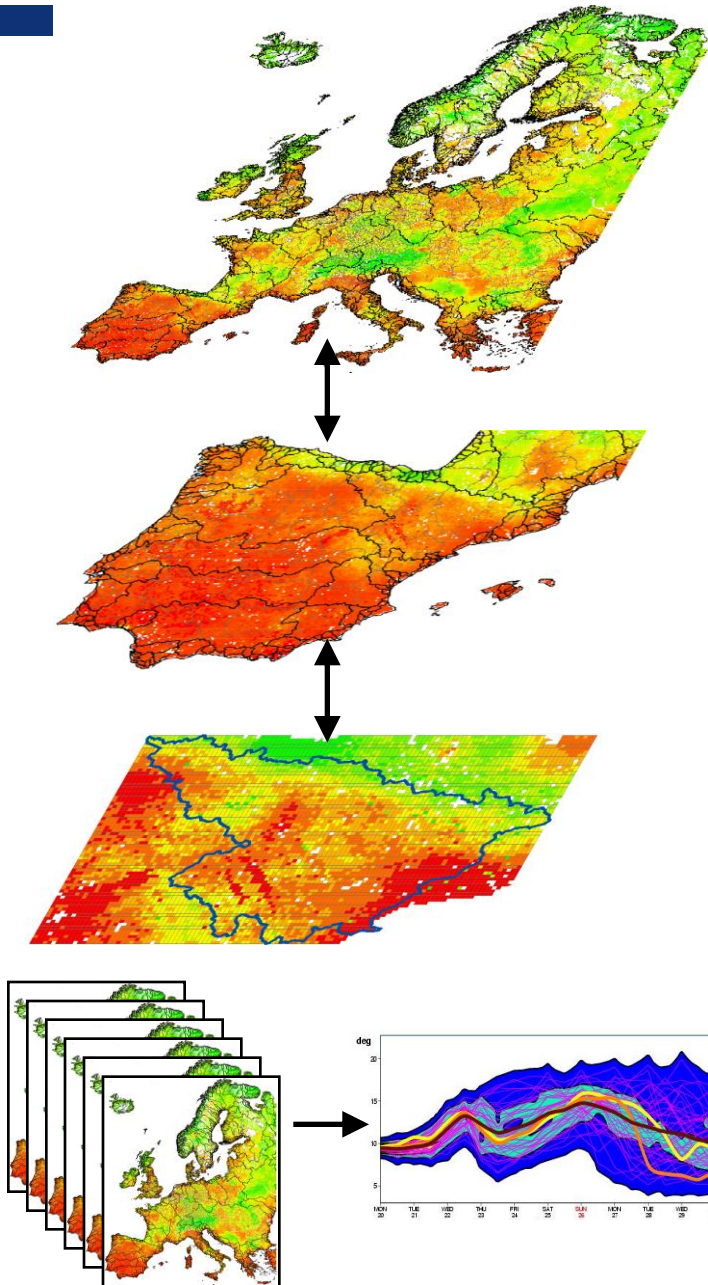


7, 2008

1



- Platform for drought detection and monitoring, forecasting, and information exchange
- Commonly agreed products (e.g. drought indices)
  - joint comparison and analysis of information
  - mutual exchange of knowledge & methodologies
  - direct up- and downscaling
- Multi-scale approach, integrating
  - EU / continental level
  - MS level / international level
  - Regional, local / basin scale
- Subsidiarity principle:
  - European level information (+ platform) to be developed and managed at CEC-JRC
  - National datasets managed at (interested) MS
  - regional information processed by (interested) river basin / regional environmental authorities
- Exploiting medium- & long-range meteorological ensemble forecasts (weeks to month)

## Vision of a European Drought Observatory

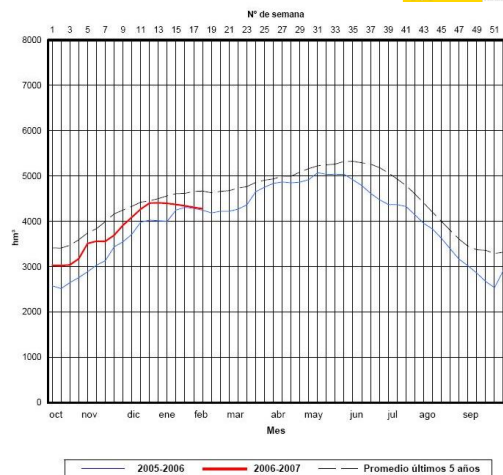
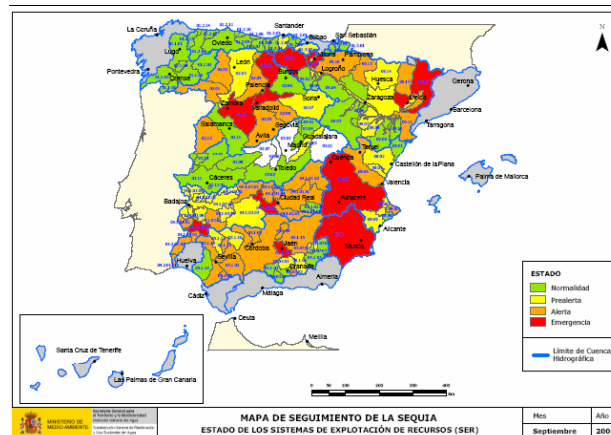
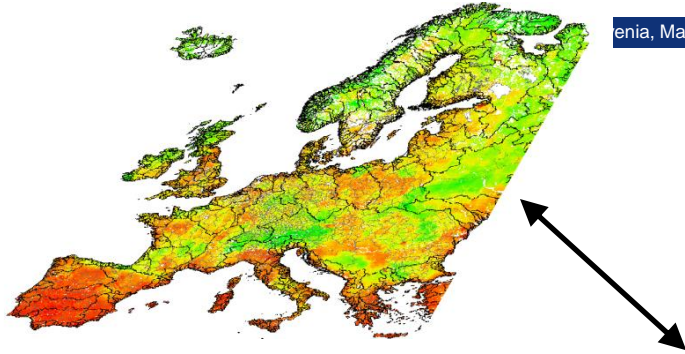
- **WWW-based platform** for drought monitoring, forecasting, and information exchange
- **Multi-scale approach**, integrating EU / continental level, MS / (multi-)national level, and regional / river basin scale
- Commonly agreed suite of products as minimum standard that are produced routinely on all levels
  - e.g. SPI, Q95, soil moisture anomaly, ...
  - **decentral data** holding and management, but **direct linking and exchange** between levels by common standards & formats
  - allows for direct up- and downscaling, comparison, analysis, and validation
  - provides a knowledge-based platform for discussion and exchange
  - regular feedback process between all levels for comparison and improvement
- Platform to be developed and tested at JRC
- Choice of indicators will continuously improve and extend over time
- Annual user community workshops
- Continuous exchange with research community, thus benefiting from latest methodologies, new indicators, indices, etc.
- Access to information managed at respective level  
(public / user community / restricted)

## Subsidiarity principle

- EU / continental level:
  - managed at JRC
  - European-level partner organisations (e.g. ECMWF, EUMETSAT)
  - using European-wide / continental scale datasets
  - providing continuous and consistent overview information
  - large spatial scale allows for exploitation of long-term forecasts (up to months)
  - users: Commission services, MS, and regional bodies, public
- national / inter-national level:
  - at relevant & interested MS authorities, DMCSEE, ...  
(Ministry for Environ., National Meteo. / Hydro Services, ...)
  - using national datasets, homogeneous for the entire territory
  - linking and integrating national drought observatories (if existing)
  - issuing national warnings, restrictions, ...
- regional / local / river basin scale:
  - run by interested regional environmental agencies, river basin authorities, ...
  - using local / regional data and networks
  - providing additional detailed local information
  - regional / basin scale measures of water management

enja, March 6-7, 2008

4



example ES:

- European Level Activities

- JRC: soil moisture, SPI, ...
- e.g. ECMWF: meteorological forecast products

- Observatorio Nacional de la Sequía

- Ministerio de Medio Ambiente
- Estado de los sistemas de explotación de recursos

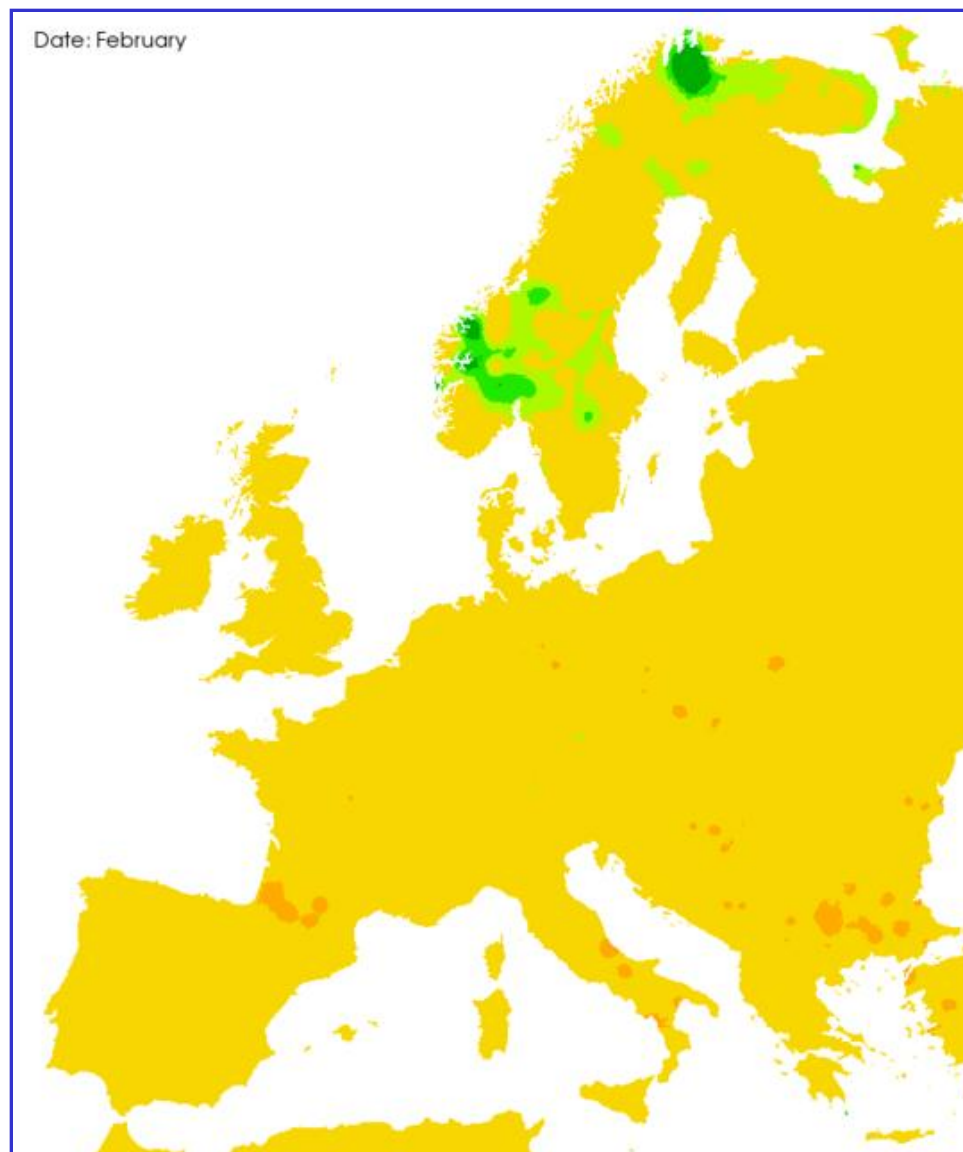
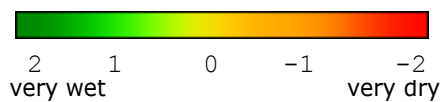
- Confederación Hidrográfica del Ebro

- Indices mensuales
- Evolución de la reserva hidraulica

## Way forward

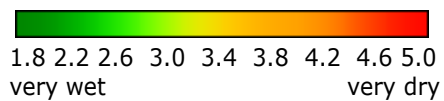
- develop basic portal of EDO at JRC
- start with pilot version of EDO
  - including European overview level
  - small number of MS, international, and regional authorities
- first workshop in 2008 (?) with interested partners
  - collect existing information
  - review experiences gained with National Observatories so far
  - propose (and agree?) first set of basic drought parameters to be included
  - discuss common format, presentation
- stepwise, bottom-up approach:
  - v0.1: linking existing internet pages
  - v0.2: first common drought index produced and presented in a harmonized way
  - ...
- further development and testing of drought indices (e.g. low flows from EFAS)
- research & development on drought forecasting (ECMWF monthly forecasts)
- networking with scientific community (e.g. XEROCHORE)
- international exchange (e.g. NDMC)

## Monthly Precipitation Anomaly

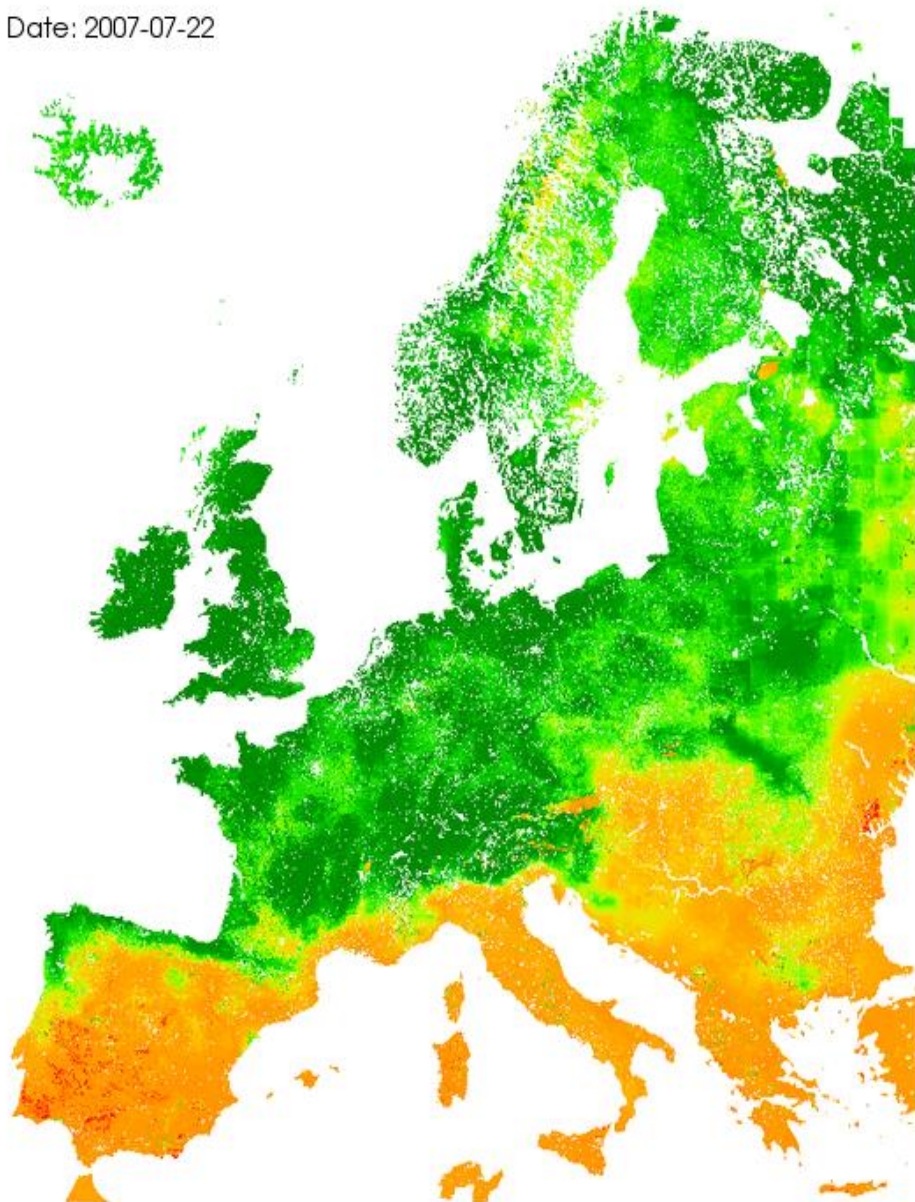




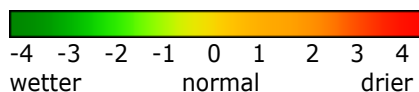
## Daily Soil Moisture Map



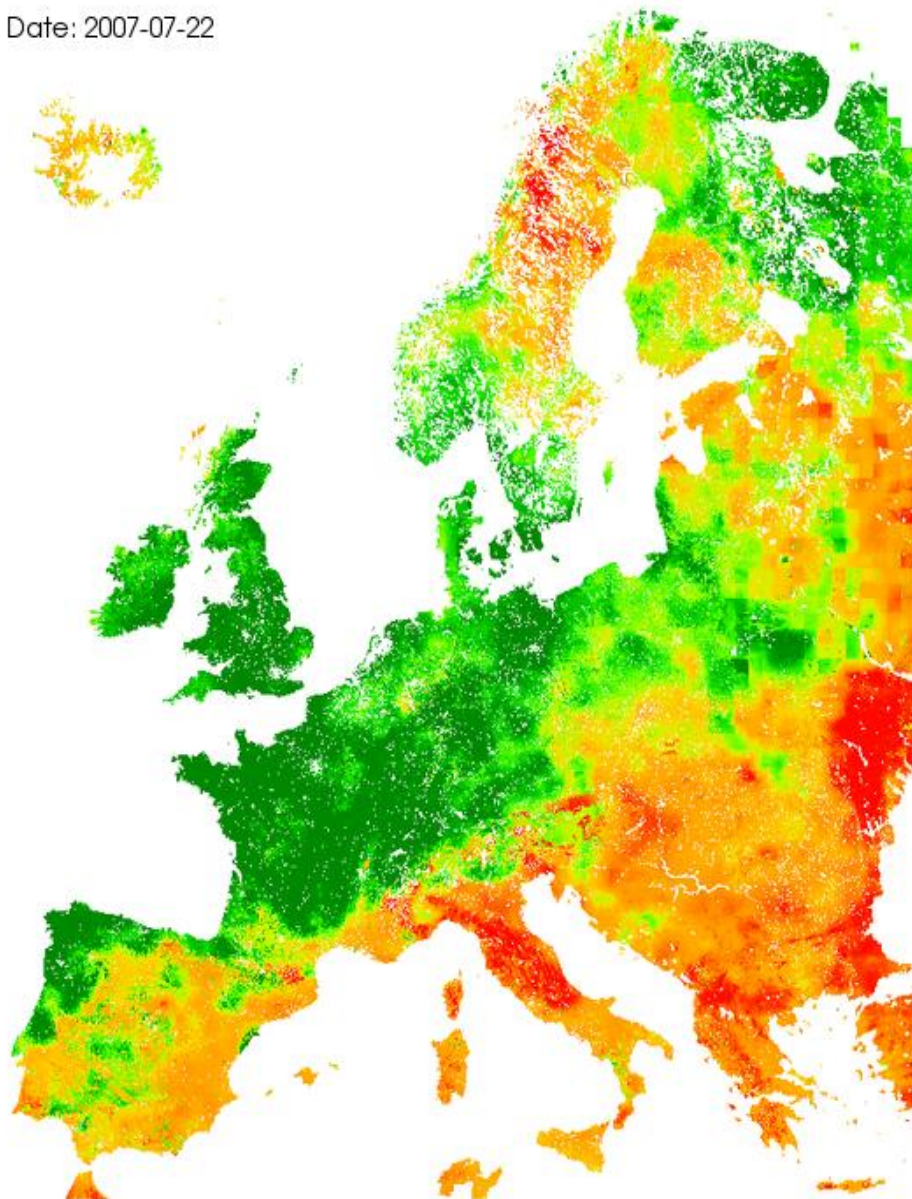
Date: 2007-07-22



## Daily Soil Moisture Anomaly

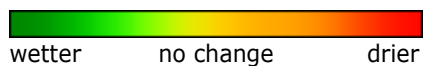


Date: 2007-07-22

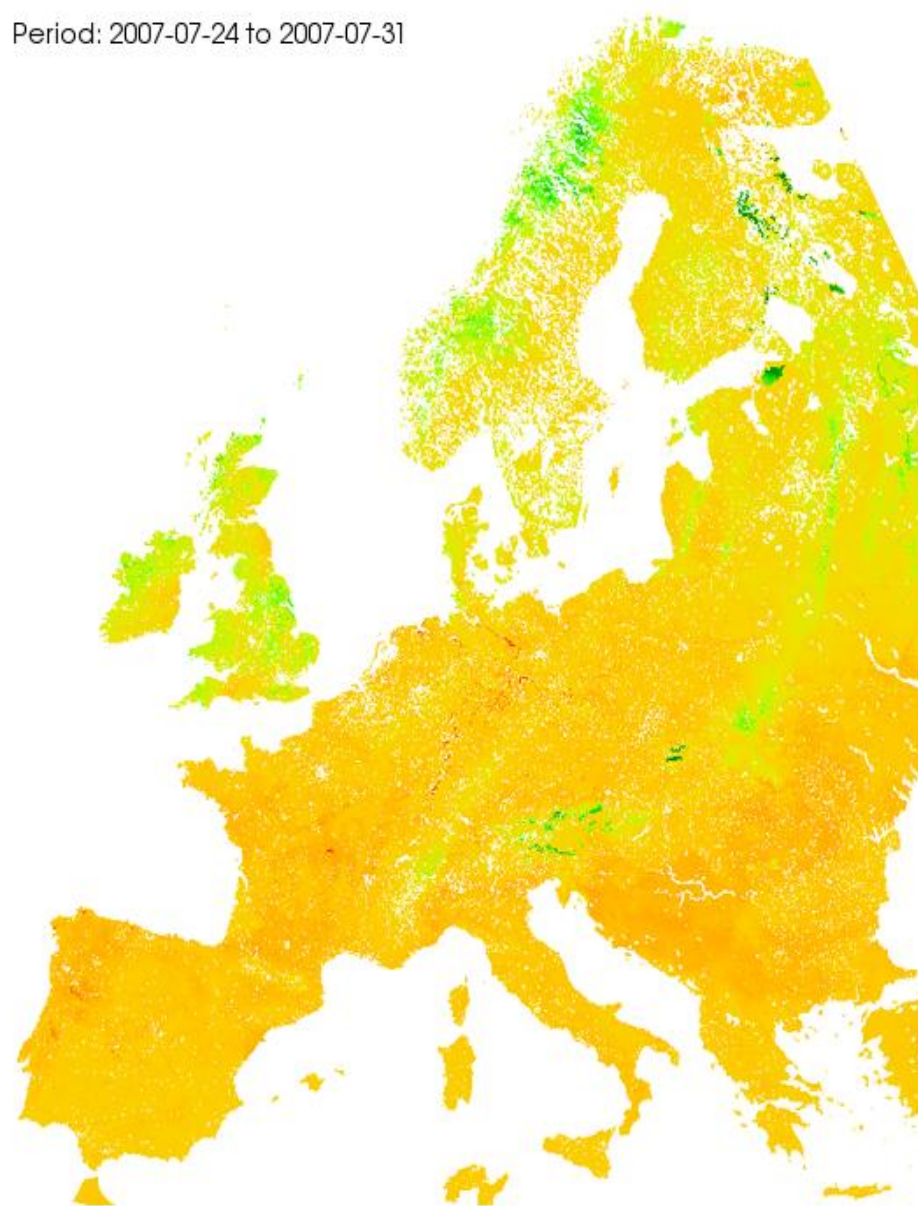




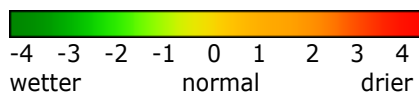
## Forecasted Soil Moisture Trend



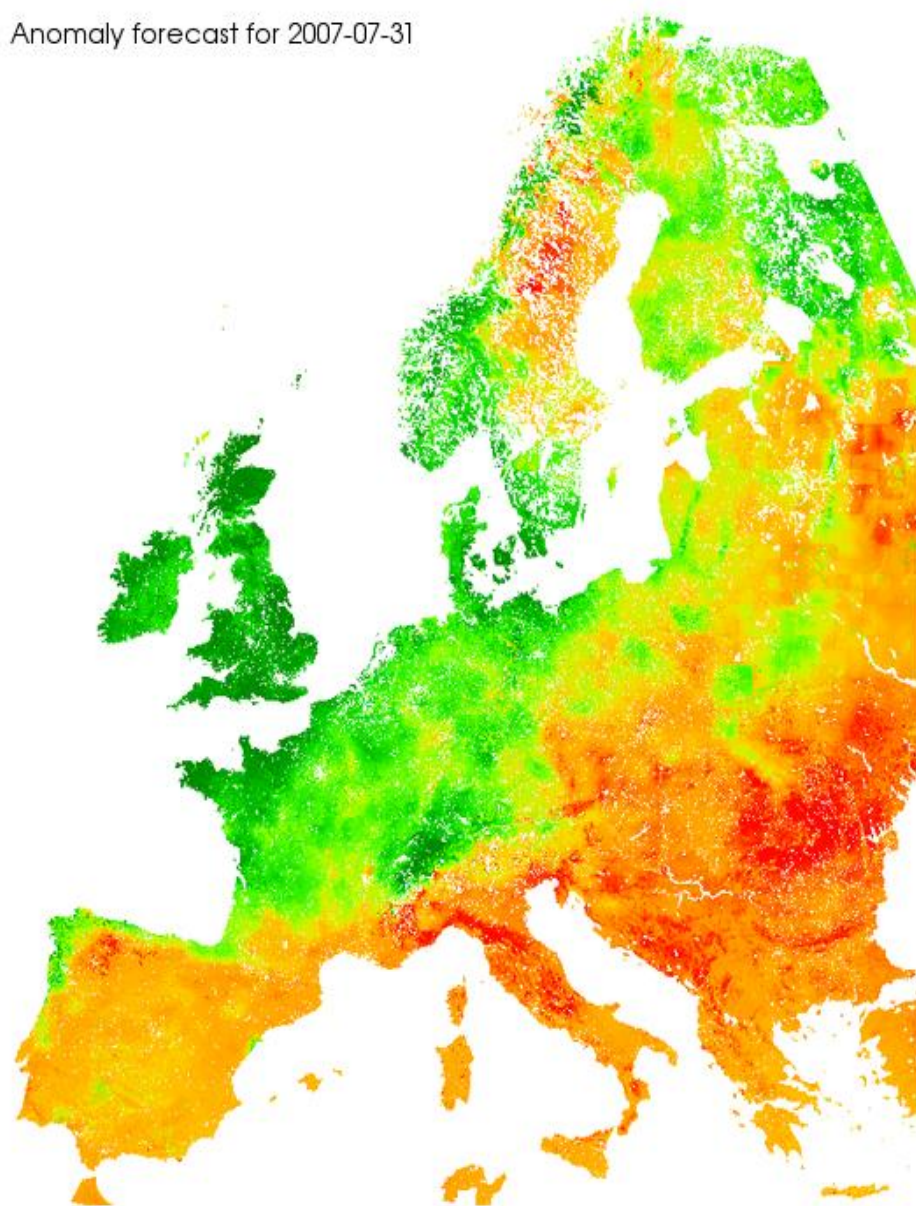
Period: 2007-07-24 to 2007-07-31




## Forecasted Soil Moisture Anomaly



Anomaly forecast for 2007-07-31



## Regional Information

 **Layers**

**Static\_layer**


☐ Country Borders


☒ NUTS3 region

☐ Soilure Moisture


☒ Anomaly


☐ Elevation

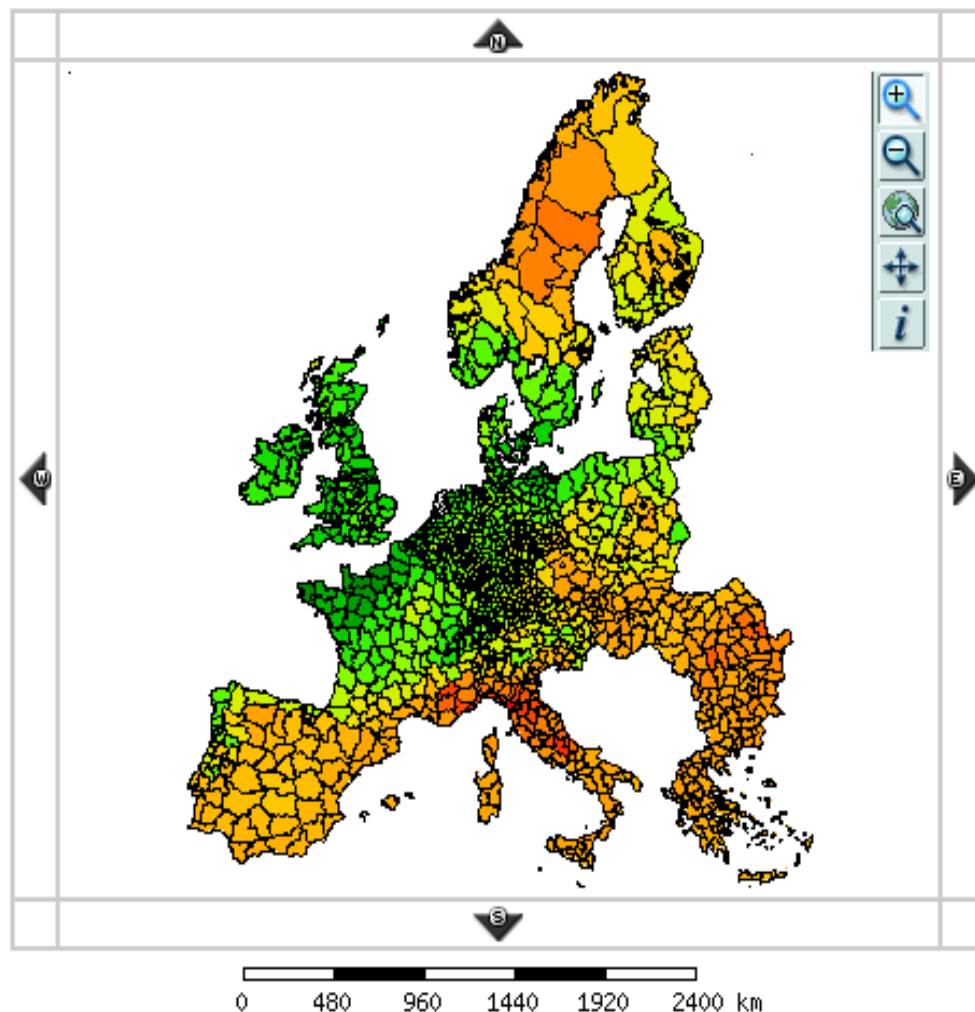
 **Redraw Map >>**

 Java Mode Enabled  
Click to Disable

**Keymap**

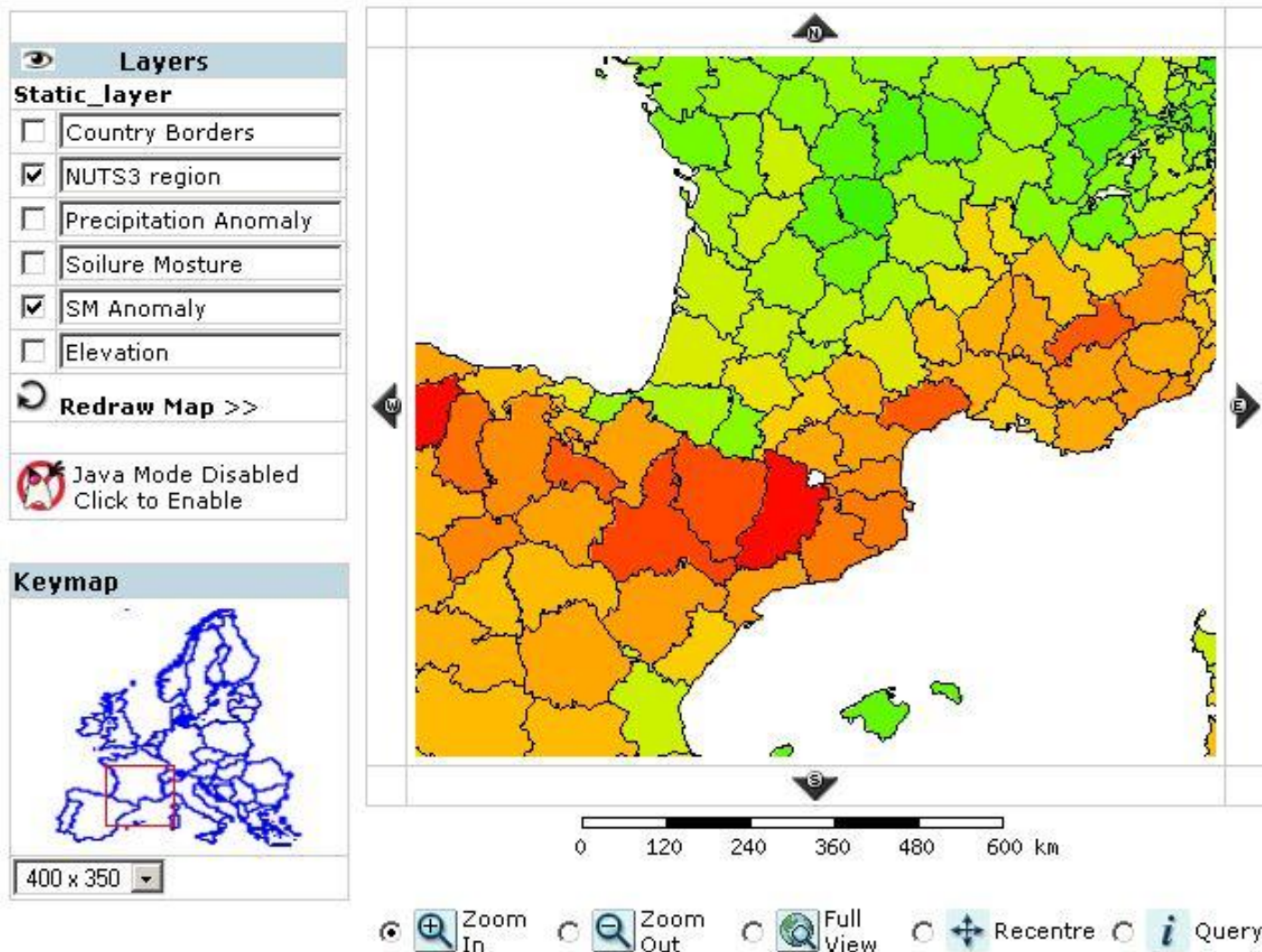


400 x 350 



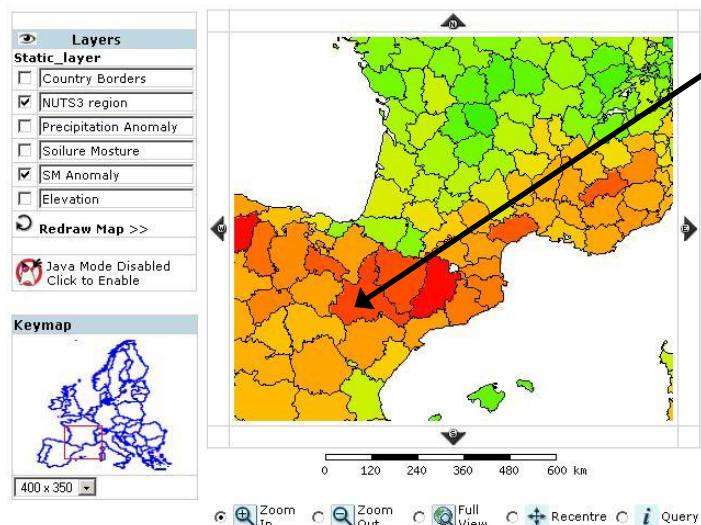


## Regional Information

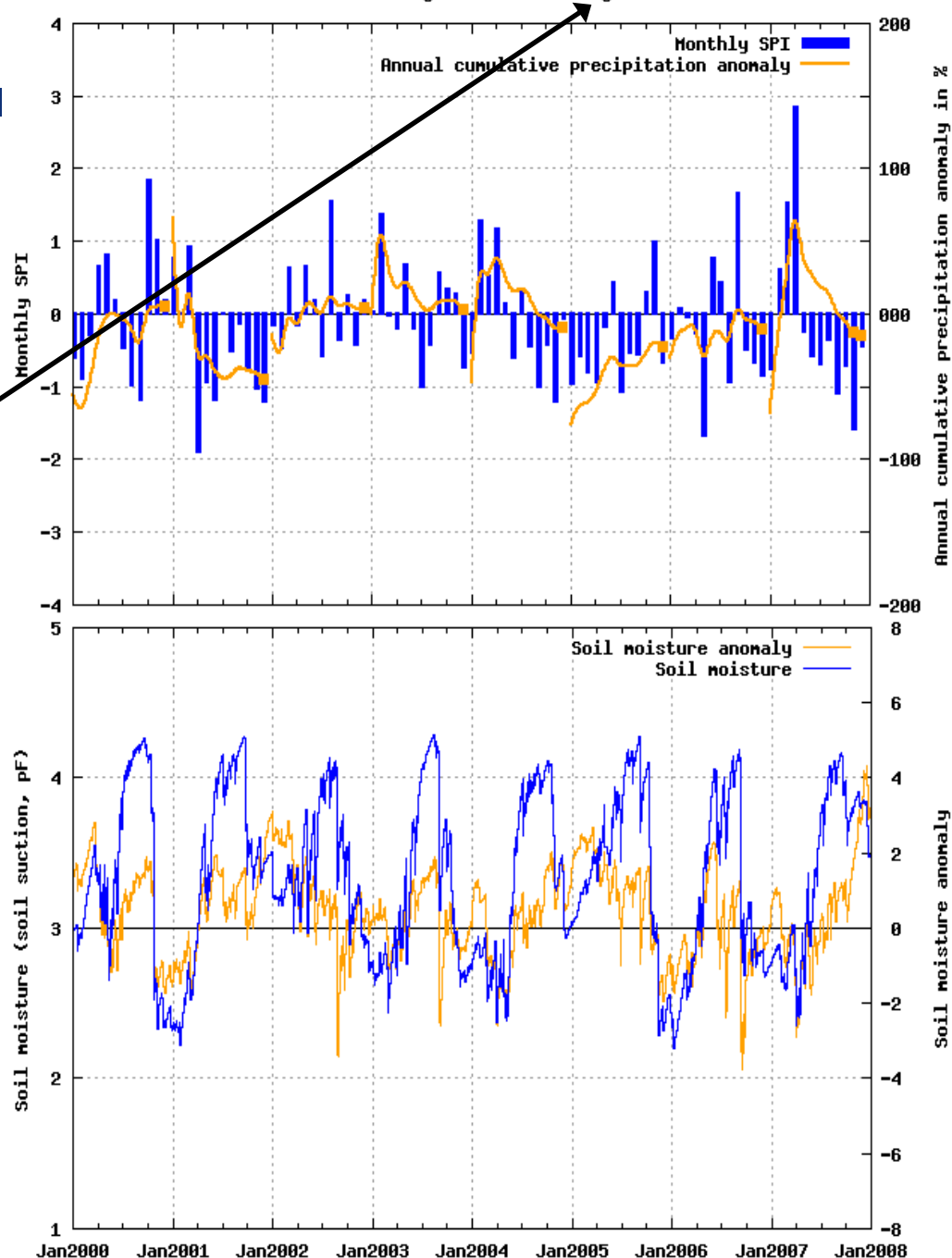




# Regional Information

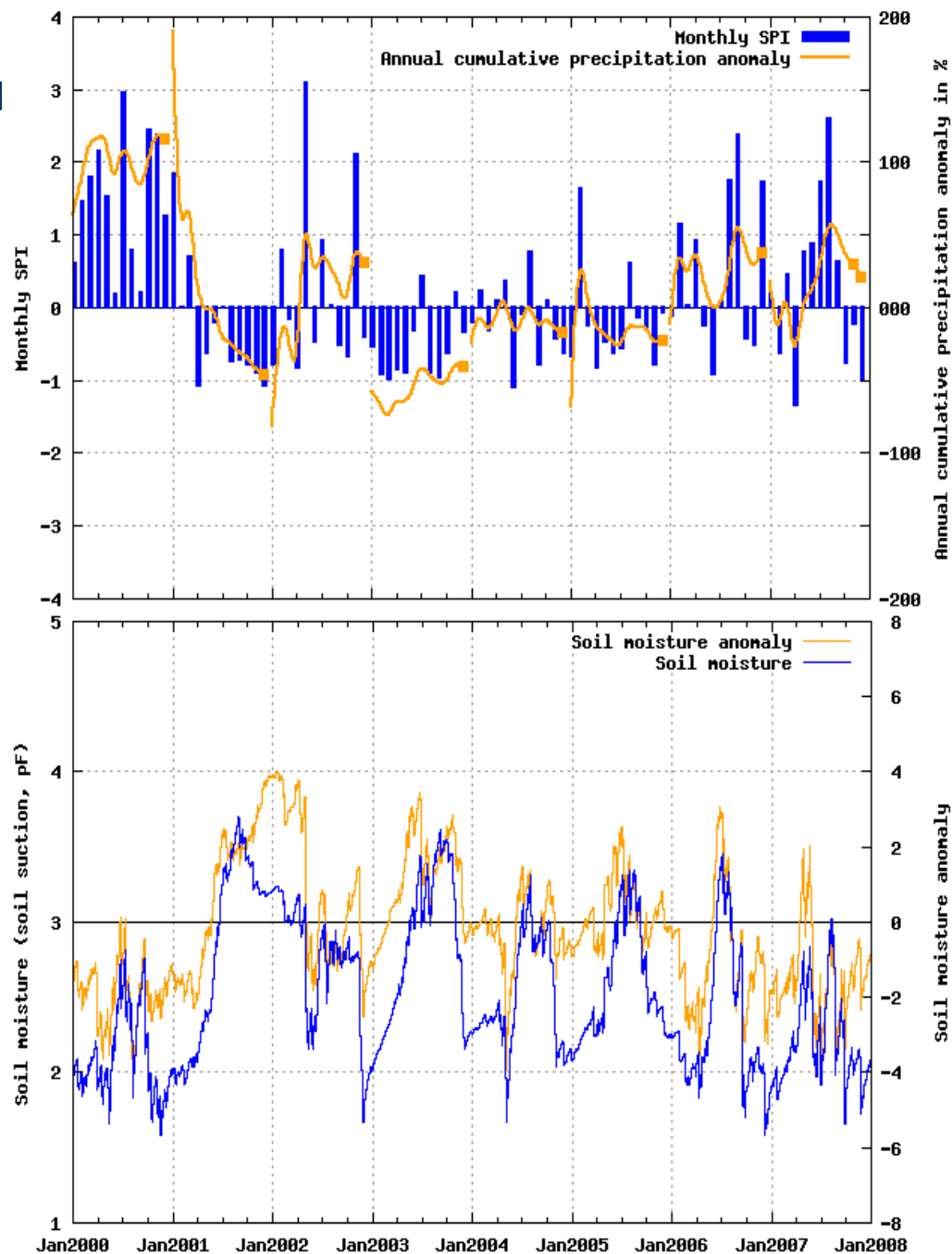


Precipitation and soil moisture development from year 2000 to today for NUTS3 region ES243 Zaragoza



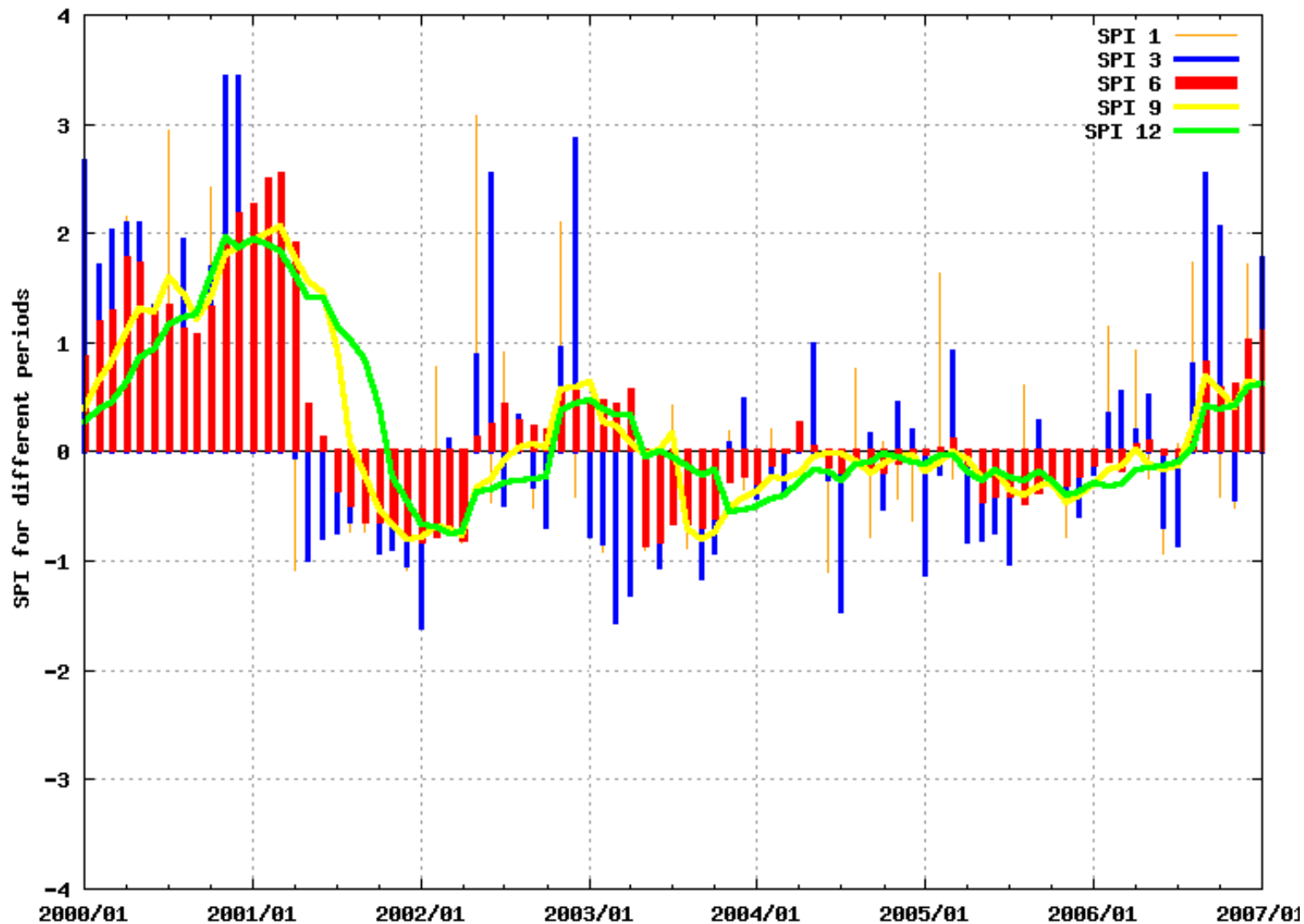
# Regional Information

Precipitation and soil moisture development from year 2000 to today  
for NUTS3 region ITC41 Varese



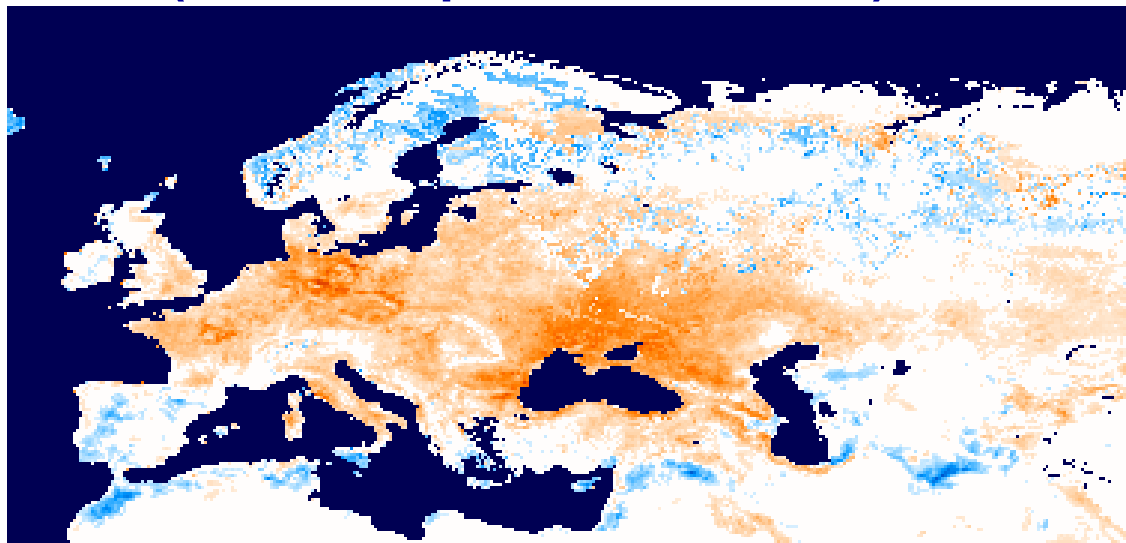
## Regional Information

1- monthly SPI from year 2000 to today  
for NUTS3 region ITC41 Varese



## Anomalies of March-April-May cumulated FAPAR (reference period 1998-2005)

2003



2005

