

Gothenburg May 19-22 2015

# Welcome to the Scientific Symposium on Harmful Algal Bloom and Climate Change

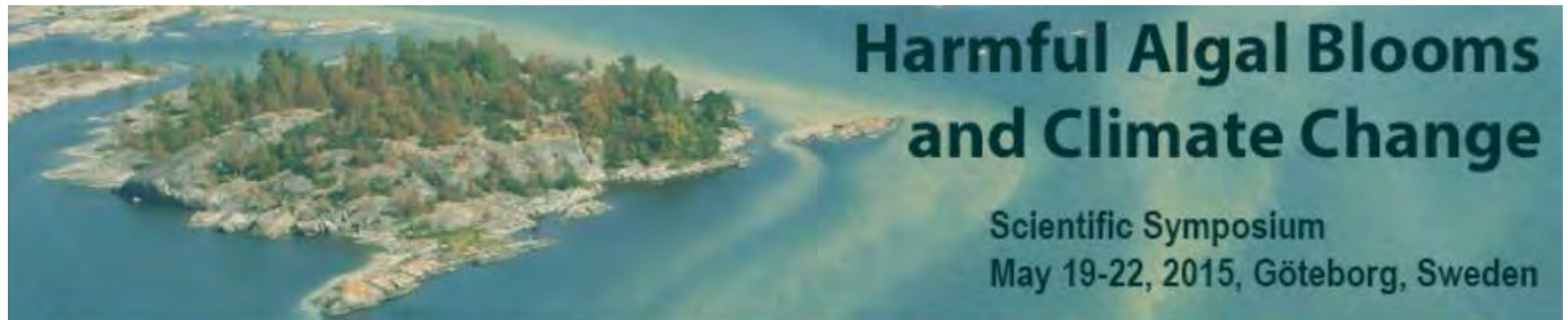
Co-conveners of the symposium

Bengt Karlson, ICES and SMHI, Sweden

Angela Wulff, University of Gothenburg, Sweden

Mark Wells, PICES

Raphael Kudela, GEOHAB



**GEOHAB**

**SMHI**

**UNIVERSITY OF  
GOTHENBURG**



# Sweden has a long coastline



# Approximately 60 participants from all continents except Antarctica

- Some aims of the symposium:
  - Present recent scientific results
  - Bring together specialists in different fields:
    - Experimentalists
    - Scientists working on long time series
    - Modellers
  - By having many discussions produce:
    - A summary of current knowledge
    - Priorities for future research
    - Recommendations about long term monitoring
  - Special issue in scientific journal?

# About the symposium

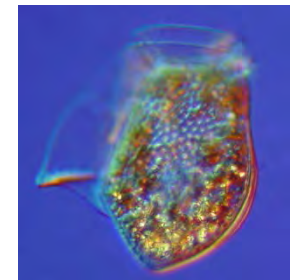
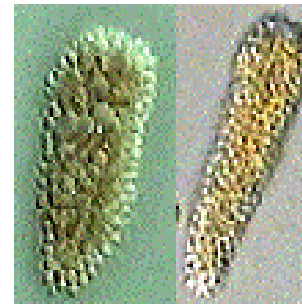
- Original idea developed by the PICES HAB section and the ICES Working Group on Harmful Algal Bloom Dynamics and endorsed by the UNESCO IOC International Panel on Harmful Algal Blooms
- Initiated by a workshop on the same topic held in 2013
  - Article submitted to Harmful Algae – in review
- Endorsed by
  - IOC - Intergovernmental Oceanographic Commission
  - ICES - International Council for the Exploration of the Sea
- Supported by
  - Swedish Research Council Formas
  - PICES
  - SCOR/GEOHAB
  - NOAA Harmful Algal Bloom Program

# Some Harmful Algal Blooms in the Baltic and the Kattegat-Skagerrak

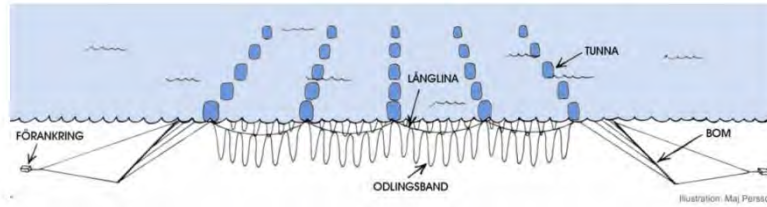
- Cyanobacteria blooms
  - Summer blooms main problem
  - Baltic Sea only
  - *Nodularia spumigena*
- Blooms of fish killing species
  - Mainly in the Kattegat-Skagerrak
  - *Prymnesium polylepis* (syn. *Chrysochromulina polylepis*) 1988
  - *Pseudochattonella* spp. 1998 and onwards
- Algae causing shellfish toxicity
  - *Dinophysis* spp. – recurring problem
  - *Alexandrium* spp. – rare events
  - *Pseudo-nitzschia* spp. – minor problem



Baltic Sea, 24 July 2014, NASA-MODIS, processed by SMHI

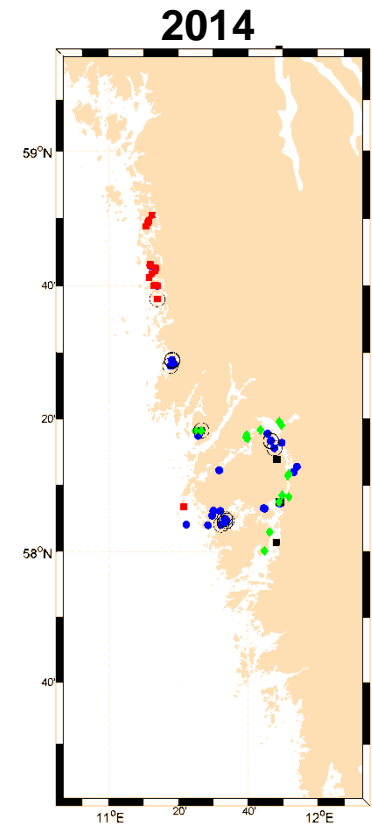
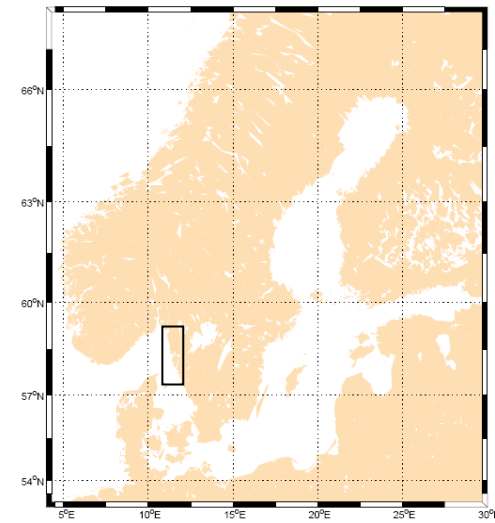


# Mussel and oyster harvesting in Sweden



*Mytilus edulis*  
photos by Lars-Ove Loo

Blue = Blue mussel *Mytilus edulis*  
Green = Cockle *Cerastoderma edule*  
Red = European oyster *Ostrea edulis*  
Circles = phyto-plankton sampling



# Algal bloom research at the University of Gothenburg

- Large university with a focus on marine sciences
- Long history of research on microalgae and oceanography at several departments
- Dept. of Biology and Environmental Sciences
- Dept. of Marine Sciences starts July 1<sup>st</sup>
  - Marine biologists
  - Physical and chemical oceanographers
  - Culture collection
- New ship in 2016
- Field stations



– Tjärnö

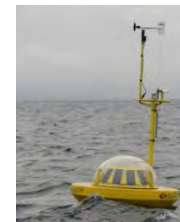
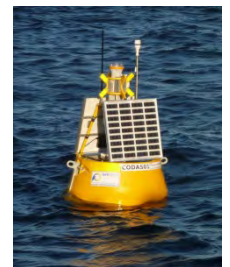


– Kristineberg



# Algal bloom research and monitoring at the Swedish Meteorological and Hydrological Institute, Oceanography

- Monthly monitoring cruises in the Baltic Sea and the Kattegat-Skagerrak
- Close cooperation with Finnish institute SYKE
- Long term monitoring
- New ship in a few years
- FerryBox system
- Oceanographic buoys
- Oceanographic laboratory
- National Oceanographic Data Centre
- Remote sensing of algal blooms
  - Baltic Algae Watch System
- Modelling facilities





# Practical information

- Questions about public transport etc.
  - Ask at the registration desk or check [www.vasttrafik.se](http://www.vasttrafik.se)
- Conference dinner on Thursday at 1830
  - Did you register? – Check at registration desk
  - Did you pay? – Check at registration desk
  - Dietary preferences (vegan etc)
- Presentations
  - PowerPoint is preferred (pdf will also work)
  - Submit on USB-stick to Oscar or to the registration desk
  - Submit your presentations the day before
- Poster presentations
  - 60 sec presentations
  - Provide your name and poster title as a pdf – file on USB stick

# Breakout sessions

- Split into three groups
- Rooms across the hall
  - Wallenberg hall (large)
  - Antarctica (medium)
  - South America (small)
  - Africa (small)
- More info after lunch today

