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# JRC TECHNICAL REPORT

## Weekly analysis of wildfires in the Amazon region and South America:

August 16 - August 22, 2021

2021

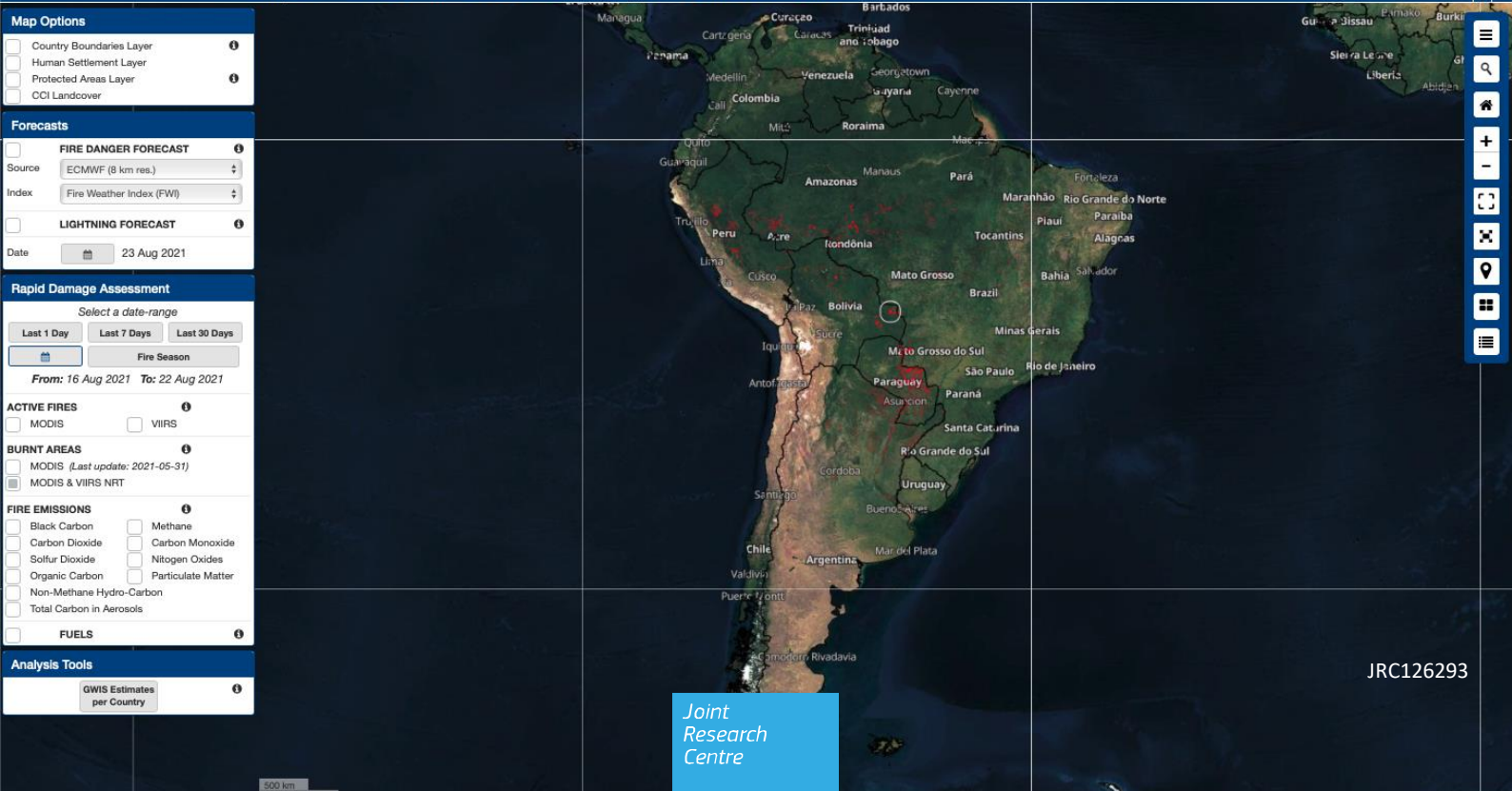


GWIS

Global Wildfire Information System



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



JRC126293

500 km  
500 mi

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## Scope of this report and executive summary

This report describes the trends of wildfires in the Amazon in 2021 through the comparison with the fire activity in the region in previous fire seasons. It must be noted that 2019 and 2020 were critical years 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 "[country profile application](#)" in GWIS. 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> and the [EU Project on support to wildfire management in LAC](#). Most of the Amazon region is in Brazil, specifically in the Brazilian Legal Amazon (BLA)<sup>2</sup>, and in other neighbor countries. Figure 1 shows the geographical extent of the countries analyzed in this report.

- In the **Brazil Legal Amazon (BLA)**, within Brazil, a total of 7.48 Million ha (Mha) burnt since January 1 until August 22, 2021. This value is below those of 2019 and 2020 in the same period. **Last week, 1,712 fires occurred**, which is below the values of 2019 and 2020 for the same week.
- **In Brazil, 12.67 Million ha (Mha) burnt since January 1 until August 22, 2021**, with a total of 1.14 Mha ha burnt in the last week. The total burnt area in Brazil is close to the values of 2020 (maximum of the years between 2015 and 2020) in the same period and number of fires is higher than in the previous 6 years (2,239 fires occurred last week).
- **In Bolivia**, the total burnt area in 2021 (3.01 Million ha (Mha)) is lower than that recorded for 2019, which was a critical year in the country, while the number of fires is higher than in the previous 6 years. 444 fires were recorded last week. . Critical fires are taking place near Robore, in the southeast of the country, where similar critical fires occurred in 2019.
- **In Colombia**, the total burnt area in the country (2.74 Million ha (Mha)) is above the values of 2018 and 2019, but approximately 12% below the values of 2020. The total number of fires since January 2021 is 9,244, the highest value since 2015 for the same period.
- **In Paraguay**, 2.61 Million ha (Mha) burnt since January 1 until August 22, 2021. The area burnt and the number of fires in the last week are the largest in the last 6 years for the same week. The total burnt area in 2021 is above those in 2018 and 2019 and reaching the values of the severe season of 2020.
- **In Peru**, for the period January 1 until August 22, 2021, the total burnt area (1.00 Mha) and total number of fires (3,567). The current fire season follows the trend of the worse fire season of the last 5 years (2020) in Peru. The burnt area and the number of fires in the last week are above the values reached in the last 6 years.
- **In Venezuela**, 4.26 Million ha (Mha) burnt in the current year until August 22. The value of the total burnt area in Venezuela is lower than that in 2019 and 2020.
- **In Chile**, 425,787 ha burnt in the current year until August 22, 2021. This value is 51% higher than that in 2020. The number of fires until now (1,576), is the highest value since 2015.
- **In Argentina**, a total of 2.89 Million ha (Mha) burnt since January 1 until August 22, 2021, which is less than half of what burned in 2020. A total of 9,782 fires were mapped this year.
- **In Ecuador**, a total of 193 fires burnt 51,556 ha since January 1 until August 22. These values are similar to the values of the last five years but the fire season is just starting.
- **In Uruguay**, a total of 44,016 ha burnt since January 1 until August 22 with 2,866 ha burnt last week. The total area is larger than the area burnt in 2018 and 2019 but lower than in 2020. 3 fires were recorded last week.
- **In French Guiana** a total of 726 ha burnt since January 1 until August 22, 2021. This value is similar with the previous years. No fires were recorded last week.
- **In Guyana**, a total of 60,995 ha burnt since January 1 until August 22, 2021, a value higher than that of 2018 but lower than the values in 2019 and 2020. 1 fire was mapped last week.

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<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](#))

- **In Suriname**, 21 fires burnt a total of 4,533 ha since January 1 until August 22, 2021, a value similar to that of 2018 and lower than 2019 and 2020. No fires were recorded last week.
- This week, fire danger conditions will continue to be very high to extreme in the central and eastern part of Brazil, northern Chile and high to extreme in eastern Bolivia, Paraguay and northern Argentina.



**Figure 1.** Areas analyzed in this report: Brazil Legal Amazon, Brazil, Bolivia, Colombia, Paraguay, Peru, Venezuela, Chile, Argentina, Ecuador, Uruguay, French Guiana, Guyana and Suriname

# 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, 2021 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 7.48 Mha burnt in the BLA since January 1 until August 22, 2021, with 0.78 Mha burnt in total during the last week, which is below the values of the same week in 2019 and 2020. The number of fires recorded in GWIS last week was 1,712, and the total number of fires up to August 22 is close to the maximum value of the last 5 years. The number of thermal anomalies until August 22, 2021 (286,026) shows a typical trend in the region as compared to the trends in 2019 and 2020. 72,643 thermal anomalies were registered last week.

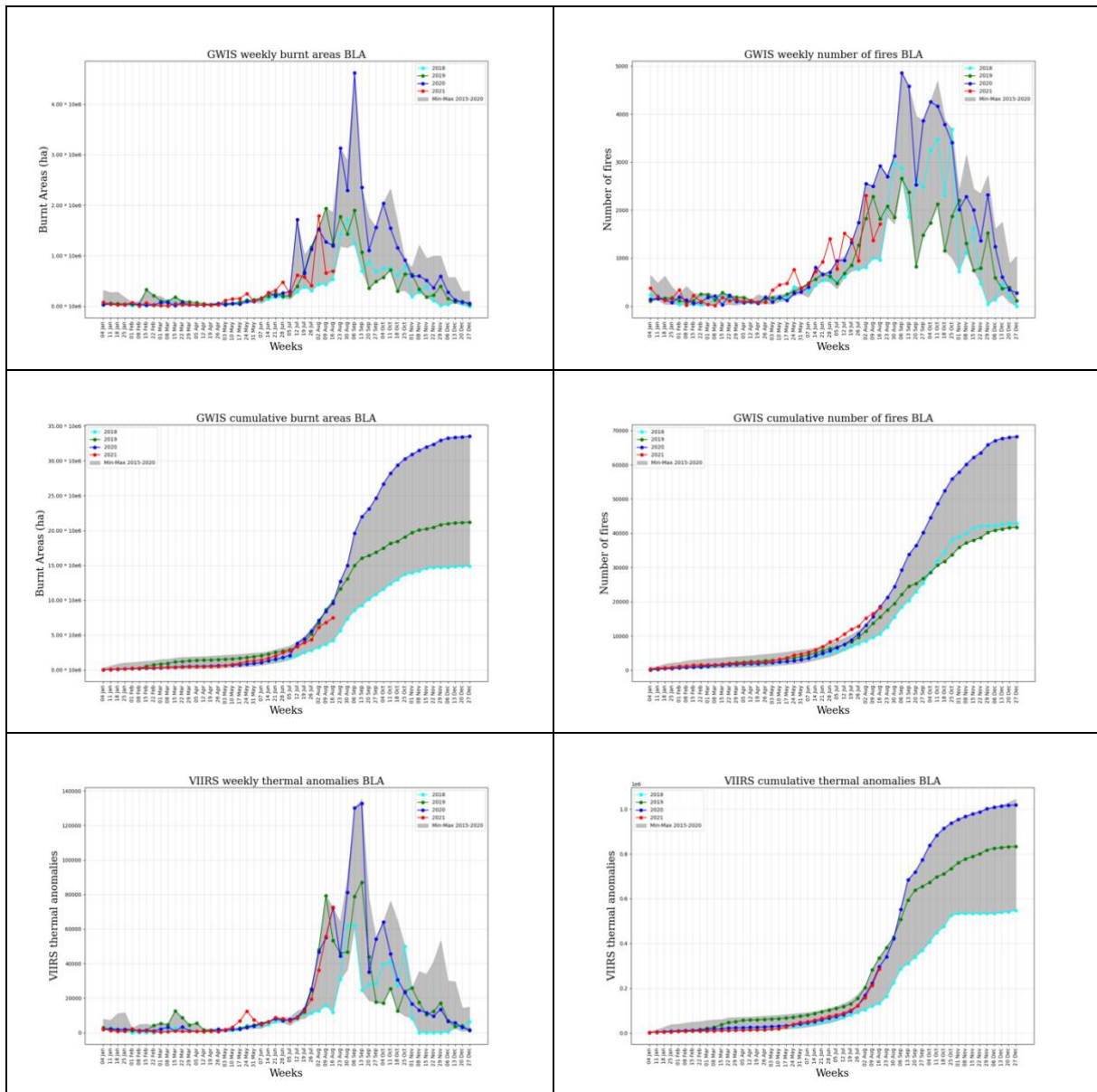


Figure 2 Trend of burnt areas and number of fires as compared to data in the last 5 years.

## 2 Wildfires in Brazil

Figure 3 shows the trends on the extent of burnt areas and the number of fires since January 1, 2021 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 12.67 Mha ha burnt in Brazil since January 1 until August 22, 2021, close to the highest value in the last 5 years, with a total 1.14 Mha burnt in the last week. The number of fires recorded in GWIS in the last week was 2,239; the total of number of fires up to the 22 of August is the highest value in the last 6 years for the same period. The number of thermal anomalies until August 22, 2021 (478,094) shows a typical trend in the region; 107,548 thermal anomalies were registered last week.

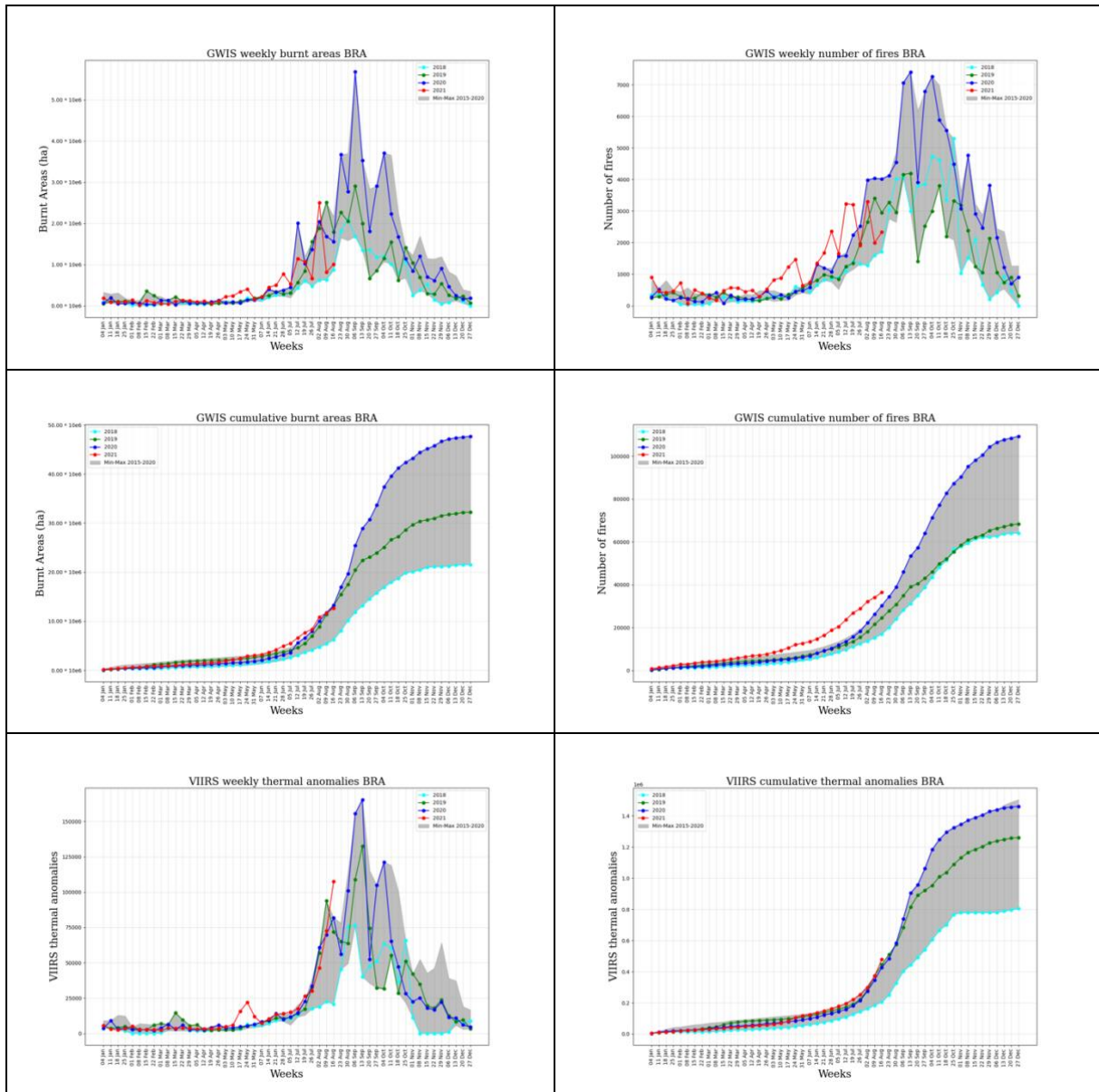


Figure 3. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

### 3 Wildfires in Bolivia

Figure 4 shows the trends on the extent of burnt areas and the number of fires since January 1, 2021 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 3.01 Mha ha burnt in Bolivia since January 1 until August 22, 2021, with 0.44 Mha burnt in the last week. Weekly and cumulative values of burnt areas are higher than 2018 and 2020 but lower than 2019. The number of fires recorded in GWIS in the last week was 444, higher than the value of 2020, but lower than that in 2019. The number of fires in 2021 is above the values of the last 6 years for the same period. The number of thermal anomalies until August 22, 2021 (97,471) is the highest value since 2015 for the same period. 20,194 thermal anomalies were detected by VIIRS in the last week. Critical fires are still active in the southeast of the country.

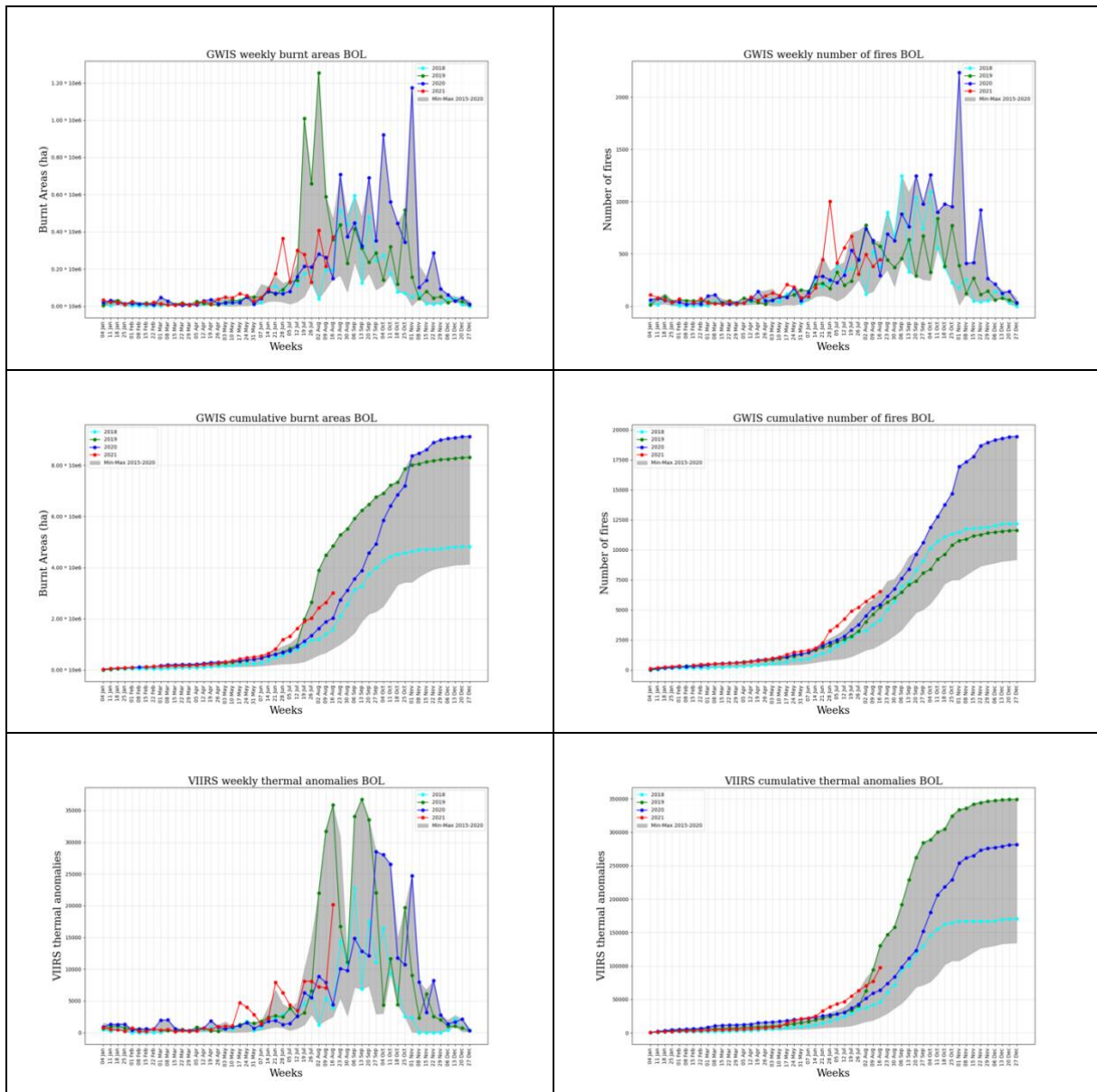


Figure 4. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.



## 4 Wildfires in Colombia

Figure 5 shows the trends on the extent of burnt areas and the number of fires since January 1, 2021 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 2.74 Mha burnt in Colombia since January 1 until August 22, 2021. Approximately 0.02M ha burnt in the country the last week increasing from the last week. The number of fires recorded in GWIS in the last week was 52 and the total number of fires since January 1. The number of thermal anomalies until August 22, 2021 (62,551) follows a typical trend in the region with similar values of 2018 but way below of 2019 and 2020. 608 thermal anomalies detected by VIIRS last week.

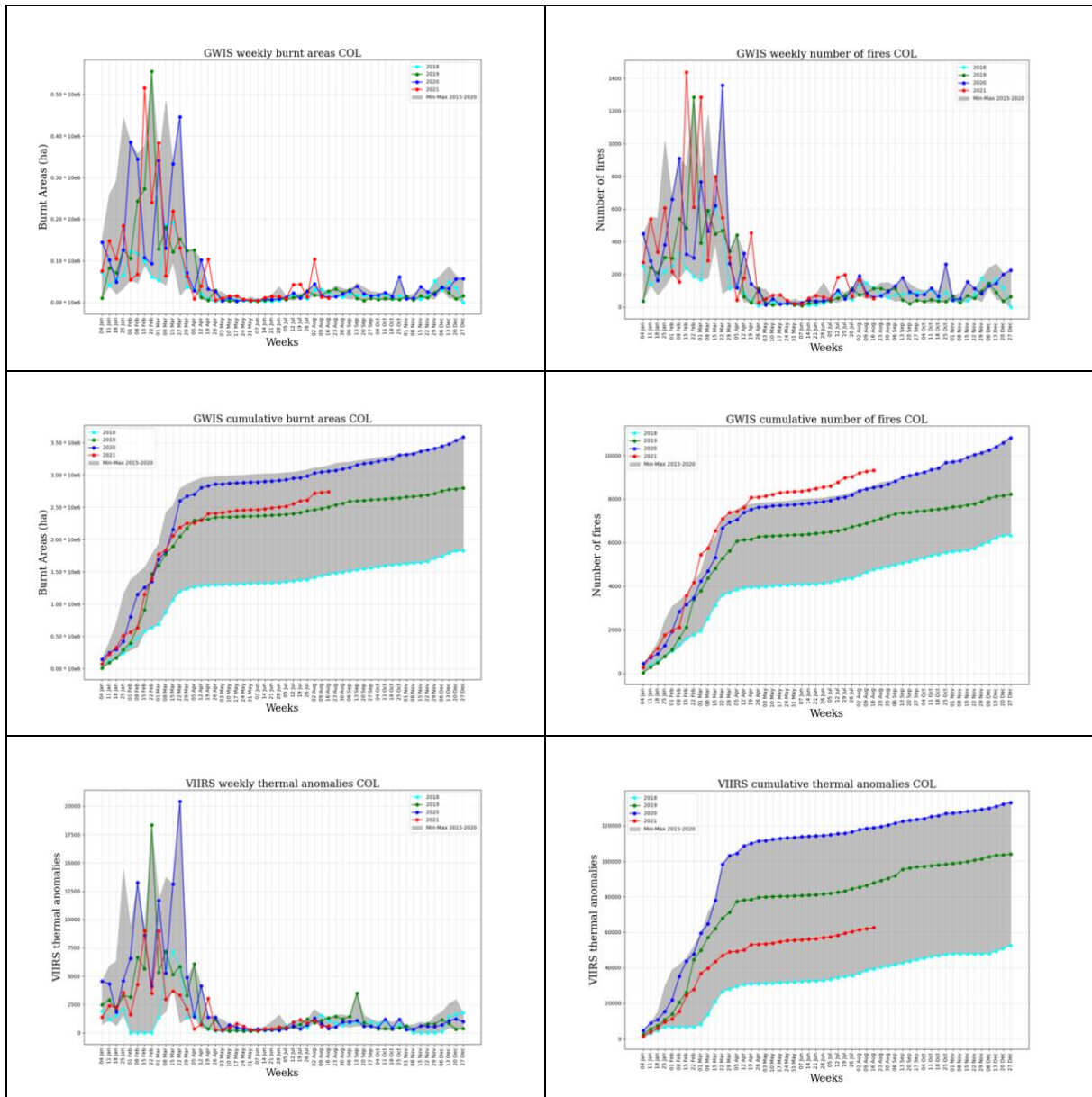


Figure 5. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

## 5 Wildfires in Paraguay

Figure 6 shows the trends on the extent of burnt areas and the number of fires since January 1, 2021 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 2.61 Mha burnt in Paraguay since January 1 until August 22, 2021. Approximately 0.54 Mha burnt in the country the last week, being this the largest value for this week in the last 6 years. The number of fires recorded in GWIS in the last week was 1073, above the values of the last 6 years for the same week. The number of thermal anomalies until August 22, 2021 (80,417) follows a typical trend in the region. 30,360 thermal anomalies detected by VIIRS last week, which is the highest value in the last 6 years.

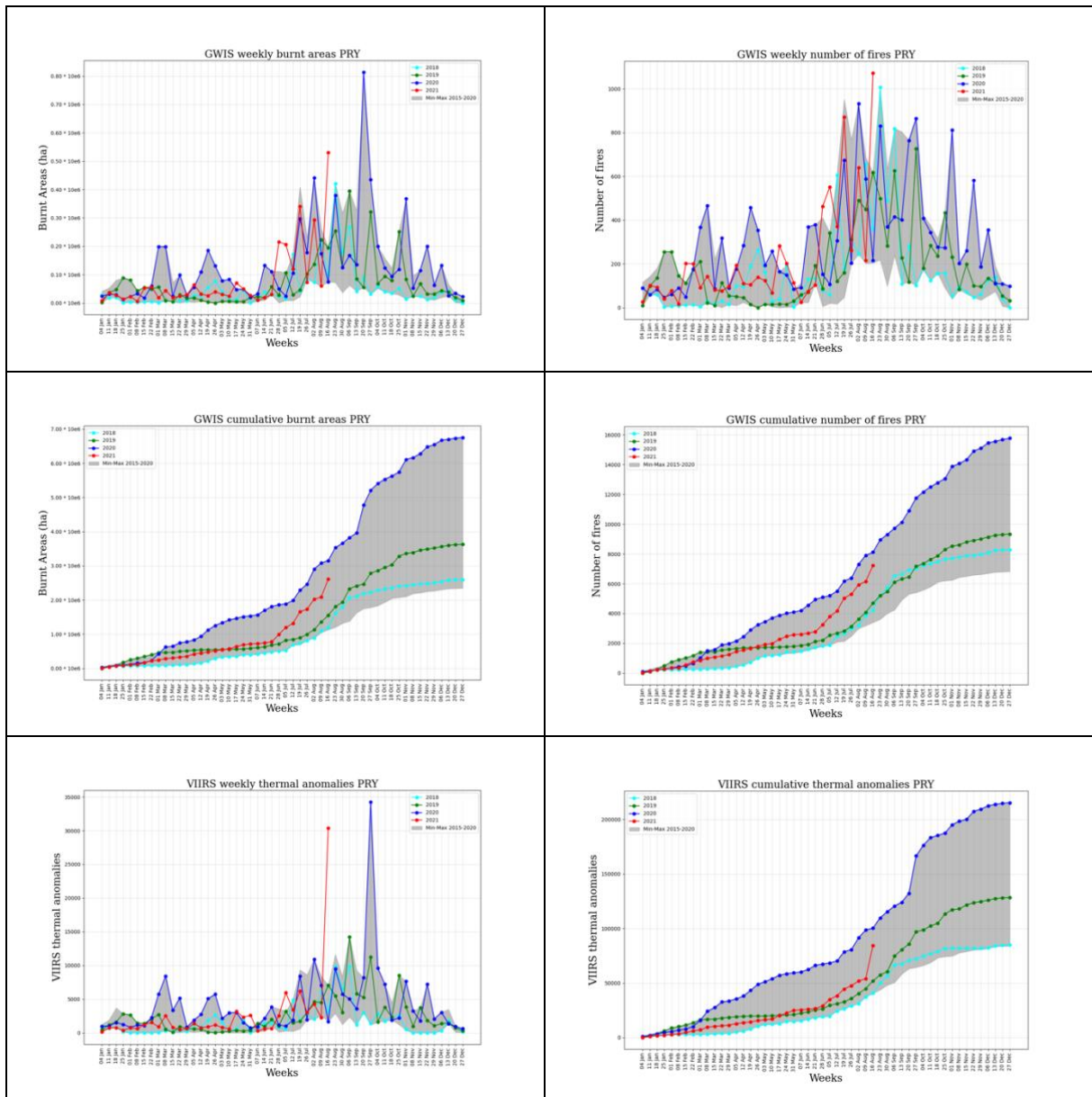


Figure 6. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

## 6 Wildfires in Peru

Figure 7 shows the trends on the extent of burnt areas and the number of fires since January 1, 2021 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 1.00 Mha burnt in Peru since January 1 until August 22, 2021, the highest value since 2015 for the same period. Approximately 149,375 ha burnt in the last week. The burnt area and the number of fires last week are above the values reached in the last 6 years for the same week. The number of thermal anomalies until August 22, 2021 (25,266) shows a typical trend in the region. 4,515 thermal anomalies registered last week, increasing after the last week.

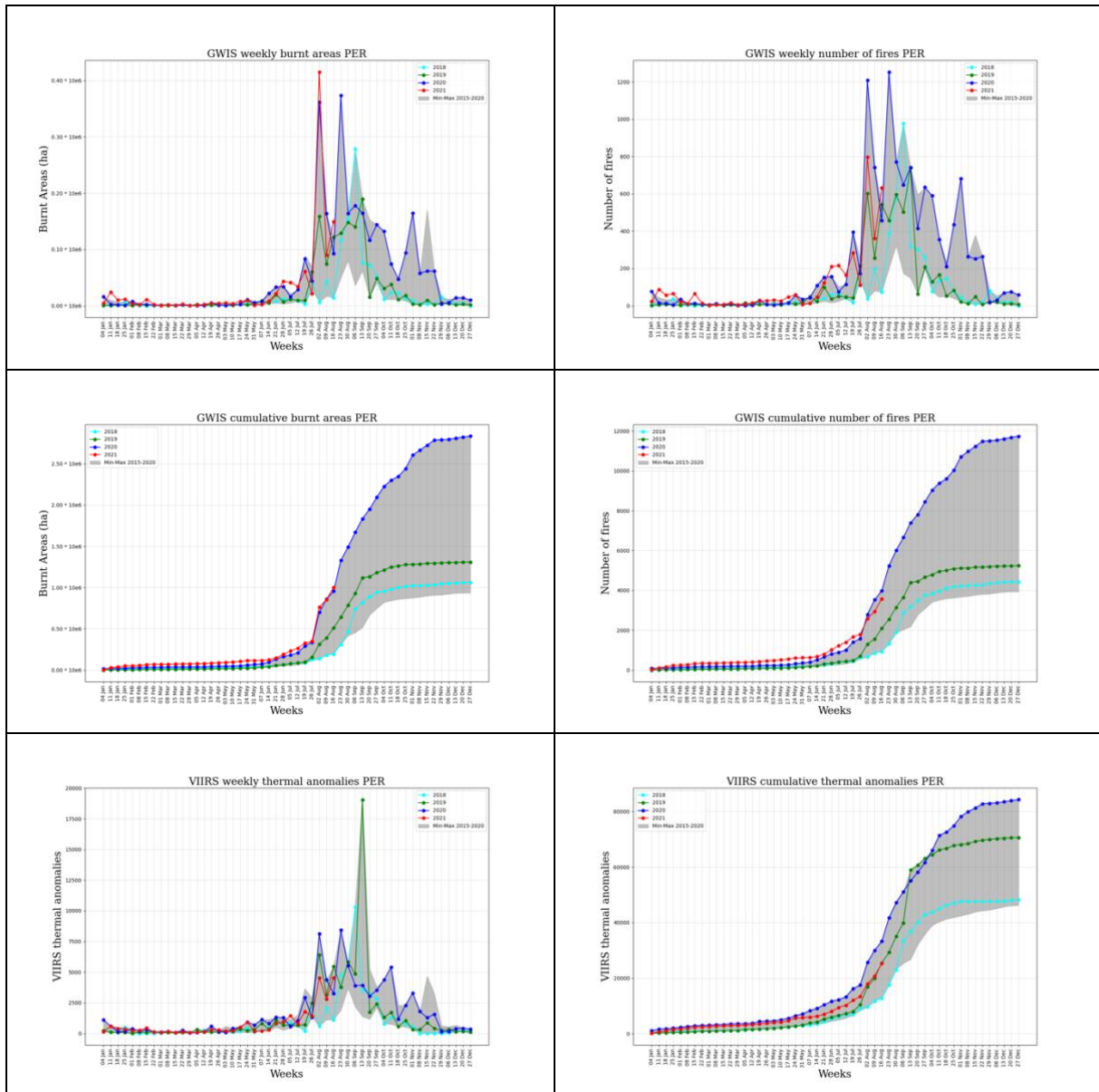


Figure 7. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

## 7 Wildfires in Venezuela

Figure 8 shows the trends on the extent of burnt areas and the number of fires since January 1, 2021 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 4.26 Mha burnt in Venezuela since January 1 until August 22, 2021, with 8,007 ha burnt in the last week. The number of fires recorded in GWIS in the last week was 42. The number of thermal anomalies until August 22, 2021 (420,647) shows a typical trend in the region. 1,278 thermal anomalies were recorded by VIIRS during the last week, a value that is the highest since 2015 for the same week.

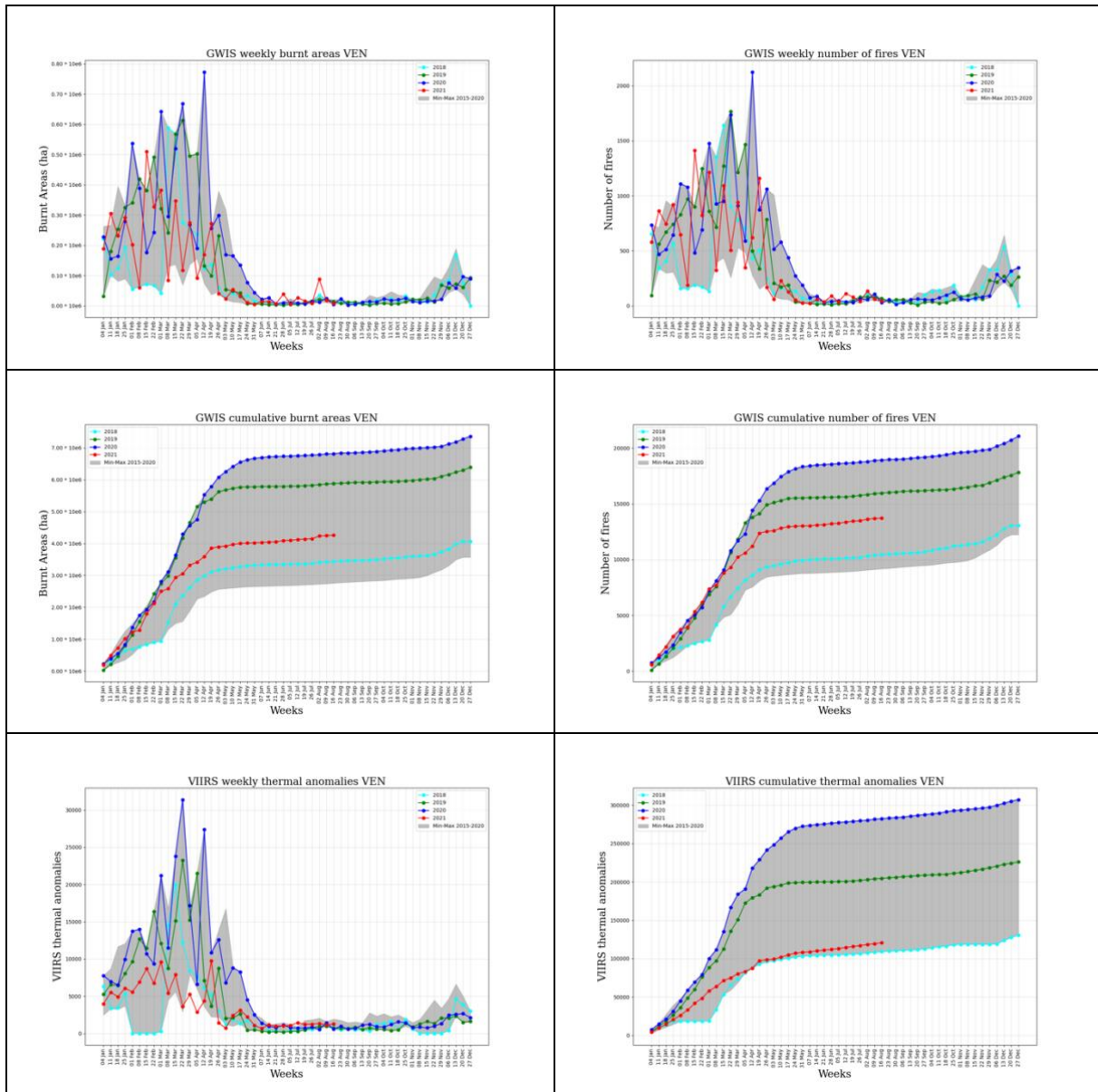


Figure 8. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

## 8 Wildfires in Chile

Figure 9 shows the trends on the extent of burnt areas and the number of fires since January 1, 2021 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 425,787 ha burnt in Chile since January 1 until August 22, 2021, with 834 ha burnt in the last week. The number of fires recorded in GWIS in the last week was 4, while the number of fires remains above the numbers of the last 6 years. The number of thermal anomalies until August 22, 2021 (12,073) shows a typical trend in the region as compared to the trends during previous years. 36 thermal anomalies were detected by VIIRS during the last week, which is similar to the values in the same week during previous years.

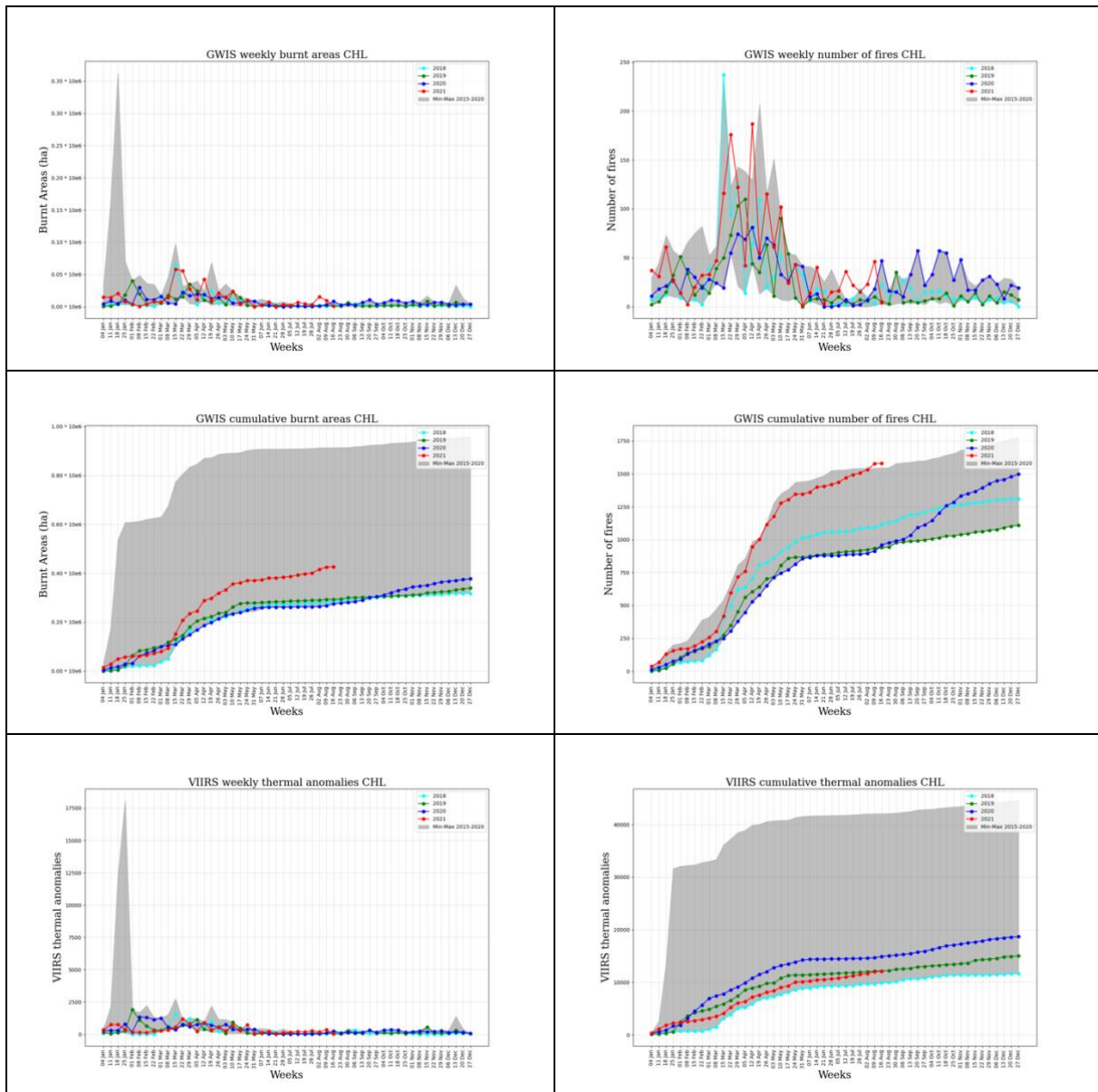


Figure 9. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

## 9 Wildfires in Argentina

Figure 10 shows the trends on the extent of burnt areas and the number of fires since January 1, 2021 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 2.89 Mha burnt in Argentina since January 1 until August 22, 2021, with 0.33 Mha burnt in the last week. These values are below of those of 2020, but above all the other years, since 2015. The number of fires recorded in GWIS in the last week was 1,124. The number of thermal anomalies until August 22, 2021 (85,511) shows a typical trend in the region. 13,999 thermal anomalies were recorded by VIIRS during the last week, a value that is like those recorded in that week for 2020.

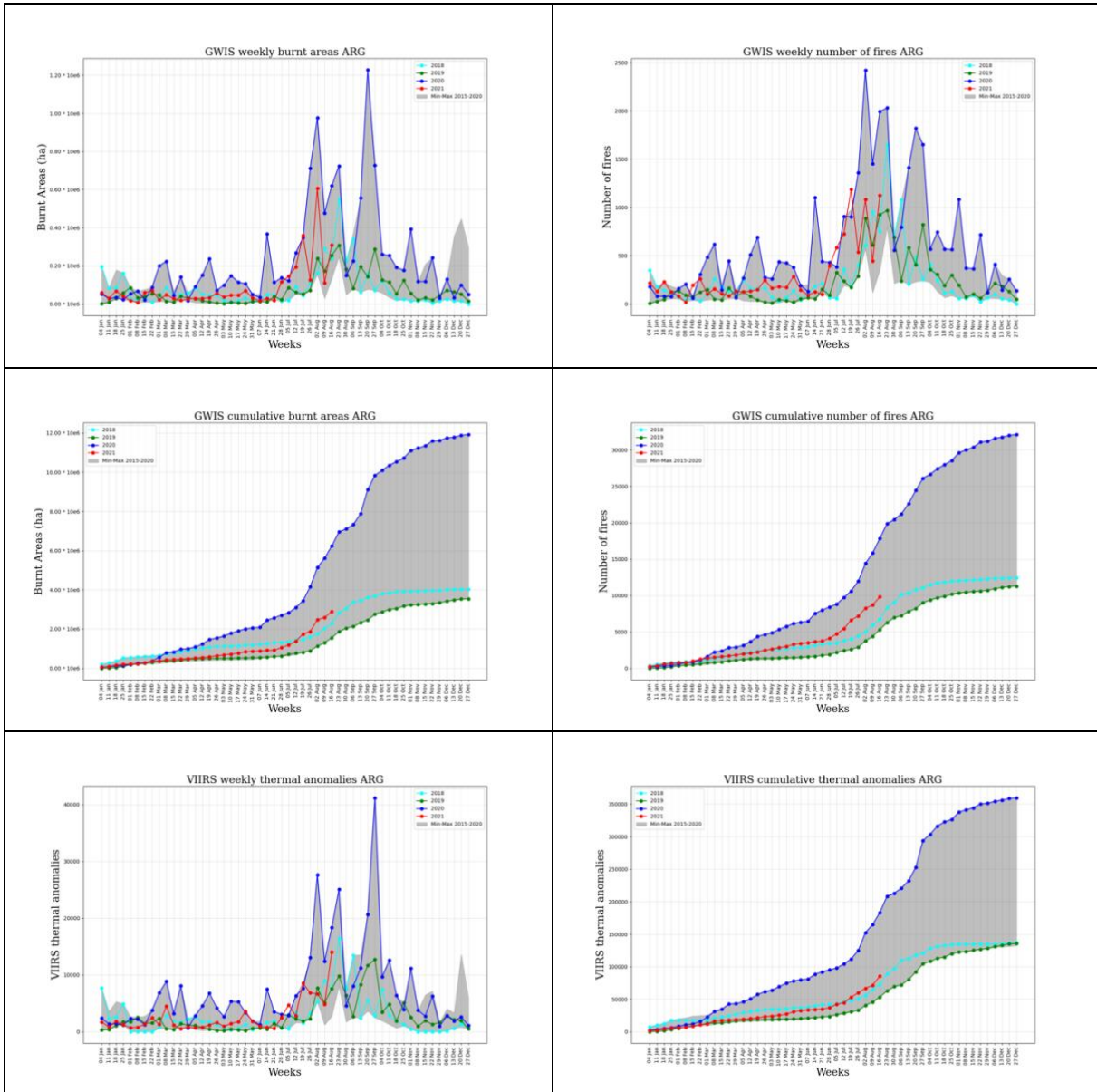


Figure 10. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

## 10 Wildfires in Ecuador

Figure 11 shows the trends on the extent of burnt areas and the number of fires since January 1, 2021 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 51,556 ha burnt in Ecuador since January 1 until August 22, 2021, with 2,265 ha burnt in the last week. The number of fires recorded in GWIS in the last week was 11. The trends of the areas burnt and the number of fires in the country are similar to those of the previous 6 years. The number of thermal anomalies until August 22, 2021 (1,731) shows a typical trend in the region. 122 thermal anomalies were detected by VIIRS in the last week.

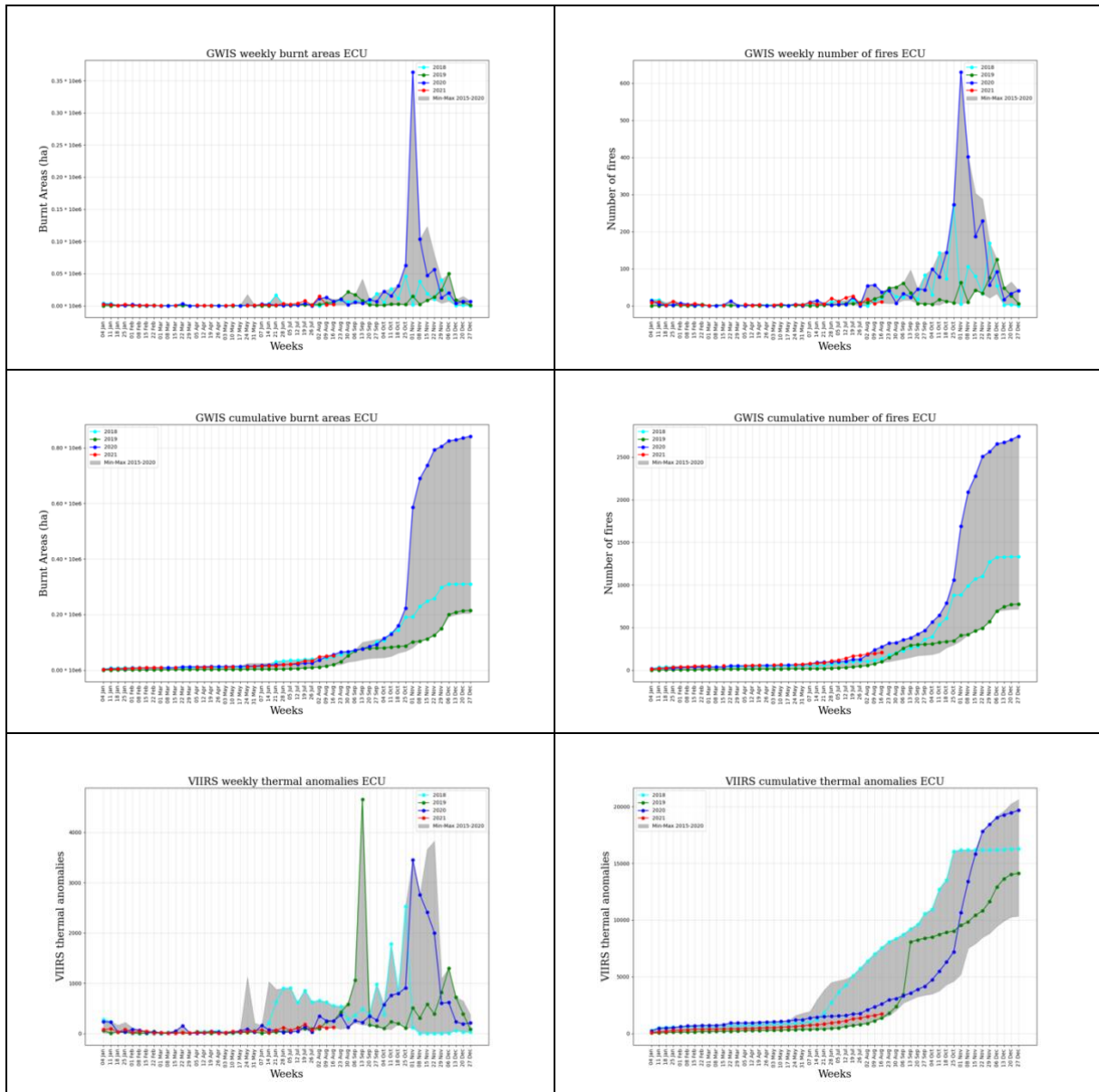


Figure 11. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

# 11 Wildfires in Uruguay

Figure 12 shows the trends on the extent of burnt areas and the number of fires since January 1, 2021 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 48,882 ha burnt in Uruguay since January 1 until August 22, 2021, with 4,866ha burnt last week, which is the highest weekly value in 2021. 3 fires were recorded last week. The number of thermal anomalies until August 22, 2021 (75) shows a typical trend in the region.

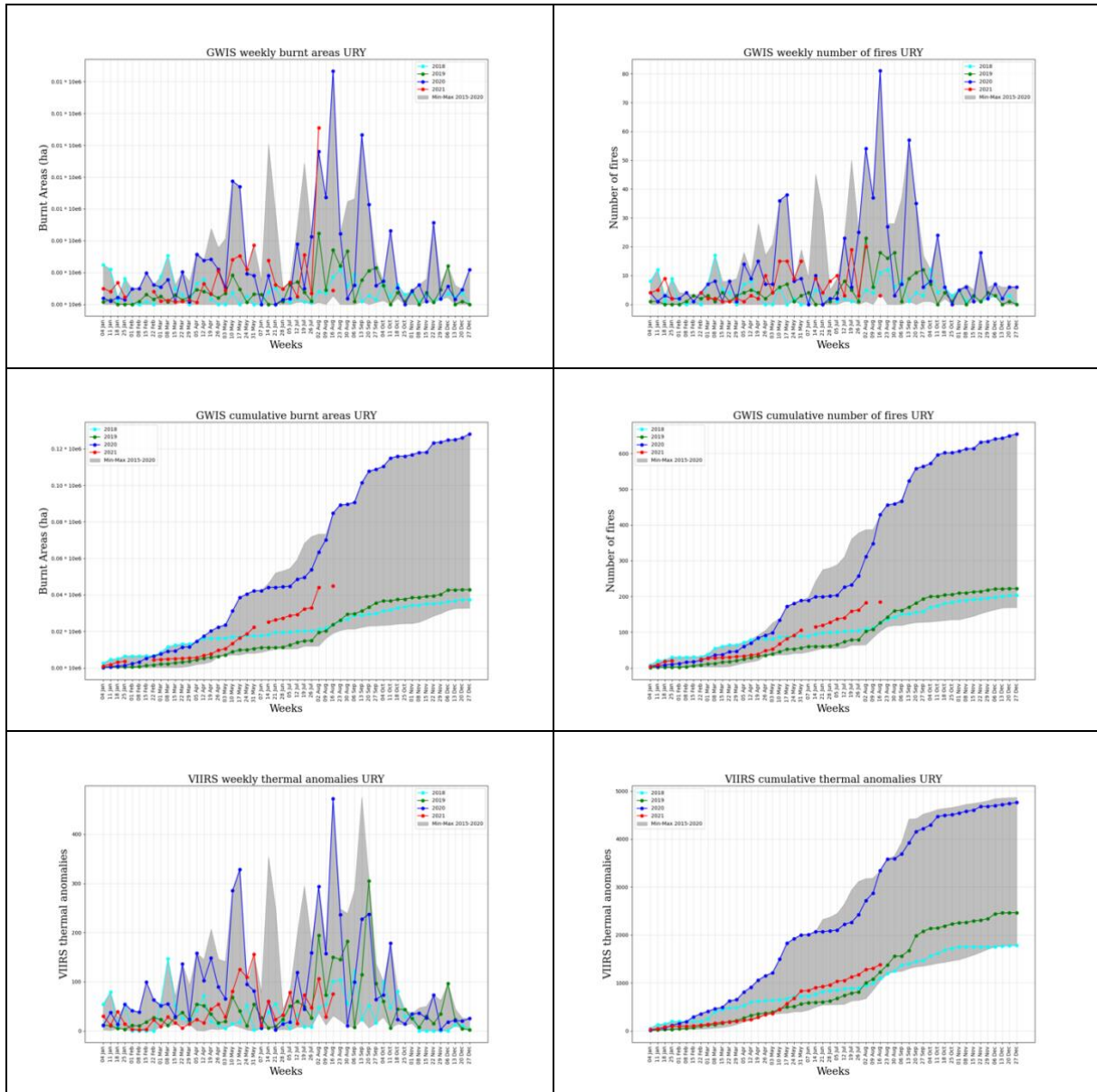


Figure 12. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.



## 12 Wildfires in French Guiana

Figure 13 shows the trends on the extent of burnt areas and the number of fires since January 1, 2021, 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 726 ha burnt since January 1 until August 22, 2021, in Guiana, with no fires recorded last week. The number of thermal anomalies until August 22, 2021 (35) shows a typical trend in the region as compared to the trends during previous years. 3 thermal anomalies were detected by VIIRS during the last week, which is similar to the values in the same week during previous years.

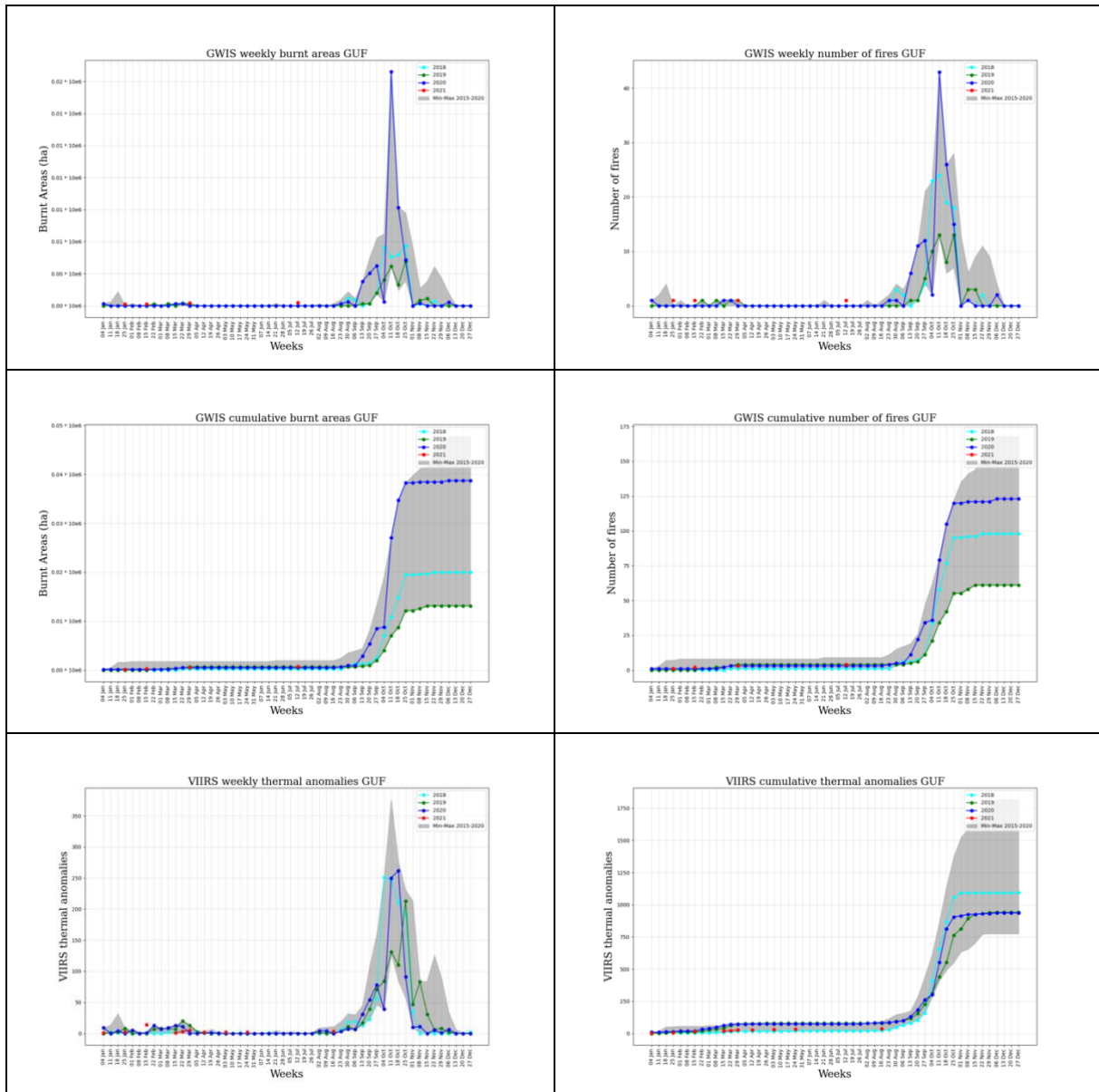


Figure 13. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

### 13 Wildfires in Guyana

Figure 14 shows the trends on the extent of burnt areas and the number of fires since January 1, 2021 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 60,995 ha burnt in Guyana since January 1 until August 22, 2021, with 325 ha burnt and one fire recorded last week. The number of thermal anomalies until August 22, 2021 (1,594) shows a typical trend in the region as compared to the trends during previous years. thermal anomalies were detected by VIIRS during the last week, which is similar to the values in the same week during previous years.

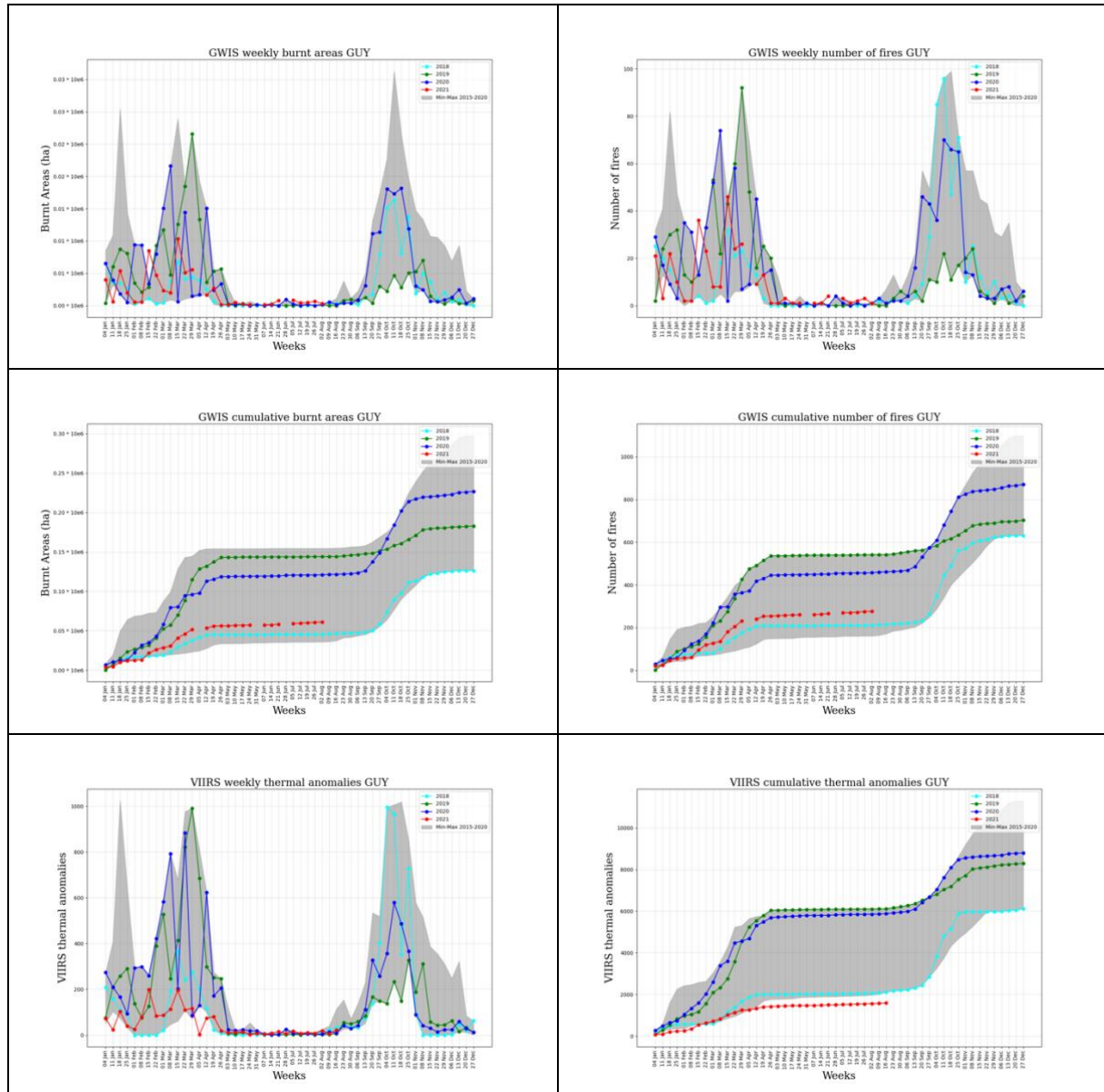


Figure 14. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

## 14 Wildfires in Suriname

Figure 15 shows the trends on the extent of burnt areas and the number of fires since January 1, 2021, 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 4,533 ha burnt in Suriname since January 1 until August 22, 2021. No fires were recorded last week. The total number of fires since the beginning of the year is 21. The number of thermal anomalies until August 22, 2021 (123) shows a typical trend in the region. 2 thermal anomalies were registered last week.

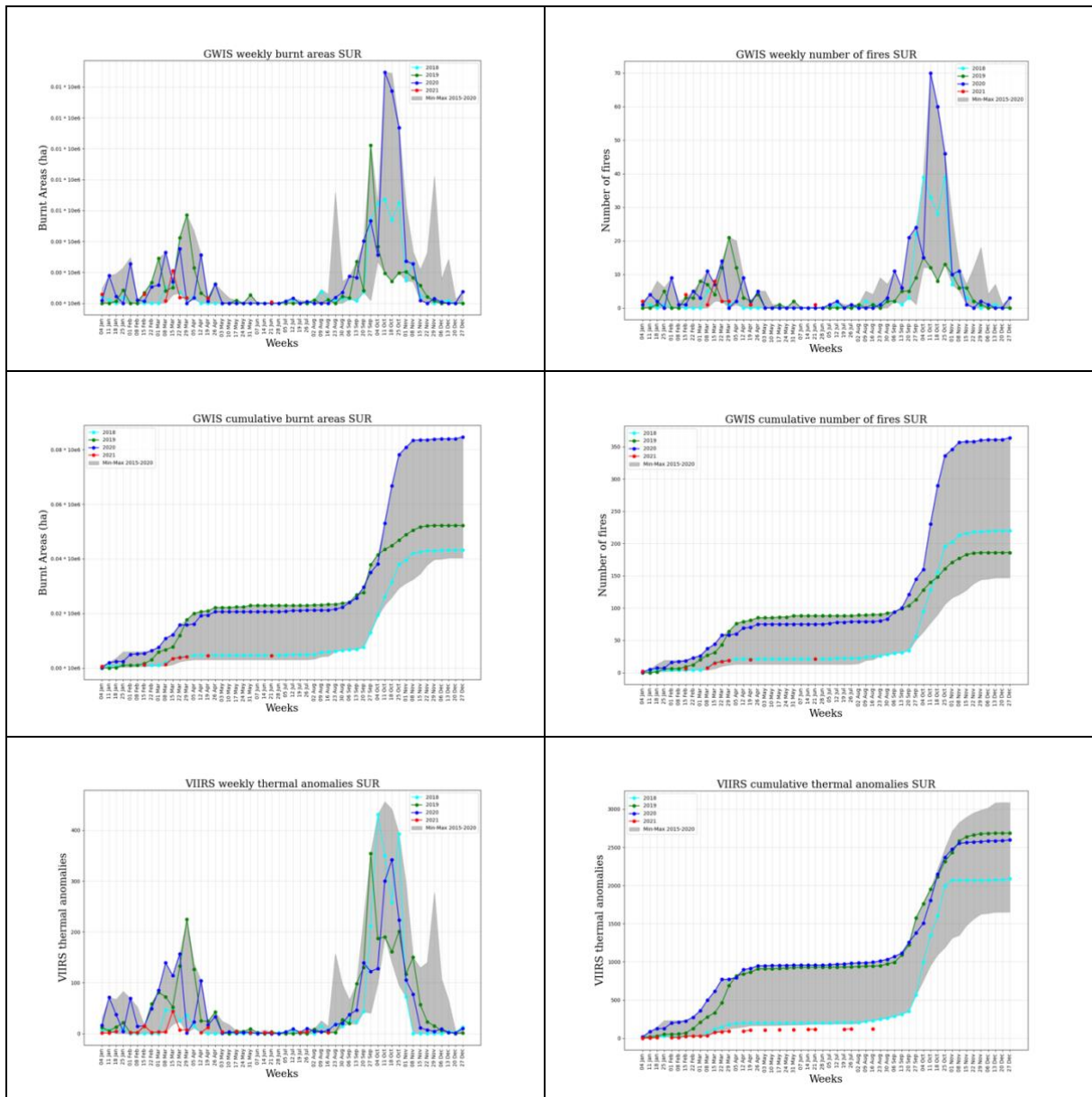


Figure 15. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

## 15 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 16 provides the average fire danger for the week of August 23 to August 29, 2021. This information is based on the daily fire danger forecast that is provided online in GWIS<sup>3</sup>. According to the forecast, it is expected that fire danger conditions will continue to be very high to extreme in the central and eastern part of Brazil, northern Chile and moderate to high in eastern Bolivia, Paraguay and northern Argentina.

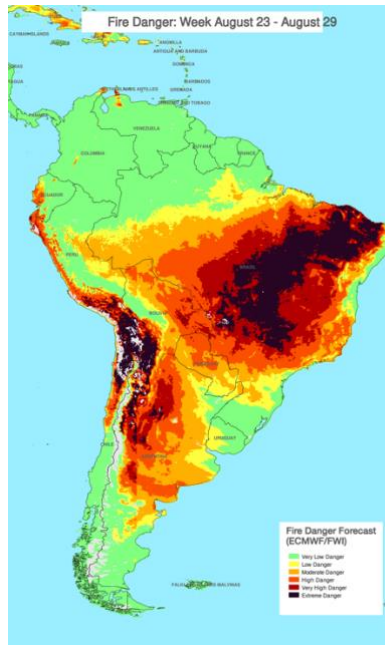


Figure 16. Average Fire danger forecast. Week, August 23- August 29, 2021.

The weekly weather forecast of temperature and precipitation anomalies for is presented in Figure 17. Below average temperatures are forecasted for areas of Argentina and Chile. Above average temperatures are forecasted in eastern Paraguay, Brazil, and Peru. The models estimate average precipitation for next week in the region, except for an above average precipitation in northern Colombia, southern Chile and southern Brazil.

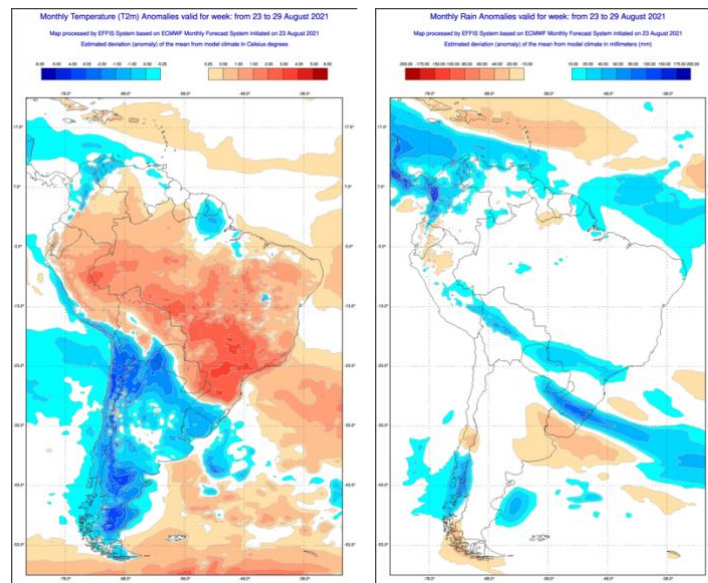


Figure 17. Temperature and rain anomalies of the current week, August 23 - August 29, 2021.

<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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