LIFE Project Number

LIFE07 ENV/FIN/000133

5th Monitoring Progress Report

Covering the project activities from 15/4/2011 to 31/10/2011

Reporting Date

07/11/2011

LIFE+ PROJECT NAME or Acronym

Monitoring and assessment of carbon balance related phenomena in Finland and northern Eurasia

Data Project

Project location	Helsinki
Project start date:	01/01/2009
Project end date:	31/12/2012
Total budget:	2155627 €
EC contribution:	1046759 €
(%) of eligible costs	49.09

Data Beneficiary

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Summary of Progress

The main progress of the project is, a novel Earth observation satellite data-aided modeling system to produce CO2 balance in resolution of 0.16 degrees for a domain covering Finland, Sweden, Norway and Denmark as whole as well as the Baltic countries: Estonia, Latvia and Lithuania; together with areas from most Northern Germany and Western parts of Russia, ready.

First results of the modeling systems developed in SnowCarbo project were produced. In figure 1, land ecosystem CO_2 balance process is shown. The process can be given in formulas below

NEE = - GPP + ecosystem respiration

NPP = GPP-(Ecosystem resp.-soil resp.)

where NEE is Net Ecosystem Exchange, GPP is Gross Primary Product and NPP is Net Primary Product.

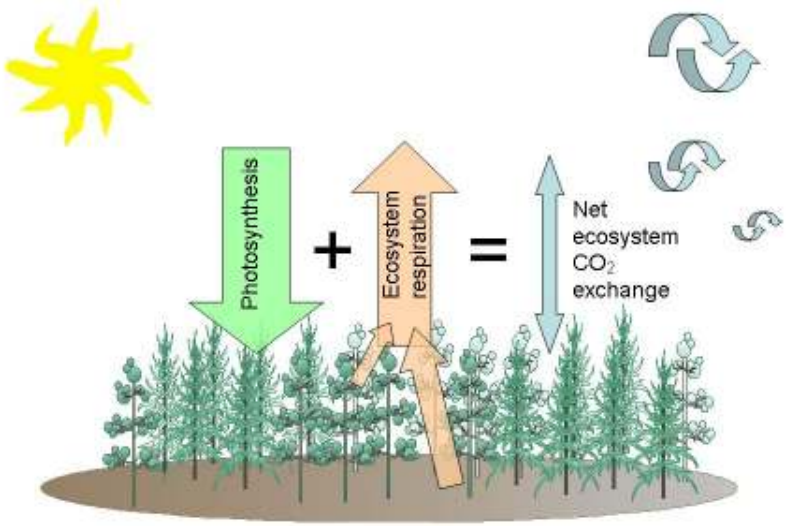

Figure 1: Land Ecosystem CO_2 Balance Process

In figure 2, GPP which was calculated using JSBACH model is shown.

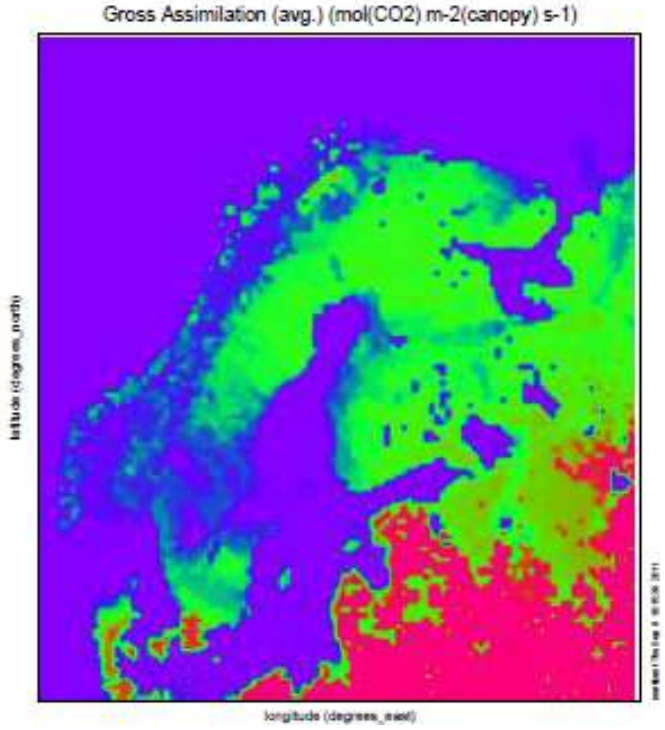

Figure 2: GPP (AVG.)(mol(CO2)/m2(canopy)s) from JSBACH, Date:09.07.2002,Time:12:00 (noon).

In Figure 3, daily carbon balance in Hyytiala, Finland between 1997-2008 is shown.

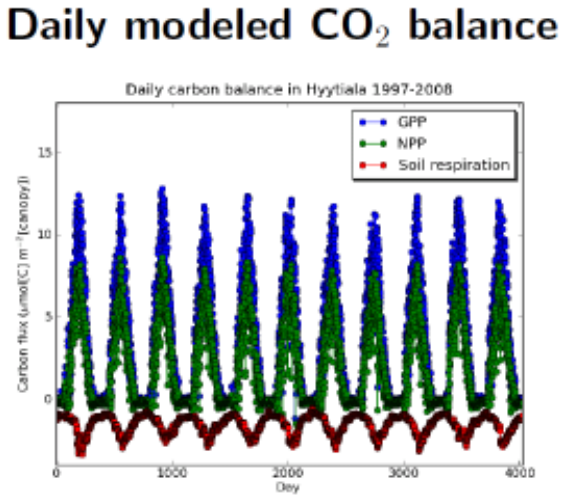

Figure 3: Daily modeled CO_2 balance

Reference dates for start of season, the final recovery of photosynthesis determined at CO_2 flux measurement sites. Time-series of vegetation indices (NDVI and NDWI) and the evolution of snow cover derived from daily MODIS observations shown in figure 4.

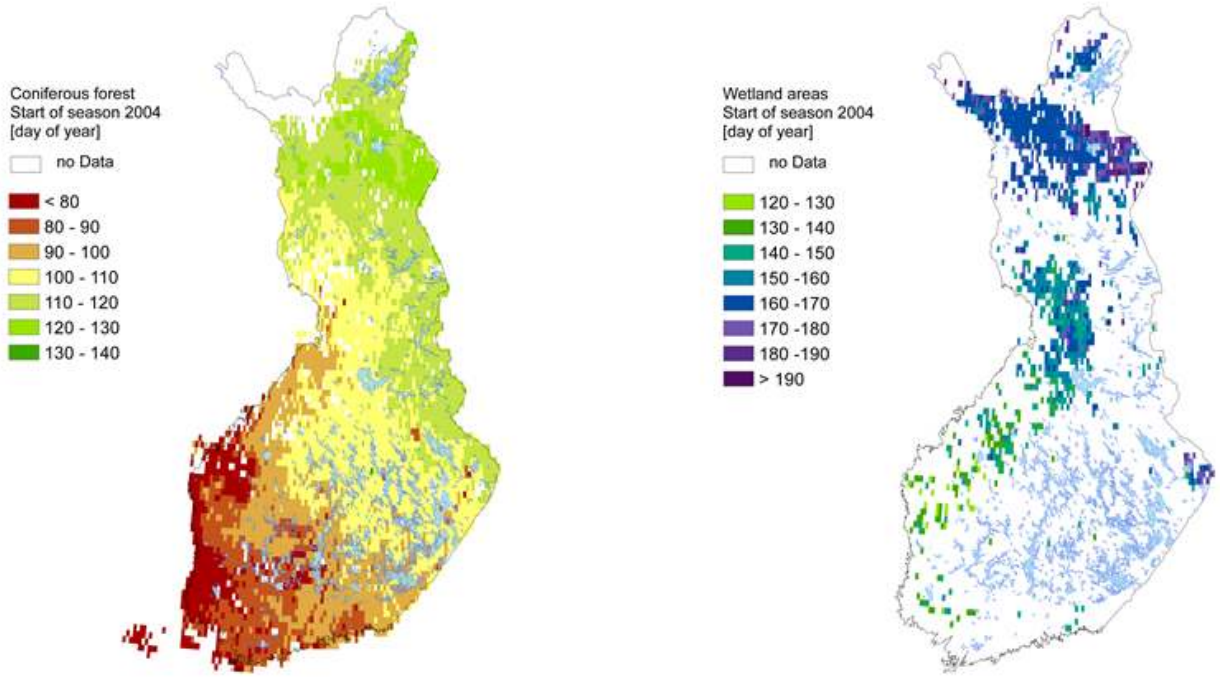

Figure 4: Comparison with modelled start of season