European Commission

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Weekly & monthly analysis of wildfires in the Amazon region and South America: September 27 - October 3 2021

2021

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Contents

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 than 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)[1] 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)[2], 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 10.83 Million ha (Mha) burnt since January 1 until October 3, 2021. This value is below those of 2019 and 2020, close to the minimum value of the last 6 years. **Last week, 1237 fires occurred, decreasing from the peak from the last week.**
- **In Brazil, 18,04 Million ha (Mha) burnt since January 1 until October 3, 2021**, with a total of 564,747 ha burnt in the last week. The total burnt area and number of fires in Brazil are lower than the values of 2019 and 2020 in the same period **(**1611 fires occurred last week). The area burnt in the last week was the lowest value of the last 6 years for the same week. The average size of the fires is smaller than in all the previous 6 years.
- **In Bolivia**, the total burnt area (5.10 Million ha (Mha)) and number of fires (9683 fires) increased from the previous week. The total burned area this year is similar to the values of 2020 and lower than that of 2019.
- **In Colombia**, the total burnt area in the country (2.84 Mha) is above the values of 2018 and 2019 but approximately 10% below the values of 2020.The total number of fires since January 2021 is 9806, which is the highest value since 2015 for the same period.
- **In Paraguay**, 3 Million ha (Mha) burnt since January 1 until October 3, 2021. This figure is above those in 2018 and 2019 but 26 % below the values of 2020.
- **In Peru,** since January 1 until October 3, 2021, the total burnt area is 1.96 Mha and total number of fires is 7255. These are the second highest values recorded since 2015 (below 2020).
- **In Venezuela,** 4.30 Million ha (Mha) burnt in the current year until October 3. The value of the total burnt area in Venezuela is lower than that in 2019 and 2020.
- **In Chile,** 449,618 ha burnt in the current year until October 3, 2021. This value is 51% higher than that of 2020. This year, the number of fires (1703) is the highest since 2015.
- **In Argentina**, a total of 3.73 Million ha (Mha) burnt since January 1 until October 3, 2021, which is less than half of what was burned in 2020 in the same period. A total of 12547 fires were mapped in this period.
- **In Ecuador**, a total of 391 fires burnt 90,612 ha since January 1 until October 3, 2021. These values are similar to the values of the last 6 years.
- **In Uruguay**, a total of 47,775 ha burnt since January 1 until October 3, 2021. This value is higher than those of 2018 and 2019 but lower than the figure of 2020. Two fires were recorded last week, a decrease from the previous week.
- **In French Guiana** a total of 893 ha burnt since January 1 until October 3, 2021. This value is similar to those of the previous years. One fire was recorded last week.
- **In Guyana,** a total of 62,511 ha burnt since January 1 until October 3, 2021, a value higher than that of 2018 but lower than the values in 2019 and 2020. One fire was mapped last week.
- **In Suriname**, 21 fires burnt a total of 4533 ha since January 1 until October 3,2021, a value similar to that of 2018 and lower than 2019 and 2020. 1 fire was mapped last week.
- This week, fire danger conditions are expected to remain extreme in great part of Brazil; fire danger will continue to be very high to extreme in the central and eastern part of Brazil and moderate to high in eastern and southwestern Bolivia, Paraguay and across Argentina.

[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)

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 10.83 Mha burnt in the BLA from January 1 until October 3, 2021, with 373,359 ha burnt in total during the last week, which is lowest value of the last six years for the same week. The number of fires recorded in GWIS in the last week was 1237, decreasing from the previous week. The number of thermal anomalies until October 3, 2021 (527,237) shows a typical trend in the region as compared to the trends in 2018 and 2020, but the values remain below. 26,847 thermal anomalies were registered last week.

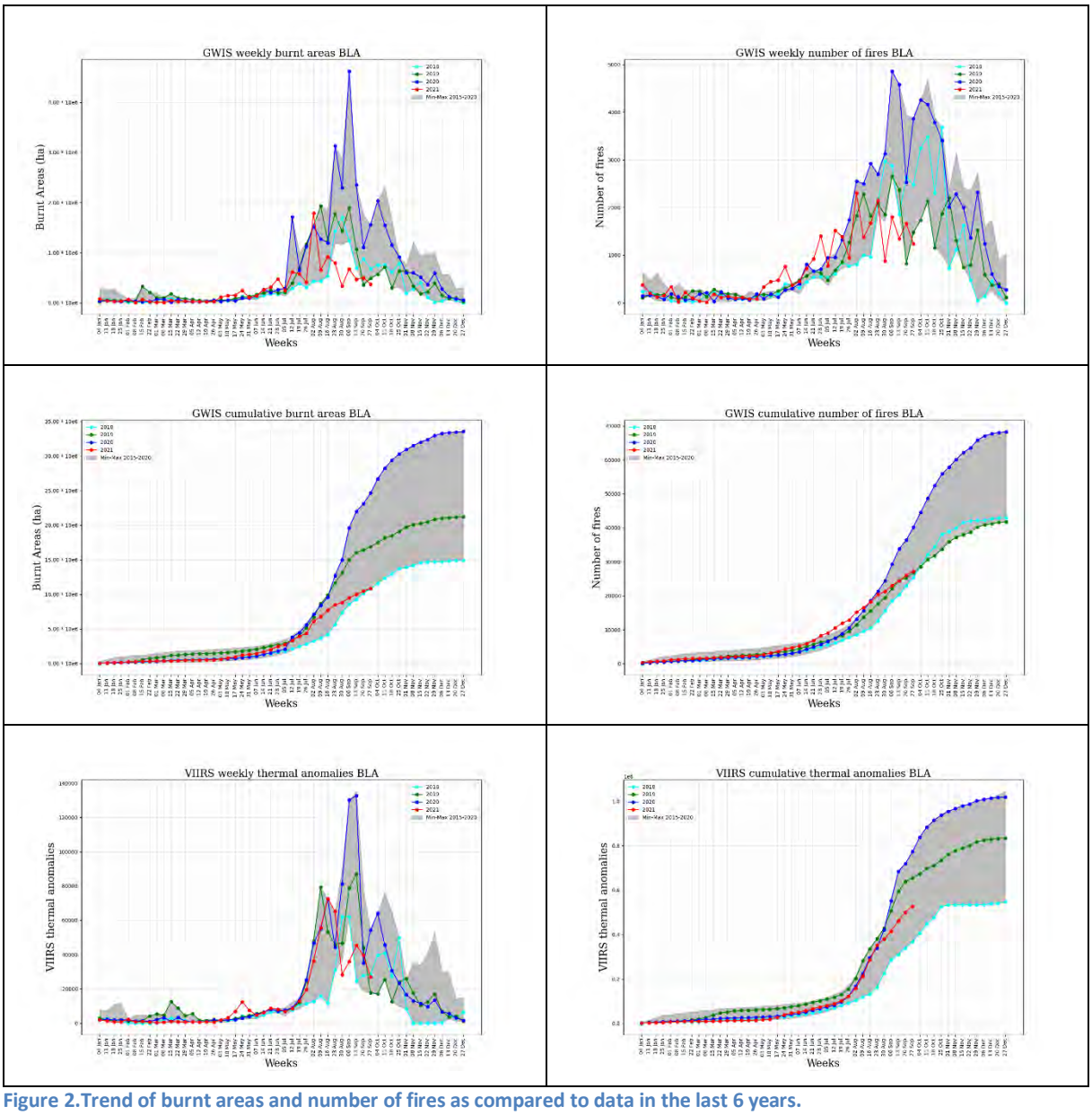


Figure 2.Trend of burnt areas and number of fires as compared to data in the last 6 years.

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 18.04 Mha ha burnt in Brazil since January 1 until October 3, 2021, with a total 564,747 ha burnt in the last week. The total burnt area in the country remains below the values of the previous two years. The number of fires recorded in GWIS in the last week was 1611, decreasing from the last week. The number of thermal anomalies until October 3, 2021 (959,967) shows a typical trend in the region. 57,546 thermal anomalies were registered last week.

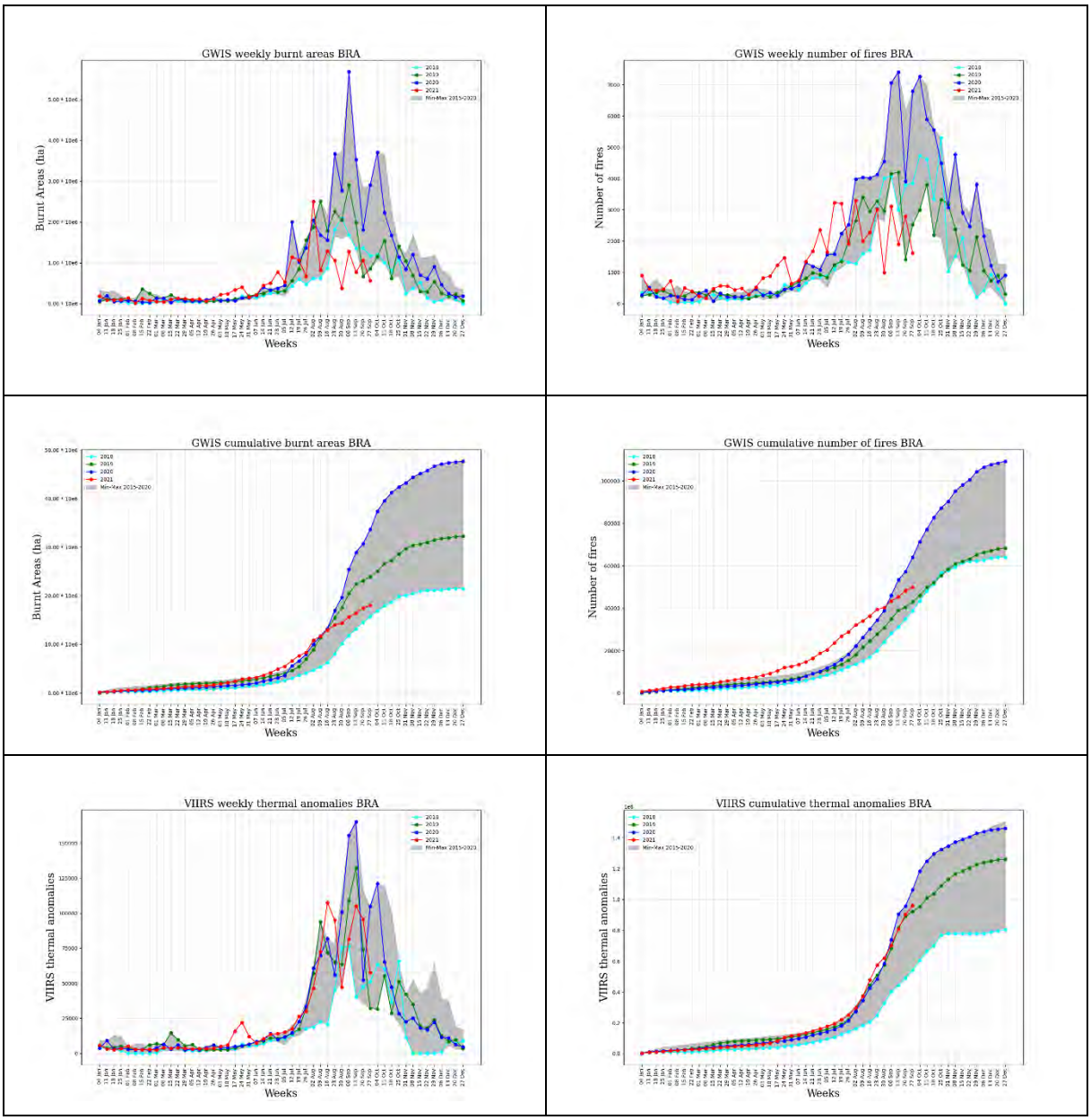


Figure 3.Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 5.10 Mha ha burnt in Bolivia since January 1 until October 3, 2021, with 576,687 ha burnt in the last week, increasing from the last week. The number of fires recorded in GWIS in the last week was 1031, higher than the number of fires in the same week from the last 6 years. The number of thermal anomalies until October 3, 2021 (213,117) is the highest value since 2015 for the same period. 29,046 thermal anomalies were detected by VIIRS in the last week.

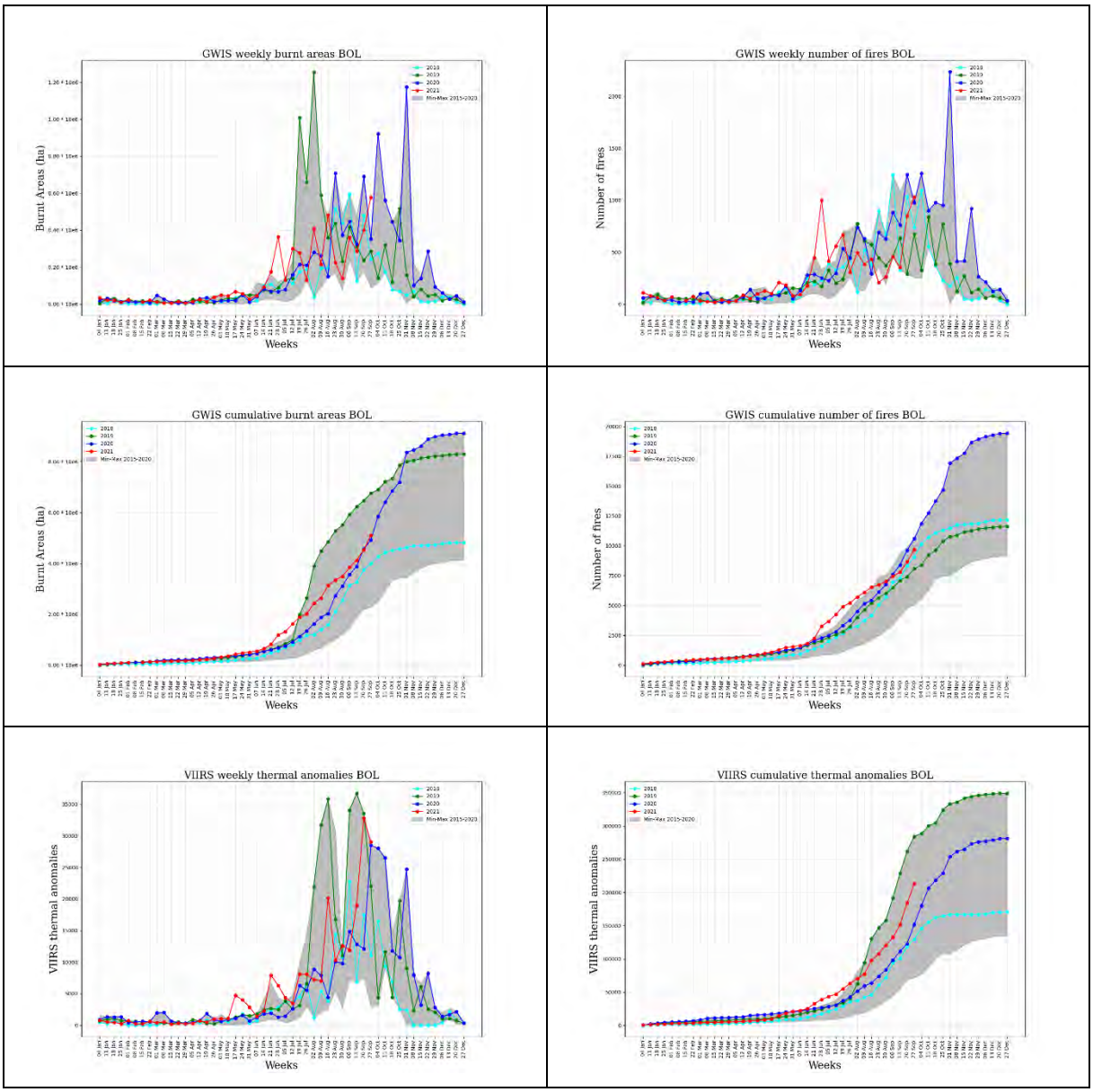


Figure 4.Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 2.84 Mha burnt in Colombia since January 1 until October 3, 2021. Approximately 22,446 ha burnt in the country the last week. The number of fires recorded in GWIS in the last week was 105 and the total number of fires since January 1 is the highest value since 2015 for the same period. The number of thermal anomalies until October 3, 2021 (67,606) follows a typical trend in the region with similar values of 2018 but way below of 2019 and 2020. 1198 thermal anomalies recorded by VIIRS last week.

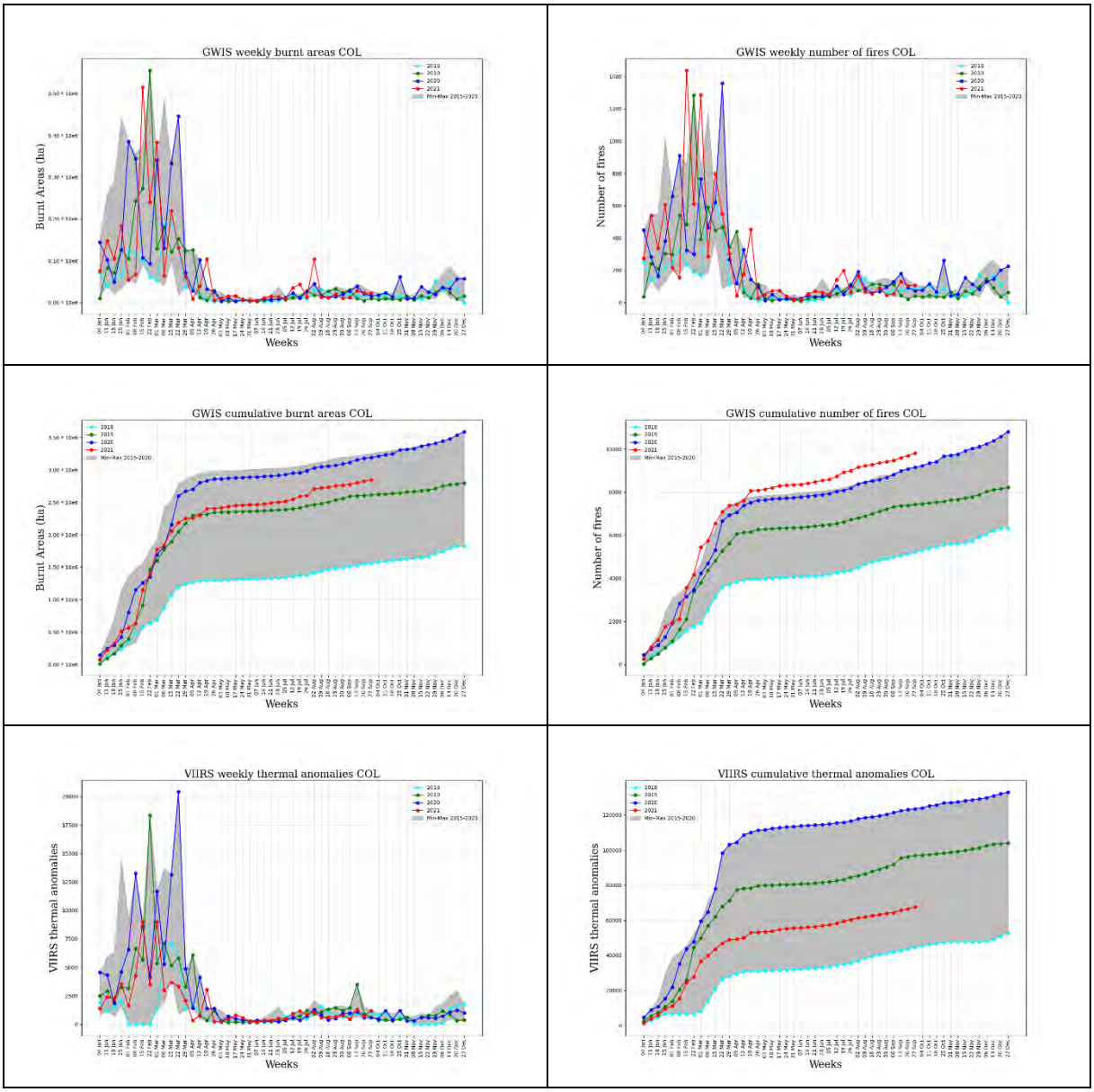


Figure 5.Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 of3 Mha burnt in Paraguay since January 1 until October 3, 2021. Approximately 88,439 ha burnt in the country the last week, decreasing from the previous week. The number of fires recorded in GWIS in the last week was 179. The number of thermal anomalies until October 3, 2021 (111,440) follows a typical trend in the region. 6997 thermal anomalies detected by VIIRS last week.

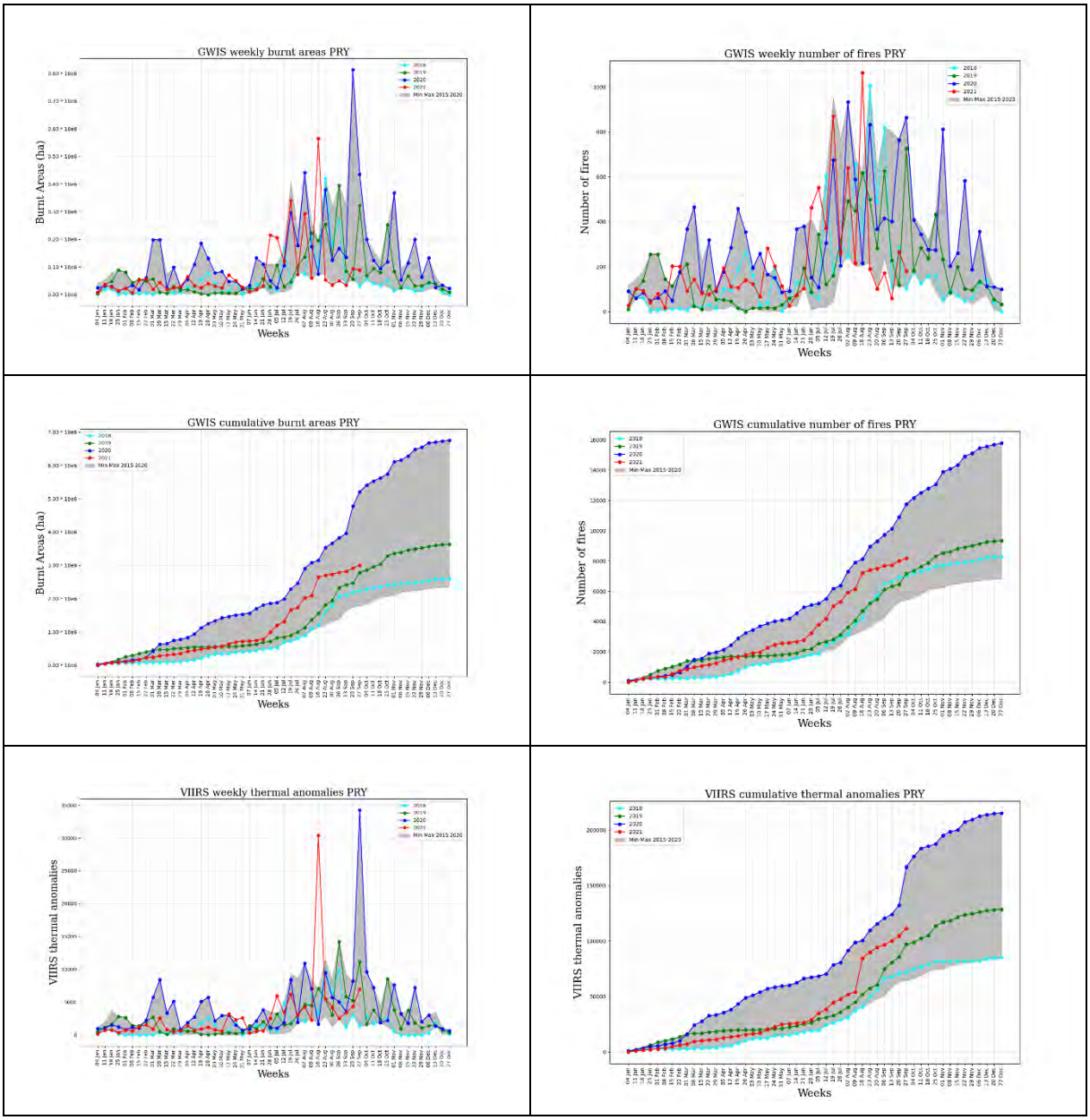


Figure 6.Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 1.96 Mha burnt in Peru since January 1 until October 3, 2021, the second highest value since 2015 for the same period. Approximately 126,336 ha burnt in the last week, decreasing from the previous week. The number of fires recorded in GWIS in the last week was 588. The total number of fires since the beginning of the year is 7255, the second highest value since 2015 for the same period. The number of thermal anomalies until October 3, 2021 (49,883) shows a typical trend in the region. 4451thermal anomalies registered last week, decreasing after the last week.

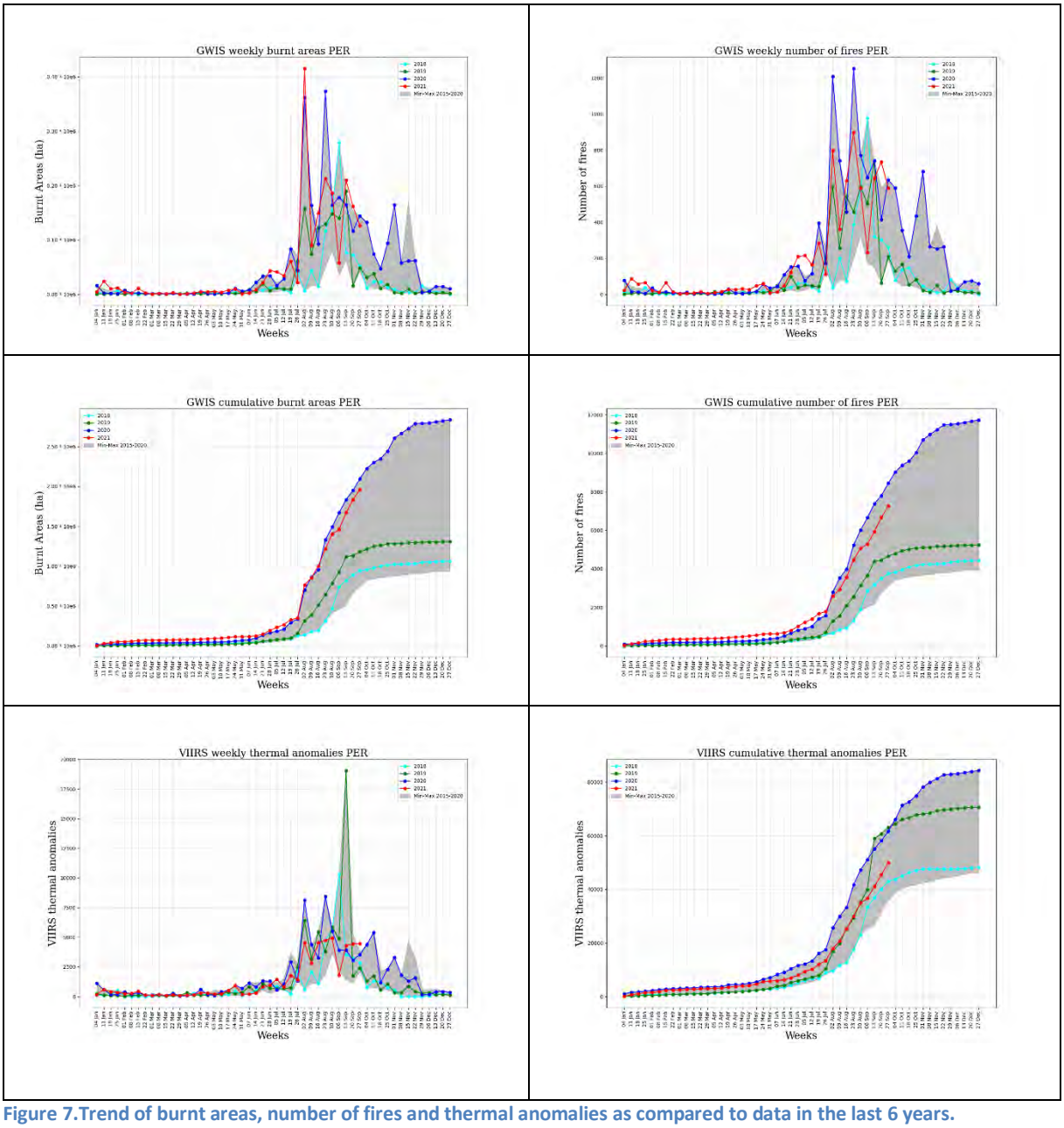


Figure 7.Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 4.30 Mha burnt in Venezuela since January 1 until October 3, 2021, with 5886 ha burnt in the last week. The number of fires recorded in GWIS in the last week was 29. The number of thermal anomalies until October 3, 2021 (129,965) shows a typical trend in the region. 1877 thermal anomalies were recorded by VIIRS during the last week.

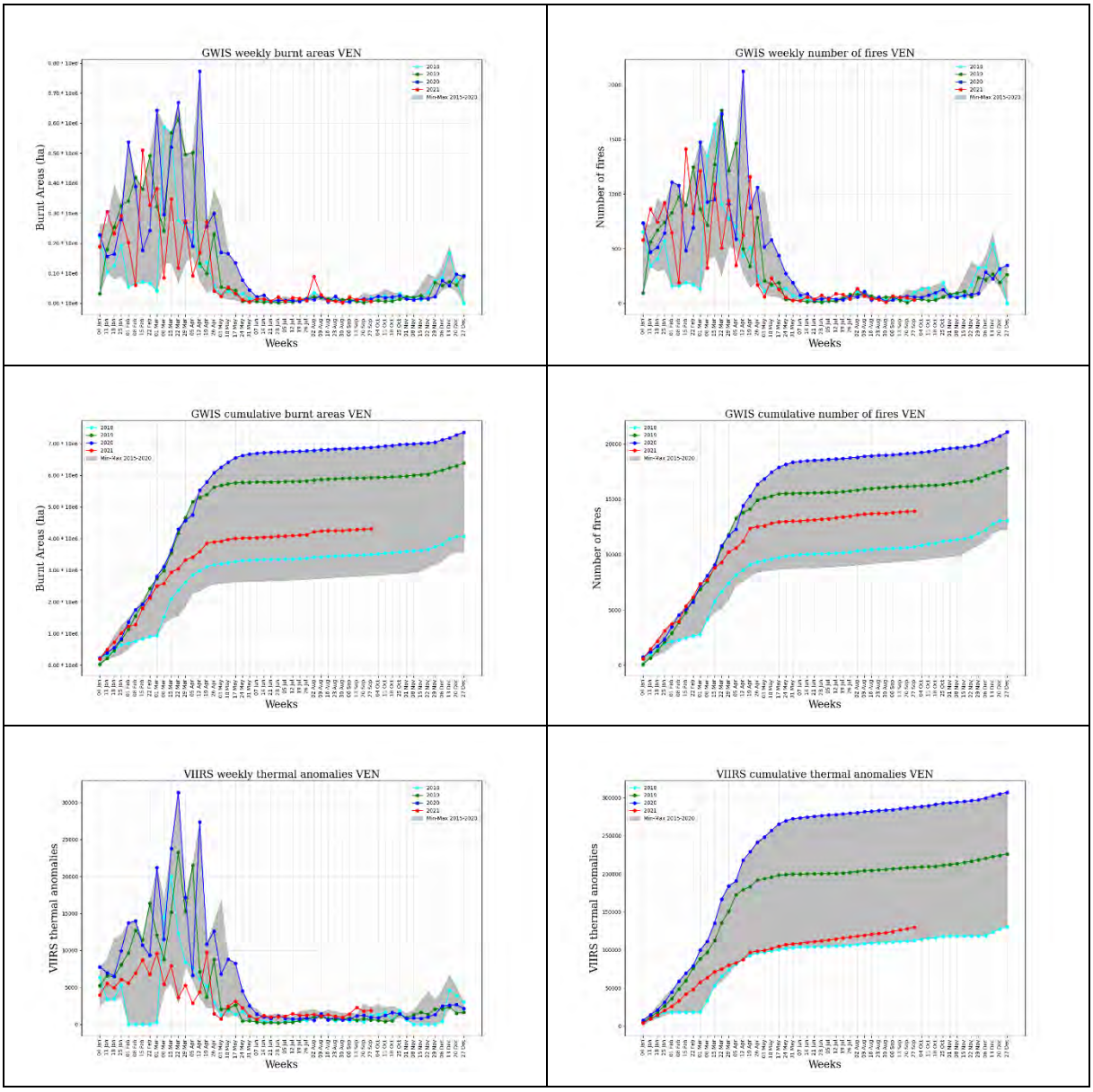


Figure 8.Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 449,619 burnt in Chile since January 1 until October 3, 2021, with 5,754 ha burnt in the last week. The number of fires recorded in GWIS in the last week was 26. The number of thermal anomalies until October 3, 2021 (13,081) shows a typical trend in the region as compared to the trends during previous years. 304 thermal anomalies were detected by VIIRS during the last week, which is similar to the values in the same week during previous years.

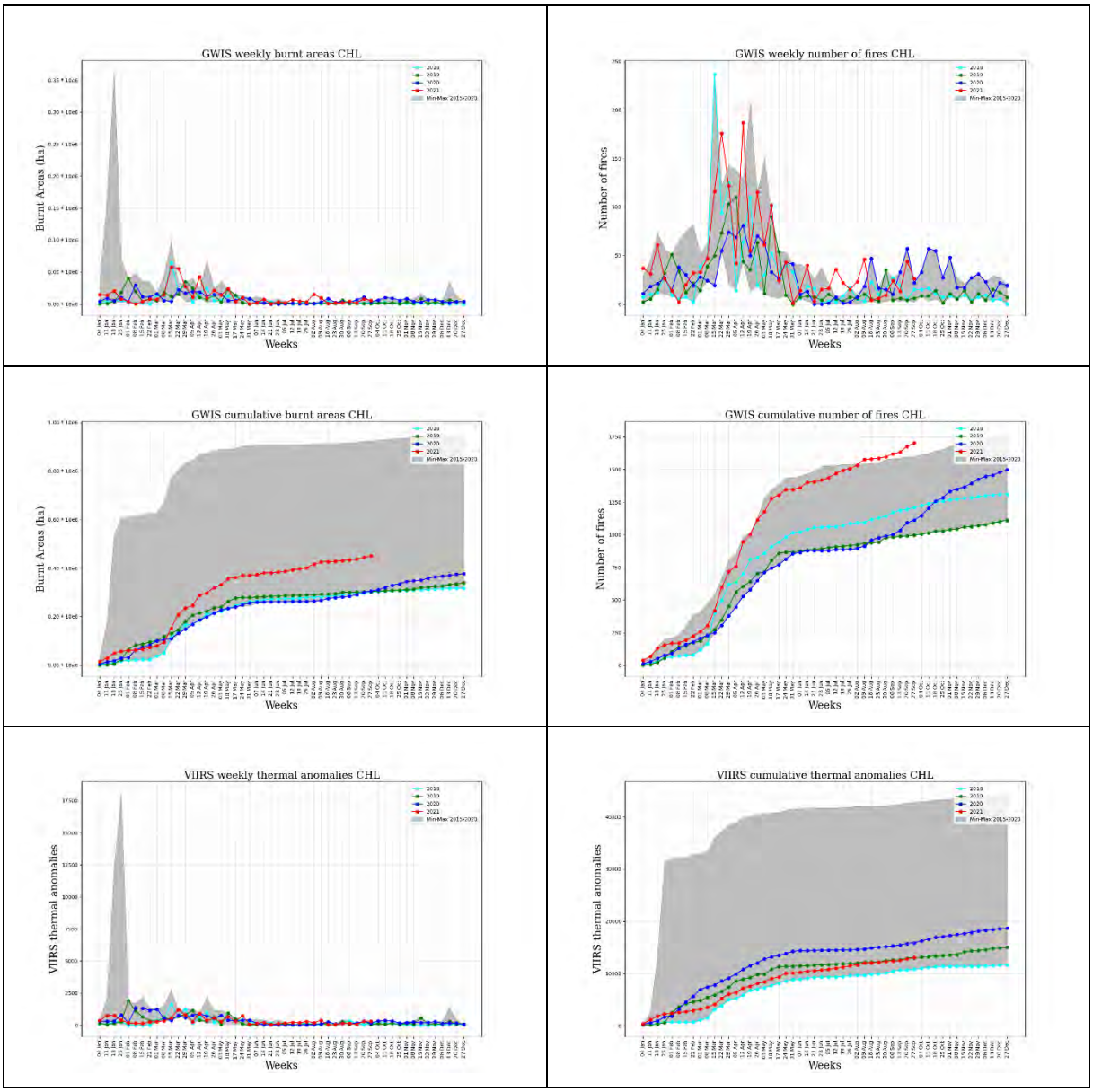


Figure 9.Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 3.73 Mha burnt in Argentina since January 1 until October 3, 2021, with 72,941 ha burnt in the last week. These values are the lowest since 2015 for the same week. The number of fires recorded in GWIS in the last week was 230, the lowest value since 2015 for the same period. The number of thermal anomalies until October 3, 2021 (125,011) shows a typical trend in the region. 3750 thermal anomalies were recorded by VIIRS during the last week, a value that is like those recorded in that week for 2020.

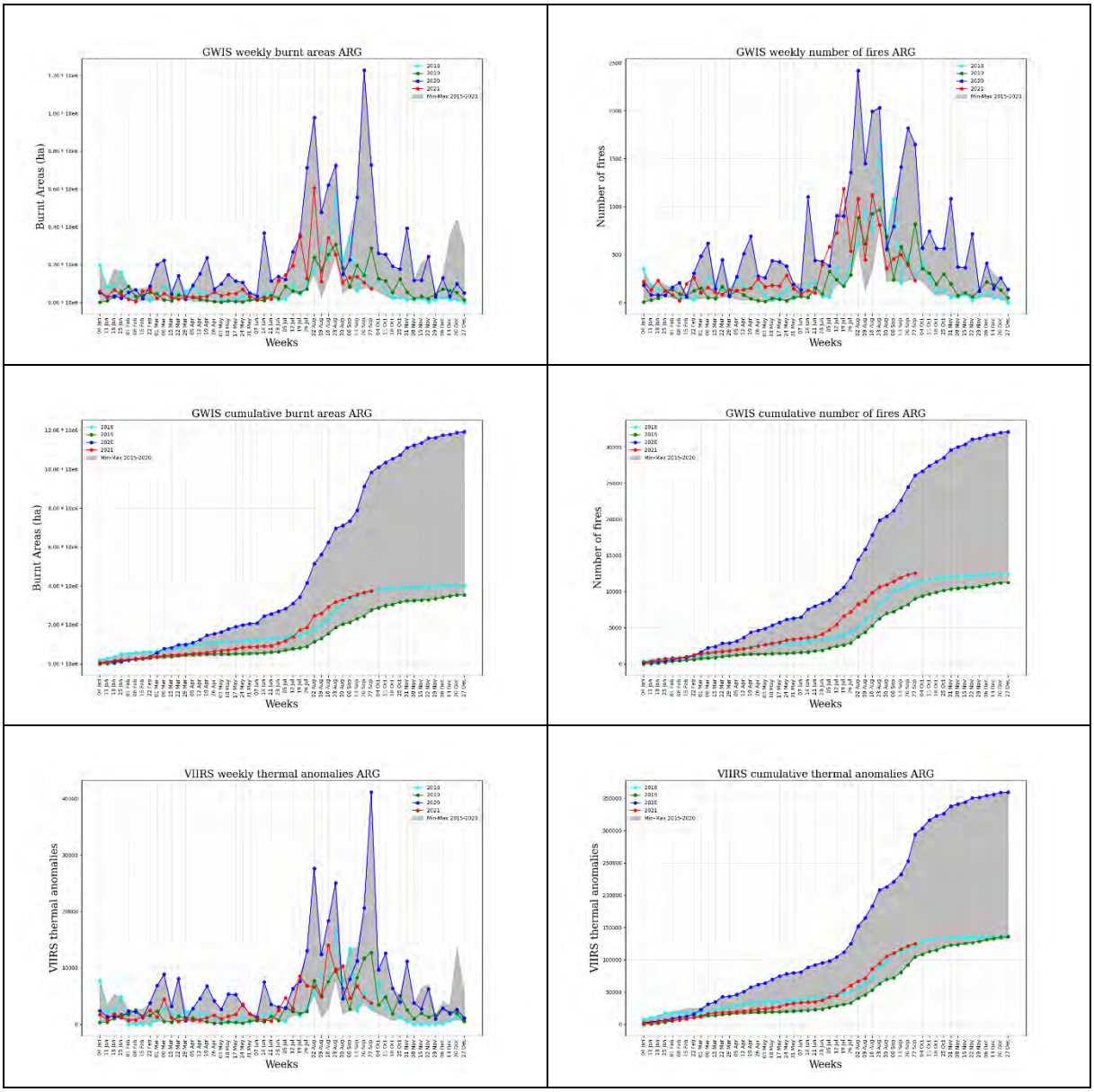


Figure 10.Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 90,612 ha burnt in Ecuador since January 1 until October 3, 2021, similar values of 2020 for the same period, with 20,843 ha burnt in the last week. The number of fires recorded in GWIS in the last week was 96 the highest value since 2015 for the same period. The number of thermal anomalies until October 3, 2021 (2809) shows a typical trend in the region. 383 thermal anomalies were detected by VIIRS in the last week.

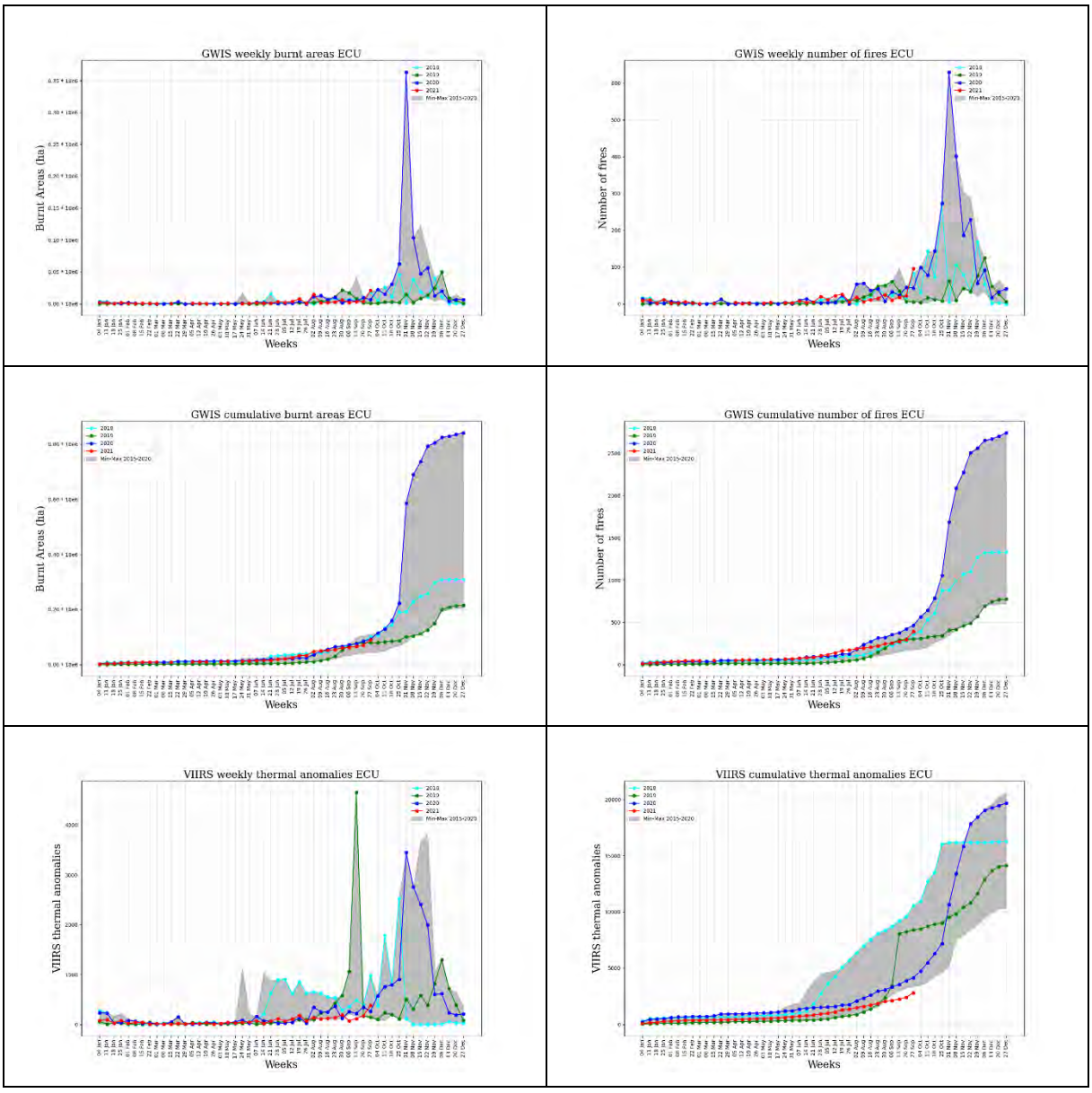


Figure 11.Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 47,775 ha burnt in Uruguay since January 1 until October 3, 2021. 2 fires were recorded last week. The number of thermal anomalies until October 3, 2021 (1,720) shows a typical trend in the region.

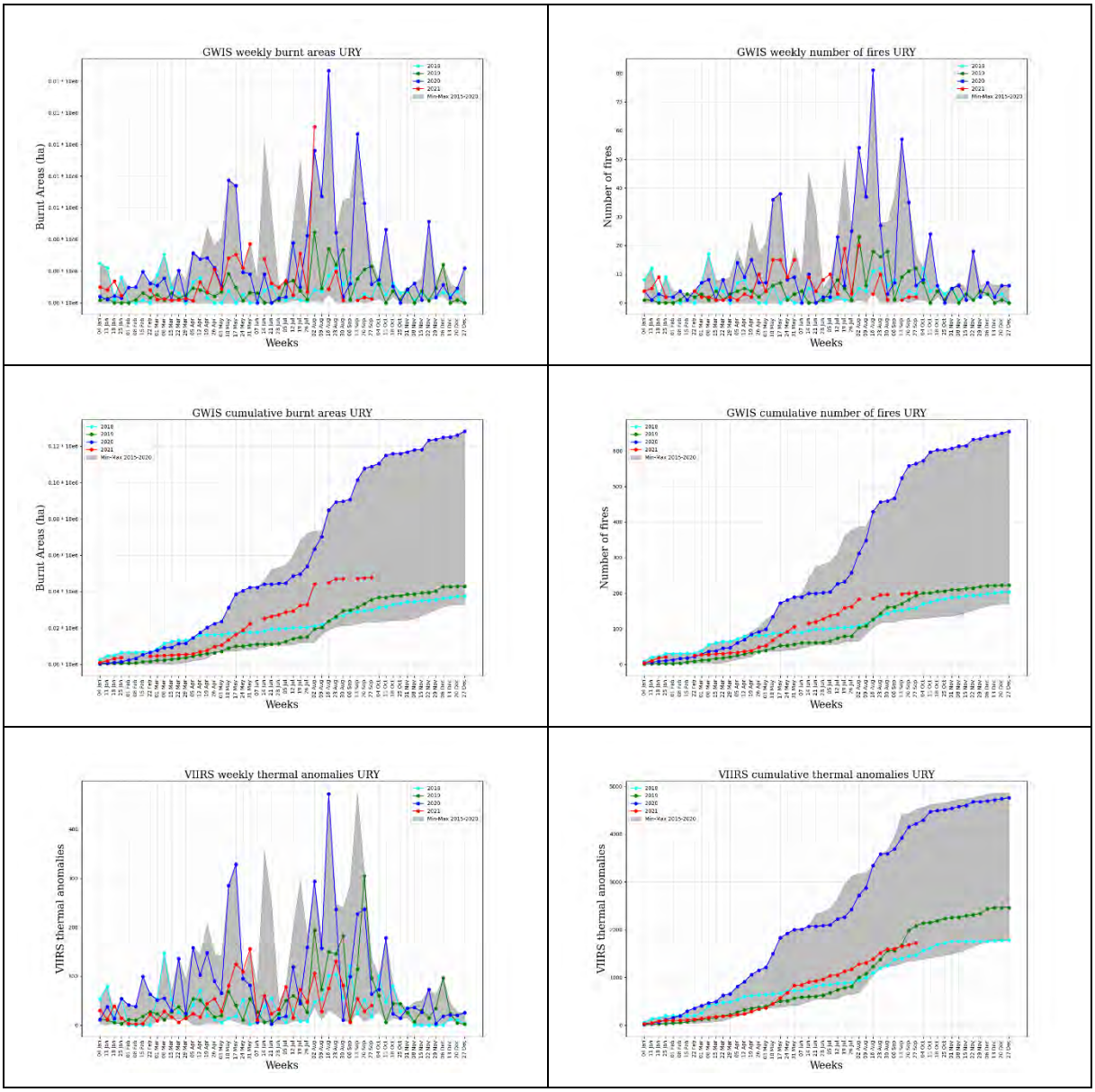


Figure 12.Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 893 ha burnt since January 1 until October 3, 2021, with one fire recorded last week. The number of thermal anomalies until October 3, 2021 (117) 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.

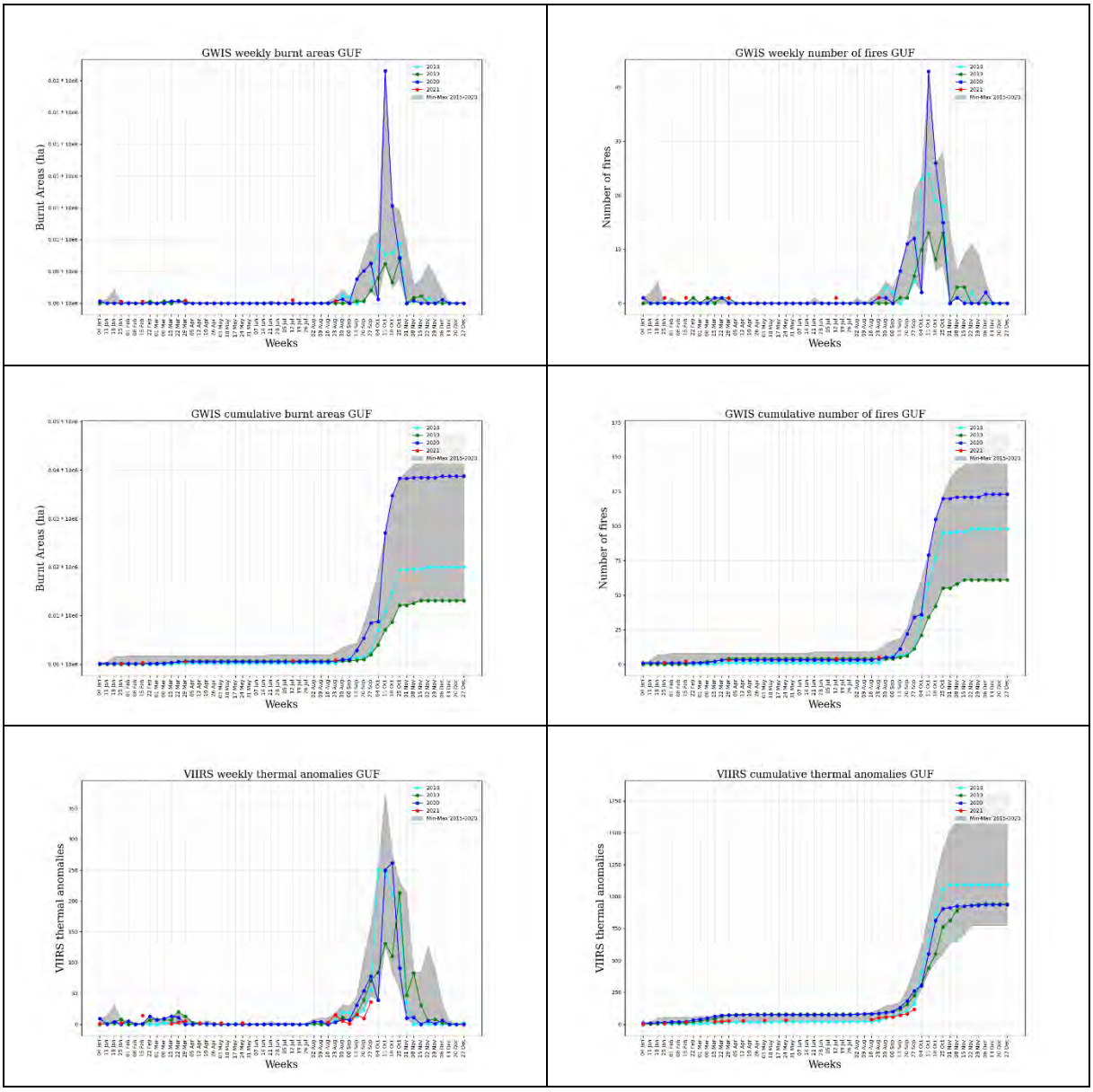


Figure 13.Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 62,511 ha burnt in Guyana since January 1 until October 3, 2021, with 1 fire recorded last week. The number of thermal anomalies until October 3, 2021 (2,348) shows a typical trend in the region as compared to the trends during previous years. 250 thermal anomalies were detected by VIIRS during the last week, which is similar to the values in the same week during previous years.

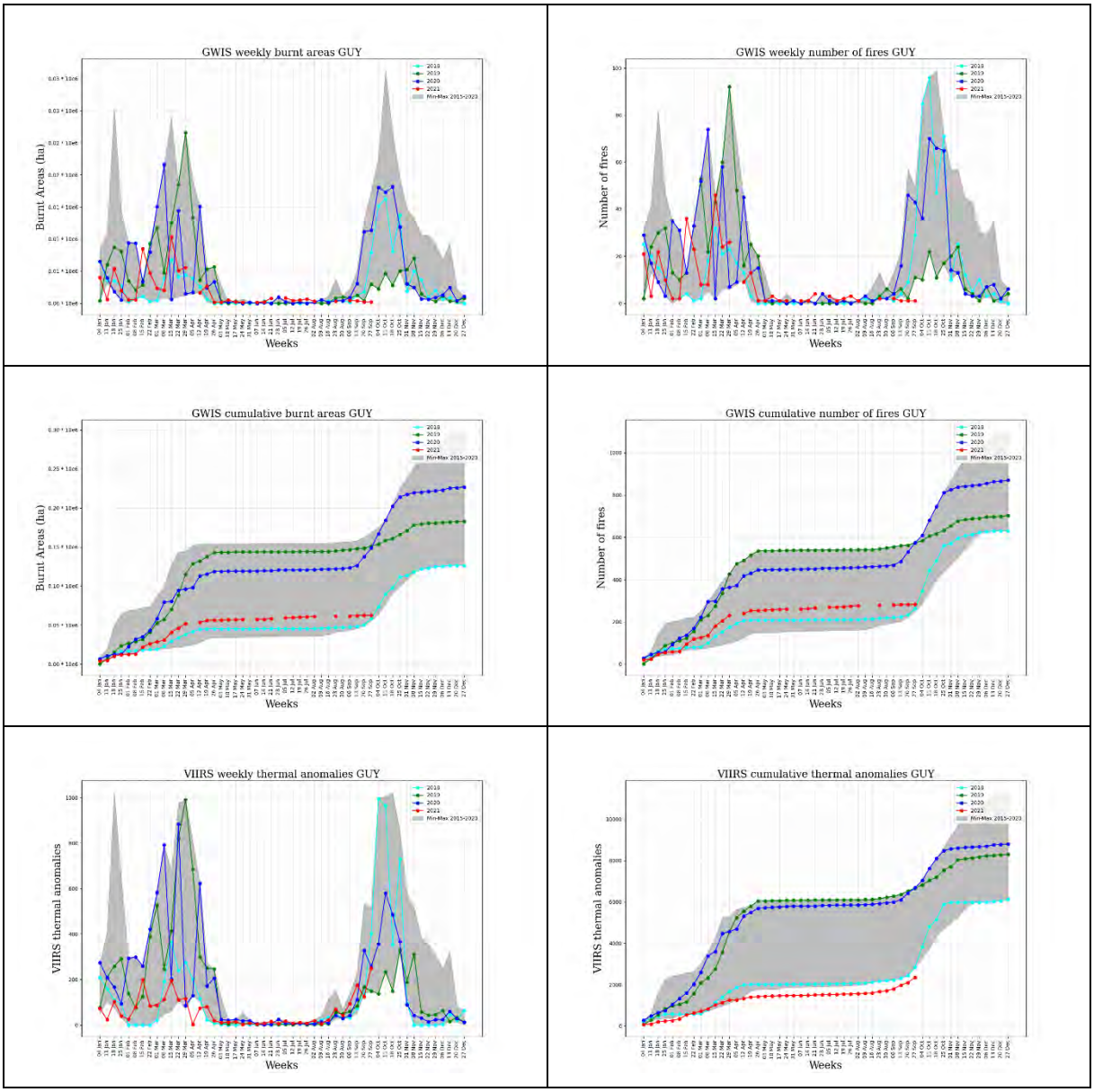


Figure 14.Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 4533 ha burnt in Suriname since January 1 until October 3, 2021. One fire was recorded last week. The total number of fires since the beginning of the year is 21. The number of thermal anomalies until October 3, 2021 (308) shows a typical trend in the region. 90 thermal anomalies registered last week, increasing after the last week.

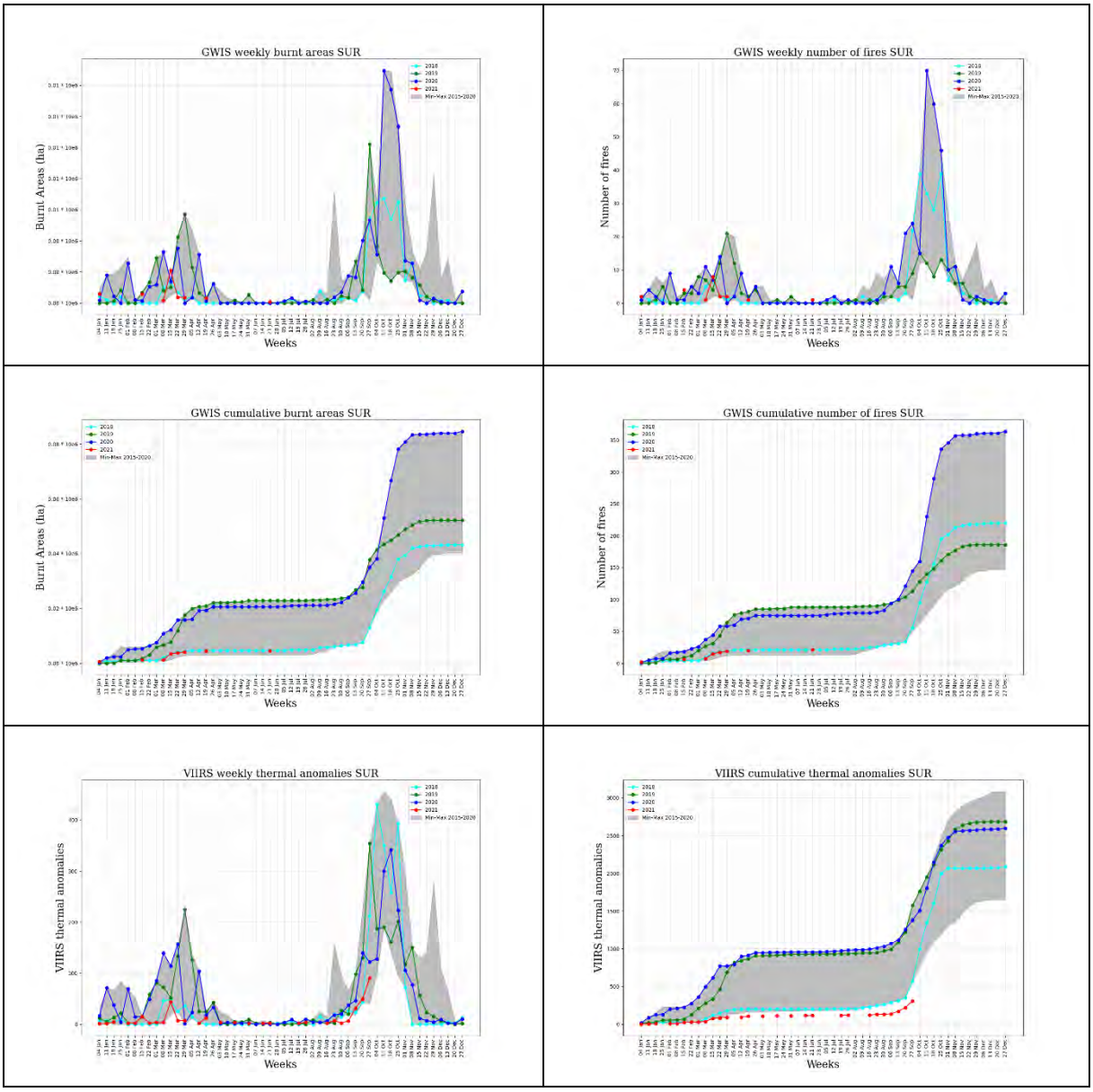


Figure 15.Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 October 04 to October 10, 2021. 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 continue to be very high to extreme in the central and eastern part of Brazil and moderate to high in eastern and southeastern Bolivia, Paraguay, Chile and across Argentina.

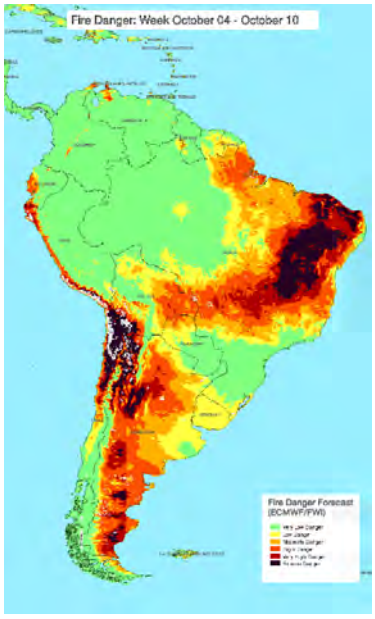


Figure 16.Average Fire danger forecast. Week, October 04 - October 10, 2021.

The weekly fire weather forecast of temperature and precipitation anomalies for this week is presented in Figure 17. Above average temperatures are forecasted for areas of southeastern Brazil, Bolivia, Peru, and southern Argentina. Below average temperatures are forecasted in Paraguay and northern Argentina. The models estimate an above average precipitation rates for next week mainly in western Brazil, Paraguay and northern Peru. Below average precipitation is foreseen mainly in northern part of Argentina.

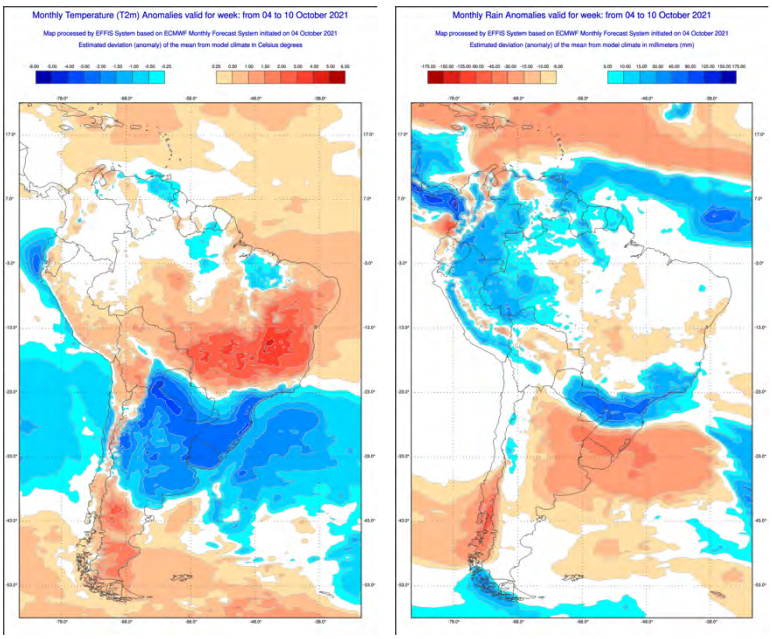


Figure 17.Fire weather anomalies of the current week, October 4- October 10, 2021.

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

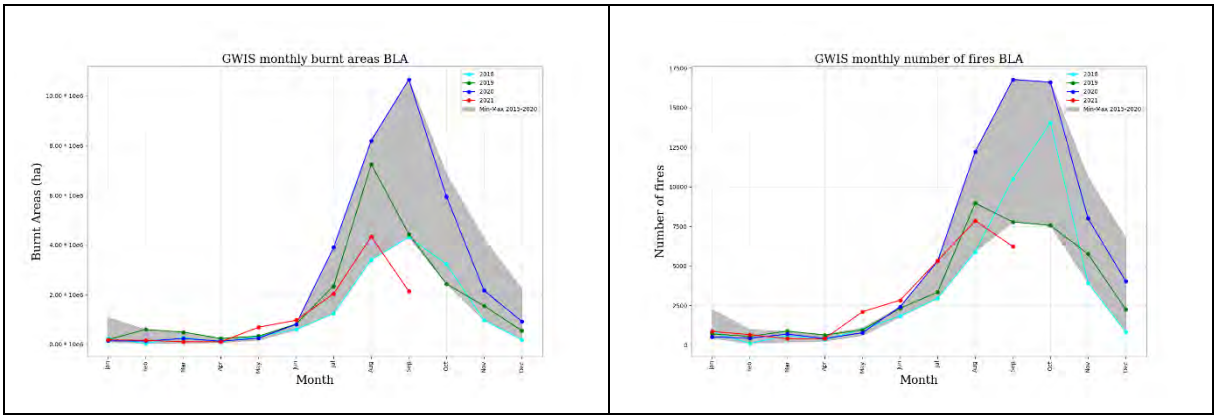
16 Monthly analysis (up to 5 September 2021)

16.1 Brazilian Legal Amazon (BLA)

Figure 18 shows the spatial distribution of burnt areas for 2021 mapped by the Near-Real Time (NRT) process in GWIS in the Brazilian Legal Amazon region, within Brazil.

Figure 18.GWIS burnt areas for 2021 in Brazilian Legal Amazon (BLA). Burnt areas until 5 September.

The 2021 fire season in the BLA was following similar trends of the last year until September as shown in Figure 19. However, this year the burnt area up to September is lower than the last two years. Besides, the numbers of fires are below values of 2020. The current season is behaving quite like the average of the previous 6 years.



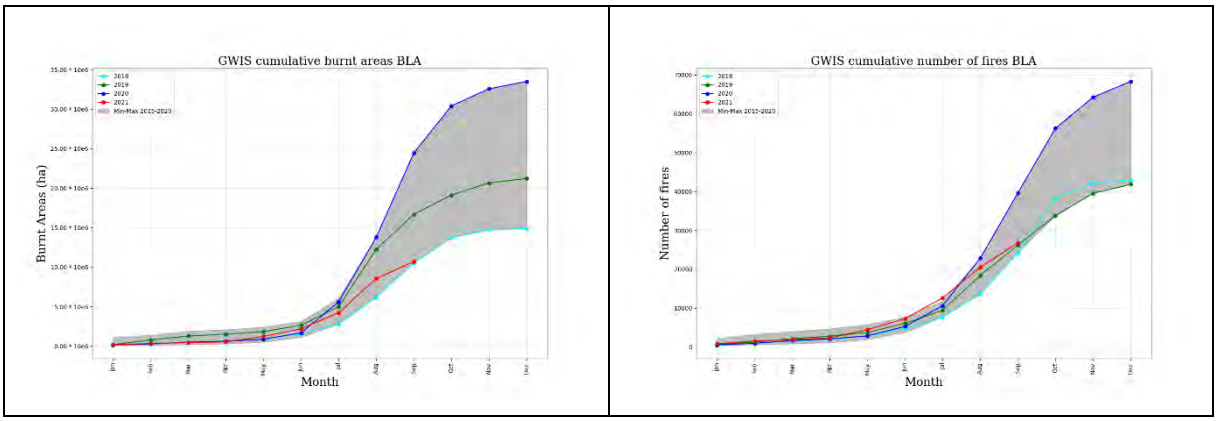


Figure 19.Trend of burnt areas and number of fires as compared to data in the last six years.

There is a considerable increase in the percentage of forest landcover burnt in August compared to previous months as shown in Figure 20.

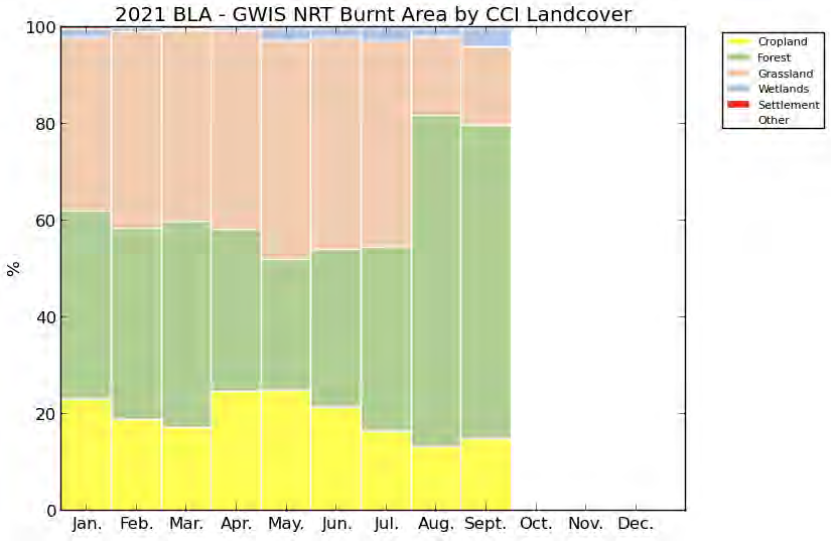


Figure 20. Monthly percentage of burnt land cover for the year 2021.

Figure 21 shows the monthly percentage of burnt area in protected areas for the year 2021.

Figure 21.Monthly percentage of burnt area within protected areas for the year 2020

In terms of the number of active fire spots retrieved directly by the VIIRS sensor, 2021 presents a number of active fire spots up to September 2021 lower than the last six years as shown in Figure 22. This type of data is often reported in the media.

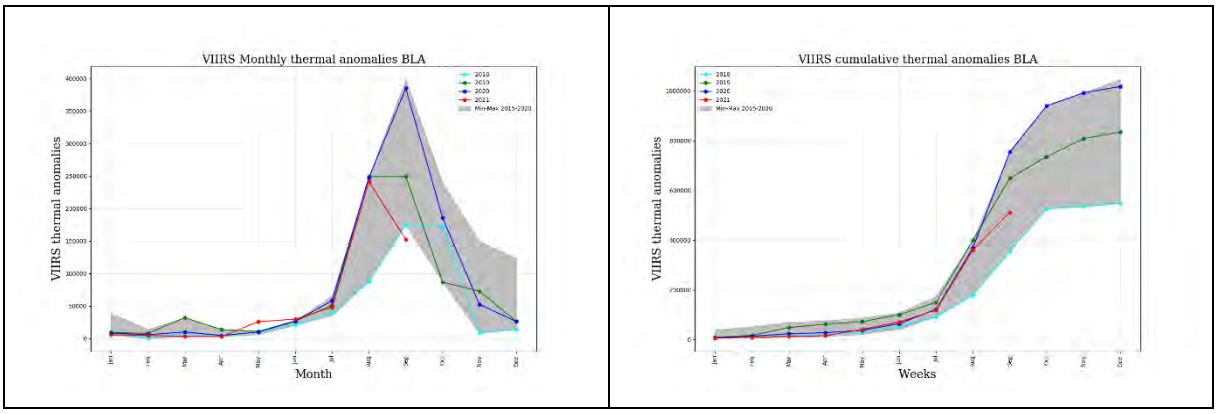


Figure 22.Trend of VIIRS thermal anomalies compared to data in the last six years.

Figure 23 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

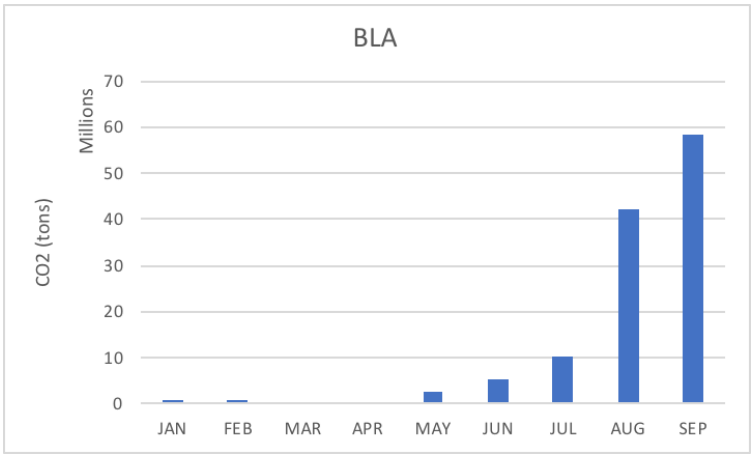


Figure 23.Trend of CO_2 emissions from biomass burning

16.2 Brazil

The spatial extent of the burnt areas mapped by the Near-Real Time (NRT) process in GWIS is presented in Figure 24. Although most of the burnt areas occurred in the center of the country (Cerrado Biome), the fire activity and resulting burnt areas are widespread from north to south, including the humid Amazon Forest.

Figure 24.GWIS burnt areas for 2021 in Brazil. Burnt areas until 5 September.

The 2021 fire season in Brazil is showing similar behavior to the average of the last 6 years. However, the number of fires depicts a small shift to the left, some of the fires started earlier than they used to do. Also, the average fire size this year is below the average for all the months except for May, June and August, being close to the minimum of the last 6 years. That fact could point out to controlled fires that might have taken place one month in advance compared to previous years. In September, the burnt areas and the number of fires decreased considerably, having the lowest number of the last six years for that month.

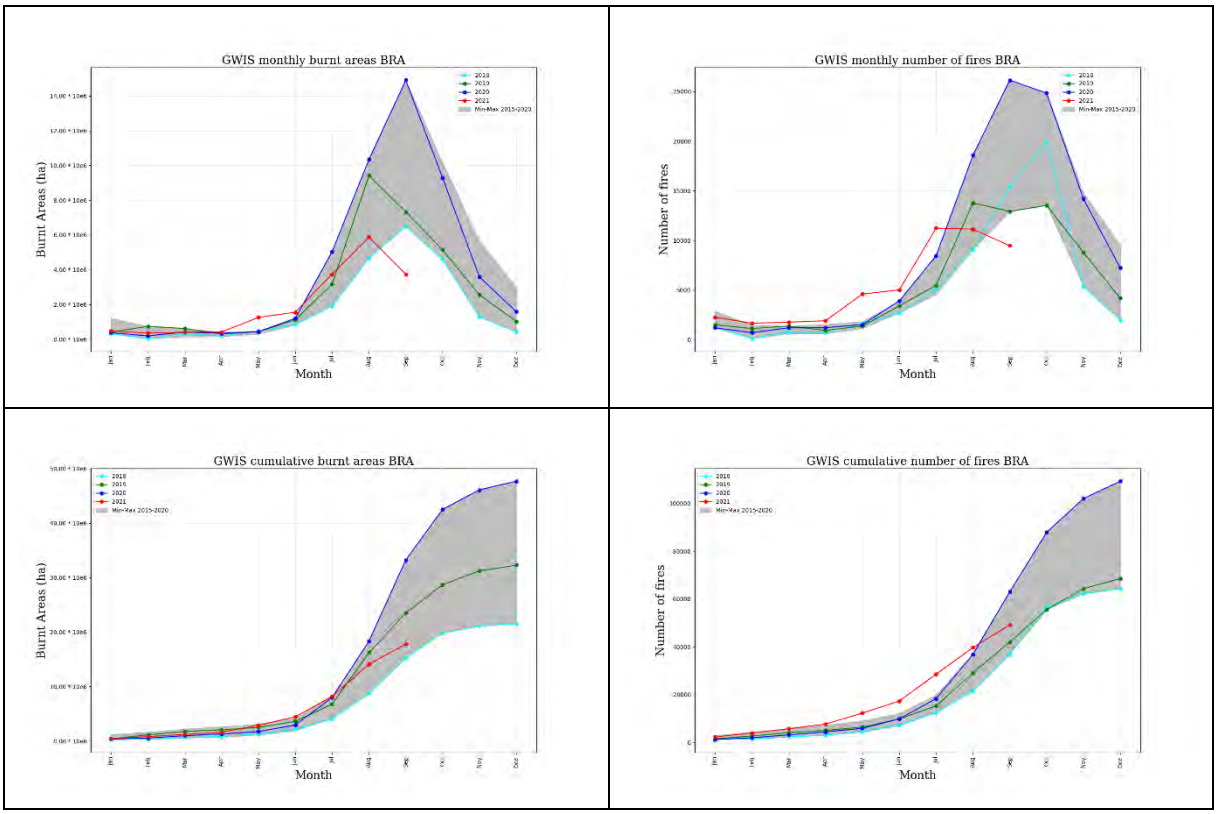


Figure 25.Trend of burnt areas and number of fires as compared to data in the last six years.

Figure 26 shows an increase of the percentage of forest land cover burnt in August, but not so remarkable as in BLA.

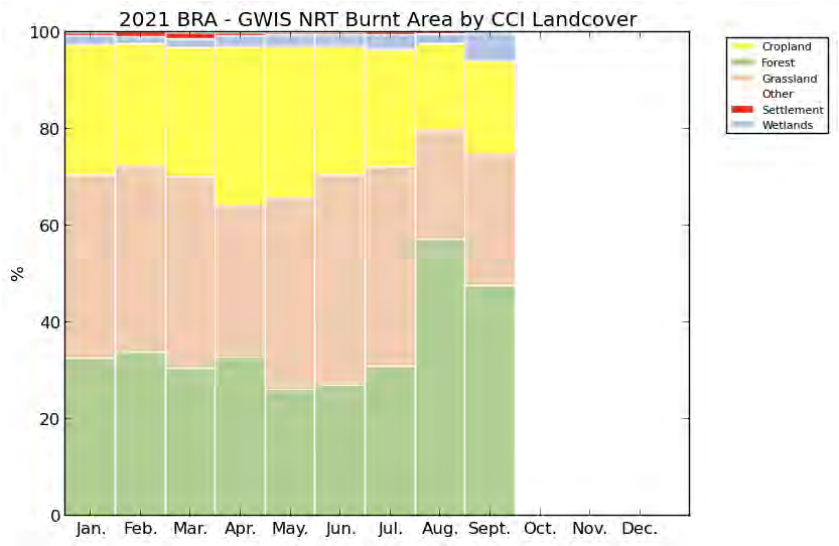


Figure 26.Monthly percentage of burnt land cover for the year 2021.

Figure 27 shows the monthly percentage of burnt area in protected areas for the year 2021.

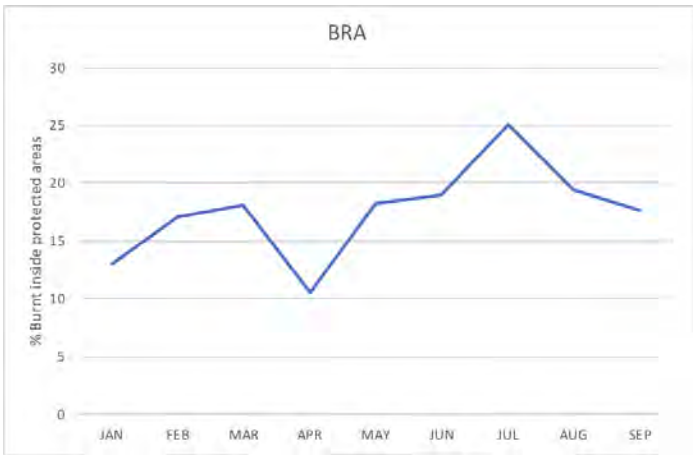


Figure 27.Monthly percentage of burnt area within protected areas for the year 2021

In terms of active fire spots detected by VIIRS, 2021 presents a number of active fire spots in the period between January and August above the values of 2020 but in September lower than 2019 and 2020 as shown in Figure 28. This type of data is those often reported in the media, which point out to a higher number of fires this year as compared to past years.

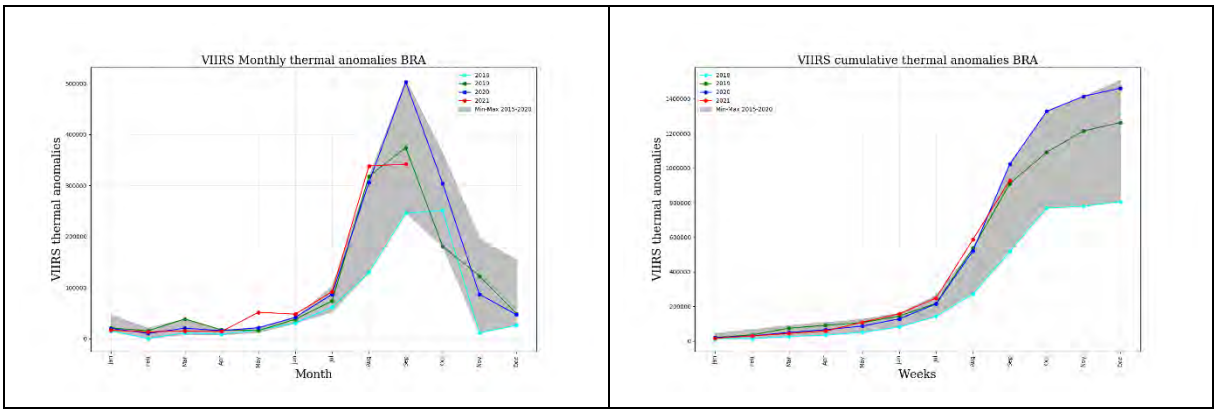


Figure 28.Trend of VIIRS thermal anomalies compared to data in the last six years

Figure 29 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

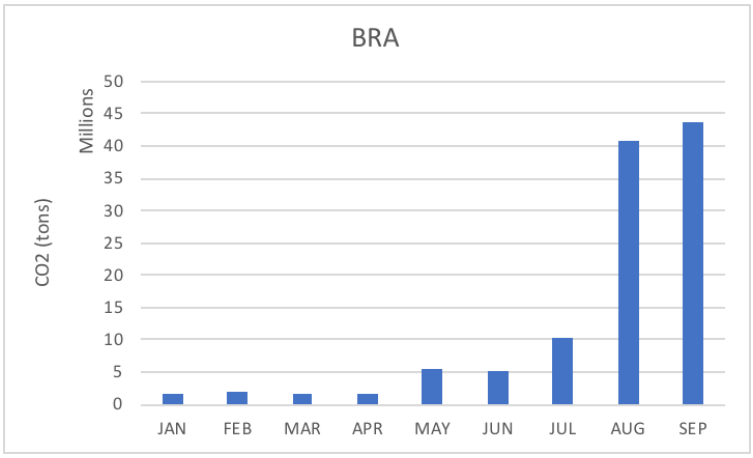


Figure 29.Trend of CO_2 emissions from biomass burning

16.3 Bolivia

The spatial distribution of burnt areas in Bolivia in 2021 mapped by the Near-Real Time (NRT) process in GWIS is shown in Figure 30. In Bolivia the 2021 fire season is following a different trend to the past five years with a moderated burnt area but a greater number of fires than the average. Bolivia has 5.11 Mha of burnt area and 9695 fires up to September.

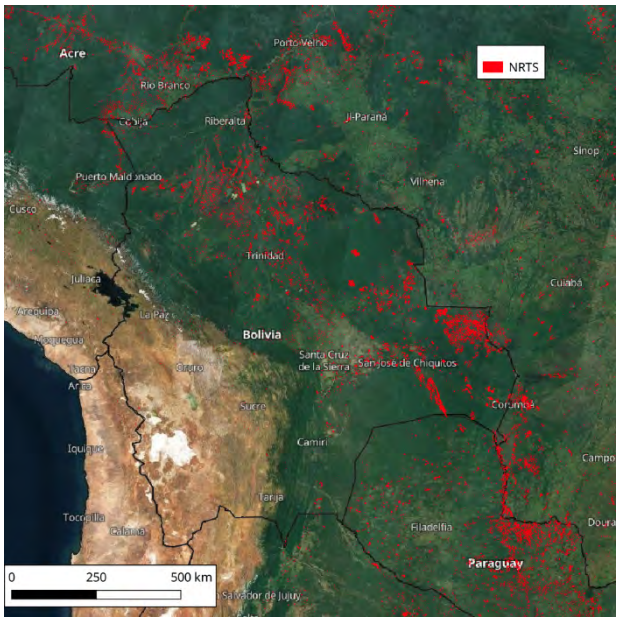


Figure 30.GWIS burnt areas for 2021 in Bolivia. Burnt areas until 5 September.

Considering 2019 a completely anomalous year because of the huge fire in Santa Cruz, this year is burning a considerable surface compared to the last 3 years. Besides, the number of fires stabilized entering inside the maximum and minimum area of the previous years. In September the number of fires increased compared to August and the season is now following a typical behavior.

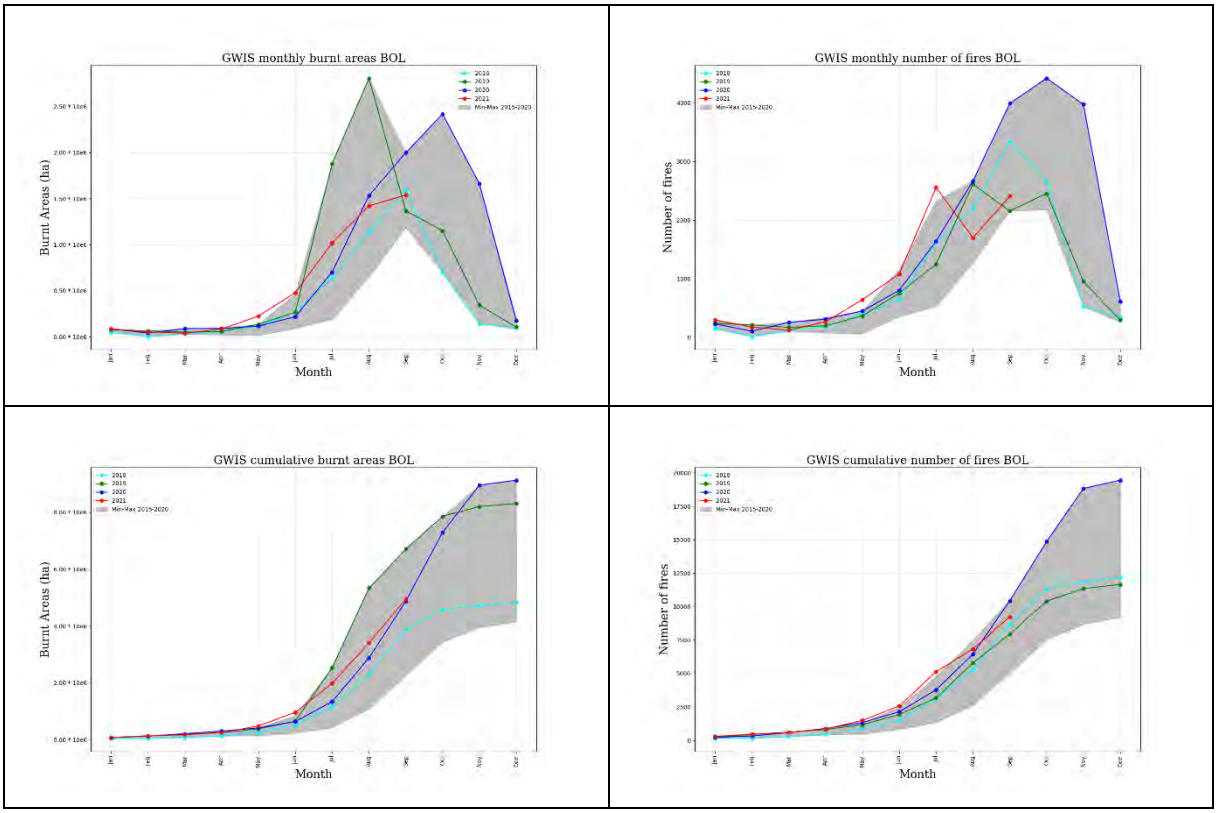


Figure 31.Trend of burnt areas and number of fires as compared to data in the last six years.

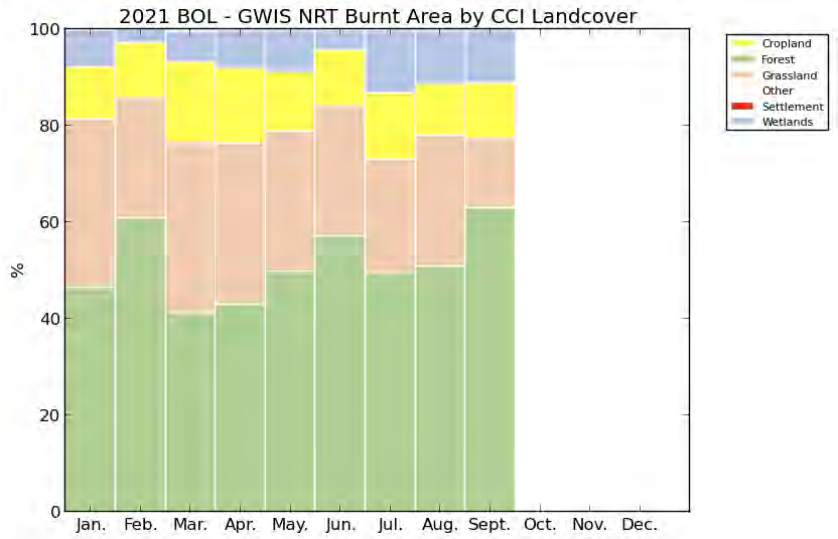


Figure 32.Monthly percentage of burnt land cover for the year 2021.

Figure 33 shows the monthly percentage of burnt area in protected areas for the year 2021.

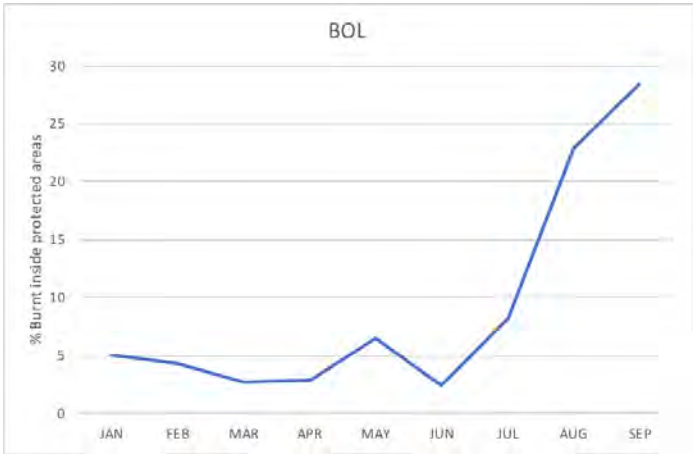


Figure 33.Monthly percentage of burnt area within protected areas for the year 2021

In terms of active fire spots detected by VIIRS, 2021 presents a number of active fire spots above 2019 and 2020 between May and June but below 2019 in August and September as shown in Figure 34. This type of information is often reported in the media.

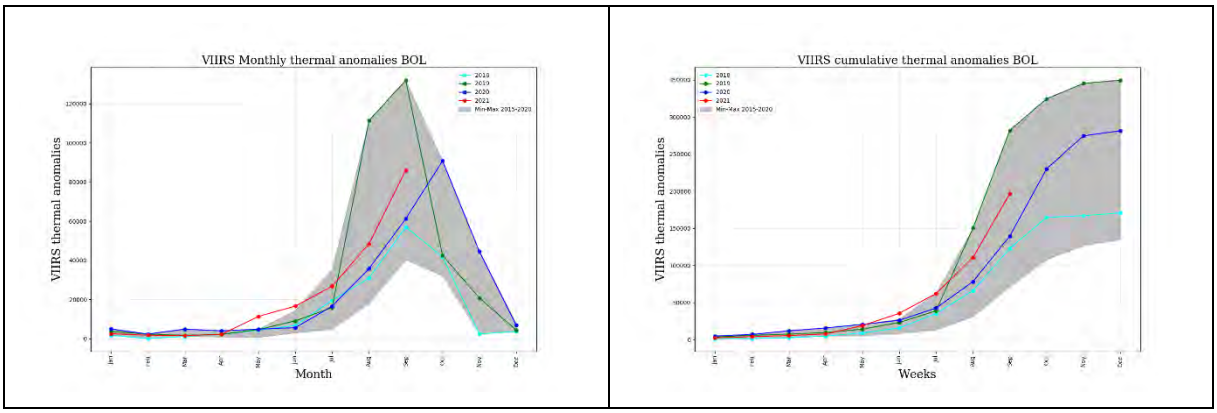


Figure 34.Trend of VIIRS thermal anomalies compared to data in the last six years.

Figure 35 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

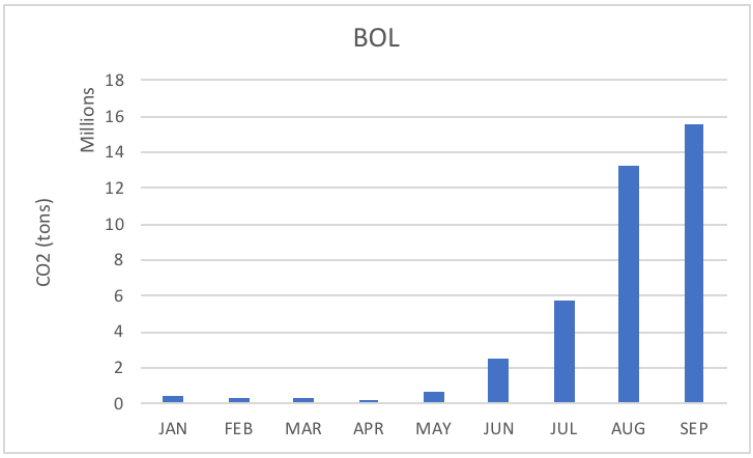


Figure 35.Trend of CO_2 emissions from biomass burning

16.4 Colombia

The spatial distribution of burnt areas in Colombia in 2021 mapped by the Near-Real Time (NRT) process in GWIS is shown in Figure 36.

Figure 36.GWIS burnt areas for 2021 in Colombia. Burnt areas until 5 September.

The current fire season has been less severe than last year in terms of burnt area but with a higher number of fires. About 2.85 Mha of burnt areas have been mapped in the country until end of September. Figure 30 shows how the number of fires is considerable higher compared with the period 2015-2020. The fires are mainly located on the center and south-west of the country, a region designated as “Llanos”, a complex savanna ecosystem which undergoes periodic, human-induced and natural biomass burning during the dry season, usually between November and April.

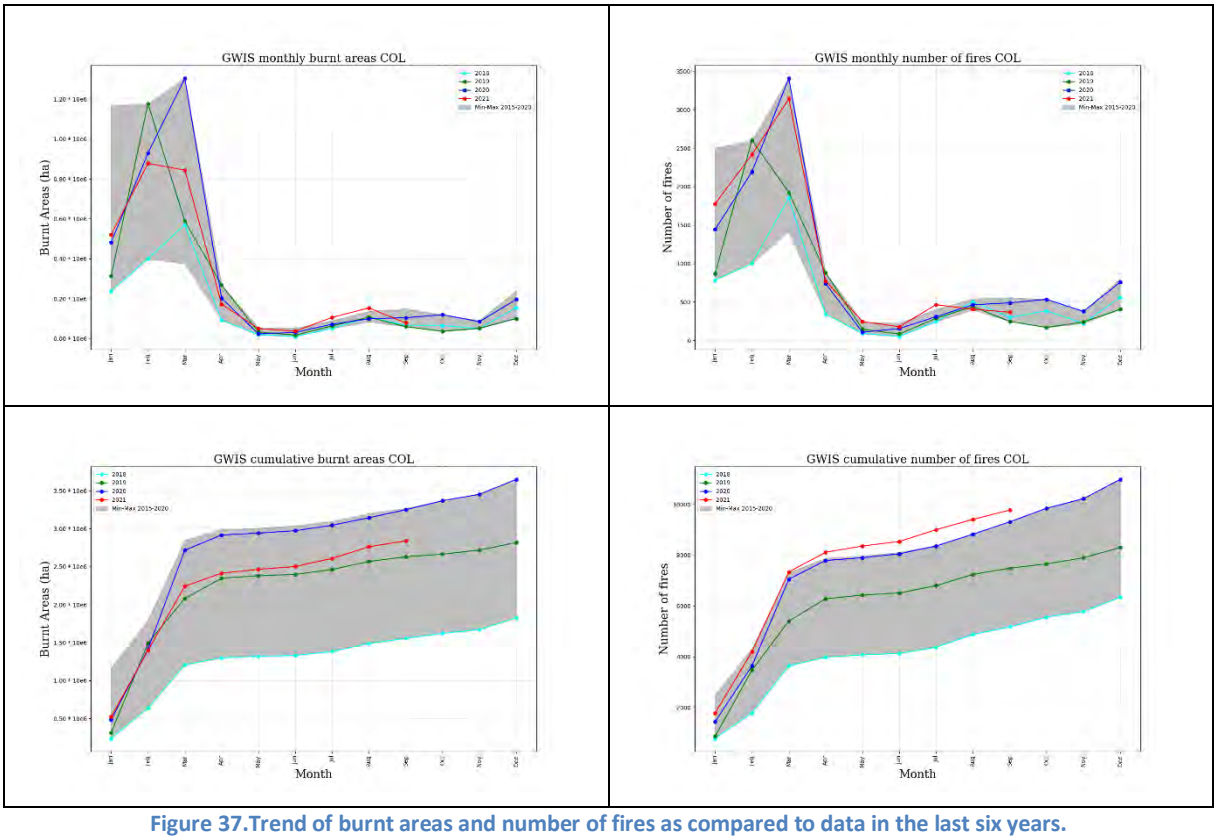


Figure 37.Trend of burnt areas and number of fires as compared to data in the last six years.

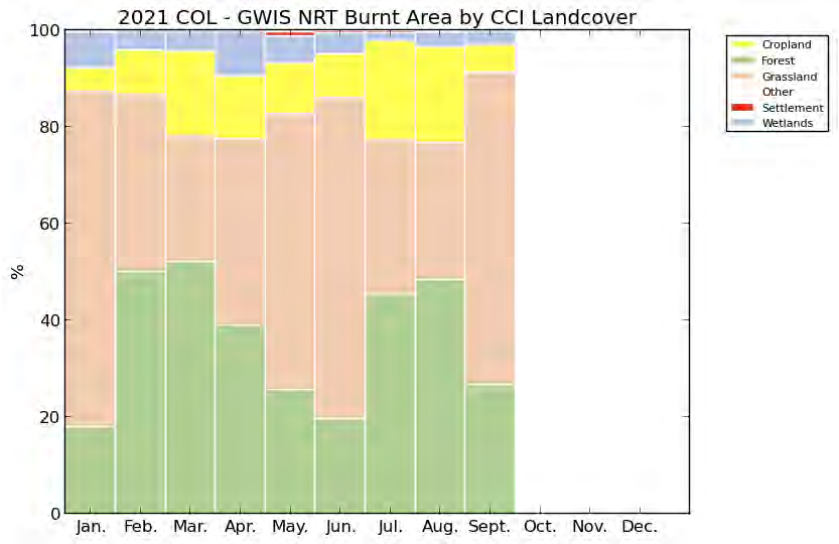


Figure 38.Monthly percentage of burnt land cover for the year 2021.

Figure 39 shows the monthly percentage of burnt area in protected areas for the year 2021.

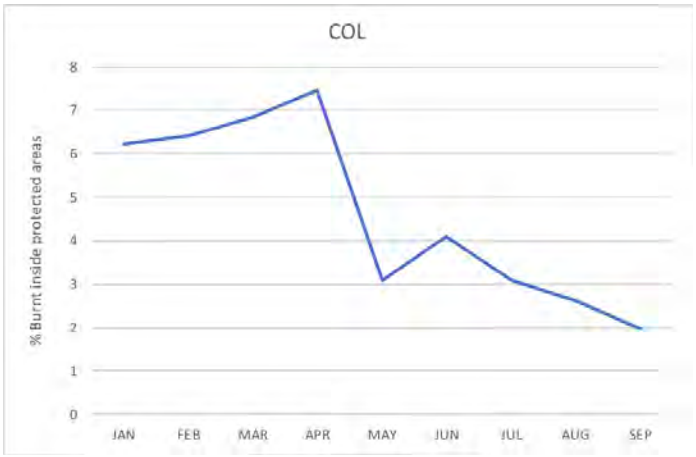


Figure 39.Monthly percentage of burnt area within protected areas for the year 2021

In terms of active fire spots detected by VIIRS, 2021 presents a number of active fire spots in the period between January and September lower than the previous two years as shown in Figure 40. This type of information is often reported in the media.

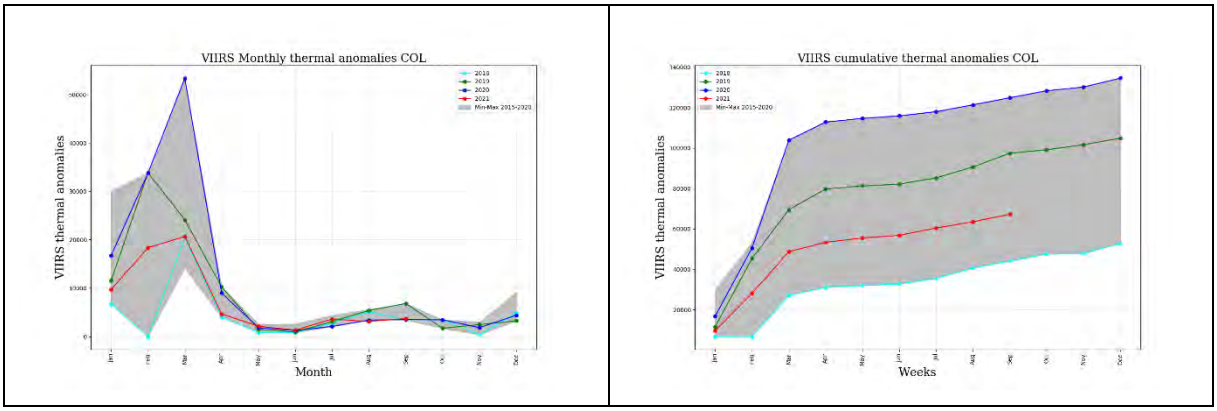


Figure 40.Trend of VIIRS thermal anomalies compared to data in the last six years.

Figure 41 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

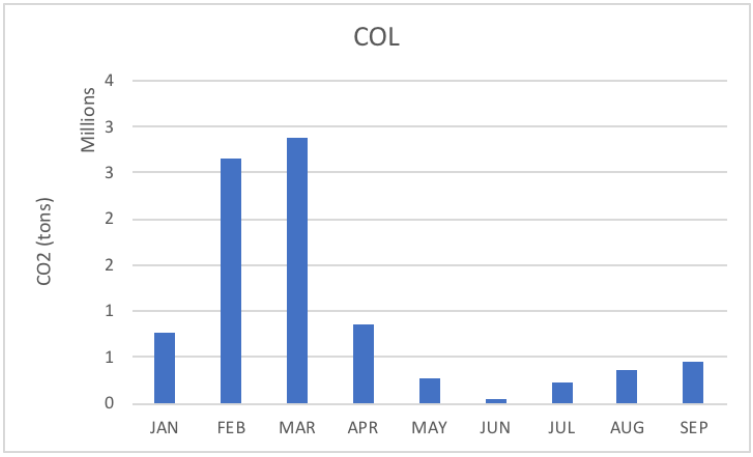


Figure 41.Trend of CO_2 emissions from biomass burning

16.5 Paraguay

In 2021, the spatial extent of the burnt areas in the country mapped by the Near-Real Time (NRT) process in GWIS is presented in Figure 42.

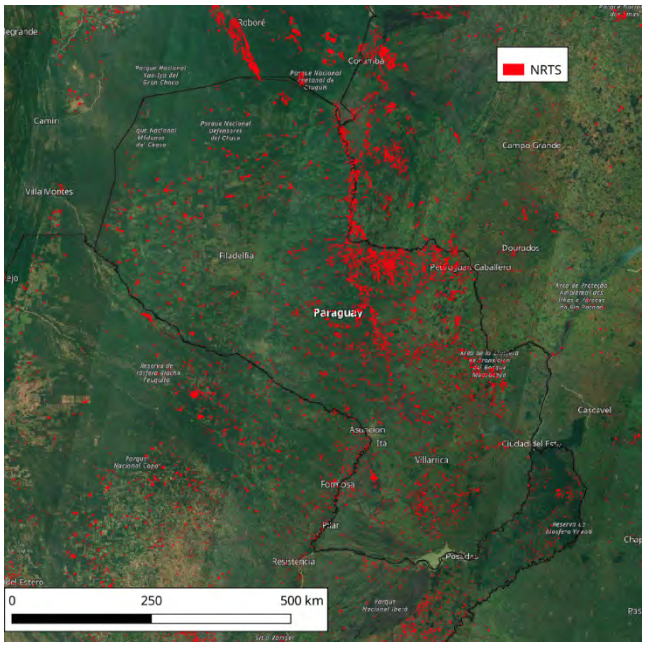


Figure 42.GWIS burnt areas for 2021 in Paraguay. Burnt areas until 5 September.

The 2021 fire season in Paraguay is showing a typical behavior compared to the previous 6 years, but with lower values than in 2020 (Figure 43). In July, the number of fires and burnt areas increased, reaching maximum values. In August, the number of fires decreased but the burnt area has been still increasing at a lower rate compared to previous years in the same month. The average fire size reached the maximum value of the last 6 years in August. In September, the fire activity decreased below the values of the previous 6 years in terms of burnt area and number of fires.

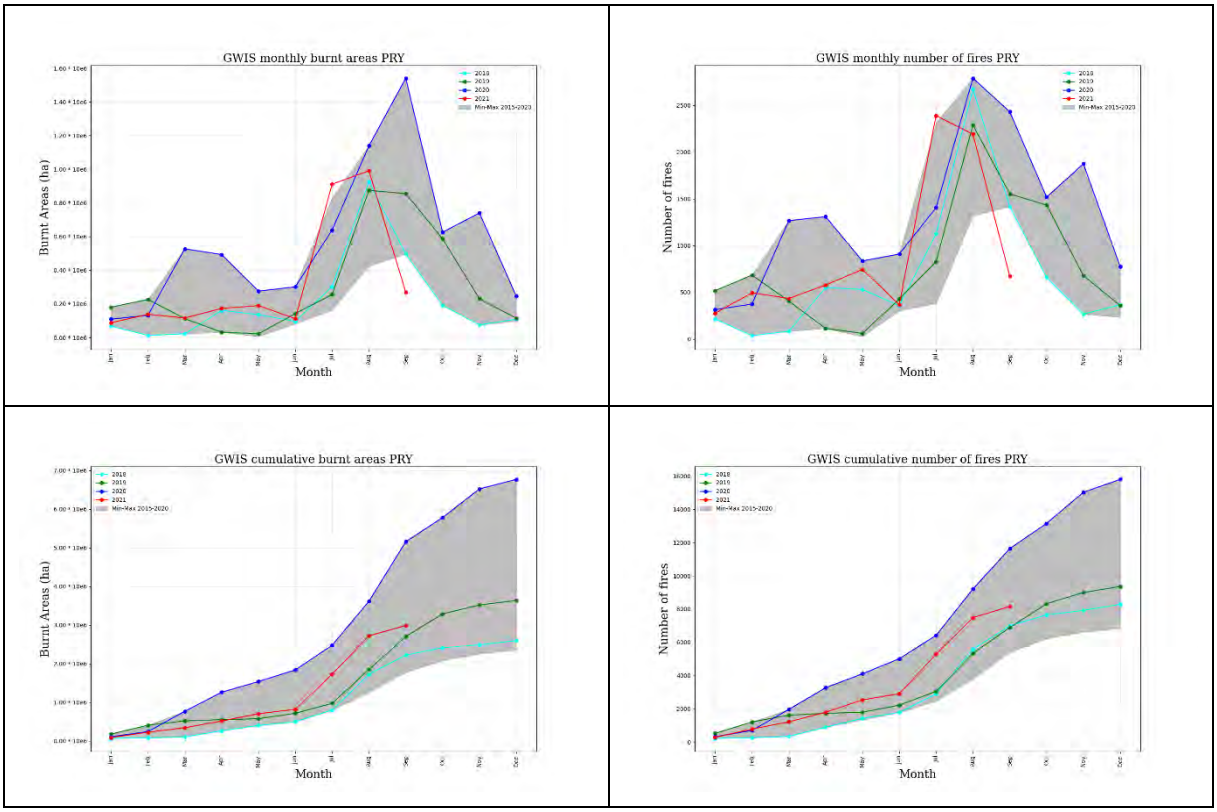


Figure 43.Trend of burnt areas and number of fires as compared to data in the last six years.

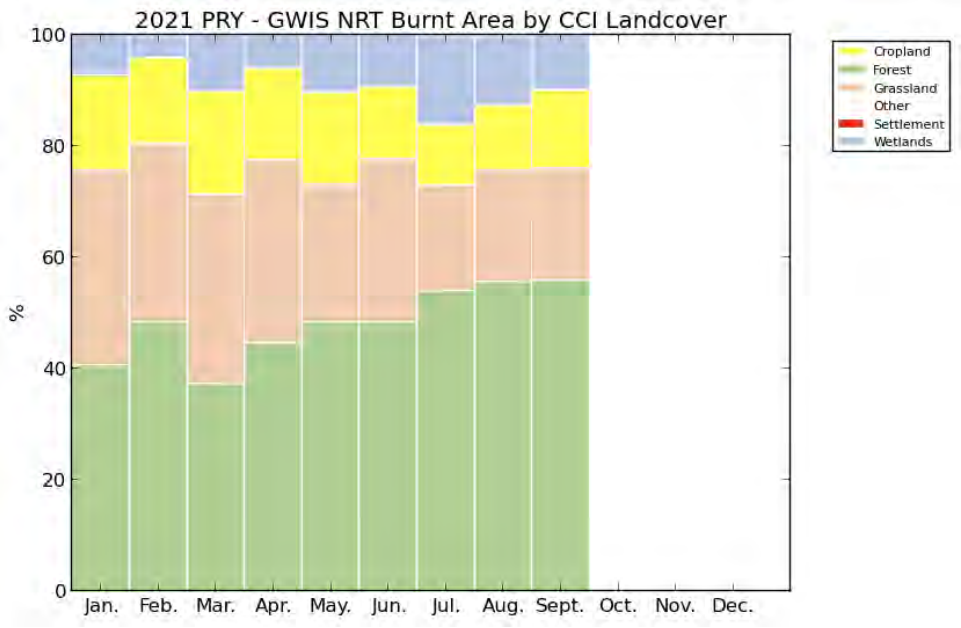


Figure 44.Monthly percentage of burnt land cover for the year 2021.

Figure 45 shows the monthly percentage of burnt area in protected areas for the year 2021.

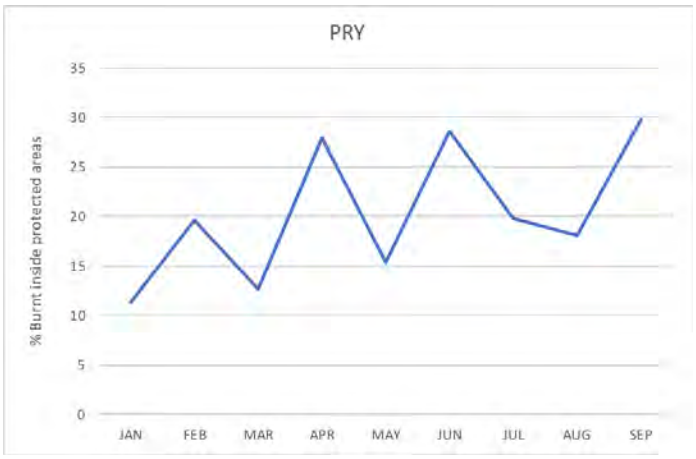


Figure 45.Monthly percentage of burnt area within protected areas for the year 2021

In terms of active fire spots detected by VIIRS, 2021 presents the same typical trend of the burned area and number of fires shown in Figure 46, with the highest number of active fire spots detected in August in the last 6 years. This type of information is often reported in the media.

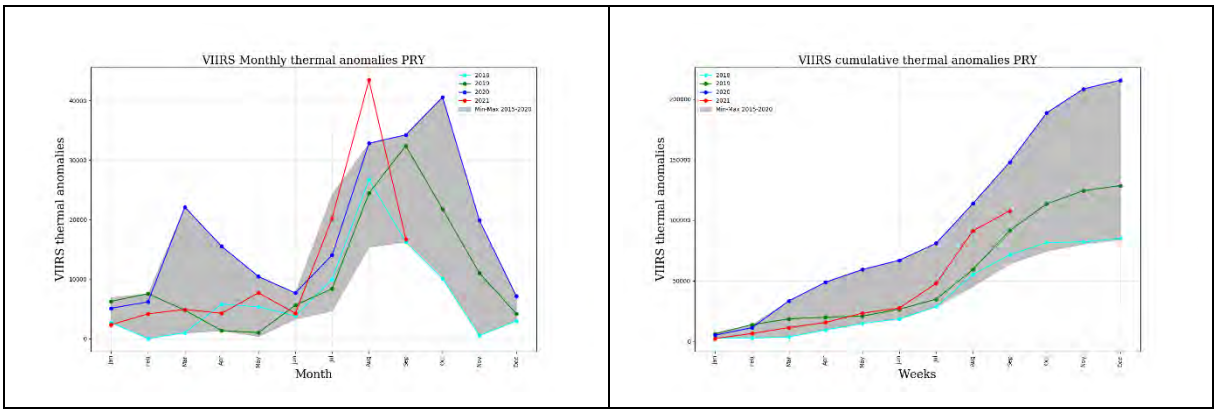


Figure 46.Trend of VIIRS thermal anomalies compared to data in the last six years.

Figure 47 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

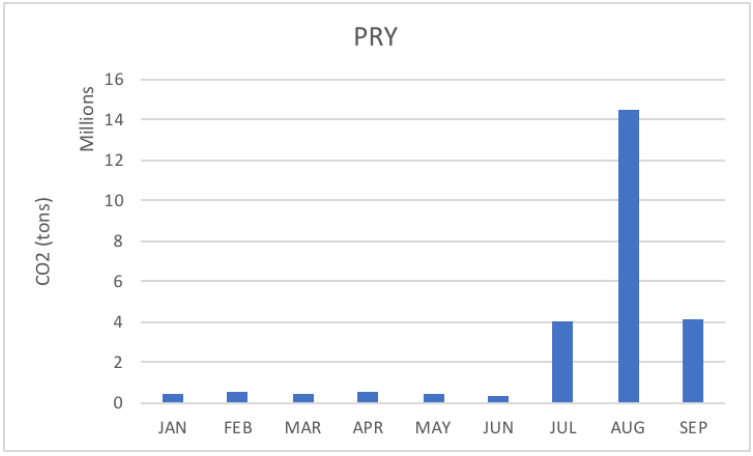


Figure 47.Trend of CO_2 emissions from biomass burning

16.6 Peru

The spatial extent of the burnt areas in the country in 2021 mapped by the Near-Real Time (NRT) process in GWIS is presented in Figure 48.

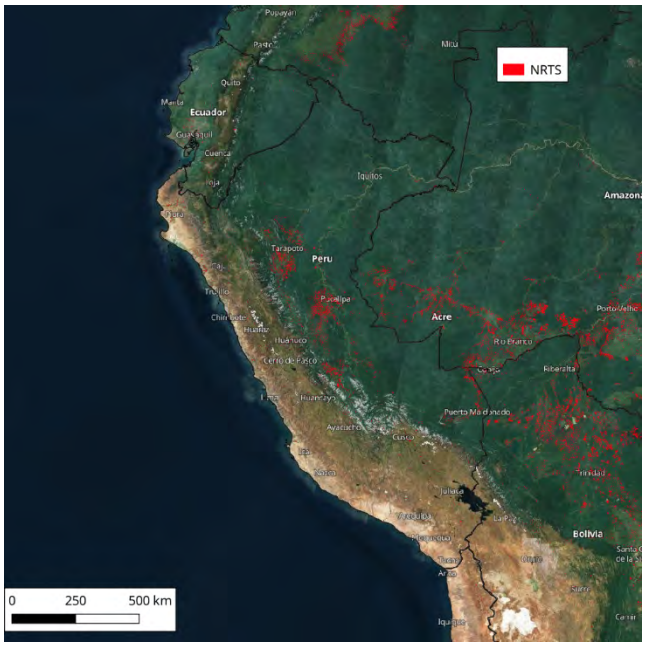


Figure 48.GWIS burnt areas for 2021 in Peru. Burnt areas until 5 September.

Peru in 2021 present similar values of burnt area of 2020. It is worth to mention that the burnt area data for Peru are subject to higher uncertainty than in other countries due to the mapping of small fires in large areas for long time periods.

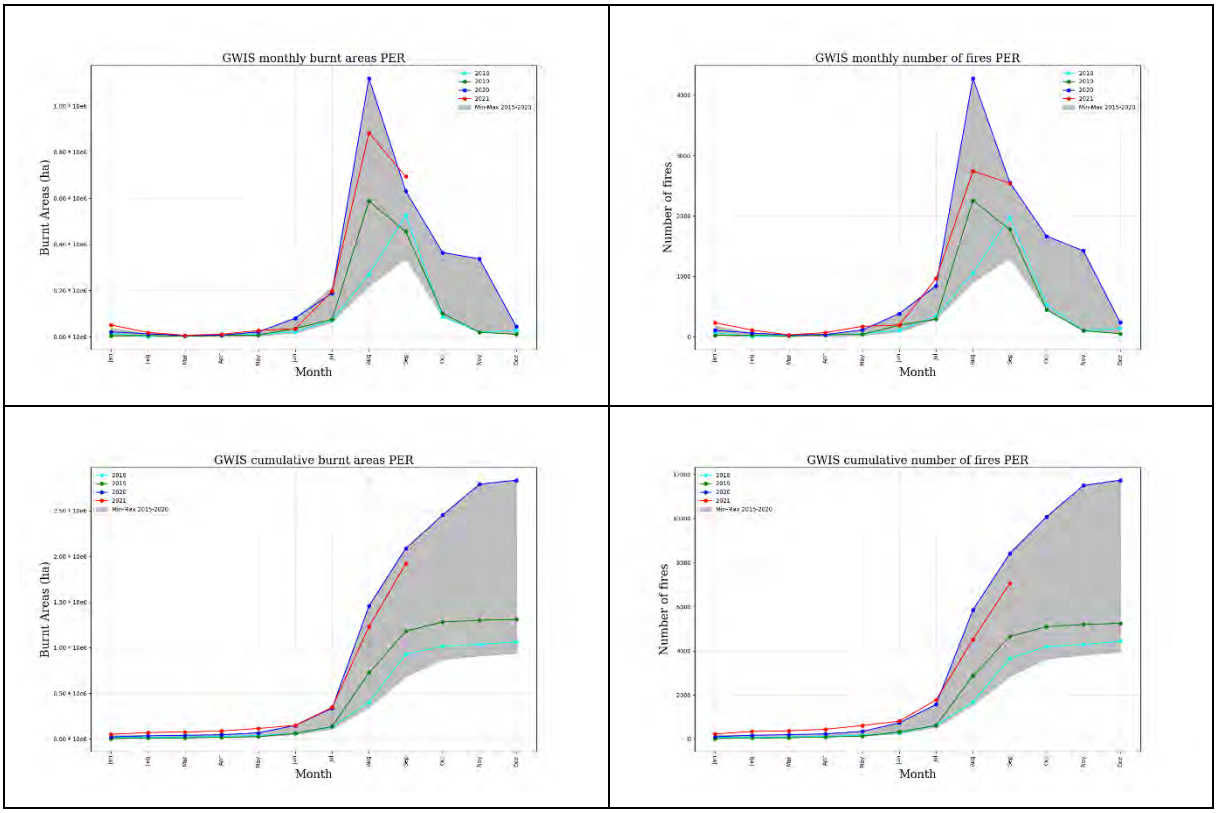


Figure 49.Trend of burnt areas and number of fires as compared to data in the last six years.

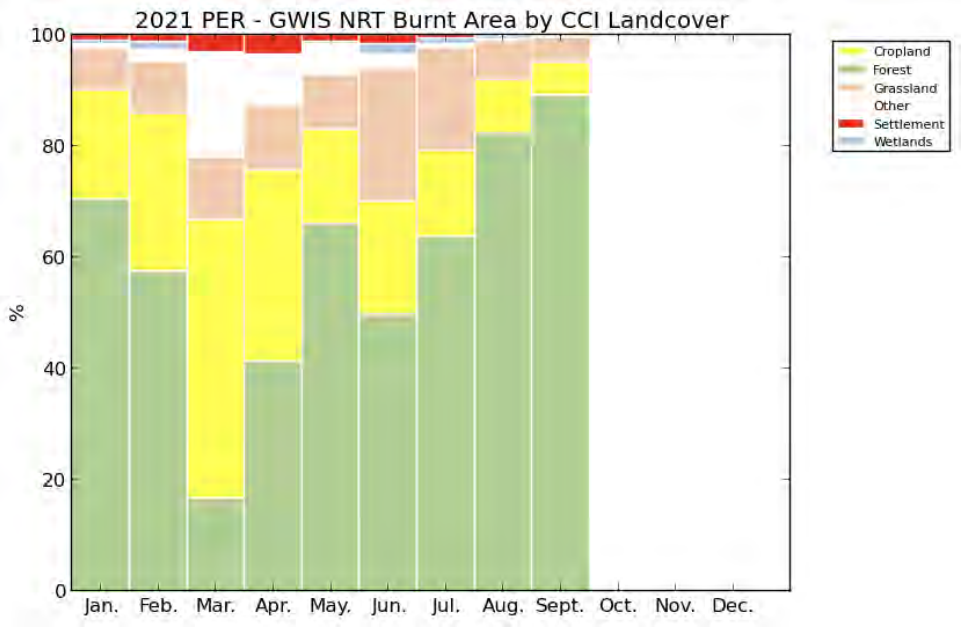


Figure 50.Monthly percentage of burnt land cover for the year 2021.

Figure 51 shows the monthly percentage of burnt area in protected areas for the year 2021.

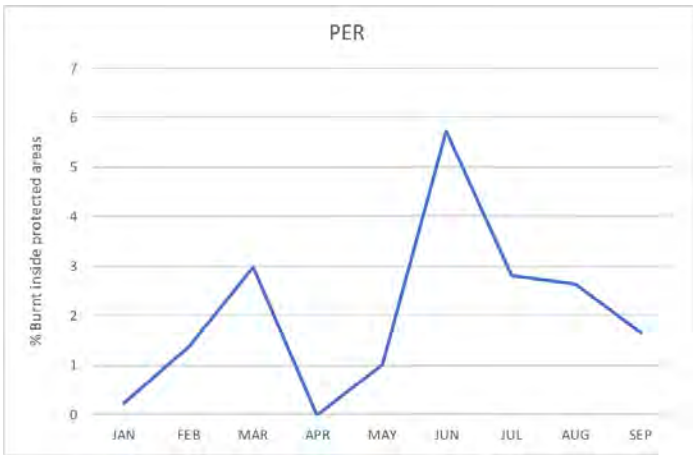


Figure 51.Monthly percentage of burnt area within protected areas for the year 2021

In terms of active fire spots detected by VIIRS, 2021 presents the same increasing trend seen in the number of fires shown in Figure 52, with a number of active fire spots in the first eight months of the year below the values of 2020 but September with values higher than 2020 as shown in Figure 38. This type of information is often reported in the media.

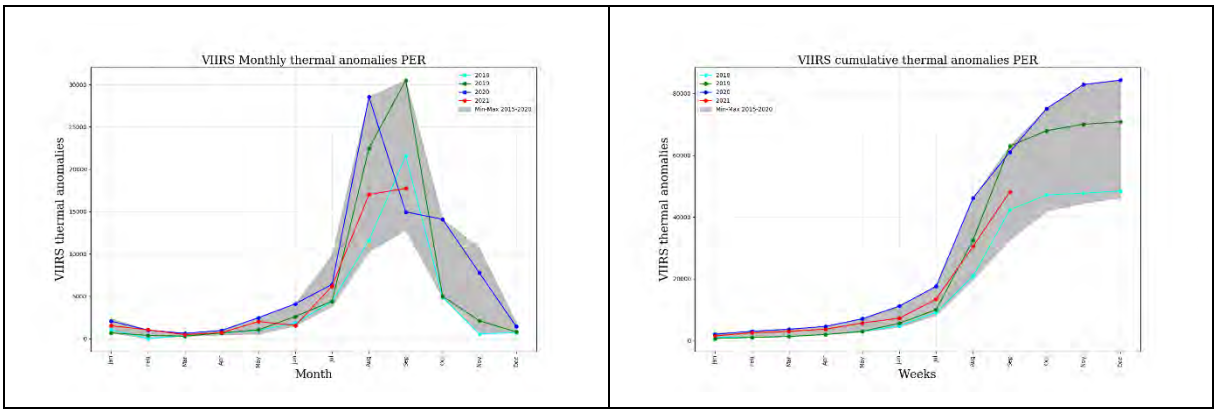


Figure 52.Trend of VIIRS thermal anomalies compared to data in the last six years.

Figure 53 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

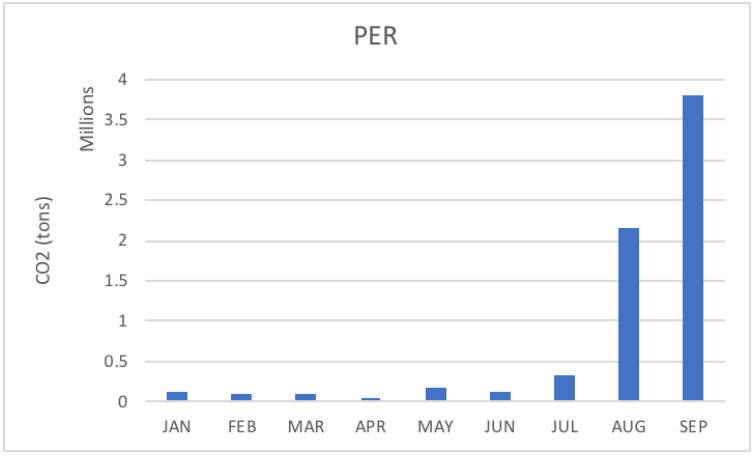


Figure 53.Trend of CO_2 emissions from biomass burning

16.7 Venezuela

In 2021, wildfires in Venezuela spread over the central and northern areas of the country, with very large fires on the west of the country, such as those on the west side of Maracaibo Lake. (Figure 54). This region is part of the designated “Llanos”, a complex savanna ecosystem sharing the border with Colombia, where it undergoes periodic, human-induced and natural biomass burning during the dry season, usually between November and April.

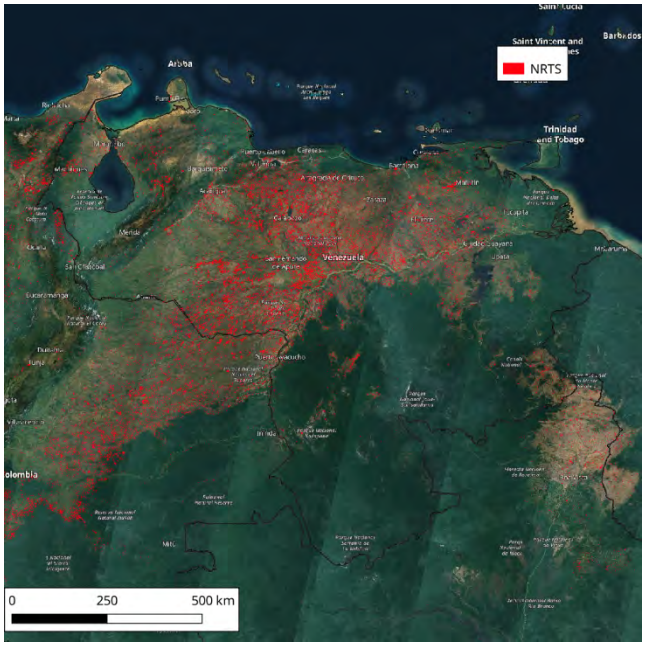


Figure 54.GWIS burnt areas for 2021 in Venezuela. Burnt areas until 5 September.

The current fire season for 2021 is below the last two years in all terms, see Figure 55. The total burnt area is above 2018, and considerably lower than that of the 2019 and 2020 fire season.

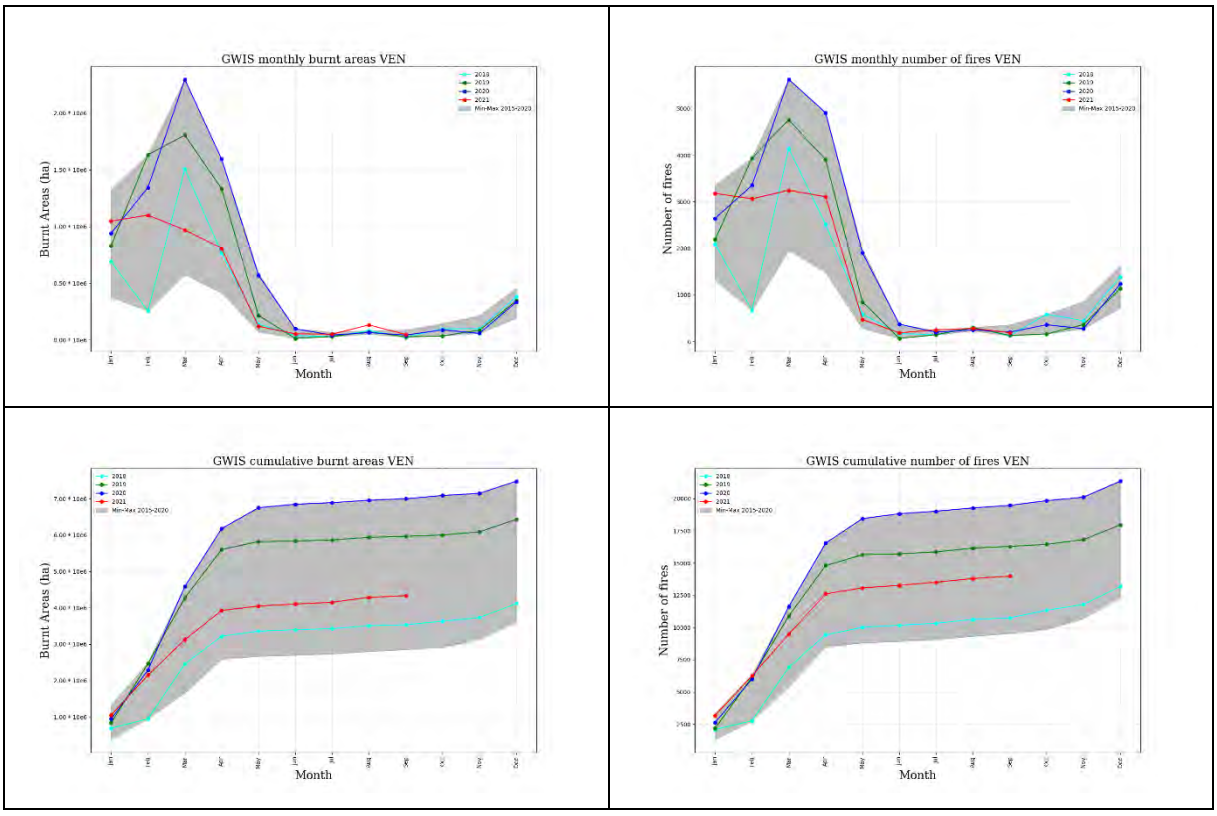


Figure 55.Trend of burnt areas and number of fires as compared to data in the last six years.

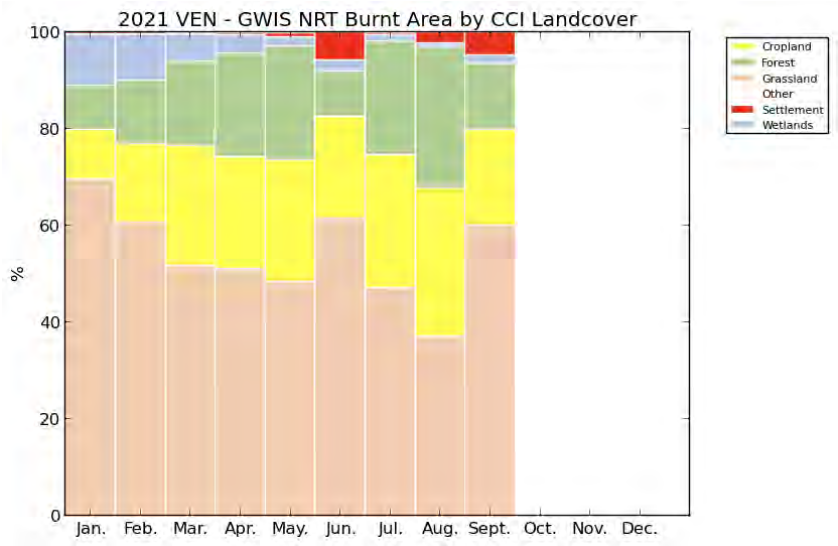


Figure 56.Monthly percentage of burnt land cover for the year 2021.

Figure 57 shows the monthly percentage of burnt area in protected areas for the year 2021.

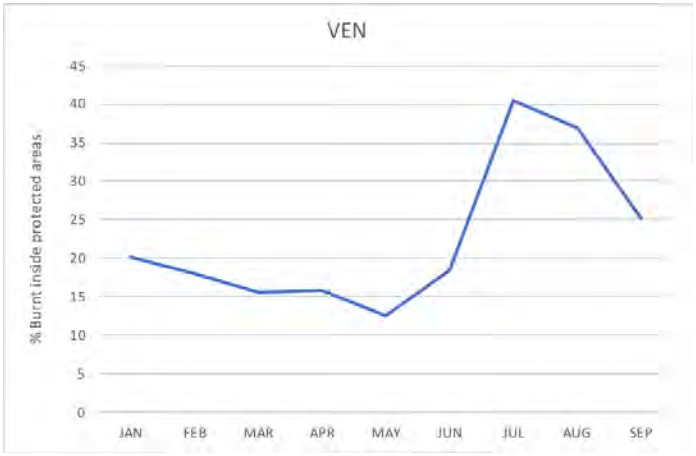


Figure 57.Monthly percentage of burnt area within protected areas for the year 2021

In terms of active fire spots detected by VIIRS, 2021 presents the same trend of the burned area and number of fires shown in Figure 41, with a number of active fire spots in the first nine months of the year below of those recorded in 2019 and 2020 as shown in Figure 58. This type of information is often reported in the media.

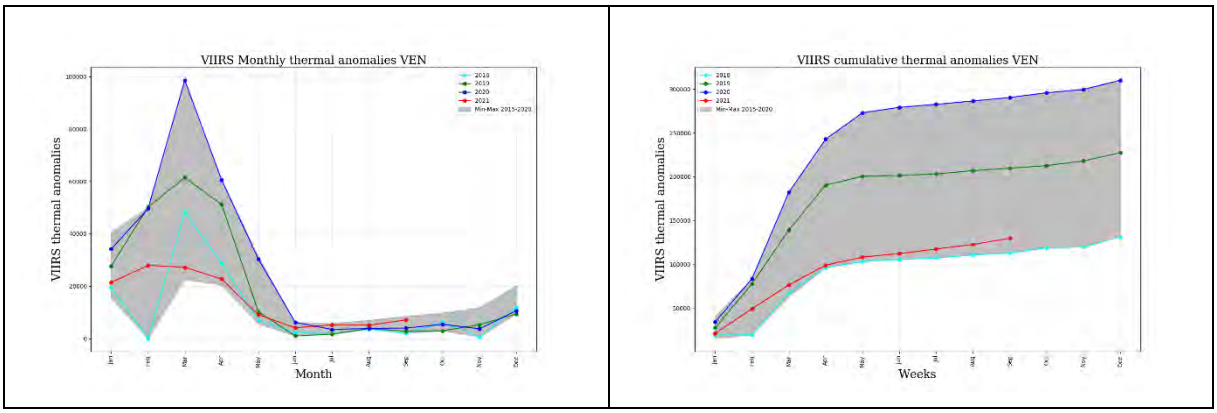


Figure 58.Trend of burnt areas and number of fires as compared to data in the last six years.

Figure 59 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

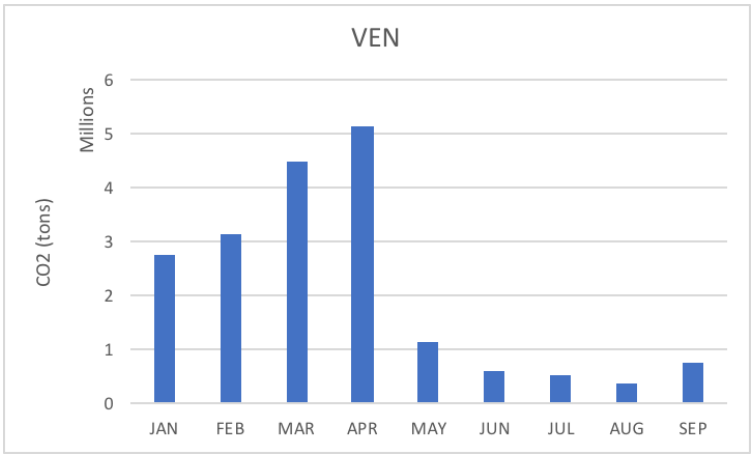


Figure 59.Trend of CO_2 emissions from biomass burning

16.8 Chile

In 2021, wildfires in Chile spread mainly in the central and southern part of the country (Figure 60).

Figure 60. GWIS burnt areas for 2021 in Chile. Burnt areas until 5 September.

The current fire season for 2021 is above the last two years in all terms, see Figure 61. The current year can be considered as quite severe since 2017 was a complete anomaly. During 2021, the accumulated number of fires reached the maximum of the last 6 years despite the total burnt area is far below the maximum.

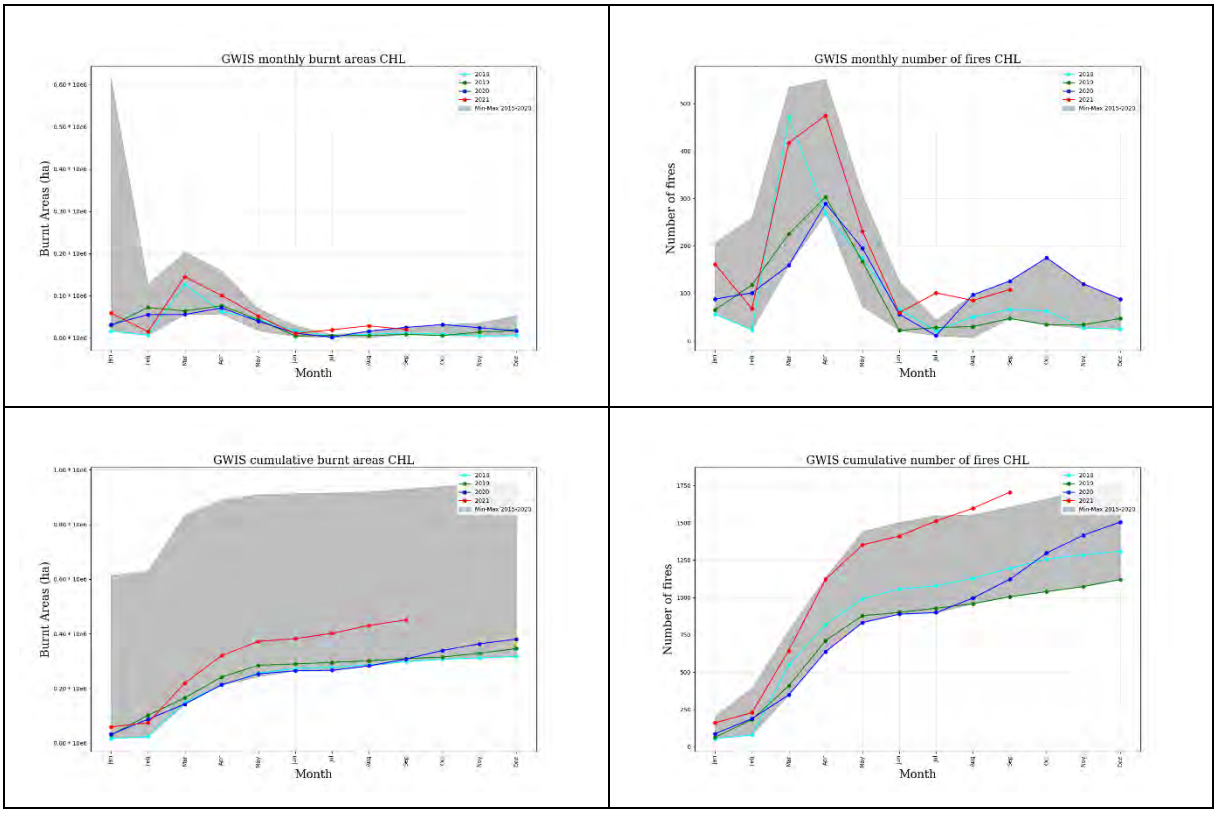


Figure 61. Trend of burnt areas and number of fires as compared to data in the last six years.

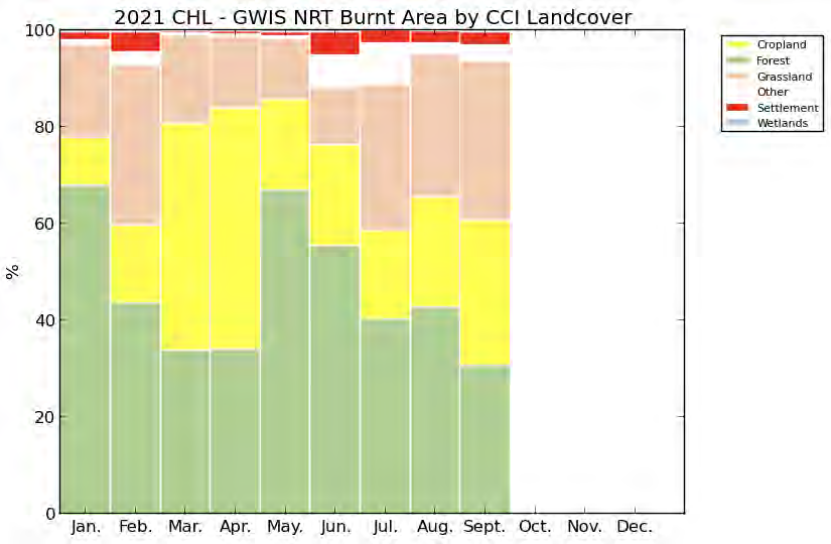


Figure 62.Monthly percentage of burnt land cover for the year 2021.

Figure 63 shows the monthly percentage of burnt area in protected areas for the year 2021.

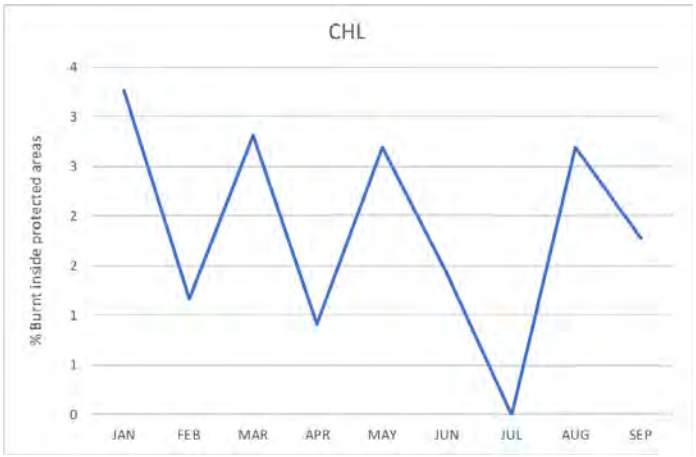


Figure 63.Monthly percentage of burnt area within protected areas for the year 2021

In terms of active fire spots detected by VIIRS, 2021 presents lower values than 2019 and 2020 for the first nine months as shown in Figure 64. This type of information is often reported in the media.

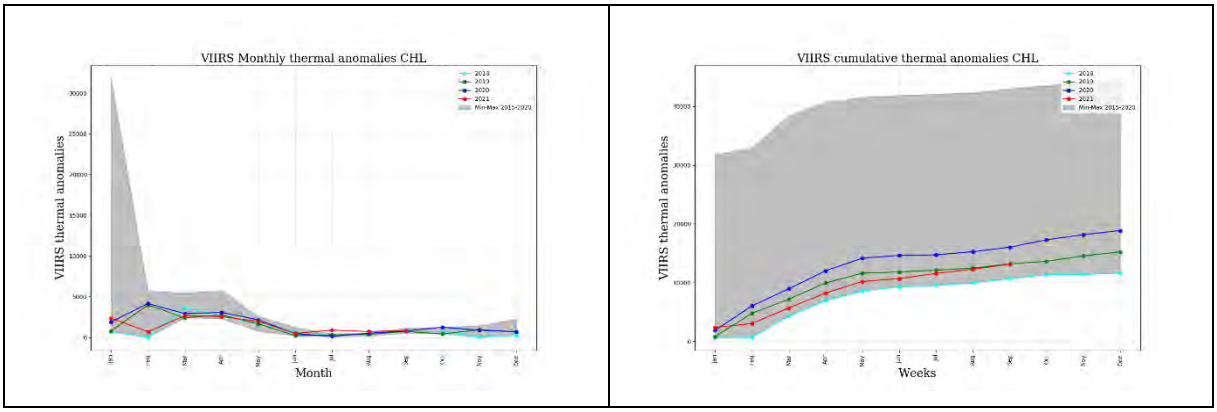


Figure 64.Trend of burnt areas and number of fires as compared to data in the last six years.

Figure 65 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

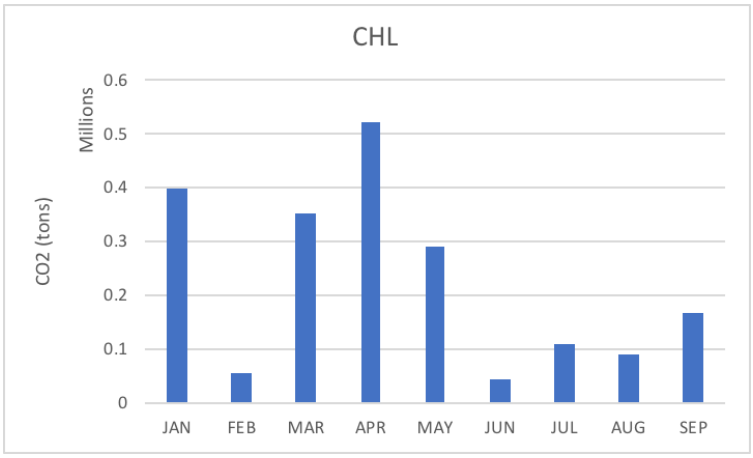


Figure 65.Trend of CO_2 emissions from biomass burning

16.9 Argentina

In 2021, the spatial extent of the burnt areas in the country mapped by the Near-Real Time (NRTS) process in GWIS is presented in Figure 66.

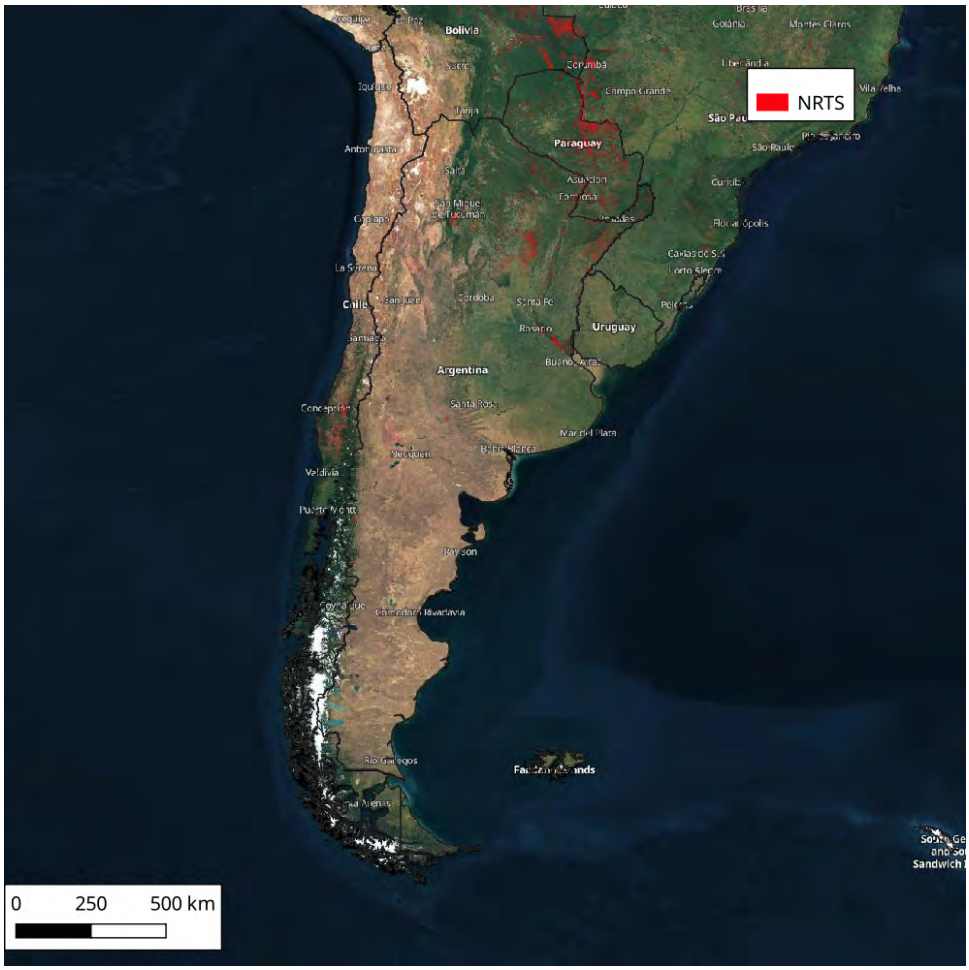
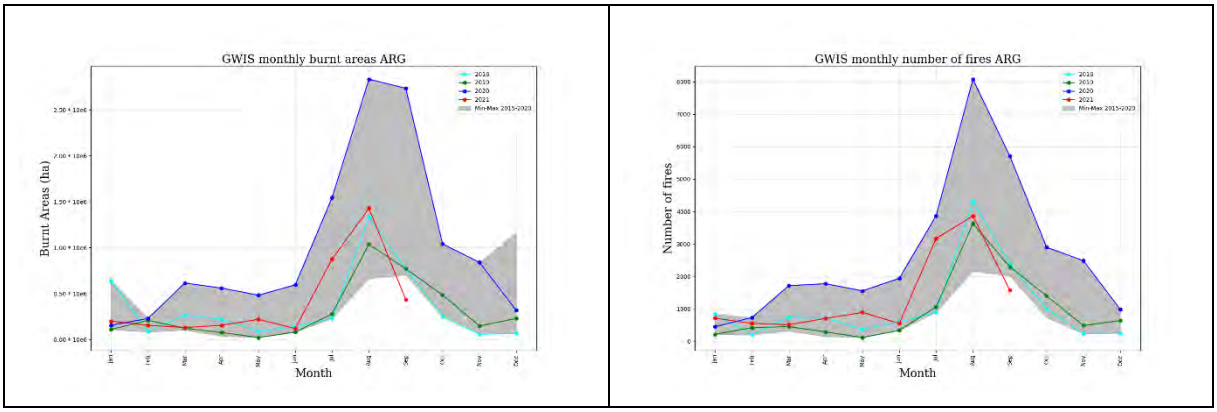


Figure 66.GWIS burnt areas for 2021 in Argentina. Burnt areas until 5 September.

The current fire season for 2021 is below than 2020 in all terms, see Figure 67. The current fire season is following the usual fire season for Argentina. The burnt area and number of fires are showing a similar behavior to 2018. September has less burnt area and number of fires than any of the six previous years.



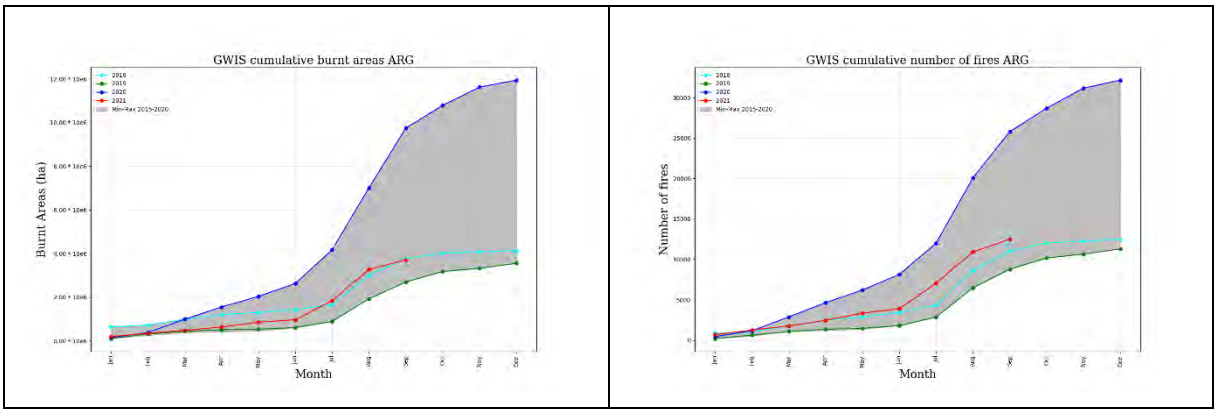


Figure 67.Trend of burnt areas and number of fires as compared to data in the last six years.

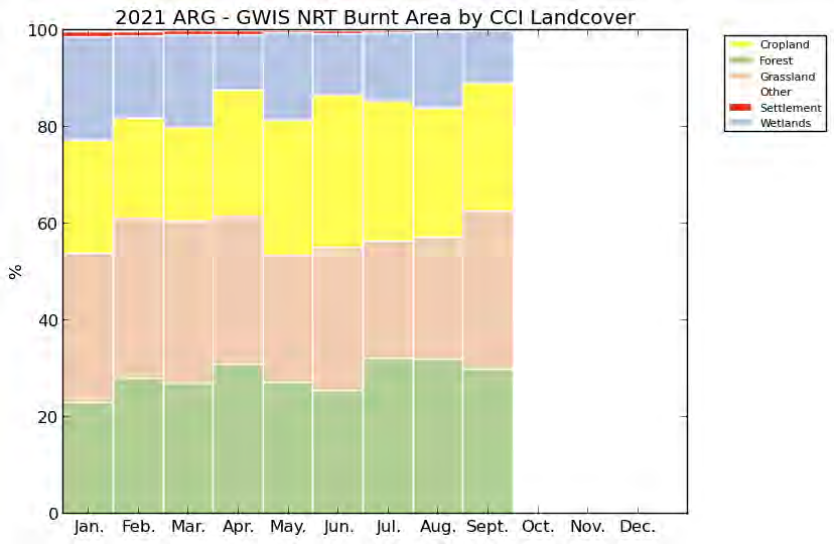


Figure 68.Monthly percentage of burnt land cover for the year 2021.

Figure 69 shows the monthly percentage of burnt area in protected areas for the year 2021.

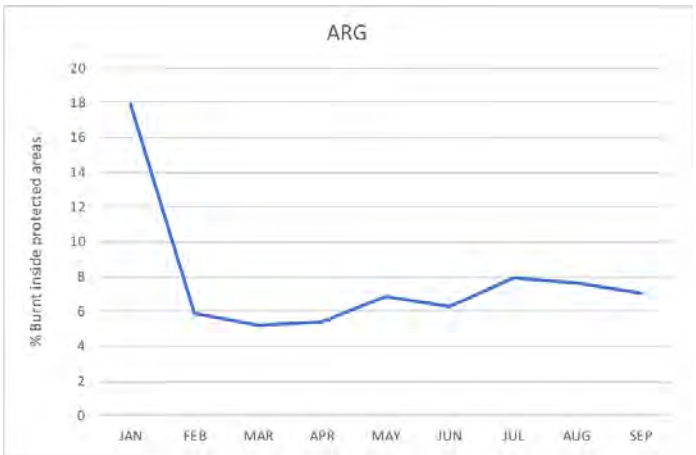


Figure 69.Monthly percentage of burnt area within protected areas for the year 2021

In terms of active fire spots detected by VIIRS, 2021 presents the same trend of the burned area and number of fires shown in Figure 41, with a number of active fire spots in the first nine months of the year below of those recorded in 2020 as shown in Figure 70. This type of information is often reported in the media.

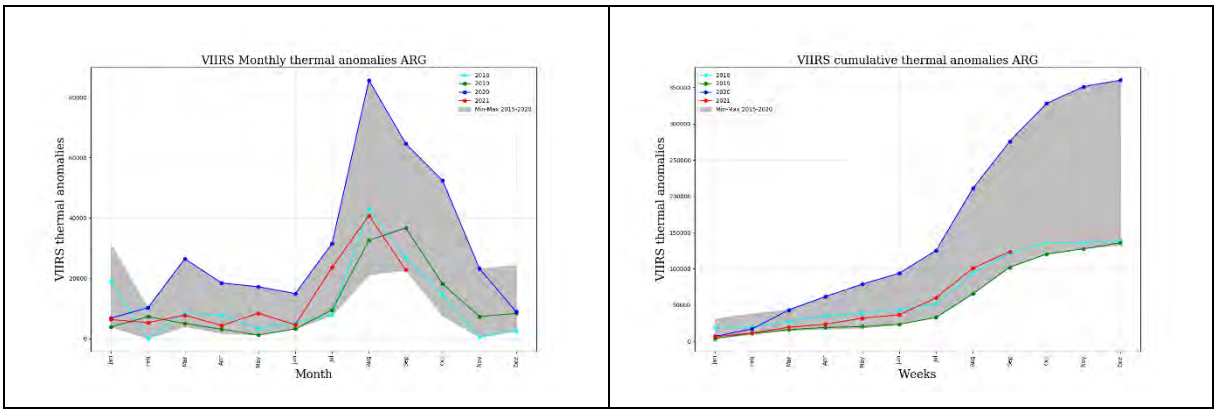


Figure 70.Trend of VIIRS thermal anomalies as compared to data in the last six years.

Figure 71 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

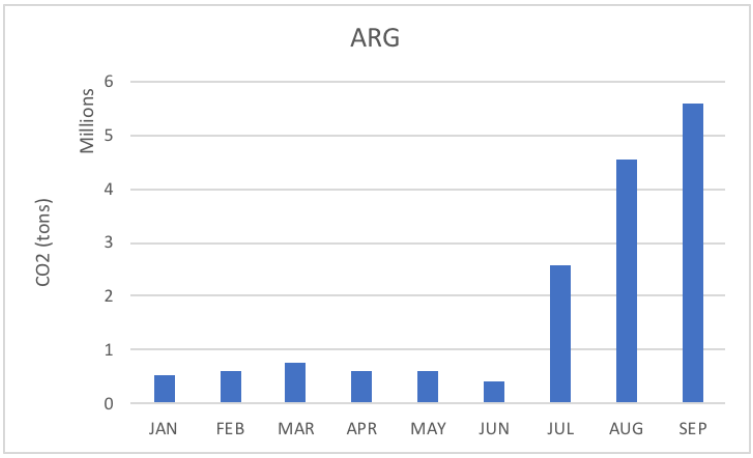


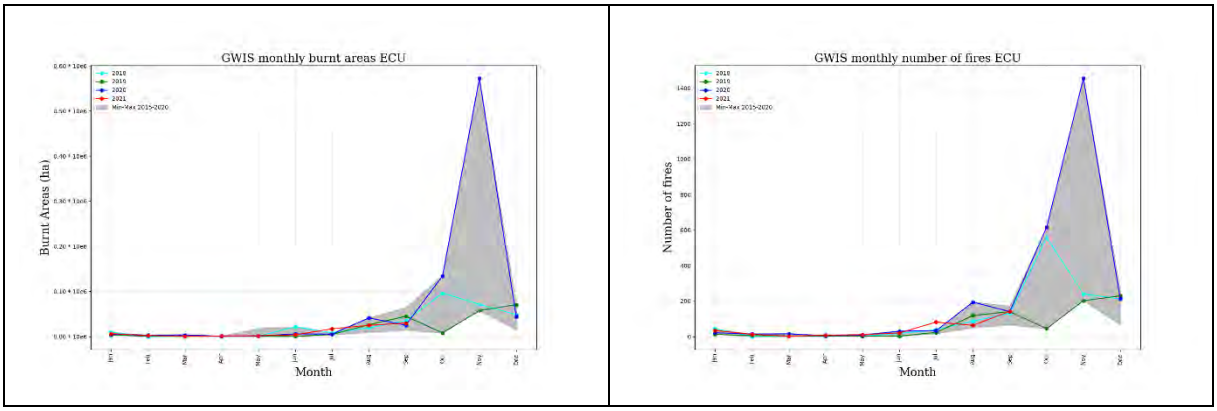
Figure 71.Trend of CO_2 emissions from biomass burning

16.10 Ecuador

In 2021, the spatial extent of the burnt areas in the country mapped by the Near-Real Time (NRT) process in GWIS is presented in Figure 72.

Figure 72.GWIS burnt areas for 2021 in Ecuador. Burnt areas until 5 September.

The current fire season for 2021 is slightly above the last two years in all terms, see Figure 73. It is worth mentioning that the fire season is still about to start.



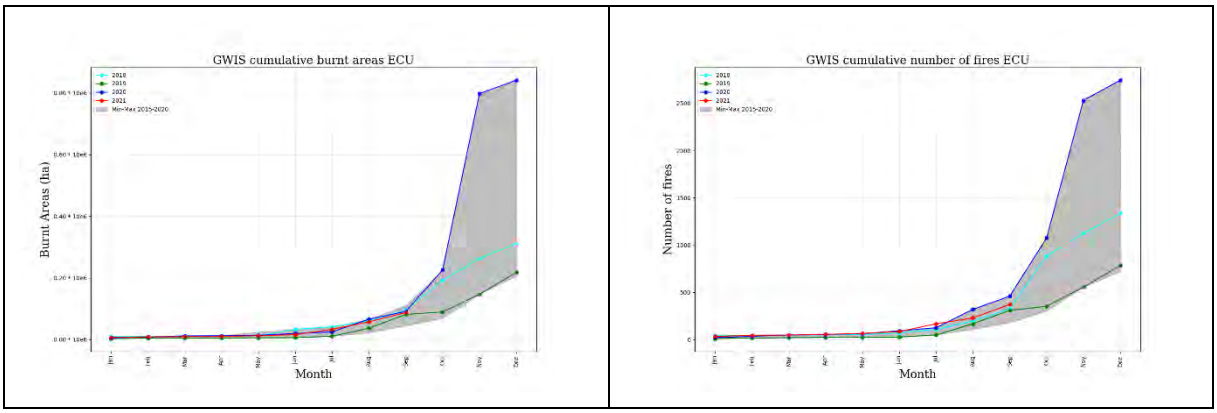


Figure 73.Trend of burnt areas and number of fires as compared to data in the last six years.

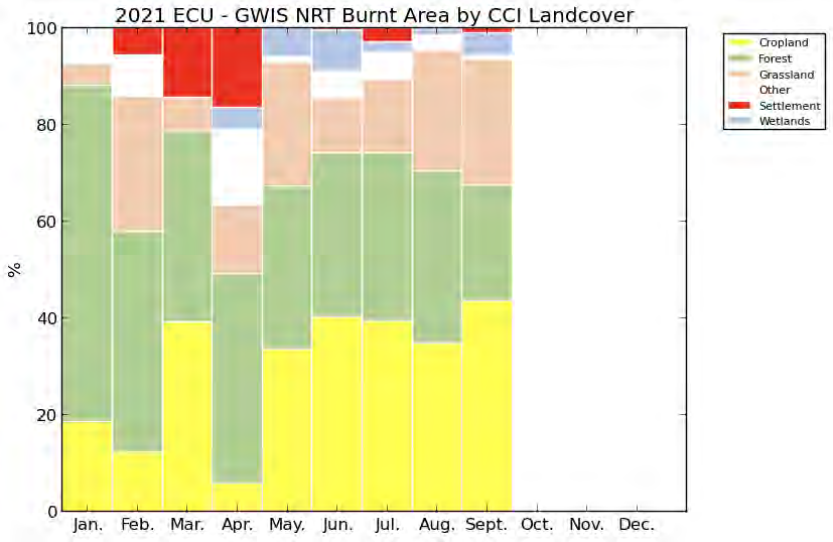


Figure 74.Monthly percentage of burnt land cover for the year 2021.

Figure 75 shows the monthly percentage of burnt area in protected areas for the year 2021.

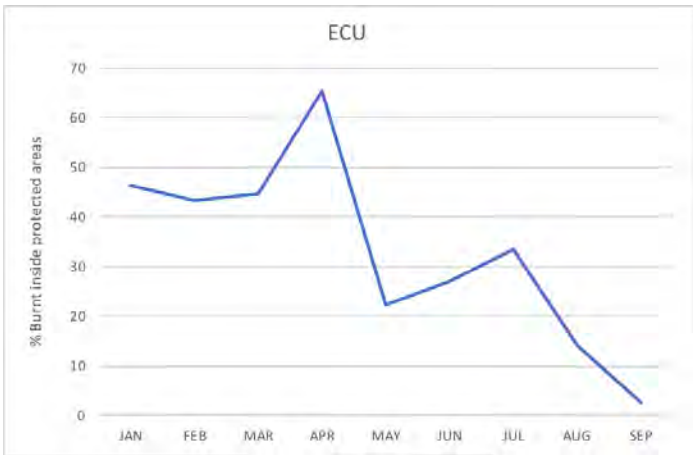


Figure 75.Monthly percentage of burnt area within protected areas for the year 2021

In terms of active fire spots detected by VIIRS, 2021 presents the same trend of the burned area and number of fires shown in Figure 52, with a number of active fire spots in the first nine months of the year below of those recorded in 2020 as shown in Figure 76. This type of information is often reported in the media.

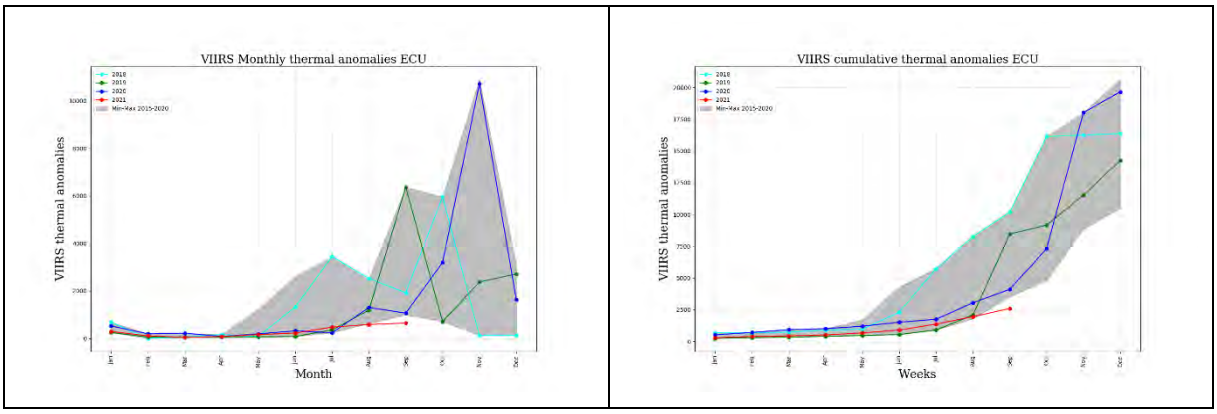


Figure 76.Trend of VIIRS thermal anomalies as compared to data in the last six years.

Figure 77 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

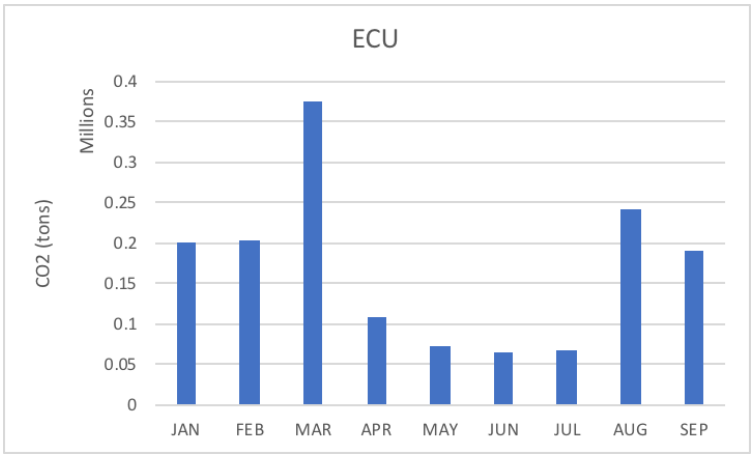


Figure 77.Trend of CO_2 emissions from biomass burning

16.11 Uruguay

In 2021, the spatial extent of the burnt areas in the country mapped by the Near-Real Time (NRT) process in GWIS is presented in Figure 78.

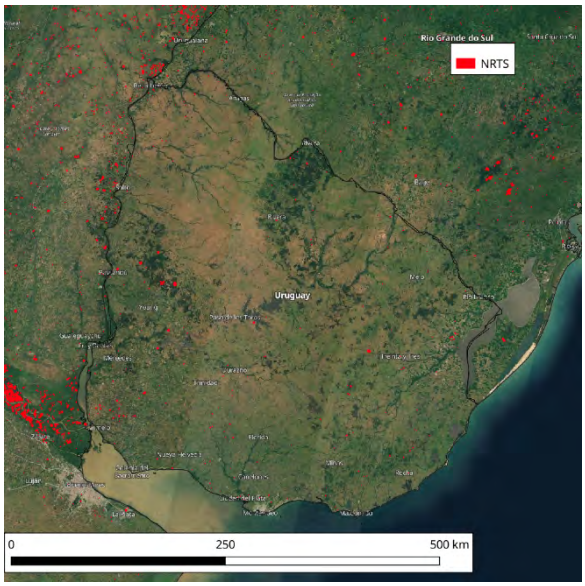


Figure 78.GWIS burnt areas for 2021 in Uruguay. Burnt areas until 5 September.

The current fire season for 2021 is below than 2020, see Figure 79. The total burnt area is above 2019, and considerably lower than of 2020 fire season. By September, almost 50 thousand ha of burnt areas have been mapped by GWIS in the region.

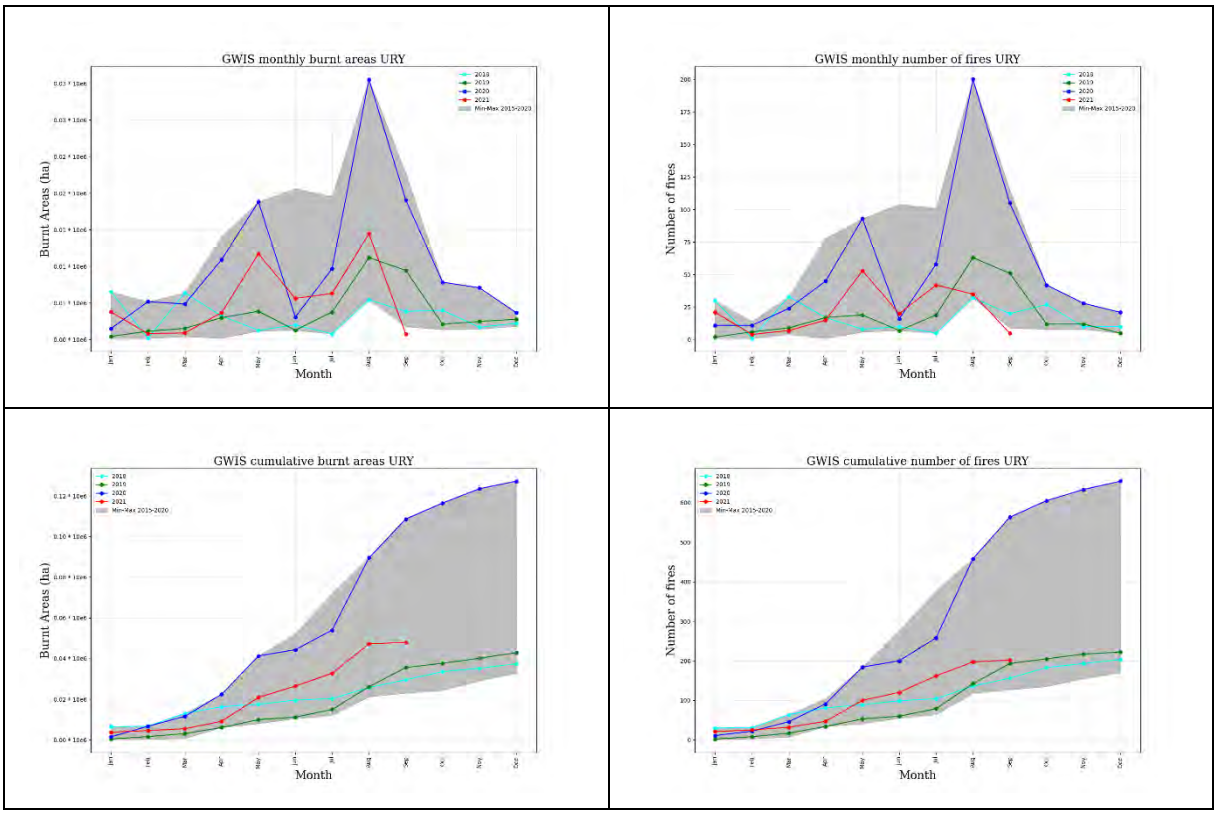


Figure 79.Trend of burnt areas and number of fires compared to data in the last six years.

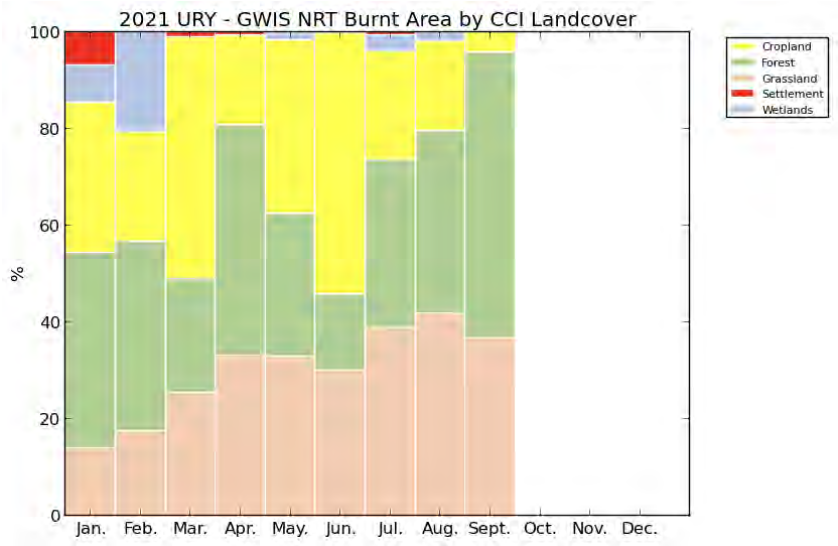


Figure 80.Monthly percentage of burnt land cover for the year 2021.

Figure 81 shows the monthly percentage of burnt area in protected areas for the year 2021.

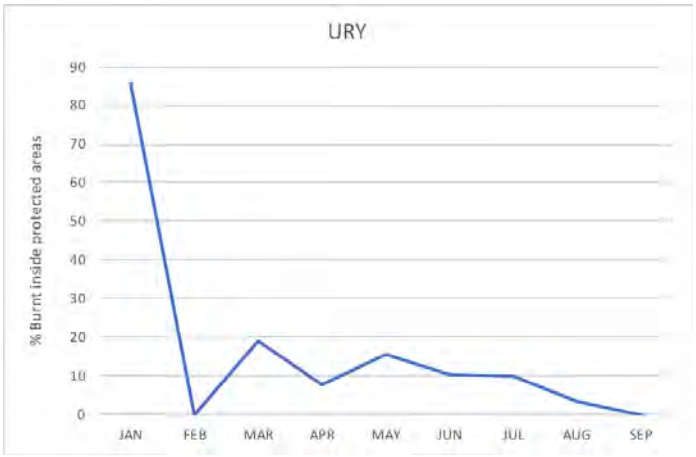


Figure 81.Monthly percentage of burnt area within protected areas for the year 2021

In terms of active fire spots detected by VIIRS, 2021 presents the same trend of the burned area and number of fires shown in Figure 56, with a number of active fire spots in the first nine months of the year below of those recorded in 2020 as shown in Figure 82. This type of data is those often reported in the media.

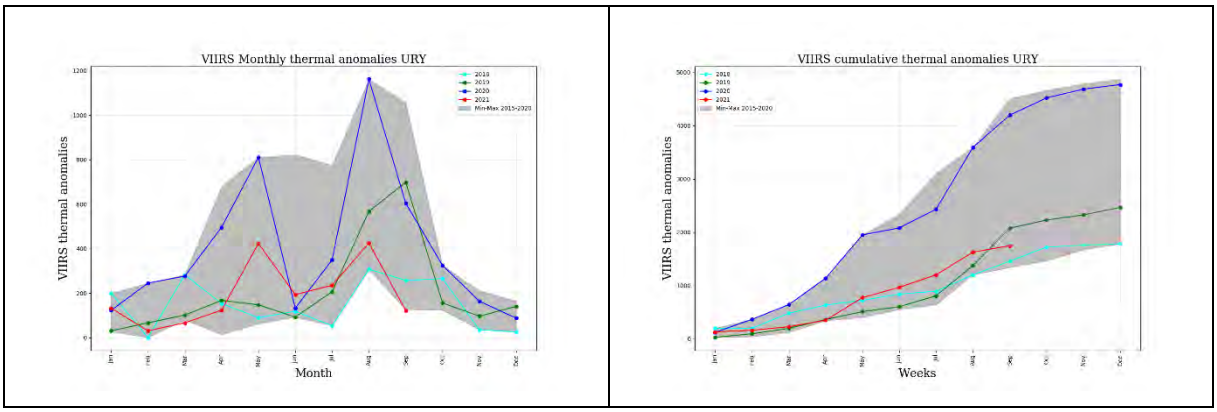


Figure 82.Trend of VIIRS thermal anomalies as compared to data in the last six years.

Figure 83 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

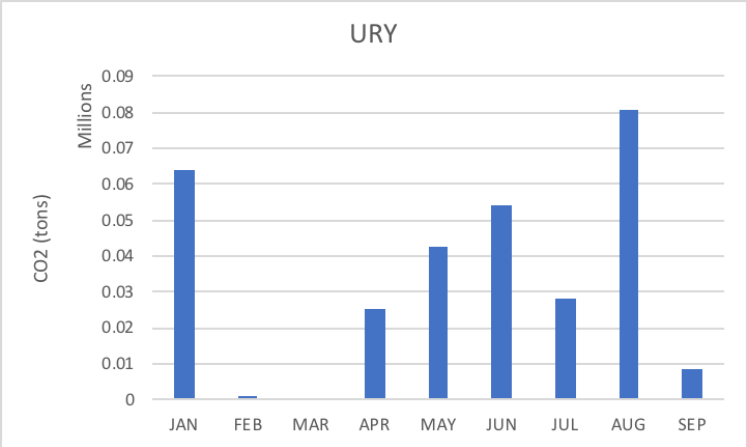


Figure 83.Trend of CO_2 emissions from biomass burning

16.12 French Guiana

In 2021, the spatial extent of the burnt areas in the country mapped by the Near-Real Time (NRT) process in GWIS is presented in Figure 84.

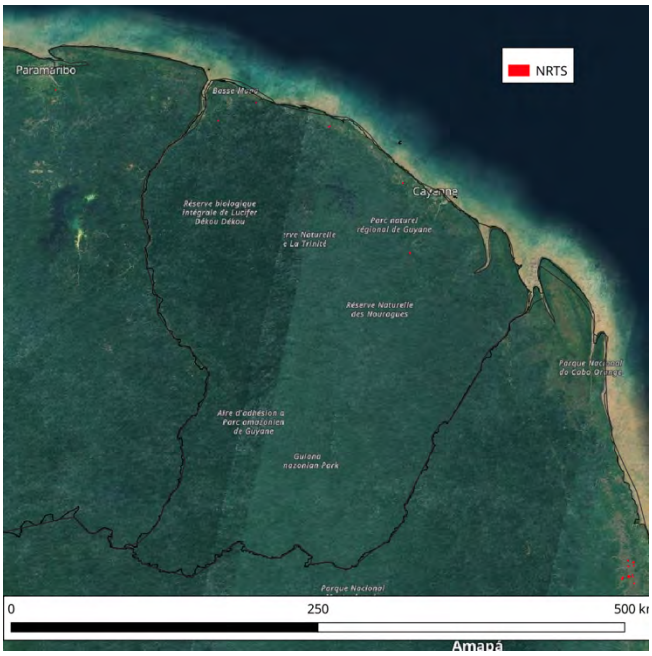


Figure 84.GWIS burnt areas for 2021 in French Guiana. Burnt areas until 5 September.

The current fire season for 2021 is similar to the previous years, see Figure 85. Until September, a total of around 700 ha of burnt areas have been mapped by GWIS in the region. The fire activity is almost none in September when the fire season should start increasing the burnt area and number of fires.

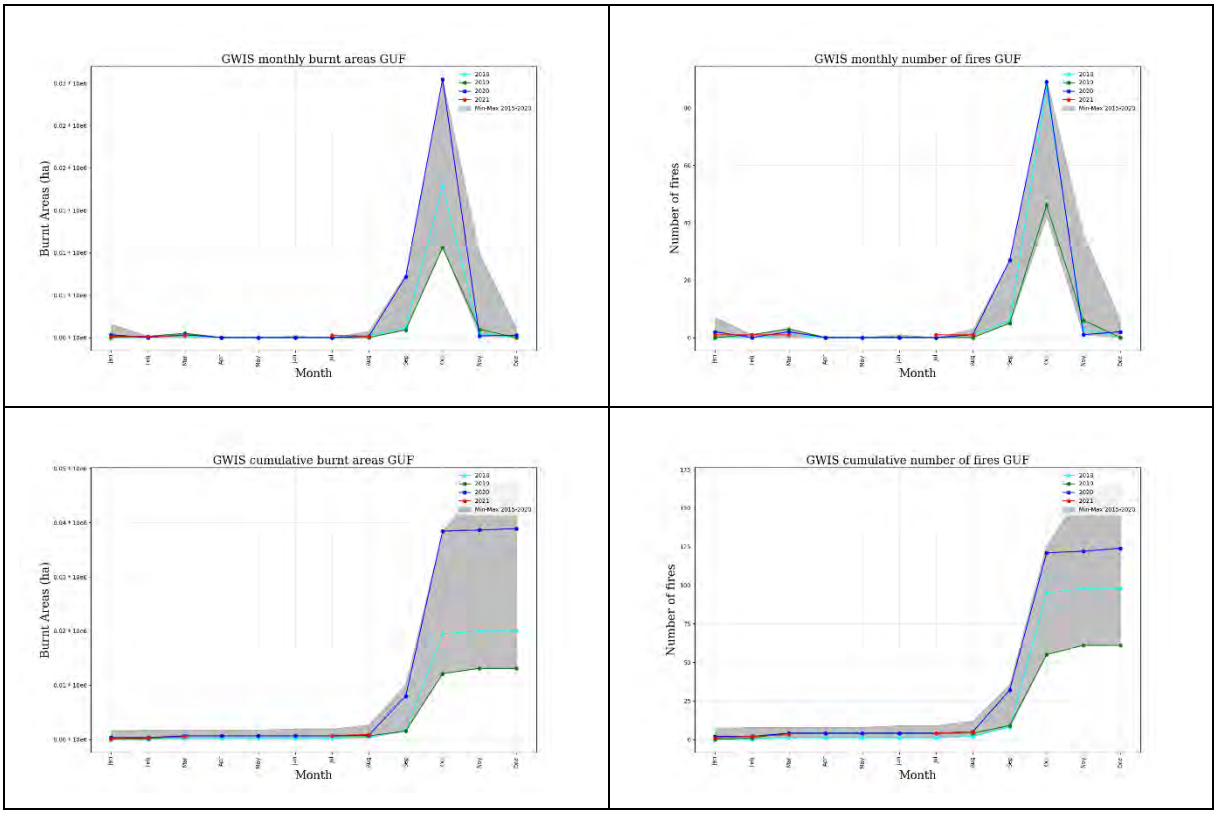


Figure 85.Trend of burnt areas and number of fires as compared to data in the last six years.

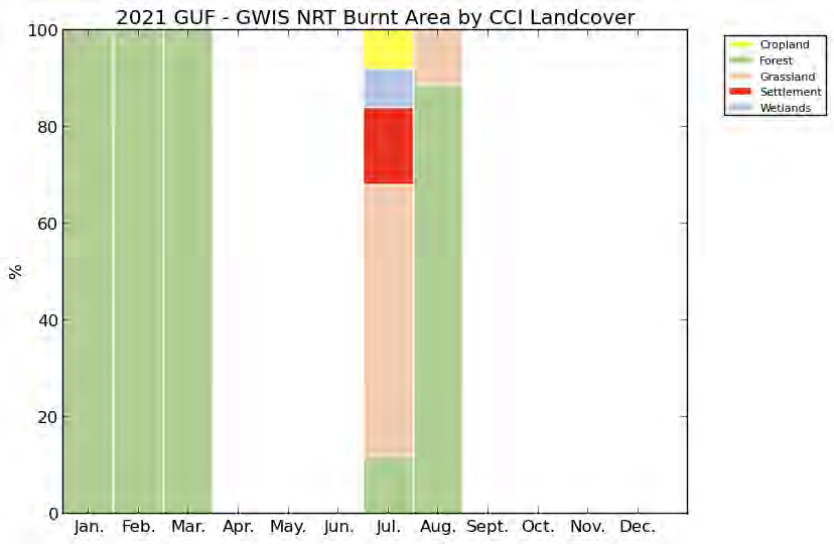


Figure 86.Monthly percentage of burnt land cover for the year 2021.

Figure 87 shows the monthly percentage of burnt area in protected areas for the year 2021.

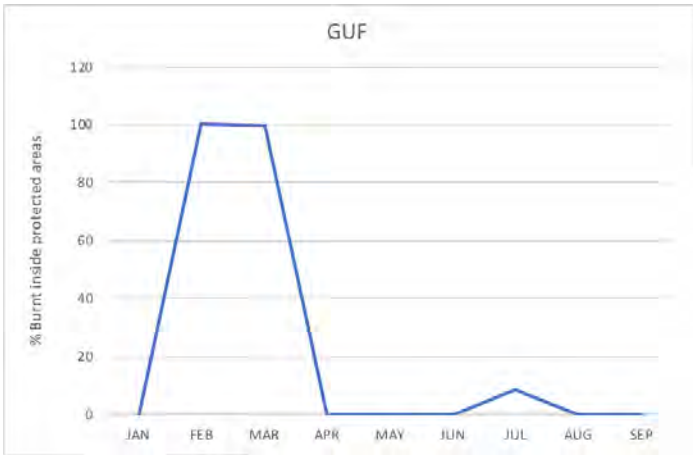


Figure 87.Monthly percentage of burnt area within protected areas for the year 2021

In terms of active fire spots detected by VIIRS, 2021 presents the same trend of the burned area and number of fires shown in Figure 88, with a number of active fire spots in the first nine months of the year below of those recorded in 2020 as shown in Figure 87. This type of data is those often reported in the media.

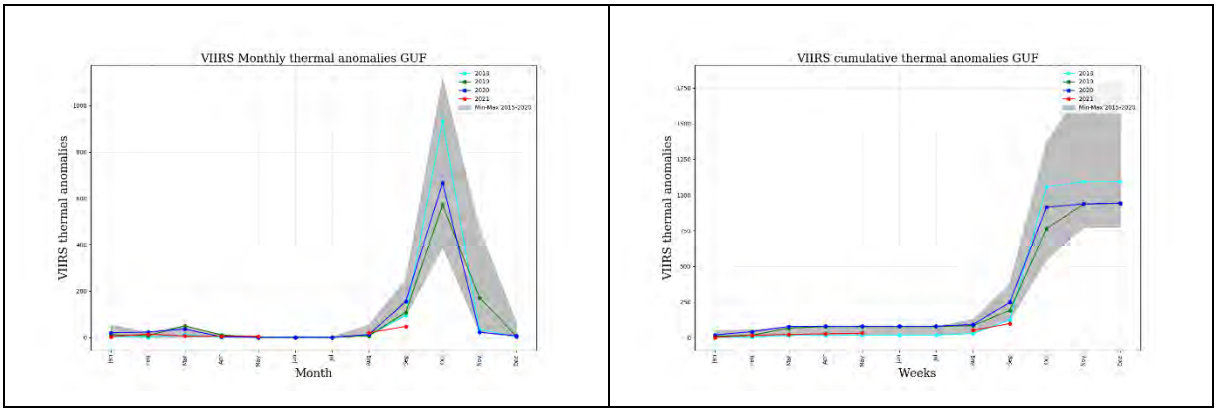


Figure 88.Trend of VIIRS thermal anomalies as compared to data in the last six years.

Figure 89 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

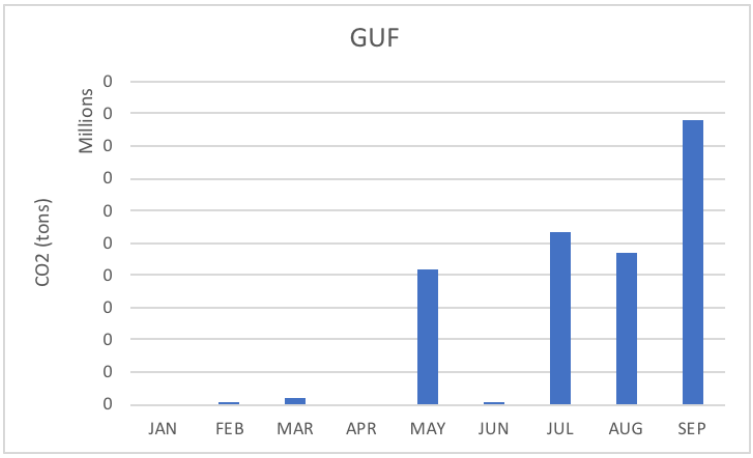


Figure 89.Trend of CO_2 emissions from biomass burning

16.13 Guyana

In 2021, the spatial extent of the burnt areas in the country mapped by the Near-Real Time (NRT) process in GWIS is presented in Figure 90.

Figure 90.GWIS burnt areas for 2021 in Guyana. Burnt areas until 5 September.

The current fire season for 2021 is below the last two years in all terms, see Figure 91. By September, almost 60 thousand ha of burnt areas have been mapped by GWIS in the region, being the current month of September a month below the previous years.

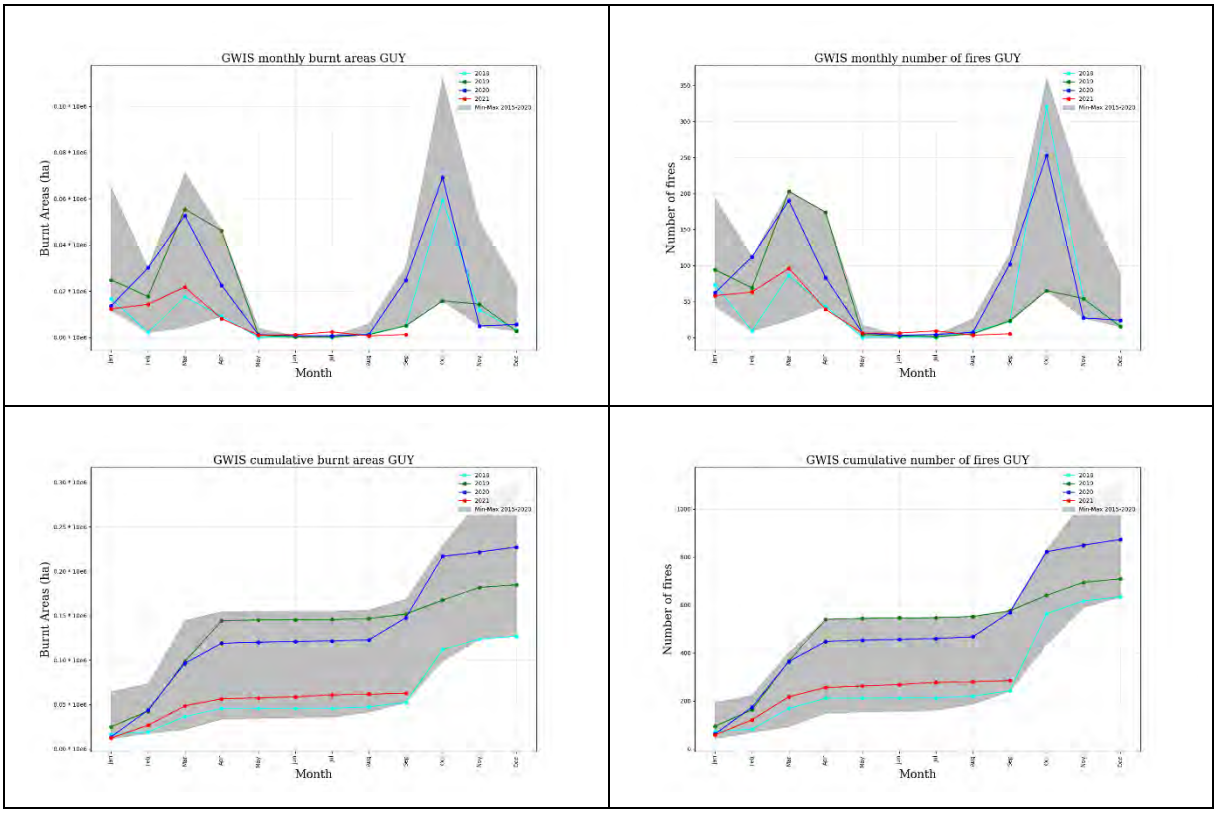


Figure 91.Trend of burnt areas and number of fires as compared to data in the last six years.

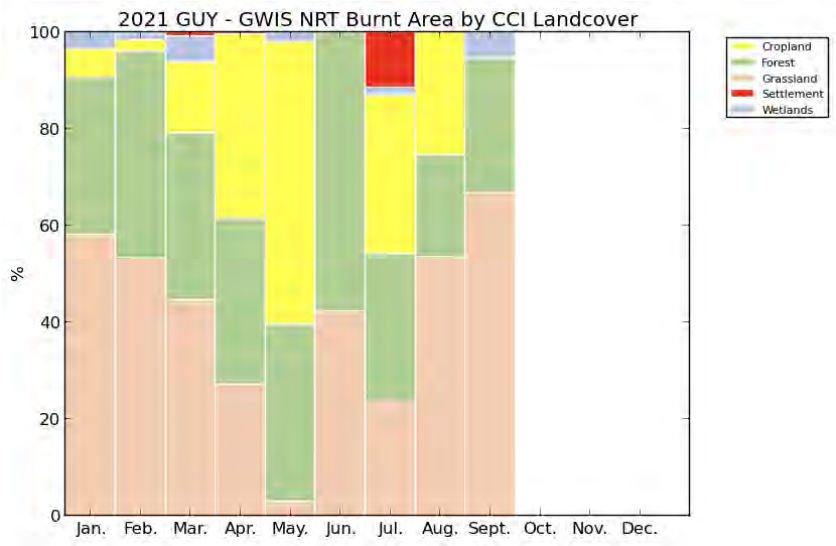


Figure 92.Monthly percentage of burnt land cover for the year 2021.

Figure 93 shows the monthly percentage of burnt area in protected areas for the year 2021.

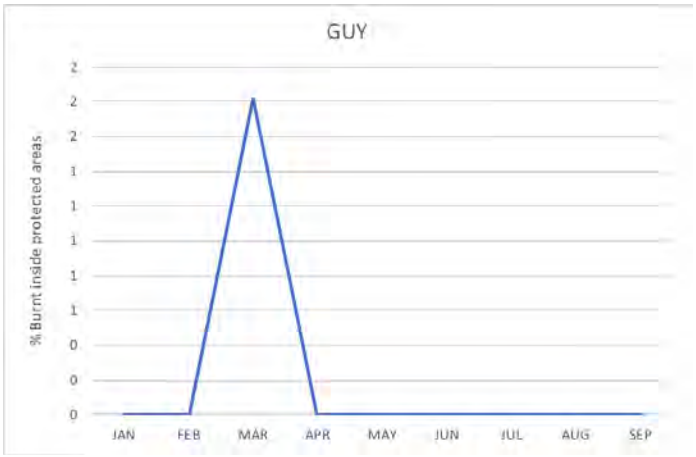


Figure 93.Monthly percentage of burnt area within protected areas for the year 2021

In terms of active fire spots detected by VIIRS, 2021 presents the lowest number in the last six years as shown in Figure 94. This type of data is those often reported in the media.

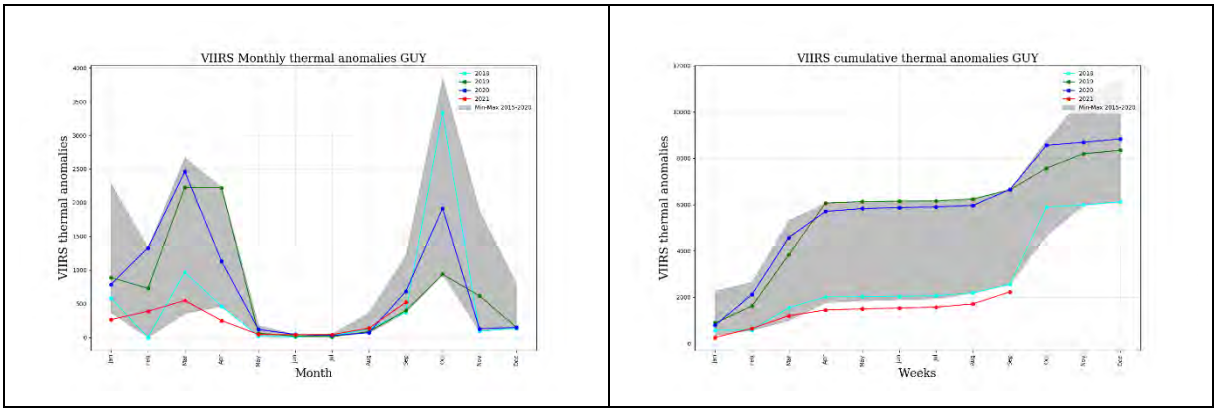


Figure 94.Trend of VIIRS thermal anomalies as compared to data in the last six years.

Figure 95 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

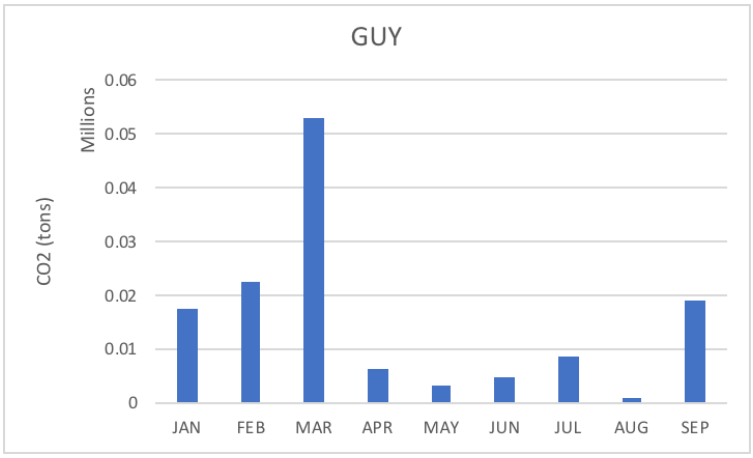


Figure 95.Trend of CO_2 emissions from biomass burning

16.14 Suriname

In 2021, the spatial extent of the burnt areas in the country mapped by the Near-Real Time (NRT) process in GWIS is presented in Figure 96.

Figure 96.GWIS burnt areas for 2021 in Suriname. Burnt areas until 5 September.

The current fire season for 2021 is similar to the last two years in all terms, see Figure 97. Until September, 4533 ha of burnt areas have been mapped by GWIS in the region.

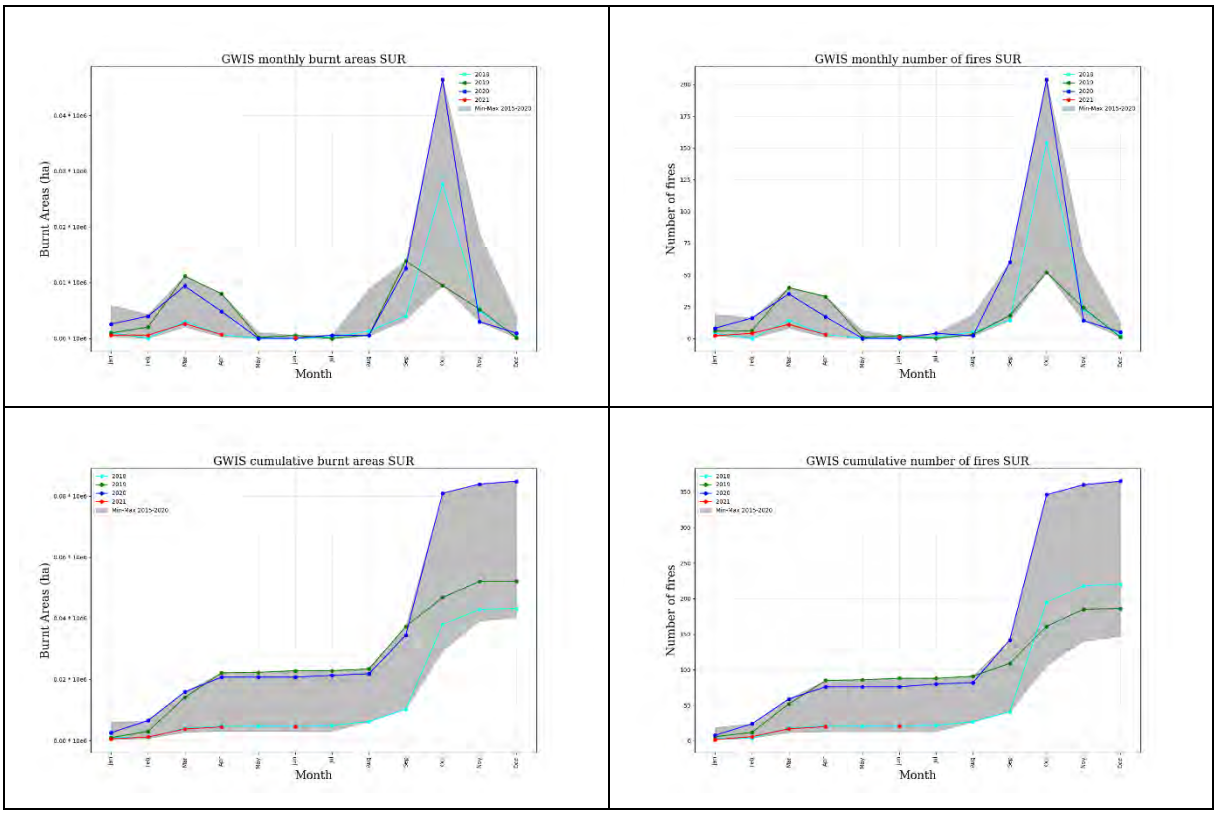


Figure 97.Trend of burnt areas and number of fires as compared to data in the last six years.

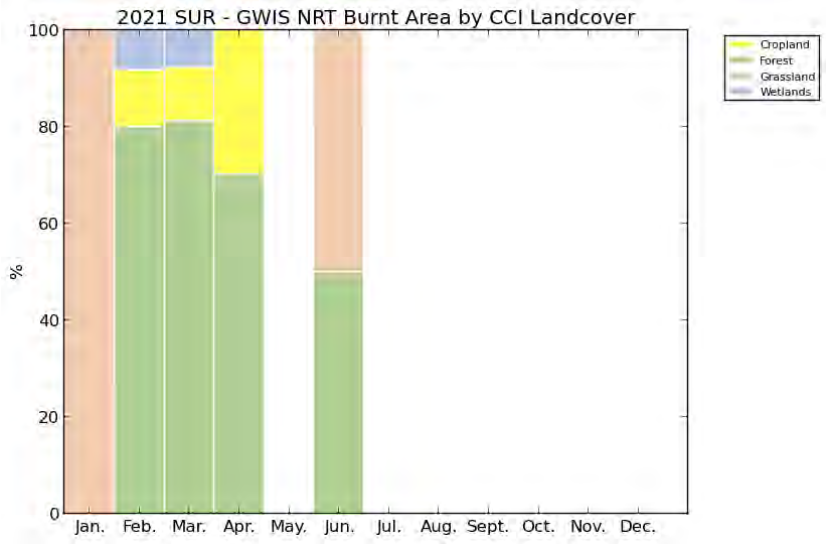


Figure 98.Monthly percentage of burnt land cover for the year 2021.

Figure 99 shows the monthly percentage of burnt area in protected areas for the year 2021.

Figure 99.Monthly percentage of burnt area within protected areas for the year 2021

In terms of active fire spots detected by VIIRS, 2021 presents the same trend of the burned area and number of fires shown in Figure 68, with a number of active fire spots in the first nine months of the year below of those recorded in the last six years as shown in Figure 100. This type of data is those often reported in the media.

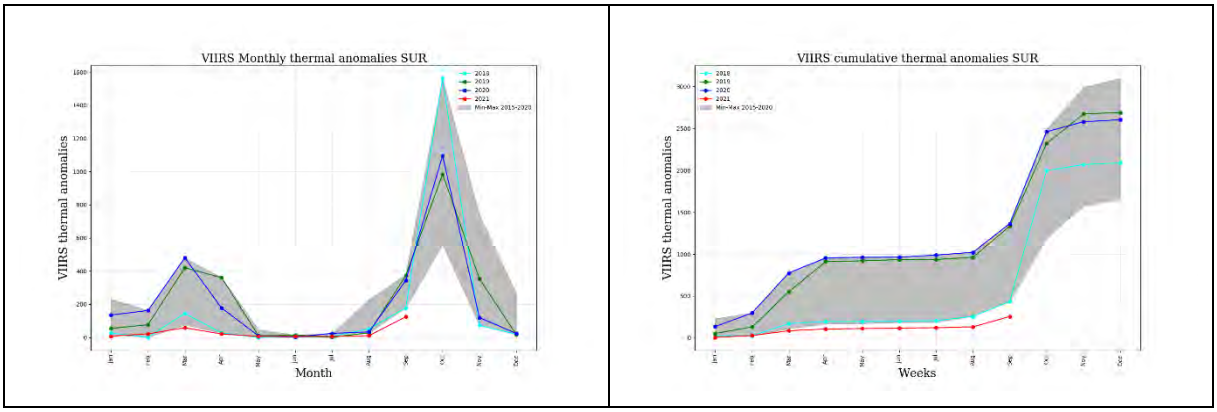


Figure 100.Trend of VIIRS thermal anomalies as compared to data in the last six years.

Figure 101 shows the 2021 monthly biomass burning CO_2 emissions from the Global Fire Assimilation System (GFAS).

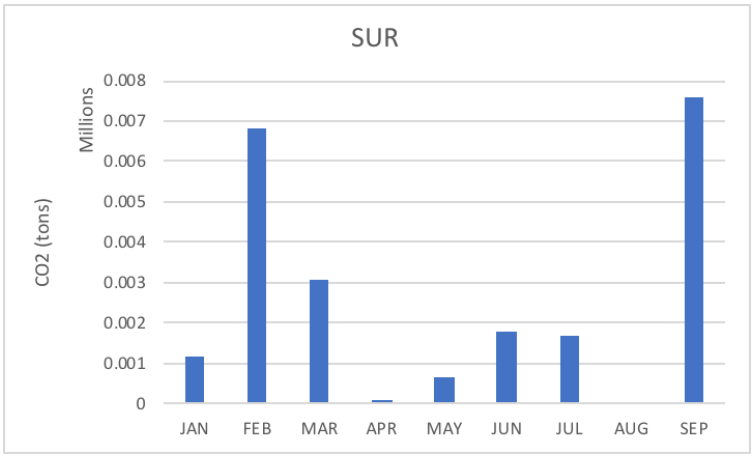


Figure 101.Trend of CO_2 emissions from biomass burning

16.15 Fire danger and fire weather forecast in the Amazon region

The seasonal fire weather forecast (monthly) of temperature and precipitation anomalies for October is presented in Figure 102. **A strong average temperature anomaly is forecasted for eastern/central Brazil, extending to Bolivia, Argentina and Peru.** The forecast estimates a decrease on precipitation rates for this month in eastern Paraguay and southeastern Brazil and increase on precipitation on the northern/southeastern Brazil, BLA and northern countries of South America.

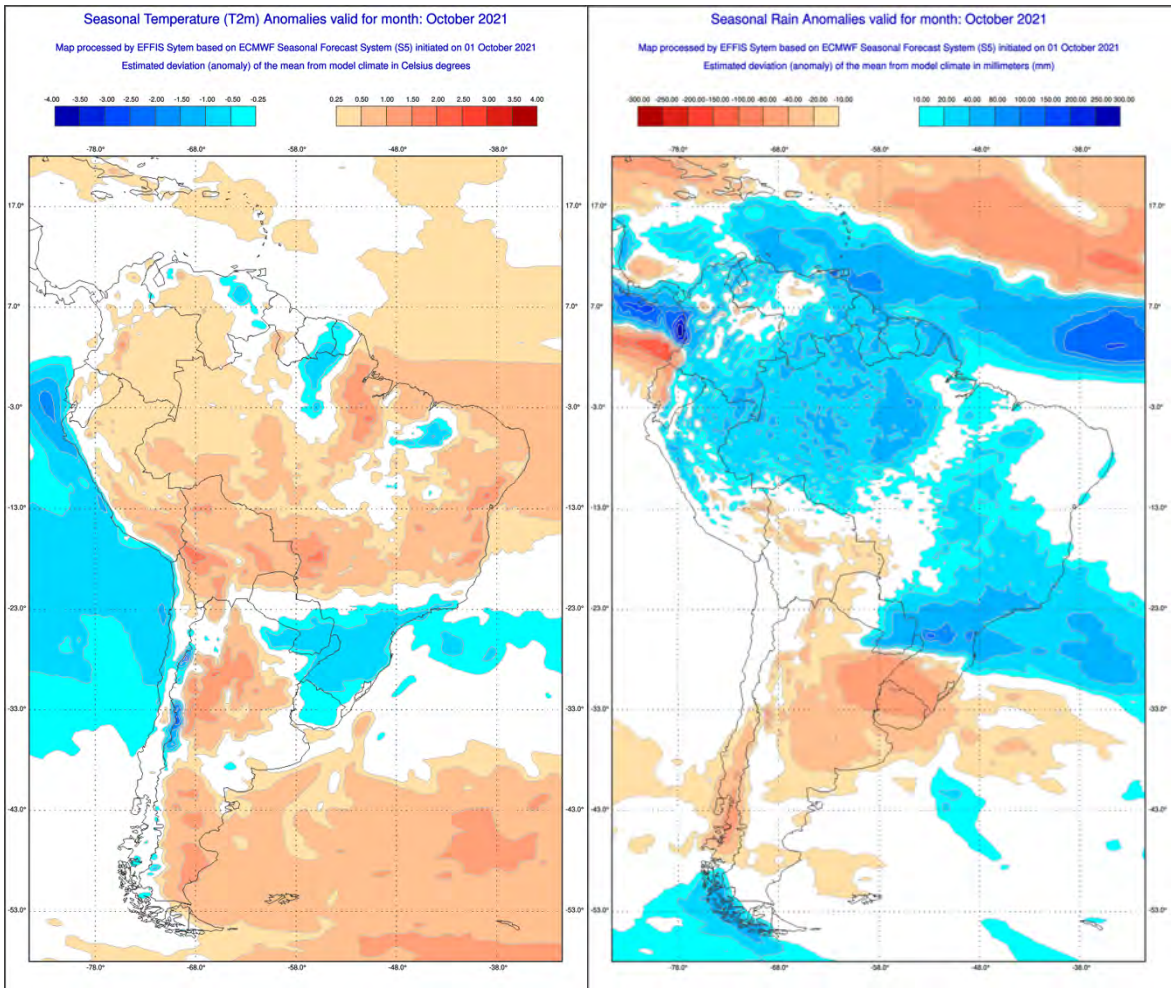


Figure 102.Fire weather anomalies of the current month, October, 2021.

At the current date, its foreseen for November a continuation of above average temperatures anomalies for mainly Argentina and southern Bolivia, and a decrease mainly in southeastern Brazil. The forecast for the precipitation rates anomalies in November will be pretty similar with September for the region (Figure 103).

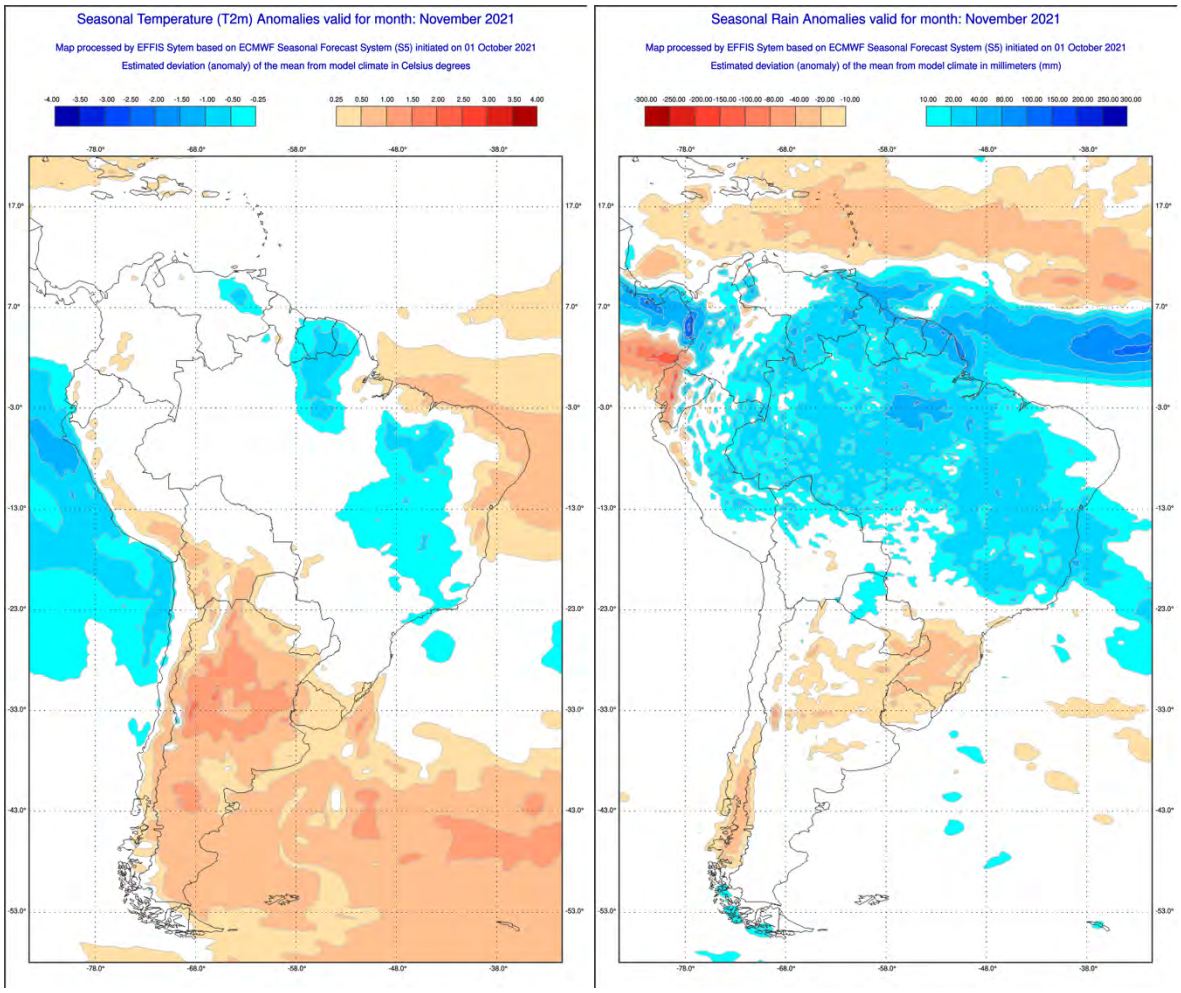


Figure 103.Fire weather anomalies of November, 2021.

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