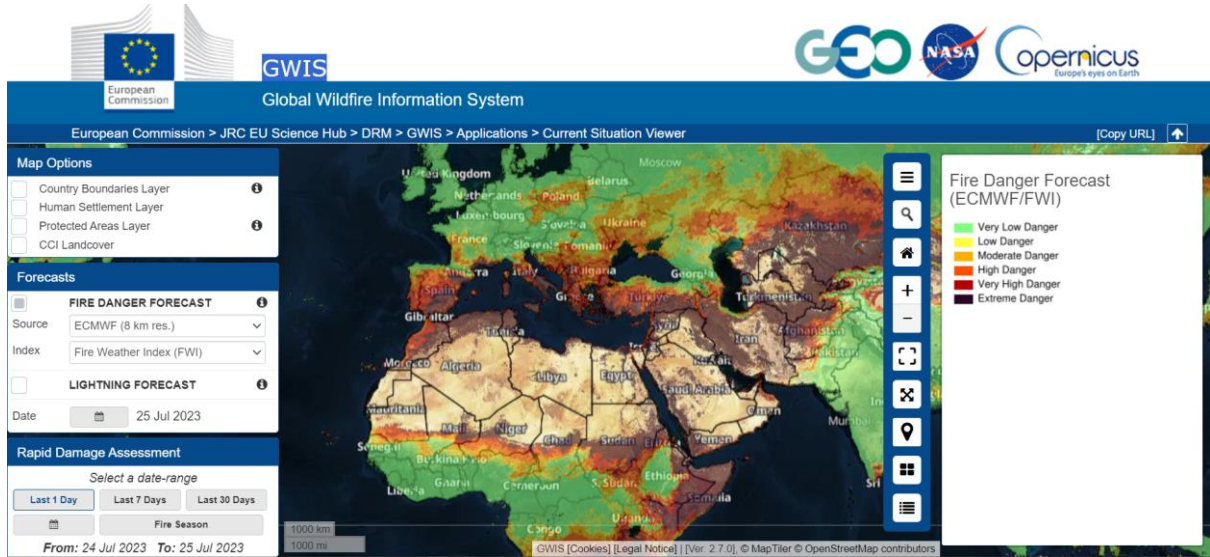




Wildfires Danger Forecasting (Global Wildfire Information System (GWIS))



The interactive fire danger forecast map through GWIS (Source: GWIS)

Product Category

- Land Use Natural Disaster Coast Management Earth's Surface Motion
- Land Cover Climate Change Marine

Financial Domain(s)

- Investment management Risk analysis Insurance management Green finance

User requirements

- UN12: Analysis of potential risks in specific regions.
- UN13: Need to geo-map clients.
- UN14: Need to screen the feasibility of projects against different hazard criteria.
- UN44: Need to measure the area vulnerable to wildfires before events.

Description

Pre-**wildfire** conditions are too complex and rely on multiple factors **including** weather conditions such as precipitation, temperature, humidity, and winds o, landscape conditions such as elevation, slope and aspect and vegetation conditions such as type, extent, health, and moisture content. Generally, four factors have a significant impact on wildfire activity: fuels, climate/weather, ignition agents, and human influence. Where fuel is available, weather plays the most crucial role in determining fire patterns in numerous regions worldwide. The European Forest Fire Information System relies on the calculation of three systems: the e U.S. Forest Service National Fire-Danger Rating System, the Canadian Forest Service Fire Weather Index Rating System, and the Australian McArthur (Mark 5) rating systems. EFFIS' Global ECMWF Fire Forecasting model uses medium-range (1-10-day lead time) weather forecasts for the indicators of the three abovementioned systems. The most important indices for fire danger predictability are FWI, the fire danger index from the McArthur Mark 5, and the ignition component from NFDRS. Having indices from different sources is important for the comparison needs. All indices were calculated based on ECMWF IFS which is postprocessed with GEFF software. The data are freely available through the interactive fire danger forecast map through the Global Wildfire Information System which is a European service of Joint initiative of the GEO 2017-2019 Work Programme and Copernicus.

Spatial coverage demand

Asset level and its surrounding

Data throughput

- Rapid tasking High Low
- Data availability High Low

Product specifications



EO-FIN

Product specifications	
Main processing steps	The interactive fire danger forecast map can be accessed through GWIS https://gwis.jrc.ec.europa.eu/ .
Input data sources	Optical: N.A Radar: N.A Reanalysis products: Interactive fire danger forecast map through GWIS. Supporting data: N.A
Accessibility	The interactive fire danger forecast map can be freely and publicly accessed from GWIS
Spatial resolution	8km
Frequency (Temporal resolution)	Daily
Latency	Daily
Geographical scale coverage	Globally
Delivery/ output format	Data type: Raster File format: GeoTIFF
Accuracies	Thematic accuracy: N.A Spatial accuracy: 1.5-2 pixels of input data
Constraints and limitations	<ul style="list-style-type: none"> ■ Low spatial resolution (8km). ■ Only up to 10 days of forecasting. ■ Vegetation state which is the main indicator of fuel type is not used for FWI, so this index lacks such important information for forest fire forecasting. ■ Fuel conditions used for IC and FDI have been provided in a mean climatological way and might not be accurate enough.
User's level of knowledge and skills to extract information and perform further analysis on the EO products.	Skills: Essential Knowledge: Essential