



Global Wildfire Information System (GWIS)

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Background of a global system on forest fires

Existing initiative of a global wildland fire early warning system under GOFC Fire IT

2009-2011 GEO WP Wildland Fire Warning System at Global Level (dropped)

October 2011, GOFC Fire IT Stresa (IT) proposal to develop a global wildfire information system under GOFC (by JRC)

April 2013, GOFC Fire IT Wageningen (NL) development of beta system under EFFIS

October 2013, Earsel (GOFC Fire IT meeting) Coventry (UK) discussion on implementation of the GWIS by including task under GEO WP – no funding/potential support/visibility

November 2013, proposal of a Global Wildfire Information System under GEO and GOFC Fire IT – GEO WP 2012-2015 (Short proposal prepared by C. Justice, J. San-Miguel and F. Gaetani and info sent by email to GOFC Fire IT network for consultation)

March 2014, adoption of the GEO WP

April 2014 – teleconference as a kick-off for the GWIS development



GEO WP 2012-2015

DI-01-C4: Global Wildfire Information System

Leads: Canada (CFS), EC (JRC, jesus.san-miguel@jrc.ec.europa.eu), South Africa (CSIRO), and GTOS (GOFC-GOLD)

Priority Actions

1. Establish a Global Wildfire Information System (GWIS) providing harmonized fire information (e.g. fire danger). Build on initial activities of the GOFC-GOLD Fire IT
2. Undertake a review of wildfire information systems building on existing reviews of operational systems for fire danger information
3. Promote the networking of major national and regional fire information providers. Organize a workshop convening key national and regional providers, e.g. Australia, Canada, Central and South America, China, New Zealand, Russia, South Africa, USA, ...
4. Link with fire communities dealing with fire aspects at global scale (e.g. burnt area assessment, emission estimation)
5. Further develop the GWIS by integrating regional data wildfire information sources



GEO WP 2012-2015

DI-01-C4: Global Wildfire Information System (teleconference)

Component Leads and Contributors:

- Jesus San-Miguel-Ayanz (EC-JRC, GOFC-GOLD Fire IT), Chair
- Krishna Prasad Vadrevu (GOFC-GOLD Fire IT)
- Antonio Martucci (FAO, NRL)
- Bill de Groot (CFS, Canada)
- Fang Chen (Institute of Remote Sensing and Digital Earth –RADI- CAS, China)
- Paolo Fiorucci (CIMA Research Foundation, Italy)
- Vince Ambrosia (NASA Applied Science Program, USA)

•**Action 1:** GEO Secretariat to develop a mock up of website for GWIS. Main features should include a page for uploading/downloading documents; list of GWIS contributors/leads and their contacts; list of relevant systems and projects being contributed to GWIS. (EoB: 30 June, 2014)

•**Action 2:** GEO Secretariat and Krishna V. to provide a list of current GEO and Fire-IT initiatives and projects related or complementary to the establishment of a GWIS. (EoB: 30 June, 2014)

•**Action 3:** Jesus SM to circulate a short document to the group asking for clarification on the definition of data and information in the implementation of a GWIS. (EoB: 31 May, 2014)

•**Action 4:** GEO Secretariat to circulate a paper about the definition of Essential Biodiversity Variables (EBV) to stimulate discussion on a possible similar approach for fire-related essential variables. (EoB: 31 May, 2014)

•**Action 5:** All to provide to Jesus SM information on relevant meetings that could be used to assess progress among the participants in the development of GWIS (e.g. Fire Research Conference – Coimbra 2014). (EoB: 31 May, 2014)

•**Action 6:** Jesus to update the GEO C4 component sheet information (EoB: ASAP)



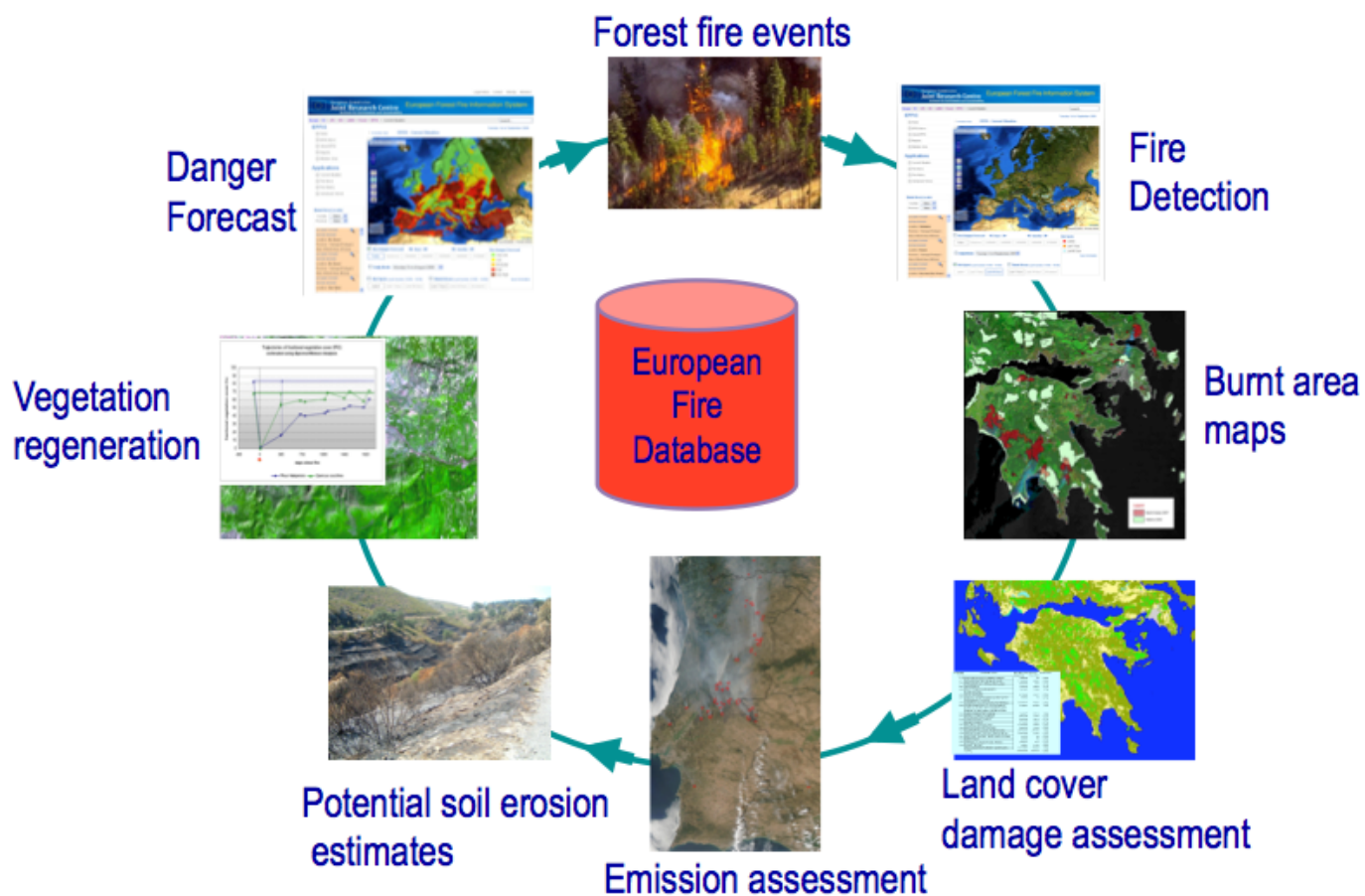
From GOFC Fire IT – Stresa, Oct. 2011

Global Fire Information System to build on the work in EFFIS in collaboration with national and International organizations under the GOFC Fire IT umbrella.

- The European Forest Fire Information System (EFFIS) has been established by the Joint Research Centre (JRC) and the Directorate General for Environment (DG ENV) of the European Commission in close collaboration with the fire services in the countries, and national/regional networks.
- It supports the services in charge of the protection of forests against fires in EU and neighbor countries, and provides the EC services and the European Parliament with harmonized information on forest fires in Europe/Globally.
- Aims at providing up-to-date, reliable information on forest fires at the European/global levels, providing European/Global level assessments during both pre-fire and post-fire phases, thus supporting fire prevention, preparedness, fire fighting and post-fire evaluations.
- EFFIS is intended as complementary system to national and regional systems in the countries, to provide harmonized information required for international collaboration on forest fire prevention and fighting and in cases of trans-boundary fire events.



EFFIS – Extension to a Global Wildfire Information System (beta system in partnership with the GOFC Fire IT, supported by GEO)





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The screenshot displays the EFFIS web interface. At the top, the European Commission logo and the text "JOINT RESEARCH CENTRE" and "EFFIS- European Forest Fire Information System" are visible. A breadcrumb trail reads: "Europa » EC » JRC » IES » FRC » FOREST » EFFIS » Applications » Current Situation". The main content area is titled "Current Situation" and shows a date of "Tuesday 29th of July, 2014".

On the left side, there are several interactive elements:

- Fire Danger Forecast 2014 ⓘ
- Source: ECMWF (16 km resolution) ⌵
- Index: Fire Weather Index (FWI) ⌵
- Calendar for July (29, 30, 31) and August (1-6)
- Hot Spots ⓘ with options: 24 Hrs, 7 Days, 90 Days
- Burnt Areas ⓘ with options: 24 Hrs, 7 Days, 30 Days, All
- Country Boundaries ⓘ
- MapLayers section with a legend for Fire Danger Forecast:
 - Very Low (Green)
 - Low (Yellow)
 - Moderate (Orange)
 - High (Red)
 - Very High (Dark Red)
 - Extreme (Black)
- Burnt Area Locator section with dropdowns for Country (All) and Province (All).

The main map area shows a color-coded fire danger forecast for Europe. A search bar at the top of the map contains "type location..." and a "search" button. A vertical toolbar on the left of the map includes icons for home, pan, zoom in, zoom out, and full screen. The map shows high fire danger (red and orange) in the Balkans and parts of the Mediterranean, and lower danger (green and yellow) in Western Europe.



Global Wildfire Information System (beta application)



JOINT RESEARCH CENTRE

EFFIS- European Forest Fire Information System

Europa » EC » JRC » IES » FRC » FOREST » EFFIS

EFFIS

EFFIS

- ⌵ About EFFIS
- ⌵ Reports and Publications
- ⌵ Applications
 - ⌵ Current Situation
 - ⌵ Long-term fire weather forecast
 - ⌵ Fire History
 - ⌵ Firenews
 - ⌵ Data and Services
 - ⌵ **Global Wildfire Information System (beta viewer)**
 - ⌵ VGI (Beta)

WELCOME TO EFFIS

The European Forest Fire Information System (EFFIS) supports the services in charge of the protection of forests against fires in the EU countries and provides the European Commission services and the European Parliament with updated and reliable information on wildland fires in Europe.

A number of specific applications are available through EFFIS:



CURRENT SITUATION

The most up to date information on the current fire season in Europe and in the Mediterranean area. This includes today meteorological fire danger maps and forecast up to 6 days, daily updated maps of hot spots and fire perimeters.



FIRE NEWS

A selection of news from the press on wildland fires in Europe updated daily by the EFFIS team. News can be browsed for specific countries selected by the user from the news map.

EFFIS Damage Assesment

EFFIS Burned Area (hectares)

Total EFFIS Coverage

Mapped 84194

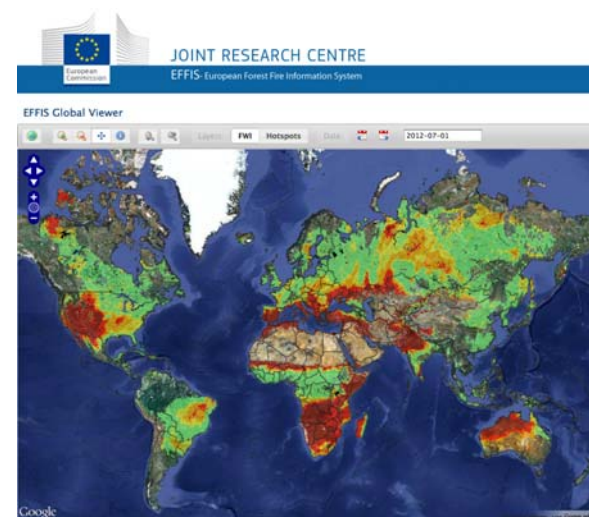
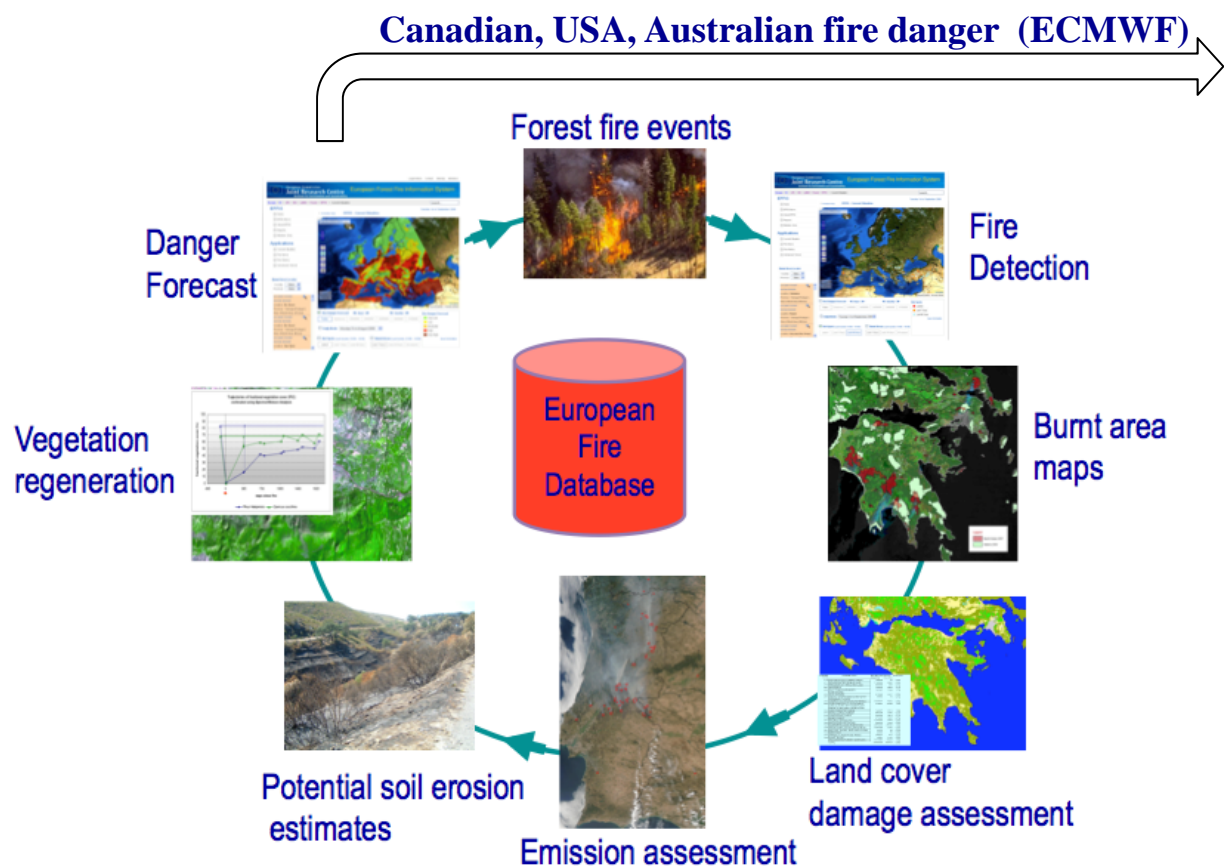
Estimated 112258.67

(Updated daily)

[information](#)




EFFIS – Extension to a Global Wildfire Information System (beta system in partnership with the GOFC Fire IT, supporting GEOSS)





Global Wildfire Information System (prototype)



European Commission

JOINT RESEARCH CENTRE

EFFIS- European Forest Fire Information System

Europa » EC » JRC » IES » FRC » FOREST » EFFIS » Applications » Global Wildfire Information System (beta viewer)

Global Wildfire Information System (beta viewer) Tuesday 29th of July, 2014

◀ increase map

Choose Date

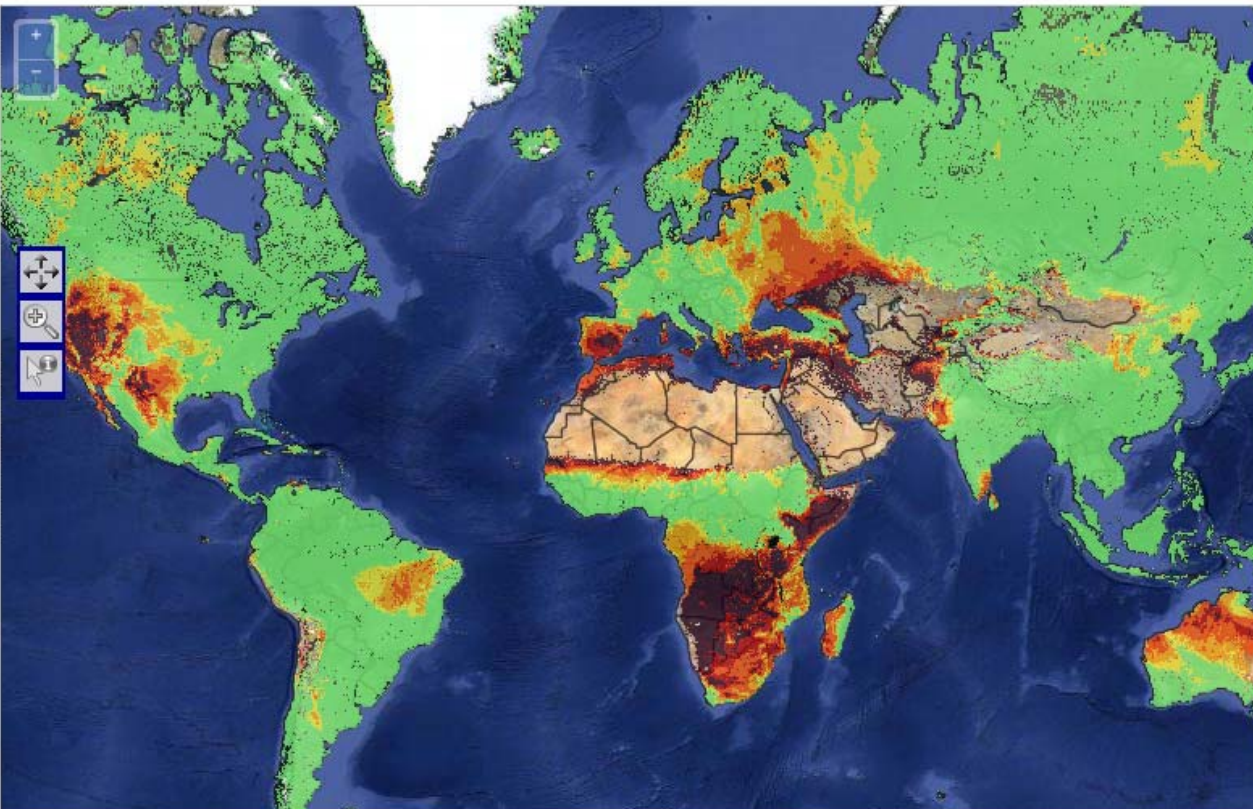
2014-07-28

- ✓ Fire Weather Index (FWI)
- Initial Spread Index (ISI)
- Build Up Index (BUI)
- Fine Fuel Moisture Code (FFMC)
- Duff Moisture Code (DMC)
- Drought Code (DC)

Legend

Fire Danger Forecast

- Very Low
- Low
- Moderate
- High
- Very High
- Extreme





Fire Danger Forecast

Global Fire Danger Forecast

Global fire danger forecast maps from day 1 up to day 10 high-res forecasts.

Global fire danger forecast maps from day 1 up to day 15 low-res forecast (EPS control run)

Global fire danger map from re-analysis fields EPS probabilities from day 1 to 15 days forecasts for a set of 5 critical thresholds of fire danger indices levels (tbd)

Global fire danger forecast anomalies

Monthly weather forecasts

Forecast weekly 2m temperature anomalies based on the Monthly Forecast System (MFS)

Forecast weekly temperature of soil / SST anomalies based on the MFS

Forecast weekly precipitation anomalies based on the MFS

Seasonal weather forecasts

Seasonal forecast with one month lead time of 2m temperature anomalies based on the S4

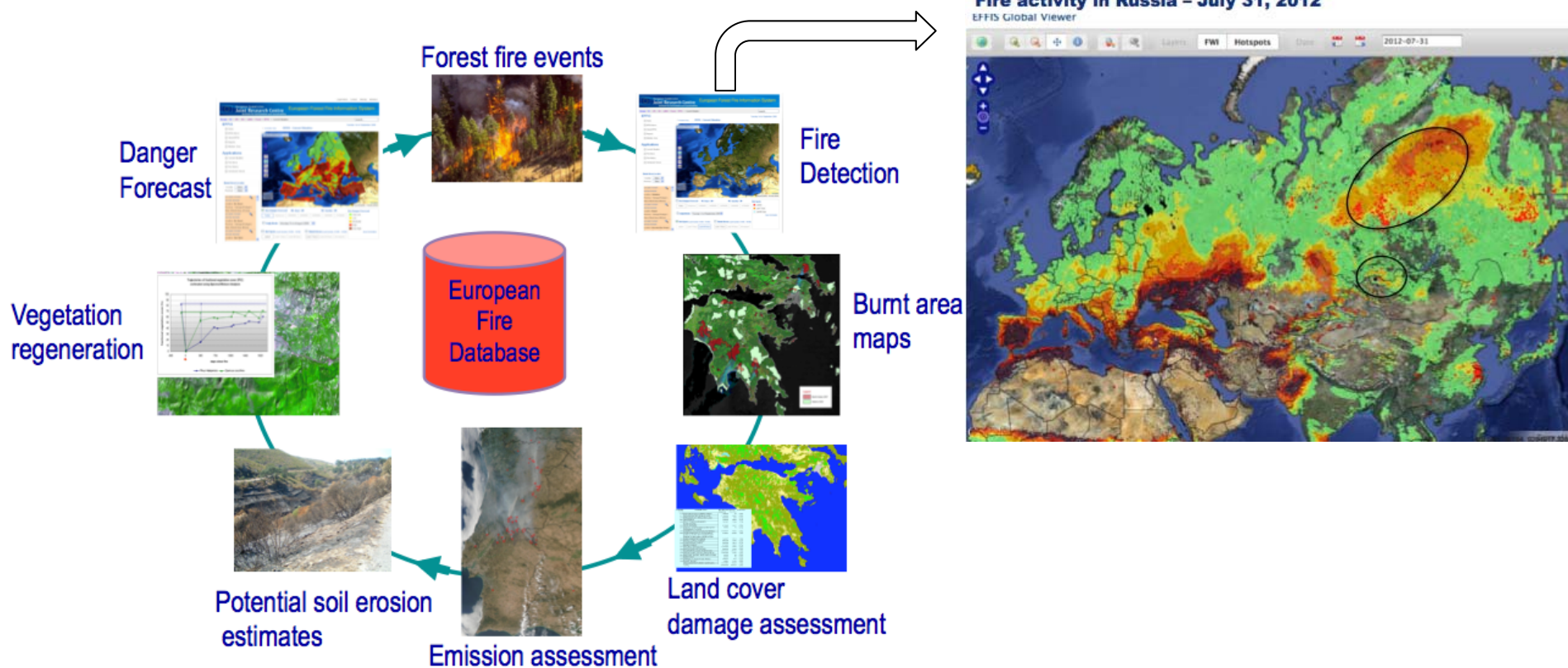
Seasonal forecast with one month lead time of precipitation anomalies based on the S4

(Reference climate from EPS re-forecasts run used as a base to assess the anomalies)



Global Wildfire Information System

(beta system in partnership with the GOFC Fire IT, supported by GEO)





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JOINT RESEARCH CENTRE

EFFIS- European Forest Fire Information System

Europa » EC » JRC » IES » FRC » FOREST » EFFIS » Applications » Global Wildfire Information System (beta viewer)

Tuesday 29th of July, 2014

Global Wildfire Information System (beta viewer)

increase map

Choose Date

2014-07-28

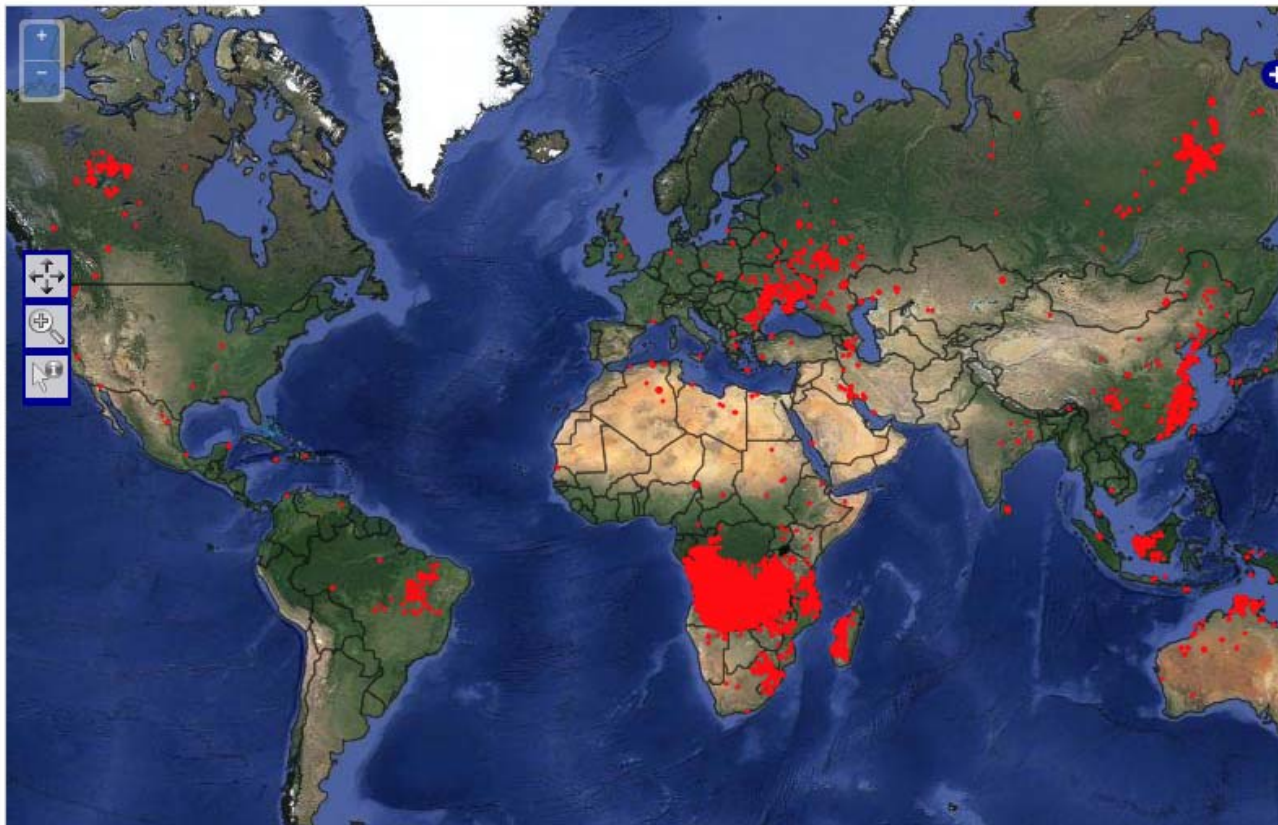
Layers

- Fire Danger Forecast
- Hot Spots
- Burnt Areas

Legend

Fire Danger Forecast

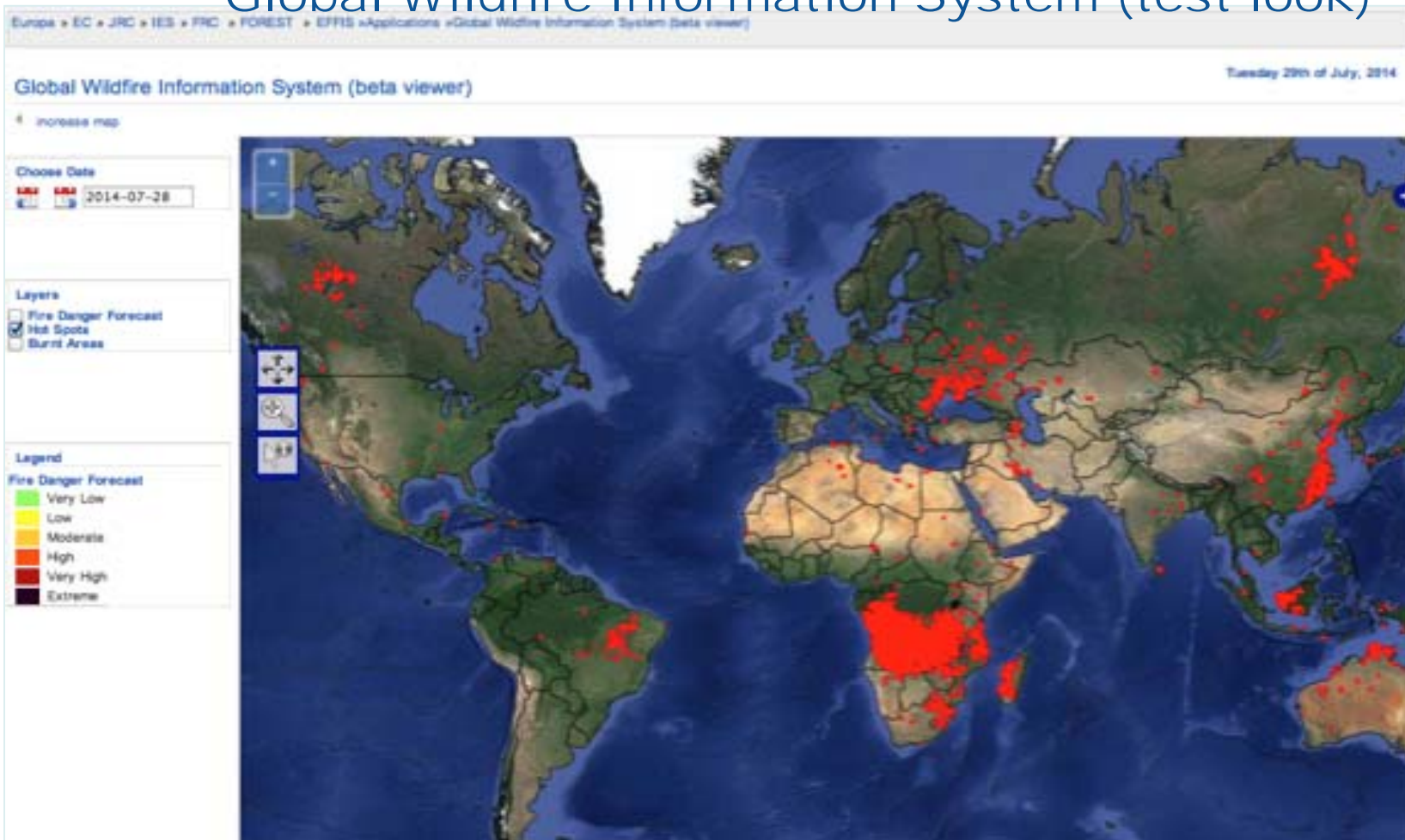
- Very Low
- Low
- Moderate
- High
- Very High
- Extreme





European Commission

Global Wildfire Information System (test look)



Universidad de Alcalá



Canadian Forest Service



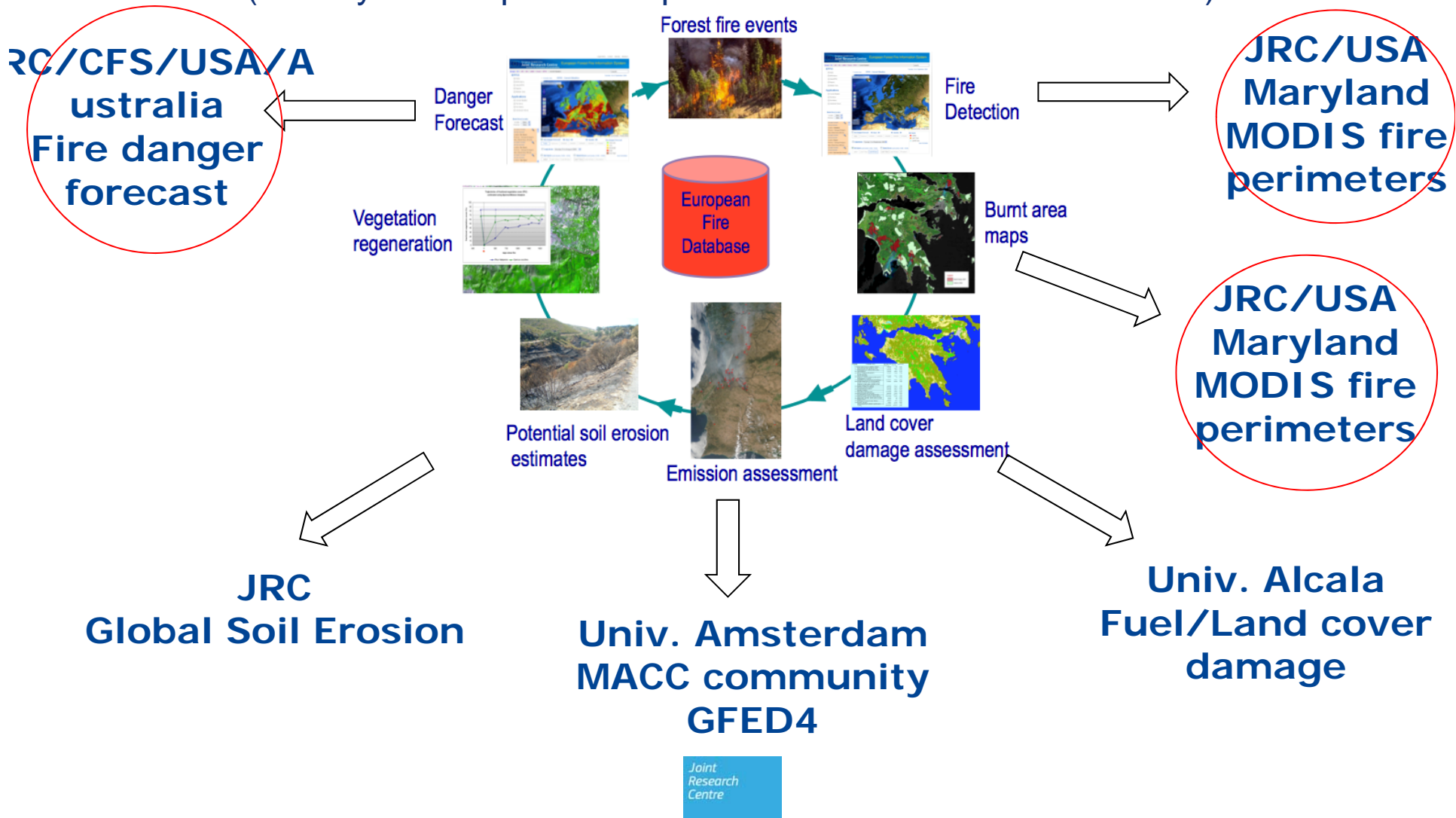
Copernicus





European

Global Wildfire Information System (beta system in partnership with the GOFC Fire IT and GEO)





Main provisional list of partners contributing to GWIS:

Information provision (regional service providers)
Calibration of products

- Canada (CFS)
- USA (NASA, Univ. Maryland, NOAA, Univ. South Dakota)
- Australia (CSIRO),
- South America (LATIF network, Mexico, Brasil)
- South Africa (CSIR)
- Europe (JRC, DE, UK, NL, ES)
- GEO Secretariat
- European Space Agency (ESA)

On-going links to:

- Russia
- China



Main potential services in GWIS:

- Harmonized up-to-date fire info at local/regional/global scale
- Country/region of interest profile
- Fire seasonality and impact, affected land cover
- Detailed information of single fire events
- Links to regional fire information providers (AFIS, Latif, ...)
- Integration of existing regional/thematic fire information systems (JRC national protected areas fire monitoring tool, emissions, ...)



Next steps:

- Further development of GWIS as a partnership system (logos of contributing organization)
- Follow-up actions from kick-off teleconference
- Interaction with national/regional service providers for integration (as far as possible) of data and services.
- Promotion/dissemination of info about the system

- October 2015 – Integration of EFFIS (and GWIS) under Copernicus up to 2020.
- Enhanced integration of Copernicus services with GWIS.



Thank you

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