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 30th month).

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

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

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

Status of task 4.1.1 after 20 months

1. Data for validation physical-biogeochemical model simulations are collected

2. Present climate slice (1997-2006) is simulated with GETM (General Estuarine Transport Model).

3. GETM simulations are validated using HELCOM monitoring data.

4. 1D ERGOM simulations are validated using HELCOM monitoring data.

Preliminary results were presented in IEEE/OES Baltic 2010 International Symposium 'INTEGRATED OCEANOGRAPHIC OBSERVATION SYSTEMS AND DATA BASES FOR CLIMATE CHANGE RESEARCH' August 25-27 2010 Riga, Latvia

Validation data

a) time series of temperature, salinity, phosphate, nitrate, silicate and chlorophyll *a* in the surface and bottom layer at HELCOM monitoring stations LL12 (60 samples), LL7(100) and LL3A (40) in 1997-2006.

b) case studies in July 1997, 1998, 1999 and 2002 (temperature, salinity, phosphate, nitrate, phytoplankton and chlorophyll *a*). Data cover the coldest (1998) and warmest (2002) summers within selected time slice.

c) Alg@line data for spring bloom validation 1997-2005 (1998 full course) and Estonian

Marine Institute monitoring data (phytoplankton on group level) Additional possibility: EU project SeaDataNet



Validation: nitrate and phosphate



observations

model

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Validation: dissolved oxygen and chl-a



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