Data Integration and Modelling workshop
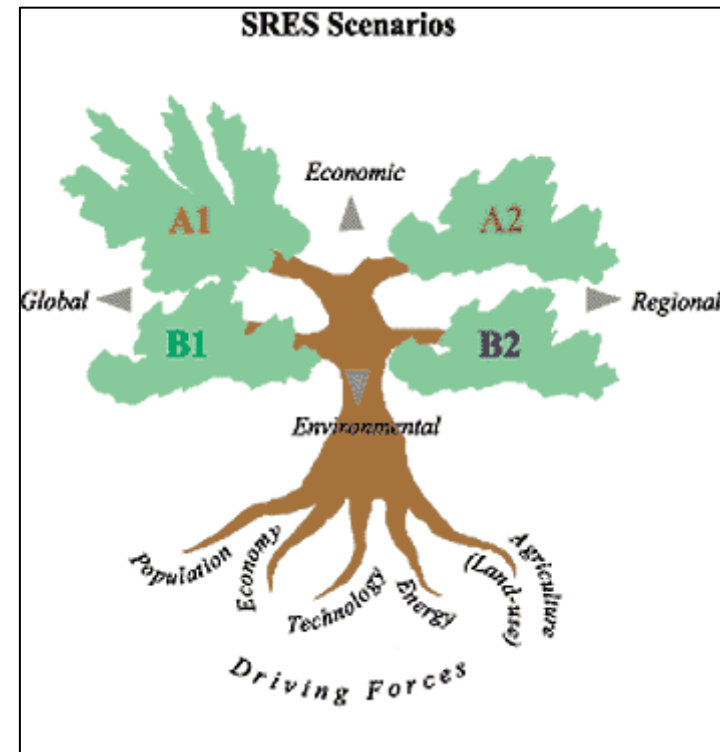
RCO-SCOBI model

Short model description

Presentation: Kari Eilola, SMHI
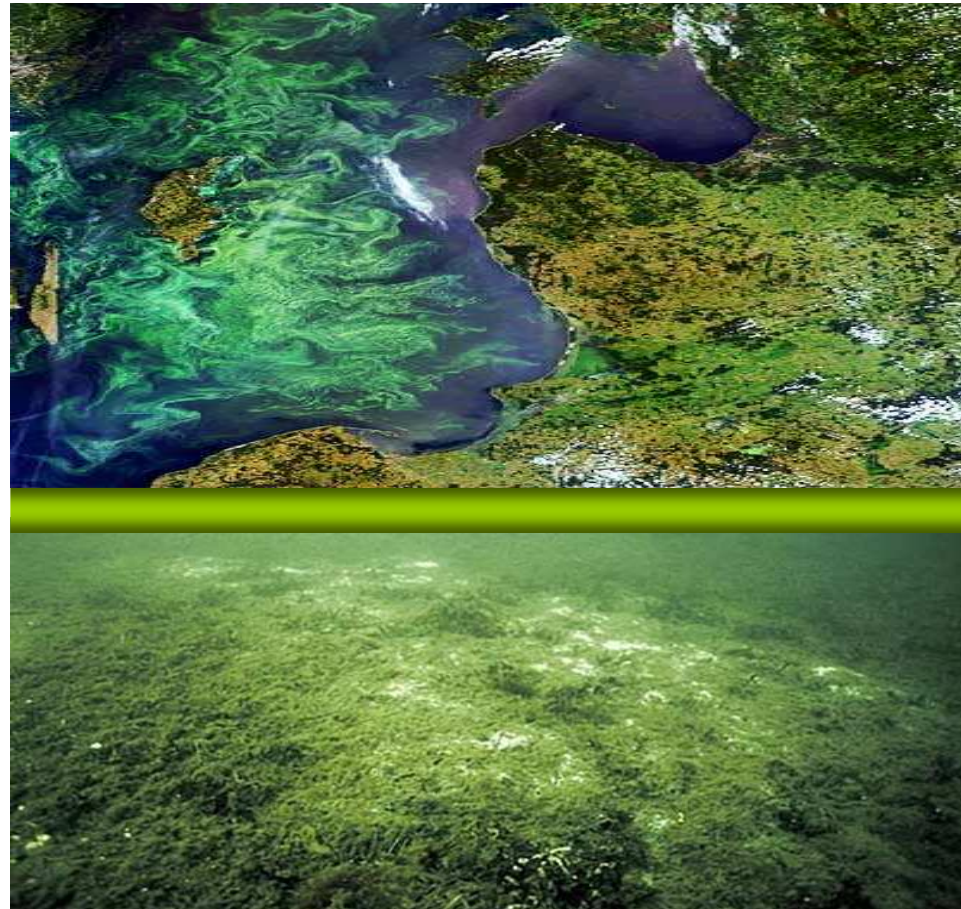Norrköping 2009-10-14

IPCC SRES scenarios

A1: globalization, emphasis on human wealth
Globalized, intensive (market forces)

A2: regionalization, emphasis on human wealth
Regional, intensive (clash of civilizations)

B1: globalization, emphasis on sustainability and
equity Globalized, extensive (sustainable
development)

B2: regionalization, emphasis on sustainability and
equity Regional, extensive (mixed green bag)

RCO - SCOBI

High resolution 3-D model for biogeochemical climate- and process studies in the Baltic Sea.

- **Investigate the Baltic Sea response to climate variations and anthropogenic activities on long timescales.**

- **Investigate natural events like the impact of deepwater renewal on hydrogen sulfide and oxygen conditions.**

- **Investigate harmful algae blooms.**

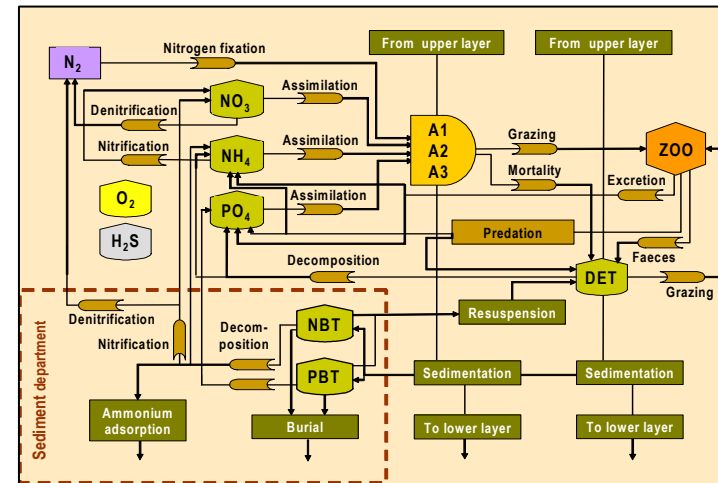- **Investigate oxygen and nutrient dynamics and reduction scenarios.**

List of biogeochemical state variables

State variables	Description	Units
O_2	Oxygen	ml O_2 l^{-1}
NH4	Ammonium	mmol NH4 -N m^{-3}
NO3	Nitrate	mmol NO3 -N m^{-3}
PO4	Phosphate	mmol PO4 -P m^{-3}
PHY [a]	Phytoplankton	mg Chl m^{-3}
DET	Detritus	mg C m^{-3}
ZOO	Zooplankton	mg C m^{-3}
NBT	Benthic nitrogen	mmol N m^{-2}
PBT	Benthic phosphorus	mmol P m^{-2}

[a] PHY is divided into groups A1, A2 and A3 that has the characteristics of "diatoms, "flagellates and others" and of nitrogen fixing cyanobacteria, respectively.
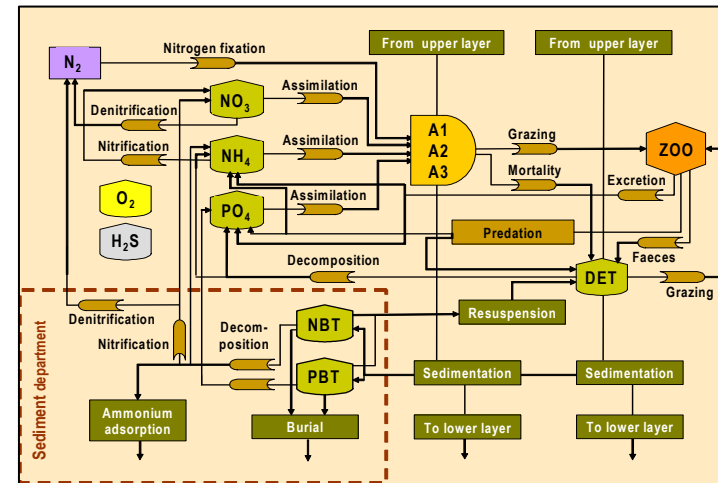
and of course also salinity (**S**) and temperature (**T**) from RCO. All data is stored every 2-days.

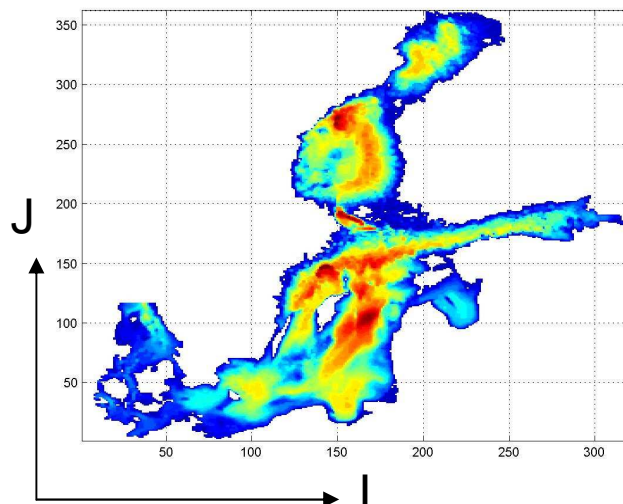## Scobi variables and units

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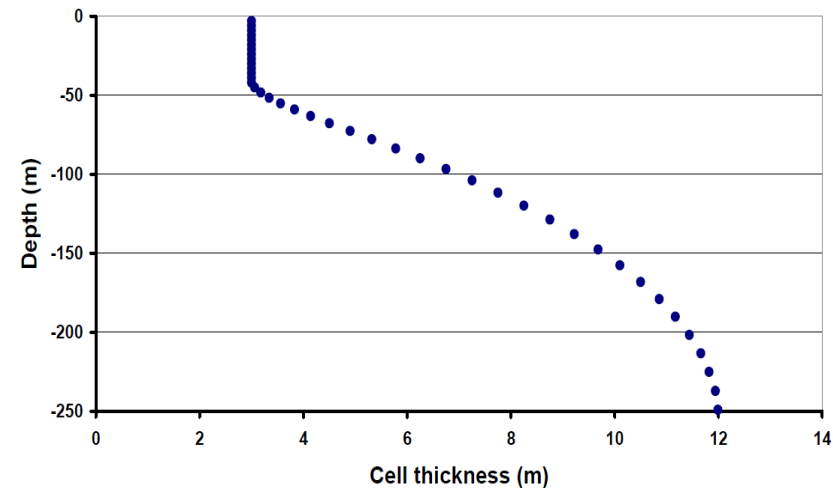
and of course also salinity (**S**) and temperature (**T**) from RCO for all wet points (**I,J**) with max 41 vertical grid points
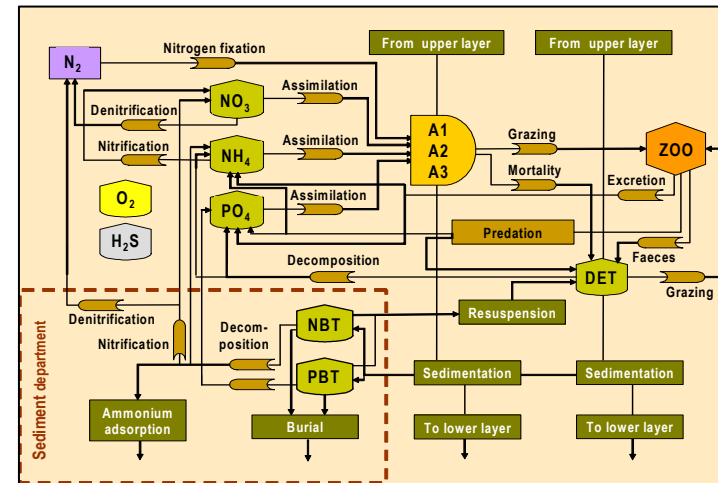
RCO horizontal grid (2nm)

RCO vertical grid

Scobi variables and units
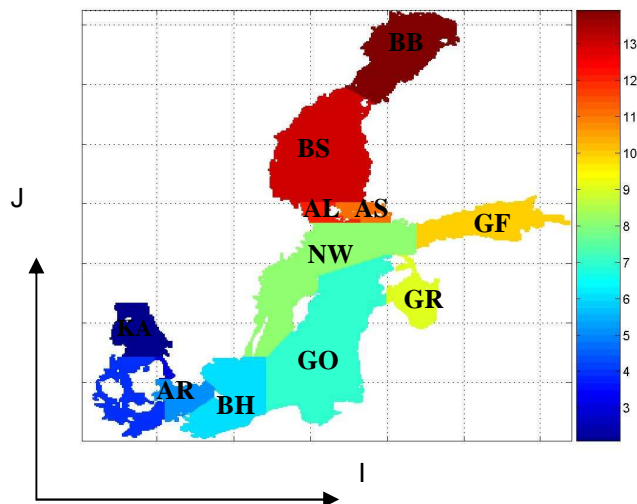
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RCO horizontal sub basin map

RCO- SCOBI vertical sub division