Bulletin of Land Surface Dynamics

Second half of 2017

April 2018

Second half of 2017

The second half of 2017 was mainly marked by dramatic forest fire and some sparse vegetation anomalies:

- **The fire of Pedrógão Grande in Portugal was one of the most dramatic fire event of summer 2017**
- **A fire in Var, France, endangered the last population of Hermann's tortoise of the country**
- **Dryness influenced the water bird's population in Camargue**
- **Contrary to Northern America, winter 2017 was normal in Europe**

Dramatic fire season in Europe

Summer 2017 was critical in term of forest fire for Europe. According to the data collected by the European Forest Fire Information System (EFFIS), there was in 2017 three times more fire than the previous years, based on the average for the 2008-2016 period. These fires caused harmful consequences on population, vegetation and biodiversity

Tragic impact of Pedrógão Grande fire on society and ecosystem

One of the most fatal fire event happened in Portugal, in Pedrógão Grande (Figure 1). Fire started during the night of 17 June and spread quickly. Due to a favorable meteorological context (high temperatures, dryness and wind), it consumed the vegetation, mostly composed of pine trees and eucalyptus, on more than 40 kilometers long. More than 60 peoples died, trapped in the fire.

Figure 1: Wildfire rages trough central Portugal (© Patricia De Melo Moreira)

This fire event is noticeable on the LifeWatch Geoviewer, where the same pattern is clearly discernible on both the fire (Figure 2) and vegetation anomalies. The vegetation anomaly in red, appearing just after the fire, remains months after the event. It shows that the vegetation was deeply affected (Figure 3).

Prepared by LifeWatch-WB

Available in April 2018– Ninth issue

Supported by:

FÉDÉRATION WALLONIE-BRUXELLES

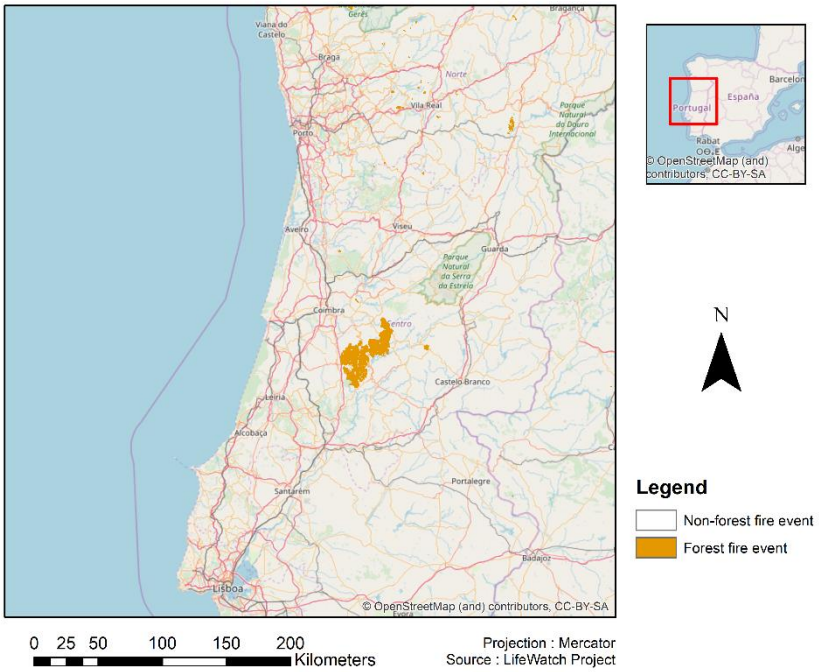


Figure 2: Pedrógão Grande fire

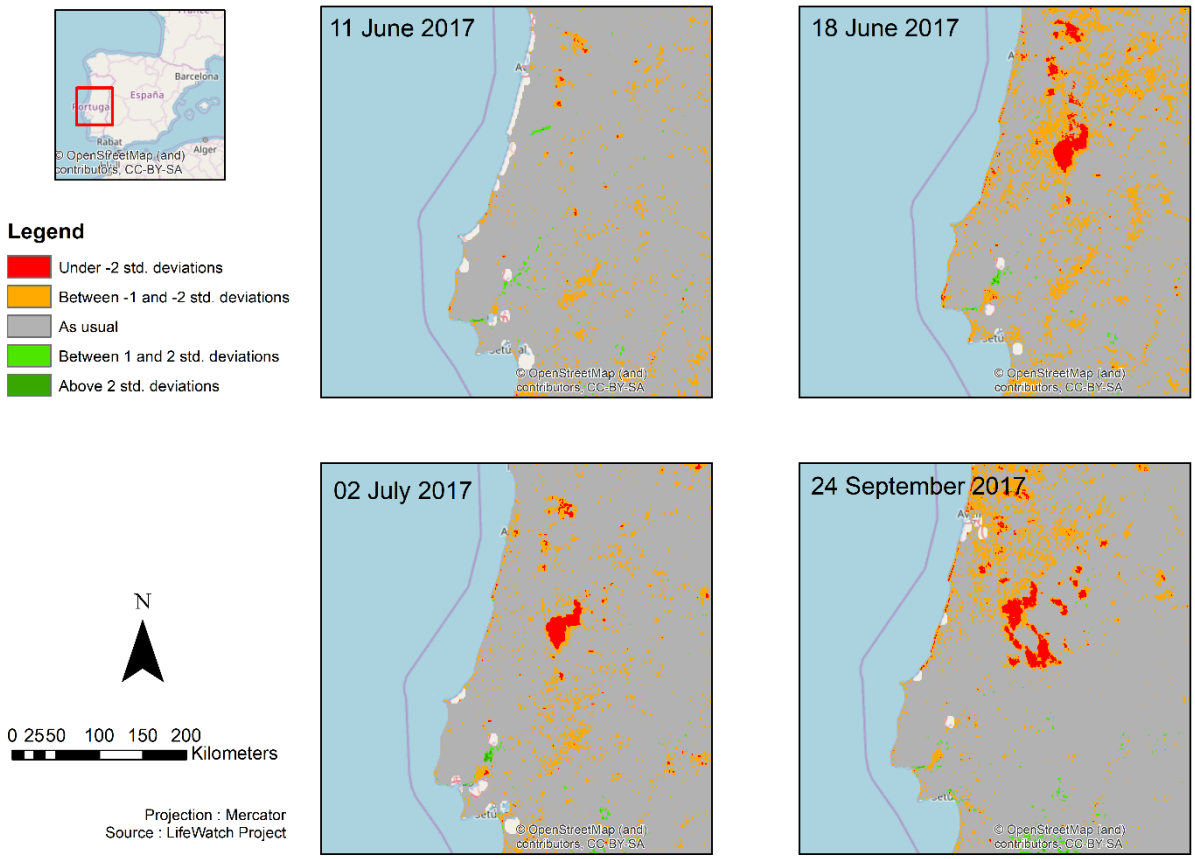


Figure 3: Vegetation anomalies caused by Pedrógão Grande fire. The fire happened between the upper left and upper right images, on which the vegetation loss caused by the fire is clearly discernible. This loss is still observable months after the fire event.

Population of Hermann's tortoise threatened by fire in Var, France

Vegetation fire had also a severe impact on Hermann's tortoise in Maures and Estrel massifs in France. Only a hundred of individuals were still present in those regions, but almost 90% of the population disappeared because of the fire events of end of July (Figure 4). Hermann's tortoises are the only wild species of tortoise in France, and this fire could be a severe thread to the survival of the species in France.

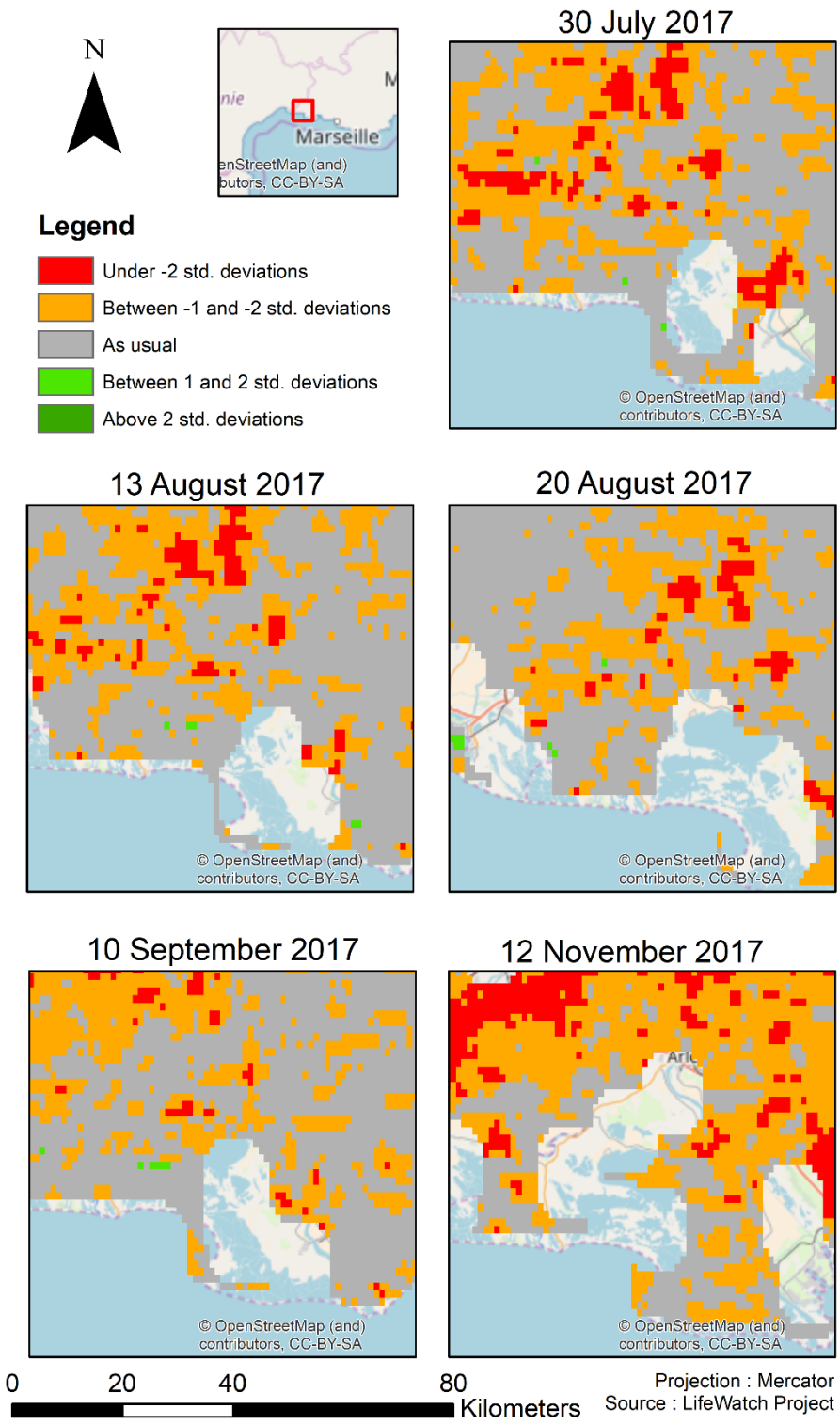
Figure 4: One of the few Hemann's tortoise survivor of the fire (© S. Caron)

Vegetation anomaly due to dryness in Southeast of France

The second half of 2017 in Europe was quite close to the long term-average in term of vegetation cover, except for some local anomalies, like in Southeast of France

The second half of 2017 was exceptionally dry around the Gard and Bouches du Rhône departments in France. In the national reserve of Camargue, this dryness had an impact on the water bird's population. This dryness is visible on the vegetation anomalies product (Figure), where the vegetation is clearly low for the season.

According to the monthly census from the "Société Nationale de Protection de la Nature", most of the ducks and coots that sually populate the reserve had left in December.



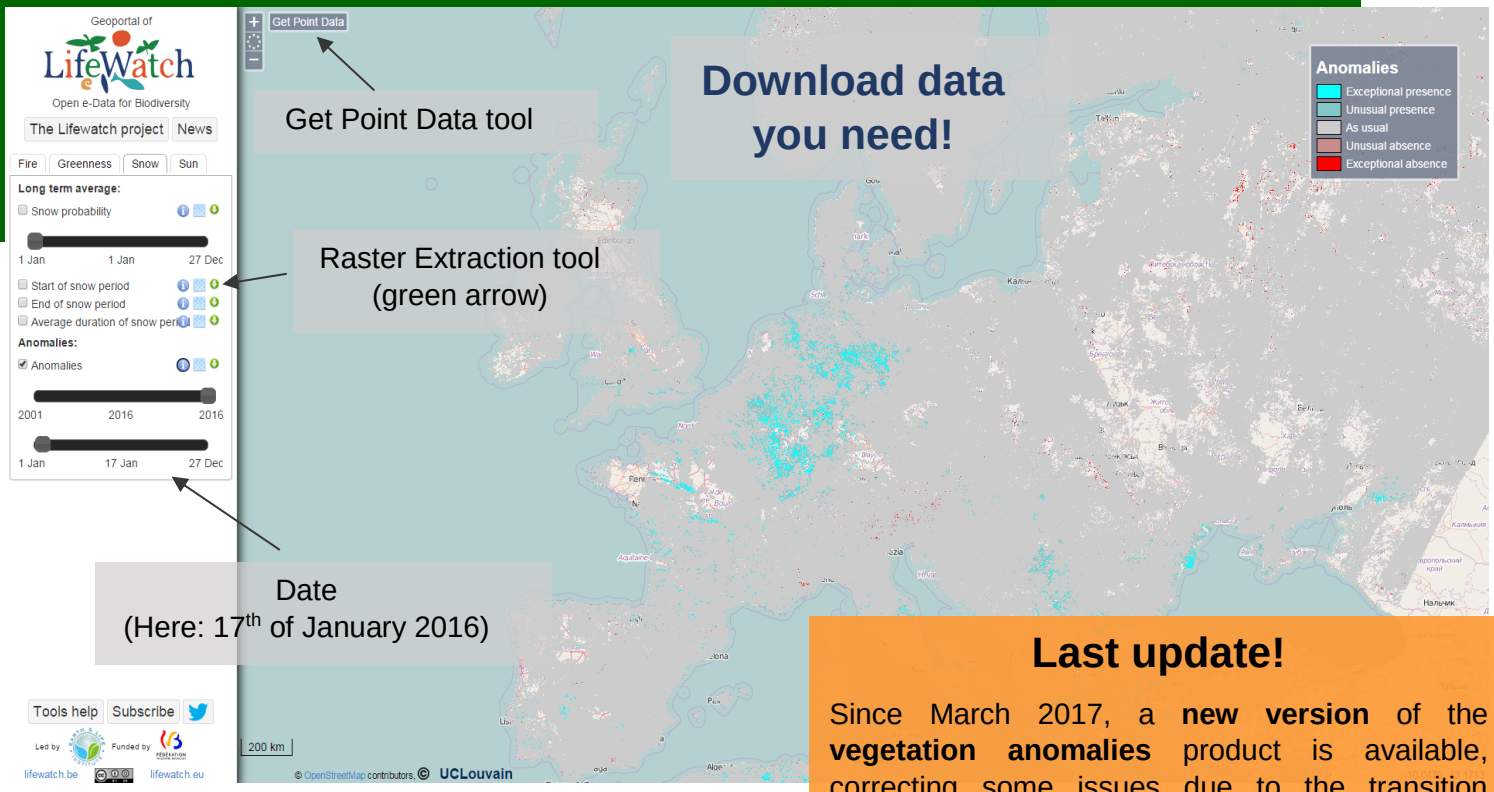
Indeed, the number of individuals of these species counted are the lowest since the beginning of the survey in the reserve, in 1988. In other hand, the low water level was favorable for the sandpipers, which were more numerous than previous year.

Figure 5: Vegetation anomalies around the national reserve of Camargue.
As shown by the images from multiple dates, the dryness lasted for the whole second half of 2017.

Bulletin of Land Surface Dynamics
Second half of 2017
E-Science European Infrastructure for Biodiversity and Ecosystem Research

Web portal to view and download data

All this information (and more) can be visualized from the web portal where a point based and a raster (.tif) extraction tools are also provided (see below): *www.uclouvain.be/lifewatch*. All data are available at least from 2001 to present and are regularly updated. Follow us on Twitter to get the latest news @LifeWatch_WB. For comments, suggestions or unusual data request, contact us at *lifewatch@uclouvain.be*



Last update!

Since March 2017, a **new version** of the **vegetation anomalies** product is available, correcting some issues due to the transition between SPOT-VEGETATION and PROBA-V and filtering false anomalies in arid zone.

LifeWatch: Biodiversity and Ecosystem research

LifeWatch Wallonia-Brussels is one of the Belgian contributions to the European Research Infrastructure Consortium for Biodiversity and Ecosystem research (LifeWatch). It is funded by the Fédération Wallonie-Bruxelles. Information about the Belgian contributions to LifeWatch can be found on *www.lifewatch.be*. LifeWatch is one of the most ambitious European initiatives for the study of biodiversity and ecosystems. LifeWatch is not a research project, but an infrastructure that offers services and tools to the scientific community, the policy makers and the public. In addition, LifeWatch will provide opportunities to construct personalized 'virtual labs', also allowing entering new data and analytical tools. More information about LifeWatch can be found on: *www.lifewatch.eu*

Methods

The summarized land surface dynamics are developed from remote sensing time series of daily global observations by satellites. The time series allow to derive average state of variables at any given time of the year. Data can be compared to this average to highlight anomalies. The average state of variables is developed within the CCI Land Cover project *http://www.esa-landcover-cci.org*. Metrics and anomalies are then derived in the frame of the Lifewatch-WB project. Data from the Belgian satellite Proba-V are used to continue the vegetation greenness time series after the end of SPOT-VEGETATION.

Prepared by LifeWatch-WB

Available in April 2018– Ninth issue

Supported by:

FÉDÉRATION WALLONIE-BRUXELLES