

# Enhancements in the GWIS and Web services

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## **Outline:**

1. GWIS web site
2. Fire danger assessment – ECMWF, MeteoFrance data models
3. Active fires – from FIRMS/LANCE
4. Burnt areas – MODIS product from LANCE
5. Fuels – from Univ. Alcala
6. Emissions - from ECMWF Copernicus Atmospheric Services
7. Analysis tools – Aggregated MODIS product from LANCE (JRC)
8. Foreseen developments



# GWIS web services



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## Global Wildfire Information System (GWIS)



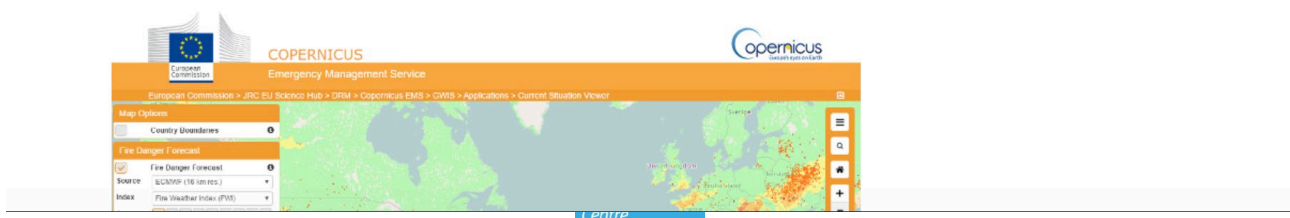
The Global Wildfire Information System is a joint initiative of the GEO and the Copernicus Work Programs. The Global Wildfire Information System (GWIS) aims at bringing together existing information sources at regional and national level in order to provide a comprehensive view and evaluation of fire regimes and fire effects at global level.

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 was just launched by NASA through its ROSES program

Access to worldwide information on wildfires is available through the GWIS viewer at [http://gwis.jrc.ec.europa.eu/static/gwis\\_current\\_situation/public/index.html](http://gwis.jrc.ec.europa.eu/static/gwis_current_situation/public/index.html)

### Applications

Current Situation Viewer  
Data and services





# GWIS partners



COPERNICUS

Emergency Management Service



European Commission > JRC EU Science Hub > DRM > Copernicus EMS > GWIS > Partners

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## Partners and contributing organizations



King's College/NERC London - UK



Geospatial Sciences Center of Excellence, South Dakota  
Wecota Hall, Box 506B - Brookings - South Dakota - 57007 - US



Univ. Alcalá, ES  
Calle de los Colegios, Alcalá, Spain



University of Leicester, UK  
Leicestershire - LE1 7RH - UK



University of Idaho, USA  
875 Perimeter Dr., MS1133 - Moscow - Idaho - 83844-1133 - US

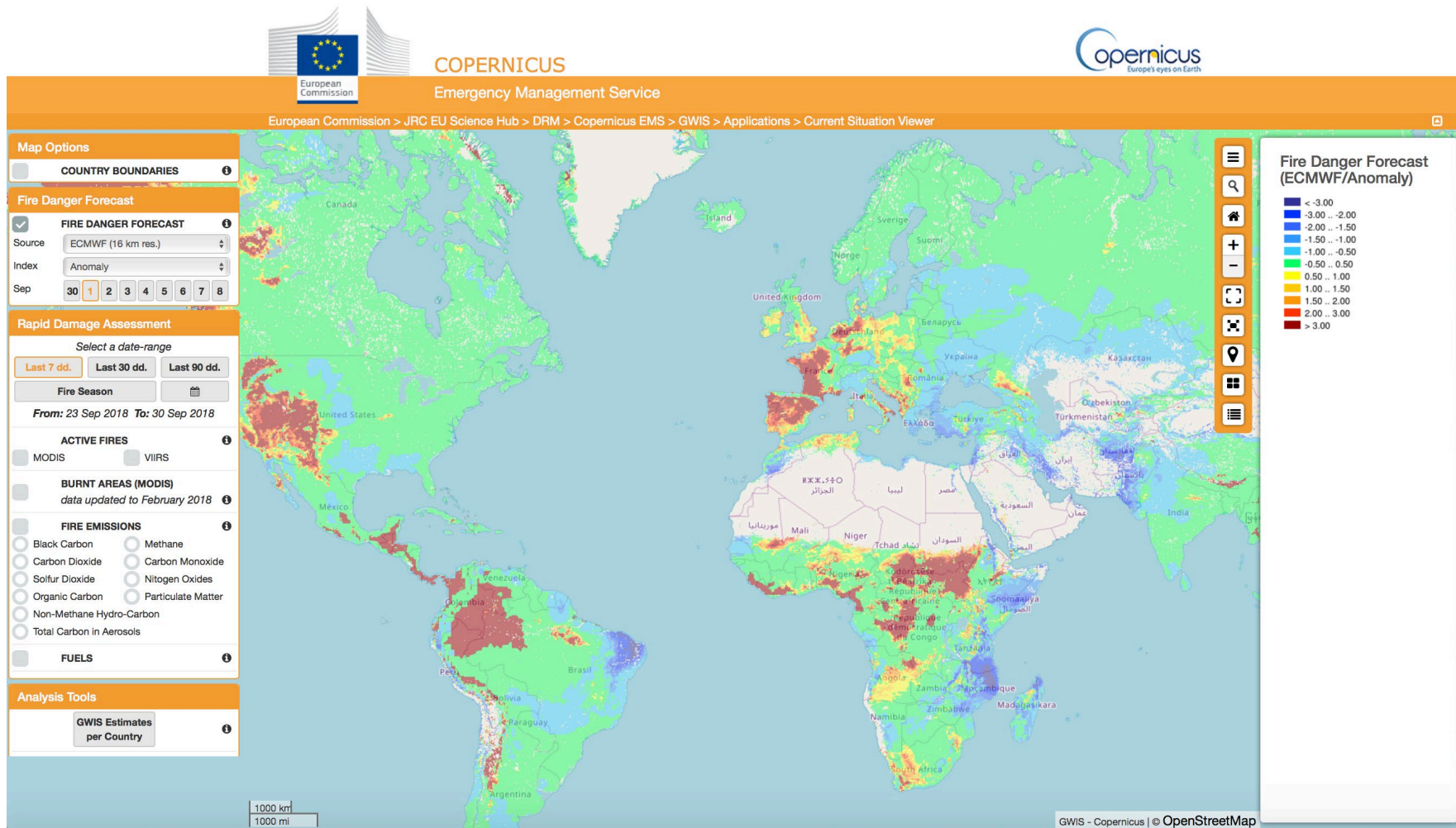


NASA Marshall Huntsville - AL - 35805 - US

### Applications

Current Situation Viewer  
Data and services

## EFFIS Current Situation



# Active fire

European  
Commission

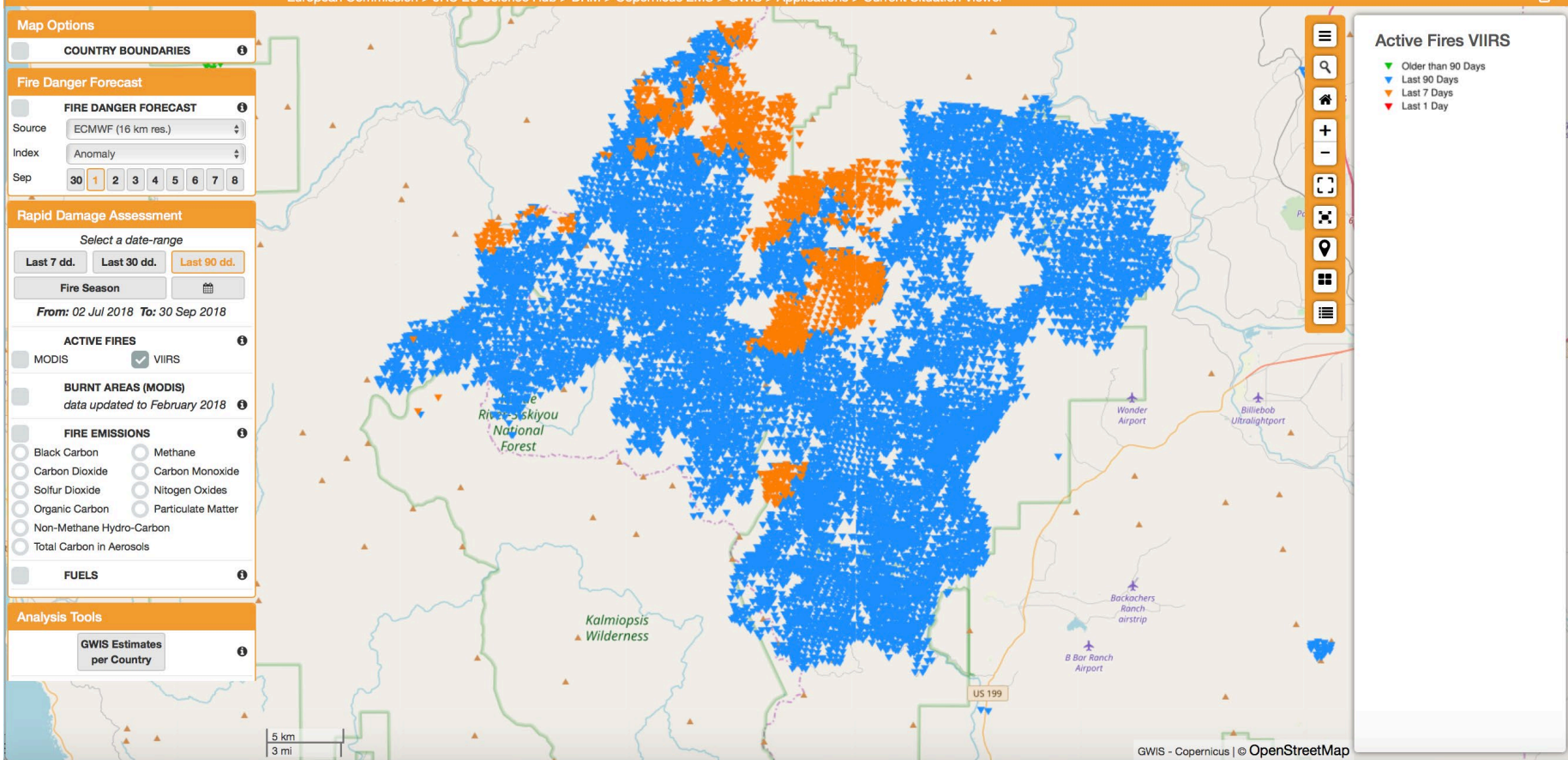


COPERNICUS

Emergency Management Service

Copernicus  
Europe's eyes on Earth

European Commission > JRC EU Science Hub > DRM > Copernicus EMS > GWIS > Applications > Current Situation Viewer



Joint  
Research  
Centre



# Burnt area mapping (based on MODIS collection 6 MCD64A1)



COPERNICUS

Emergency Management Service



European Commission > JRC EU Science Hub > DRM > Copernicus EMS > GWIS > Applications > Current Situation Viewer

## Map Options

☐ COUNTRY BOUNDARIES

## Fire Danger Forecast

☐ FIRE DANGER FORECAST

Source: ECMWF (16 km res.)

Index: Anomaly

Sep 30 1 2 3 4 5 6 7 8

## Rapid Damage Assessment

Select a date-range

Last 7 dd. Last 30 dd. Last 90 dd.

Fire Season

From: 01 Jan 2017 To: 31 Dec 2017

## ACTIVE FIRES

☐ MODIS ☐ VIIRS

## BURNT AREAS (MODIS)

data updated to February 2018

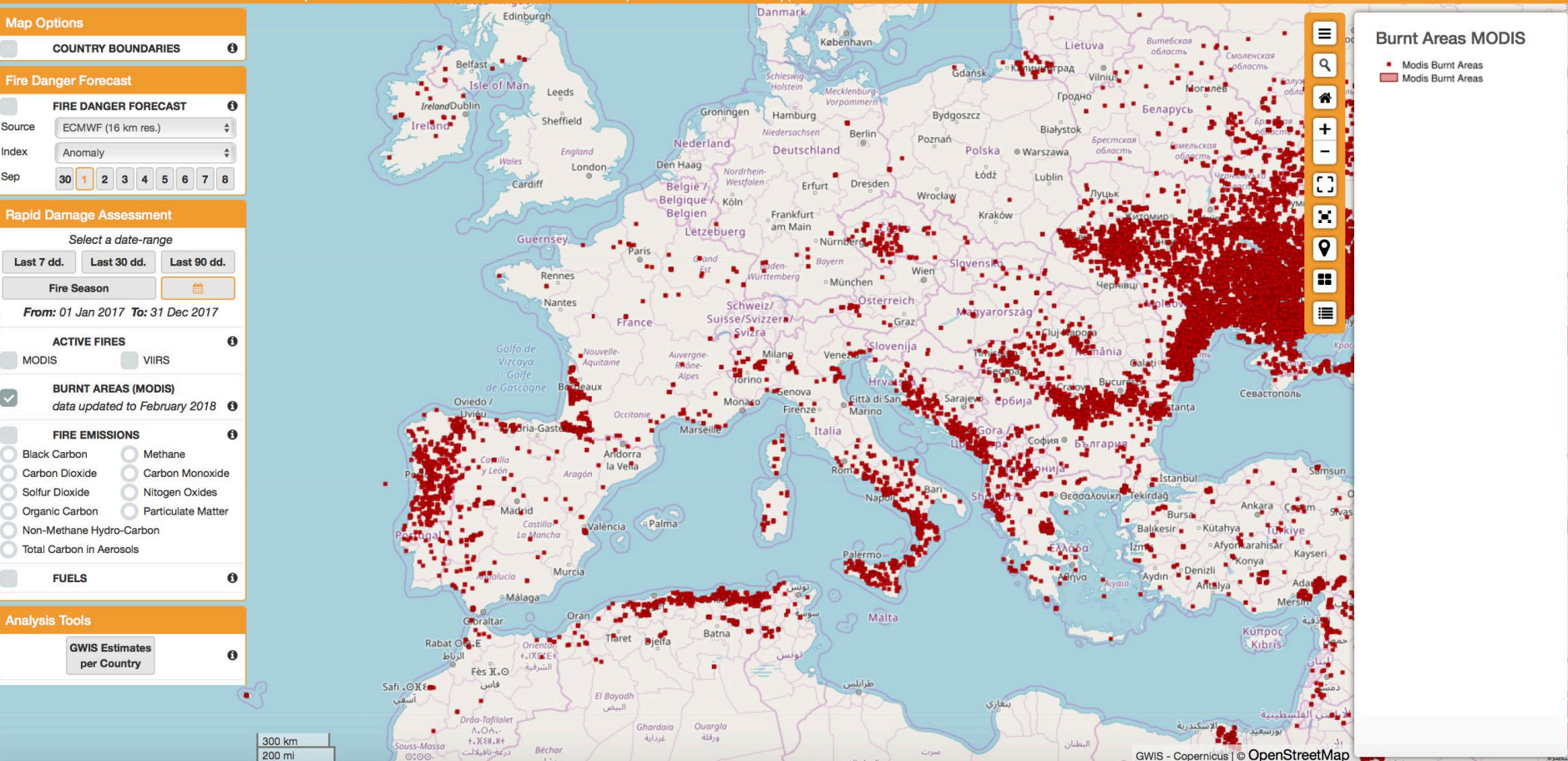
## FIRE EMISSIONS

- ☐ Black Carbon
- ☐ Carbon Dioxide
- ☐ Sulfur Dioxide
- ☐ Organic Carbon
- ☐ Non-Methane Hydro-Carbon
- ☐ Total Carbon in Aerosols
- ☐ Methane
- ☐ Carbon Monoxide
- ☐ Nitrogen Oxides
- ☐ Particulate Matter

## FUELS

## Analysis Tools

GWIS Estimates  
per Country



# Burnt area statistics (based on MODIS collection 6 MCD64A1)

## GWIS Statistics

GWIS

2001

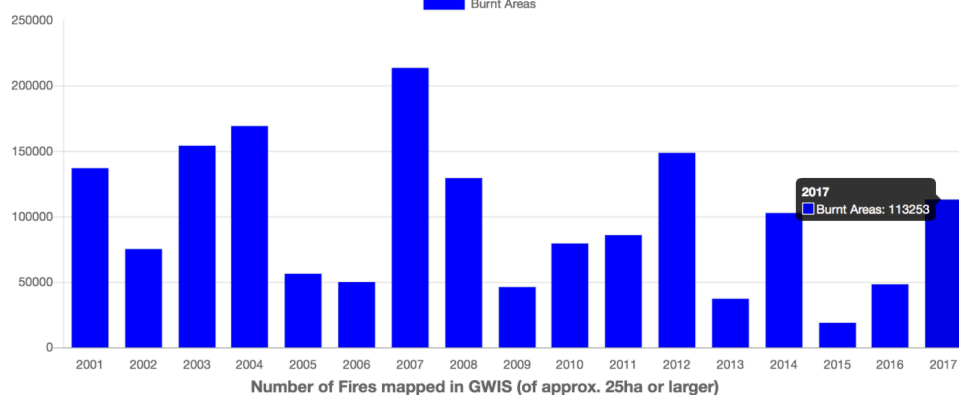
2017

### GWIS - Country Statistics for Italy [IT]

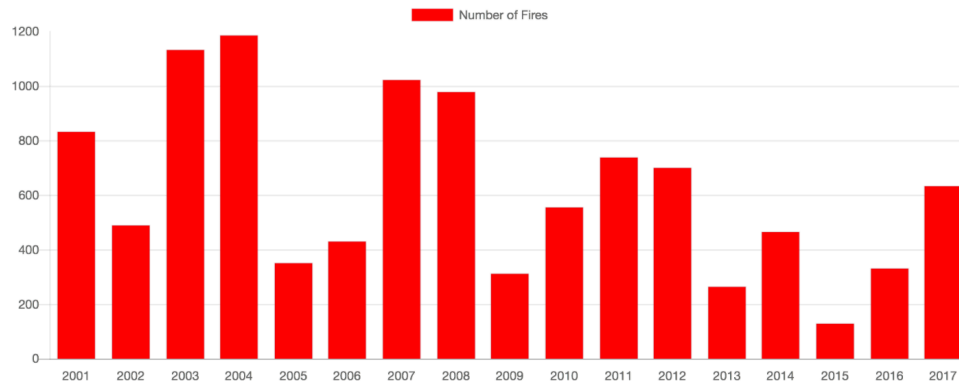
Europe

-  Andorra [AD]
-  Albania [AL]
-  Austria [AT]
-  Åland Islands [AX]
-  Bosnia and Herzegovina [BA]
-  Belgium [BE]
-  Bulgaria [BG]
-  Belarus [BY]
-  Switzerland [CH]
-  Czechia [CZ]
-  Germany [DE]
-  Denmark [DK]
-  Estonia [EE]
-  Spain [ES]
-  Finland [FI]
-  Faroe Islands [FO]
-  France [FR]
-  United Kingdom of Great Britain and Northern Ireland [GB]
-  Guernsey [GG]
-  Cyprus [CY]

Burnt Area mapped in GWIS



Number of Fires mapped in GWIS (of approx. 25ha or larger)

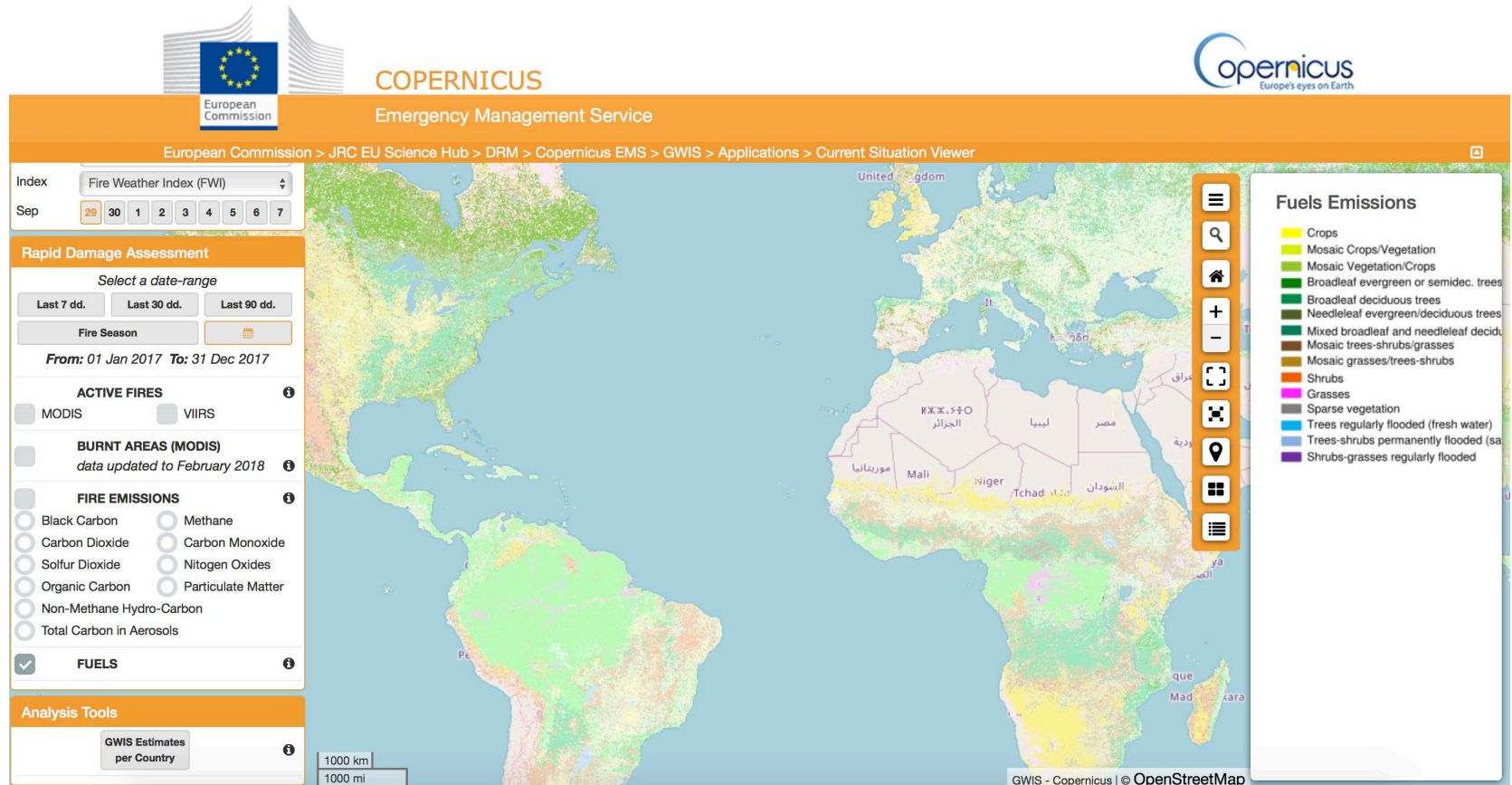


Year	Burnt Areas (ha)	Number of fires
2001	137220	833
2002	75449	490
2003	154387	1133
2004	169370	1186
2005	56587	352
2006	50260	431
2007	213771	1023
2008	129642	979
2009	46451	313
2010	79708	556
2011	86086	739
2012	148871	701
2013	37536	265
2014	102992	466
2015	19154	130
2016	48556	332
2017	113253	634

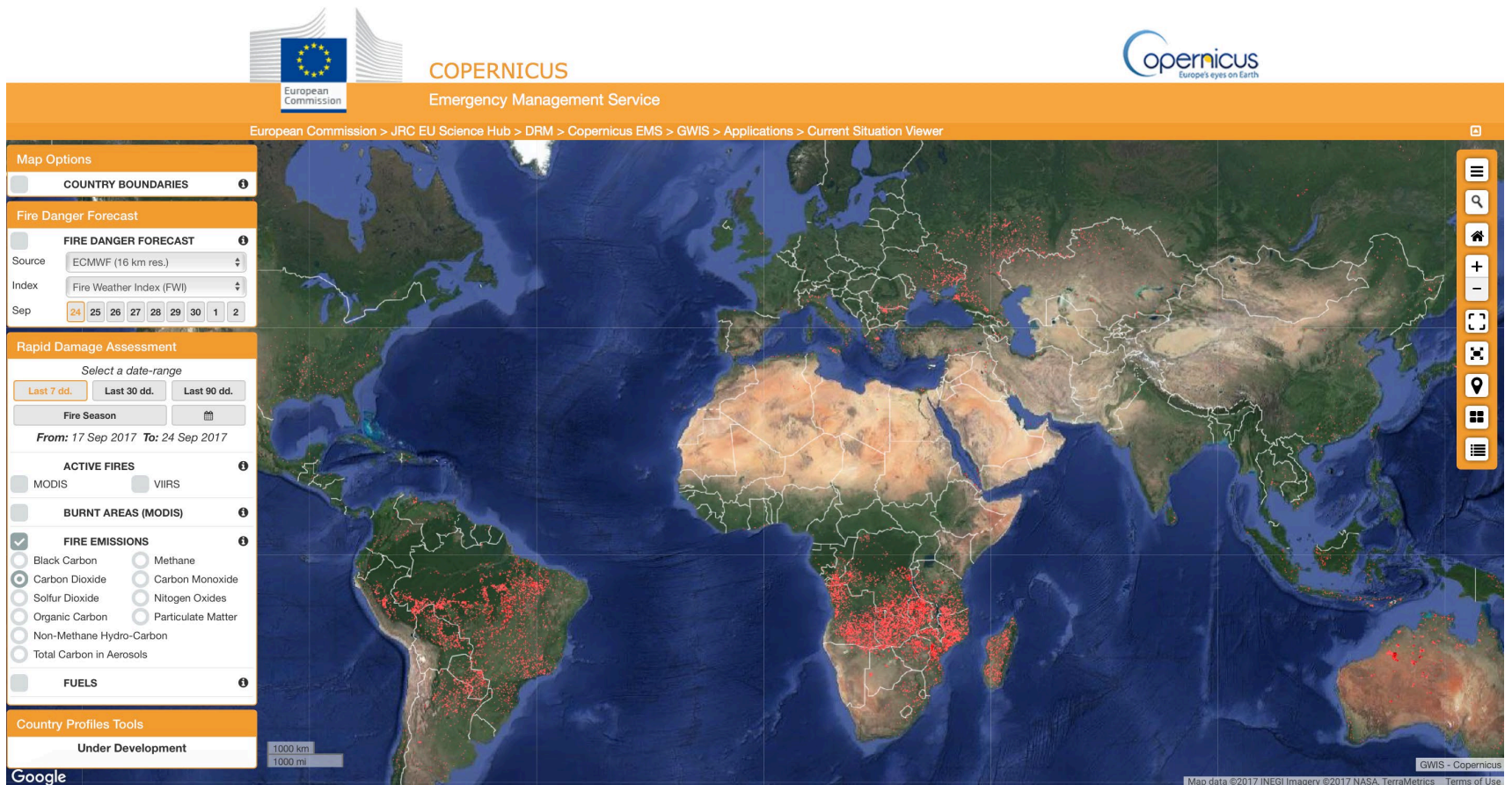
[Download Statistics \(.csv\)](#)



# GWIS – Global fuel models

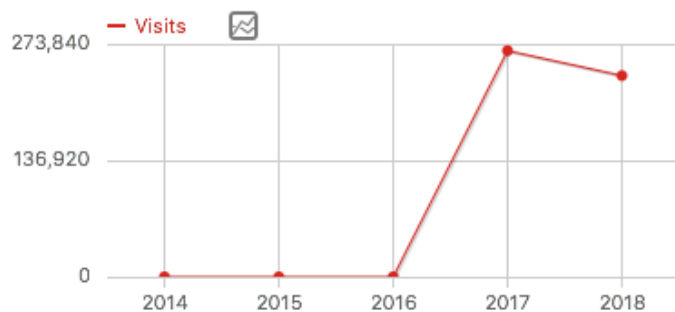


# GWIS – Fire emissions



## 2018 – Web usage EFFIS






### Visits Overview (with graph)



### Continent

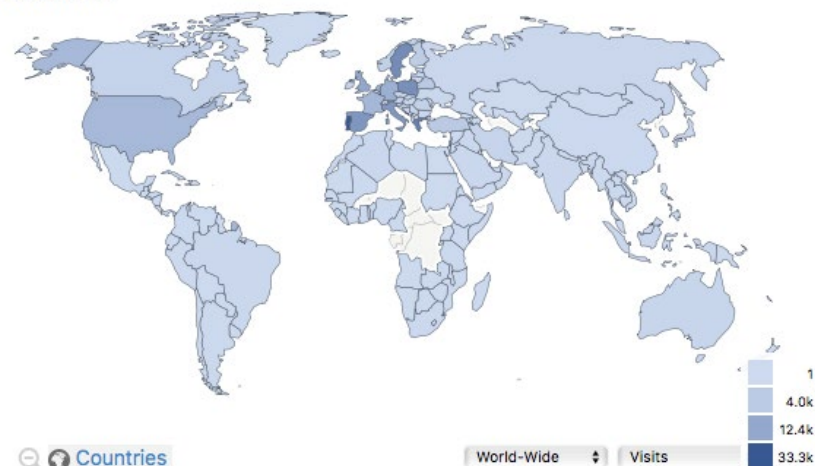
CONTINENT	VISITS
Europe	211,219
North America	10,089
Asia	7,577
Unknown	3,585
Africa	1,611
South America	1,178
Oceania	1,175
Central America	142

### Country

COUNTRY	VISITS
 Portugal	33,307
 Greece	22,711
 Sweden	19,511
 Poland	18,570
 Spain	16,859

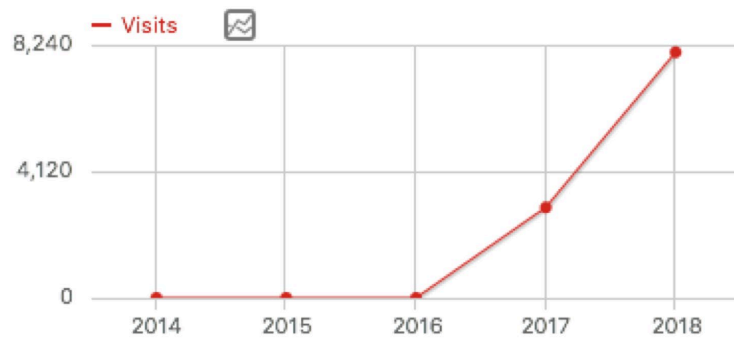
1-5 of 186 [Next >](#)

236.6k visits

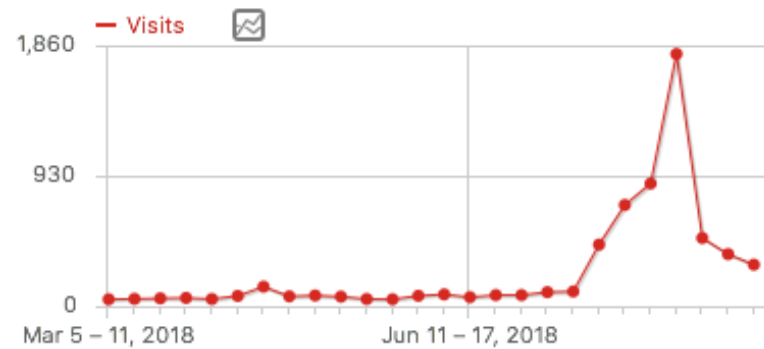


## 2018 – Web usage GWIS

Visits Overview (with graph)



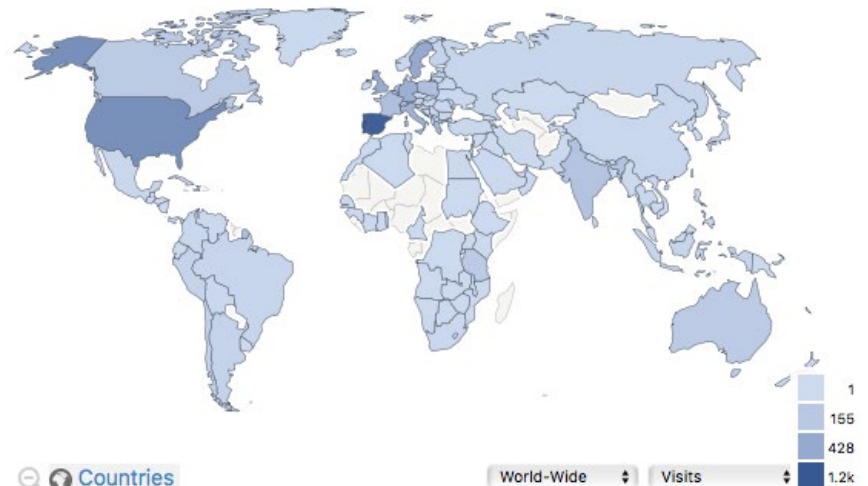
Visits Overview (with graph)



### Continent ?

CONTINENT	VISITS
Europe	5,673
North America	838
Asia	432
Unknown	380
South America	271
Africa	241
Oceania	138
Central America	25

8.0k visits





## Foreseen developments in GWIS

### Integration of NASA GEO GWIS projects:

- Integration of GWED data – R. Field
- Integration of visualization tools and thematic reports, including emissions (FAO) – L. Boschetti/D. Roy
- Test in the usage/display of geostationary satellite products, L. Giglio/W. Schroeder
- Collaboration with NASA/ARSET on training material/webinars
- Development of seasonal fire weather/danger products
- Enhancement of the viewer/analysis tools in the system
- Collaboration with UNISDR in the Global Risk Assessment Framework
- Follow up project proposals with the GEO secretariat active fire product, near-real time tracking of ongoing critical fires, and collaboration with Google & Amazon environments.



# Thank you

<http://effis.jrc.ec.europa.eu>

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

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