



European  
Commission

# JRC TECHNICAL REPORT

## Weekly analysis of wildfires in the Amazon region: September 21 - September 27, 2020

2020



GWIS

Global Wildfire Information System



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

**Map Options**

- Country Boundaries Layer
- Human Settlement Layer

**Forecasts**

**FIRE DANGER FORECAST**

Source:

Index:

**LIGHTNING FORECAST**

Date:

**Rapid Damage Assessment**

Select a date-range

From: 21 Sep 2020 To: 27 Sep 2020

**ACTIVE FIRES**

MODIS  VIIRS

**BURNT AREAS**

MODIS (Last update: 2020-06-13)

MODIS & VIIRS NRT

**FIRE EMISSIONS**

Black Carbon  Methane

500 km  
500 mi

Joint  
Research  
Centre

JRC121986

GWIS | Ver. 2.4.41. Brexit disclaimer

This publication is a Technical report by the Joint Research Centre (JRC), the European Commission's science and knowledge service. It aims to provide evidence-based scientific support to the European policymaking process. The scientific output expressed does not imply a policy position of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use that might be made of this publication. For information on the methodology and quality underlying the data used in this publication for which the source is neither Eurostat nor other Commission services, users should contact the referenced source. The designations employed and the presentation of material on the maps do not imply the expression of any opinion whatsoever on the part of the European Union concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Contact information

Name: Global Wildfire Information System  
Address: <https://gwis.jrc.ec.europa.eu>  
Email: [jrc-effis@ec.europa.eu](mailto:jrc-effis@ec.europa.eu)  
Tel.: +39 0332 786138

EU Science Hub  
<https://ec.europa.eu/jrc>

JRC121986

Luxembourg: Publications Office of the European Union, 2020

© European Union, 2020

Cover image: Burnt areas mapped in GWIS the week of September 21 -27 2020. White boxes show areas of fires larger than 10000 ha.



The reuse policy of the European Commission is implemented by the Commission Decision 2011/833/EU of 12 December 2011 on the reuse of Commission documents (OJ L 330, 14.12.2011, p. 39). Except otherwise noted, the reuse of this document is authorised under the Creative Commons Attribution 4.0 International (CC BY 4.0) licence (<https://creativecommons.org/licenses/by/4.0/>). This means that reuse is allowed provided appropriate credit is given and any changes are indicated. For any use or reproduction of photos or other material that is not owned by the EU, permission must be sought directly from the copyright holders.

All content © European Union, 2020

How to cite this report: San-Miguel-Ayanz, J.<sup>1</sup>, Artes, T.<sup>1</sup>, Oom, D.<sup>1</sup>, Campanharo, W.<sup>2</sup>, Pfeiffer, H.<sup>3</sup>, Branco, A.<sup>3</sup>, Libertà, G.<sup>1</sup>, De Rigo, D.<sup>3</sup>, Grecchi, R.<sup>3</sup>, Maianti, P.<sup>3</sup>, Boca, R.<sup>3</sup>, Durrant, T.<sup>4</sup>, Ferrari, D.<sup>4</sup>, 2020. Weekly analysis of wildfires in the Amazon region: September 21-September 27, 2020, Publications Office of the European Union, Luxembourg, JRC121986.

<sup>1</sup> European Commission, Joint Research Centre (JRC), Ispra, Italy

<sup>2</sup> Instituto Nacional de Pesquisas Espaciais (INPE), San Jose dos Campos, Brazil

<sup>3</sup> ARCADIA SIT, Milan, Italy

<sup>4</sup> Engineering Ingegneria Informatica S.p.A. Rome, Italy

**Contents**

Scope of this report and executive summary ..... 1

1 Wildfires in the Brazilian Legal Amazon Region ..... 2

2 Wildfires in Brazil..... 3

3 Wildfires in Bolivia..... 4

4 Wildfires in Colombia..... 5

5 Wildfires in Paraguay..... 6

6 Wildfires in Peru..... 7

7 Wildfires in Venezuela ..... 8

8 Fire danger and fire weather forecast in the Amazon region..... 9

## Scope of this report and executive summary

This report describes the trends of wildfires in the Amazon in 2020 through the comparison with the fire activity in the region in previous fire seasons. It must be noted that 2019 was a critical year in terms of fire activity in many of the countries in the region. Seasonality and trends on fire activity in the countries can be found at the [JRC Technical Report on the Amazon](#). The current report has been produced by the European Commission's Joint Research Centre (JRC) within its activities on the development of a Global Wildfire Information System (GWIS)<sup>1</sup>. Paraguay has been included in this report due to the high fire activity observed this year, although it is not part of the Amazon region. Figure 1 shows the geographical extent of the countries analyzed in this report.

- The Brazil Legal Amazon, within Brazil, shows a similar trend of burnt areas of that in 2019, with approximately 1.11 Mha burned in the last week, which is the value of the same week in 2019; **3,441 fires were recorded in the week, increasing from the previous week**, and above the value of the same week in 2019. **About 23.4 Mha burnt so far in 2020, a value that is about 42 % higher than that in 2019.**
- The 2020 wildfire season in Brazil shows a similar pattern to that of 2019. More than 1,8 Mha burned last week in Brazil, where 5,437 new fires occurred, increasing from the previous week. **Overall, 31.1 Mha of burnt areas were mapped in GWIS until September 27, 2020, which is a value about 34% higher than that in 2019.**
- A total of 4,5 Mha ha burnt in Bolivia since January 1 until September 27, 2020, with **705,203 ha burnt last week, the second highest value of burnt areas in a week this year.** This is an increase from the previous week although the value is lower than the peak of the week 24-31 August. **The total burnt area in 2020 is notably below (-32%) the values of 2019 and similar to 2018.**
- **In Colombia, the current fire season has been more severe than the last two years, 2018 and 2019,** with larger burnt areas and a higher number of fires from January to April. The fire activity last week was similar to that of previous years. **Nearly 3.1 Mha burnt in the country until September 27, 2020, which is a value about 20% higher than that of 2019.**
- **Paraguay, with 4.55 Mha burnt** until September 27, 2020, shows higher fire activity than in 2018 and 2019, and an increase of burnt areas between March and June, currently **reaching values nearly 2 times those of the past years. The fire activity last week, with 612,198 ha burned in one week, was the highest since the beginning of the year.**
- **Peru** recorded last week 951 fires, responsible for 236,176 ha burned, an increase comparing with the previous week. It **shows an above average fire activity in 2020, as compared to the previous two years. With about 2.06 Mha burnt until September 27, 2020, the number of areas burnt in the year is about double of that in 2019.** The number of fires is also nearly double of that in 2019.
- **Venezuela, with about 6,78 Mha burnt** in the country until now, **is above the values of the previous two years. However, the fire activity in the last weeks is comparable to those in 2018 and 2019.**
- This week, fire danger conditions are expected to be very high to extreme in central, south and northeastern Brazil with higher values than the previous week. Also, extreme values are expected in southern Bolivia and Paraguay. Moderate or high fire danger is expected in northern Bolivia and southern BLA.



Figure 1. Areas analyzed in this report: Brazil Legal Amazon, Brazil, Bolivia, Colombia, Paraguay, Peru and Venezuela

<sup>1</sup> <https://gwis.jrc.ec.europa.eu>

# 1 Wildfires in the Brazilian Legal Amazon Region

Figure 2 shows the trends on the extent of burnt areas and the number of fires since January 1, 2020 produced by the Near-Real Time (NRT) fire analysis in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 23,478,310 ha burnt in the BLA since January 1 until September 27, 2020, with 1,111,614 ha burnt in total the last week, decreasing from the last week. The total burnt area in the BLA, at about 23.4 Mha, is currently about 42.32 % higher than the same period of 2019.

The number of fires recorded in GWIS in the last week was 3,441 ,increasing from the last week. The total number of fires in 2020 is close to 45.54% above the figure in 2019. On average, fires that occurred in the BLA in the last 4 weeks, were smaller in 2020 as compared to 2019. The number of thermal anomalies until September 27, 2020 (724,158) shows a typical trend in the region as compared to the trends in 2018 and 2019. A number of 29,684 thermal anomalies was registered last week, less than the half recorded in the previous week.

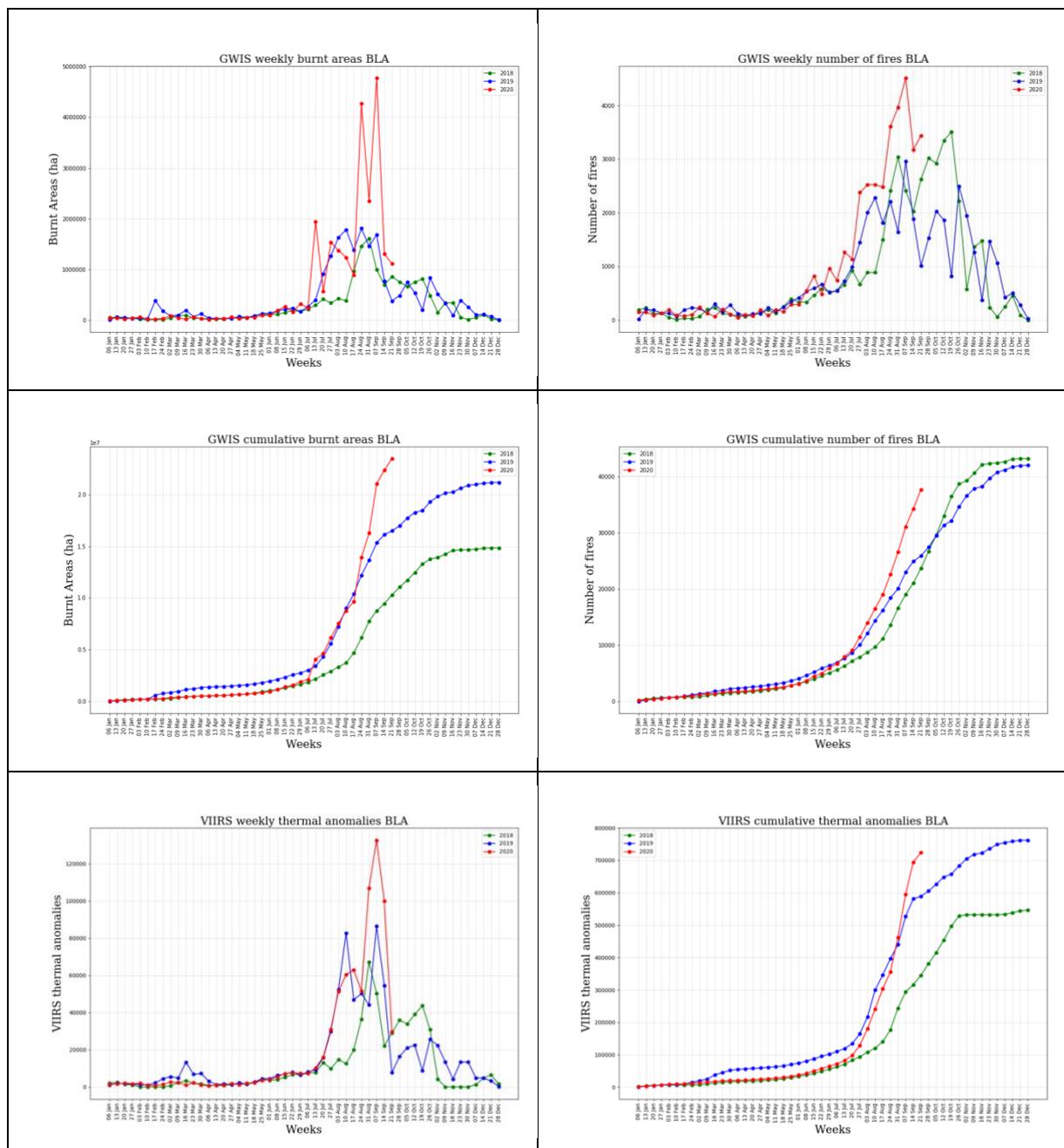


Figure 2. Trend of burnt areas and number of fires as compared to data in the last two years.

## 2 Wildfires in Brazil

Figure 3 shows the trends on the extent of burnt areas and the number of fires since January 1, 2020 produced by the Near-Real Time (NRT) fire analysis in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 31,1 Mha ha burnt in Brazil since January 1 until September 27, 2020, with a total 1,822,063 ha burnt in the last week, decreasing from the values recorded last week. The total burnt area in Brazil, at approximately 31.1 Mha, is about 34.36% higher than that of 2019. The value of the week was higher than the value of the same week in 2019 and 2018.

The number of fires recorded in GWIS in the last week was 5437, increasing from the values recorded last week, and 45% higher than the value in 2019 in that week. The number of fires in 2020 up to September 6 is about 44.19% higher than that of 2019, with similar average fire size. The number of thermal anomalies until September 27, 2020 (966,043) shows a typical trend in the region but higher values as compared to the trends in 2018 and 2019. 49,055 thermal anomalies were registered last week, decreasing from the value recorded last week but still higher than 2019.

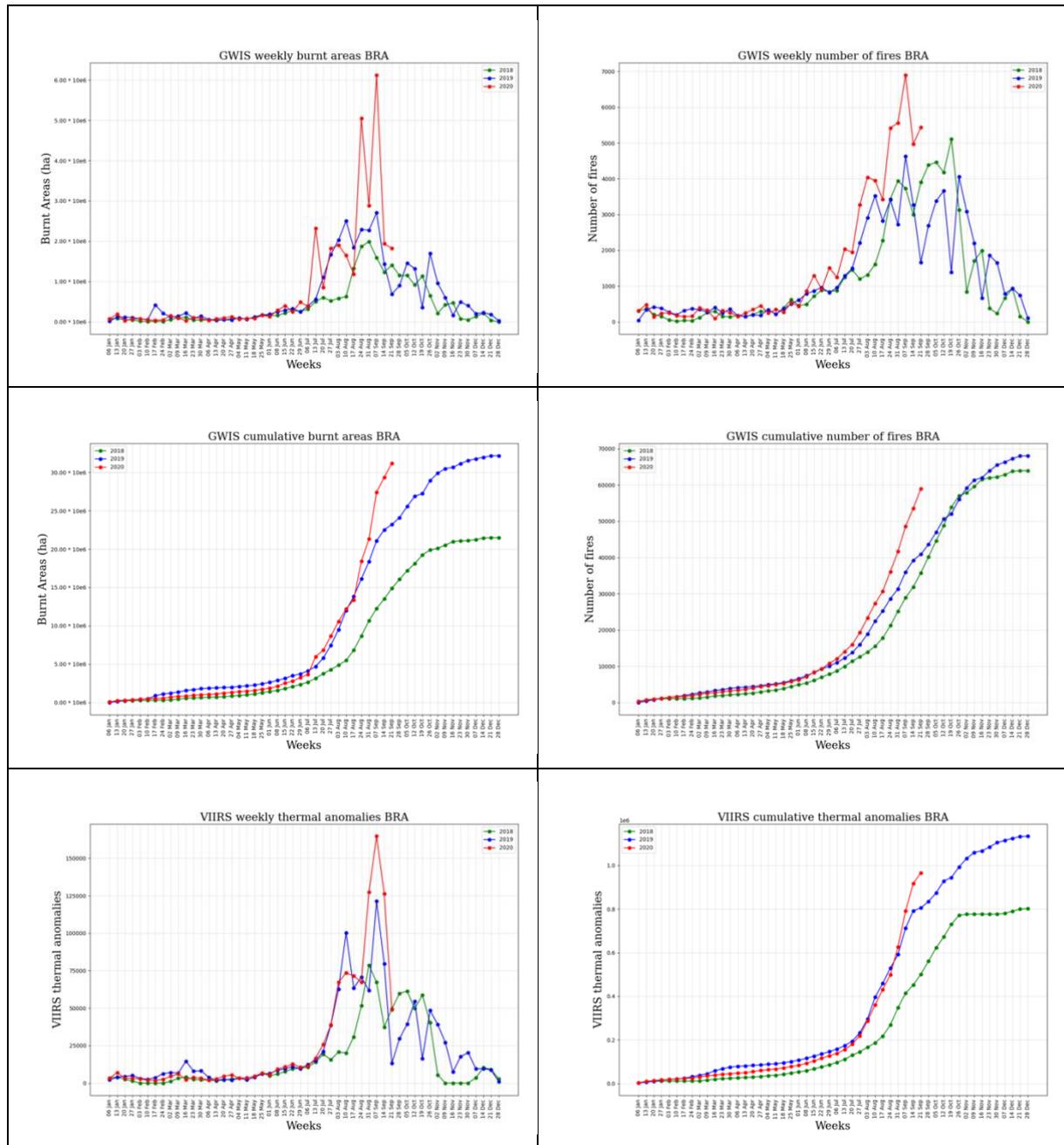


Figure 3. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

### 3 Wildfires in Bolivia

Figure 4 shows the trends on the extent of burnt areas and the number of fires since January 1, 2020 produced by the Near-Real Time (NRT) fire analysis in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 4,520,856 ha burnt in Bolivia since January 1 until September 27, 2020, with 705,203 ha burnt in the last week, the second highest value in the year. The total burnt area in 2020 is currently about 31.7% below the value of 2019, slightly higher than 2018.

The number of fires recorded in GWIS in the last week was 1765, the highest value in the year. The total number of fires are higher than 2018 and 2019. The number of thermal anomalies until September 27, 2020 (131,545) shows a typical trend in the region; however, the value is about 50% of that reached in 2019. 19,588 thermal anomalies were detected by VIIRS in the last week, a value that is still below those of 2019 but higher than 2018.

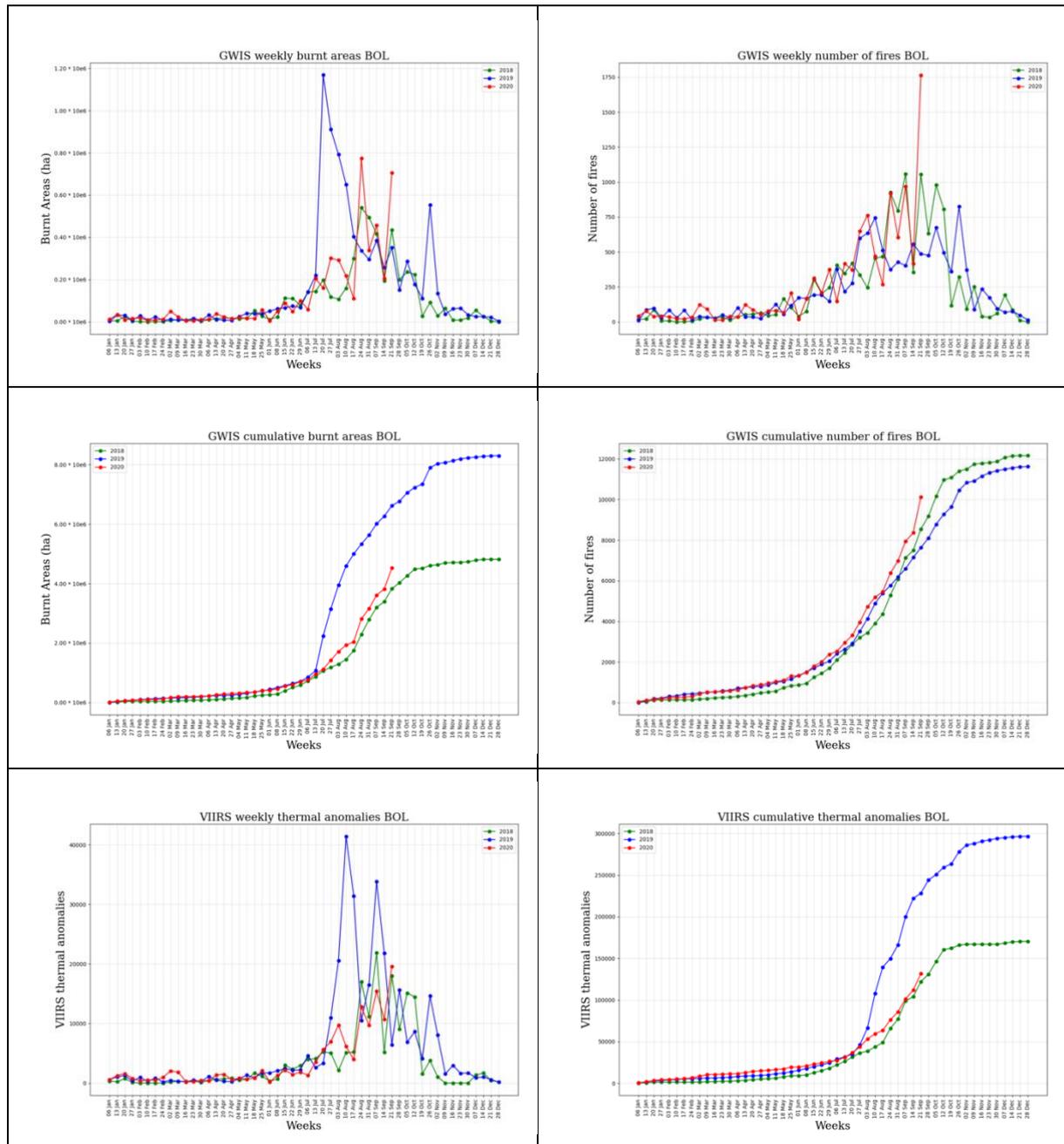


Figure 4. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 4 Wildfires in Colombia

Figure 5 shows the trends on the extent of burnt areas and the number of fires since January 1, 2020 produced by the Near-Real Time (NRT) fire analysis in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 3,131,312 ha burnt in Colombia since January 1 until September 27, 2020, with 23,733 ha burnt in the last week. Although the fire activity last week is similar to those of previous years, the total burnt area in the country remains approximately 20.56 % above the values of 2019, due to the intensive fire activity from January to April 2020.

The number of fires recorded in GWIS in the last week was 106, which shows a stable trend in the last weeks, but higher as compared to 2018 and 2019. The number of fires is approximately 21.52% higher than that of last year. The number of thermal anomalies until September 27, 2020 (110,998) shows a typical trend in the region as compared to the trends in 2018 and 2019, with values approximately 20% higher than those in 2019. 548 thermal anomalies were detected by VIIRS during the last week, which is similar to the values in the same week for 2018 and 2019.

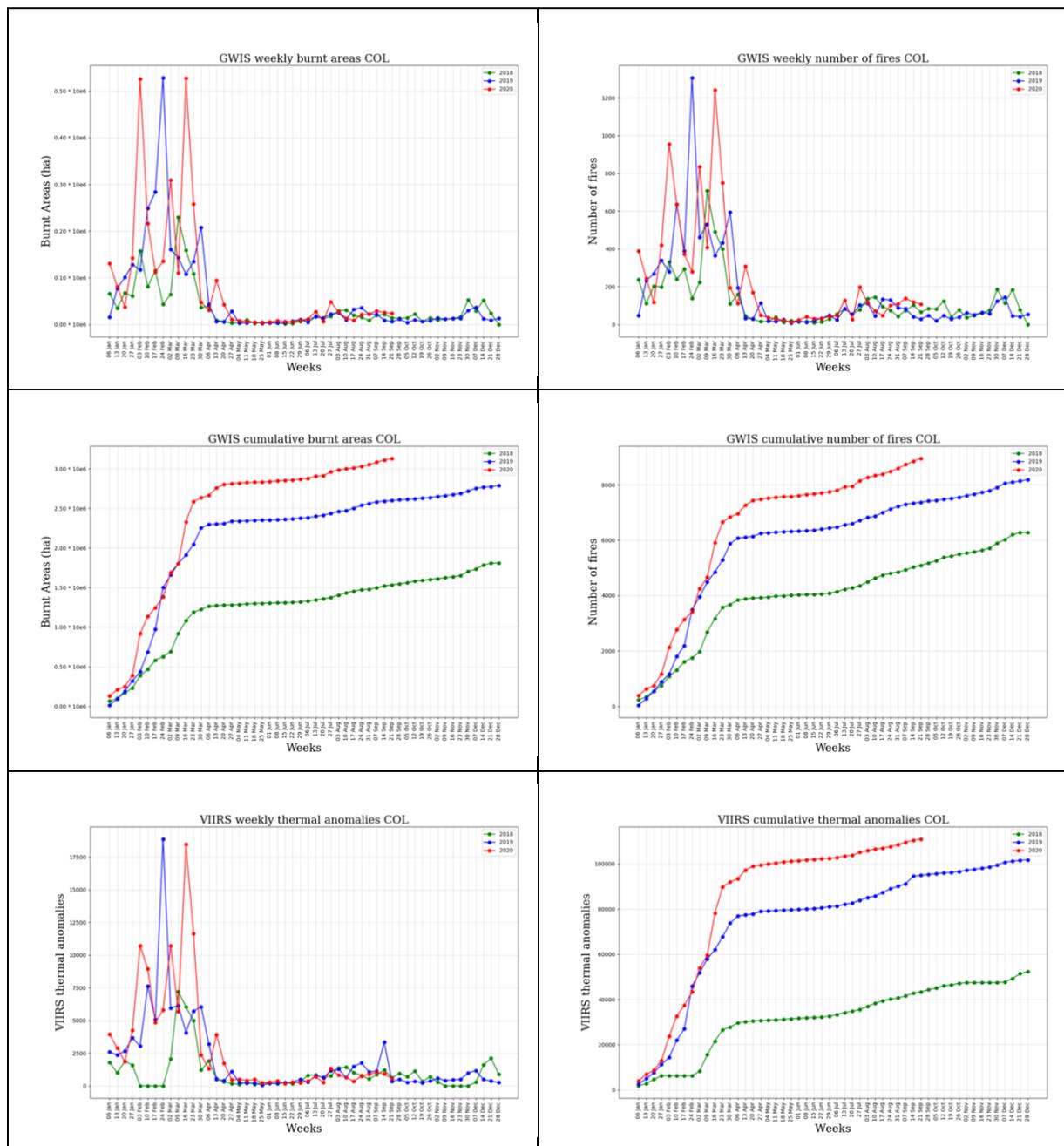


Figure 5. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 5 Wildfires in Paraguay

Figure 6 shows the trends on the extent of burnt areas and the number of fires since January 1, 2020 produced by the Near-Real Time (NRT) fire analysis in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 4,550,933 ha burnt in Paraguay since January 1 until September 27, 2020, which is approximately the double of the values in 2018 and 2019. Approximately 612,198 ha burnt in the country the last week, which is the highest value since the beginning of the year, with values much higher than of those of 2018 and 2019 for the same week.

The number of fires recorded in GWIS in the last week was 1253, which is the highest value since the beginning of the year. The number of thermal anomalies until September 27, 2020 (136,949) shows a typical trend in the region, but with much higher values, nearly double values, as compared to the trends in 2018 and 2019, with 15,819 thermal anomalies detected by VIIRS last week.

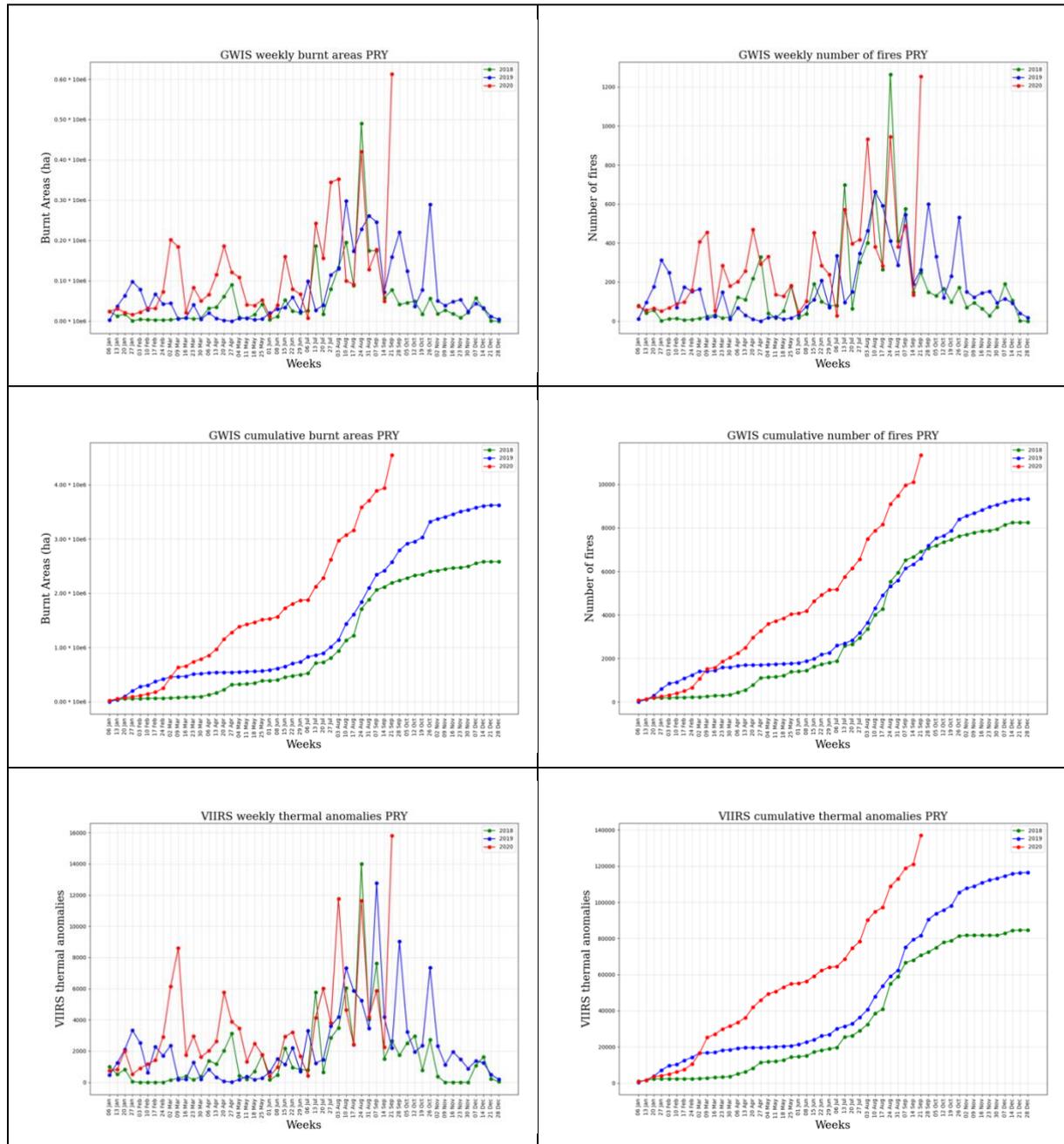


Figure 6. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 6 Wildfires in Peru

Figure 7 shows the trends on the extent of burnt areas and the number of fires since January 1, 2020 produced by the Near-Real Time (NRT) fire analysis in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 2,068,347 ha burnt in Peru since January 1 until September 27, 2020. This value is approximately the double than that of 2019. Approximately 236,176 ha burnt in the last week, increasing from the last week, a value that is higher than those of 2019 and 2018 for the same week.

The number of fires recorded in GWIS in the last week was 951, increasing from the values of the last week, higher than that of 2019 and 2018 for the same week. The total number of fires since the beginning of the year, above 5,000, is about double of that of 2019. The number of thermal anomalies until September 27, 2020 (59,705) shows a typical trend in the region, with values higher than in 2018 and 2019. 4,373 thermal anomalies registered last week.

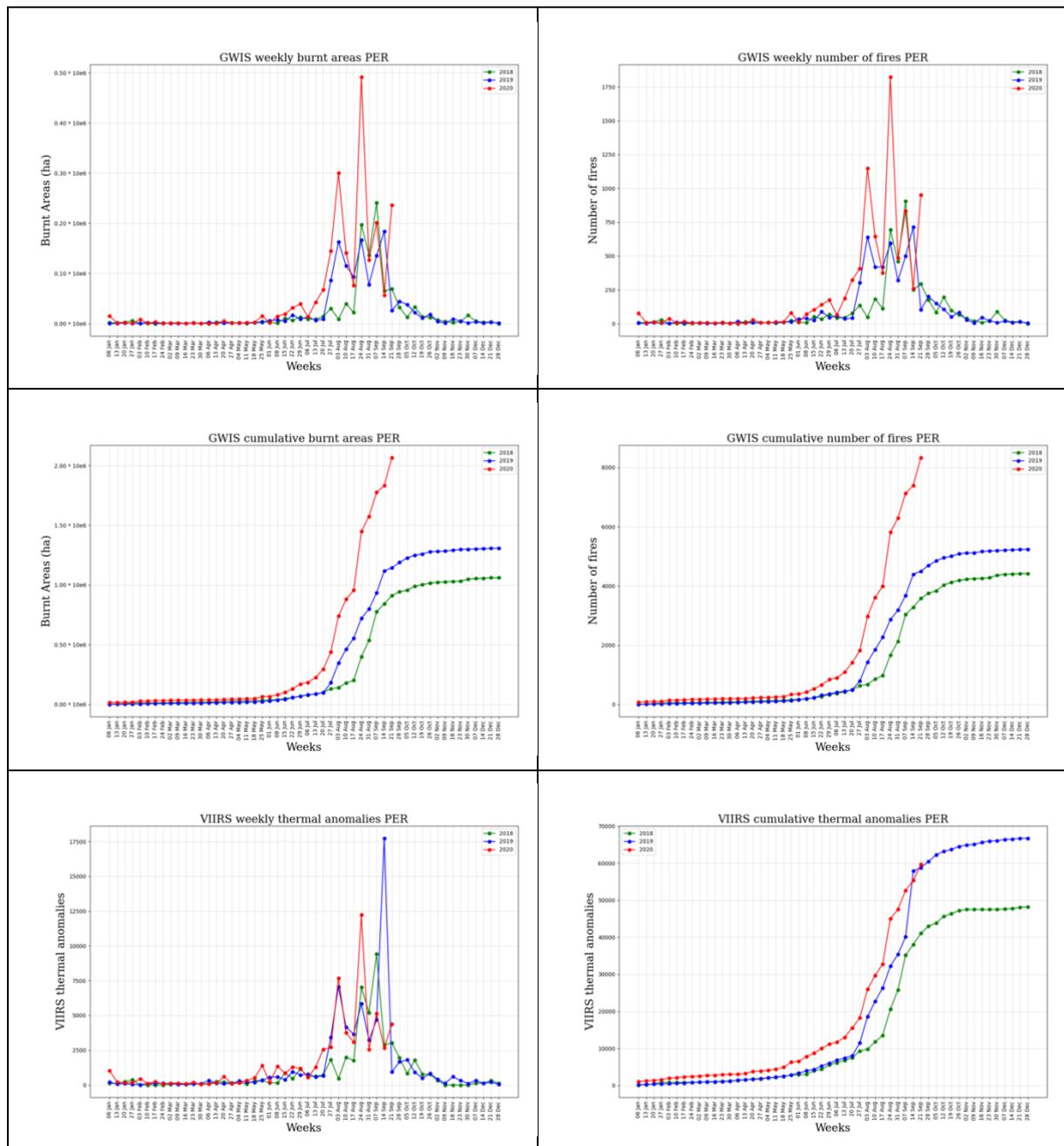


Figure 7. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 7 Wildfires in Venezuela

Figure 8 shows the trends on the extent of burnt areas and the number of fires since January 1, 2020 produced by the Near-Real Time (NRT) fire analysis in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 6,787,573 ha burnt in Venezuela since January 1 until September 27, 2020, with 16,624 ha burnt in the last week. The value of the total burnt area in the country is approximately 15.14 % higher than that in 2019 due to the intensive fire activity in the country between January and April. The trend in the last week is comparable to that of 2018 and 2019.

The number of fires recorded in GWIS in the last week was 72, which shows a stable trend comparable to those of the previous two years, although the total number of fires remains approximately 17.32% higher than in 2019. The number of thermal anomalies until September 27, 2020 (267,266) shows a typical trend in the region as compared to the trends in 2018 and 2019, but with approximately 29.90% higher value than the previous years. 1378 thermal anomalies were recorded by VIIRS during the last week, a value that is slightly higher than those recorded in that week for the previous two years.

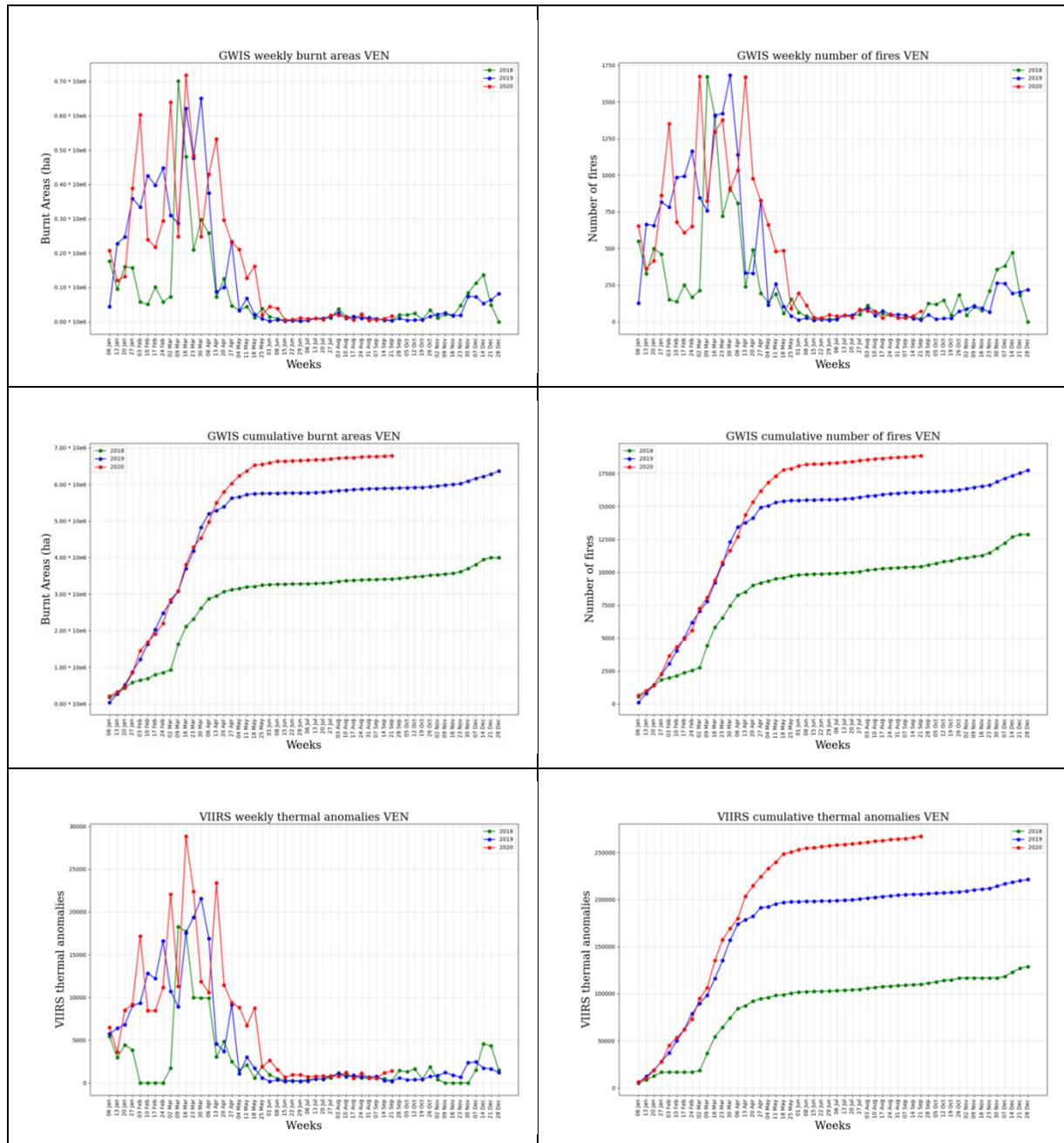


Figure 8. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 8 Fire danger and fire weather forecast in the Amazon region

This section provides information on the fire danger forecast in the Amazon region for the current week. High levels of fire danger facilitate fire ignitions and the propagation of ongoing fires. Figure 9 provides the average fire danger for the week of September 28 to October 04, 2020. This information is based on the daily fire danger forecast that is provided online in GWIS<sup>2</sup>. According to this forecast, it is expected that fire danger conditions are going to be more extreme in the central, south and northeastern Brazil comparing with the previous week. Southern Bolivia and Paraguay also show extreme values of fire danger, with higher values than the previous week. Moderate or high fire danger is expected in northern Bolivia and southern BLA.

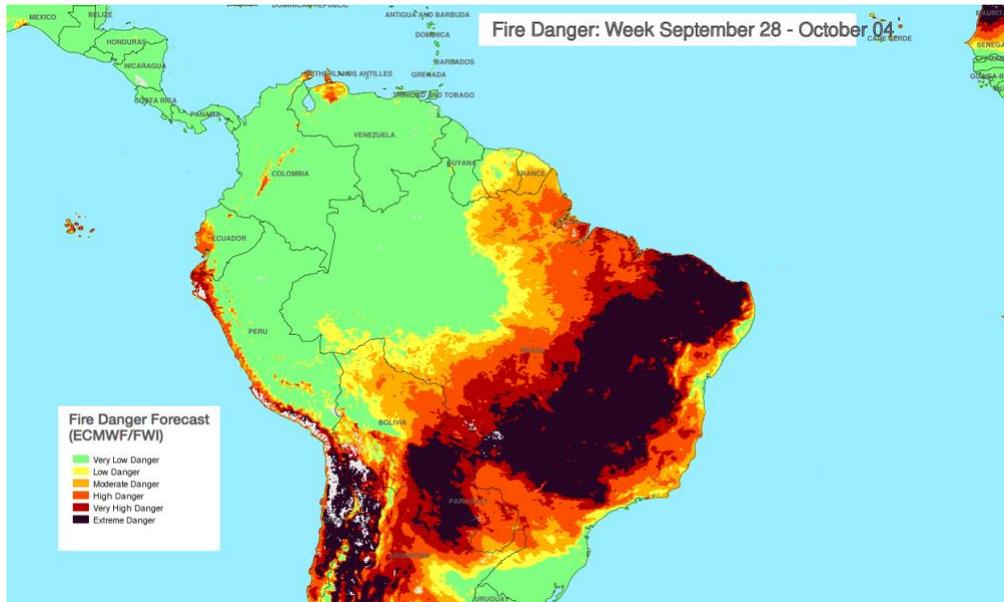


Figure 9. Average Fire danger forecast. Week, September 28-October 04, 2020.

The weekly fire weather forecast of temperature and precipitation anomalies for this week is presented in Figure 10. High above average temperature anomalies are forecasted for central and southern Brazil, eastern Bolivia and Paraguay. Additionally, below average temperatures are foreseen in western Bolivia. The models estimate a below average precipitation rates for this week mainly in central and southern Brazil, Bolivia and southeastern Paraguay. Above average precipitation is expected mainly in northern Peru, and southern Colombia.

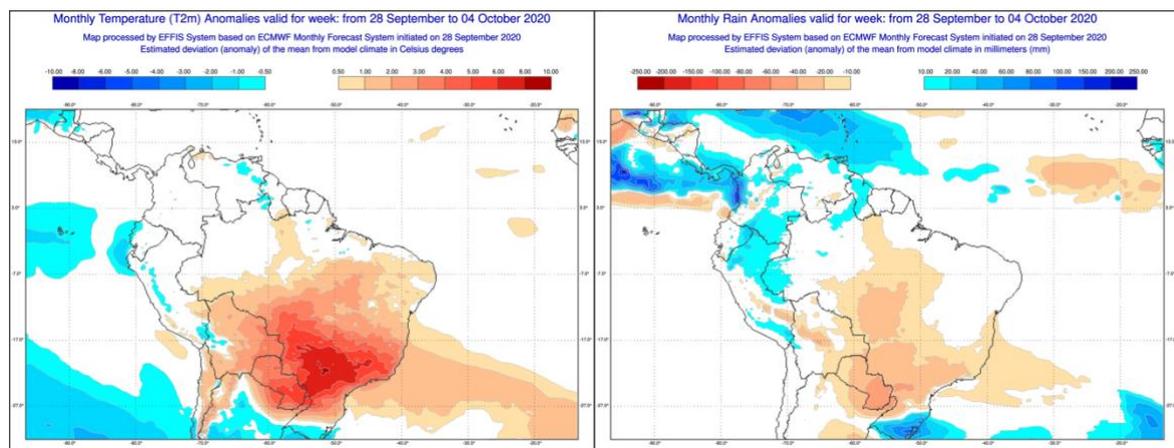


Figure 10. Fire weather anomalies of the current week, September 28-October 04, 2020.

<sup>2</sup> [https://gwis.jrc.ec.europa.eu/static/gwis\\_current\\_situation/public/index.html](https://gwis.jrc.ec.europa.eu/static/gwis_current_situation/public/index.html)

## **GETTING IN TOUCH WITH THE EU**

### **In person**

All over the European Union there are hundreds of Europe Direct information centres. You can find the address of the centre nearest you at: [https://europa.eu/european-union/contact\\_en](https://europa.eu/european-union/contact_en)

### **On the phone or by email**

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),
- at the following standard number: +32 22999696, or
- by electronic mail via: [https://europa.eu/european-union/contact\\_en](https://europa.eu/european-union/contact_en)

## **FINDING INFORMATION ABOUT THE EU**

### **Online**

Information about the European Union in all the official languages of the EU is available on the Europa website at: [https://europa.eu/european-union/index\\_en](https://europa.eu/european-union/index_en)

### **EU publications**

You can download or order free and priced EU publications from EU Bookshop at: <https://publications.europa.eu/en/publications>. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see [https://europa.eu/european-union/contact\\_en](https://europa.eu/european-union/contact_en)).

## The European Commission's science and knowledge service

Joint Research Centre

### JRC Mission

As the science and knowledge service of the European Commission, the Joint Research Centre's mission is to support EU policies with independent evidence throughout the whole policy cycle.



**EU Science Hub**  
[ec.europa.eu/jrc](https://ec.europa.eu/jrc)



@EU\_ScienceHub



EU Science Hub - Joint Research Centre



EU Science, Research and Innovation



EU Science Hub



Publications Office  
of the European Union