

Monitoring of forest fires (wildfires) in Europe: The European Forest Fire Information System (EFFIS)

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EFFIS

■ Definition and scope of EFFIS

- System established by the Joint Research Centre (JRC) and DG Environment (ENV) as focal point for information on forest fires in Europe (1998)
- Provides EU level assessments during both pre-fire and post-fire phases, thus supporting fire prevention, preparedness, fire fighting and post-fire operations
- Complements national fire information systems through the provision of harmonised data, methods and standards

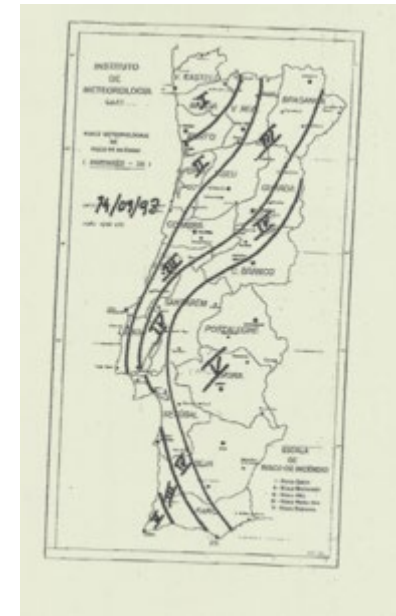
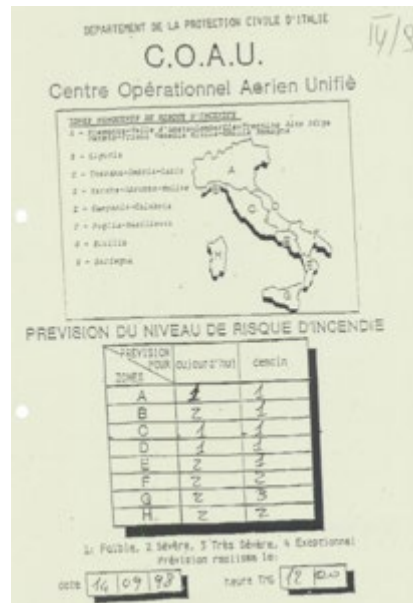
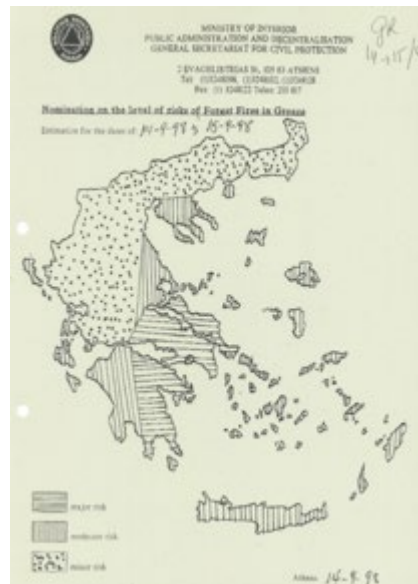
■ Users

- EC Services, European Parliament, national/regional forest fires and civil protection services of EU and non-EU countries
- FAO, United Nations Economic Commission for Europe, FAO *Silva Mediterranea*

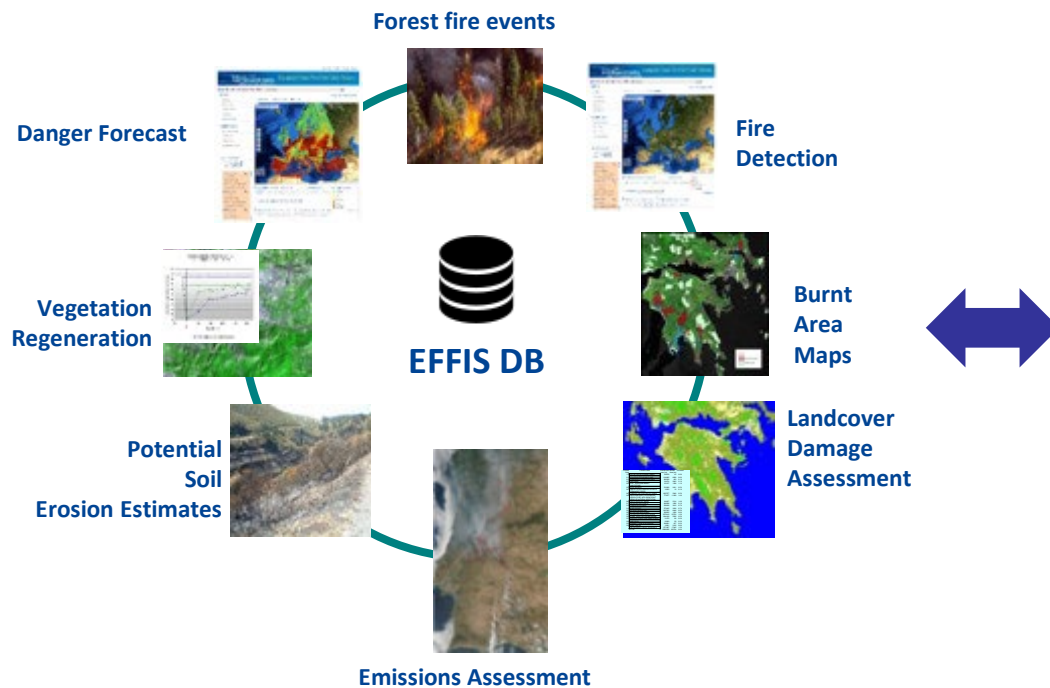
■ Operation and development

- Development by the JRC
- Operation supported by the EC Directorate Generals DEFIS (Copernicus Program), ECHO, ENV, JRC
- Since 2016 part of the Copernicus Emergency Management Services (CEMS)

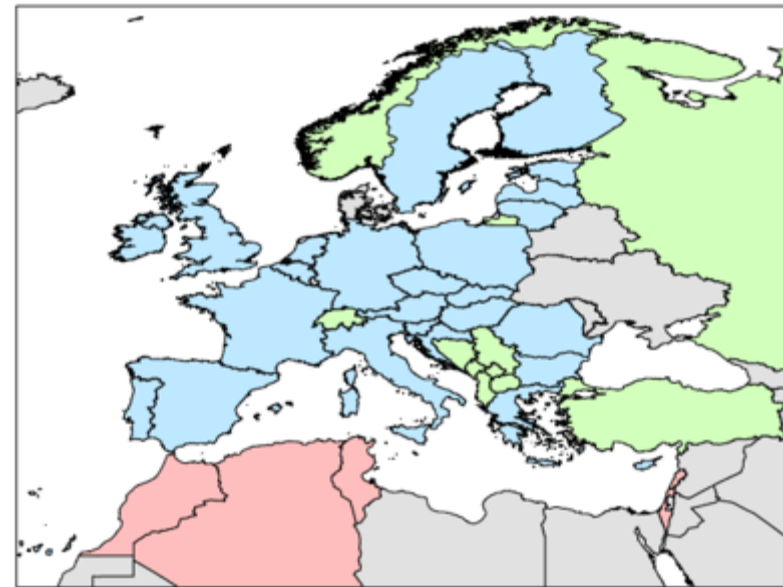
Fire danger exchange 1998... => the need for harmonization






EFFIS fire monitoring cycle



EFFIS Network – 43 countries



EFFIS Current Situation

Emergency Management Service

European Commission > JRC EU Science Hub > DRM > Copernicus EMS > European Forest Fire Information System (EFFIS)

About EFFIS ▾ Reports and Publications ▾ Applications ▾ Partners

Welcome to EFFIS

The European Forest Fire Information System (EFFIS) provides information on wildland fires in the EU countries and provides the European Parliament with updated and reliable information on wildland fires.

A number of specific applications are available:

- Long-term seasonal fire weather forecast
- Long-term monthly fire weather forecast
- Fire History
- Fire news
- Data and services

Since 1998, EFFIS is supported by a network of experts from 40 countries in European, Middle East and North African countries. In 2015, EFFIS became one of the components of the Emergency Management Services in the EU Copernicus program.

The link to some of the most widely used applications is provided below. Additional applications such as the extension of EFFIS to the global level into a Global Wildfire Information System (GWIS) are available through the side "Applications" box.

Current Situation Viewer

Long-term seasonal fire weather forecast

Long-term monthly fire weather forecast

Fire History

Fire news

Data and services

Visit the brand-new

GWIS Current Situation Viewer

EFFIS Damage Assessment

EFFIS Burned Area (ha)

Total EU28 Countries

Mapped: 56156 (13.3 % Forest)

Estimated: 74874.67

Total EFFIS Coverage

Mapped: 100025

Estimated: 133366.67

(Updated daily)

IRDA Disclaimer and layer information

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.

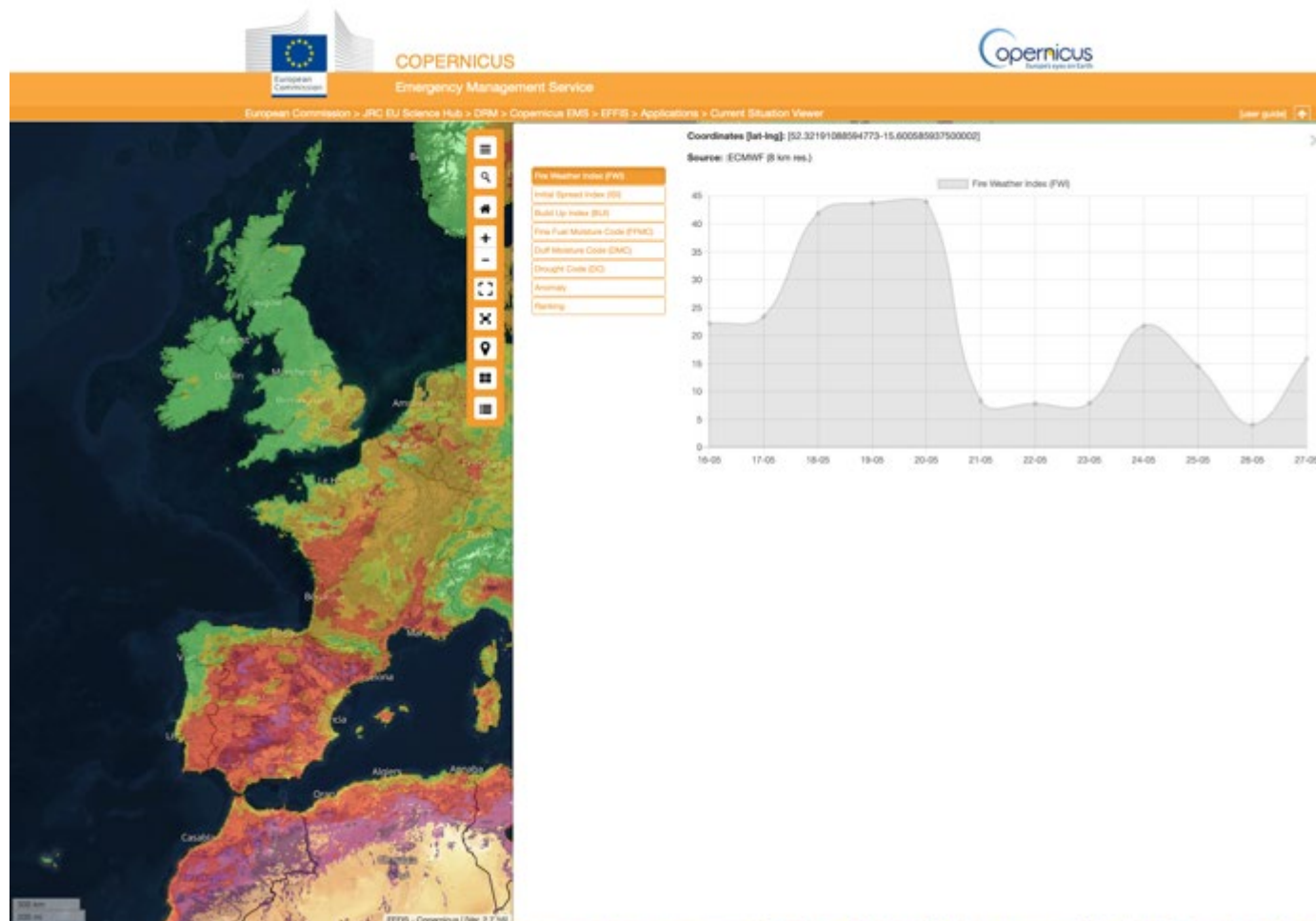
Applications

- Current Situation Viewer
- Long-term seasonal fire weather forecast
- Long-term monthly fire weather forecast
- Fire History
- Fire news

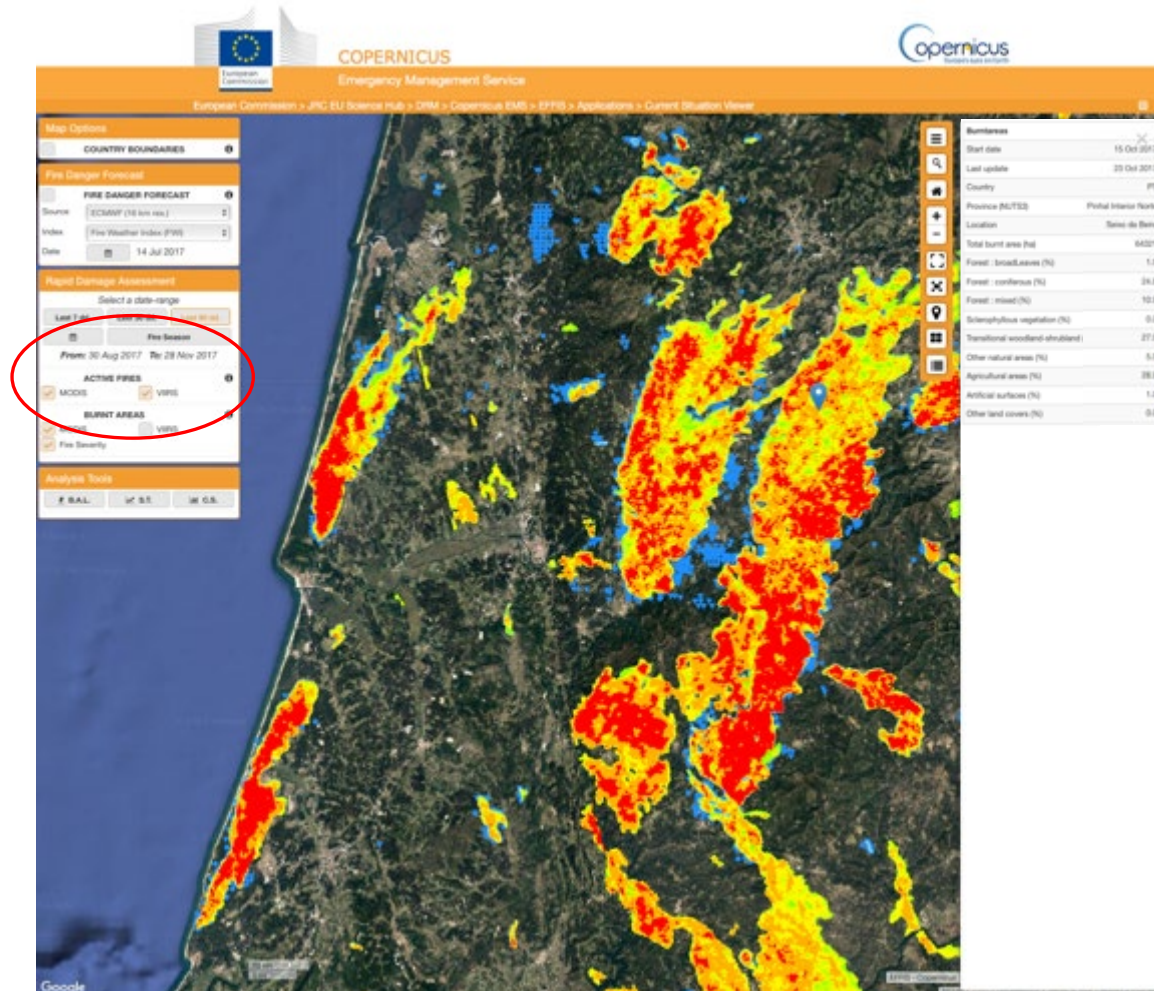


European
Commission

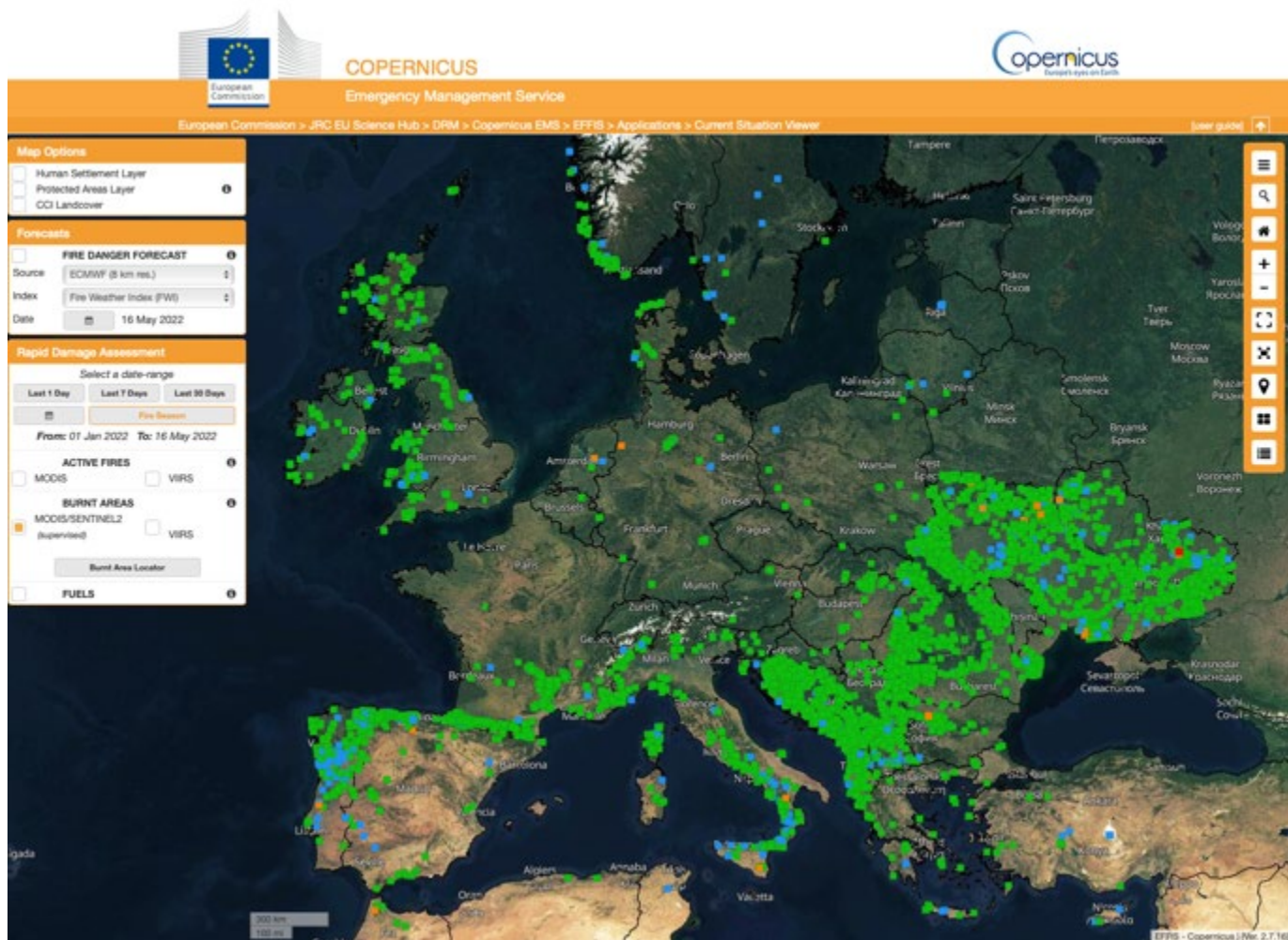
EFFIS - Fire Danger Forecast



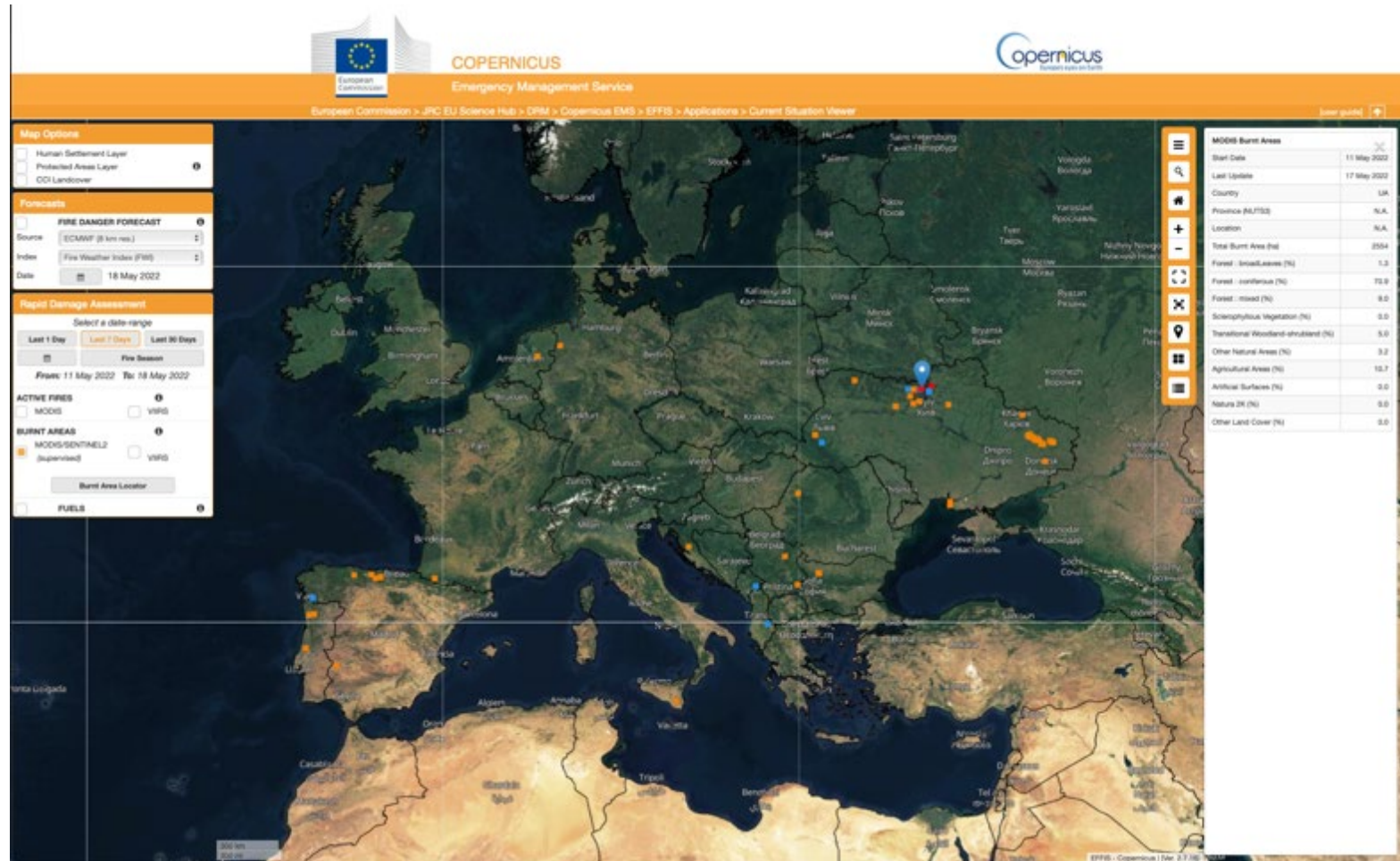
Active fire and burnt area mapping



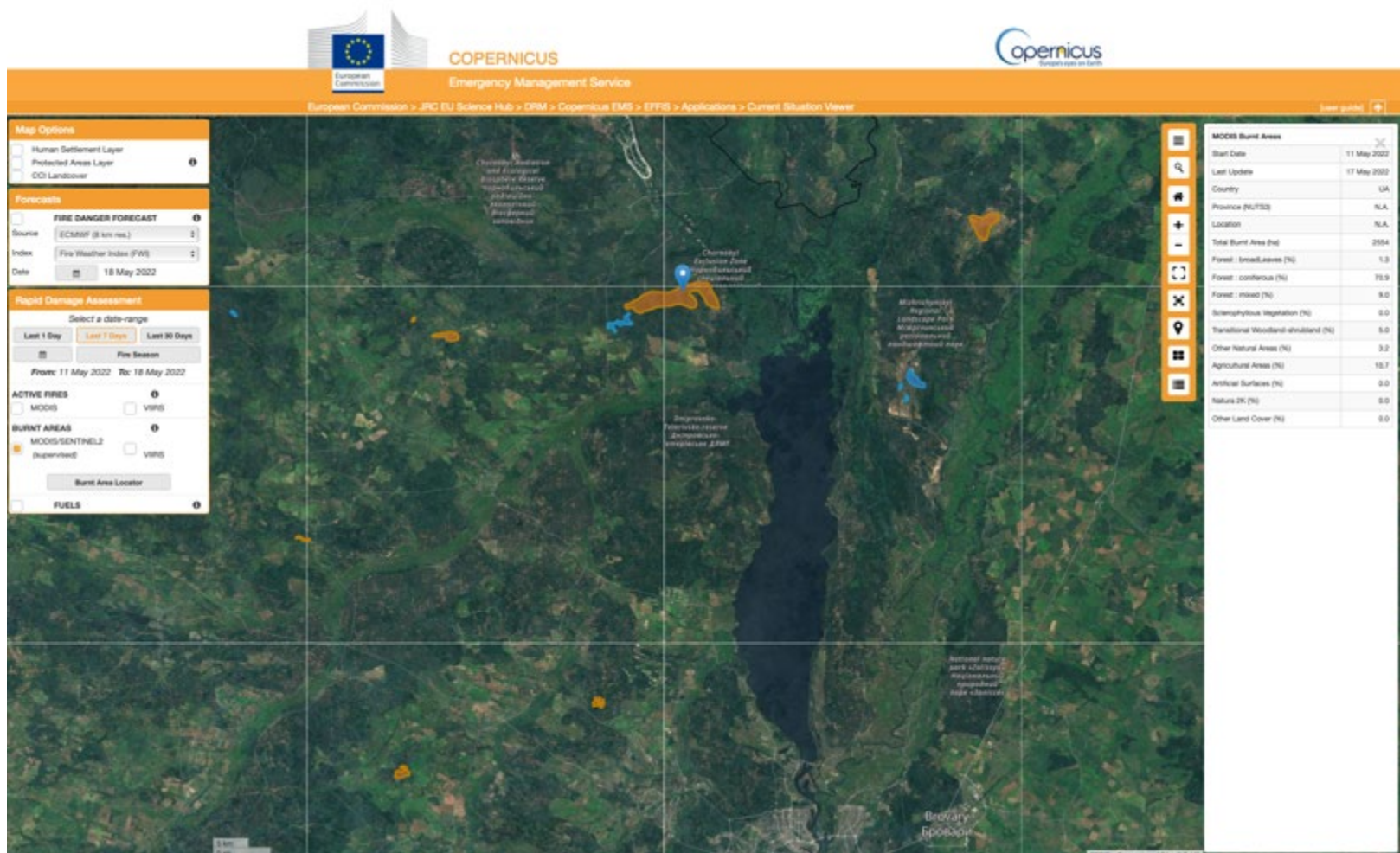
Spatial distribution of large fires in Europe: January – mid-June 2021



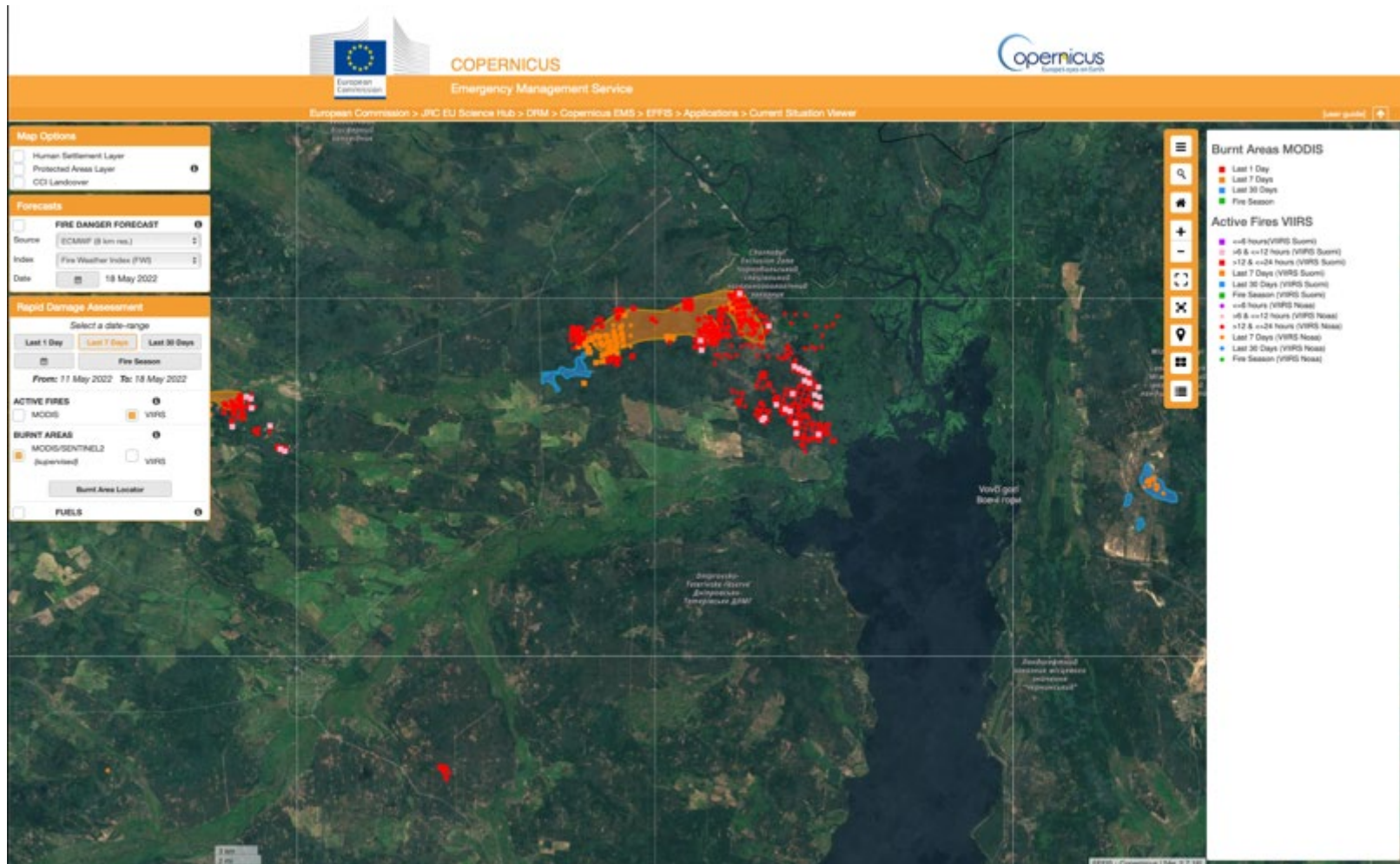
Spatial distribution of large fires in Europe: Last 7 days



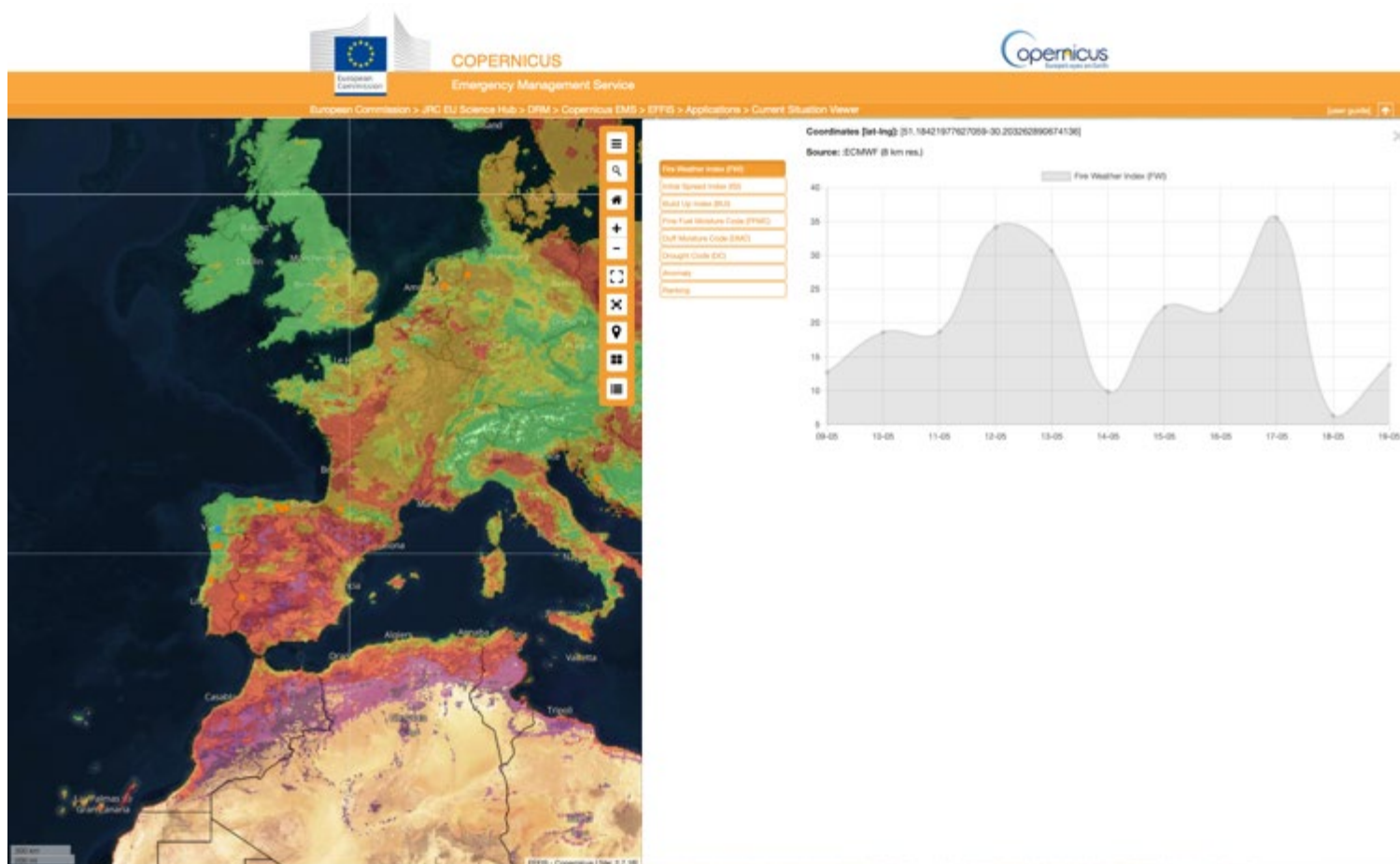
Single fire information




Spatial distribution of large fires in Europe: Last 7 days





Fire danger forecast for a specific fire location – Kiev

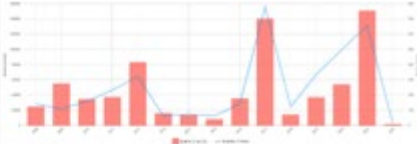


New EFFIS Statistics Portal – Seasonal Trends






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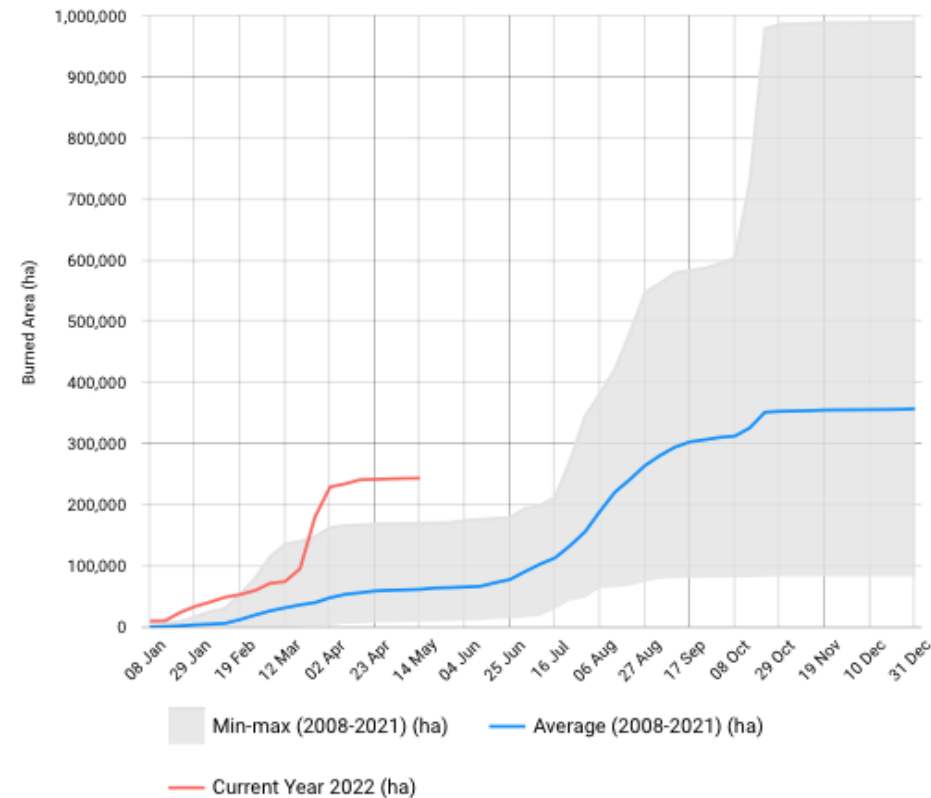
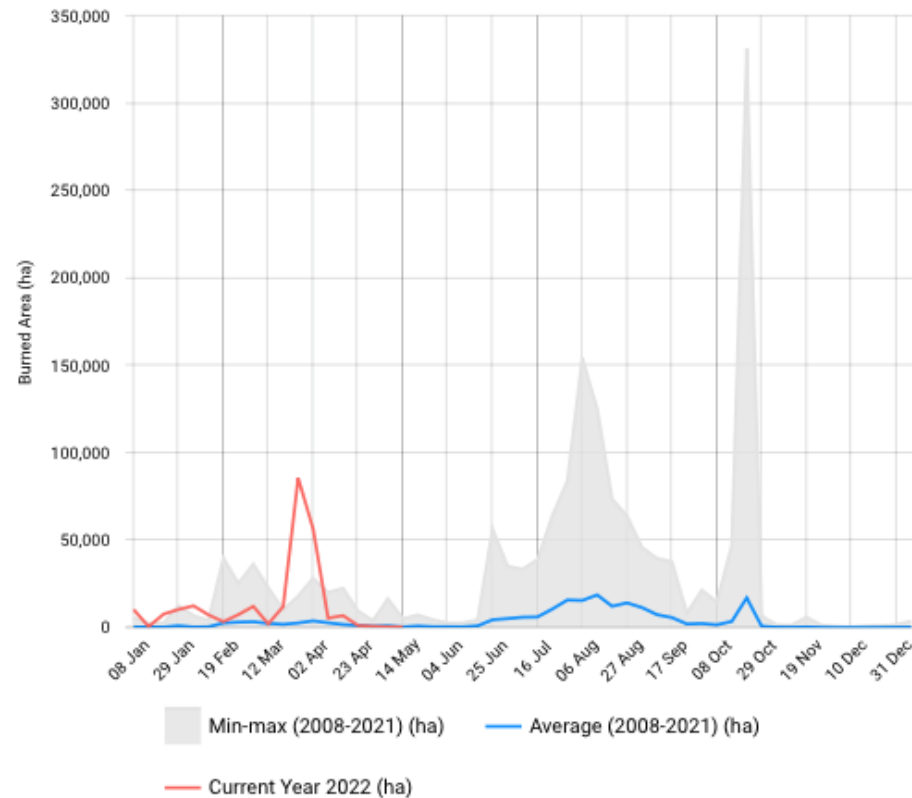
Open



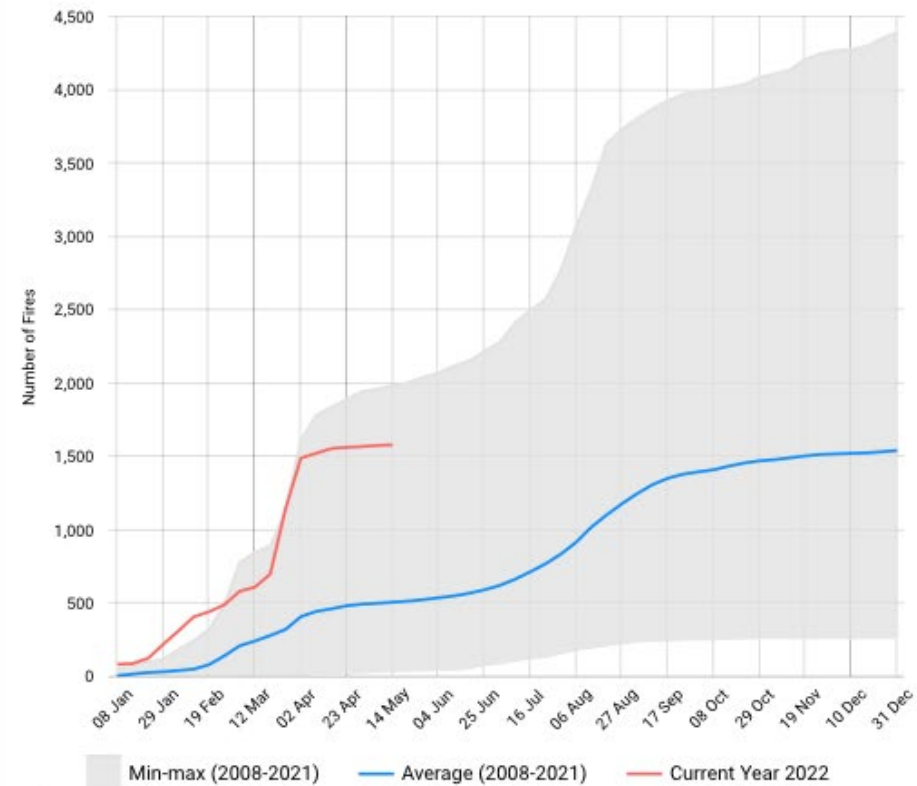
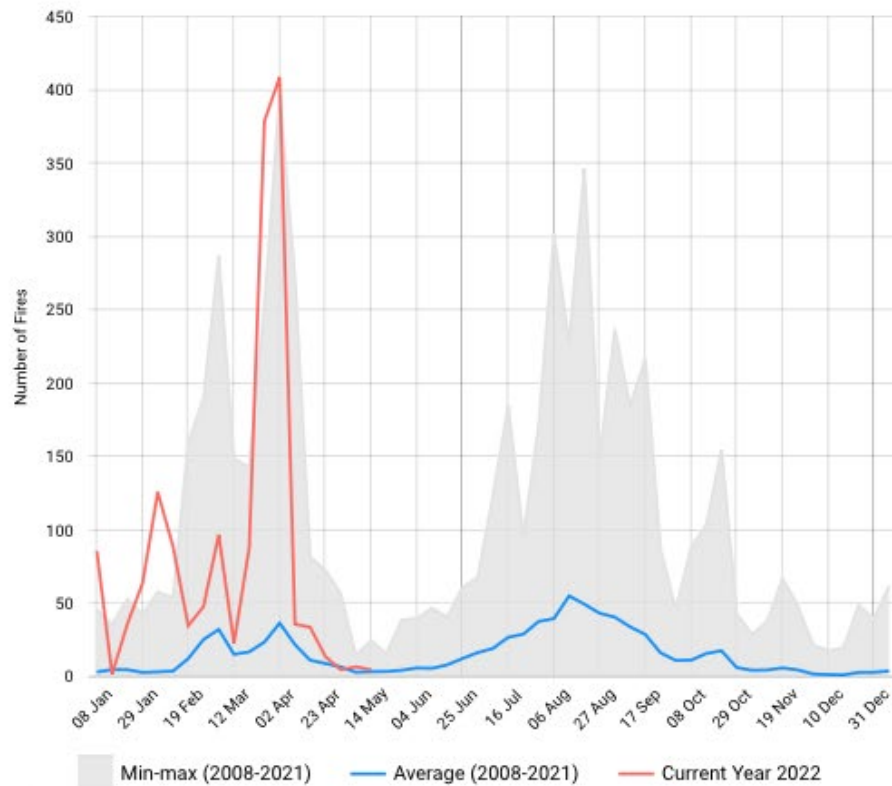
Open

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Temporal distribution of burnt areas in the EU: January – mid-May 2022



Temporal distribution of large fires in the EU: January – mid-May 2022



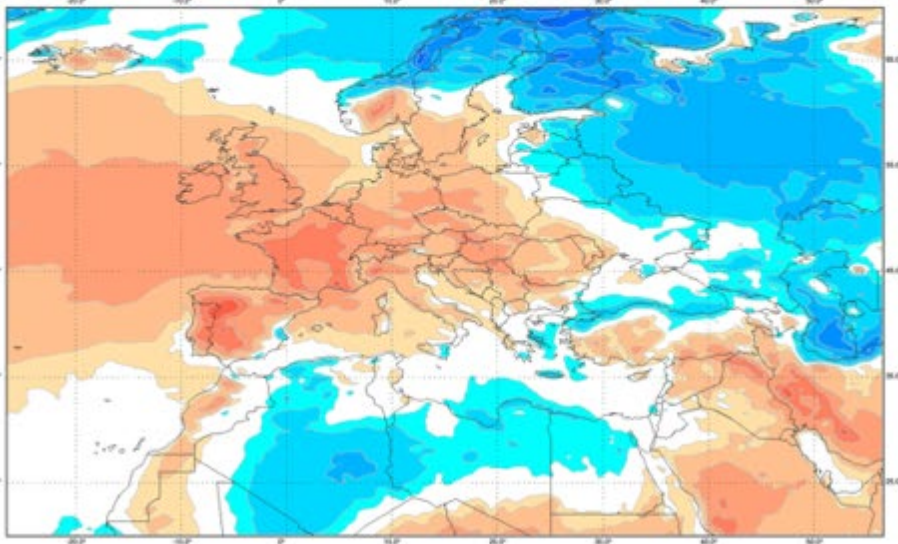
Fire Weather Anomalies - May

Temperature Anomalies

May 2022

Seasonal Temperature (T2m) Anomalies valid for month: May 2022

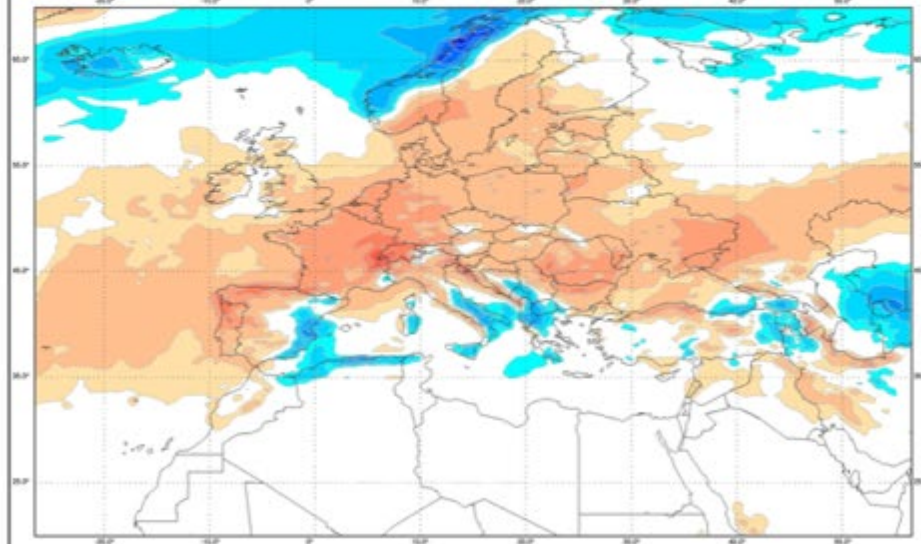
Map processed by EFFIS Sytem based on ECMWF Seasonal Forecast System (S5) initiated on 01 May 2022
Estimated deviation (anomaly) of the mean from model climate in Celsius degrees



May 2022

Seasonal Rain Anomalies valid for month: May 2022

Map processed by EFFIS Sytem based on ECMWF Seasonal Forecast System (S5) initiated on 01 May 2022
Estimated deviation (anomaly) of the mean from model climate in millimeters (mm)



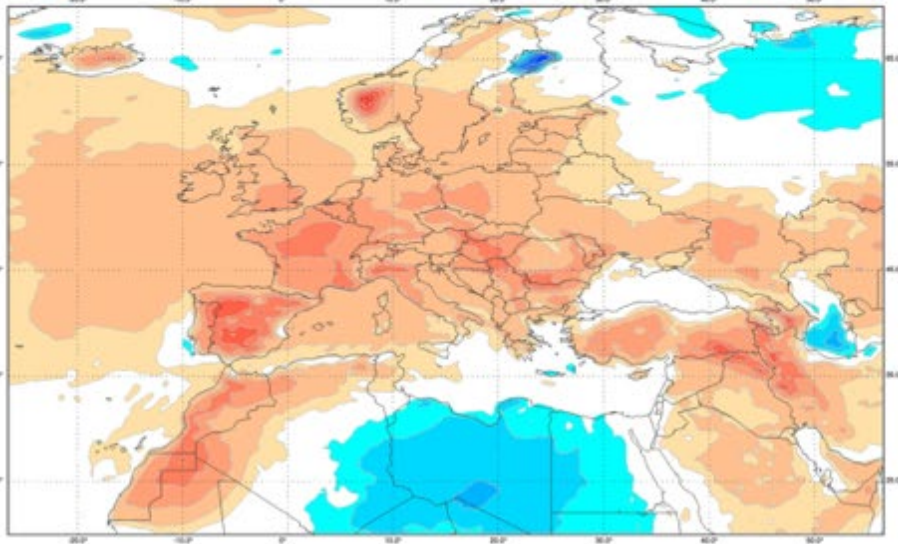
Fire Weather Anomalies - June

Temperature Anomalies

June 2022

Seasonal Temperature (T2m) Anomalies valid for month: June 2022

Map processed by EFFIS Sytem based on ECMWF Seasonal Forecast System (S5) initiated on 01 May 2022
Estimated deviation (anomaly) of the mean from model climate in Celsius degrees

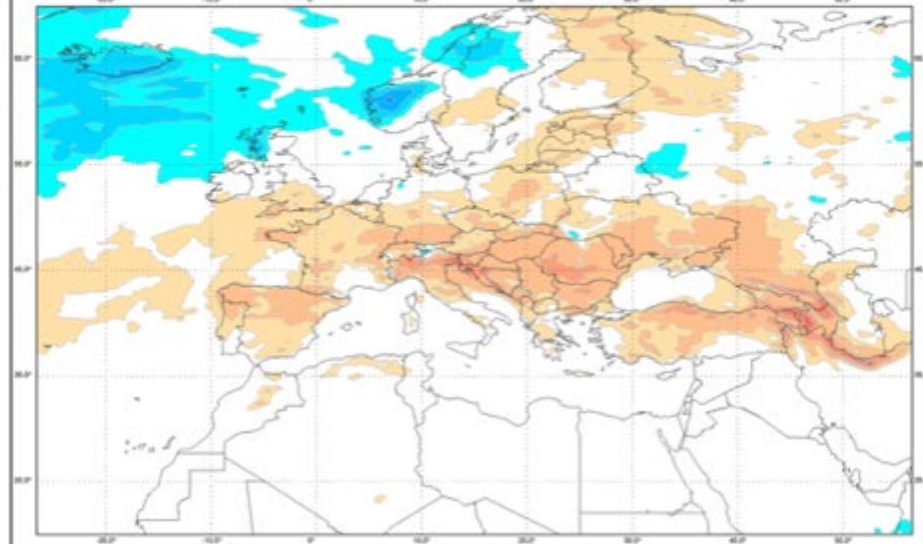


Rain Anomalies

June 2022

Seasonal Rain Anomalies valid for month: June 2022

Map processed by EFFIS Sytem based on ECMWF Seasonal Forecast System (S5) initiated on 01 May 2022
Estimated deviation (anomaly) of the mean from model climate in millimeters (mm)



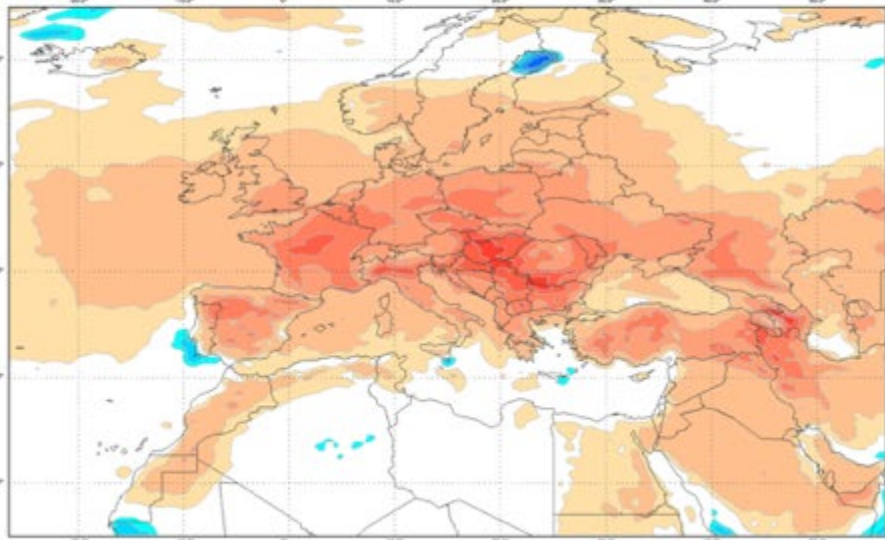
Fire Weather Anomalies - July

Temperature Anomalies

July 2022

Seasonal Temperature (T2m) Anomalies valid for month: July 2022

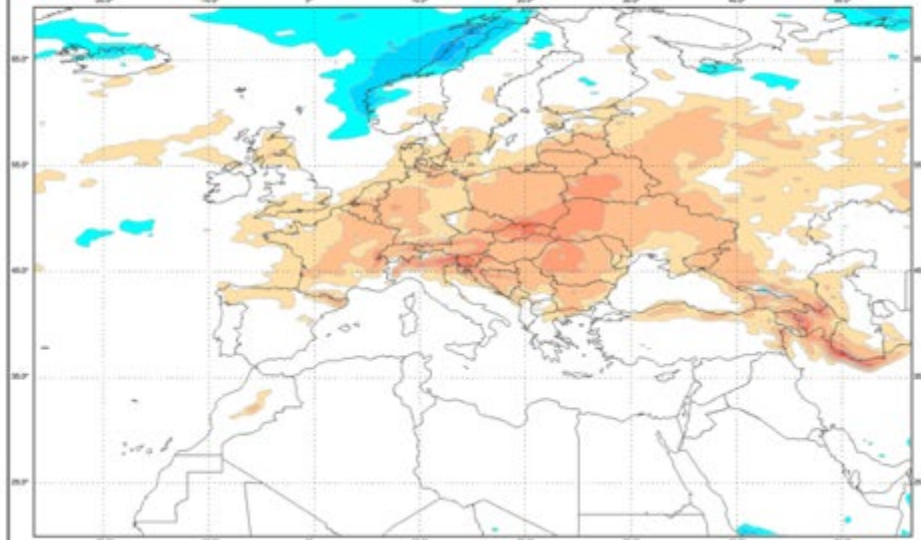
Map processed by EFFIS Sytem based on ECMWF Seasonal Forecast System (S5) initiated on 01 May 2022
Estimated deviation (anomaly) of the mean from model climate in Celsius degrees



July 2022

Seasonal Rain Anomalies valid for month: July 2022

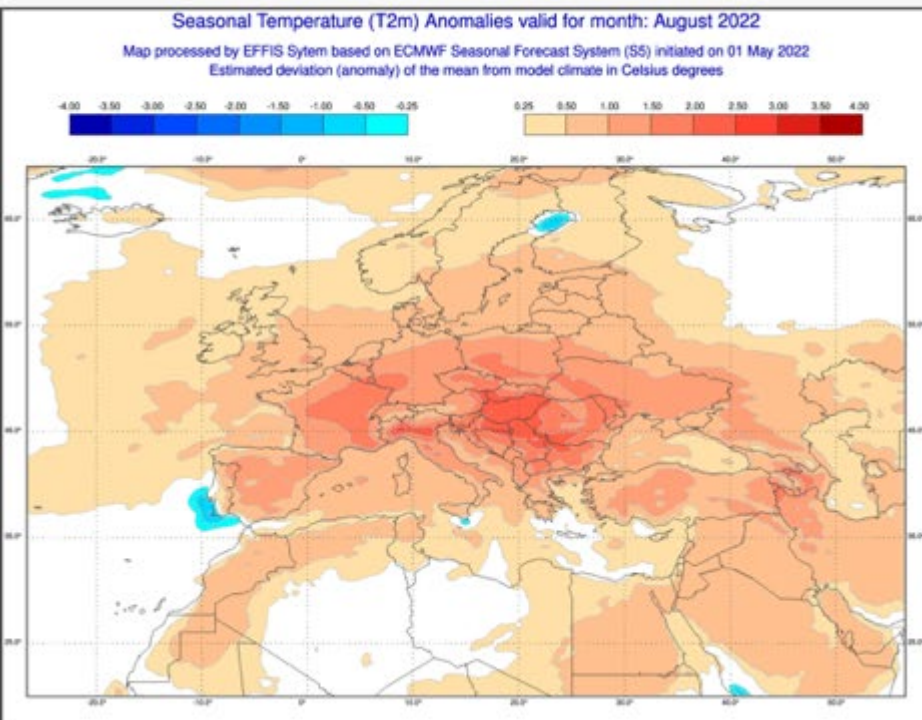
Map processed by EFFIS Sytem based on ECMWF Seasonal Forecast System (S5) initiated on 01 May 2022
Estimated deviation (anomaly) of the mean from model climate in millimeters (mm)



Fire Weather Anomalies - August

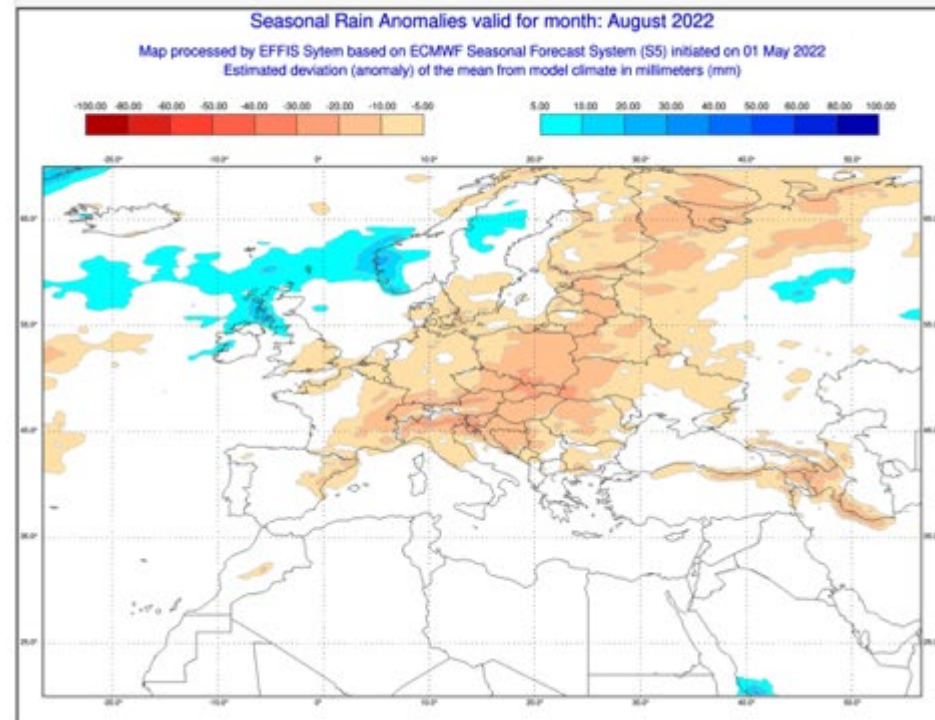
Temperature Anomalies

August 2022



Rain Anomalies

August 2022





European
Commission

EFFIS Fire News



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From

To

Country

Search

Showing 1 to 10 of 141 records

- 2021-10-07 - 2021-10-07 [IT] - Italy / Villaputzu 0 ha
- 2021-10-06 - 2021-10-06 [EL] - Greece / Astereika 15 ha
- 2021-10-06 - 2021-10-06 [IT] - Italy / Tempio Pausania 5 ha
- 2021-10-01 - 2021-10-01 [IT] - Italy / Bornova 0 ha
- 2021-10-01 - 2021-10-01 [TR] - Turkey / Karaburun, Izmir 0 ha
- 2021-09-30 - 2021-09-30 [EL] - Greece / Marathon 0 ha
- 2021-09-30 - 2021-09-30 [IT] - Italy / Nuraminis 40 ha

2021-10-06 / 2021-10-06
[EL] / Greece / Astereika
Fire size: 15 ha

News for this fire:

Ηλέκ: «Σπάχη» 150 στρέμματα στα Αστερικά Αμαλιάδας - Zougla

Σε εξέλιξη δύο πυρκαγιές σε Ανατολική Μάνη και Αστερικά Αμαλιάδας (βίντεο) - Πρώτο Θέμα

Φωτιά: Καίγεται δασική έκταση στην περιοχή Αστερικά της Αμαλιάδας - Reader.gr

Ηλέκ: Πυρκαγιά σε δασική έκταση στα Αστερικά Αμαλιάδας - Zougla

Περιστέρι Αμαλιάδας: Μεγάλη δασική πυρκαγιά στα Αστερικά (photos & video) - Ηλέκ Live! Όλες οι ...

www.ilialive.gr/live/επικαιρότητα/81447-περιστέρι-αμαλιάδας-μεγάλη-δασική-πυρκαγιά-στα-αστερικά.html

EFFIS Data access and download

jrc-effis@ec.europa.eu

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Data and services

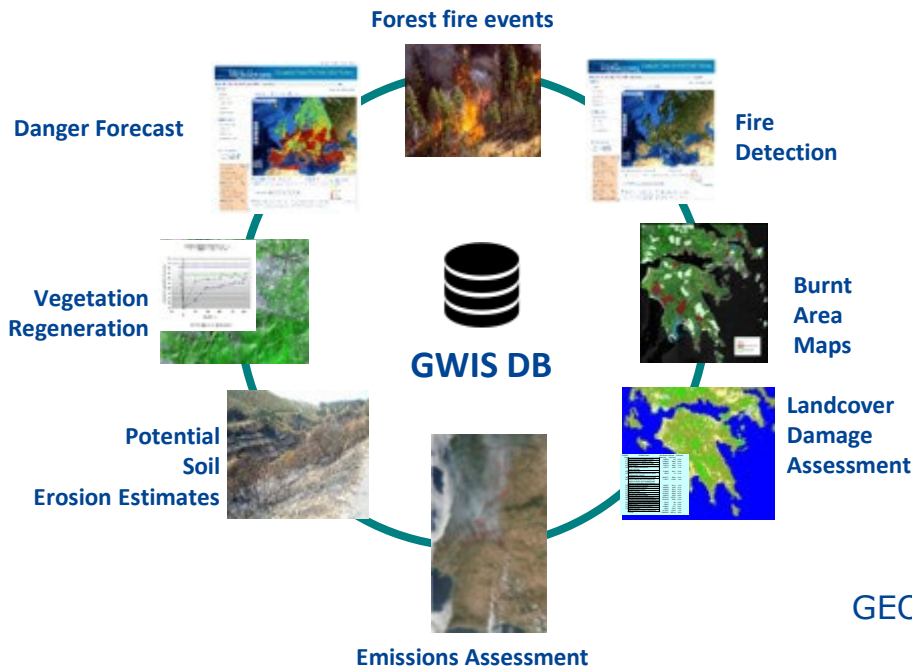
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| | | |
|--|--------------------------|--------------------------|
| Human Settlement Layer | Download | |
| Protected Areas Layer | Download | |
| CCI Landcover | Download | |
| Fire Danger Forecast (1 day forecast) | ECMWF (8 km res.) | Meteo France |
| FWI - Fire Weather Index (FWI) | Download | Download |
| FWI - Initial Spread Index (ISI) | Download | Download |
| FWI - Build Up Index (BUI) | Download | Download |
| FWI - Fine Fuel Moisture Code (FFMC) | Download | Download |
| FWI - Duff Moisture Code (DMC) | Download | Download |
| FWI - Drought Code (DC) | Download | Download |
| FWI - Anomaly | Download | Download |
| FWI - Ranking | Download | Download |

Summary and conclusions

- Wildfire season started very early in 2021, as in the last three years, with many fires in mountain ranges in winter and strong spring season in the Balkan region.
- Number of fires and burned area are in several countries above the average of the last decade
- At EU level, both the number of fires and burned areas are above the average.
- The fire weather in Europe foresees above average temperatures in most of the territory, with normal or below average precipitation for the next months.
- A fairly dry winter/spring in the central Europe and areas of the Mediterranean region, next to warmer temperatures during the summer months would likely lead above average fire danger conditions this season.

Towards global wildfire monitoring: GWIS – Global Wildfire Information System



GEO - <https://www.earthobservations.org/activity.php?id=126>
JRC - <http://gwis.jrc.ec.europa.eu>

Global Wildfire Information System (GWIS)

jrc-effis@ec.europa.eu

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Welcome to GWIS

The Global Wildfire Information System (GWIS) is a joint initiative of the [GEO](#) and the [Copernicus](#) Work Programs. In the [new GEO GWIS work program for the years 2020-2022](#), the Global Wildfire Information System (GWIS) aims at bringing together existing information sources at regional and national level in order to provide a comprehensive view and evaluation of fire regimes and fire effects at global level and to provide tools to support operational wildfire management from national to global scales.

GWIS builds on the ongoing activities of the European Forest Fire Information System ([EFFIS](#)), the Global Terrestrial Observing System (GTOS) Global Observation of Forest Cover- Global Observation of Land Dynamics (GOF-C-GOLD) Fire Implementation Team ([GOF-C Fire IT](#)), and the associated Regional Networks, complementing existing activities that are on-going around the world with respect to wildfire information gathering. The development of GWIS is supported by the partner organizations and space agencies. Support to GWIS is provided by NASA through its [GEO-GWIS activities in the ROSES program](#).

Currently, GWIS is made of three applications:

Visit the brand-new

[Country Profile](#)

GWIS Applications

[Current Situation Viewer](#)

[Country Profile](#)

[Long-term fire weather forecast](#)

[Data and Services](#)

<https://gwis.jrc.ec.europa.eu>

Global Wildfire Information System, developed by JRC under the Group on Earth Observations (GEO) and EU Copernicus programs



Global Wildfire Information System (GWIS)

Applications

Current Situation Viewer
This application provides near-real time information on:
1) Fire danger forecast up to 10 days in advance on the bases of the Canadian Fire Weather Index (FWI)
2) Lightning occurrence
3) Active fire detections from the NASA MODIS and VIIRS sensors
4) Near-real time burnt area perimeters derived from MODIS and VIIRS
5) Fire emissions from the Copernicus CAM Service
In addition, access to a static global fuel map is available.

Current Statistics Portal
Statistics are provided at national level and for regions of interest, such as the "Brazilian Legal Amazon" and the Arctic Monitoring and Assessment Program (AMAP).
The portal provides information on the evolution of the current fire season through the provision of:
1) Current statistics of burnt areas and number of fires, as compared to the average of the last 10 years. Statistics of the current year can be compared to a single year or a period in the past.
2) Seasonal cumulative trend in burnt areas and number of fires as compared to the average of the last 10 years.
3) Number of thermal anomalies detected by the VIIRS sensor as compared to the average of thermal anomalies for the last 10 years.
4) Number of thermal anomalies detected by the MODIS sensor as compared to the average of the thermal anomalies for the last 10 years.

Country Profile
This application provides a historical overview of fire regimes at country and sub-country level for the period 2002-2019. It includes maps of yearly/monthly burnt areas, burnt area frequency and burnt area seasonality. Additionally, it provides multi-year and single-year charts of:
1) Number of fires derived from GlobFire
2) Burnt areas derived from MODIS MCD64A1
3) Fire regimes (seasonality)
4) Monthly fire size distribution per year
5) Landcover damage and
6) Yearly/monthly wildfire emissions
Data are downloadable in the application.

Long-term fire weather forecast
Monthly and seasonal forecast of temperature and rainfall anomalies that are expected to prevail over the world.

Data & Services
This application provides access to the data used in the GWIS applications. Data from the Current Situation Viewer are provided in the form of Web Map Services (WMS).

Early warning & real-time monitoring

Planning and management



Additional information :

<https://gwis.jrc.ec.europa.eu>

Thank you

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