

STORYTELLING TOOL FOR A FOREST FIRE IN YESTE (ALBACETE, SPAIN)

This storytelling tool shows the daily evolution of the fire based on the wind direction changes using satellite data.

The challenge

Castilla la Mancha is a region in Spain that has been severely affected by wildfires. Large forest fires such as the one that took place in August 2017 in the municipality of Yeste (Albacete) are becoming more and more frequent in the Mediterranean and are leading to more catastrophic outcomes. Understanding how the fire growth and spread is crucial for preventing and suppressing wildfires whilst providing critical and accurate information to the pertinent authorities. This is why we developed this storyline tool for the forest fire in Yeste. This tool combines the accuracy and updated data from the Copernicus Earth Observation (EO) Programme with wind speed data to analyse how the fire spread.

The tool shows maps together with narratives explaining the fire behaviour using graphs and pictures to convey the event information in an interactive and comprehensive way for the general public.

The space based solution

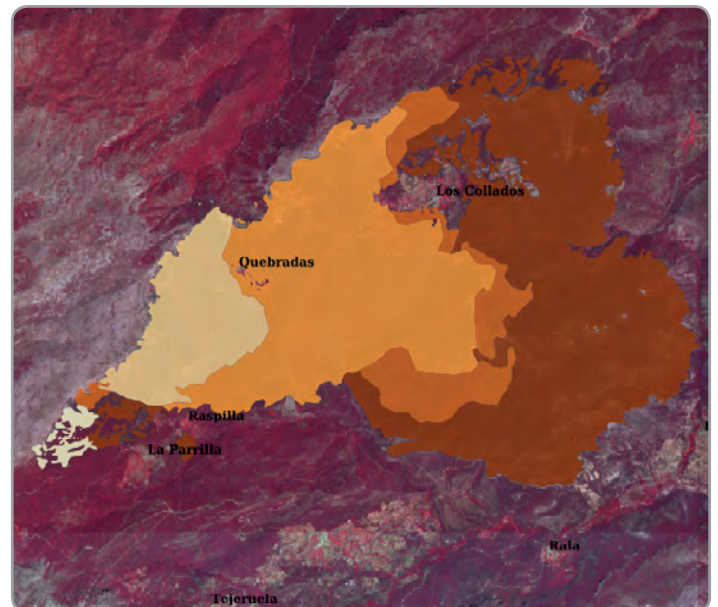
Copernicus EO data offers unprecedented available amount of data and services to monitor wildfires. We used Sentinel 3A, 2A and 2B from the Copernicus Programme, MODIS imagery aboard NASA's Terra satellite and Landsat-ETM+ and OLI satellite images from the joint NASA/USGS programme to delimit burnt areas per day and detect active fires during the fire event. In addition to this, we used information from the Copernicus Emergency Management Service and other relevant datasets such as the boundaries of the natural park that were affected by the fire. Global wind data coming from the NOAA Operational Model Archive and Distribution System was collected on every day the event occurred. Once the layers were ready a set of web mapping services were created with the purpose of publishing the results online. A short text was prepared

to explain the source of the fire. The application is available free of charge at: http://projects.randbee.com/yeste_storytelling. The tool which is based on open source software works best with Firefox or Chrome Internet browsers.

Benefits to Citizens

The service and data coming from Copernicus offer a great opportunity to democratise the use of satellite data and services beyond academia and industry. For example, the fires generate a lot of attention from the media. The attention increases if the fire is putting people's life and goods in danger. It is estimated that over the two weeks after the start of the Yeste fire, there were about 160 news items published on the web.

This storytelling tool was published 10 days after the event and as soon as the images were published and processed. It was disseminated using different social media channels and shared



The map shows the satellite image in false colour Sentinel 2B with brownish colours showing the area affected by the fire per day.

Thematic Area



TERRITORIAL
MANAGEMENT
AND URBAN
PLANNING

Region of Application



CASTILLA
LA MANCHA

Sentinel mission used



S2
S3

Copernicus Service used



-

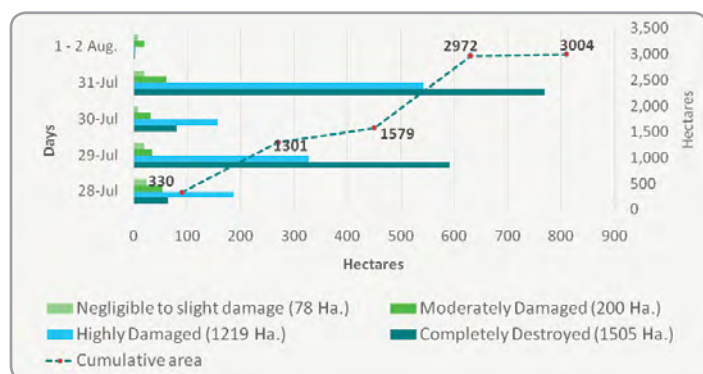
Usage Maturity Level



2

amongst different local organisations in the area. This storytelling tool provides all authorities involved in the event with timely and accurate geospatial information derived from EO Copernicus with narrative text, multimedia and images content. The core benefit of this tool is that it makes it easy to harness the power of EO data further combined with other data sources. This tool also facilitates the work of Local and Regional authorities (LRAs) when measuring the impact of fire damage. An assessment of burn severity can be communicated using a severity index (in order of severity level) negligible to slight damaged area, moderately damaged area, highly damaged area, and completely destroyed area as per the graph above.

Moreover, LRAs can potentially share official assessments using these type tools for informing citizens.



The graph shows the number of hectares burned per day together with the severity index derived from satellite images.

“This tool provides reliable information to the citizens whilst incorporating lessons learned that could be applied in other regions or events.”

*Nicolás López Molina,
Regional Government of Castille La Mancha*

Outlook to the future

Storytelling tools are very engaging and informative and a great way of promoting the use of satellite imagery from the Copernicus Programme. The tool presented here is an example of how stories based on satellite data and information can be communicated. The data and services from the different Sentinels are fundamental for advancing our knowledge on climate change but also for raising environmental awareness and improving data driven decision-making.

Acknowledgements

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ABOUT COPERNICUS4REGIONS

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The model cases focus on local and regional authorities who successfully applied Copernicus data in 8 major public policy domains. The views expressed in the Copernicus User Stories are those of the Authors and can in no way be taken to reflect the official opinion of the European Space Agency or of the European Commission.

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