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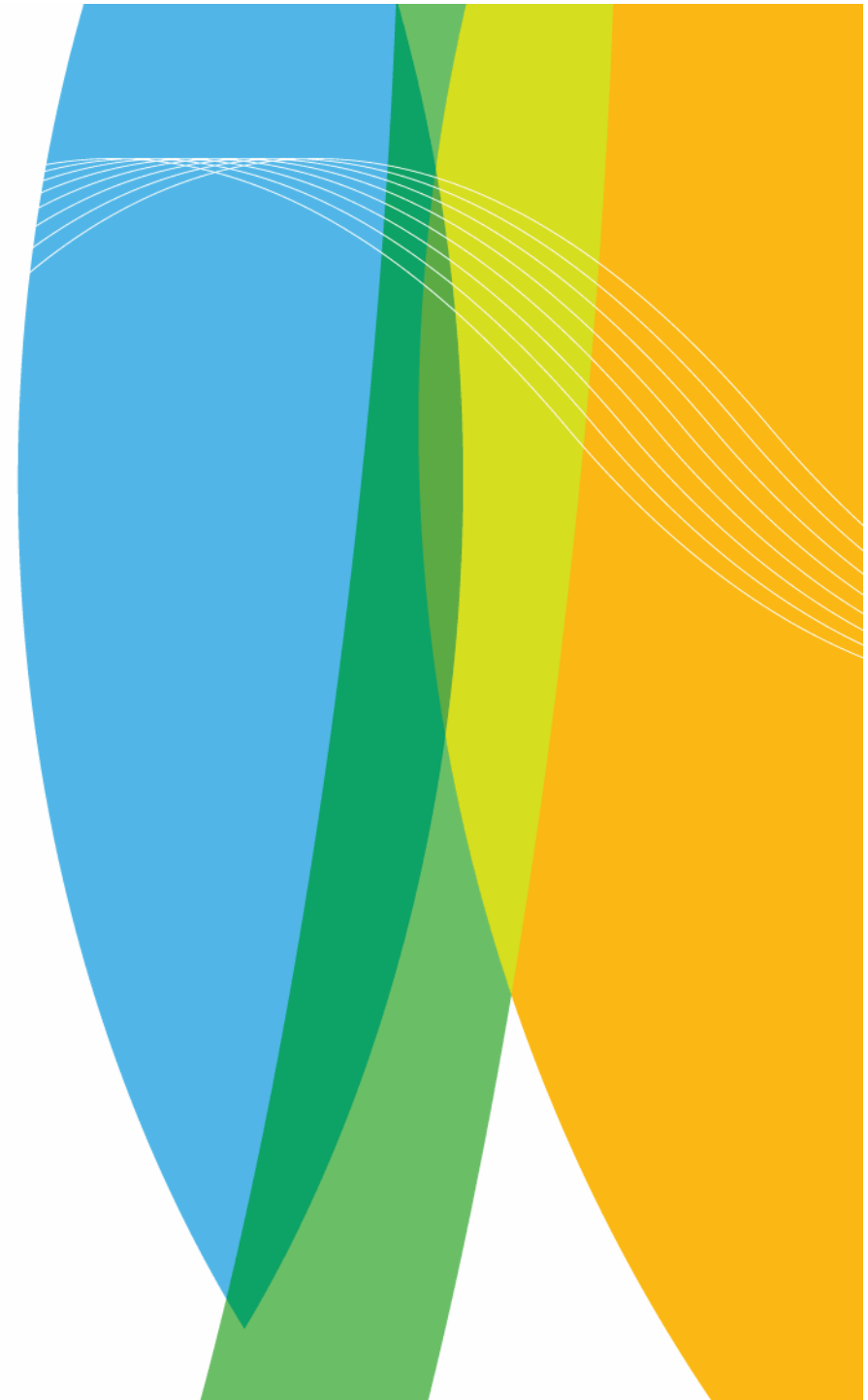
ANALYSIS AND FORECASTS OF THE BIRCH POLLEN SEASON IN EUROPE USING ATMOSPHERIC AND BIOLOGICAL MODELS

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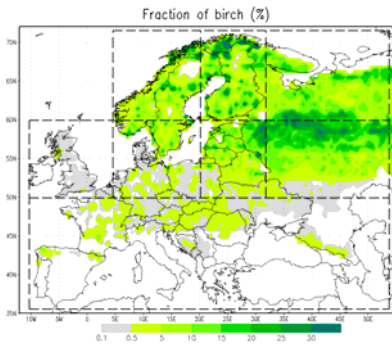
(3) University of Helsinki



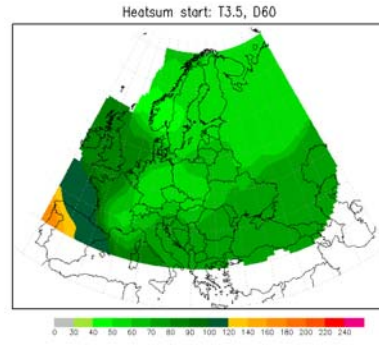


SILAM-POLLEN forecasting system NWP

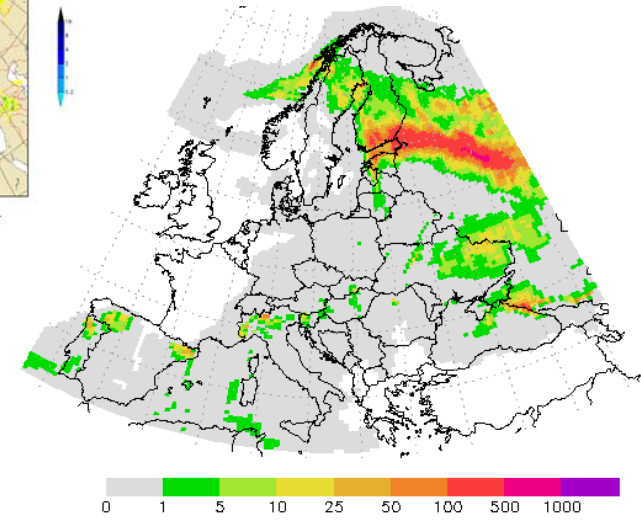
Birch fraction map



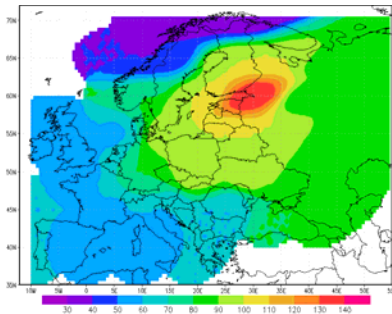
Start of flowering
Temp. sum thresh



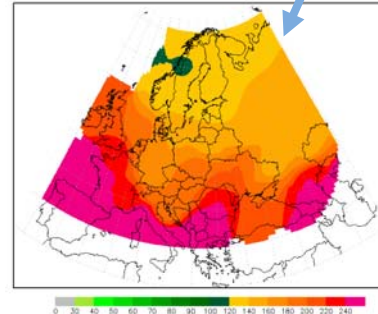
Pollen concentr.[#/m3]



Nbr of pollen grains
(% vs normal)

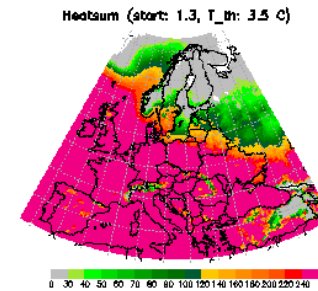


End of flowering
Temp. sum thresh

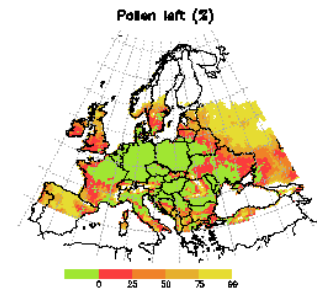


Dispersion model
SILAM

Release
Transport
Sinks



Temp. sum



pollen still in
catkins, %

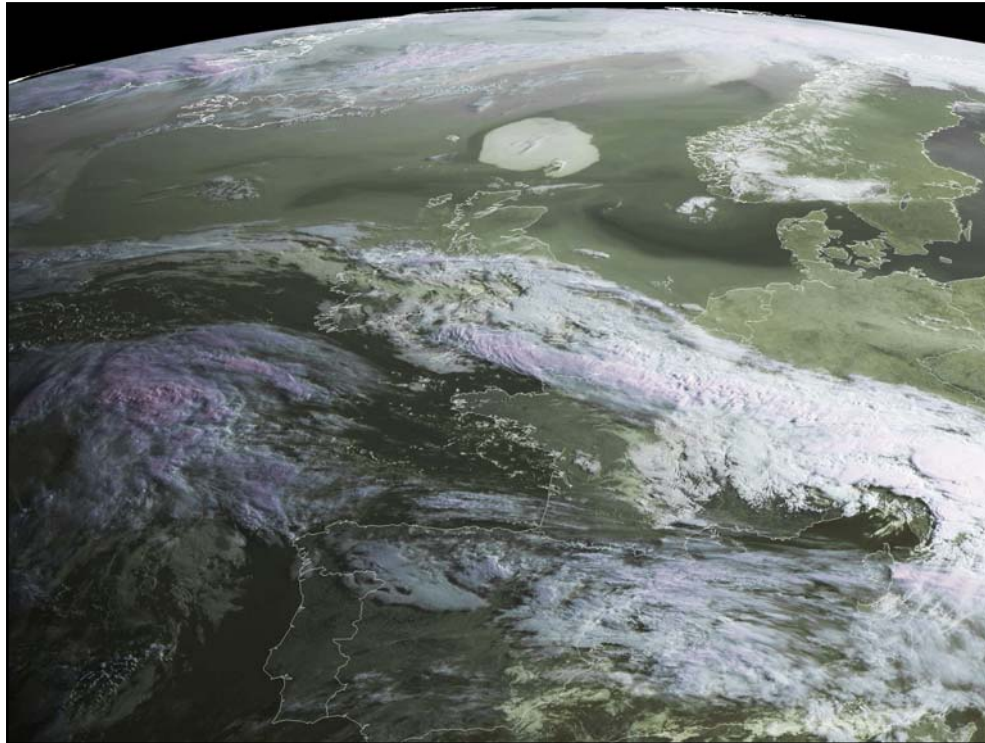


Results in spring 2006

- **Cold spring over large area in Europe**
- **Rapid warming, no rain**
- **Short but intensive birch pollen season**
- **Before local flowering and partly at the same time long-range transport episode in Finland (and Europe)**
 - “Pollen monster” from Russian forests to Iceland



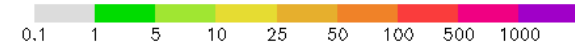
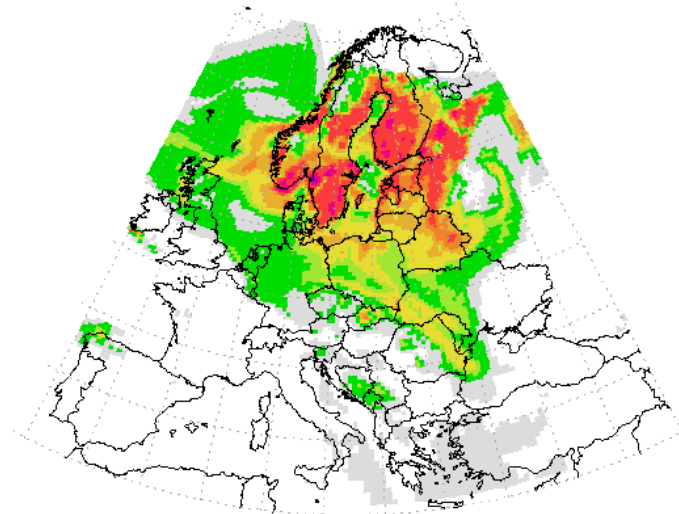
Birch pollen concentrations in Europe 9.5.2006



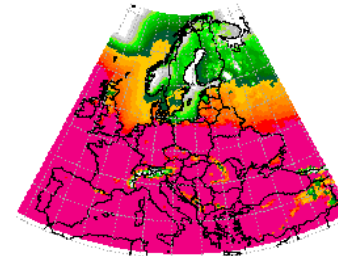
EUMETSAT 9.5.2006 06 UTC

“Smoke/pollen plume over Europe and the Northern Atlantic (2-11 May 2006)”

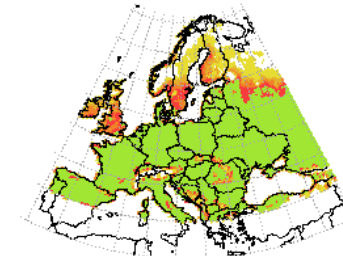
Birch pollen concentration (grains/m³)
06Z09MAY2006



Heatsum (start: 1.3, T_th: 3.5 C)



Pollen left (%)





Turku 2006

- **Even small pollen counts in April well predicted**
- **Timing good**
- **Shape of the curve is good, but concentrations are not reliable**

SILAM output hourly,
pollen observations
daily averages

