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# JRC TECHNICAL REPORT

## Weekly analysis of wildfires in the Amazon region: October 19 - October 25, 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. 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.

- In the Brazil Legal Amazon (BLA), within Brazil, a total of **29.46 Mha burnt since January 1 until October 25, 2020. This value is about 59% higher than that of 2019. Both, the number of fires and the burnt area in the last week, were above the values of 2019, and mark an increase in fire activity with respect to the previous week. Last week 3,509 fires occurred, decreasing from the highest value since the beginning of the year recorded last week.**
- **41.34 Mha ha burnt in Brazil since January 1 until October 25, 2020**, with a total 1.23 Mha burnt in the last week. **So far, the total burnt area in Brazil is about 52% higher than that of 2019. 4,780 fires occurred last week.** The average fire size is similar to 2019 that was a critical year.
- In Bolivia, **the last week, with 1235 fires that burned 431,177 ha, represented a higher burnt area and number of fires than the same week in 2019. The total burnt area of the year 2020 is 6.84 Mha**, below the figures of burnt areas in 2019. The average fire size remains similar to that of previous weeks and the total burnt area is approaching the values of 2019.
- **In Colombia, the total burnt area in the country (3.20 Mha) remains approximately 21% above the values of 2019, due to the intensive fire activity from January to April 2020.**
- **Paraguay, with 5.62 Mha burnt since January 1 until October 25, 2020, has reached values nearly two times the values in 2018 and 2019.**
- A total of 2.36 Mha burnt in Peru since January 1 until October 25, 2020. **This value is almost double than that of 2019, mainly because of the increase of the fire activity during July and August.** The number of fires mapped in GWIS is nearly double of that in 2019.
- Venezuela recorded 6.86 Mha burnt in the current year. **The value of the total burnt area in Venezuela is approximately 16% 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 those of 2018 and 2019.**
- This week, fire danger conditions will remain extreme in eastern Brazil, although the overall the conditions in the region are less extreme than last week, especially in southern Brazil. High to very high fire danger is expected in southern Bolivia.



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 29.46 Mha burnt in the BLA since January 1 until October 25, 2020, with 910,264 ha burnt in total the last week, higher than for the same week in 2018 and 2019. Until October 25, the total burnt area in 2020 in BLA is about 59% higher than that of 2019.

The number of fires recorded in GWIS in the last week was 3,509, decreasing from the highest value since the beginning of the year recorded last week. The total number of fires in 2020 is above the figures in 2018 and 2019. On average, fires that occurred in the BLA in the last 4 weeks, were of a similar size in 2020 compared to 2019 and 2018. The number of thermal anomalies until October 25, 2020 (917,226) shows a typical trend in the region as compared to the trends in 2018 and 2019. A number of 28,227 thermal anomalies was registered last week.

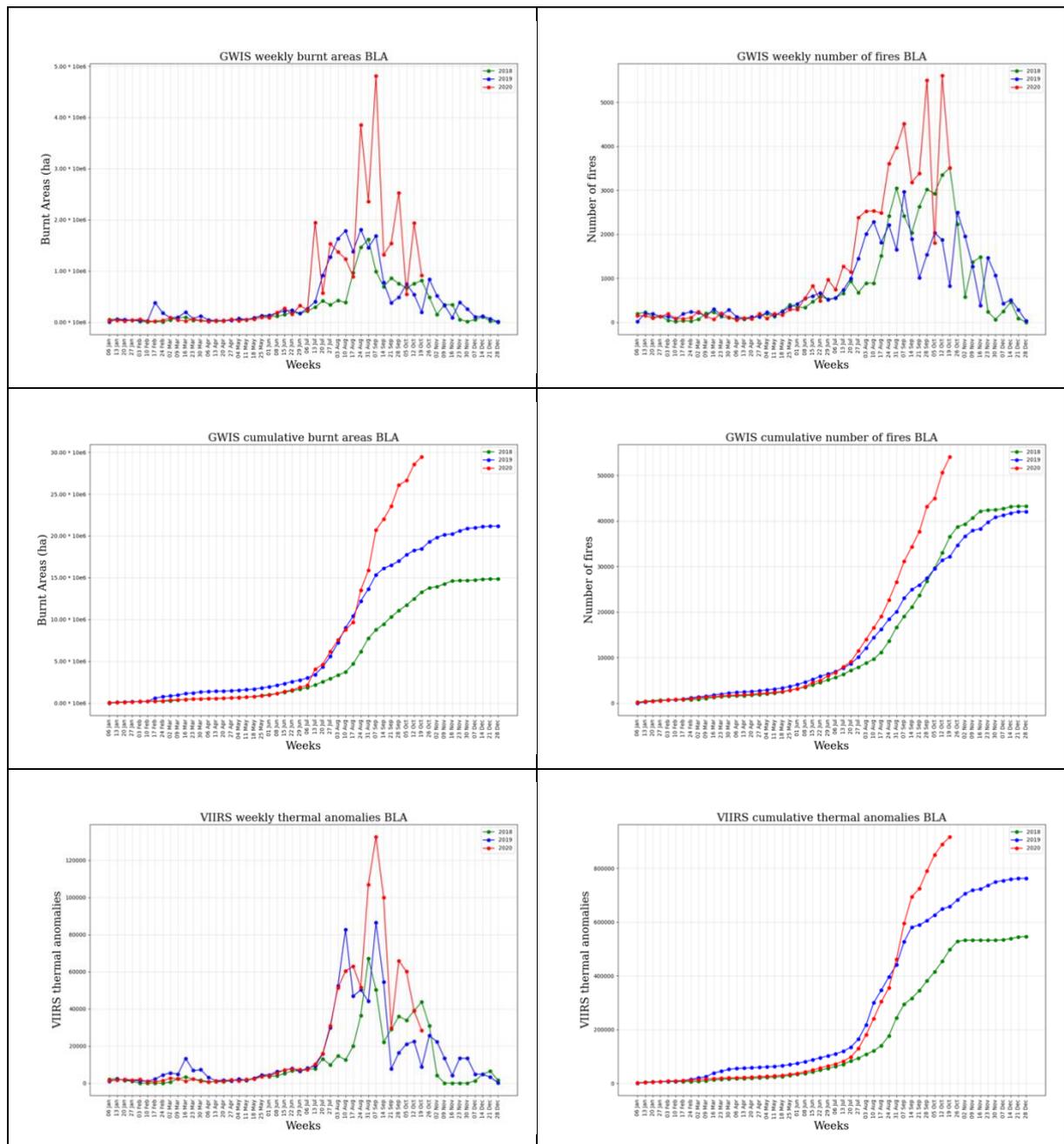


Figure 2. Trend of burnt areas and number of fires as compared to data in the last two years.

## 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 41.34 Mha ha burnt in Brazil since January 1 until October 25, 2020, with a total 1,24 Mha burnt in the last week. The value of the week decreased from the values of the last week but its higher than 2018 and 2019 for the same week. Until October 25, the total burnt area in Brazil is about 52% higher than that of 2019.

The number of fires recorded in GWIS in the last week was 4,780. The number of fires in 2020 up to October 25 is higher than that of 2019, although the average fire size is similar to 2019 that was a critical year. The number of thermal anomalies until October 25, 2020 (1,295,141) shows a typical trend in the region but higher values as compared to the trends in 2018 and 2019. 40,502 thermal anomalies were registered last week.

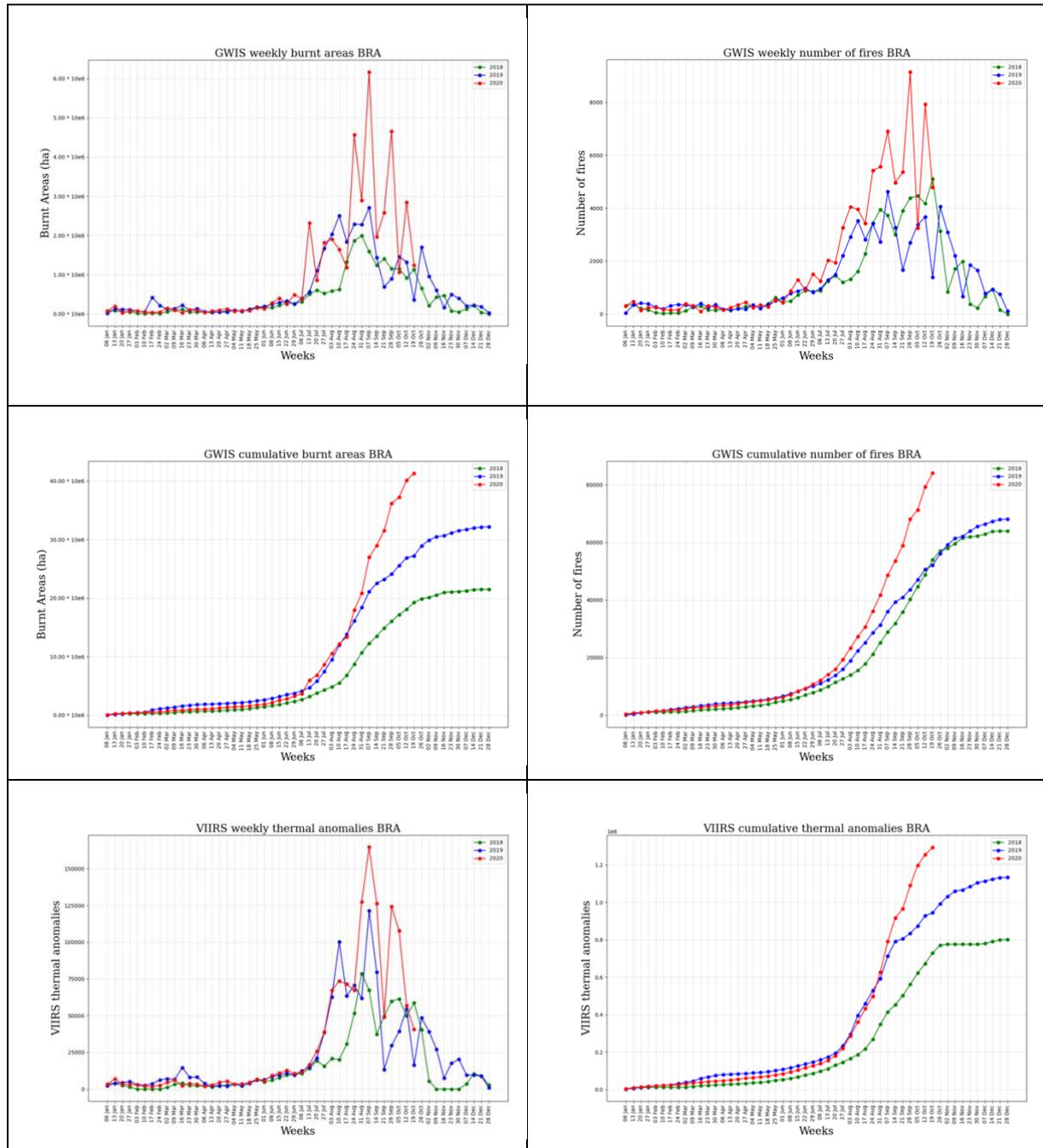


Figure 3. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

### 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 6,84 Mha ha burnt in Bolivia since January 1 until October 25, 2020 a 7% less than in 2019 for the same time period. However, the last three weeks have been, in average, worse than the same period during the last two years. At this period of the year the trend of the season starts showing a decrease rate of burnt area and number of fires. But this last week, the rate is not still decreasing as in 2018 and 2019.

The number of fires recorded in GWIS in the last week was 1,235, higher than the number of fires in the same week in 2018 and 2019. The number of thermal anomalies until October 25, 2020 (221,505) shows a typical trend in the region. 13,368 thermal anomalies were detected by VIIRS in the last week, decreasing again from the highest values since the beginning of the year recorded two weeks ago.

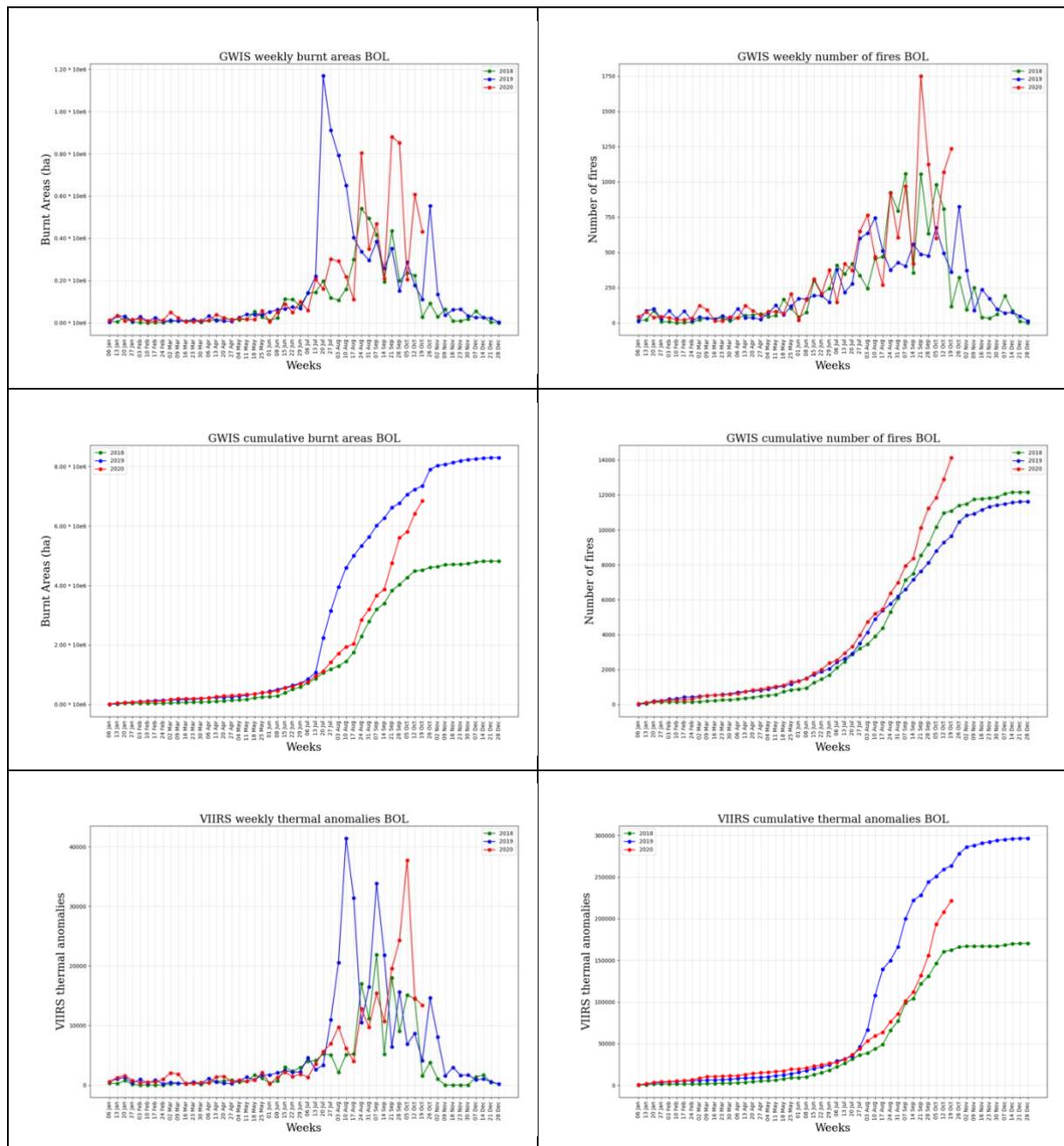


Figure 4. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 3.20 Mha burnt in Colombia since January 1 until October 25, 2020, with 21,705 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 22% above the values of 2019 (3.20 Mha vs 2.61 Mha), due to the intensive fire activity from January to April 2020.

The number of fires recorded in GWIS in the last week was 99, which shows a stable trend in the last weeks, as compared to 2018 and 2019. The number of fires is 24% higher than that of last year (9222 vs 7436). The number of thermal anomalies until October 25, 2020 (113,722) 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. 530 thermal anomalies were detected by VIIRS during the last week, which is similar to the values in the same week in 2019 and 2018.

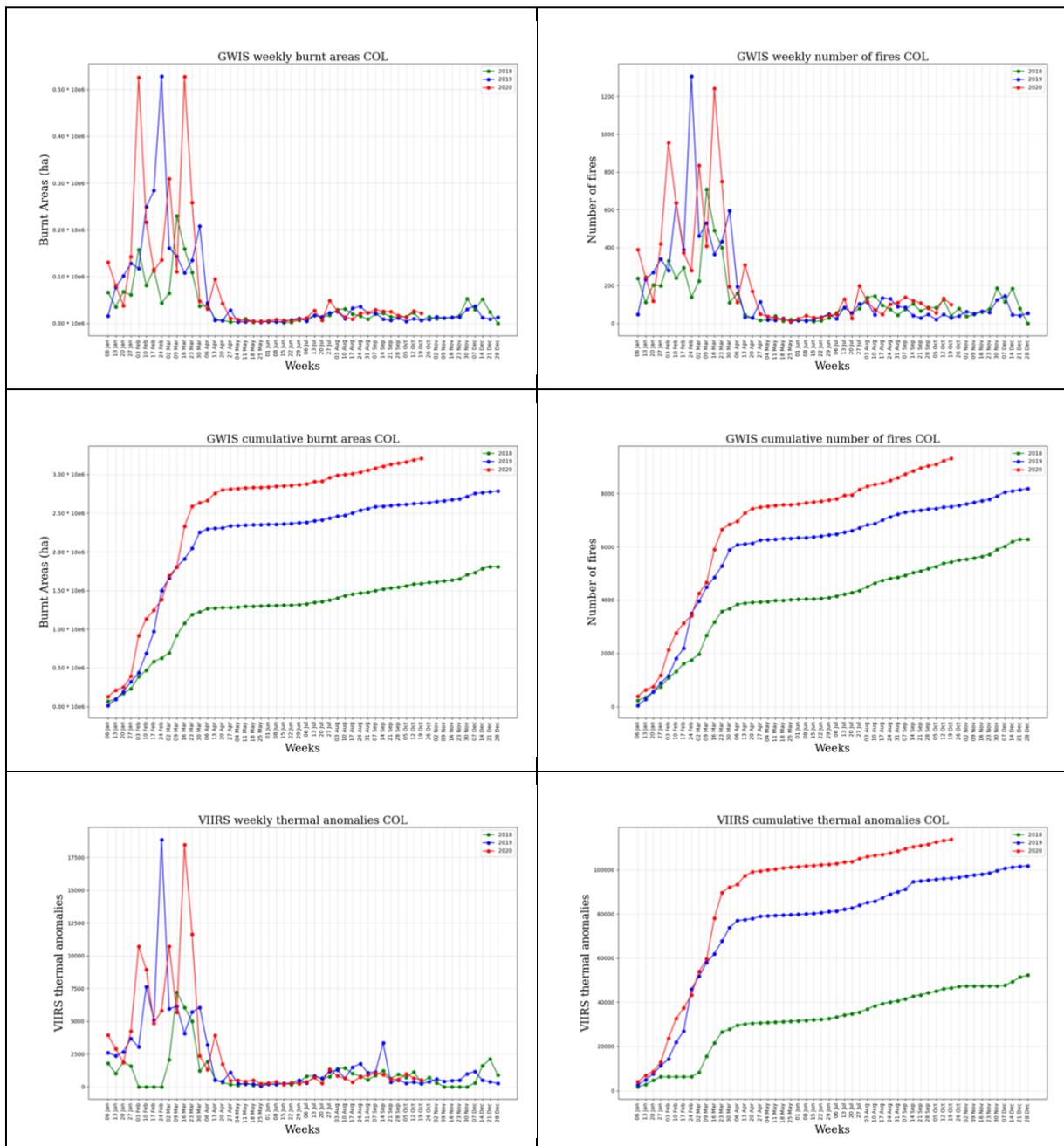


Figure 5. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 5.62 Mha burnt in Paraguay since January 1 until October 25, 2020, which is 85% higher than the value in 2019. Approximately 92,748 ha burnt in the country the last week, which is lower than the previous week and higher than the value of the same week of 2018 and 2019.

The number of fires recorded in GWIS in the last week was 312, which is higher than the value in 2019 and 2018. The average fire size has been higher during the last 3 weeks compared to the same weeks of 2018 and 2019. The same happened from the week of July 15 to August 3. Those weeks with higher average fire size matches with the weeks that contribute to increase the current burnt area for the current fire season. The number of thermal anomalies until October 25, 2020 (181,751) follows a typical trend in the region, but with higher values, nearly the double as compared to 2018 and 2019. 2,261 thermal anomalies detected by VIIRS last week, decreasing from the highest value since the beginning of the year recorded three weeks ago.

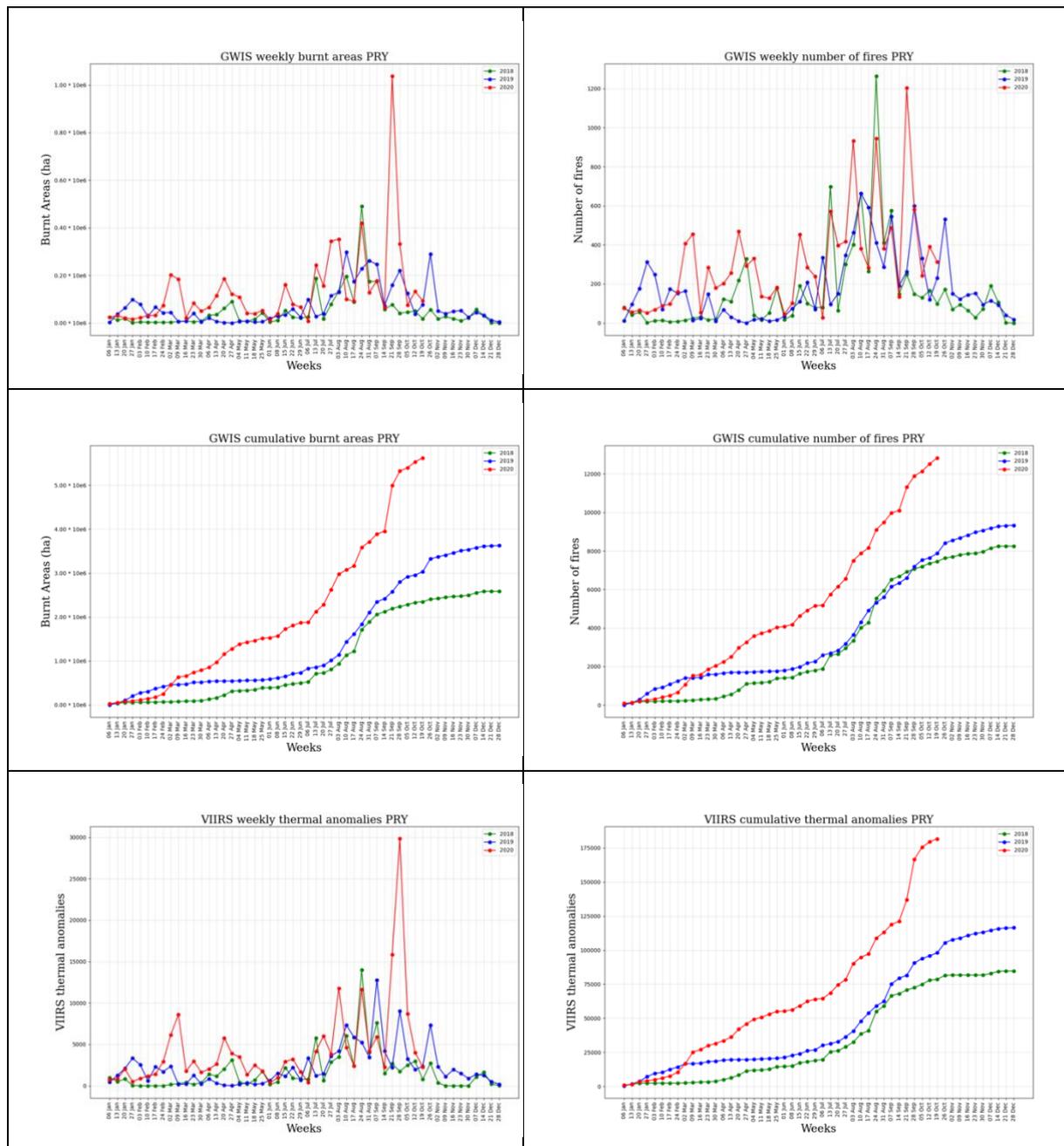


Figure 6. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 2.36 Mha burnt in Peru since January 1 until October 25, 2020. This value is almost the double than that of 2019. Approximately 44,037 ha burnt in the last week, higher values to ones of 2018 and 2019 for the same week.

The number of fires recorded in GWIS in the last week was 228, decreasing from the last week and higher to ones of 2018 and 2019 for the same week. The total number of fires since the beginning of the year, above 8,000, is about double of that of 2019. The number of thermal anomalies until August 30, 2020 (72,289) shows a typical trend in the region, with values higher than in 2018 and 2019. 1,377 thermal anomalies registered last week, decreasing after the last week.

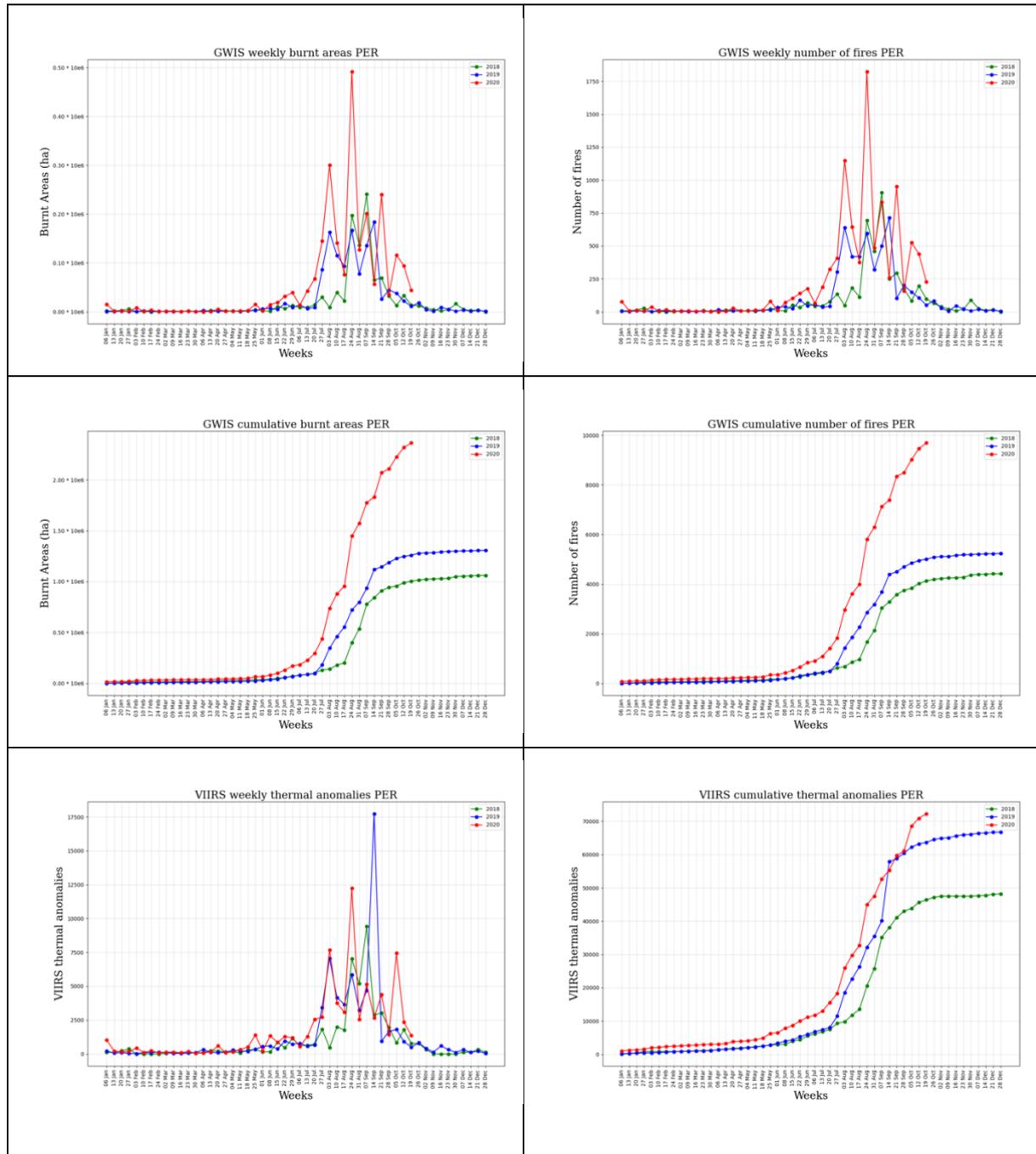


Figure 7. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 6.86 Mha burnt in Venezuela since January 1 until October 25, 2020, with 17,041 ha burnt in the last week. The value of the total burnt area in the country is approximately 16 % higher than that in 2019 (6.86 Mha vs 5.90 Mha) 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 91, which shows a stable trend comparable to those of the previous two years, although the total number of fires remains approximately 18% higher than in 2019 (18965 vs 16143). The number of thermal anomalies until October 25, 2020 (271,651) shows a typical trend in the region as compared to the trends in 2018 and 2019, but with approximately 31% higher value than the previous years. 1218 thermal anomalies were recorded by VIIRS during the last week, a value that is like those recorded in that week the previous two years.

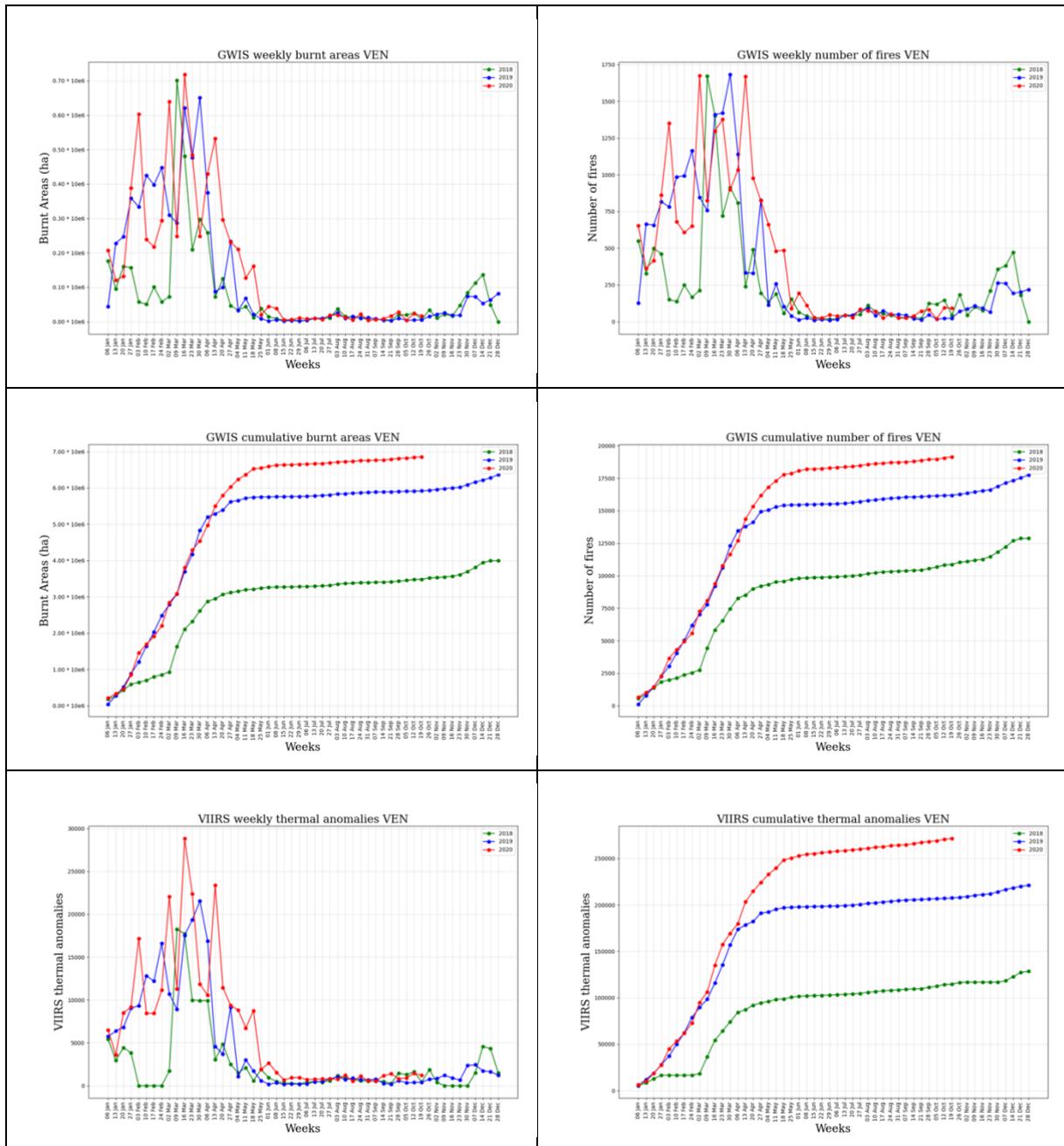


Figure 8. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 October 26 to November 01, 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 remain extreme in eastern Brazil, although the overall the conditions in the region are less extreme than last week, especially in southern Brazil. High to very high fire danger is expected also in southern Bolivia.

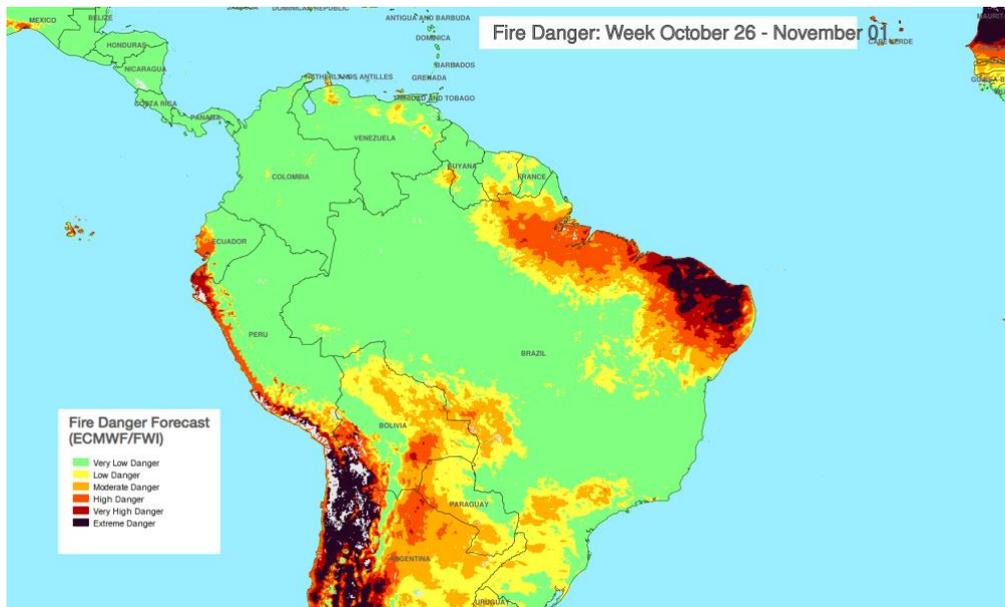


Figure 9. Average Fire danger forecast. Week, October 26-November 01, 2020.

The weekly fire weather forecast of temperature and precipitation anomalies for this week is presented in Figure 10. Moderate above average temperature values are forecasted for central and northern Brazil, BLA and Colombia. Below averages temperatures values are forecasted for southeastern Brazil, southern Bolivia high below averages temperature values for Paraguay. The models estimate an above average precipitation rates for this week mainly in central/southern Brazil, BLA and northern Bolivia.

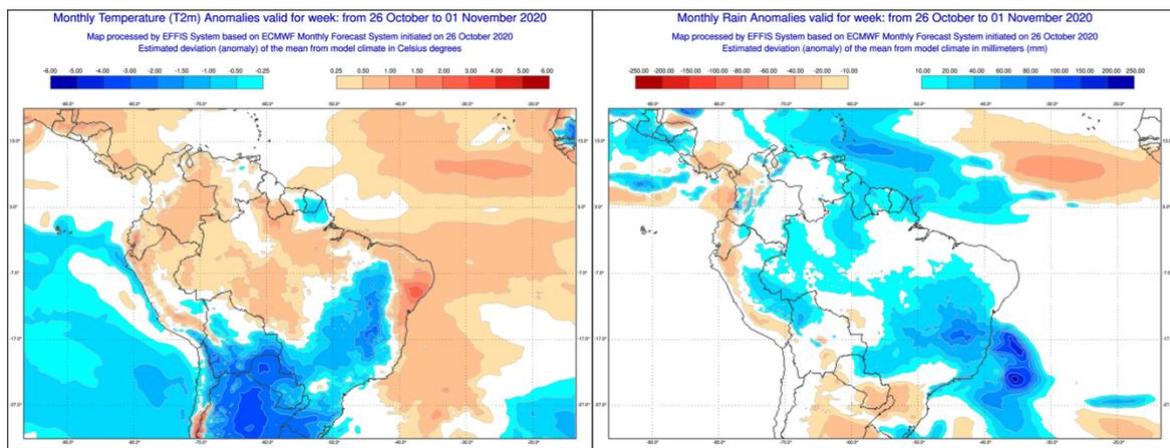


Figure 10. Fire weather anomalies of the current week, October 26-November 1, 2020.

<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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