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# JRC TECHNICAL REPORT

## Weekly analysis of wildfires in the Amazon region: August 24 - August 30, 2020

2020



GWIS

Global Wildfire Information System



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JRC121721

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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. 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>. Most of the Amazon region is in Brazil, specifically in the Brazilian Legal Amazon (BLA)<sup>2</sup>, 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.

- The Brazil Legal Amazon shows a similar trend to that in 2019, with approximately 995,347 ha burned in the last week, a value that is about 55% of the figure in 2019 for that week; 2,564 fires were recorded in the week, which is slightly higher than the value of the same week of 2019. About 10,65 Mha burnt so far in 2020, a value 8% lower than that in 2019.
- The 2020 wildfire season in Brazil is similar to that of 2019. More than 1,34 Mha burned last week in Brazil, where 3,833 new fires occurred. Overall, 14,71Mha of burnt areas were mapped in GWIS until August 30, 2020, a 17% lower value of that in 2019. The main difference compared to 2019 is that the average fire size is considerable smaller in 2020.
- A total of 2,366,941 ha burnt in Bolivia since January 1 until August 30, 2020, with 325,988 ha burnt in the last week almost four times more than the previous week (17-23 August). The total burnt area in 2020 is notably below (-58%) the values of 2019 and similar to 2018. The burnt area last week was similar to 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 30, 2020, which about 18% higher than that of 2019.
- Paraguay, with 3.45 Mha burnt until August 30, 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 was below the values in 2018 but higher than 2019 for the same week.
- Peru shows the highest values of weekly burned area and number of fires since the beginning of the year 2020 with 1283 fires responsible for 305,186 ha burned. It shows an above average fire activity in 2020, as compared to the previous two years, with about 1,260,953 ha of burnt areas mapped until August 30, 2020, which is approximately 38% above the values of 2019. The number of fires mapped in GWIS is nearly double of that in 2019.
- Venezuela, with about 6,74Mha 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 a large part of Brazil and BLA, while Bolivia and Paraguay presents moderate to high fire danger.



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>

<sup>2</sup> 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 10,654,876 ha burnt in the BLA since January 1 until August 30, 2020, with 995,347 ha burnt in total the last week. Ongoing fires and those new fires started between August 23 and August 30 burnt 2,564 ha during last week. The total burnt area in the BLA, at about 10.6 Mha, is currently 8% lower than that the same period of 2019.

The number of fires recorded in GWIS in the last week was 2,564, which is a higher number than the value in 2019 and 2018 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 30, 2020 (498641) shows a typical trend in the region as compared to the trends in 2018 and 2019, with 51,556 active hot spots detected last week by VIIRS.

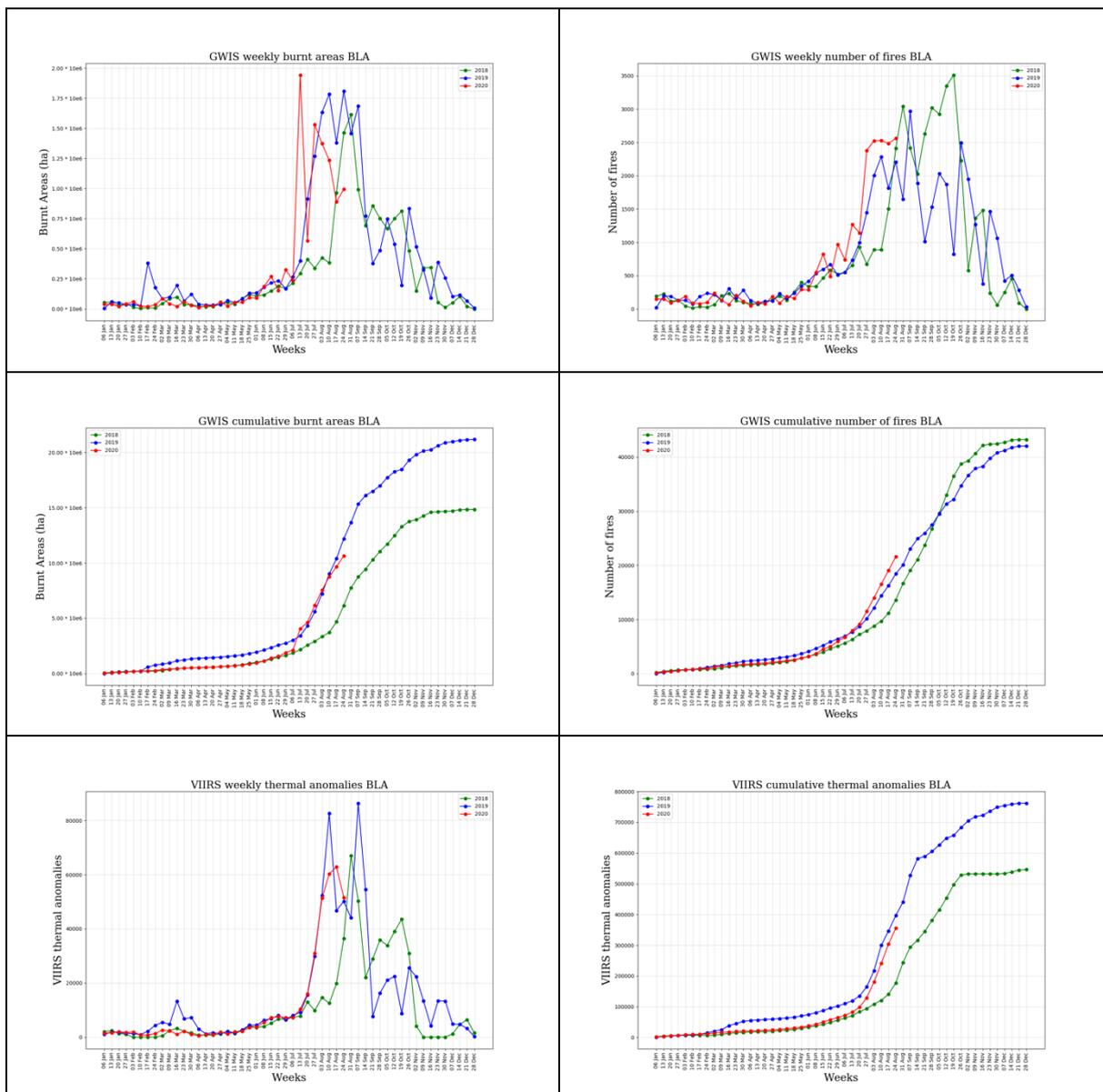


Figure 2. Trend of burnt areas and number of fires as compared to data in the last two years.

## 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 14,707,816 ha burnt in Brazil since January 1 until August 30, 2020, with a total 1,340,254 ha burnt in the last week. Ongoing fires and those new fires started between August 23 and August 30 burnt 1,599,029 ha the last week. The total burnt area in Brazil, at approximately 14.7 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 but higher than 2018.

The number of fires recorded in GWIS in the last week was 3,833, which shows an increasing trend higher than the previous years. The number of fires in 2020 up to August 30 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 (498,641) shows a typical trend in the region as compared to the trends in 2018 and 2019, with a slightly decrease on the number of hot spots detected last week of 67,305.

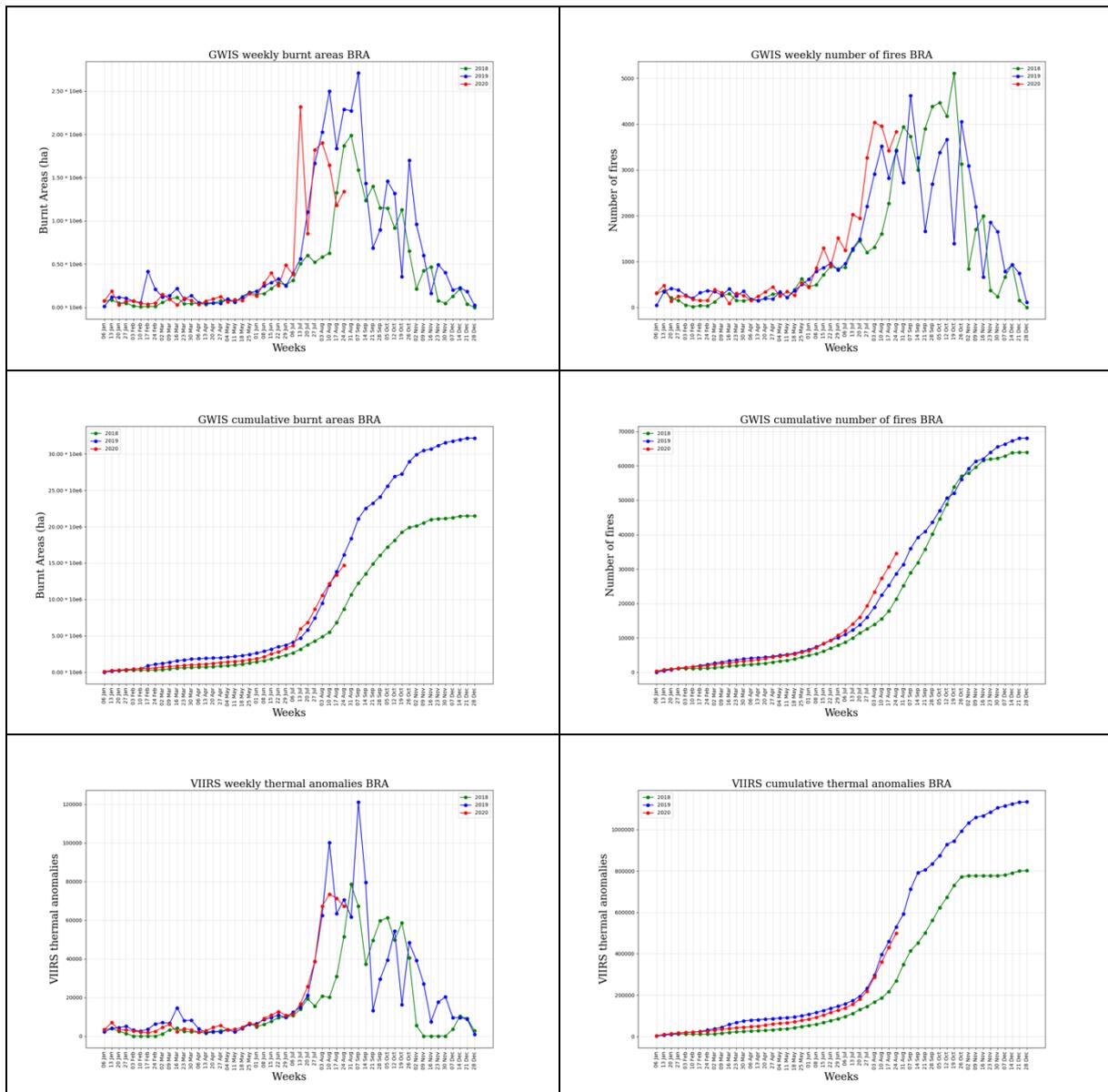


Figure 3. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

### 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 2,366,941 ha burnt in Bolivia since January 1 until August 30, 2020, with 325,988 ha burnt in the last week. The total burnt area in 2020 is currently about 58% below the value of 2019, while the burnt area last week was very similar to the value of the same week in 2019 but below than that of 2018.

The number of fires recorded in GWIS in the last week was 650, lower than the number of fires in the same week in 2019. The number of thermal anomalies until August 30, 2020 (76,143) shows a typical trend in the region; however, the value is about 40% of that reached in 2019. 12,763 thermal anomalies detected by VIIRS in the last week, a value that is below those of 2018 and 2019.

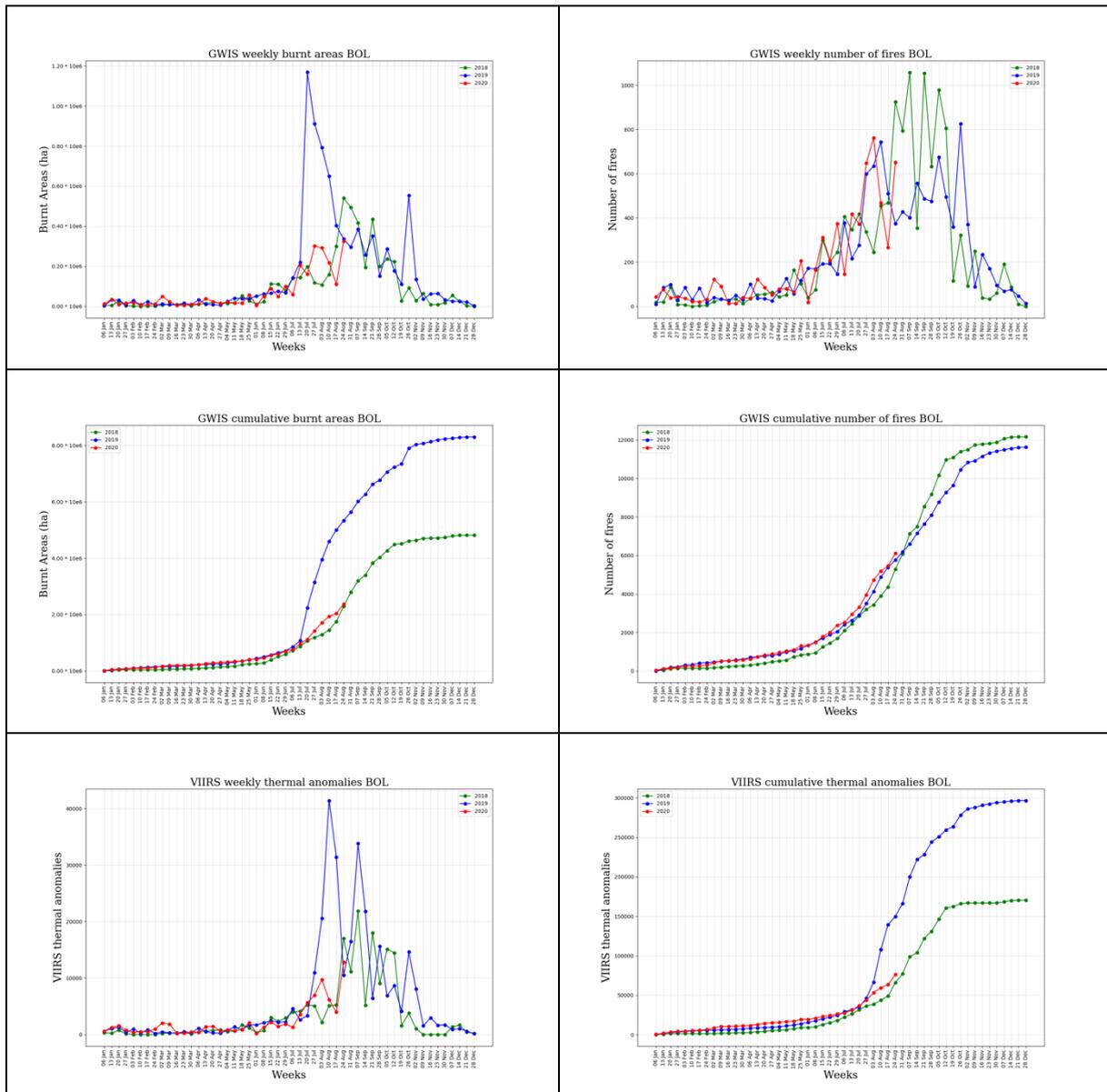


Figure 4. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 3,022,820 ha burnt in Colombia since January 1 until August 30, 2020, with 13,407 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 18% 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 68, 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 30, 2020 (107,638) 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. 743 thermal anomalies were detected by VIIRS during the last week, which is slightly below the values in the same week in 2018 and 2019.

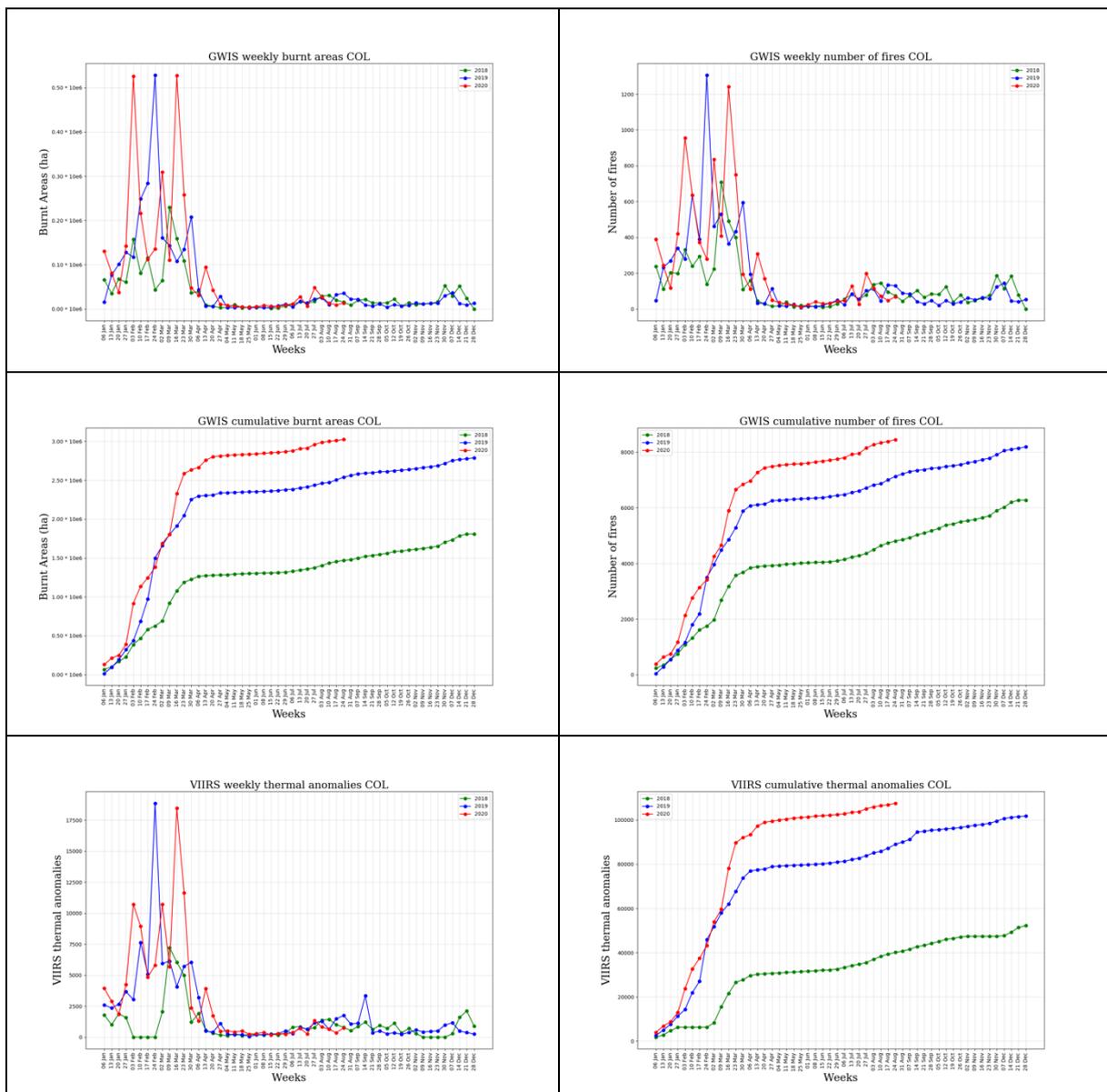


Figure 5. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 3,450,468 ha burnt in Paraguay since January 1 until August 30, 2020, which is more than double than the values in 2018 and 2019. Approximately 286,112 ha burnt in the country the last week, which showed higher fire activity than the previous two weeks.

The number of fires recorded in GWIS in the last week was 780, which is lower than the value in 2018 but higher than 2019. The number of thermal anomalies until August 23, 2020 (108,824) 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 11,640 thermal anomalies detected by VIIRS last week.

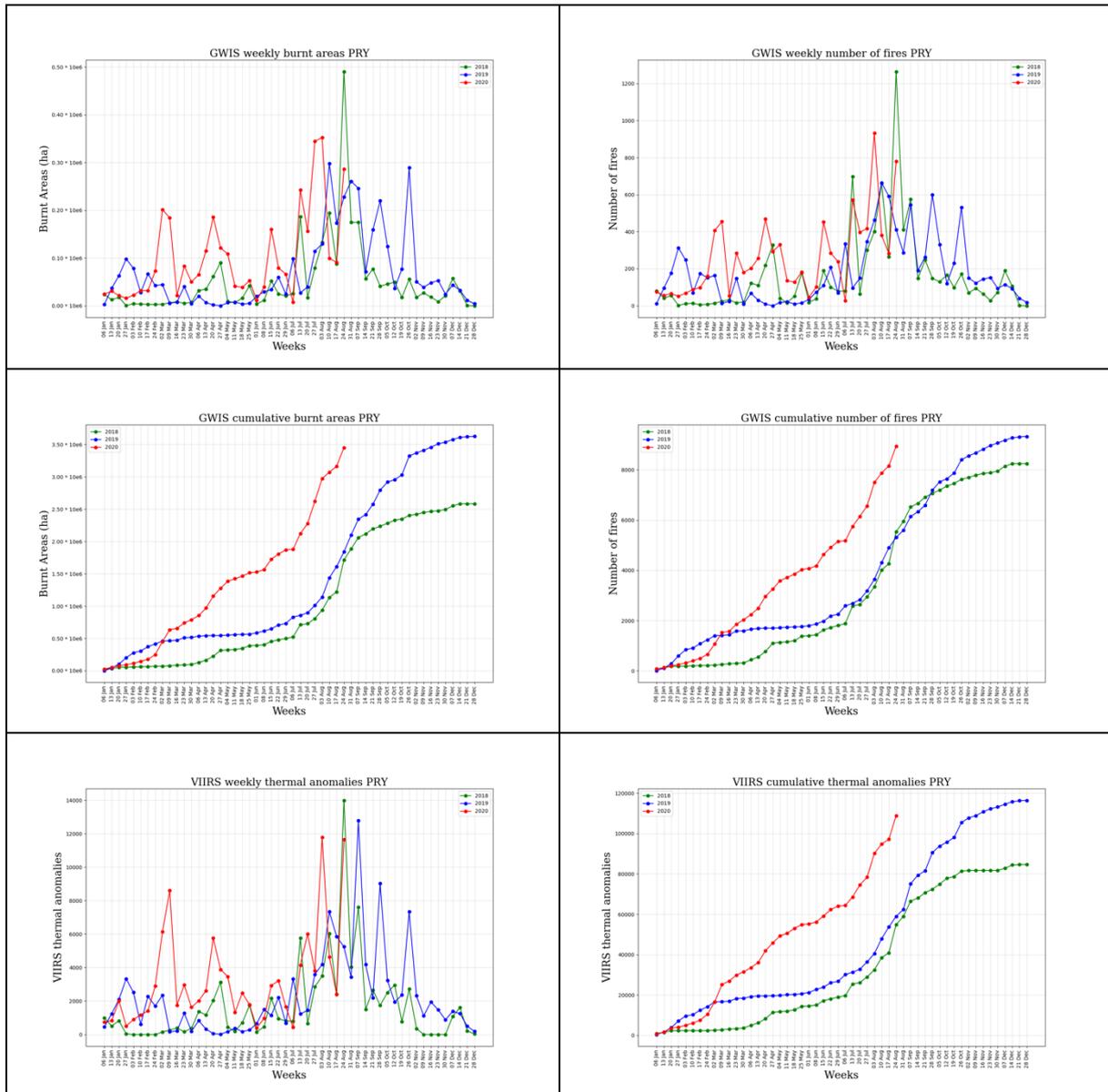


Figure 6. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 1,260,953 ha burnt in Peru since January 1 until August 30, 2020. This value is approximately 38% higher than that of 2019. Approximately 305,186 ha burnt in the last week, the highest value since the beginning of the year, a value that is higher than those of 2018 and 2019 for the same week.

The number of fires recorded in GWIS in the last week was 1283, which is the highest number since the beginning of the year higher than that of 2018 and 2019 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 August 30, 2020 (44,996) shows a typical trend in the region, with values higher than in 2018 and 2019. 12,234 thermal anomalies registered last week, the highest value since the beginning of the year.

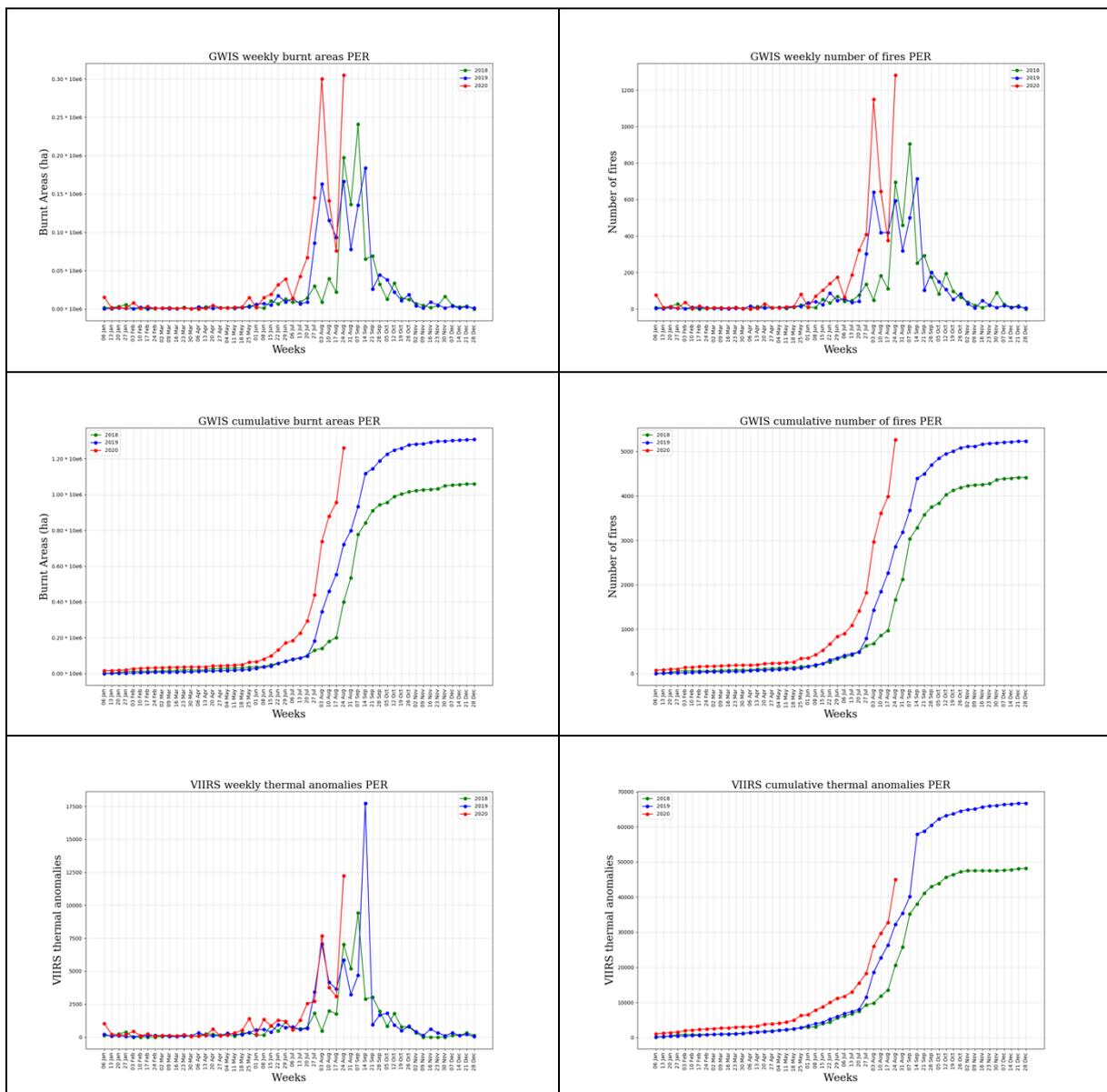


Figure 7. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 6,745,918 ha burnt in Venezuela since January 1 until August 30, 2020, with 14,795 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 47, 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 30, 2020 (263,624) 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. 1103 thermal anomalies were recorded by VIIRS during the last week, a value that is like those recorded in that week the previous two years.

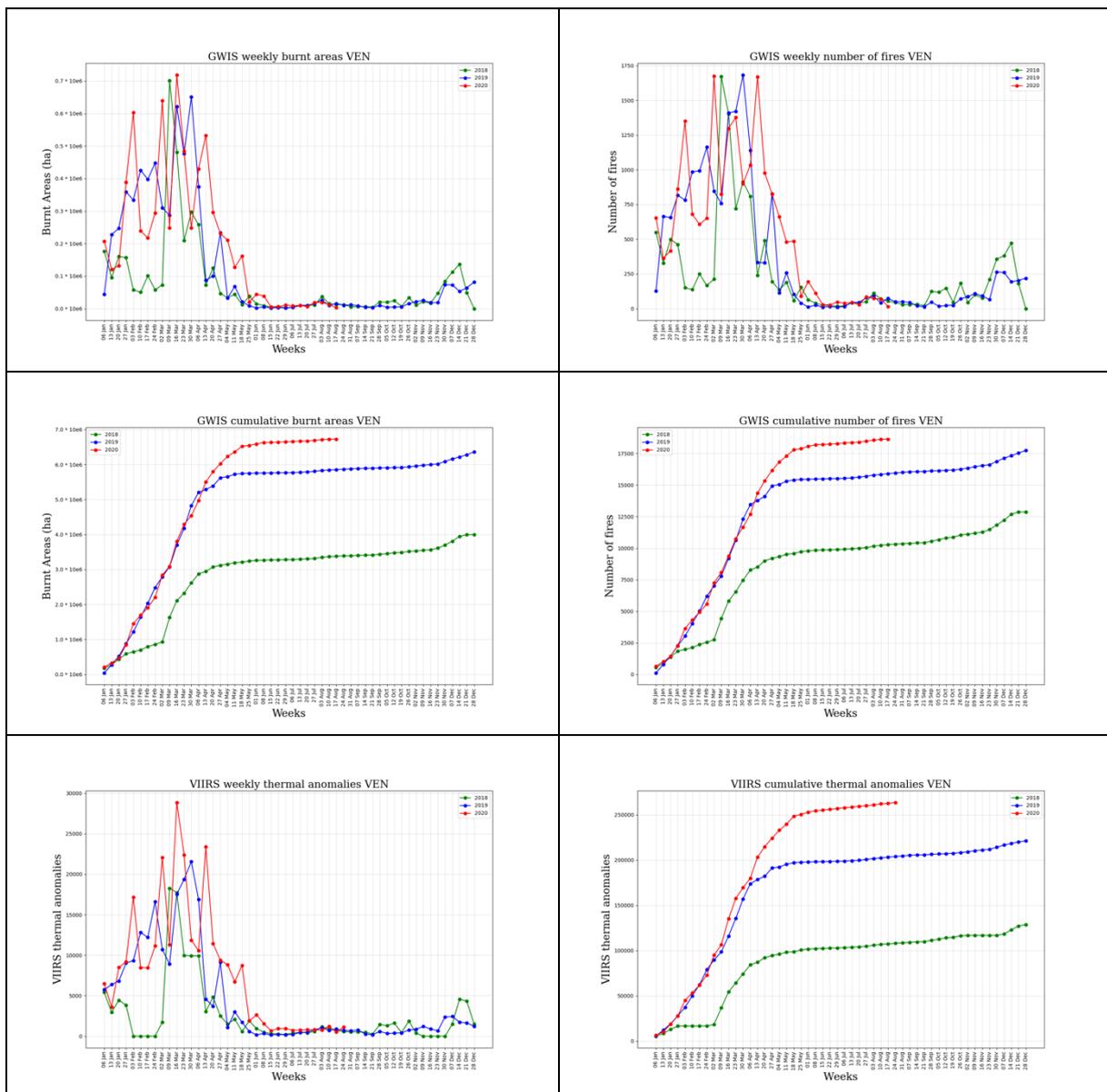


Figure 8. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 31 to September 06, 2020. This information is based on the daily fire danger forecast that is provided online in GWIS<sup>3</sup>. According to this forecast, it is expected that fire danger conditions will be extreme in a greatpart of Brazil, especially on central, northeastern and southeastern Brazil. This also includes the south and eastern part of BLA, which concentrate the highest amount of fires. Moderate or high fire danger is expected in Paraguay and eastern Bolivia. The overall fire danger levels will be higher in Brazil and BLA, while in Paraguay and Bolivia fire danger levels decrease the magnitude and the extension when compared with the previous week.

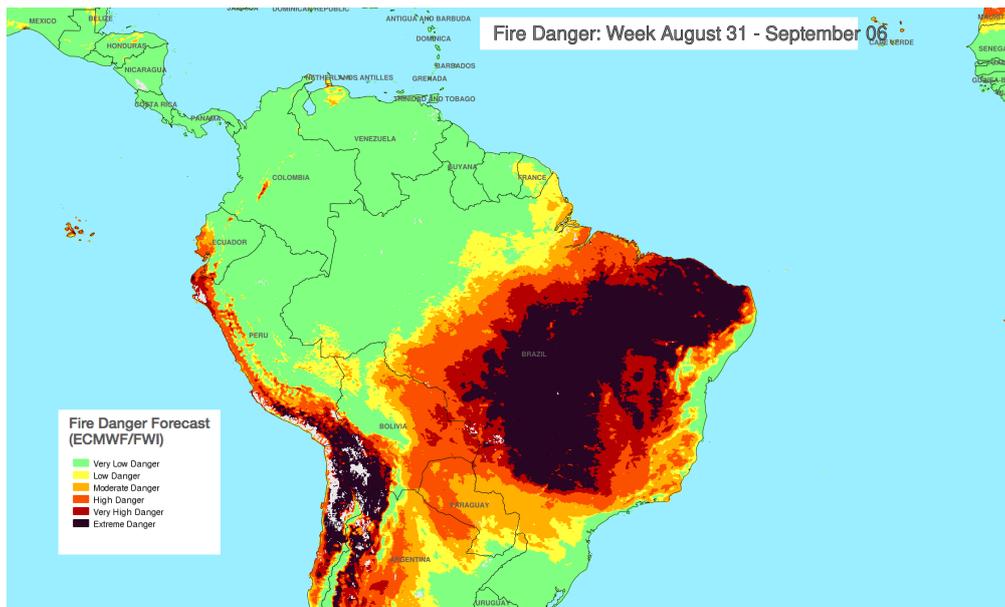


Figure 9. Average Fire danger forecast. Week, August 31-September 06, 2020.

The weekly fire weather forecast of temperature and precipitation anomalies for this week is presented in Figure 10. A strong anomaly on temperature are forecasted for mid-west and southern Brazil, however high values also are expected on the BLA, Bolivia, Peru and Colombia. Additionally, negative trends on temperature are foreseen in northern Paraguay, northeastern Brazil and extreme north of BLA (Amapá state). The models estimate a increase on precipitation rates for this week in southern Colombia, northern Peru and southern Brazil. Below average precipitation is expected in northern and mid-west Brazil, reaching part of eastern Colombia, Paraguay, up to the south and southeast of Brazil.

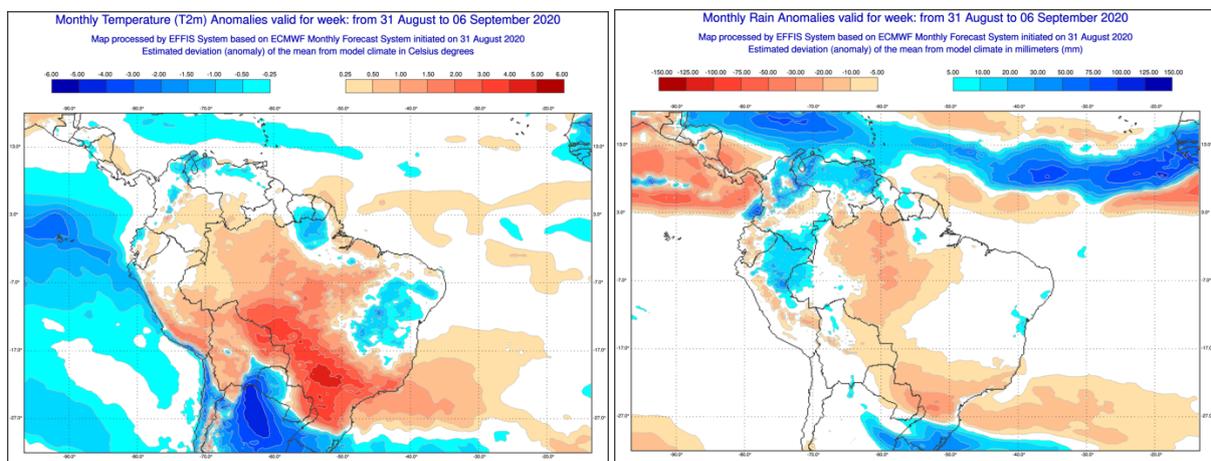


Figure 10. Fire weather anomalies of the current week, August 31-September 06, 2020.

<sup>3</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)

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