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JRC TECHNICAL REPORT

Weekly analysis of wildfires in the Amazon region and South America: November 15 - November 21, 2021

2021

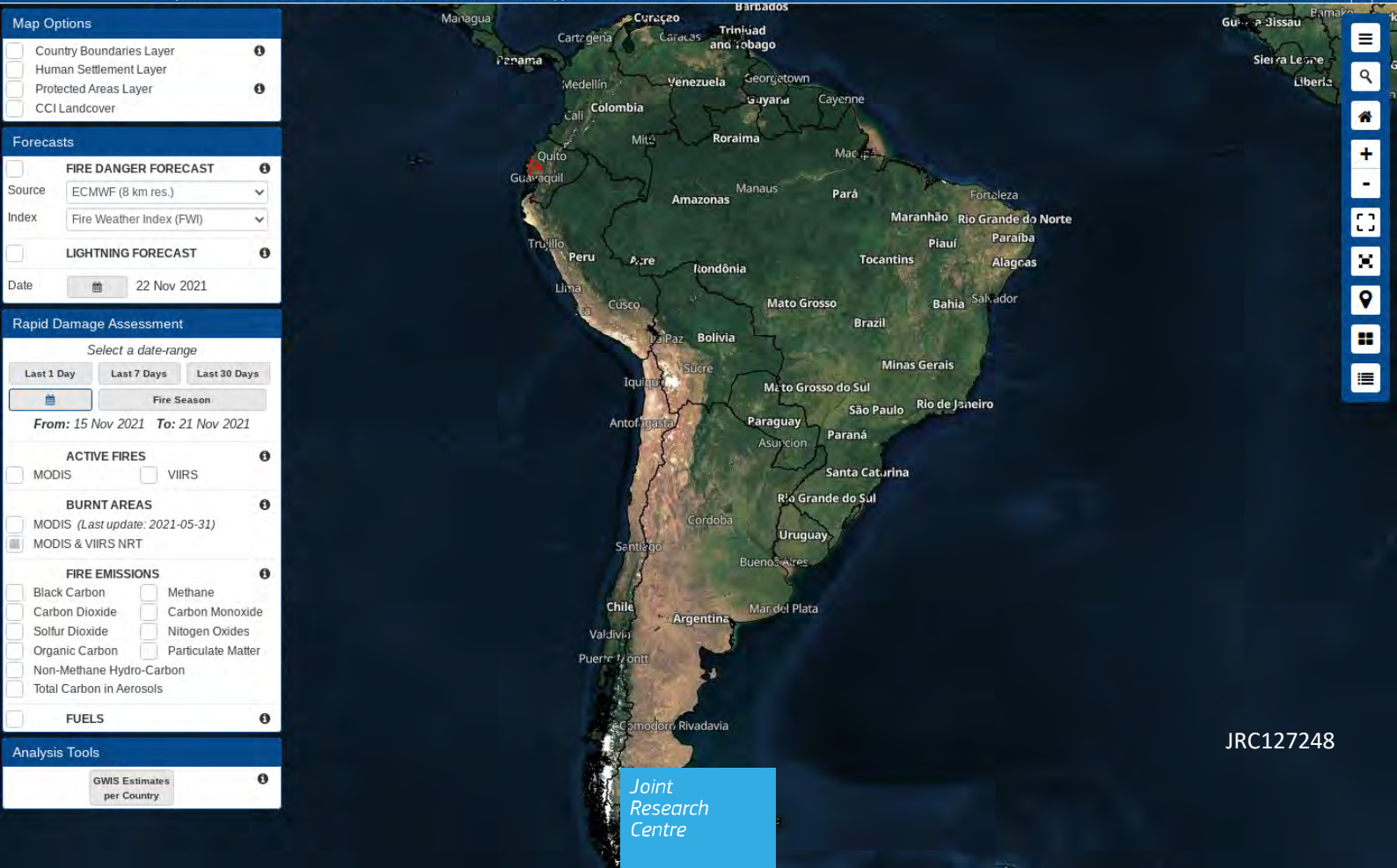


GWIS

Global Wildfire Information System



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



JRC127248

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How to cite this report: San-Miguel-Ayanz, J¹, Artes, T.¹, Oom, D.¹, Pfeiffer, H.³, Branco, A.³, Liberta, G.¹, De Rigo, D.³, Grecchi, R.³, Maianti, P.³, Boca, R.³, Durrant, T.⁴, Ferrari, D.⁴, 2021. Weekly analysis of wildfires in the Amazon region and South America: November 15 – November 21, 2021, European Commission, Ispra, JRC127248.

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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)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 12,34 Million ha (Mha) burnt since January 1 until November 21, 2021. This value the lowest of the last 6 years.** Last week, 25 fires occurred, following the decreasing trend from previous weeks.
- **In Brazil, 20,01 Mha burnt since January 1 until November 21, 2021,** with a total of 34,043 ha burnt in the last week. **The total burnt area and number of fires in Brazil are lowest values of the last 6 years.** 152 fires occurred last week occurred last week, while 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.

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](#))

- **In Bolivia**, the total burnt area (6.89 Mha) and number of fires (13,533 fires) decreased from the previous week. **The total burned area this year is below the values of 2019 and 2020.**
- **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 9,857, which is the second highest value since 2015 for the same period (below 2020).
- **In Paraguay**, 3.3 Mha burnt since January 1 until November 21, 2021. This figure is above those of 2018 but below the value of 2019 and 26 % below the value of 2020.
- **In Peru**, since January 1 until November 21, 2021, the total burnt area is 2.16 Mha and total number of fires is 8,344. These are the second highest values recorded since 2015 (below 2020).
- **In Venezuela**, 4.03 Mha burnt in the current year until November 21. The value of the total burnt area in Venezuela is lower than that in 2019 and 2020.
- **In Chile**, 438,334 ha burnt in the current year until November 21, 2021. This value is 51% higher than that of 2020. This year, the number of fires (1760) is the highest since 2015.
- **In Argentina**, a total of 4.336 Mha burnt since January 1 until November 21, 2021, which is less than half of what was burned in 2020 in the same period. A total of 14,350 fires were mapped in this period.
- **In Ecuador**, a total of 884 fires burnt 244,740 ha since January 1 until November 21, 2021. **The number of fires and the burnt area had the largest weekly increase of the year.** However, these values are lower than the values of 2018 and 2020.
- **In Uruguay**, a total of 48,305 ha burnt since January 1 until November 21, 2021. This value is higher than those of 2018 and 2019 but lower than the figure of 2020. 1 fire was recorded last week.
- **In French Guiana** a total of 6,641 ha burnt since January 1 until November 21, 2021. This value is the lowest of the last 6 years. 1 fire was recorded last week.
- **In Guyana**, a total of 80,734 ha burnt since January 1 until November 21, 2021, the lowest value of the last 6 years. 5 fires were mapped last week.
- **In Suriname**, 54 fires burnt a total of 12,810 ha since January 1 until November 21, 2021, the lowest value of the last 6 years. No fires were mapped last week.
- This week, fire danger conditions will be very high to extreme in southern Argentina and northern Chile. Paraguay and eastern part of Brazil will have moderate to high fire danger.



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 12.34 Mha burnt in the BLA from January 1 until November 21, 2021, with 5,904 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 25, decreasing from the previous week. The number of thermal anomalies until November 21, 2021 (635,304) shows a typical trend in the region as compared to the trends in 2018 and 2020, but the values remain below. 7,282 thermal anomalies were registered last week.

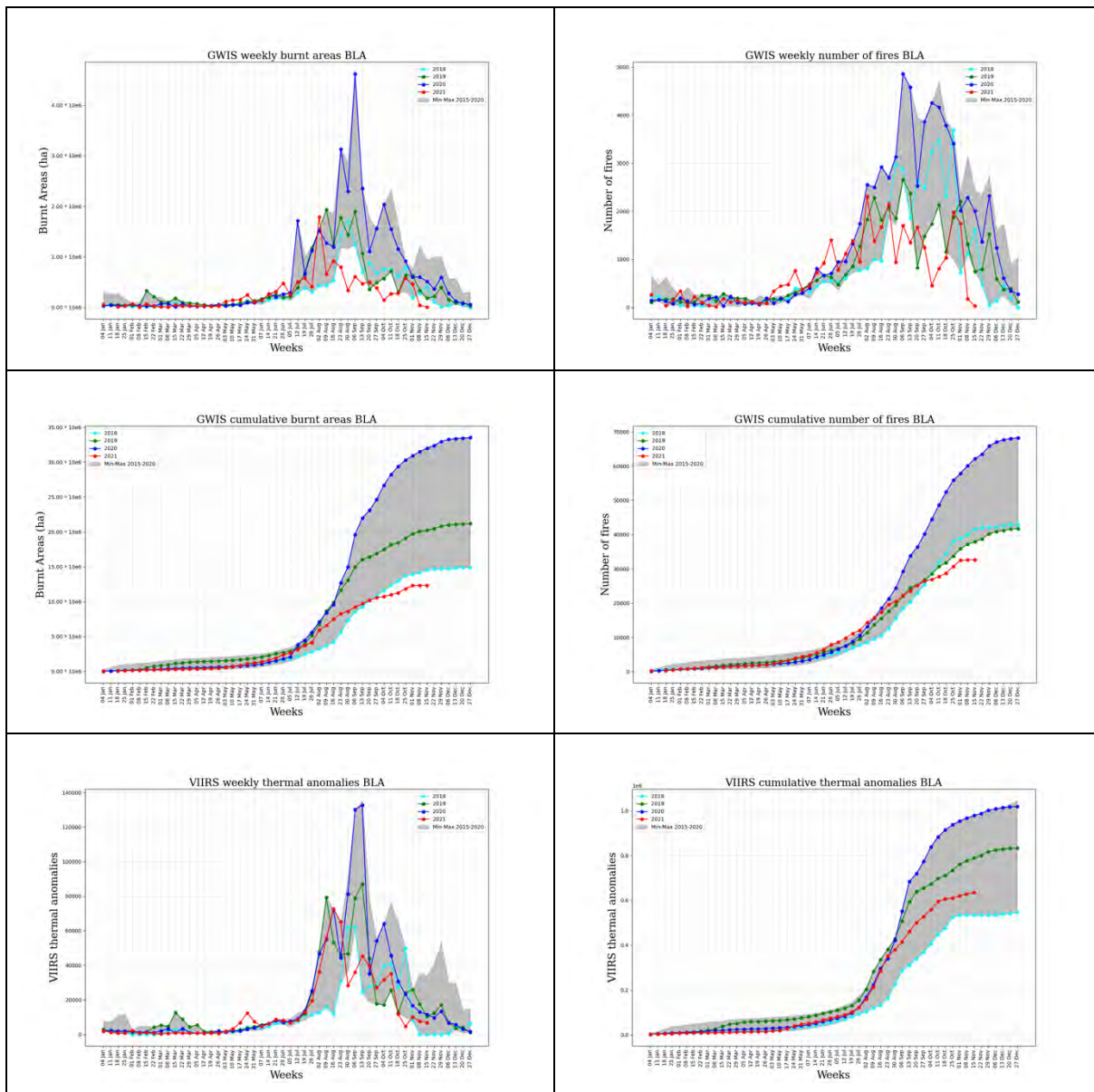


Figure 2. Trend of burnt areas and number of fires as compared to data in the last 6 years.

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 20.11 Mha ha burnt in Brazil since January 1 until November 21, 2021, with a total 34,043 ha burnt in the last week. The total burnt area in the country remains below the values of the previous 6 years. The number of fires recorded in GWIS in the last week was 152, decreasing from the last week. The number of thermal anomalies until November 21, 2021 (1,155,002) shows a typical trend in the region. 16,516 thermal anomalies were registered last week.

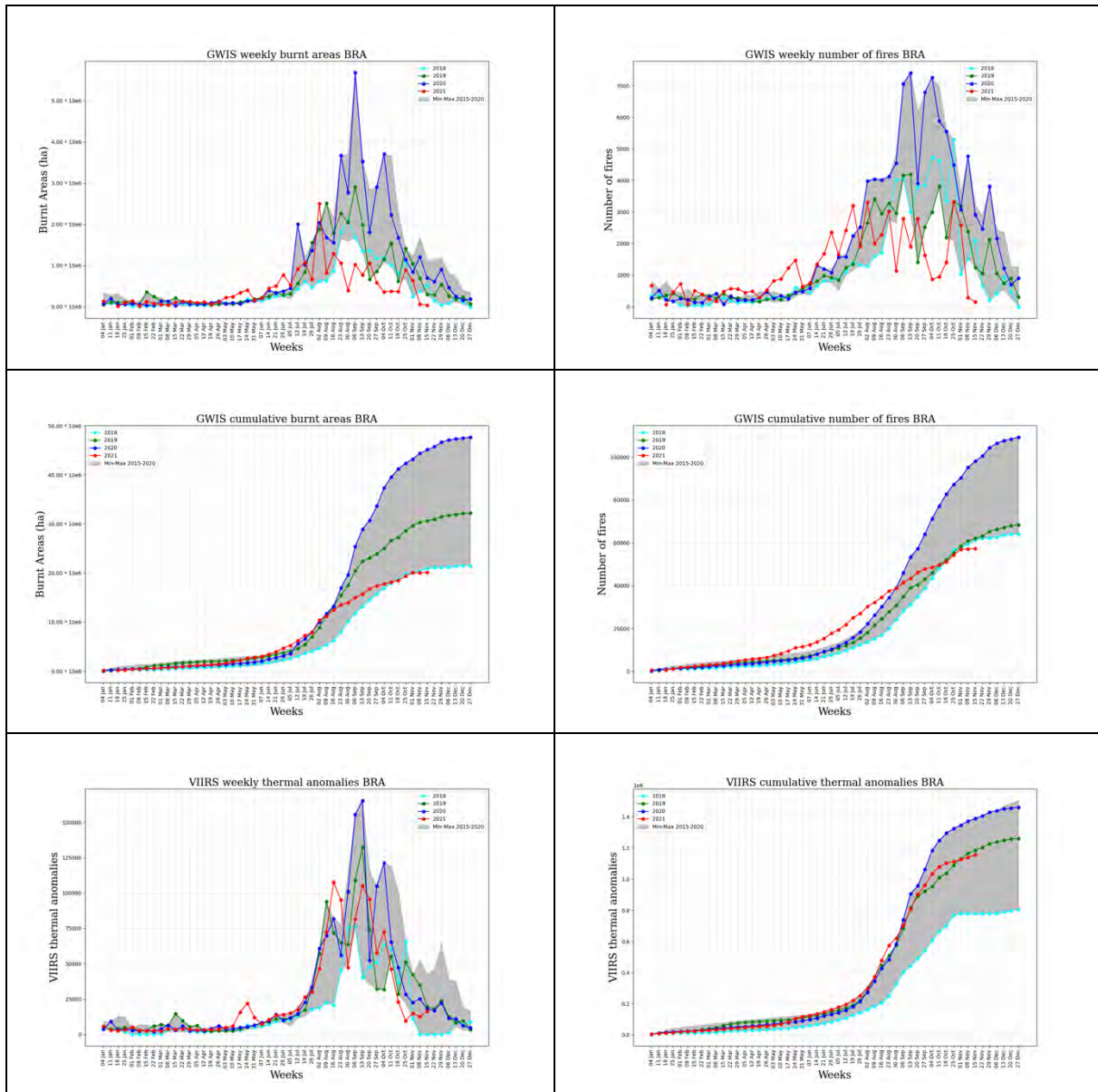


Figure 3. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 6.89 Mha ha burnt in Bolivia since January 1 until November 21, 2021, with 9,661 ha burnt in the last week, decreasing from the last week. The number of fires recorded in GWIS in the last week was 38, lower than the number of fires in the same week from the last 6 years. The number of thermal anomalies until November 21, 2021 (275,290) is between the values of 2018 and 2020 the same period. 1,130 thermal anomalies were detected by VIIRS in the last week.

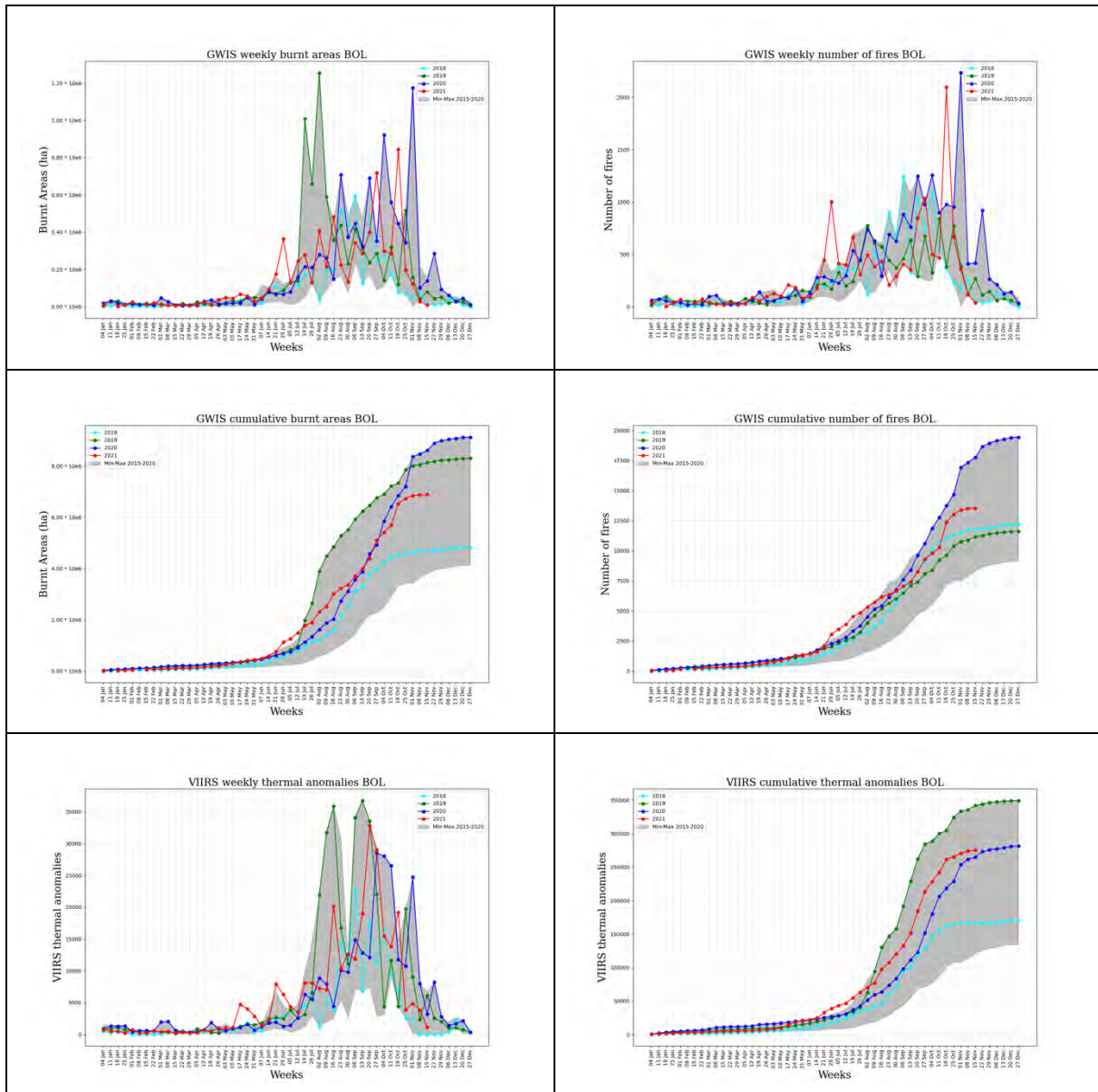


Figure 4. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 November 21, 2021. Approximately 40,164 ha burnt in the country the last week. The number of fires recorded in GWIS in the last week was 168 and the total number of fires since January 1 is the second highest value since 2015 for the same period. The number of thermal anomalies until November 21, 2021 (74,613) follows a typical trend in the region with similar values of 2018 but way below of 2019 and 2020. 1,886 thermal anomalies recorded by VIIRS last week.

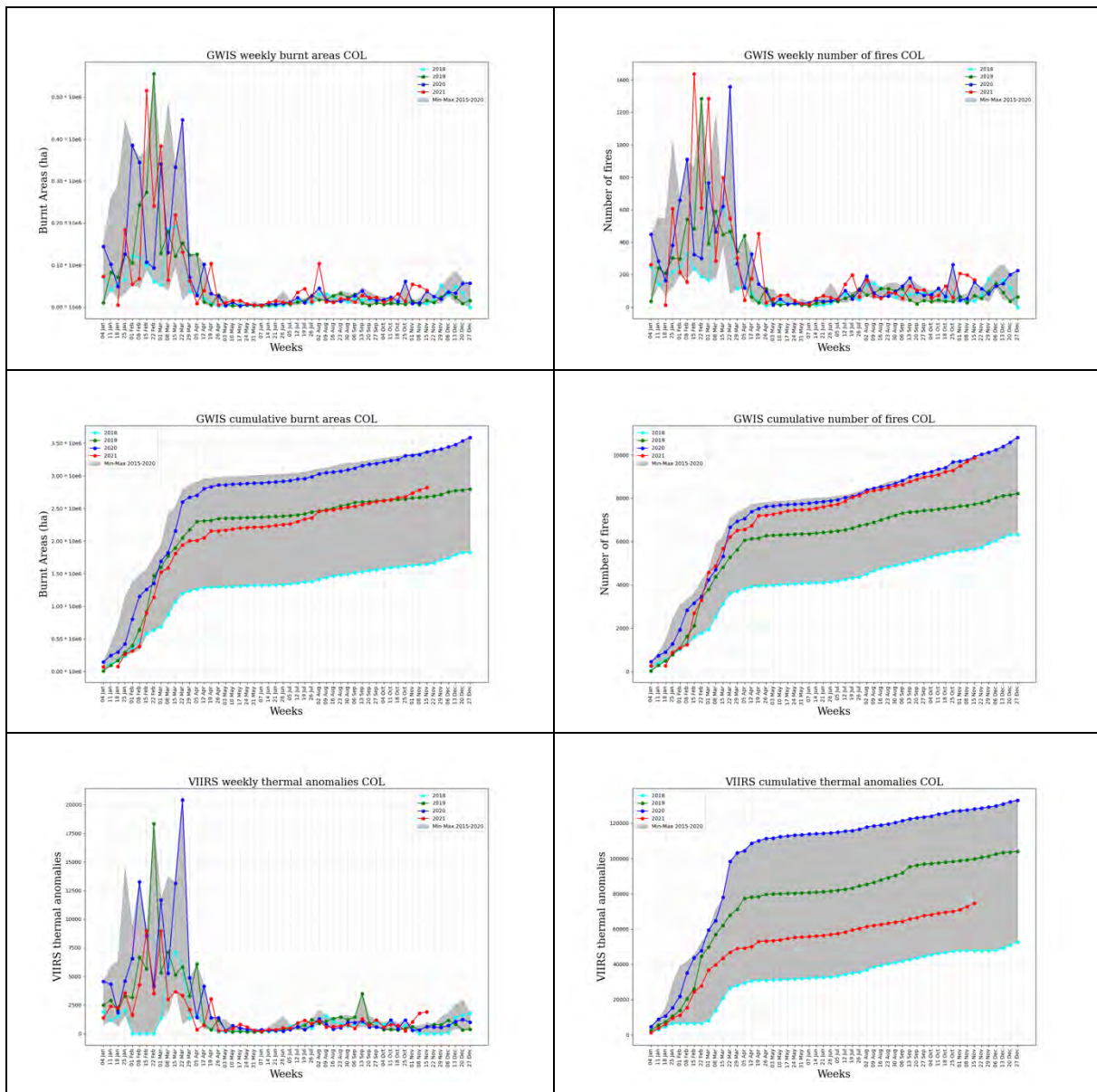


Figure 5. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 of 3.29 Mha burnt in Paraguay since January 1 until November 21, 2021. Approximately 9,382 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 37. The number of thermal anomalies until November 21, 2021 (122,892) follows a typical trend in the region. 859 thermal anomalies detected by VIIRS last week.

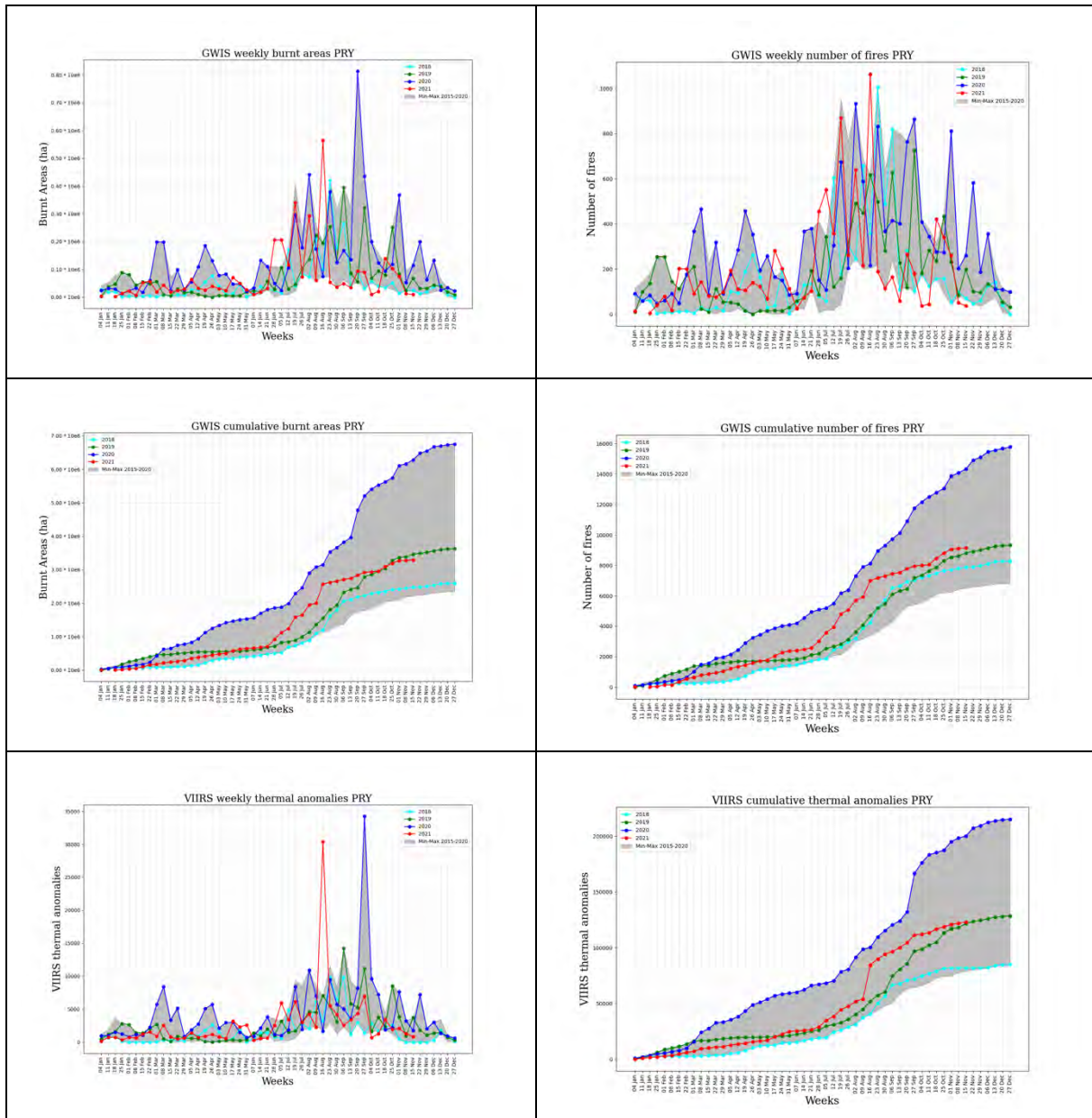


Figure 6. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 2.16 Mha burnt in Peru since January 1 until November 21, 2021, the second highest value since 2015 for the same period. Approximately 8,649 ha burnt in the last week, decreasing from the previous week. The number of fires recorded in GWIS in the last week was 45. The number of thermal anomalies until November 21, 2021 (58,231) shows a typical trend in the region. 423 thermal anomalies registered last week, decreasing after the last week.

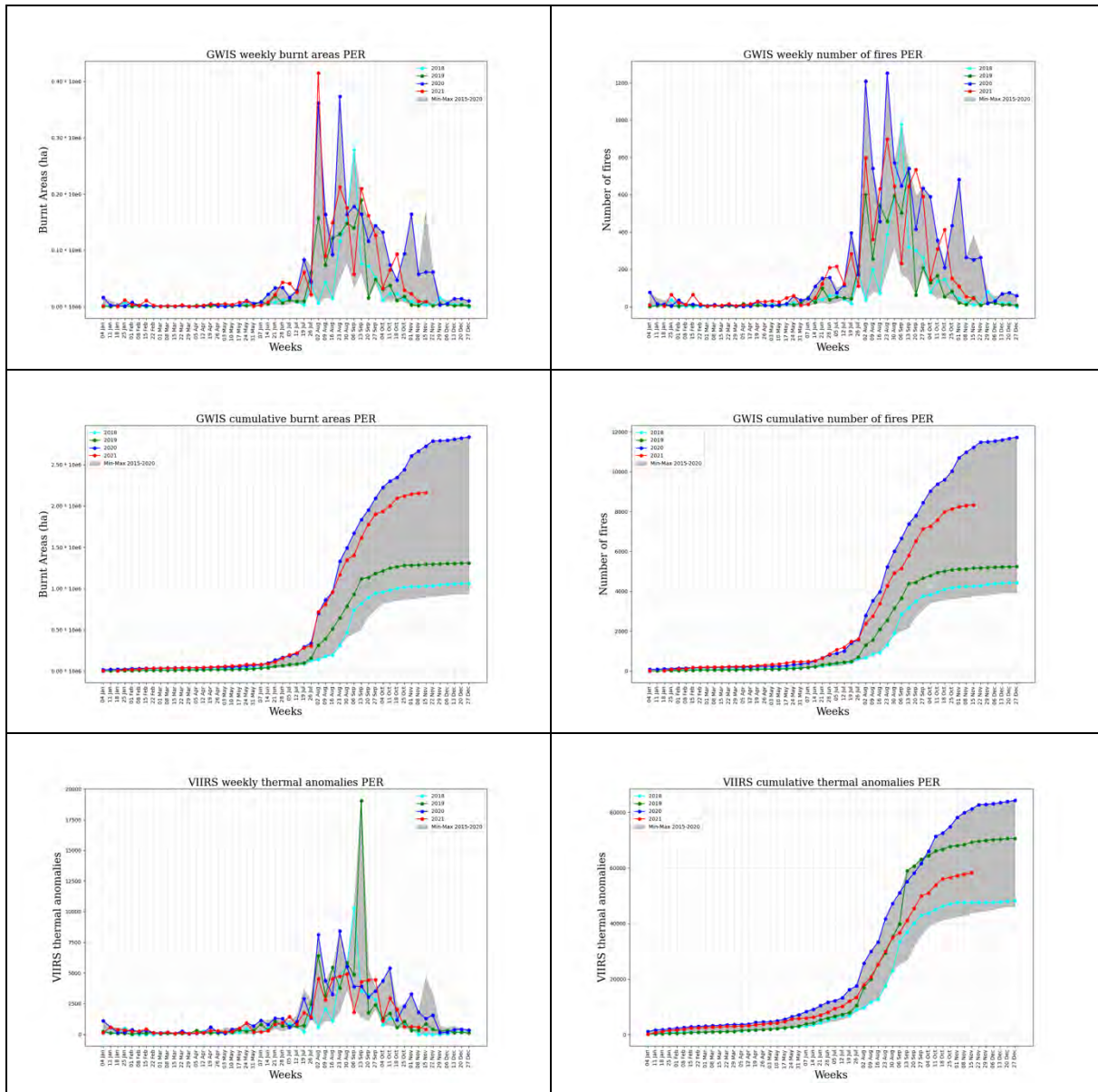


Figure 7. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 4.03 Mha burnt in Venezuela since January 1 until November 21, 2021, with 23,841 ha burnt in the last week. The number of fires recorded in GWIS in the last week was 108. The number of thermal anomalies until November 21, 2021 (144,093) shows a typical trend in the region. 3,162 thermal anomalies were recorded by VIIRS during the last week.

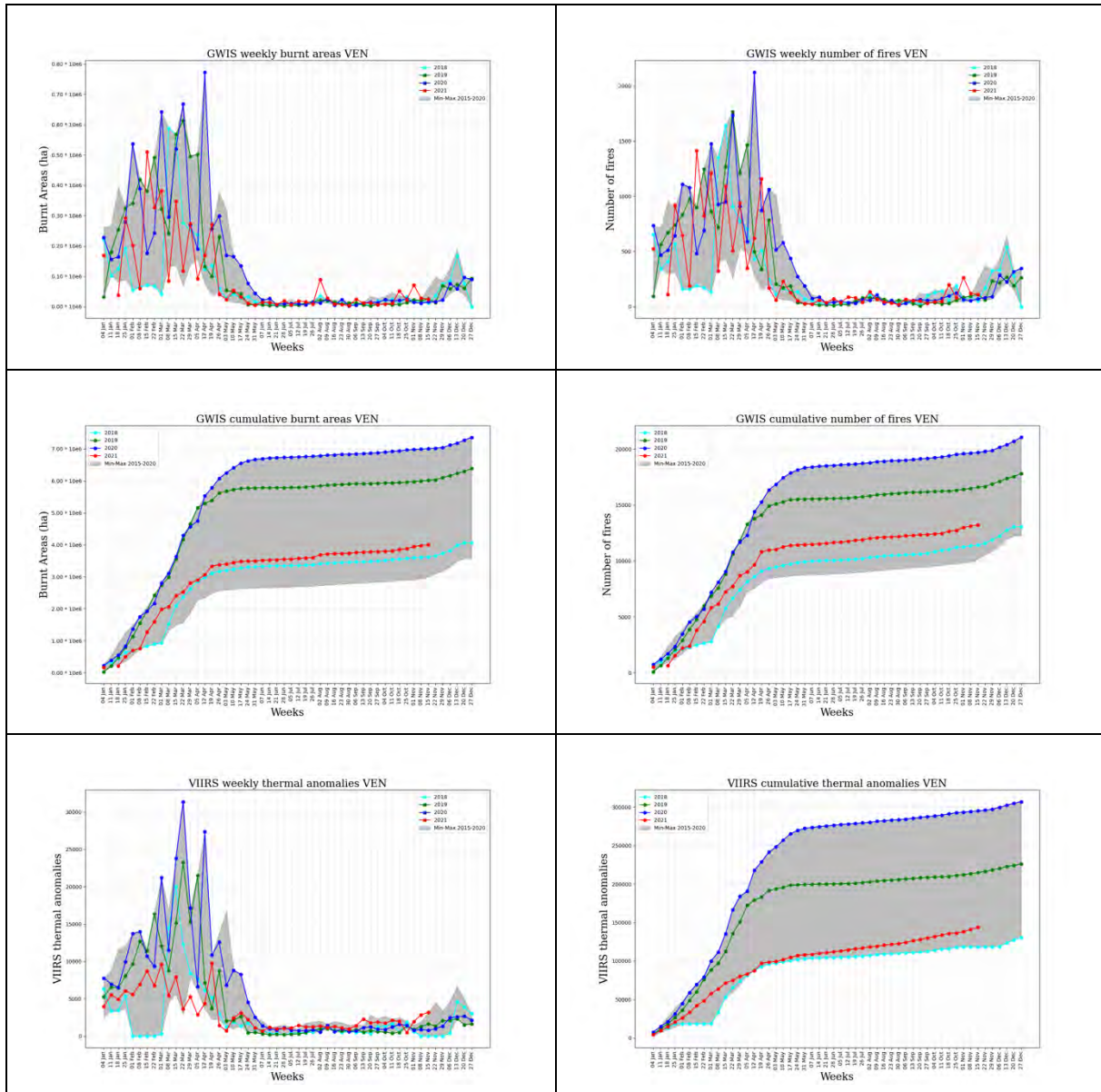


Figure 8. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 438,334 burnt in Chile since January 1 until November 21, 2021, with 2,742 ha burnt in the last week. The number of fires recorded in GWIS in the last week was 12. The number of thermal anomalies until November 21, 2021 (14,307) shows a typical trend in the region as compared to the trends during previous years. 118 thermal anomalies were detected by VIIRS during the last week, which is similar to the values in the same week during previous years.

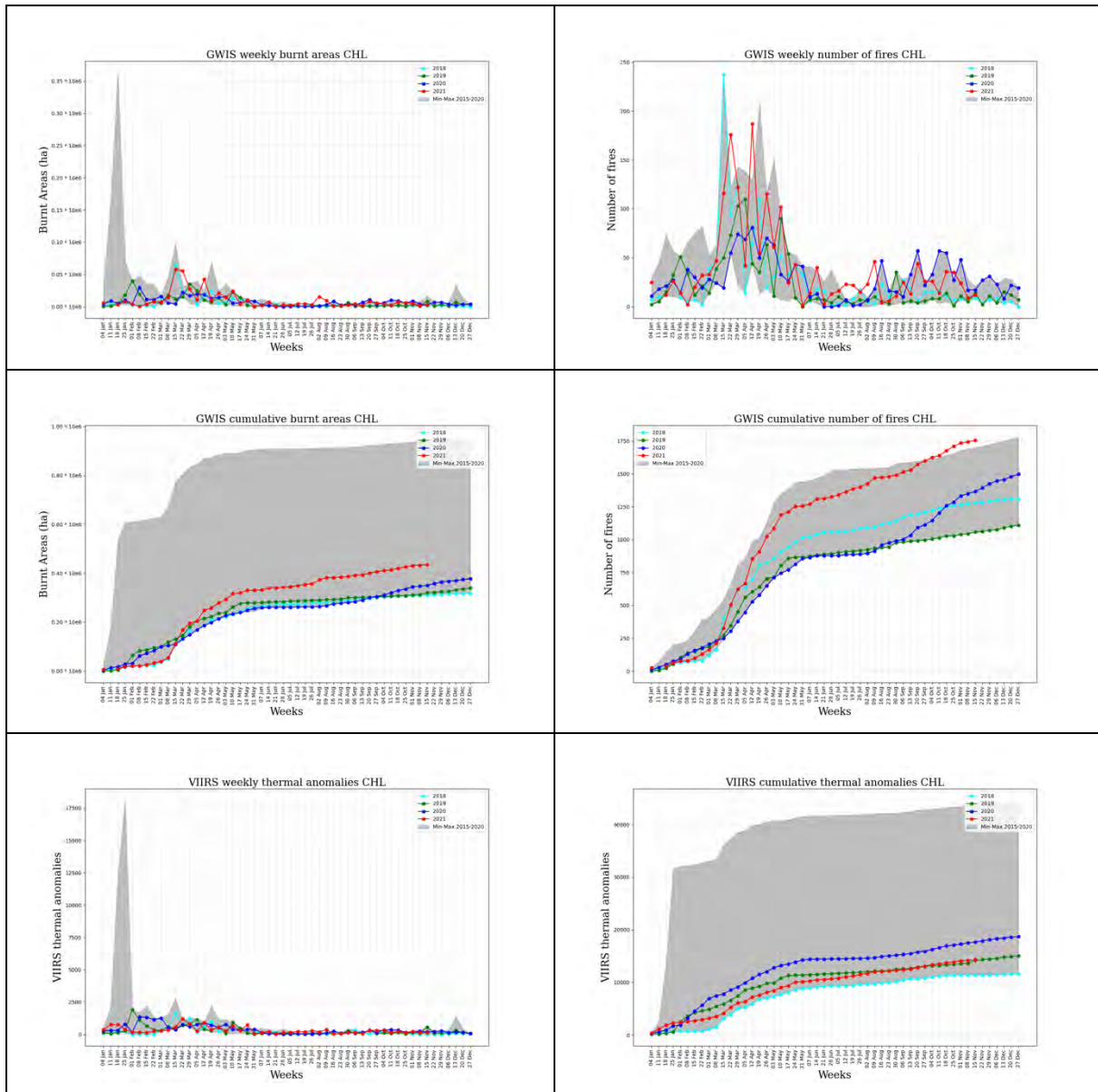


Figure 9. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 4.36 Mha burnt in Argentina since January 1 until November 21, 2021, with 18,404 ha burnt in the last week. These values are the second highest since 2015 for the same week. The number of fires recorded in GWIS in the last week was 73, the second highest value since 2015 for the same period. The number of thermal anomalies until November 21, 2021 (147.654) shows a typical trend in the region. 1,338 thermal anomalies were recorded by VIIRS during the last week, a value that is like those recorded in that week for 2020.

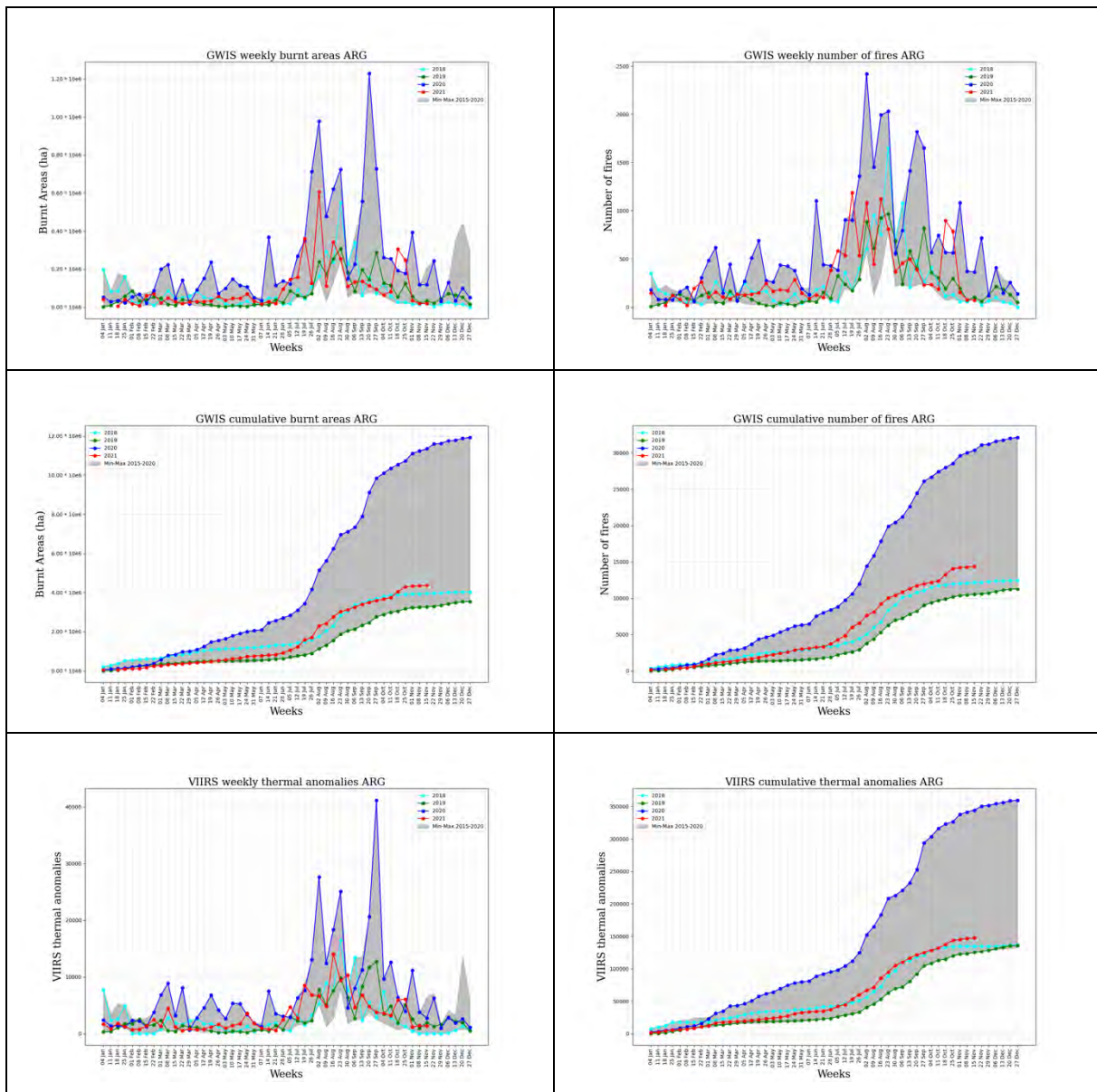


Figure 10. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 244,740 ha burnt in Ecuador since January 1 until November 21, 2021, the second highest value for the same period in the last 6 years, with 88,059 ha burnt in the last week, one of the largest weekly increases of the year. The number of fires recorded in GWIS in the last week was 260. The number of thermal anomalies until November 21, 2021 (6,016) shows a typical trend in the region. 1,667 thermal anomalies were detected by VIIRS in the last week.

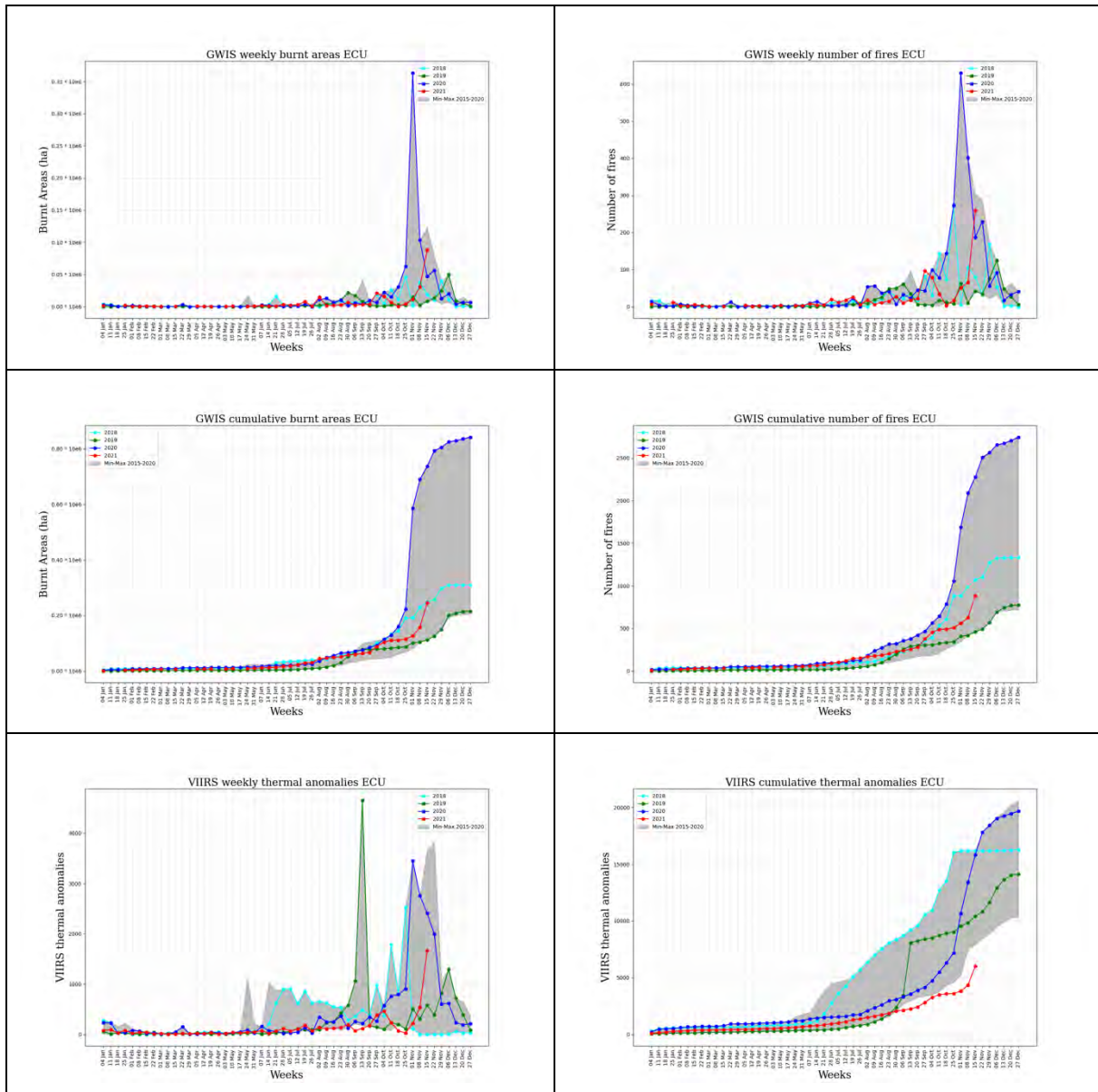


Figure 11. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 48,305 ha burnt in Uruguay since January 1 until November 21, 2021. 1 fire was recorded last week. The number of thermal anomalies until November 21, 2021 (1,945) shows a typical trend in the region.

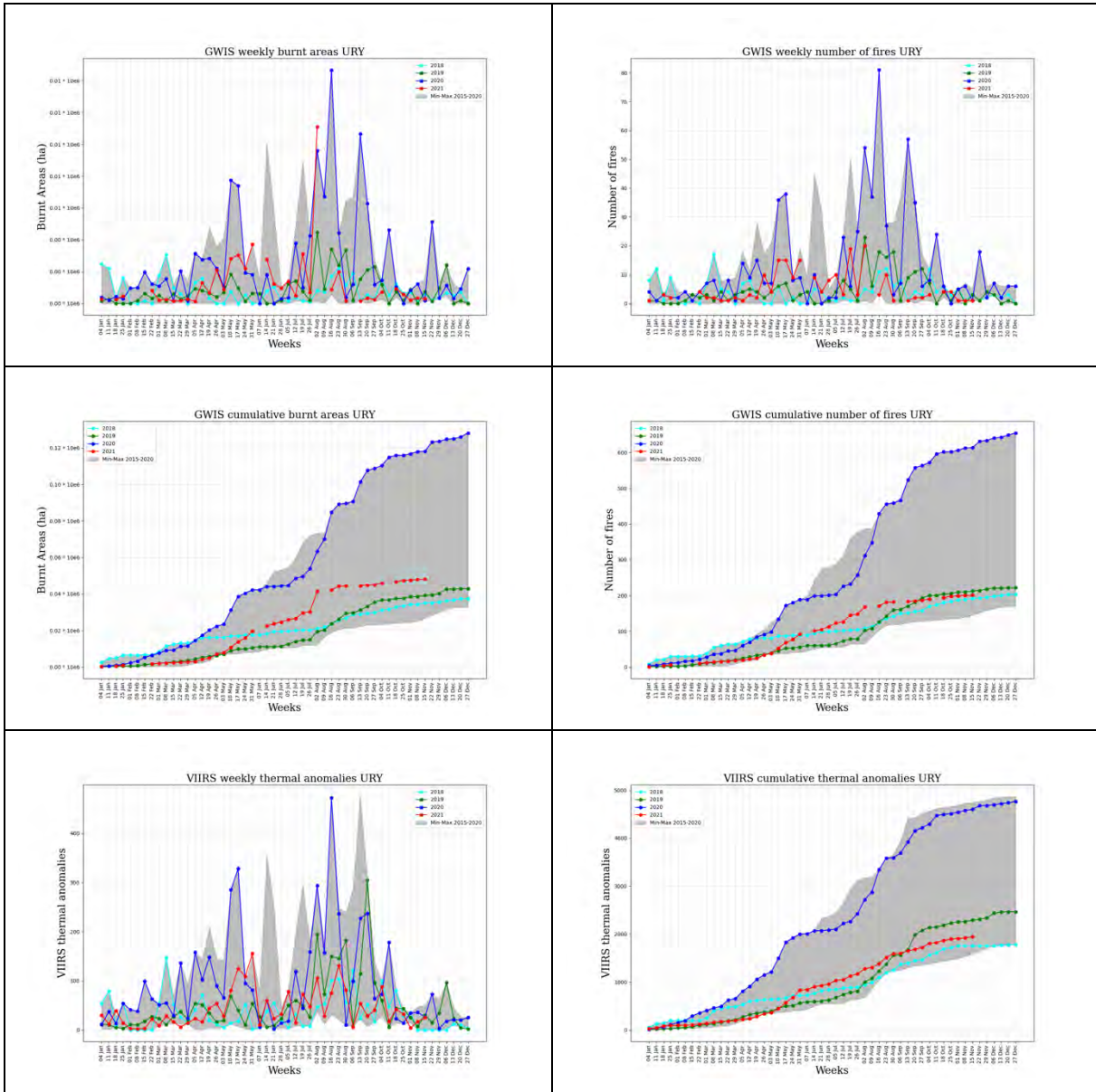


Figure 12. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 6,641 ha burnt since January 1 until November 21, 2021, with 1 fire recorded last week. The number of thermal anomalies until November 12, 2021 (353) shows a typical trend in the region as compared to the trends during previous years. 4 thermal anomalies were detected by VIIRS during the last week, which is similar to the values in the same week during previous years.

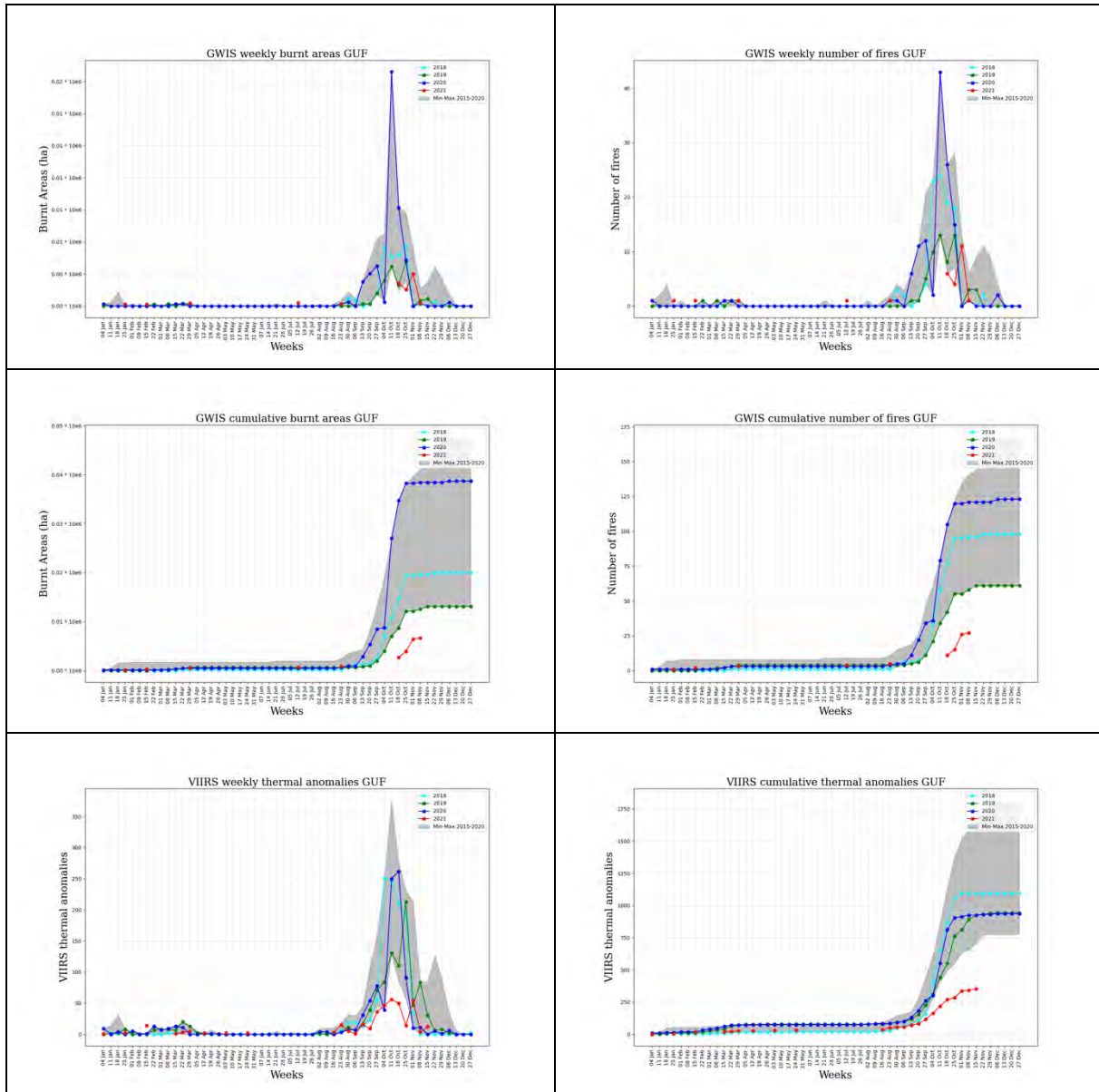


Figure 13. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 80,734 ha burnt in Guyana since January 1 until November 21, 2021, with 1 fires recorded last week. The number of thermal anomalies until November 21, 2021 (3,582) shows a typical trend in the region as compared to the trends during previous years. 90 thermal anomalies were detected by VIIRS during the last week, which is similar to the values in the same week during previous years.

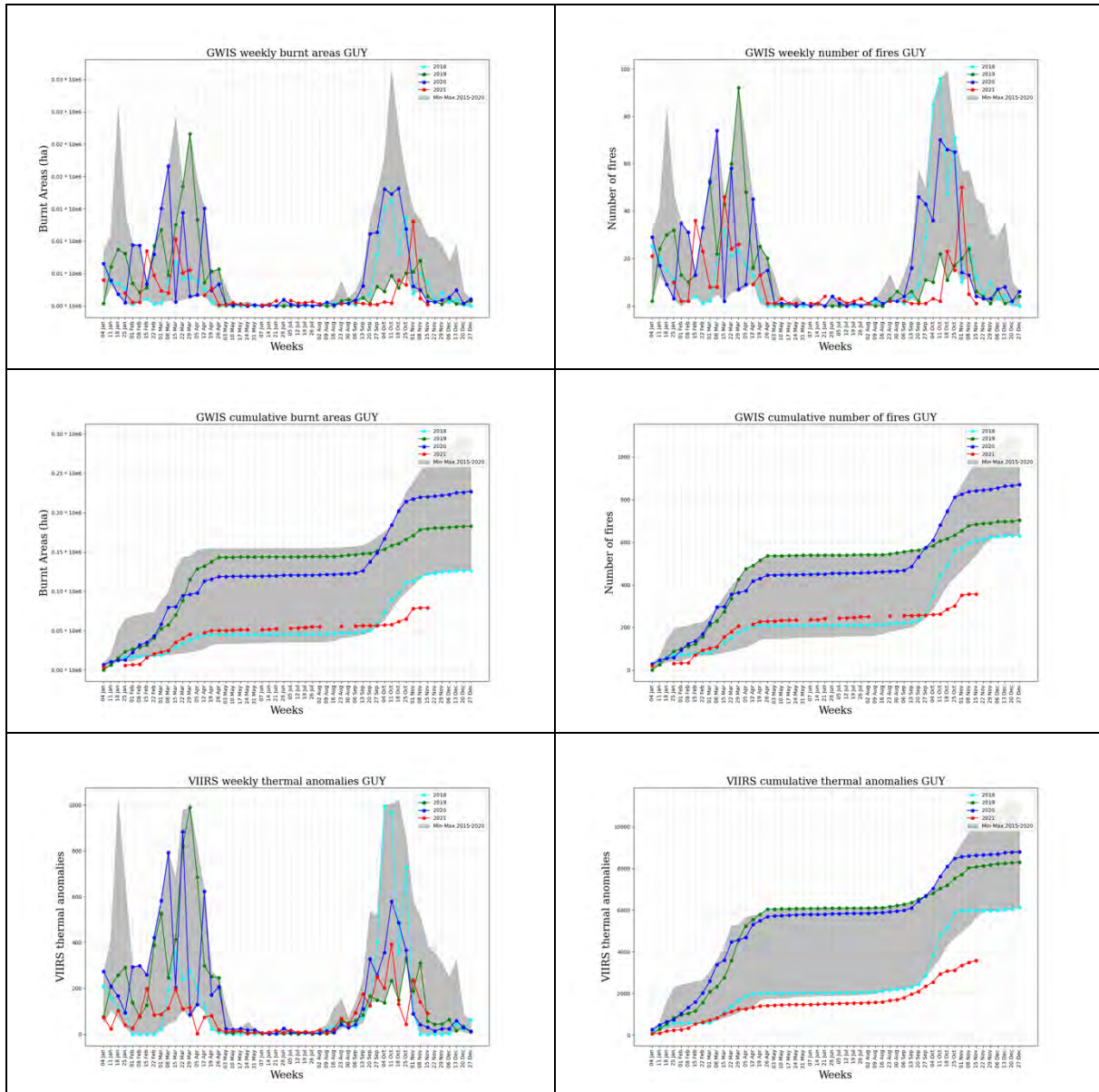


Figure 14. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 12,810 ha burnt in Suriname since January 1 until November 21, 2021. No fires were recorded last week. The total number of fires since the beginning of the year is 54. The number of thermal anomalies until November 21, 2021 (830) shows a typical trend in the region. 18 thermal anomalies registered last week, increasing after the last week.

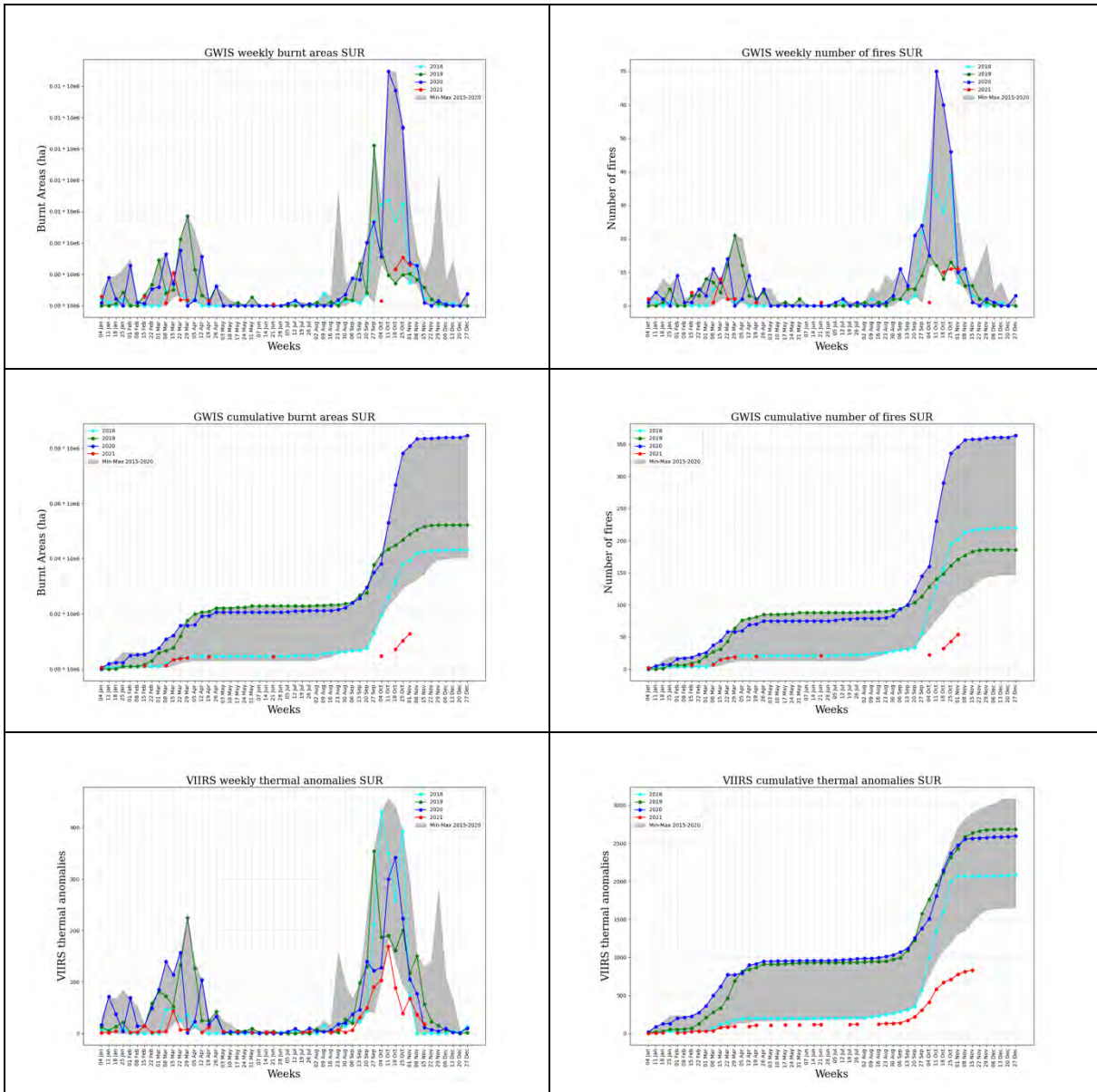


Figure 15. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 6 years.

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 November 22 to November 28, 2021. This information is based on the daily fire danger forecast that is provided online in GWIS³. According to this forecast, it is expected that fire danger conditions will be very high to extreme in southern Argentina and northern Chile. Paraguay and eastern part of Brazil will have moderate to high fire danger.

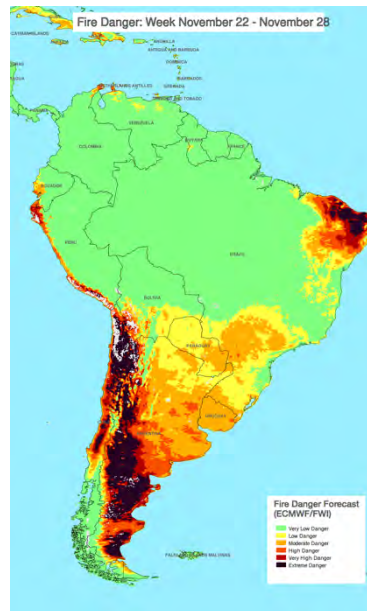


Figure 16. Average Fire danger forecast. Week, November 22 – November 28, 2021.

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, Paraguay and Argentina. Below average temperatures are forecasted in northern Brazil. The models estimate an above average precipitation rates for next week mainly in Brazil and northern Argentina. Below average precipitation is foreseen mainly in southeastern Brazil, Bolivia and Paraguay.

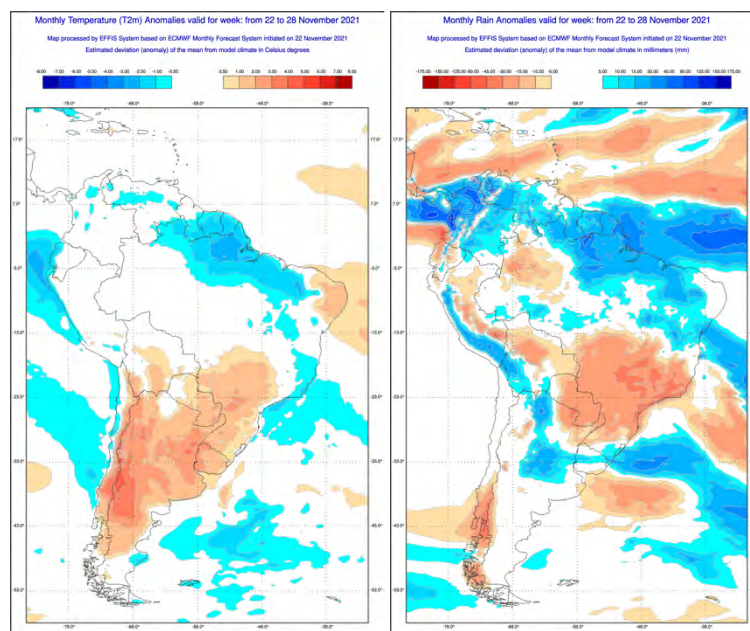


Figure 17. Fire weather anomalies of the current week, November 22 - November 28, 2021.

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

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