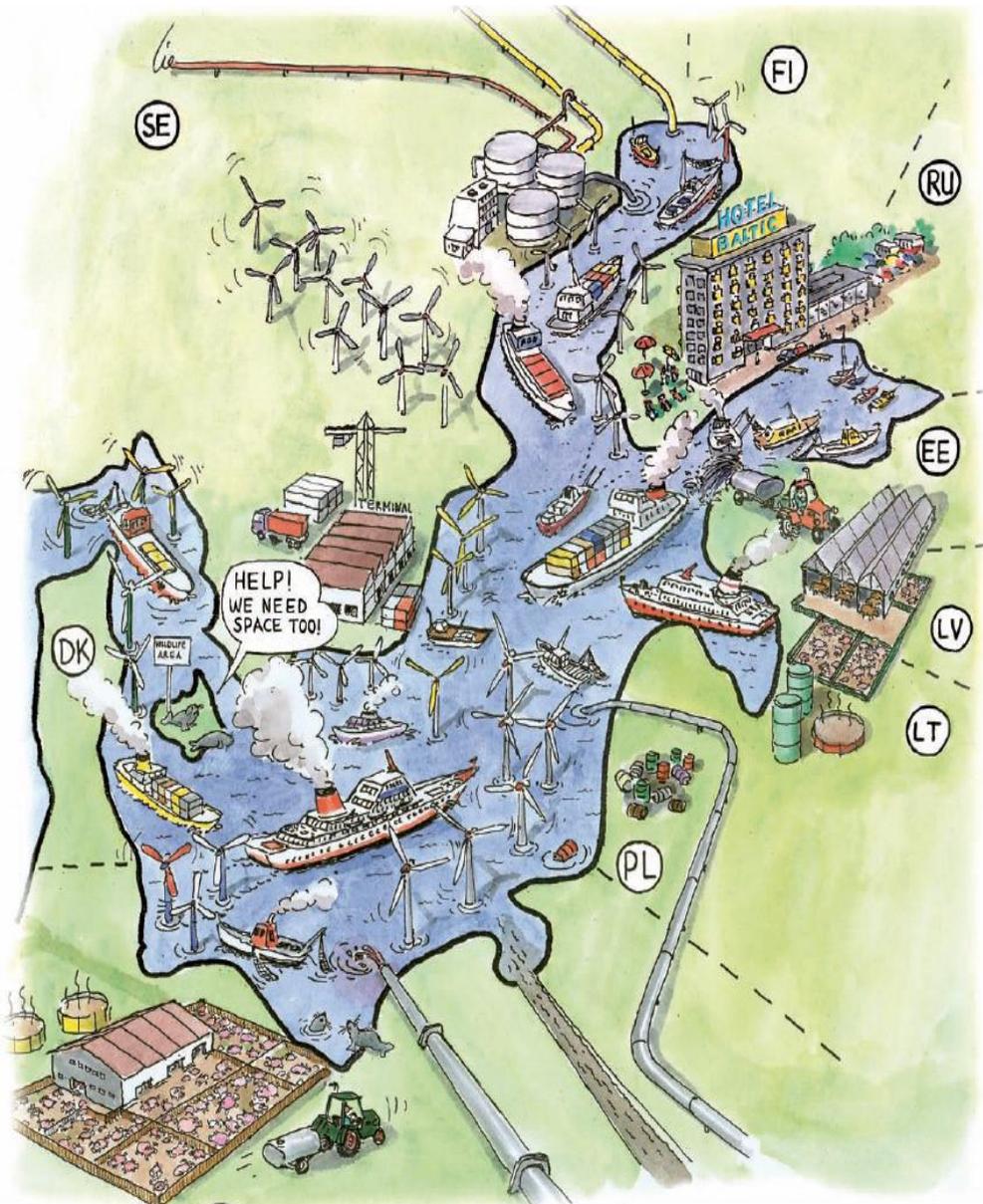
Etsi...

# Results available in an open portal

Printed Atlas under preparation



# SYKE MRC collects information and develops tools for marine spatial planning



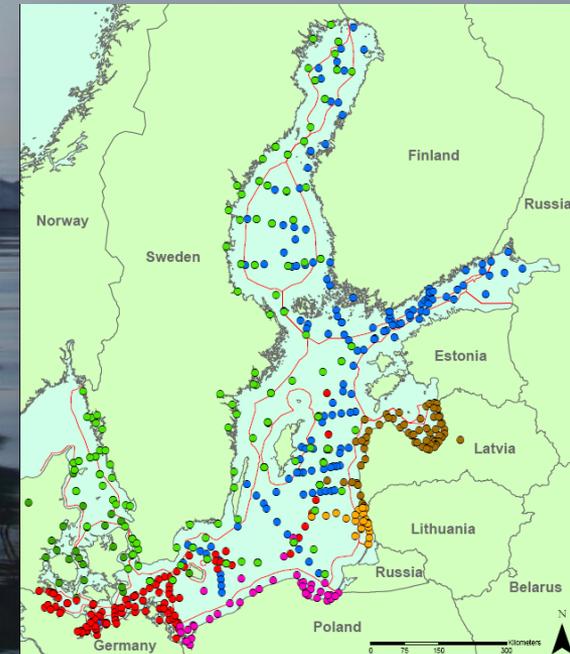
**SYKE**

# Open sea monitoring

according to EU Marine Strategy Directive, International Convention on the Protection of the Marine Environment of the Baltic Sea Area and Finnish legislation



Physical and chemical water quality  
Phytoplankton, Zooplankton, Benthic macrofauna  
Contaminants  
Alg@line (SOOP)  
Satellite remote sensing

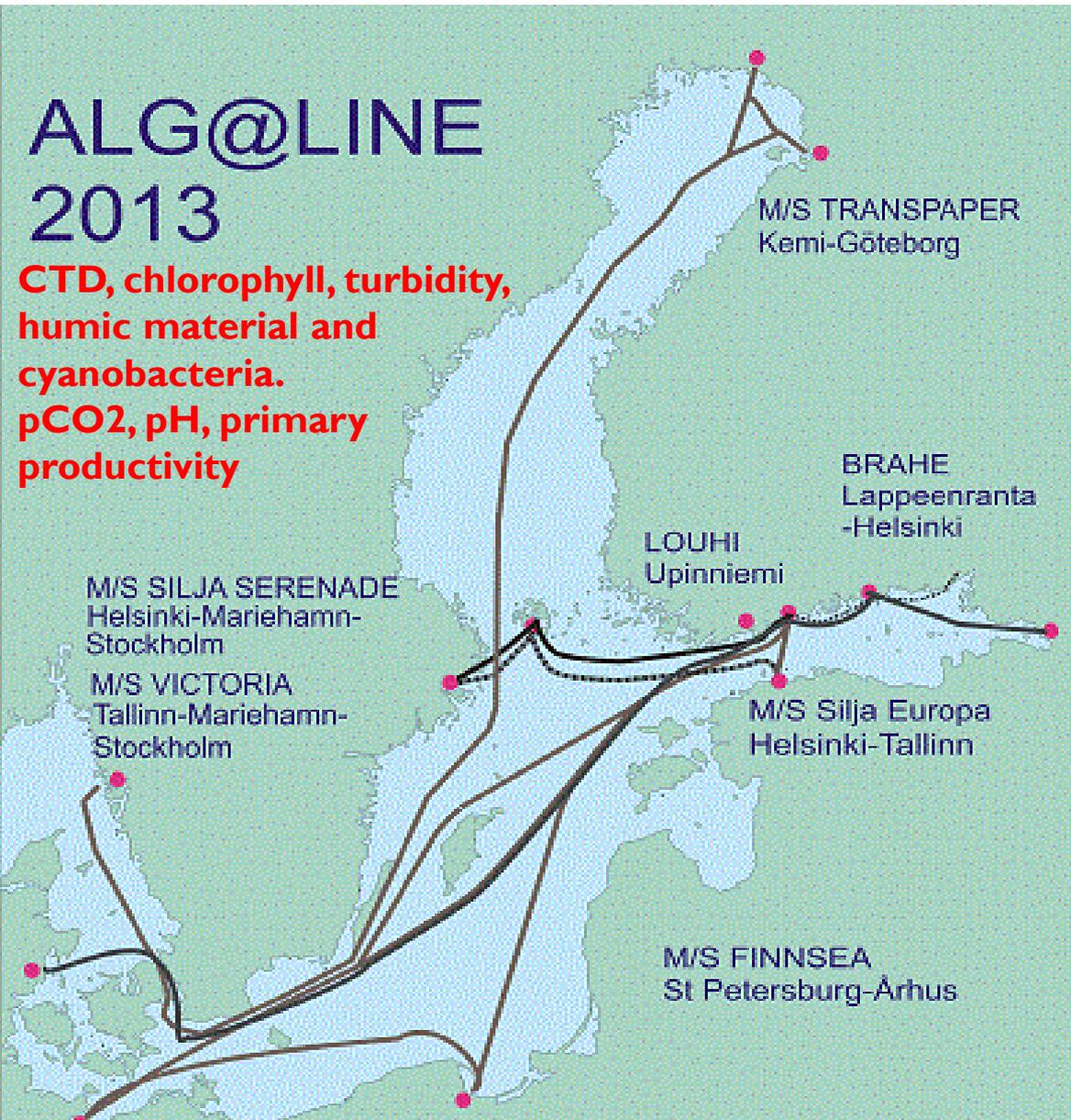


# SYKE MRC : Continuous data collection system

4-6 commercial ferries  
automated measurements and  
water sampling devices

## ALG@LINE 2013

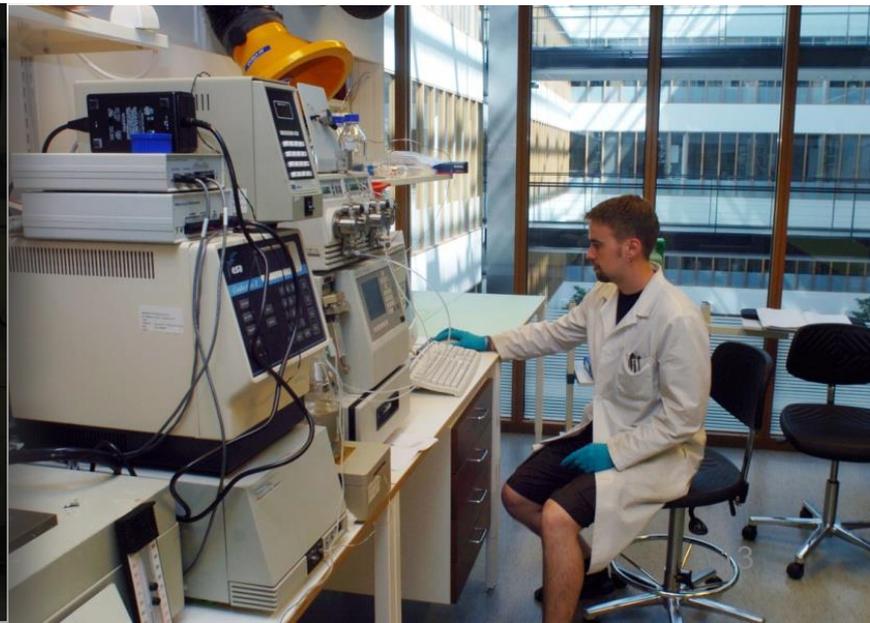
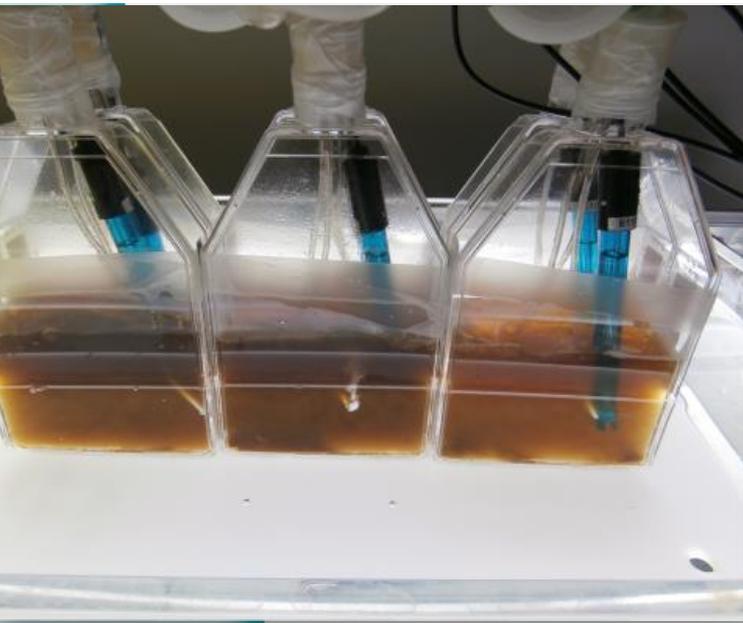
CTD, chlorophyll, turbidity,  
humic material and  
cyanobacteria.  
pCO<sub>2</sub>, pH, primary  
productivity





# **SYKE Ecological Marine Research Laboratories**

experimental research \* method development \* controllable facilities \*  
algae culture collection \* novel instrumentation \* bio-optics and imaging



# SYKE - FINMARI Consortium for Finland's National Marine Research Infrastructure

New solutions for automated sampling,  
real time measurement and integration of  
data production



# Utö automated marine research station a test base for physical and biological measurements in cold seas

ocean carbonate chemistry \* acidification \* sea-air gas flux \* marine biota \*  
minute scale observations of phytoplankton productivity and taxonomy

- Research since 1881 -



# Remote sensing products for monitoring of the Baltic Sea and the arctic environment

Sentinel-3A-satelliitti,  
© ESA–Pierre Carril.



# **SYKE is responsible for Finland's marine environmental emergency response**

together with the Frontier Guard and the Finnish Naval Forces



**Agreement on Marine Oil Pollution Preparedness  
and Response in the Arctic**  
**full scale, table top and alert exercises**

**mechanical oil spill response  
prototype development**



# Agreement on Marine Oil Pollution Preparedness and Response in the Arctic

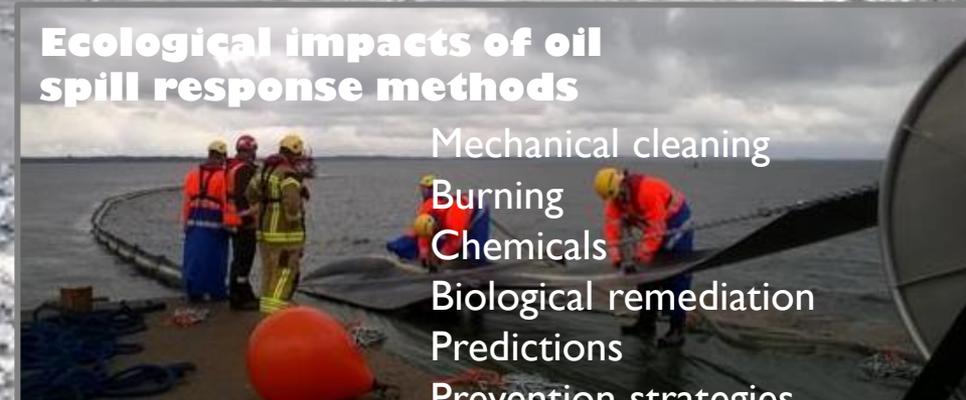
## yearly full scale, table top and alert exercises

### mechanical oil spill response prototype development



#### Ecological impacts of oil spill response methods

- Mechanical cleaning
- Burning
- Chemicals
- Biological remediation
- Predictions
- Prevention strategies



# Arctic multi-disciplinary research

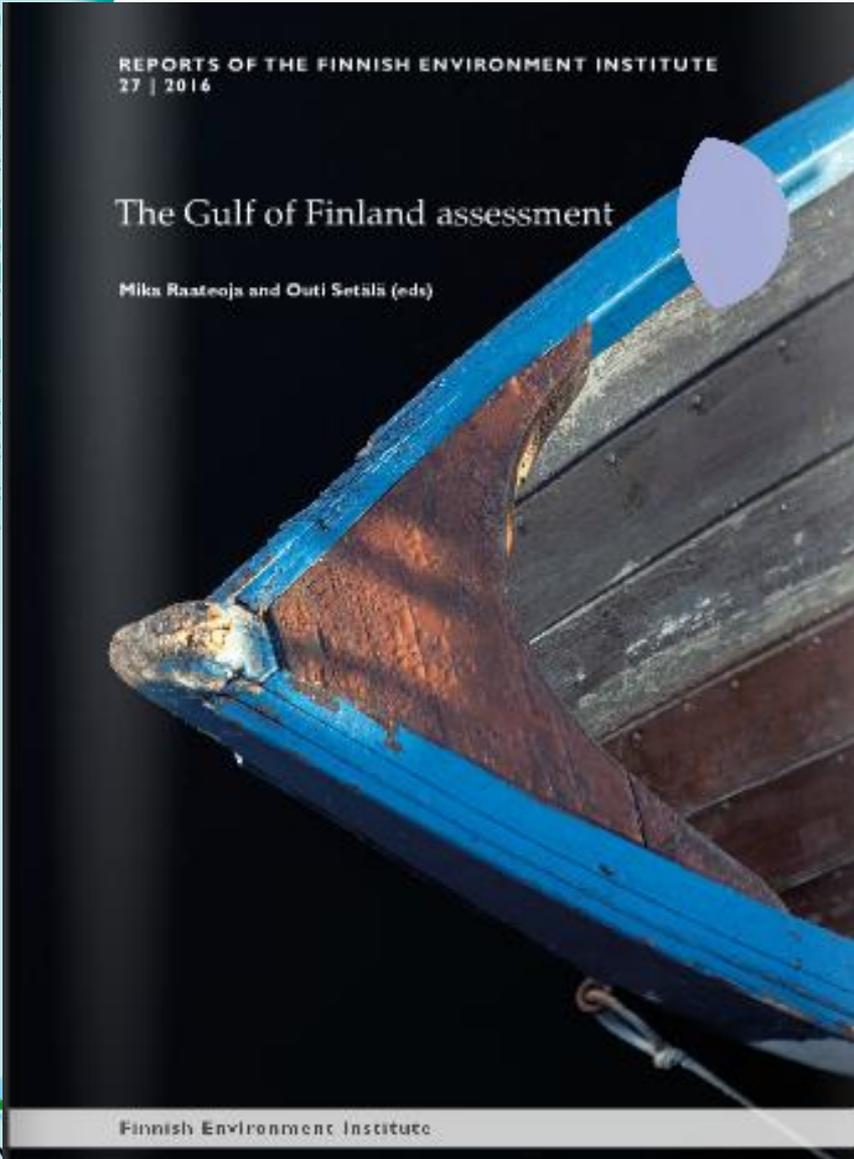
## Baltic Sea as an arctic laboratory

Climate Change \* Marine Food Webs \* Sea ice ecology \* Flux modelling



Sea ice cruise, R/V Aranda, March 2016

# Societal Impact - information for policy and decision makers - example Gulf of Finland Year



# R/V Aranda

## Ice Class A1 Super

### \* Renovation 2017 - 18



## **Thank you!**

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Finnish Environment Institute

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