**LifeWatch BELGIUM**

Second half of 2018

The second half of 2018 was mostly marked by severe droughts in Europe, lasting until October in some areas and having significant impacts on agriculture and biodiversity.

- Severe damage on vegetation
- Wildlife impacted in several countries
- Unusual wildfires raging in northern Europe (up into the Arctic Circle)

Severe heat wave in Europe.

The summer of 2018 was marked with a severe heat wave in Europe, lasting from June to the end of October in some areas (e. g. Frances' Massif Central and North-East regions). The impacts of these extreme conditions on vegetation are clearly visible in the greenness anomalies (figure 1)
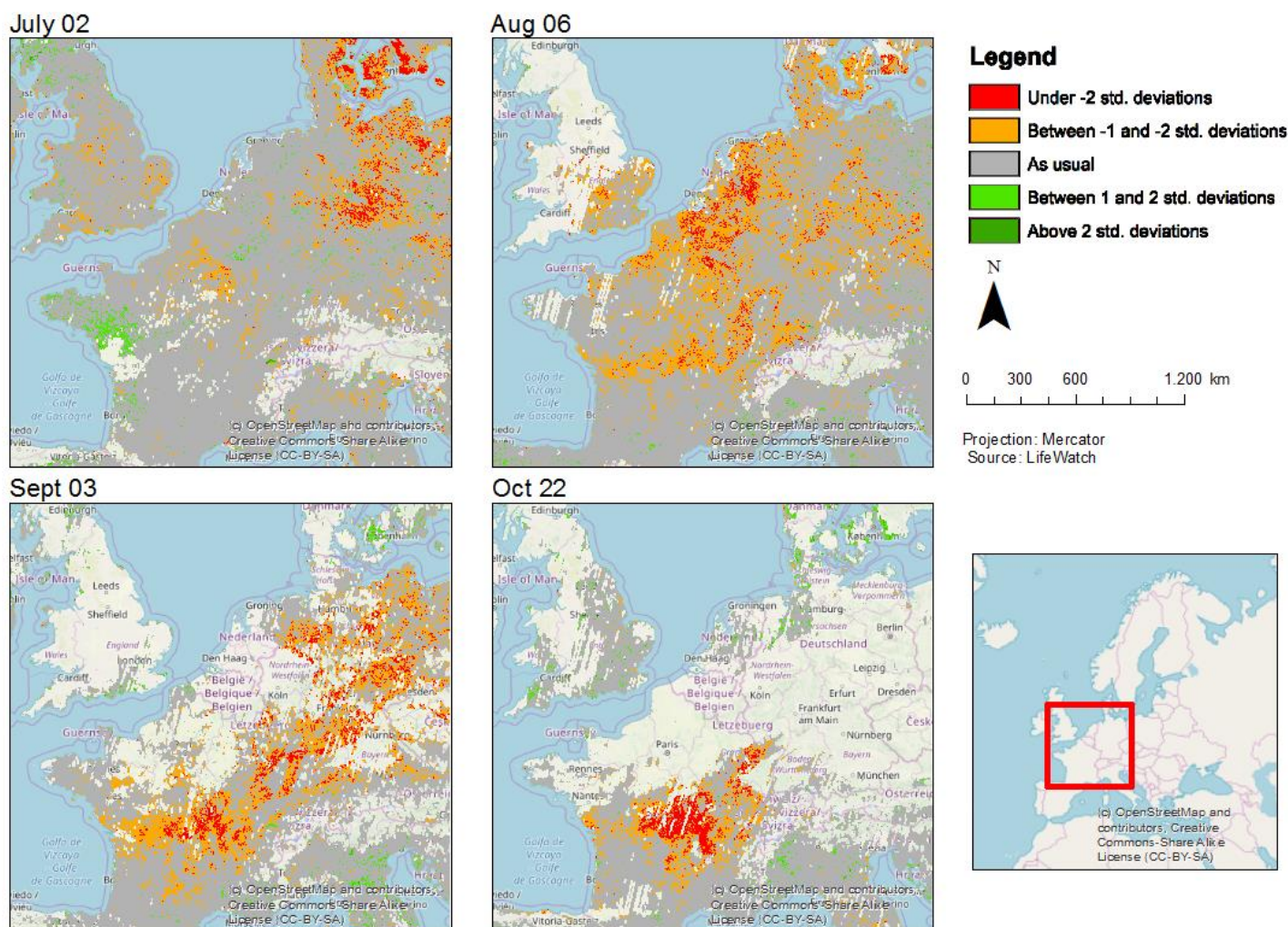
1. Negative vegetation anomalies caused by the severe heat wave in Europe.

UK wildlife impacted by the heat wave.

Many animal species have suffered directly or indirectly from the prolonged heatwave. The drought has severely affected vegetation (figure 1). The Avnon Wildlife Trust explains that fewer pollinating plants mean fewer insects and caterpillars, which means food shortage for many bird species and small mammals such as shrews and bats. In an article on the impacts of the heat wave on wildlife, NBC news mentions there have been several reports of badgers killed on the road in Scotland. The small mammals were forced to wander outside their usual feeding areas, in the search for worms, buried deep under the dry and compact soil.

2. Scottish badger

More occurrence of rare butterflies in Belgian gardens.

3. Old World swallowtail (Papilio machaon)

In Belgium, the 1000 participants of a butterfly inventory action, initiated by Natagora ("Devine qui papillonne au jardin") reported about 14 butterflies per garden, which is less than usual, according to an article by RTBF. Common species such as the European peacock (*Aglais io*), the red admiral (*Vanessa atalanta*) or the small tortoiseshell (*Aglais urticae*) were observed less than other years. This low occurrence in gardens is partly due to the fact that butterflies had been seeking refuge forest in tree lines during the hot days. Less common species such as the Old World swallowtail (*Papilio machaon*) and the silver-washed fritillary (*Argynnis paphia*) however benefitted from the heat and broke records in terms of occurrence.

Apiculture in France: concerns for 2019

While the honey production of 2018 seemed to break records in France, beekeepers are concerned for this year's (2019) yields. According to l'"Action Agricole Picarde", the persisting drought has caused rapeseed, one of the main resources for bees, to develop slower, which affected bee colonies.

Wildfires in the Arctic Circle.

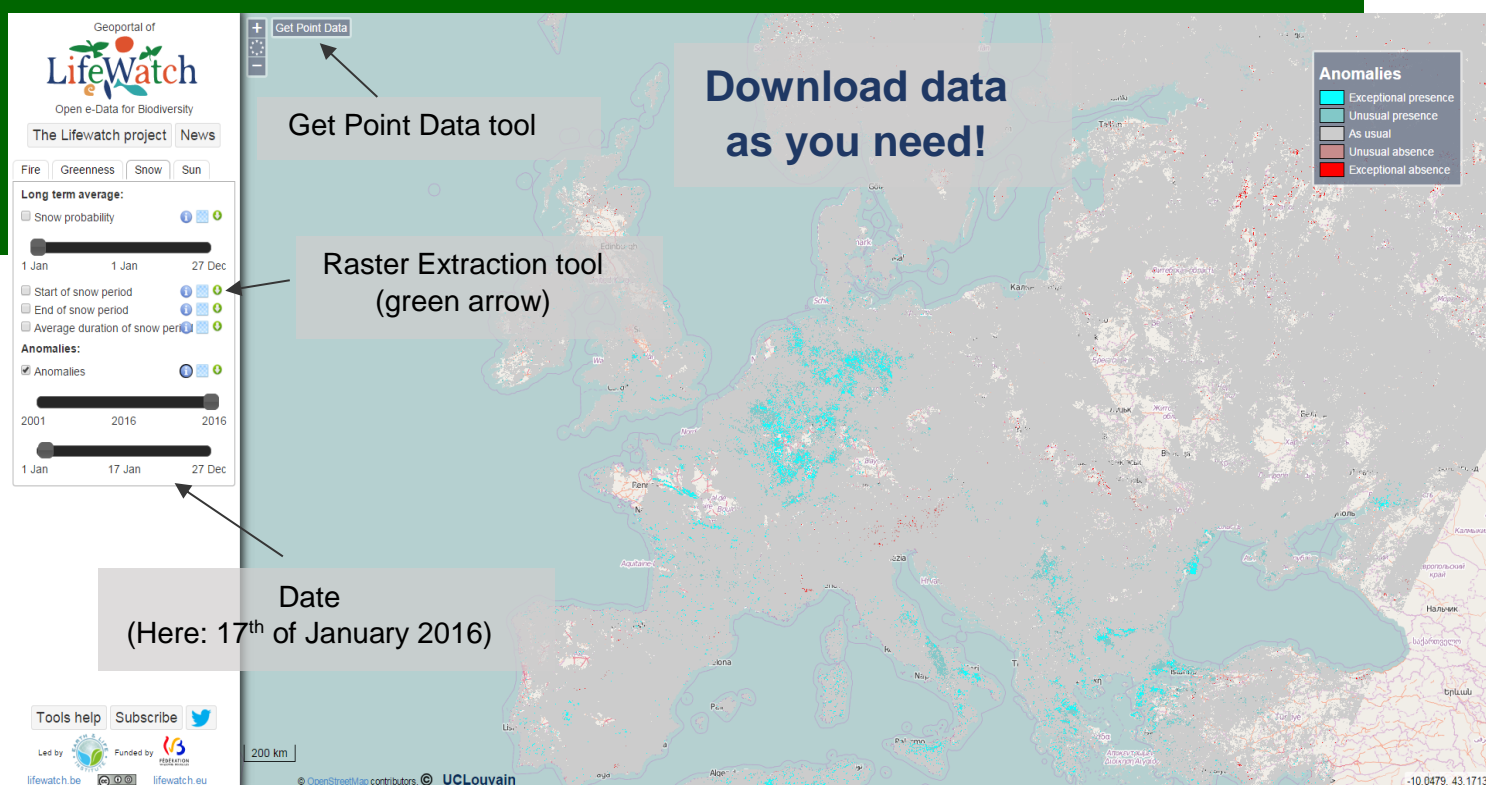*4. Wildfire in Sweden (Reuters/TT News/M. Anderson)*

The record heat wave also caused unusually large wildfires outside the traditional European fire zone of the Mediterranean. According to 'The Guardian' Sweden was one of the worst affected countries, with wildfires raging up into the Arctic Circle. The unusual occurrence of fires in northern Europe is well illustrated by the fire occurrence anomalies of 2018 (figure **5**). Indeed, in 14% of the 100x100 km grids of the map extent, unusually large areas were affected by wildfires, i.e. at least 2 standard deviations larger than the 18 years average. The most affected grids above the Arctic Circle were touched by wildfires on a bit more than 1% of their surface, while the 18 years average is around 0.07%.
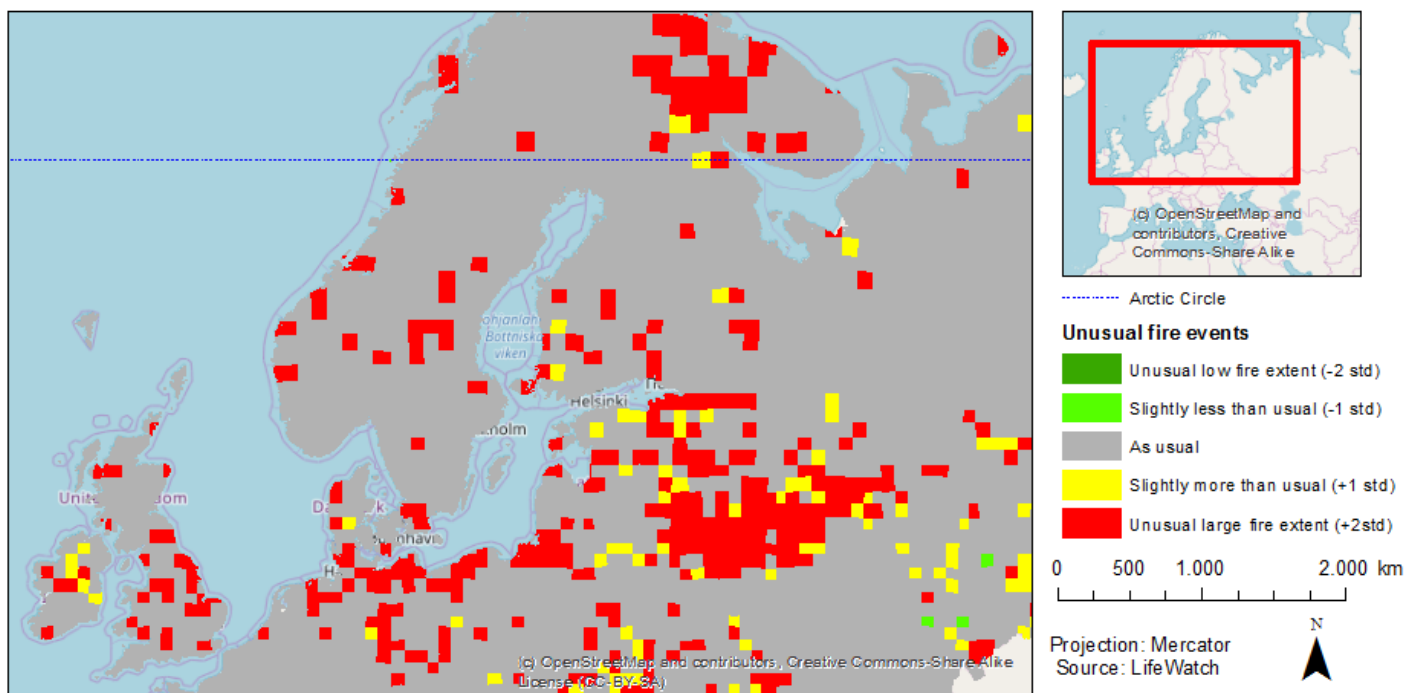
5. Unusual fire events - 2018 fire anomalies

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 updated every week. Follow us on Twitter to get the latest news @LifeWatch_WB. For comments, suggestions or unusual data request, contact us at *lifewatch@uclouvain.be*

Get Point Data tool

Raster Extraction tool
(green arrow)

Date
(Here: 17th of January 2016)

Download data
as you need!

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.