# T4.1: Impacts on the Gulf of Finland (MSI)

1. High spatial resolution coupled physical-biogeochemical model simulations of present and future climate (10-year time slices) (**deadline month 30**).

2. Uncertainty estimates of model output fields (**month 33**).

3. Distribution maps of water quality indicators in the coastal zone and open Gulf (**month 33**).

4. Recommendations for future country-wise actions on achieving and preserving good water quality of the Gulf management its marine resources (**month 33**).

# Work plan 21-33 month, September 2010 – September 2011.

**4.1.1.** High spatial resolution (0.5 nm) coupled physical-biogeochemical model simulations of present and future climate slices: **month 28 (end of April 2011**).

**a**) Validated GETM: **month 23 (end of November 2010),**

**b**) Coupled GETM and 3D ERGOM: **month 24 (end of December 2010),**
**In cooperation with A. Stips group JRC, Ispra**

**c)** Preparation of forcing, initial fields and boundary conditions for simulation future climate slice: **month 24 (end of December 2010),**

**d**) Simulation of present climate slice (**XXXX-XXXX**) with coupled GETM and ERGOM and validation: **month 26 (end of February 2011)**

**e**) Simulation of future climate slice with coupled GETM and ERGOM: **month 28 (end of April 2011).**

**4.1.2.** Uncertainty estimates of simulated fields: **month 29 (end of May 2011).**

**4.1.3.** Distribution maps of water quality indicators in the coastal zone and open Gulf: **month 33 (end of September 2011).**

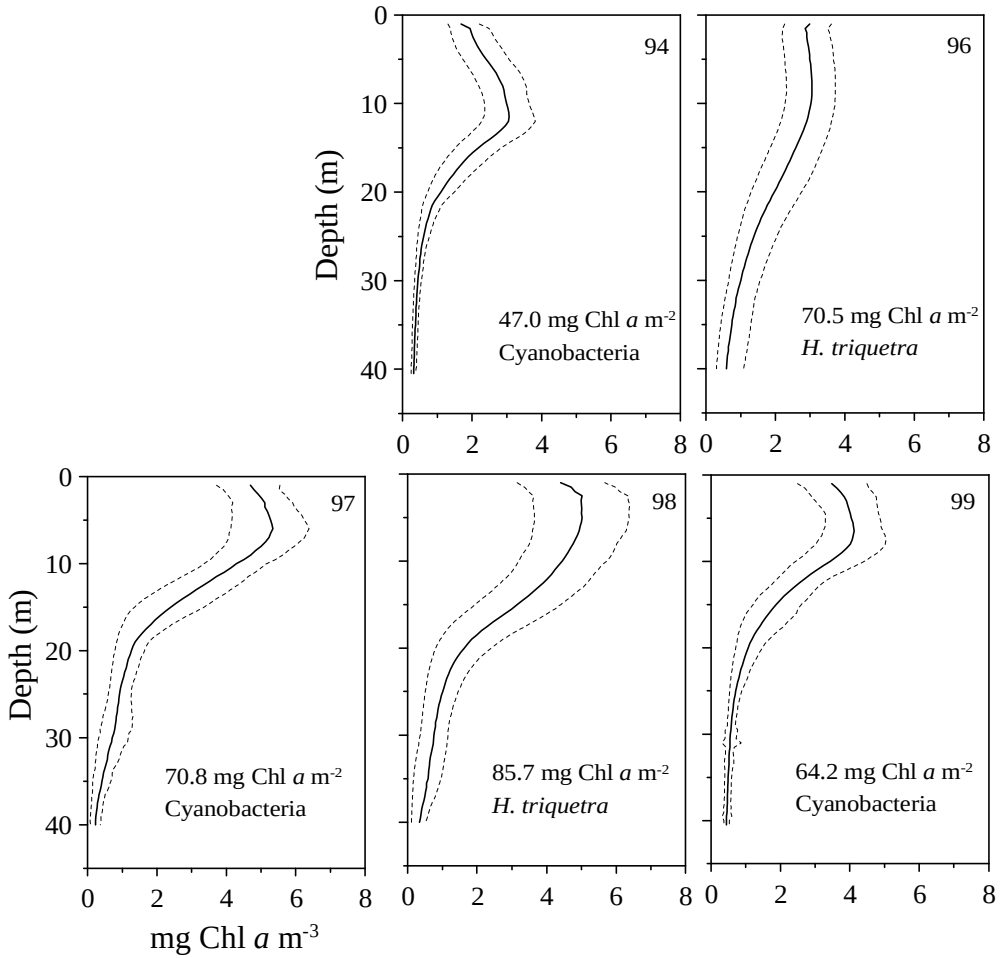
**4.1.4.** Recommendations for future country-wise actions on achieving and preserving good water quality of the Gulf management its marine resources: **month 33 (end of September 2011).**

## Potential problems

Validation of 3D ERGOM

Water quality indicators: chlorophyll *a* content in the upper 10-m layer, winter phosphate and nitrate content in the upper 10-m layer?

# Averaged Chl *a* vertical profiles at the entrance area to the Gulf



## **Forcing data** (WP2: T2.1, T2.2?):

1. Atmospheric forcing fields (wind, solar radiation, air temperature, precipitation, cloudiness).

2. River loads (including diffusive and point sources) and diatoms, flagellates, cyanobacteria, zooplankton, nutrients (ammonium, nitrate, phosphate), oxygen, detritus river loads.

3. Airborne nutrient loads

4. Initial temperature, salinity, diatoms, flagellates, cyanobacteria, zooplankton, nutrients (ammonium, nitrate, phosphate), oxygen, detritus fields

5. Lateral boundary conditions at the Danish Straits: temperature, salinity, sea level, diatoms, flagellates, cyanobacteria, zooplankton, nutrients (ammonium, nitrate, phosphate), oxygen, detritus fields