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# JRC TECHNICAL REPORT

## Weekly analysis of wildfires in the Amazon region: September 14 - September 20, 2020

2020



GWIS

Global Wildfire Information System



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



JRC121908

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Cover image: Burnt areas mapped in GWIS the week of September 14 -20, 2020. White boxes show areas of fires larger than 10000 ha.



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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>. 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 1.26 Mha burned in the last week, a higher value than the value of that week in 2019; **3,197 fires were recorded in the week, decreasing from the highest yearly value recorded the previous week, but still higher than the value of the same week of 2019. About 21.7 Mha burnt so far in 2020, a value that is about 35% higher than in 2019.**
- The 2020 wildfire season in Brazil is similar to that of 2019. More than 1,8 Mha burned last week in Brazil, where 4,981 new fires occurred, decreasing from the highest values of the year recorded last week. **Overall, 28.5 Mha of burnt areas were mapped in GWIS until September 20, 2020, which is a value about 27% higher than that in 2019.**
- A total of 3,651,231 ha burnt in Bolivia since January 1 until September 20, 2020, with 167,582 ha burnt last week. This is an increase from the last week but the value is lower than the peak of the week 24-31 August. **The total burnt area in 2020 is notably below (-58%) the values of 2019 and similar to 2018.** The number of burnt areas last week was lower 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. **Nearly 3.1 Mha burnt in the country until September 20, 2020, which is a value about 20% higher than that of 2019.**
- **Paraguay, with 3.92 Mha burnt** until September 20, 2020, shows higher fire activity than in 2018 and 2019, and an increase of burnt areas between March and June, currently **reaching values over 2 times those of the past years. The fire activity last week was below the values in 2018 and 2019 for the same week.**
- **Peru** recorded this week 259 fires, responsible for 53,279 ha burned, decreasing the values from the last week. It **shows an above average fire activity in 2020, as compared to the previous two years, with about 1.82 Mha burnt until September 20, 2020, which is approximately the double of the values in 2019.** The number of fires mapped in GWIS is also nearly double of that in 2019.
- **Venezuela, with about 6,77 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 northeastern part of Brazil, southern Bolivia and the north of Paraguay. Moderate or high fire danger is also expected in eastern Bolivia, Paraguay and southern Brazil, although with lower values than those of the previous week.



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 21,664,902 ha burnt in the BLA since January 1 until September 20, 2020, with 1,258,714 ha burnt in total the last week, decreasing from the peak of the last week. The total burnt area in the BLA, at about 21.7 Mha, is currently about 35% higher than the same period of 2019.

The number of fires recorded in GWIS in the last week was 3,197, decreasing from the peak of the last week, but still higher than the value in 2019 and 2018 in that week. The total number of fires in 2020 is close to 37% 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 20, 2020 (694,474) shows a typical trend in the region as compared to the trends in 2018 and 2019. A number of 99,879 thermal anomalies was registered last week, decreasing from the highest value recorded last week.

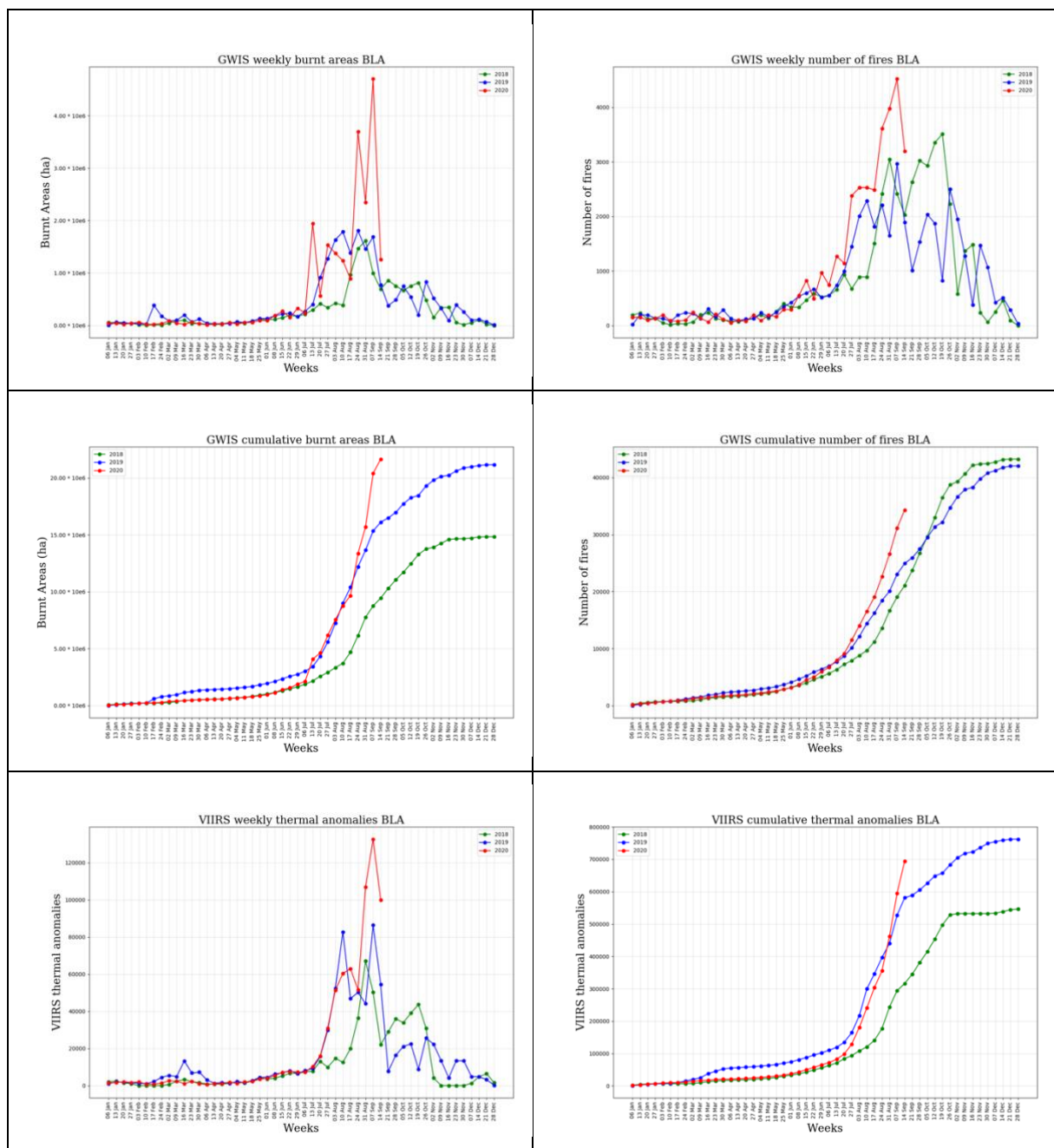


Figure 2. Trend of burnt areas and number of fires as compared to data in the last two years.

## 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 28,5 Mha ha burnt in Brazil since January 1 until September 20, 2020, with a total 1,849,315 Mha burnt in the last week, decreasing from the highest value recorded last week. The total burnt area in Brazil, at approximately 28.5 Mha, is about 27% 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 4981, decreasing from the highest value recorded last week, but still 45% higher than the value in 2019 in that week. The number of fires in 2020 up to September 6 is about 35% higher than that of 2019, with similar average fire size. The number of thermal anomalies until September 20, 2020 (916,988) shows a typical trend in the region but higher values as compared to the trends in 2018 and 2019. 126,281 thermal anomalies were registered last week, decreasing from the highest value recorded last week but still higher than 2018 and 2019.

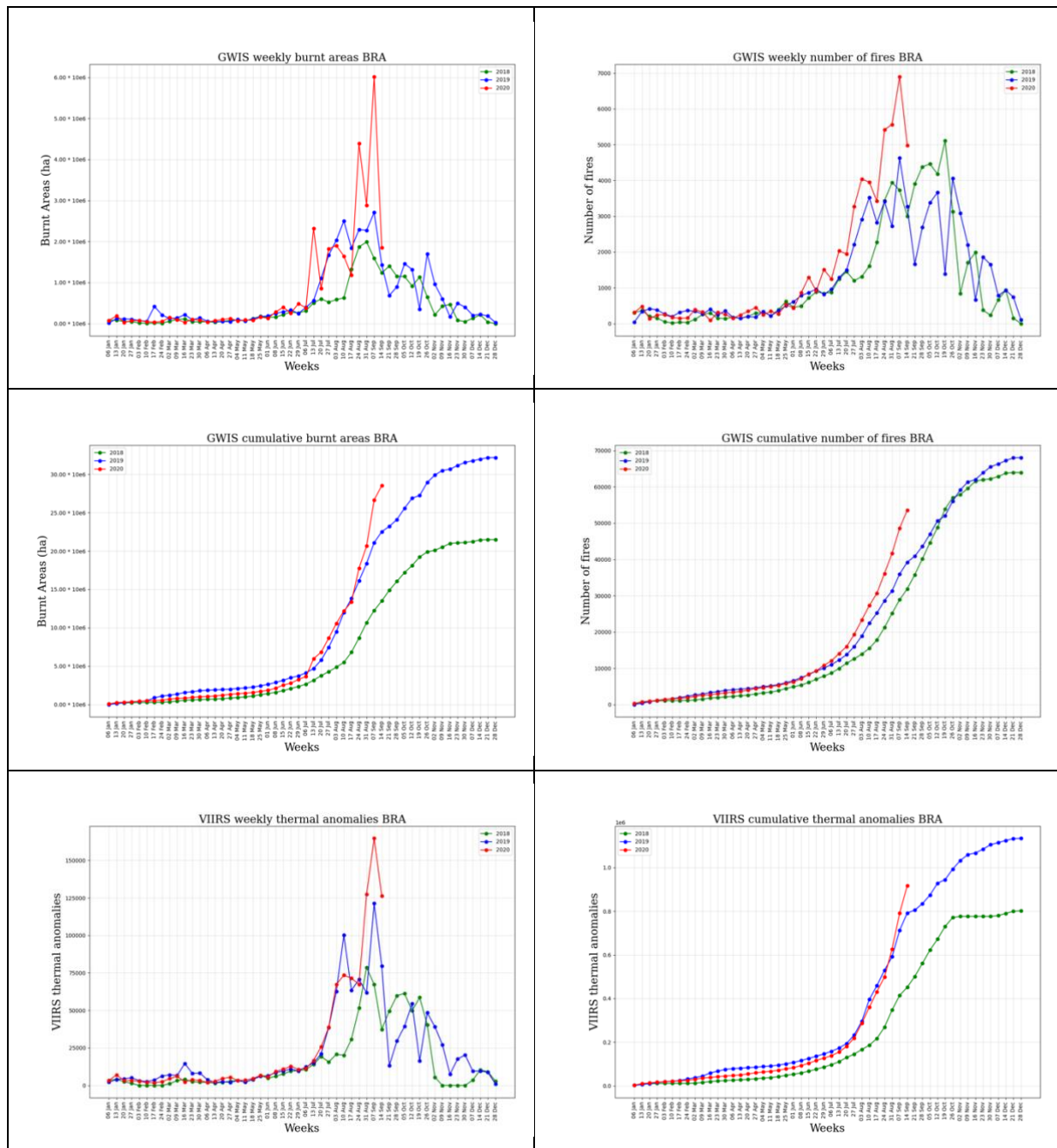


Figure 3. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.



### 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 3,651,231 ha burnt in Bolivia since January 1 until September 20, 2020, with 167,582 ha burnt in the last week. The total burnt area in 2020 is currently about 58 % below the value of 2019, very similar to 2018, while the burnt area last week presented values lower than 2018 and 2019 for the same week.

The number of fires recorded in GWIS in the last week was 420, lower than the number of fires in the same week in 2019 but higher than 2018. The total number of fires are higher than 2018 and 2019. The number of thermal anomalies until September 20, 2020 (111,957) shows a typical trend in the region; however, the value is about 50% of that reached in 2019. 10,714 thermal anomalies were detected by VIIRS in the last week, a value that is still below those of 2019 but higher than 2018.

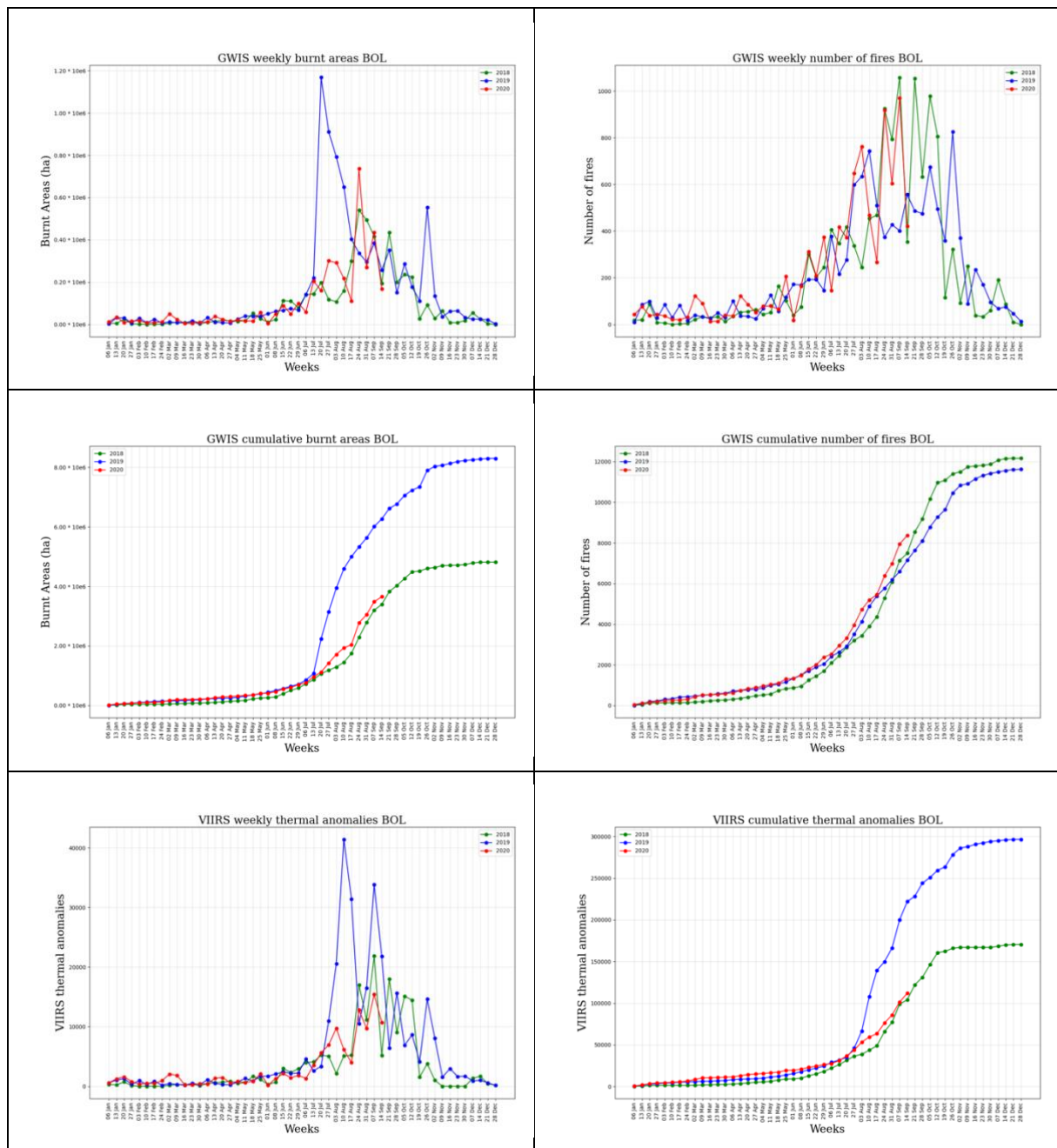


Figure 4. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 3,106,253 ha burnt in Colombia since January 1 until September 20, 2020, with 24,286 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 % 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 120, which shows a stable trend in the last weeks, but higher as compared to 2018 and 2019. The number of fires is approximately 20 % higher than that of last year. The number of thermal anomalies until September 20, 2020 (110,450) 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. 900 thermal anomalies were detected by VIIRS during the last week, which is similar to the values in the same week in 2018 but below the values in the same week in 2019.

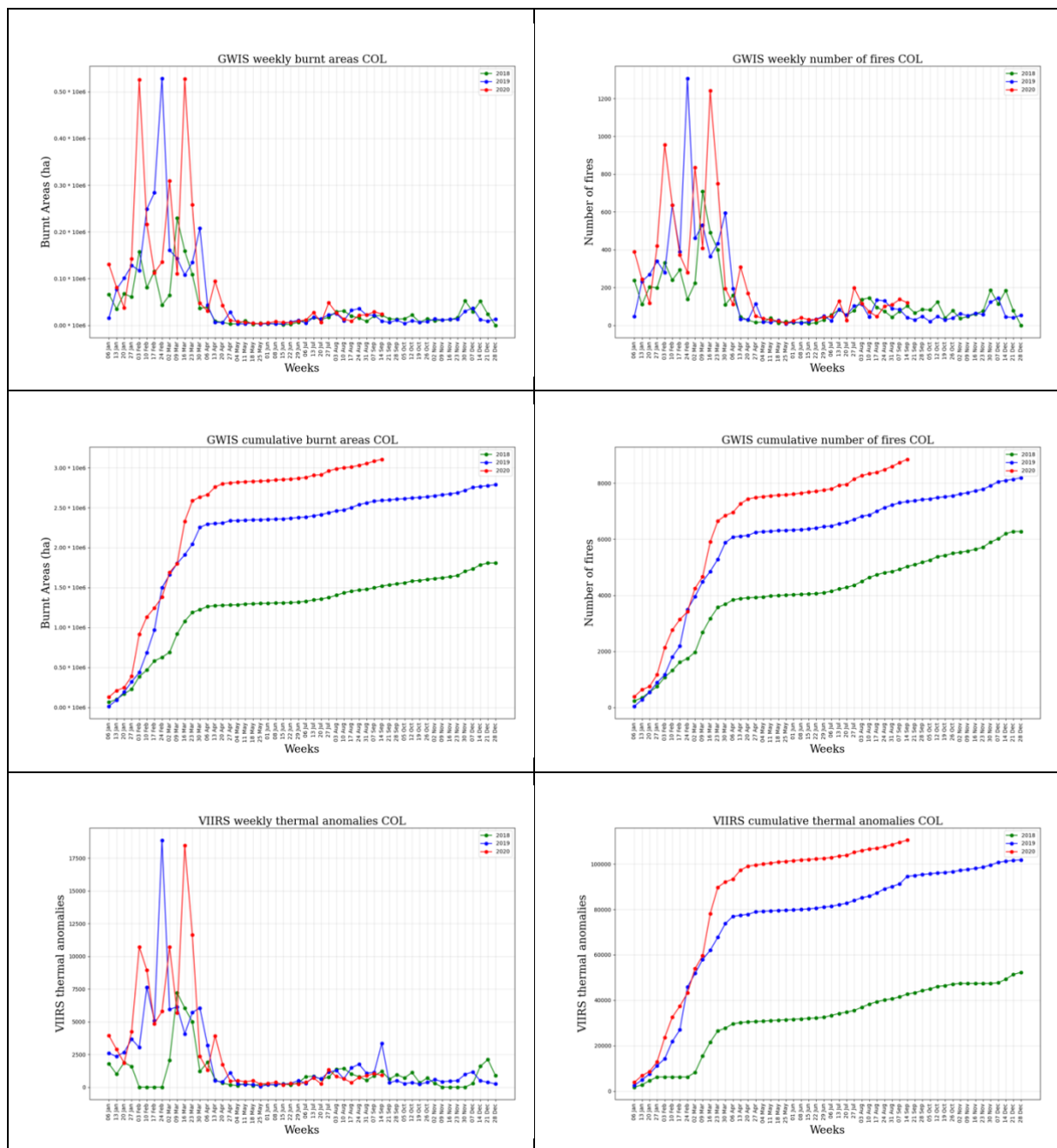


Figure 5. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.



## 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 3,921,193 ha burnt in Paraguay since January 1 until September 20, 2020, which is more than double of the values in 2018 and 2019. Approximately 37,161 ha burnt in the country the last week, which showed lower fire activity comparing with the previous week, with values below of those of 2018 and 2019 for the same week.

The number of fires recorded in GWIS in the last week was 135, which is lower than the value in 2018 and 2019. The number of thermal anomalies until September 20, 2020 (121,130) 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 2,247 thermal anomalies detected by VIIRS last week.

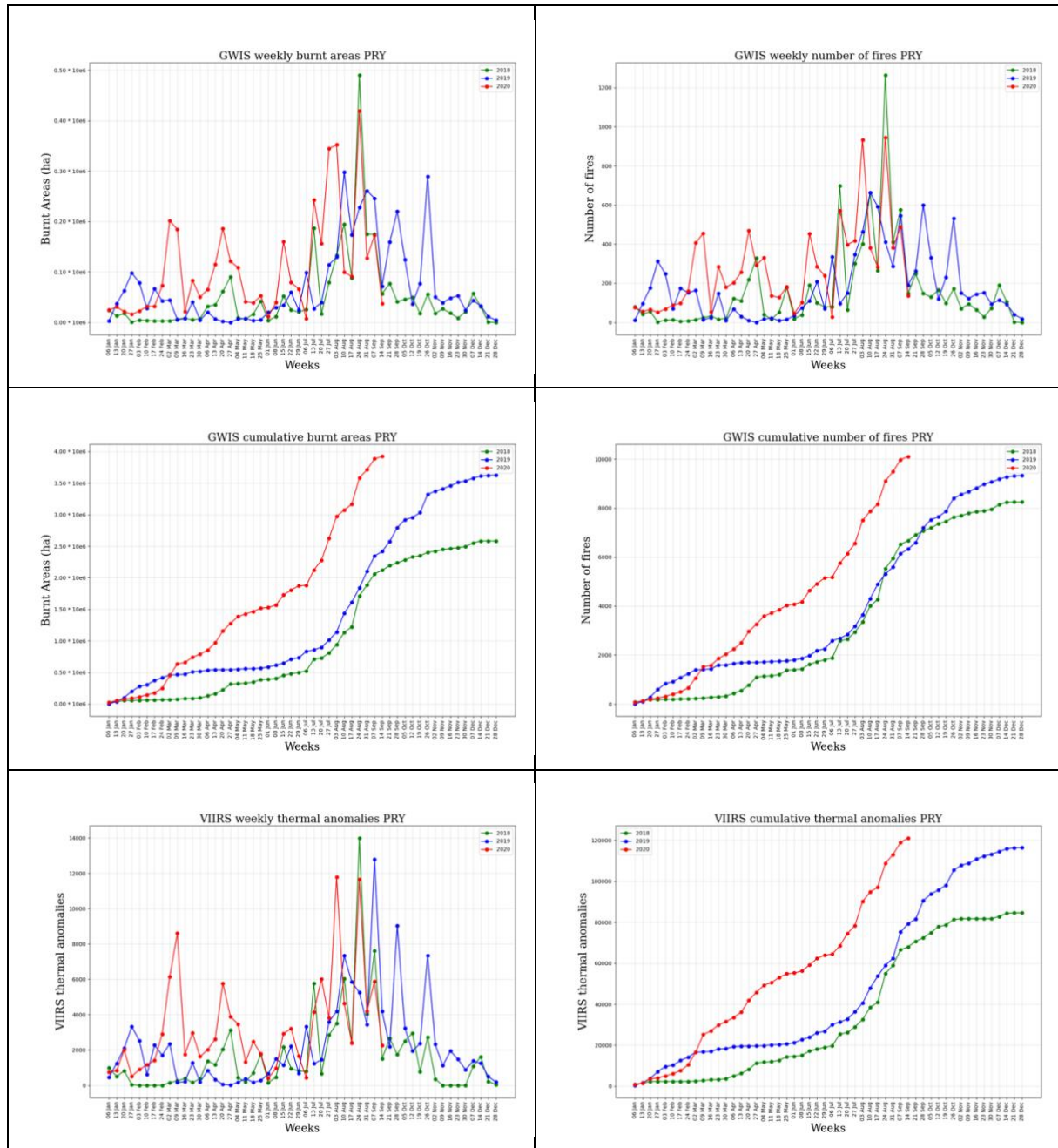


Figure 6. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 1,827,453 ha burnt in Peru since January 1 until September 20, 2020. This value is approximately the double than that of 2019. Approximately 53,279 ha burnt in the last week, decreasing from the last week, a value that is lower than those of 2019 and 2018 for the same week.

The number of fires recorded in GWIS in the last week was 259, decreasing from the values of the last week, lower than that of 2019 and similar to 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 20, 2020 (55,332) shows a typical trend in the region, with values higher than in 2018 but lower than 2019. 2,663 thermal anomalies registered last week.

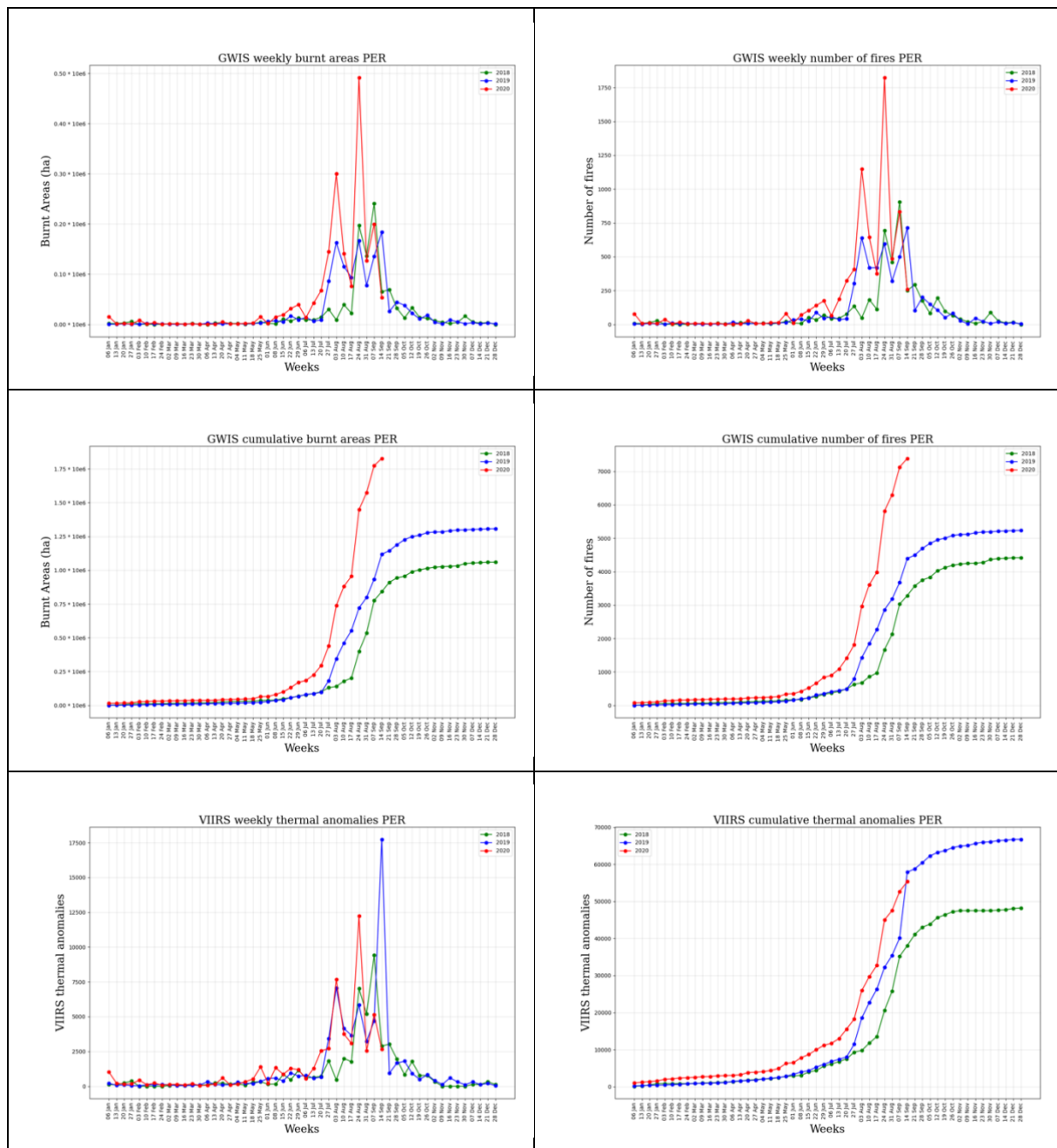


Figure 7. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 6,769,799 ha burnt in Venezuela since January 1 until September 20, 2020, with 8,006 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 40, 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 September 20, 2020 (265,888) 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. 1149 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.

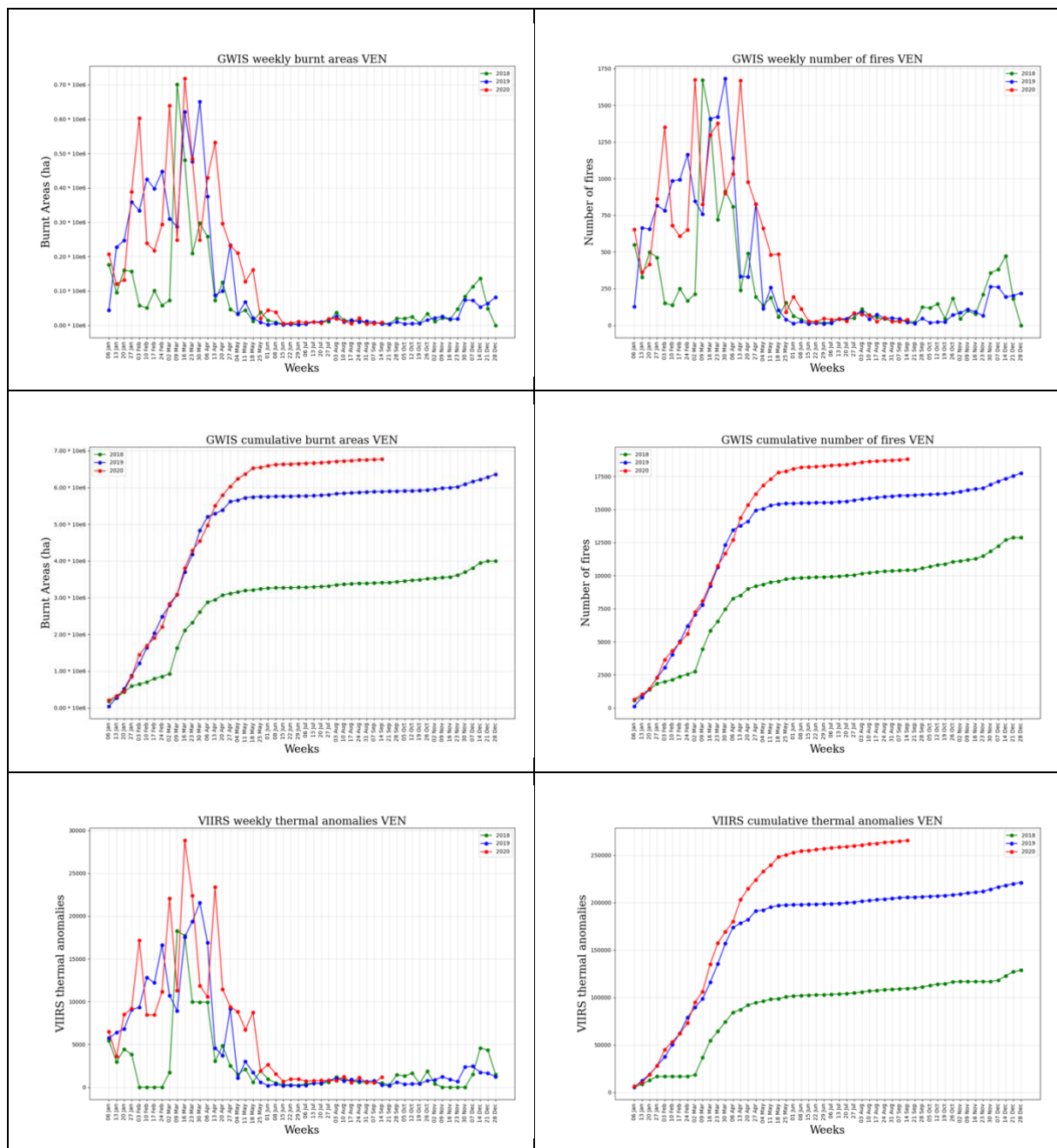


Figure 8. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last two years.

## 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 21 to September 27, 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 continue to be extreme in the northeastern Brazil. Southern Bolivia and north of Paraguay also show extreme values of fire danger. Moderate or high fire danger is also expected in eastern Bolivia, Paraguay and southern Brazil, however with lower values comparing with the previous week.

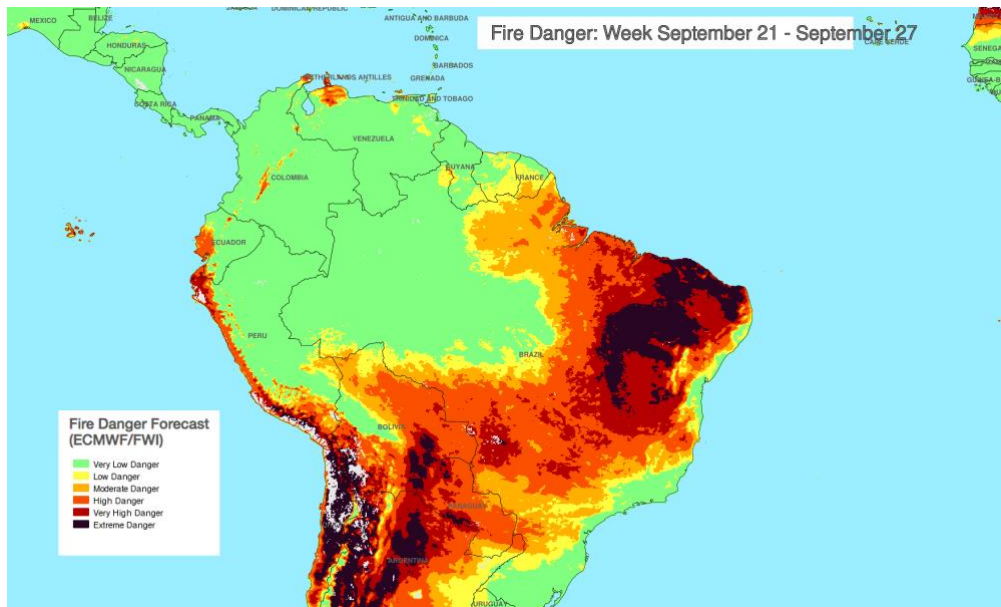


Figure 9. Average Fire danger forecast. Week, September 21-September 27, 2020.

The weekly fire weather forecast of temperature and precipitation anomalies for this week is presented in Figure 10. Moderate to high above average temperature anomalies are forecasted for south/western Brazil, eastern Bolivia and Paraguay. Additionally, below average temperatures are foreseen in central Brazil. The models estimate a below average precipitation rates for this week mainly in central Bolivia and Paraguay. Above average precipitation is expected mainly in central and northwestern Brazil and central Peru.

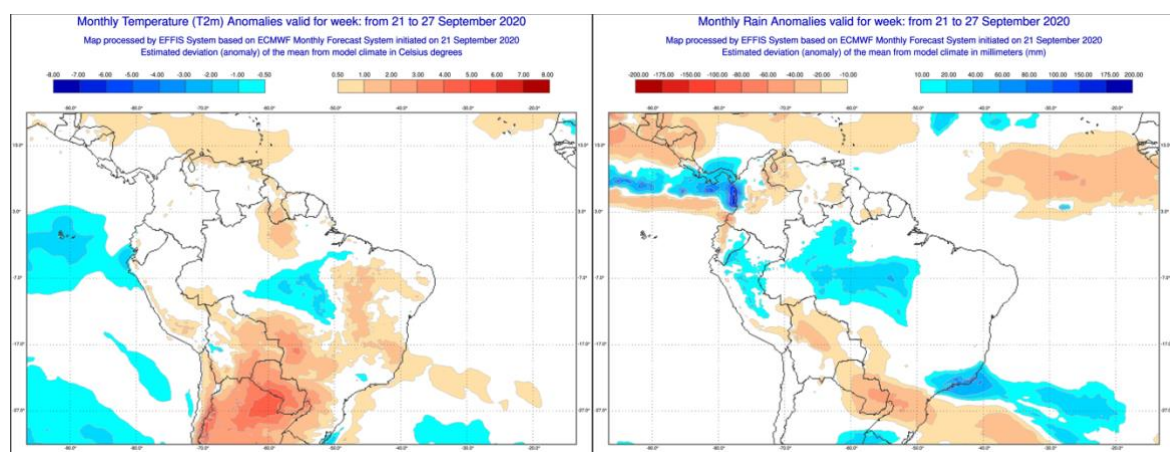


Figure 10. Fire weather anomalies of the current week, September 21-September 27, 2020.

<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)

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