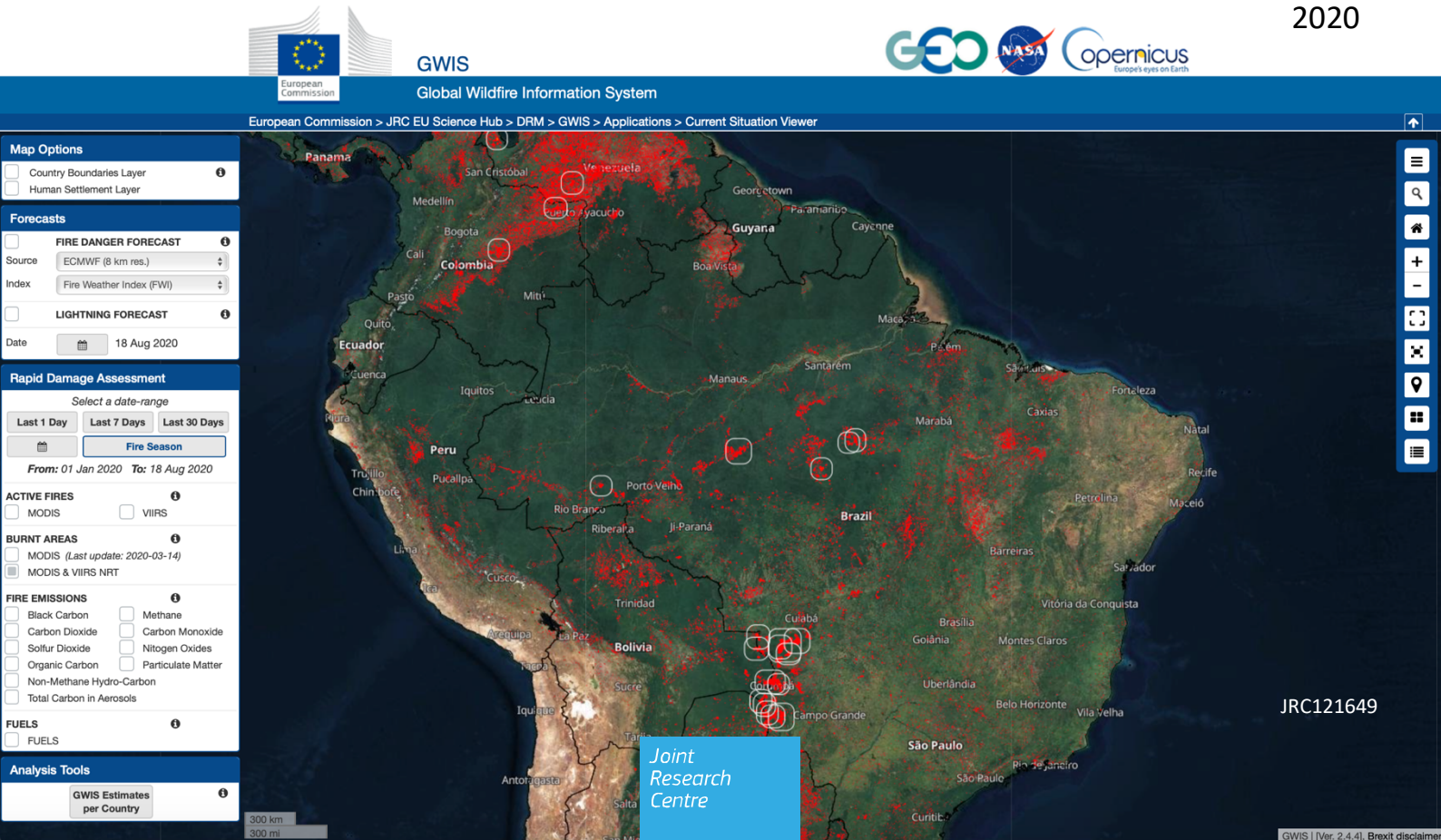
European Commission

JRC TECHNICAL REPORT

Weekly analysis of wildfires in the Amazon region: August 17 - August 23, 2020

2020



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Contents

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 than 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)[1]. Most of the Amazon region is in Brazil, specifically in the Brazilian Legal Amazon (BLA)[2], and in other neighbor countries. 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. In the overall Amazon region, there has been stable trend in the fire activity during the week of August 17 to August 23, as compared to previous weeks.

- The Brazil Legal Amazon shows a similar trend to that in 2019, with approximately 2.2 Mha burned in the last week, a value that is about 40% of the figure in 2019 for that week; 2,246 fires were recorded in the week, which is slightly higher than the value of the same week of 2019. About 8.98 Mha burnt so far in 2020, a value 22% lower than that in 2019.
- The 2020 wildfire season in Brazil is similar to that of 2019. More than 2 Mha burned last week in Brazil, where 3,055 new fires occurred. Overall, 12.66 Mha of burnt areas were mapped in GWIS until August 23, 2020, a similar value compared to 2019. The main difference compared to 2019 is that the average fire size is considerable smaller in 2020.
- A total of 1,834,103 ha burnt in Bolivia since January 1 until August 23, 2020, with 79,537 ha burnt in the last week. The total burnt area in 2020 is notably below the values of 2019. The burnt are last week was about ¼ of the value of the same week in 2019.
- 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, although nearly 3 Mha burnt in the country until August 23, 2020, which about 28% higher than that of 2019.
- Paraguay, with 3.1 Mha burnt until August 23, 2020, shows higher fire activity than in 2018 and 2019, and an increase of burnt areas between March and June, reaching values more than 2 times those of the past years. The fire activity last week is below the values reached in 2018 and 2019 for the same week.
- Peru shows above average fire activity in 2020, as compared to the previous two years, with about 951,881 ha of burnt areas mapped until August 23, 2020, which is approximately 43% above the values of 2019. The number of fires mapped in GWIS is nearly double of that in 2019.
- Venezuela, with about 6.8 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 of high to extreme fire danger in central and northeastern Brazil, center Bolivia and northwest Paraguay. Fire danger will be moderate to high in eastern of Peru.

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

[1] https://gwis.jrc.ec.europa.eu

[2] The Brazilian Legal Amazon is a geopolitical region in Brazil, established in the article 2 of the complementary law 124, of 2007, that includes 772 municipalities over 9 states. It comprises approximately five million square kilometres, which correspond to 59% of the Brazilian territory (IBGE, 2019)

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 8,989,136 ha burnt in the BLA since January 1 until August 23, 2020, with 2,238,354 ha burnt in total the last week. Ongoing fires and those new fires started between August 17 and August 23 burnt 1,473,558 ha during last week. The total burnt area in the BLA, at about 9 Mha, is currently 22% lower than that the same period of 2019.

The number of fires recorded in GWIS in the last week was 2,246, which is a higher number than the value in 2019 in that week. The total number of fires in 2020 is slightly above the figures in 2018 and 2019. On average, fires that occurred in the BLA in the last 4 weeks, were smaller in 2020 compared to 2019. The number of thermal anomalies until August 23, 2020 (297,505) shows a typical trend in the region as compared to the trends in 2018 and 2019, with 53,788 active hot spots detected last week by VIIRS.

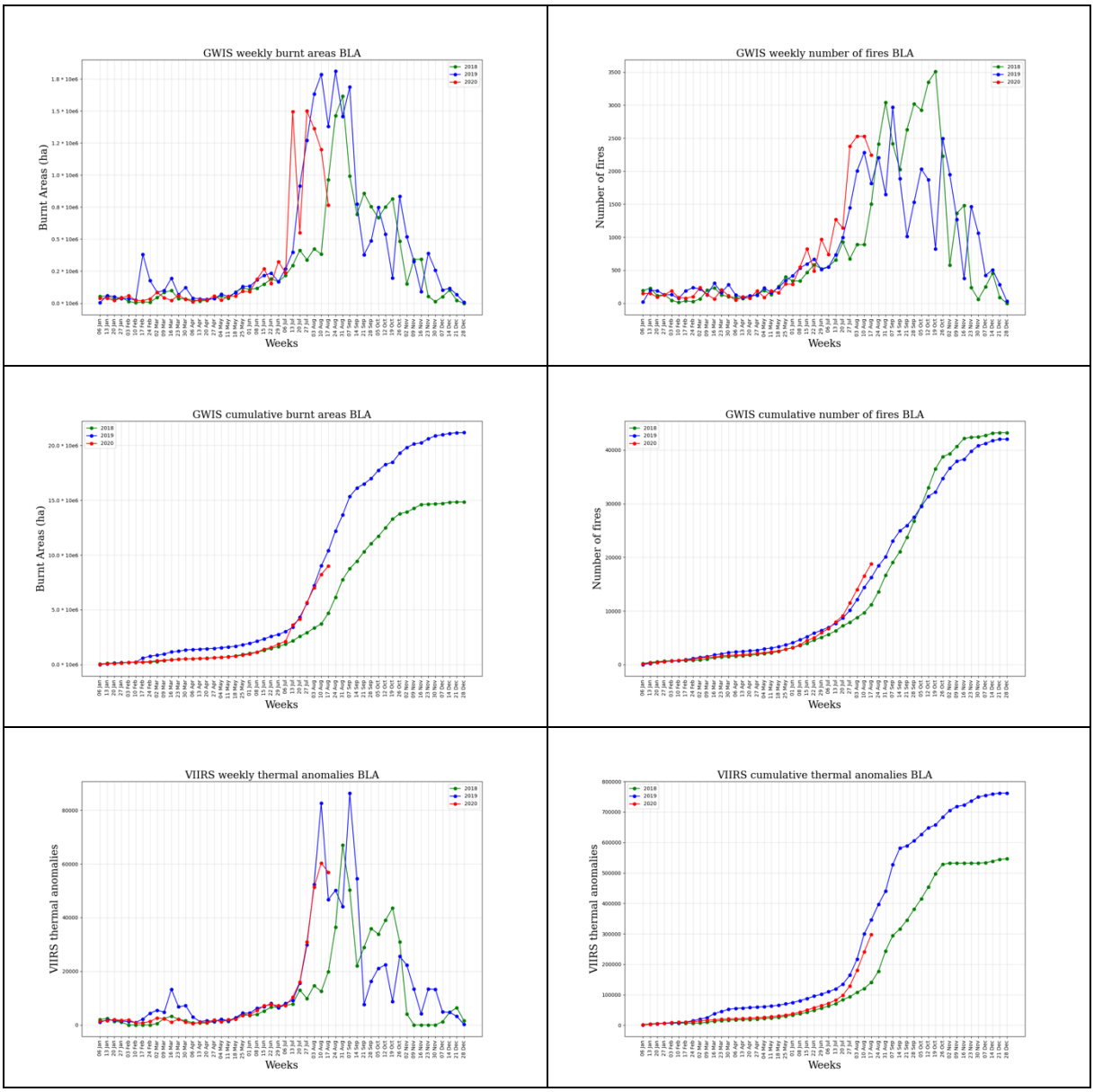

Figure 2. Trend of burnt areas and number of fires as compared to data in the last two years.

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 12,659,545 ha burnt in Brazil since January 1 until August 23, 2020, with a total 2,606,051 ha burnt in the last week. Ongoing fires and those new fires started between August 17 and August 23 burnt 1,599,029 ha the last week. The total burnt area in Brazil, at approximately 12.5 Mha, is 17% lower than that of 2019. The value of the week was about 40% of the value of the same week in 2019.

The number of fires recorded in GWIS in the last week was 3,055, which shows an increasing trend higher than the previous years. The number of fires in 2020 up to August 23 is higher than that of 2019, although the average fire size is smaller than that of 2019. This results in a total burnt area in 2020 smaller than that of 2019. The number of thermal anomalies until August 23, 2020 (424,627) shows a typical trend in the region as compared to the trends in 2018 and 2019, with an increase on the hot spots detected last week of 61,242

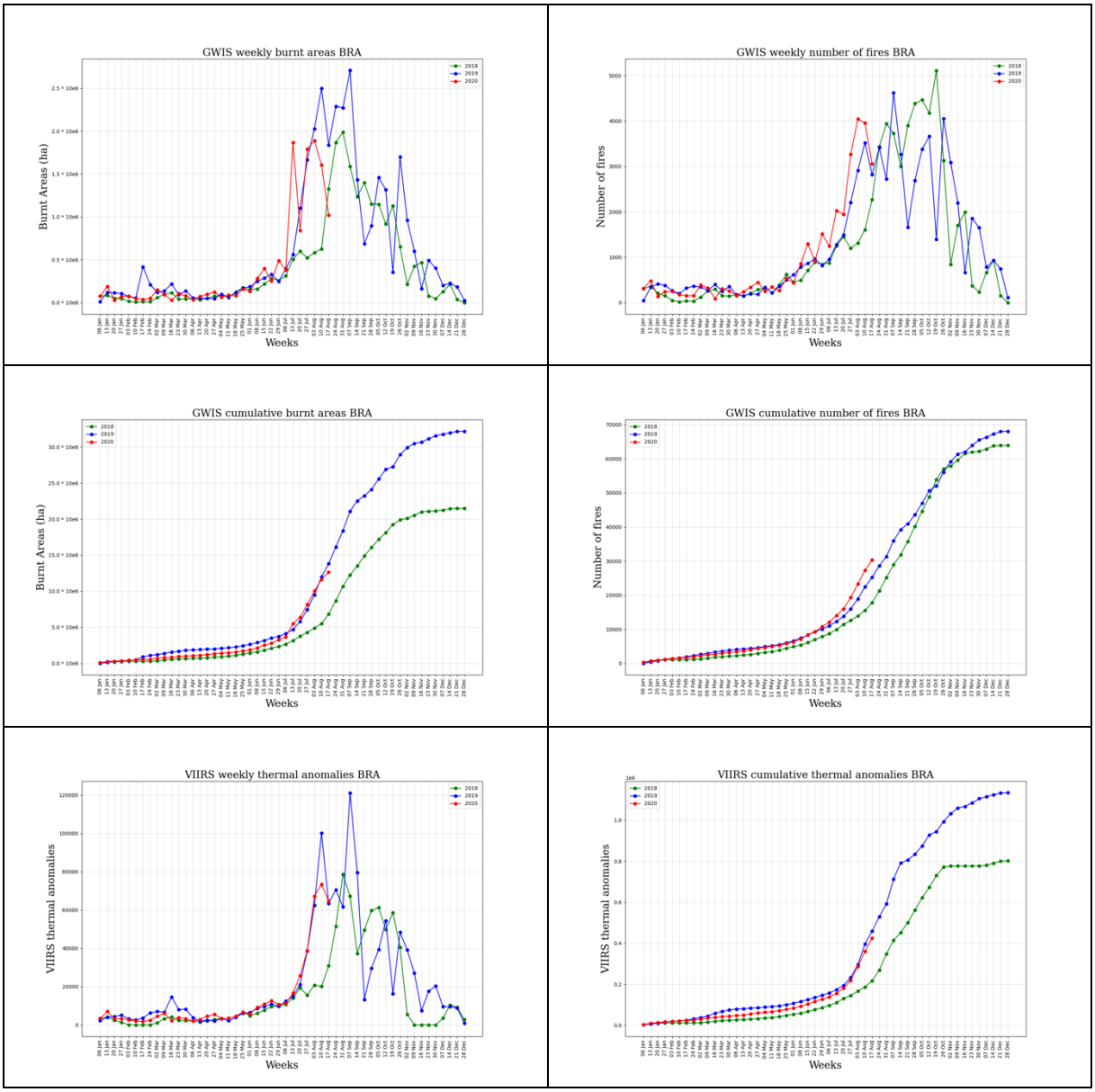

Figure 3. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

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 1,988,030 ha burnt in Bolivia since January 1 until August 23, 2020, with 79,537 ha burnt in the last week. The total burnt area in 2020 is currently about 58% of the value of 2019, while the burnt area last week was about ¼ of the value of the same week in 2019.

The number of fires recorded in GWIS in the last week was 214, lower than the number of fires in the same week in 2019 The number of thermal anomalies until August 23, 2020 (62,581) shows a typical trend in the region; however the value is about 40% of that reached in 2019. 3,021 thermal anomalies detected by VIIRS in the last week, a value that is below those of 2018 and 2019.

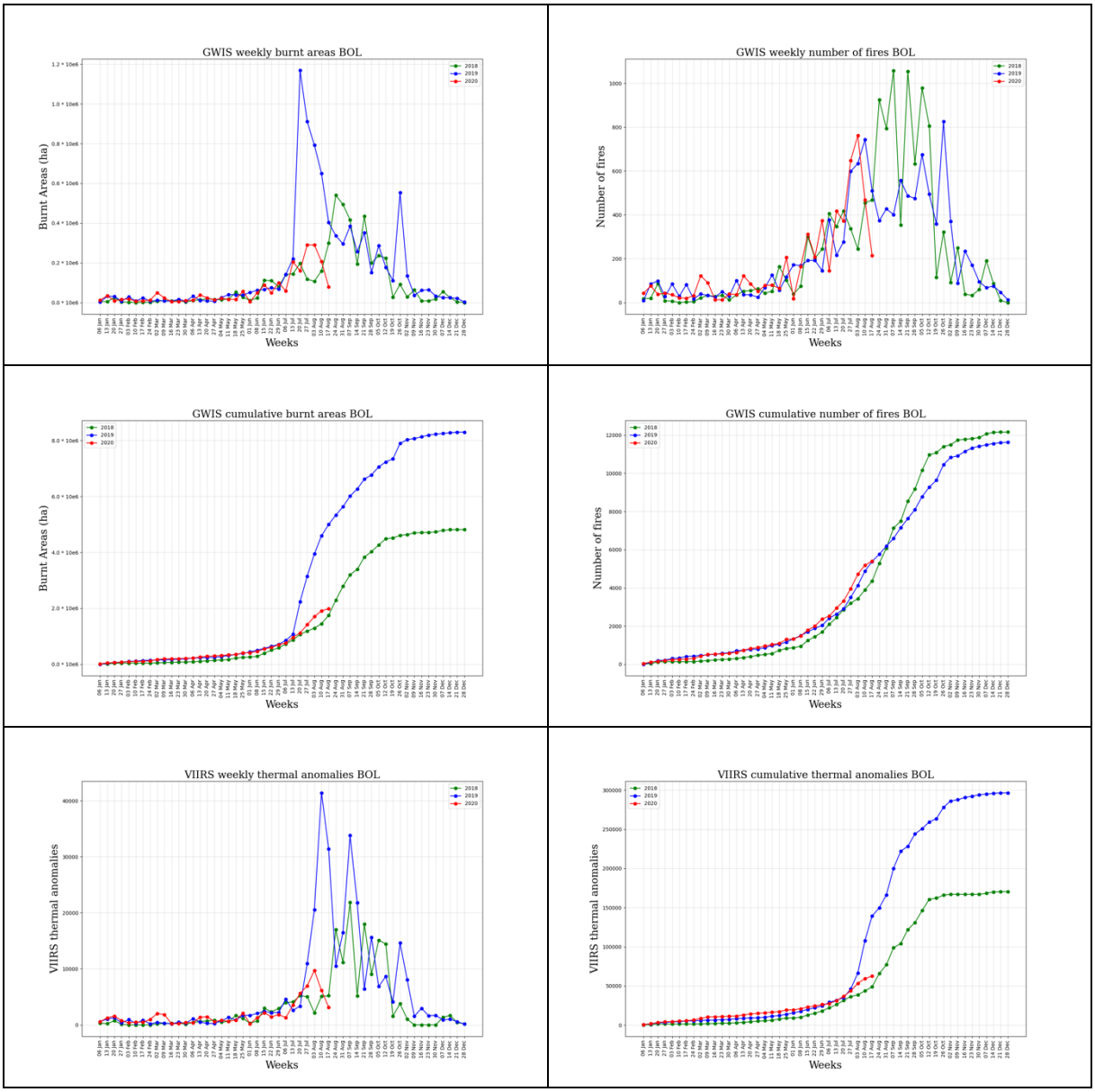

Figure 4. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

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 3,008,987 ha burnt in Colombia since January 1 until August 23, 2020, with 8,593 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 28% 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 44, which shows a stable trend in the last weeks, as compared to 2018 and 2019. The number of fires is approximately 28% higher than that of last year. The number of thermal anomalies until August 23, 2020 (106,848) shows a typical trend in the region as compared to the trends in 2018 and 2019, with values approximately 28% higher than those in 2019. 295 thermal anomalies were detected by VIIRS during the last week, which is slightly below the values in the same week in 2018 and 2019.

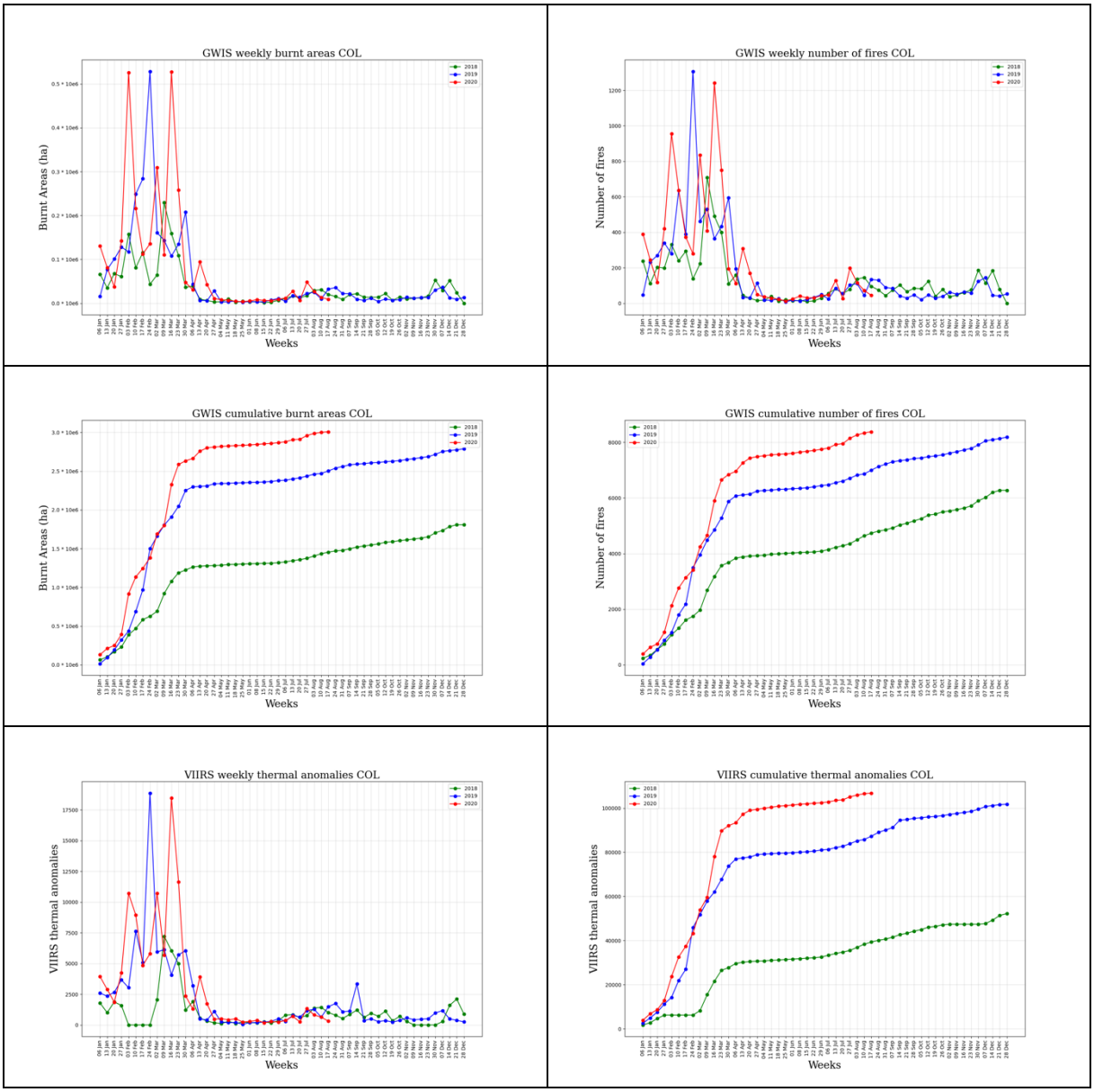

Figure 5. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

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 3,130,778 ha burnt in Paraguay since January 1 until August 23, 2020, which is more than double than the values in 2018 and 2019. Approximately 57,570 ha burnt in the country the last week. This weekly value is about 1/3 of that in 2019.

The number of fires recorded in GWIS in the last week was 211, which is lower than the values of the last two years. The number of thermal anomalies until August 23, 2020 (96,627) 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 1,832 thermal anomalies detected by VIIRS last week.

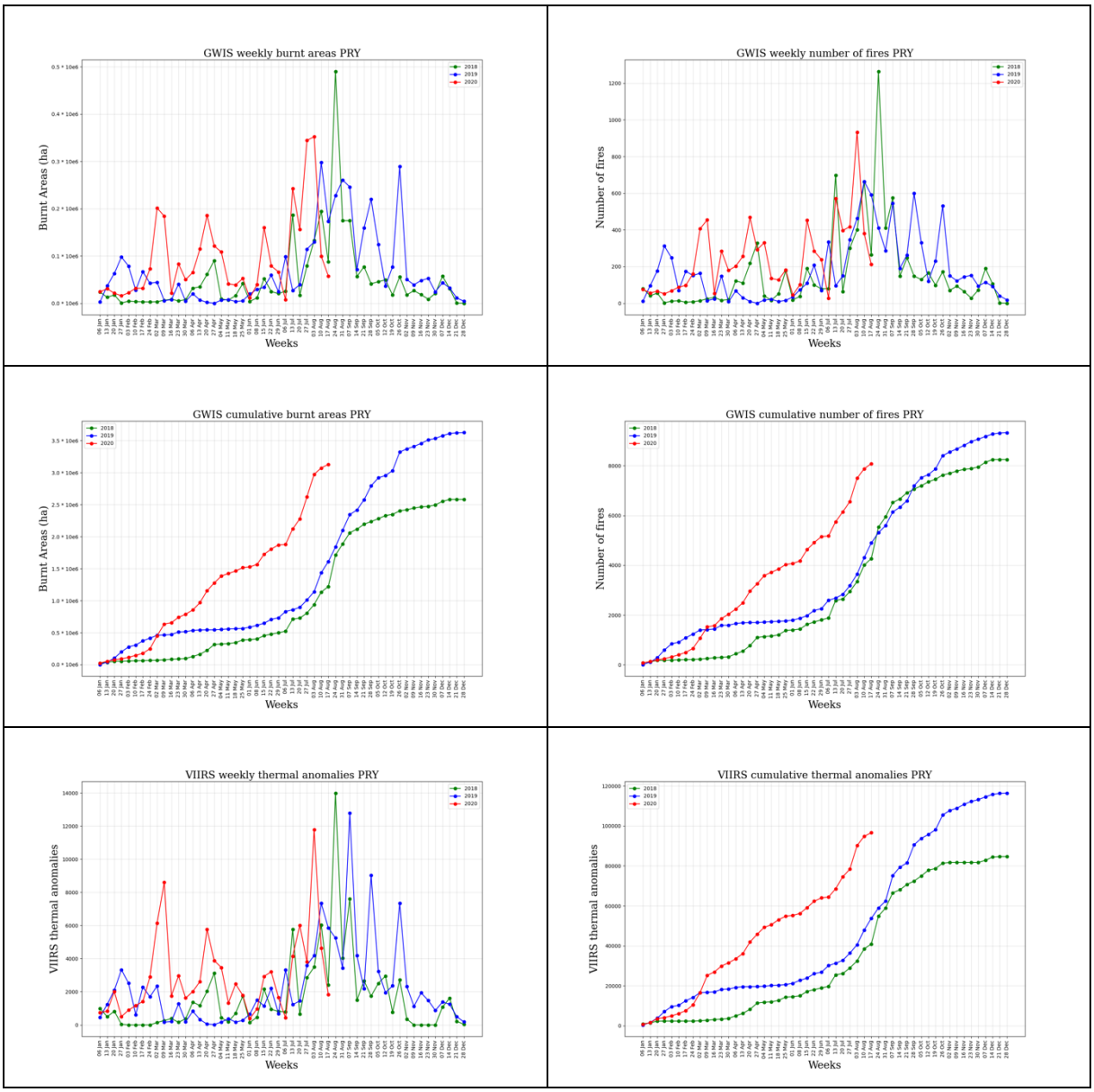

Figure 6. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

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 951,882 ha burnt in Peru since January 1 until August 23, 2020. This value is approximately 48% higher than that of 2019. Approximately 72,235 ha burnt in the last week, a value that slightly higher than that of 2018, but below that of 2019.

The number of fires recorded in GWIS in the last week was 362, which is close to the number of fires recorded that week in 2019. The total number of fires since the beginning of the year, 4000, is about double of that of 2019. The number of thermal anomalies until August 23, 2020 (32,493) shows a typical trend in the region, with values in between those registered in 2018 and 2019. 2,760 thermal anomalies registered last week.

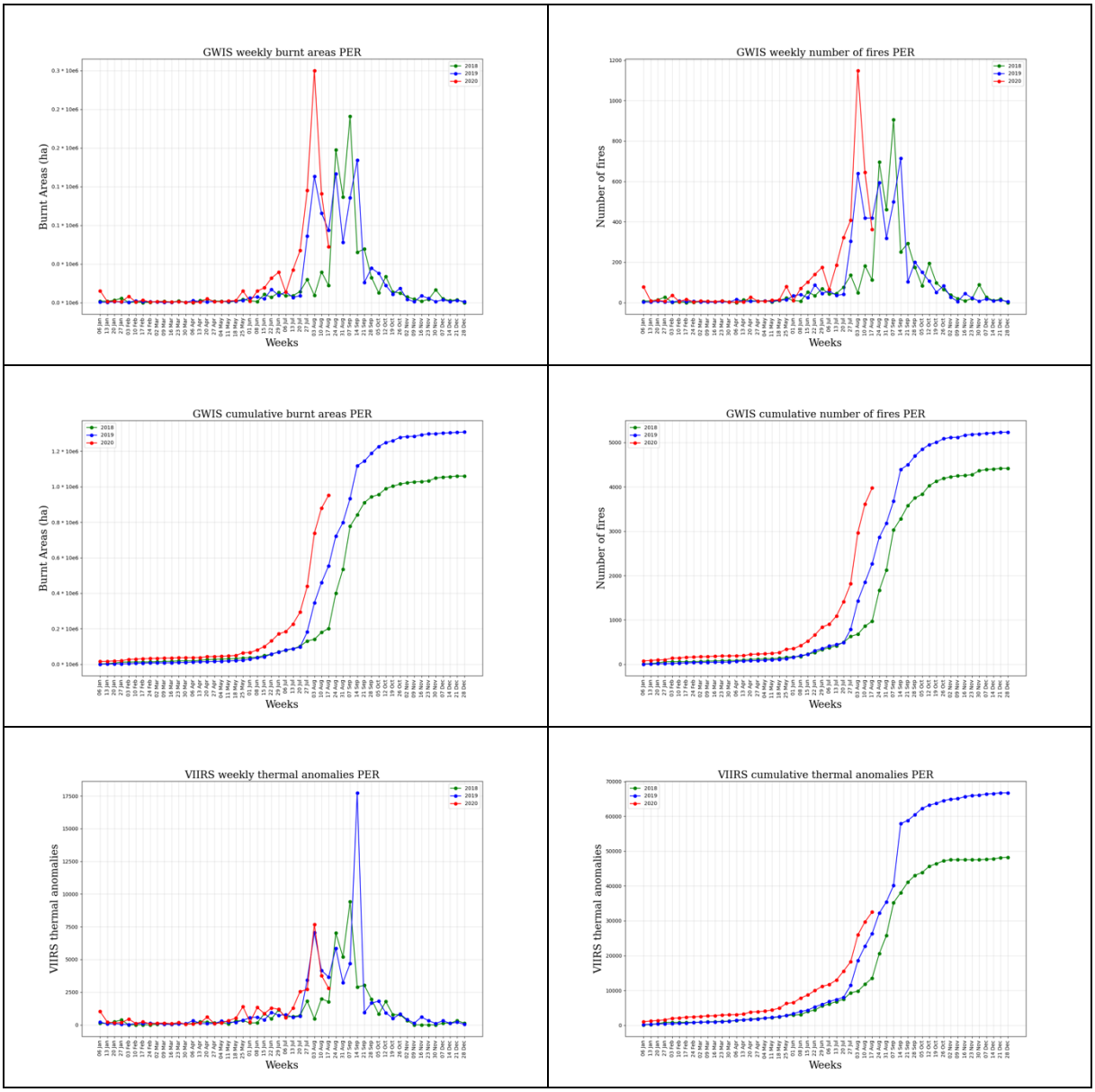

Figure 7. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

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 6,729,007 ha burnt in Venezuela since January 1 until August 23, 2020, with 2,746 ha burnt in the last week. The value of the total burnt area in the country is approximately 15% 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 16, which shows a stable trend comparable to those of the previous two years, although the total number of fires remains approximately 15% higher than in 2019. The number of thermal anomalies until August 23, 2020 (262,413) shows a typical trend in the region as compared to the trends in 2018 and 2019, but with approximately 15% higher value than the previous years. 330 thermal anomalies were recorded by VIIRS during the last week, a value that is similar to those recorded in that week the previous two years.

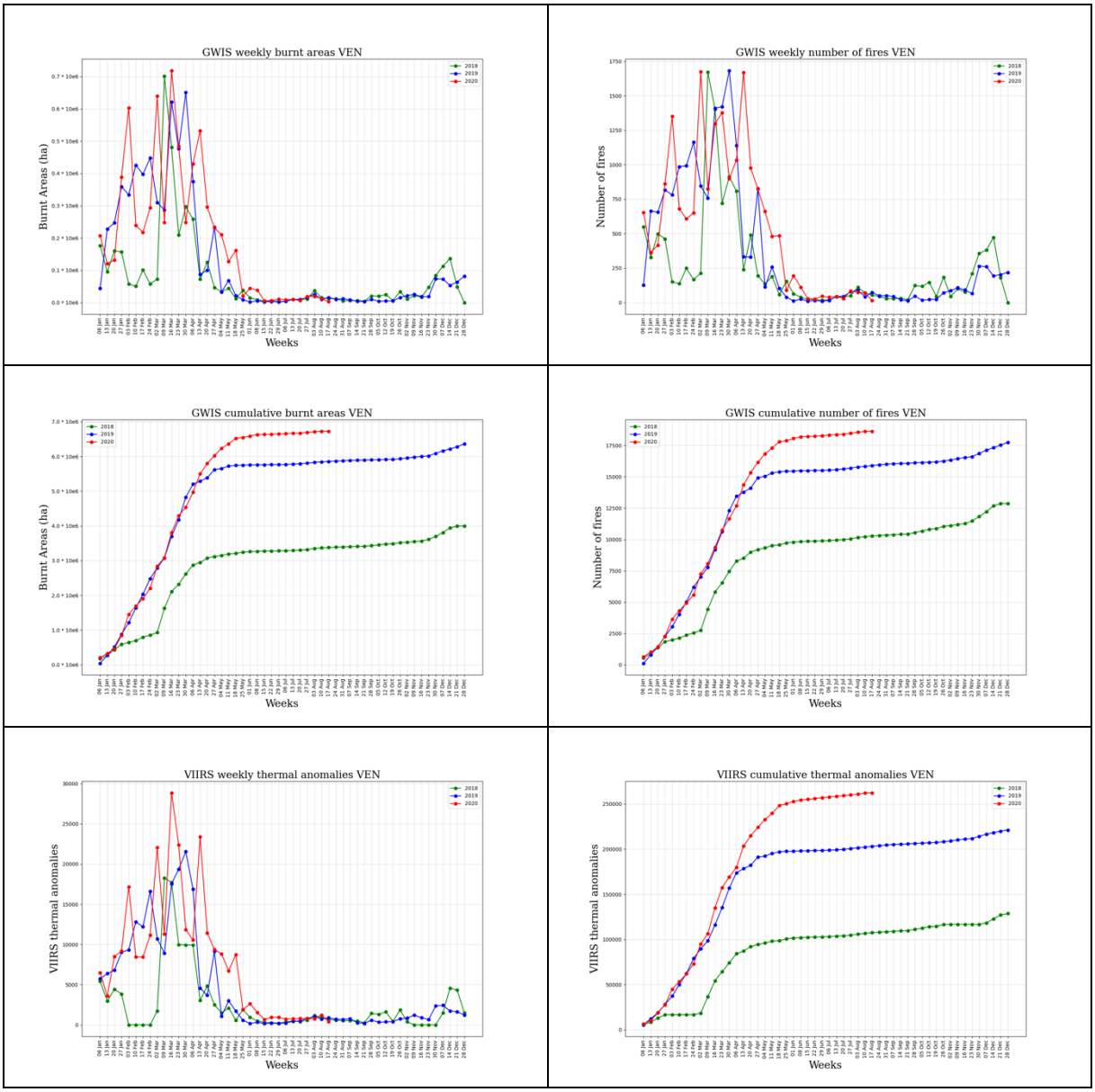

Figure 8. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

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 August 24 to August 30, 2020. This information is based on the daily fire danger forecast that is provided online in GWIS[3]. According to this forecast, it is expected that fire danger conditions will be extreme in central and northeastern Brazil, also in the center of Bolivia and northwest of Paraguay. Moderate or high in all over the Brazilian border of BLA, eastern Bolivia, western Paraguay and in the border of Peru and Acre (Brazil). . The overall fire danger levels will be higher in Paraguay and Bolivia than those of the previous week.

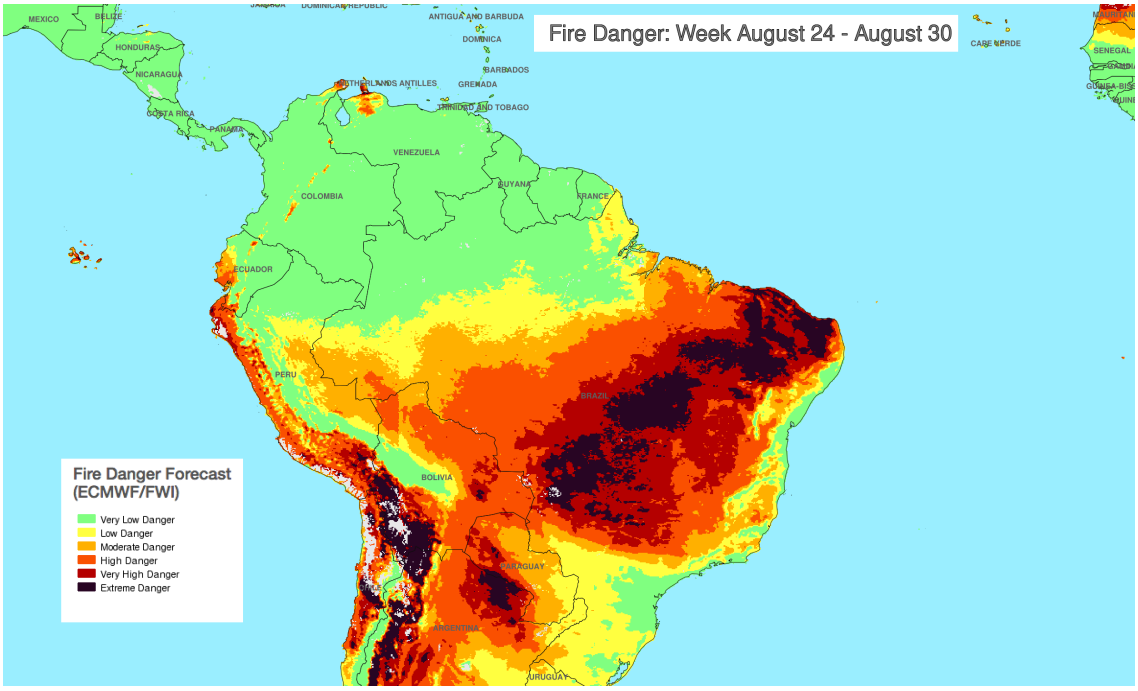

Figure 9. Average Fire danger forecast. Week, August 24-August 30, 2020.

The weekly fire weather forecast of temperature and precipitation anomalies for this week is presented in Figure 10. A strong anomaly on temperature are forecast for Paraguay and this extends to Peru, covering all territory of Bolivia and western Brazil. The same region will face a negative trend on precipitation in this week, which will also cover south of Colombia and spread from western until south of Brazil. Furthermore, a decrease on average temperature is expected in northern and southeast Brazil. Above average precipitation is forecasted in northern Brazil and Colombia. .

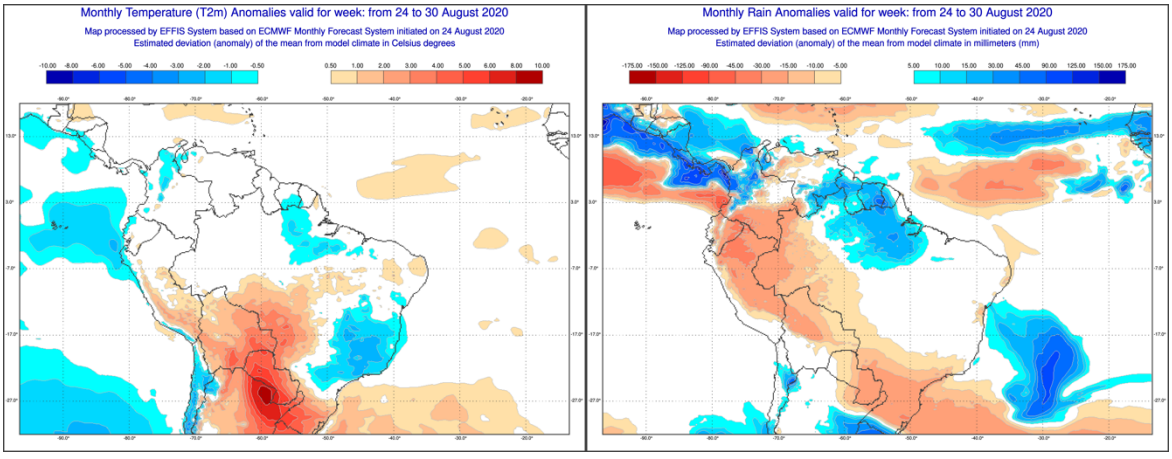

Figure 10. Fire weather anomalies of the current week, August 24-August 30, 2020.

[3] https://gwis.jrc.ec.europa.eu/static/gwis_current_situation/public/index.html

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