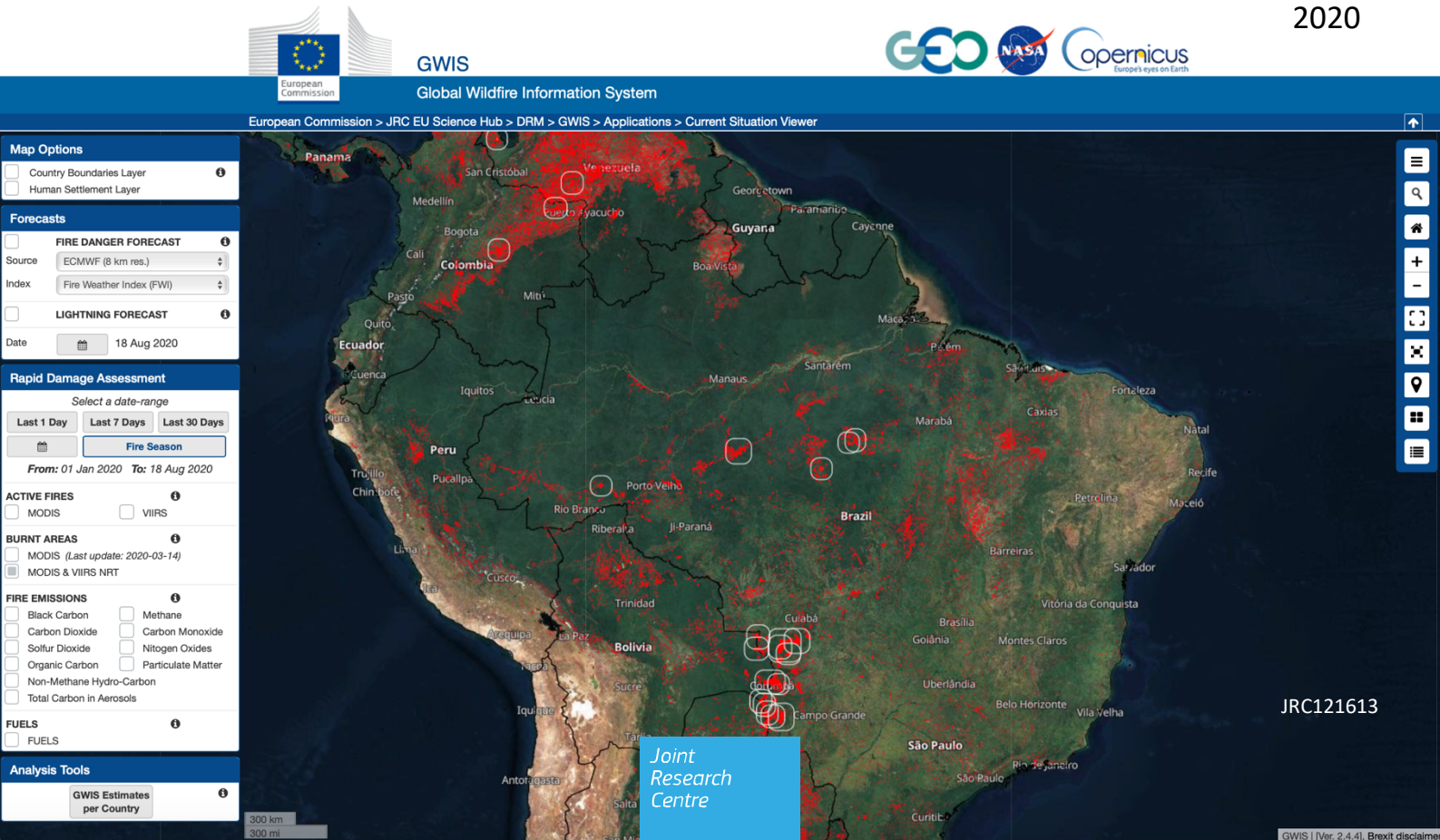
European Commission

JRC TECHNICAL REPORT

# Weekly analysis of wildfires in the Amazon region: August 10 - August 16, 2020

2020

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## 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. The 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 a decrease in the fire activity during the last week, August 10 to August 16th, as compared to previous weeks.
- The Brazil Legal Amazon shows a similar trend as those in previous years, with approximately 0.7 Mha burned in the last week, a value that is about 40% of the figure in 2019 for that week; 1,981 fires were recorded in the week, which is lower compared to 2019. About 6.75 Mha burnt so far in 2020, over 22% lower than 2019. Nevertheless, Pantanal showed an increase on fire activity, with large ongoing fires. The fire danger in Pantanal will remain high for this week, although they will improve after August 21st.
- The 2020 wildfire season in Brazil is similar to those of past years. More than 1 Mha burned last week in Brazil, where 3,262 new fires occurred. Overall, 10.05 Mha of burnt areas were mapped in GWIS until August 16, 2020, which are 17% less than the value in 2019. The area burn this week decreased considerably, being about 40% of the values of the same week in 2019.
- A total of 1,834,103 ha burnt in Bolivia since January 1 until August 16, 2020, with 148,577 ha burnt in the last week. The total burnt area in 2020 is notably below the values of 2019, about 58% of the values of the previous year. 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 16, 2020, which about 28% higher than that of 2019.
- Paraguay, with 3.1 Mha burnt until August 16, 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 as 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 854,669 ha of burnt areas mapped until August 16, 2020, which is approximately 43% above the values of 2019. The number of fires mapped in GWIS is nearly double of that of 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 high to extreme in central and eastern Brazil, and moderate to high in the rest of Brazil, north Paraguay and eastern Bolivia, with above average temperatures in north and south of Brazil and Bolivia. The overall fire danger conditions are expected to improve after August 21th.

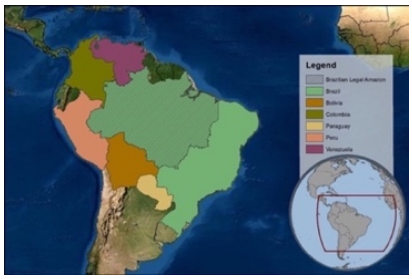


Figure 1. Areas analyzed in this report: Brazil Legal Amazon, Brazil, Bolivia, Colombia, Paraguay, Peru and Venezuela

[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) process in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 6,750,782 ha burnt in the BLA since January 1 until August 16, 2020, with 674,377 ha burnt in the last week. The total number of burnt areas is currently 22% lower than that of 2019.

The number of fires recorded in GWIS in the last week was 1,981, which is a lower 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. The number of thermal anomalies until August 16, 2020 (229,722) shows a typical trend in the region as compared to the trends in 2018 and 2019, with an increase of fire activity in the last week (45,630), with respect to the previous ones.

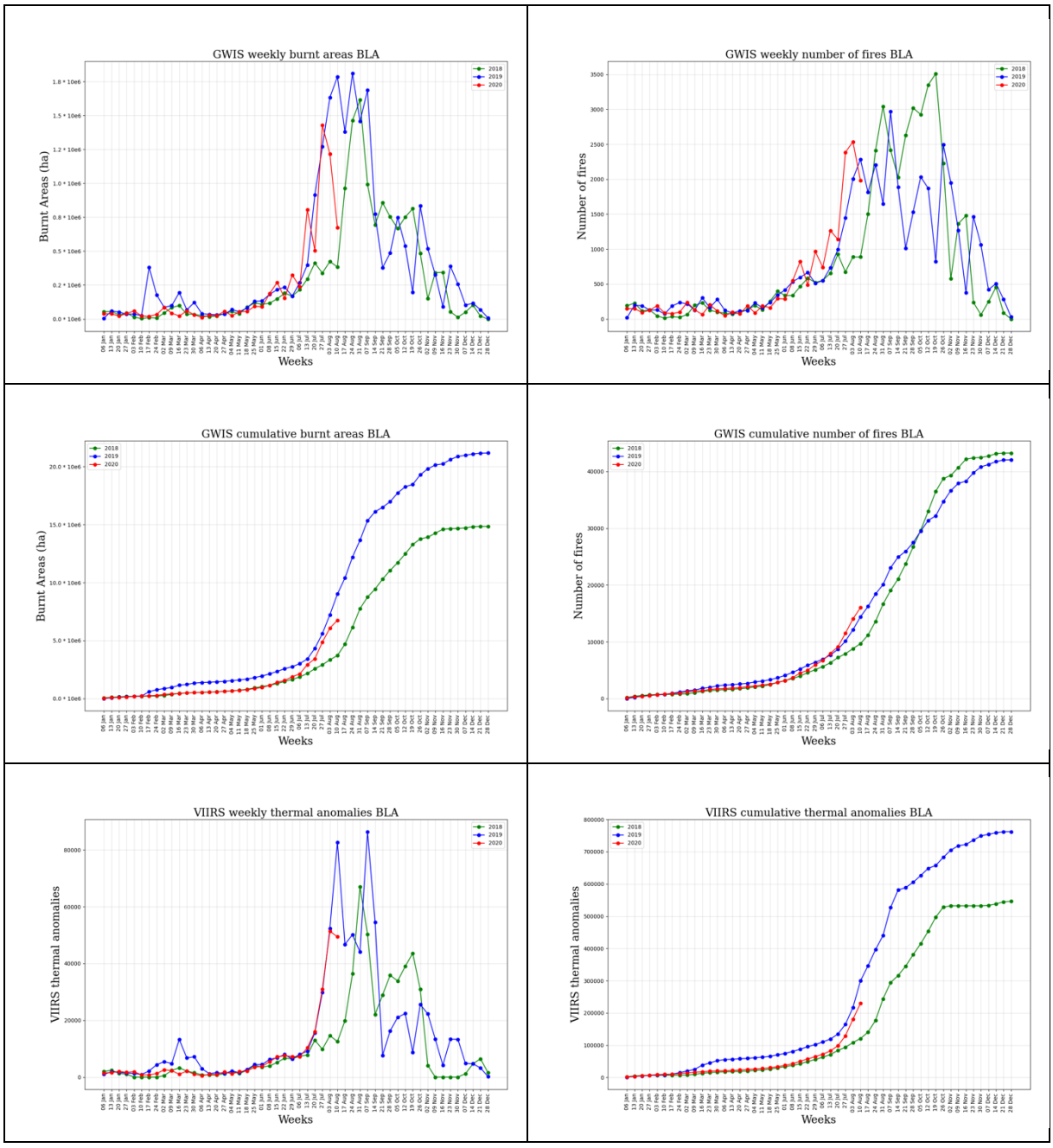


Figure 2. Trend of burnt areas and number of fires as compared to data in the last two years.

## 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) process in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 10,053,494 ha burnt in Brazil since January 1 until August 16, 2020, with 1,007,022 ha burnt in the last week. The total number of burnt areas is currently 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 3,262, which shows an increasing trend higher than the previous years. The number of fires in 2020 up to August 16 is higher than that of 2019. The number of thermal anomalies until August 16, 2020 (348,115) shows a typical trend in the region as compared to the trends in 2018 and 2019, with an increase of fire activity in the last week (57,213), with respect to the previous ones.

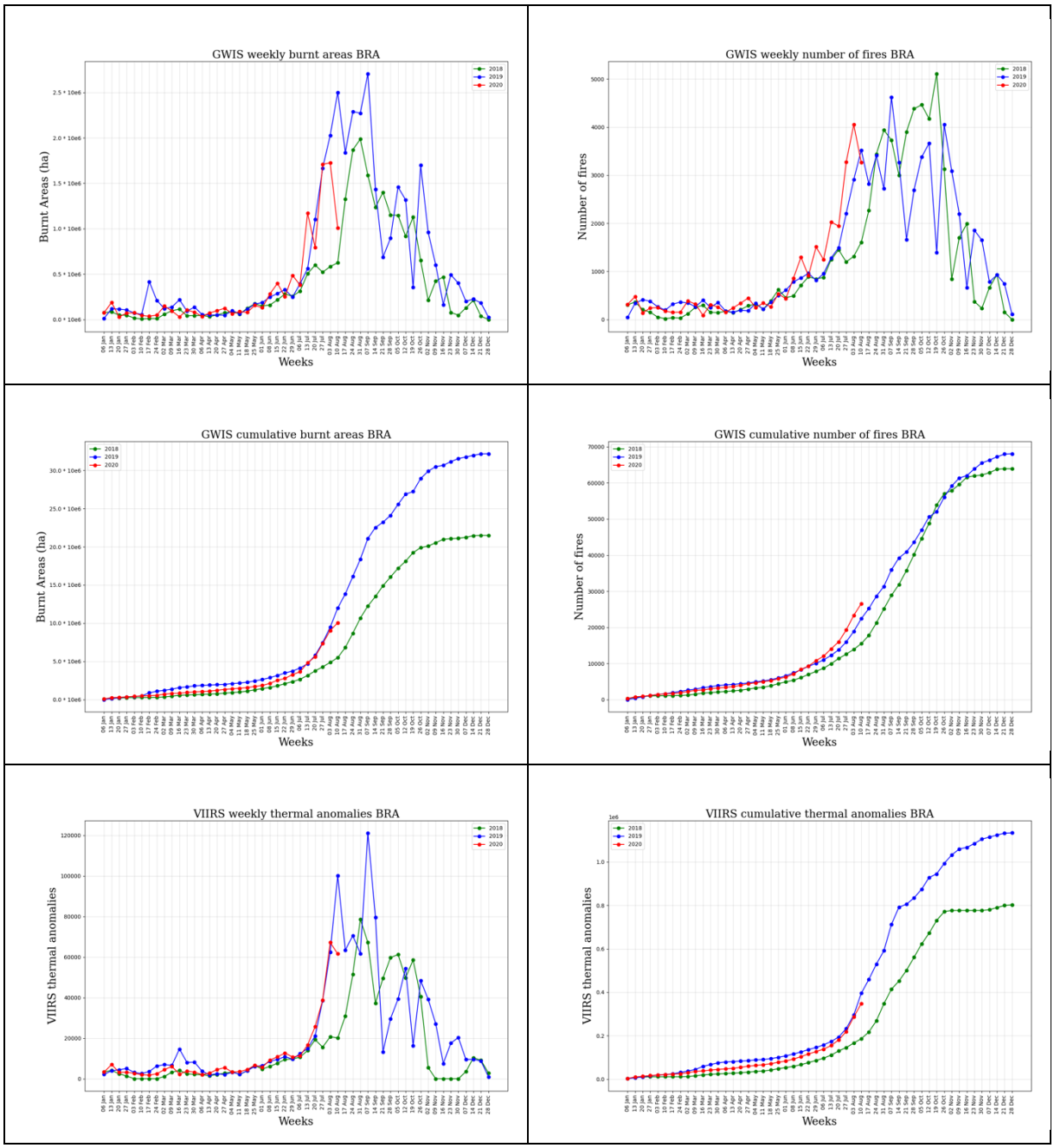


Figure 3. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

# 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) process in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 1,834,103 ha burnt in Bolivia since January 1 until August 16, 2020, with 148,577 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 415, lower than the number of fires in the same week in 2019. The trend of 2020 in number of fires resembles that of 2019. The number of thermal anomalies until August 16, 2020 (58,618) shows a typical trend in the region as compared to the trends in 2018 and 2019, with 4,936 thermal anomalies detected by VIIRS in the last week.

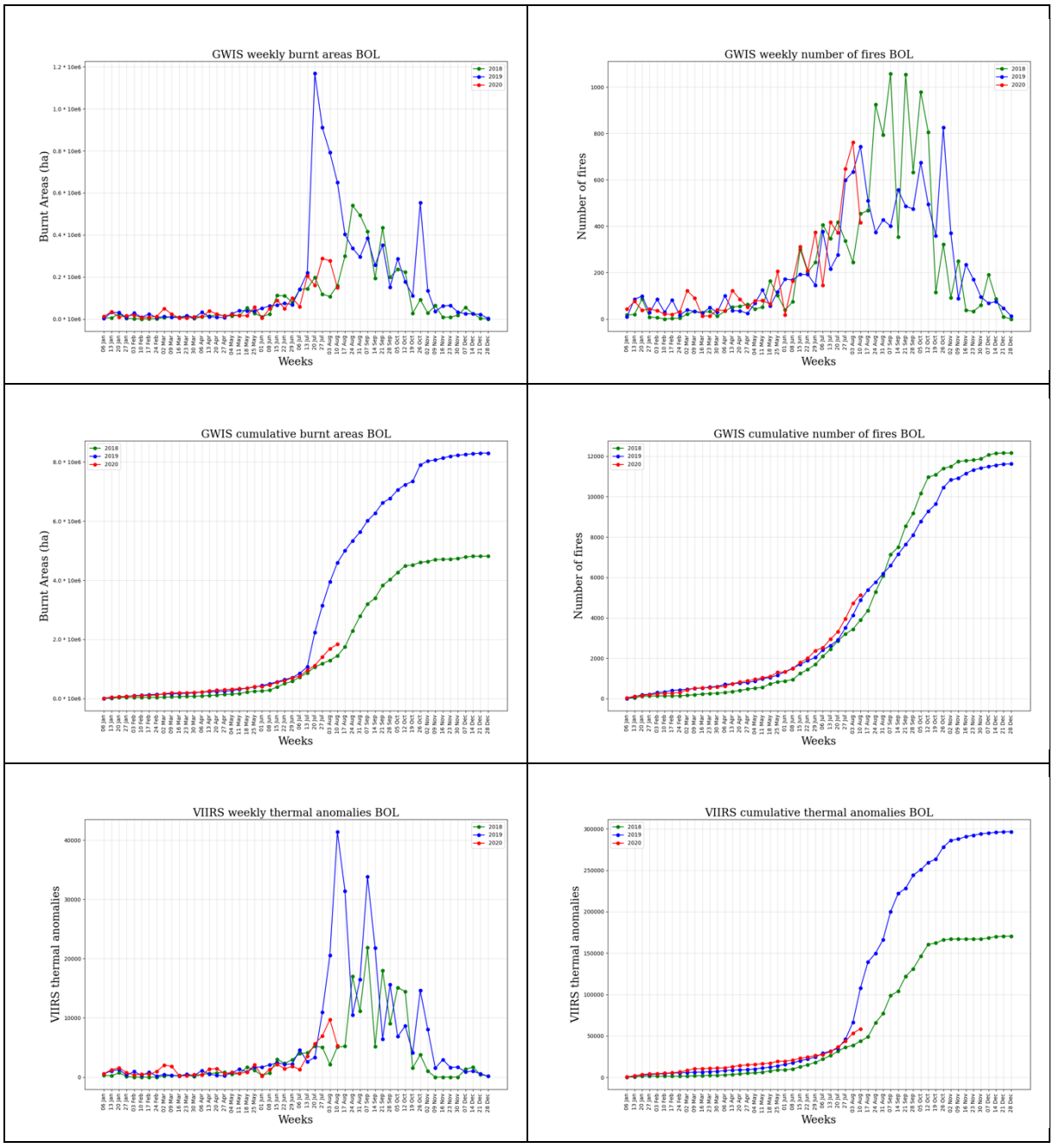


Figure 4. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

# 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) process in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 2,999,260 ha burnt in Colombia since January 1 until August 16, 2020, with 12,278 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 66, 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 16, 2020 (106,518) 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. 595 thermal anomalies were detected by VIIRS during the last week, slightly below the values in the same week in 2018 and 2019.

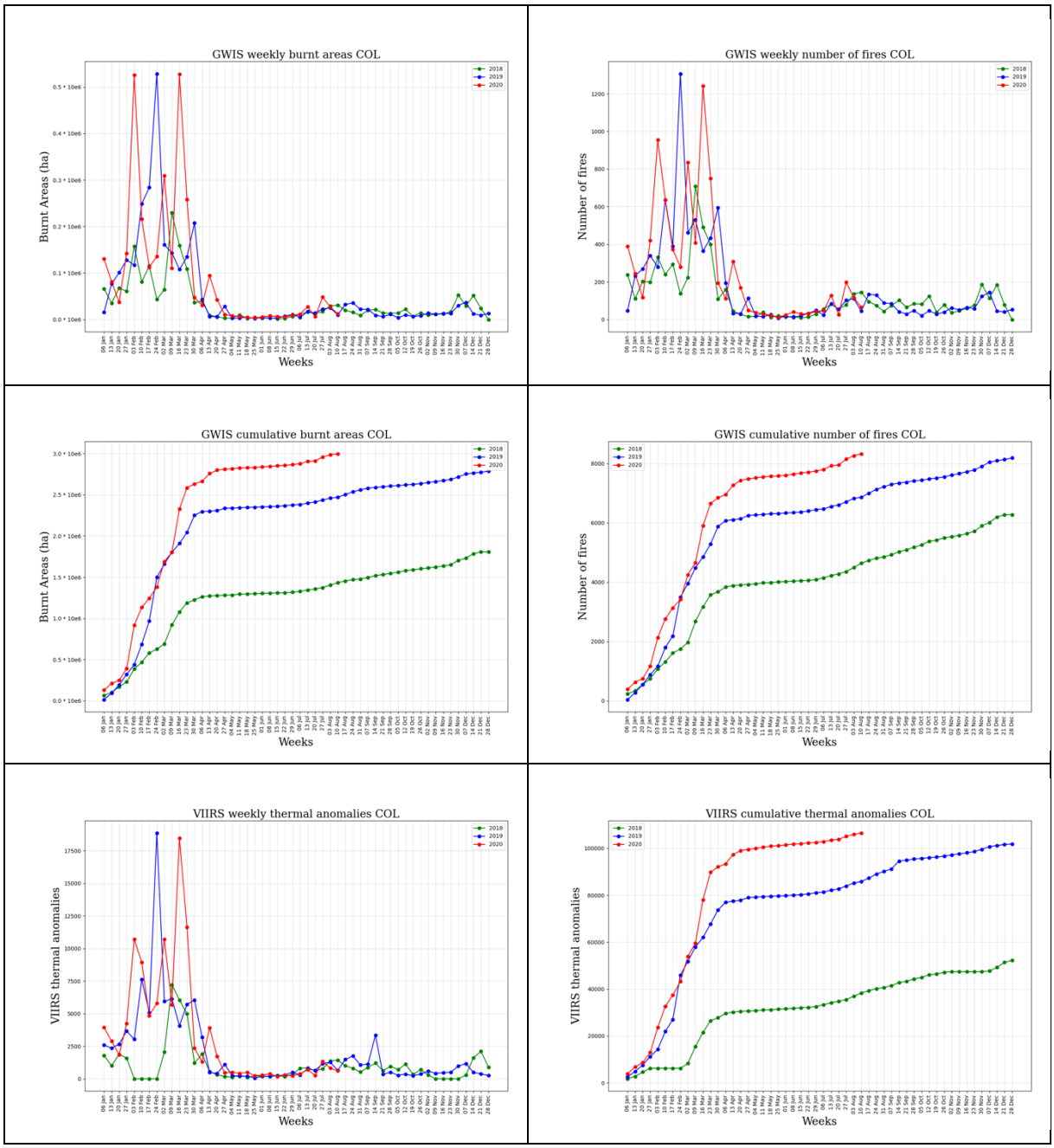


Figure 5. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

# 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) process in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 3,066,478 ha burnt in Paraguay since January 1 until August 16, 2020, which is more than double than the values in 2018 and 2019. Approximately 96,327 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 373, which is lower than the values of the last two years. The number of thermal anomalies until August 16, 2020 (94,698) 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 4101 thermal anomalies detected by VIIRS last week.

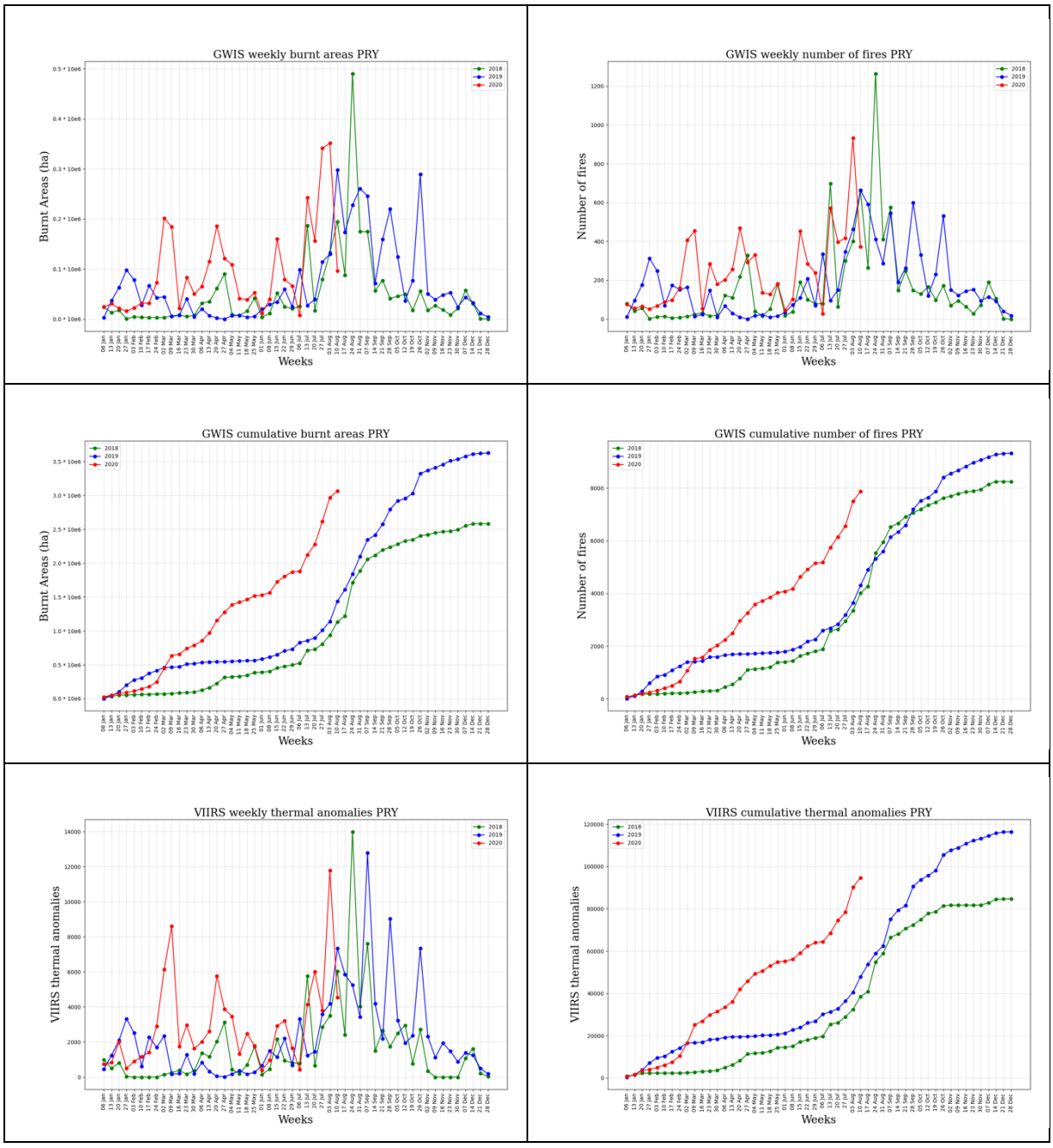


Figure 6. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

# 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) process in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 854,669 ha burnt in Peru since January 1 until August 16, 2020. This value is approximately 48% higher than that of 2019. Approximately 122,687 ha burnt in the last week, a value that slightly higher than that of the previous two years.

The number of fires recorded in GWIS in the last week was 588, which is 30% higher than the number of fires recorded that week in 2019. The total number of fires since the beginning of the year, 2,800, is about 2 times higher than that of 2019. The number of thermal anomalies until August 16, 2020 (29,386) shows a typical trend in the region, with higher values as compared to the trends in 2018 and 2019. 3,398 thermal anomalies registered last week.

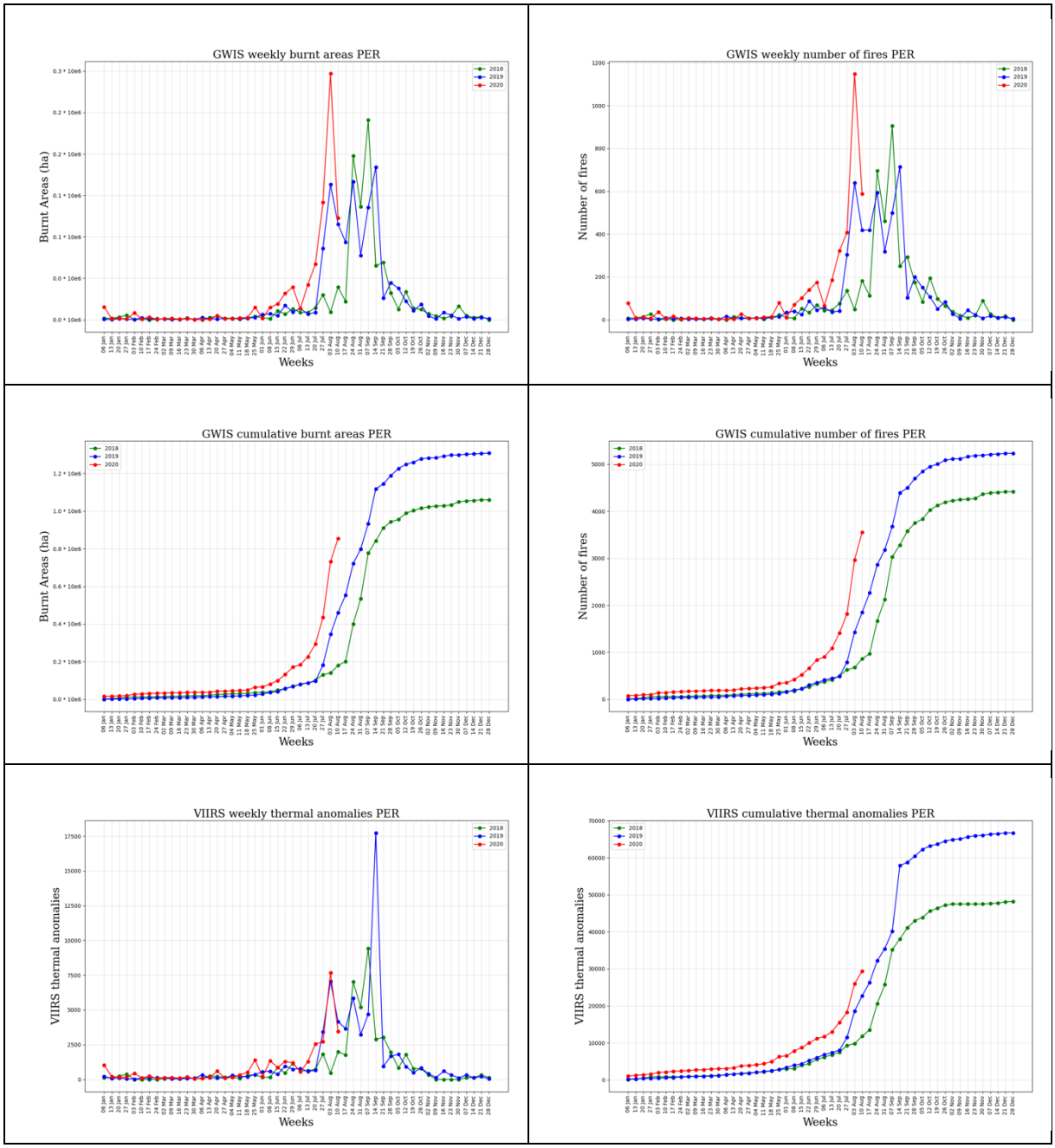


Figure 7. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

# 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) process in GWIS. The last row shows the evolution of active hot spots (thermal anomalies) detected by the satellite sensor VIIRS. A total of 6,725,119 ha burnt in Venezuela since January 1 until August 16, 2020, with 11,075 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 63, 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 16, 2020 (261,898) 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. 936 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.

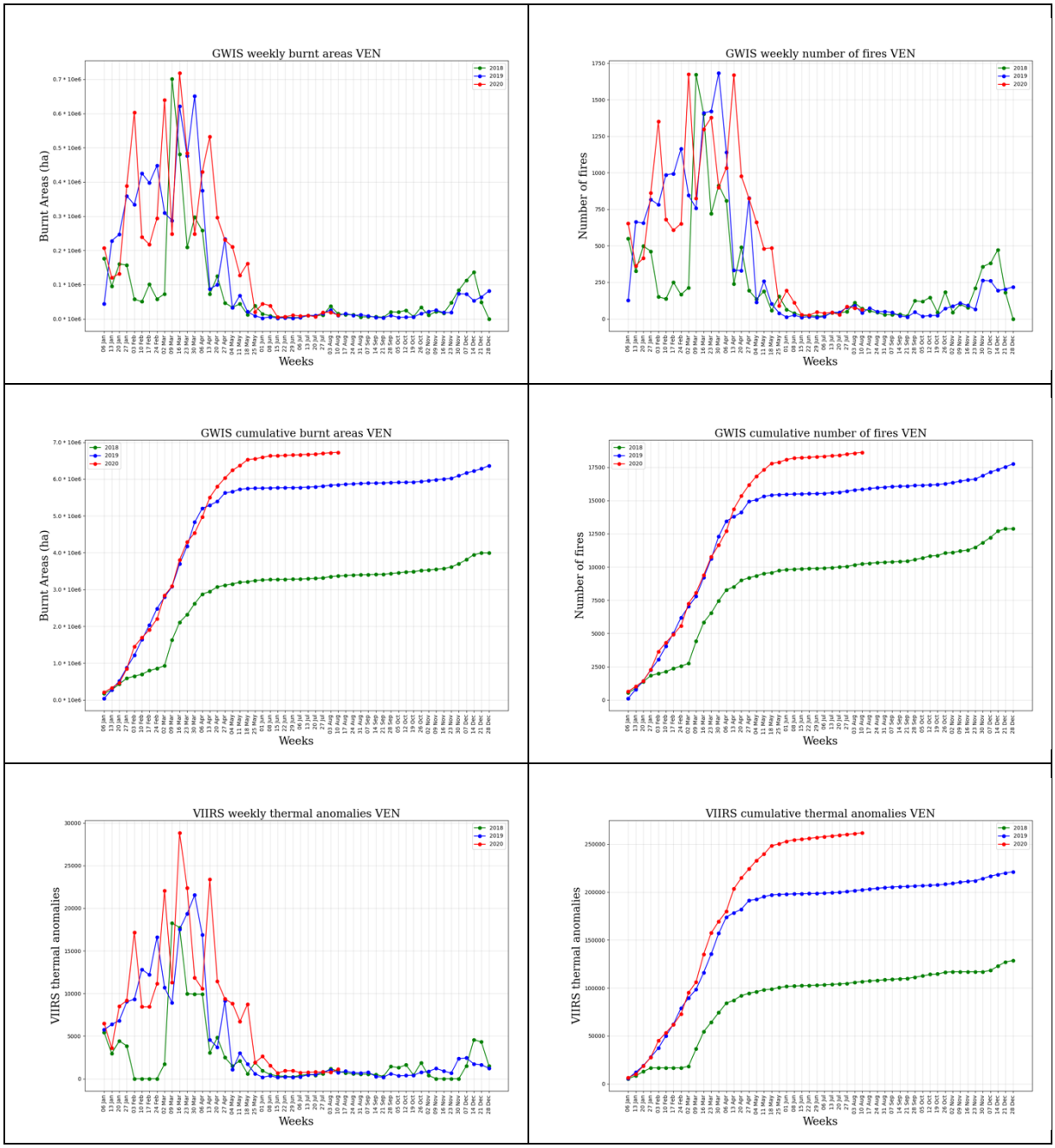


Figure 8. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

# 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 17 to August 23, 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, while they will remain of moderate or high in eastern Bolivia and western Paraguay. It is worth mentioning that the level of fire danger will decrease considerably in Bolivia, central and northeastern Brazil after August 21, from extreme levels to high and very high fire danger levels. The overall fire danger levels will be lower than those of the previous week.

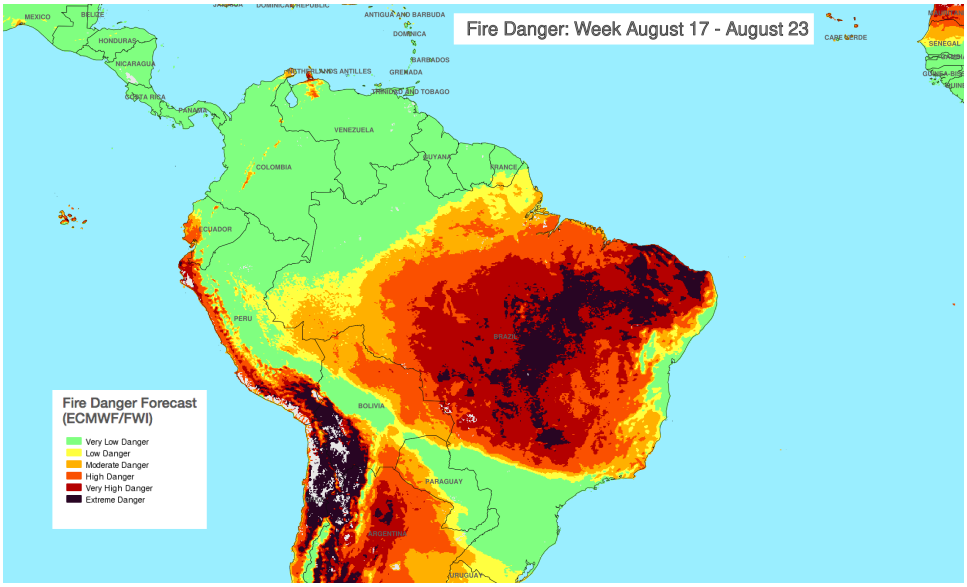


Figure 9. Average Fire danger forecast. Week, August 17-August 23, 2020.

The weekly fire weather forecast of temperature and precipitation anomalies for this week is presented in Figure 10. Although some areas of extreme wildfire risk remain in central and eastern Brazil, the general trend is towards lower levels of fire danger in the Amazon region, especially after August 21st. This week, trends of above average temperatures are forecasted for the eastern part of the Amazon region, especially in Brazil. Below average temperatures are expected in southeastern Peru, Bolivia, Paraguay and southwestern Brazil. Above average precipitation is expected in Colombia, Venezuela, Paraguay, central Bolivia and southern Brazil.

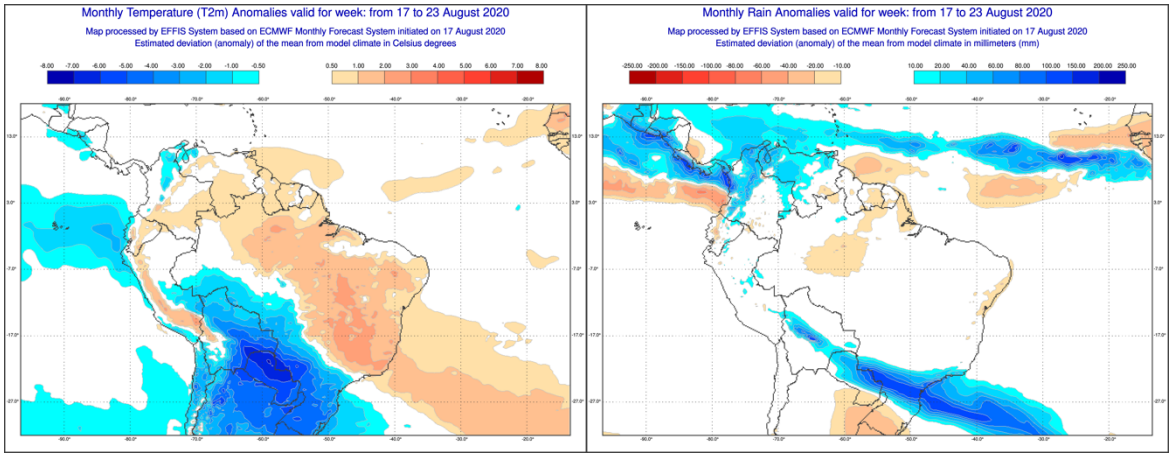


Figure 10. Fire weather anomalies of the current week, August 16chrome-August 23, 2020.

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

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