

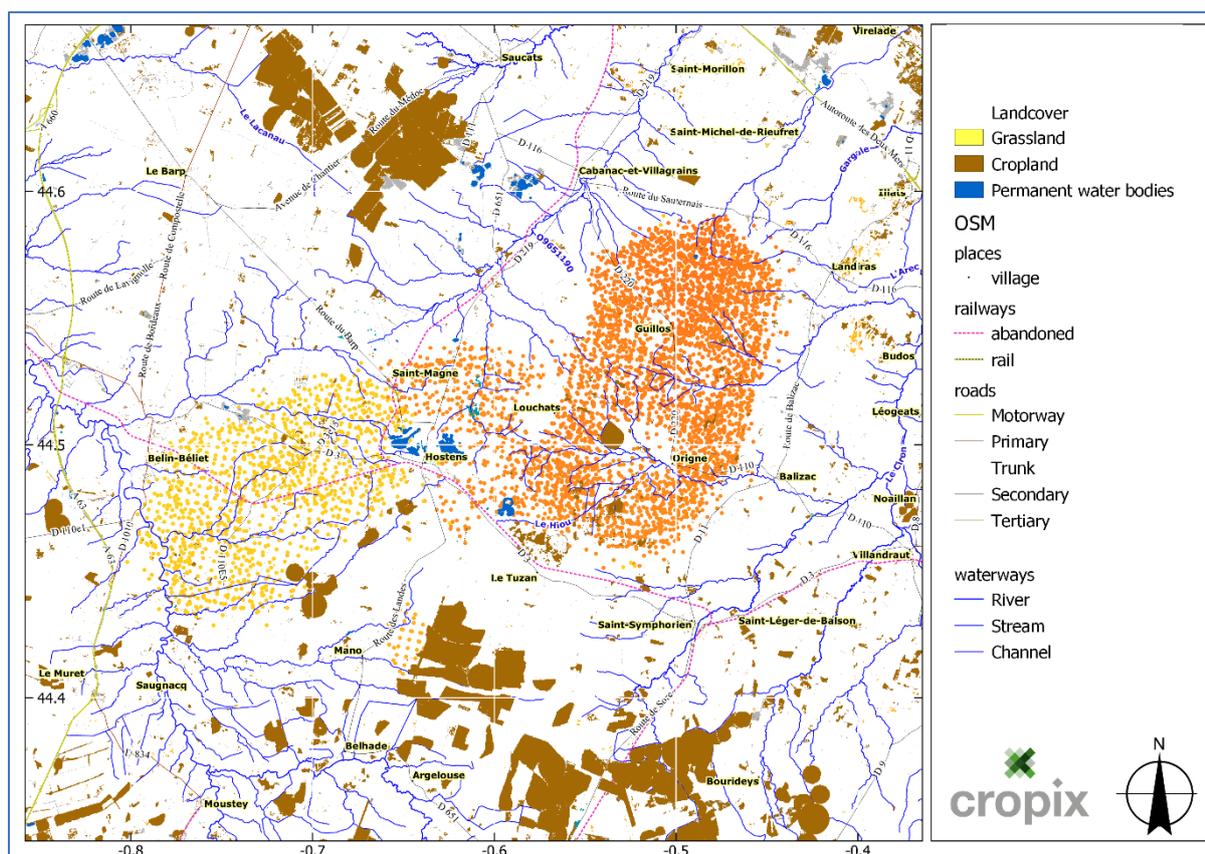
Forest fires in the Gironde region in France

The summer 2022 is hot and dry. In Europe we have forest fires in many countries. Spain has lost already 250.000 ha. In Europe we count 660.000 ha of burnt forests and the season is still ongoing.

Many rivers in Europe are getting dry like the Po in Italy, the Rhine and Elbe in Germany and the Rhone and Loire in France. The energy industry has learnt the lesson, that nuclear power might be independent from wind and sun, but it needs water for cooling.

Climate is not in a good shape. We have to come up with solutions and we have to do it now.

For an area in the Gironde in the south-west of France we tried to detect the burnt area with **Sentinel-1 SAR data**.



In the map you see the footprints of two fire events. The spots were detected with optical infrared sensors with a spatial resolution of 375m. The data is published on daily basis by the NASA under the **FIRMS** project (Fire Information for Resource Management System).

The red spots were detected between **July 13-19, 2022**. The yellow spots on **Aug 9-10, 2022**.

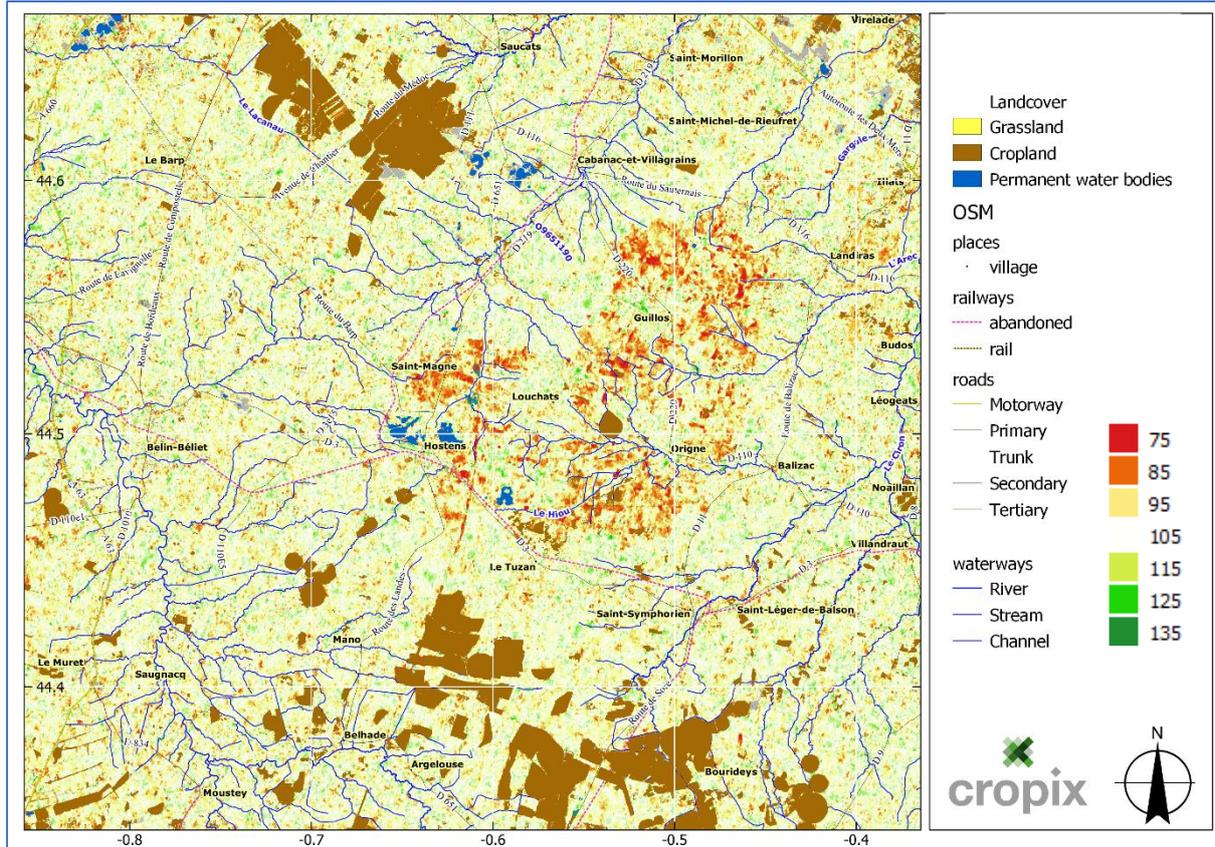
The same footprints you will see in two change maps on the following page.

The first one shows the change in **ESVI** (enhanced SAR Vegetation Index) units between the two acquisitions from **July 8, 2022** and **July 20, 2022**.

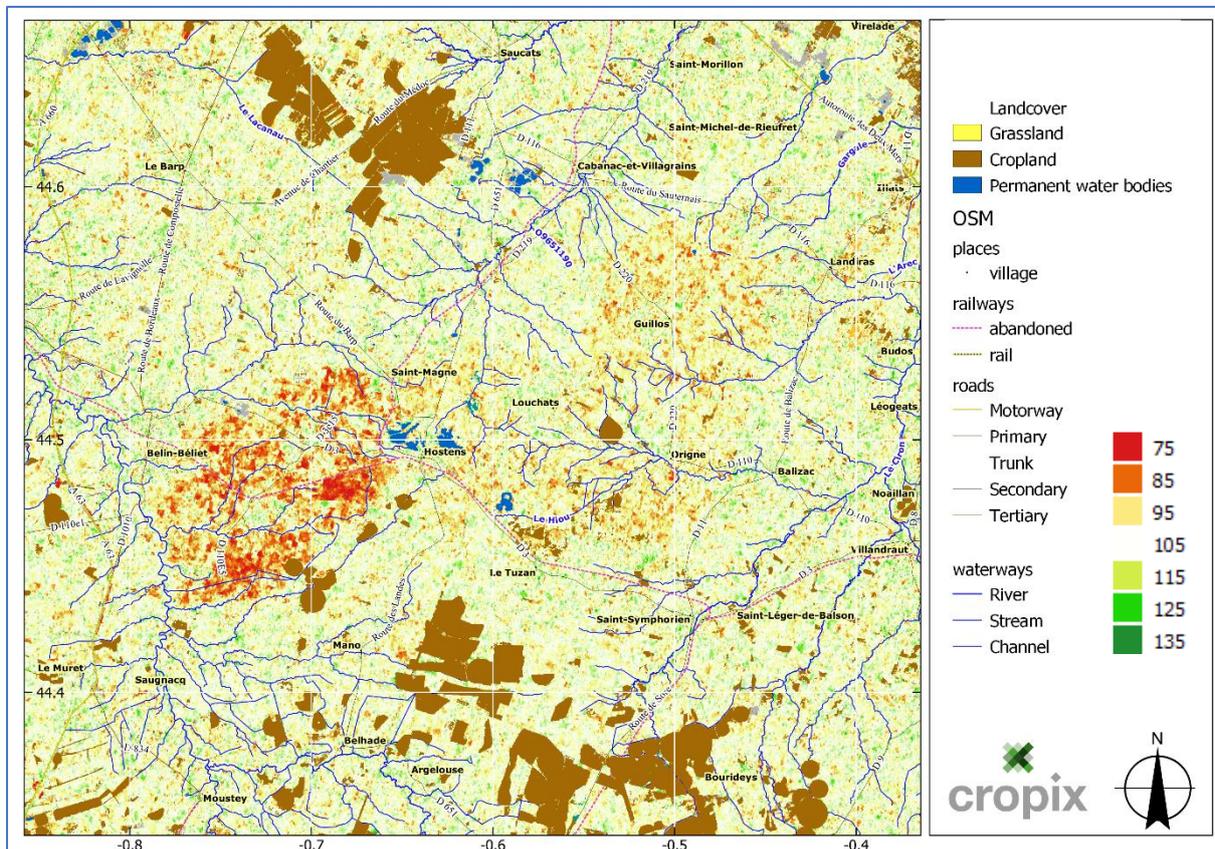
The second one shows the change between **August 1, 2022** and **August 13, 2022**.

You will see as well, that Sentinel-1 has a higher resolution 20x20 m and shows a slightly different pattern. In a previous study we noticed, that the optical sensors can be irritated by dense smoke.

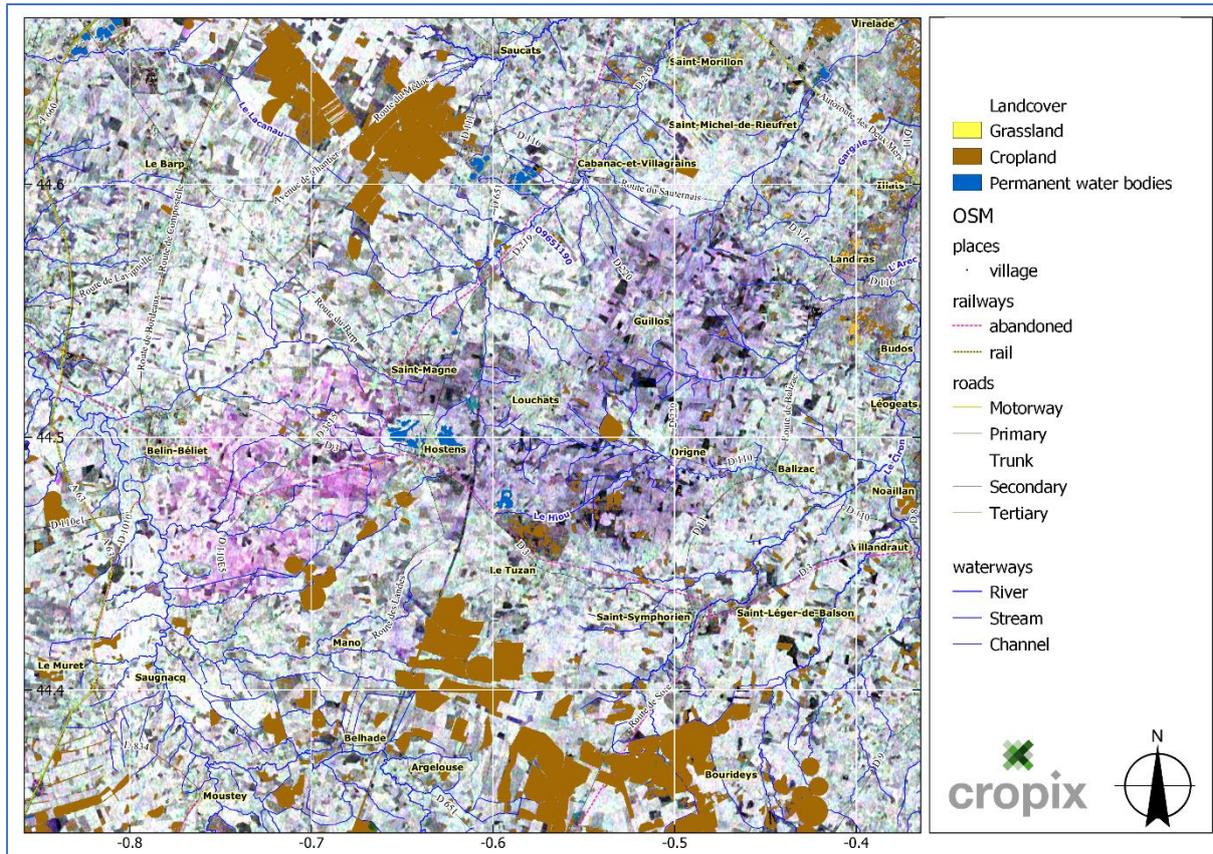
In red you see the reduction of ESVI units in July.



Here you see the change that occurs in August.



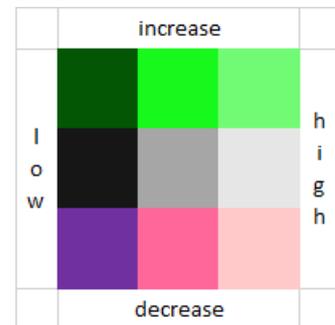
For the following **Color-Composite** we merged 3 succeeding ESVI maps.
 You see here as well the footprints of the two events in different colors.



The map shows in black permanent low values. This are normally inland water bodies or bare soil.

Bright grey color indicates high biomass values for all three acquisitions. These are normally forests.

In pink you see a reduction whereby the color changes according to the different dates.



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