



European
Commission

JRC TECHNICAL REPORT

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

August 09 - August 15, 2021



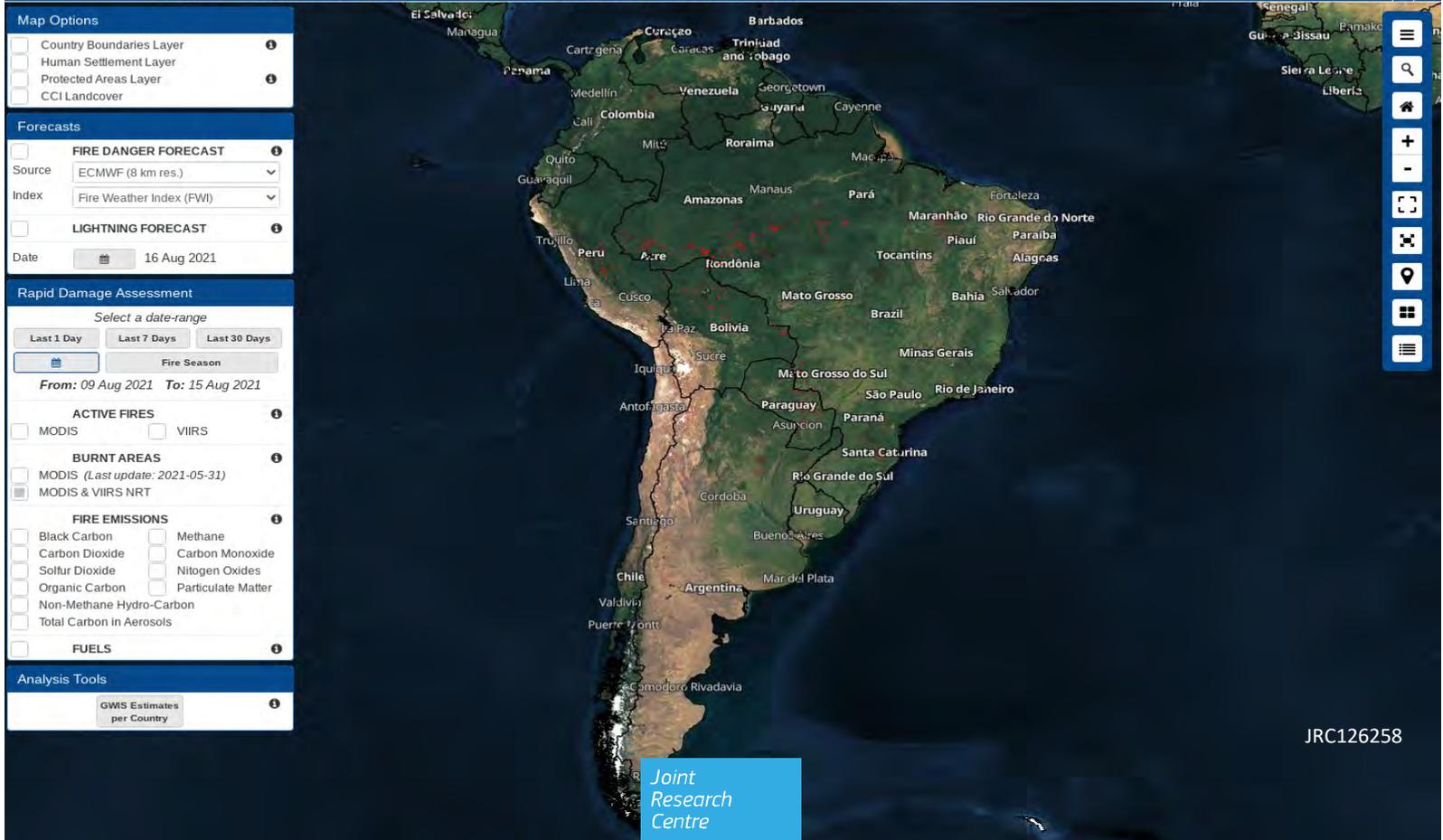
GWIS

Global Wildfire Information System



2021

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



JRC126258

Joint
Research
Centre

This publication is a Technical report by the Joint Research Centre (JRC), the European Commission's science and knowledge service. It aims to provide evidence-based scientific support to the European policymaking process. The scientific output expressed does not imply a policy position of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use that might be made of this publication. For information on the methodology and quality underlying the data used in this publication for which the source is neither Eurostat nor other Commission services, users should contact the referenced source. The designations employed and the presentation of material on the maps do not imply the expression of any opinion whatsoever on the part of the European Union concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Contact information

Name: Global Wildfire Information System
Address: <https://gwis.jrc.ec.europa.eu>
Email: jrc-effis@ec.europa.eu
Tel.: +39 0332 786138

EU Science Hub
<https://ec.europa.eu/jrc>

JRC126258

Ispra: European Commission, 2021

© European Union, 2021



The reuse policy of the European Commission is implemented by the Commission Decision 2011/833/EU of 12 December 2011 on the reuse of Commission documents (OJ L 330, 14.12.2011, p. 39). Except otherwise noted, the reuse of this document is authorised under the Creative Commons Attribution 4.0 International (CC BY 4.0) licence (<https://creativecommons.org/licenses/by/4.0/>). This means that reuse is allowed provided appropriate credit is given and any changes are indicated. For any use or reproduction of photos or other material that is not owned by the EU, permission must be sought directly from the copyright holders.

All content © European Union, 2021

How to cite this report: San-Miguel-Ayanz, J.¹, 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: August 9 – August 15, 2021, European Commission, Ispra, JRC126258

¹ European Commission, Joint Research Centre (JRC), Ispra, Italy

³ ARCADIA SIT, Milan, Italy

⁴ Engineering Ingegneria Informatica S.p.A. Rome, Italy

Contents

Scope of this report and executive summary1

1 Wildfires in the Brazilian Legal Amazon Region.....3

2 Wildfires in Brazil4

3 Wildfires in Bolivia5

4 Wildfires in Colombia6

5 Wildfires in Paraguay7

6 Wildfires in Peru8

7 Wildfires in Venezuela9

8 Wildfires in Chile10

9 Wildfires in Argentina11

10 Wildfires in Ecuador12

11 Wildfires in Uruguay13

12 Wildfires in French Guiana14

13 Wildfires in Guyana.....15

14 Wildfires in Suriname.....16

15 Fire danger and fire weather forecast in the Amazon region.....17

16 List of Figures.....18

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 6.70 Million ha (Mha) burnt since January 1 until August 15, 2021. This value is below those of 2019 and 2020 in the same period. **Last week, 1385 fires occurred, which is below the values of 2019 and 2020 for the same week.**
- **In Brazil, 11.53 Million ha (Mha) burnt since January 1 until August 15, 2021**, with a total of 0.91 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 inclusive) in the same period and number of fires is higher than in the previous 6 years (1,851 fires occurred last week).
- **In Bolivia**, the total burnt area in 2021 (2.57 Million ha (Mha)) is lower than that recorded for 2019, which was a critical year in the country, while the number of fires in 2021 (328 fires) is the highest value recorded since 2015 in the same period.
- **In Colombia**, the total burnt area in the country (2.72 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 9,261, the highest value since 2015 for the same period.
- **In Paraguay**, 2.07 Million ha (Mha) burnt since January 1 until August 15, 2021. This figure is above those in 2018 and 2019, but 29 % below the values of 2020.
- **In Peru**, for the period January 1 until August 15, 2021, the total burnt area (0.83 Mha) and total number of fires (2,877) are the second highest values recorded since 2015.
- **In Venezuela**, 4.25 Million ha (Mha) burnt in the current year until August 15. The value of the total burnt area in Venezuela is lower than that in 2019 and 2020.
- **In Chile**, 424,953 ha burnt in the current year until August 15, 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 2.56 Million ha (Mha) burnt since January 1 until August 15, 2021, which is less than half of what burned in 2020. A total of 8,622 fires were mapped this year.
- **In Ecuador**, a total of 193 fires burnt 49,291 ha since January 1 until August 15. These values are similar to the values of the last five years.
- **In Uruguay**, a total of 44,016 ha burnt since January 1 until August 15 with 442 ha burnt last week. The total area is larger than the area burnt in 2018 and 2019 but lower than in 2020. 20 fires were reported last week.
- **In French Guiana** a total of 726 ha burnt since January 1 until August 15, 2021. This value is similar with the previous years. No fires were reported last week.
- **In Guyana**, a total of 60,995 ha burnt since January 1 until August 15, 2021, a value higher than that of 2018 but lower than the values in 2019 and 2020. 1 fire was mapped last week.
- **In Suriname**, 21 fires burnt a total of 4,533 ha since January 1 until August 15, 2021, a value similar to that of 2018 and lower than 2019 and 2020. No fires were reported 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, southern Bolivia and northern Paraguay, moderate to high in northern Bolivia, southern Paraguay and across eastern 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 6.70 Mha burnt in the BLA since January 1 until August 15, 2021, with 0.77 Mha burnt in total during the last week, which is similar to the values of the same week in 2019 and 2020. The number of fires recorded in GWIS in the last week was 1385, and the total number of fires up to August 15 are above the average value of the mean of the last 5 years. The number of thermal anomalies until August 15, 2021 (213,383) shows a typical trend in the region as compared to the trends in 2019 and 2020. 55,606 thermal anomalies were registered last week.

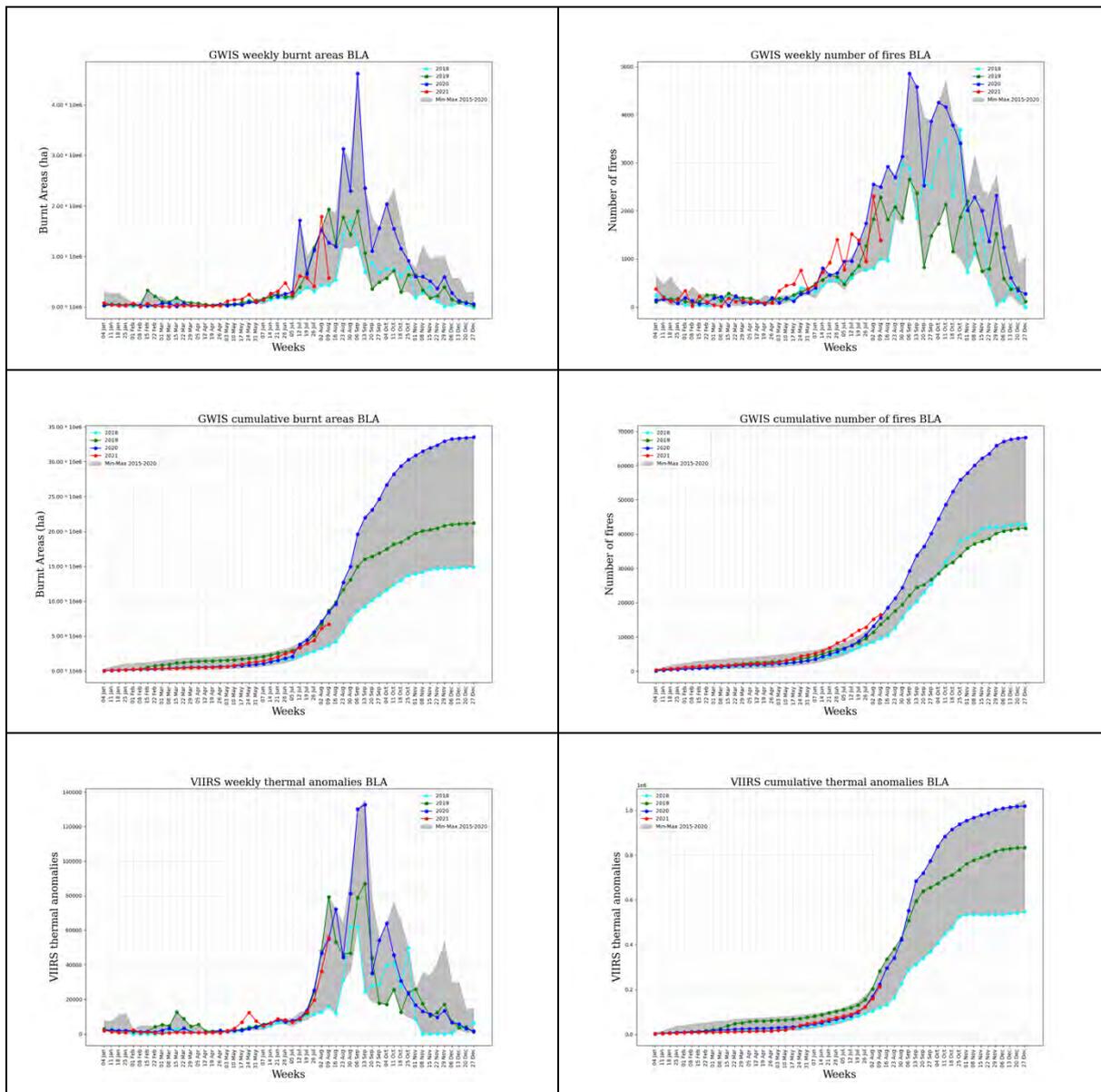


Figure 2 Trend of burnt areas and number of fires as compared to data in the last 5 years.

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 11.53 Mha ha burnt in Brazil since January 1 until August 15, 2021, being this the highest value in the last 5 years, with a total 0.91 Mha burnt in the last week. The number of fires recorded in GWIS in the last week was 1,851; the total of number of fires up to 15 of August is the highest value in the last 6 years for the same period. The number of thermal anomalies until August 15, 2021 (370,546) shows a typical trend in the region; 72,602 thermal anomalies were registered last week.

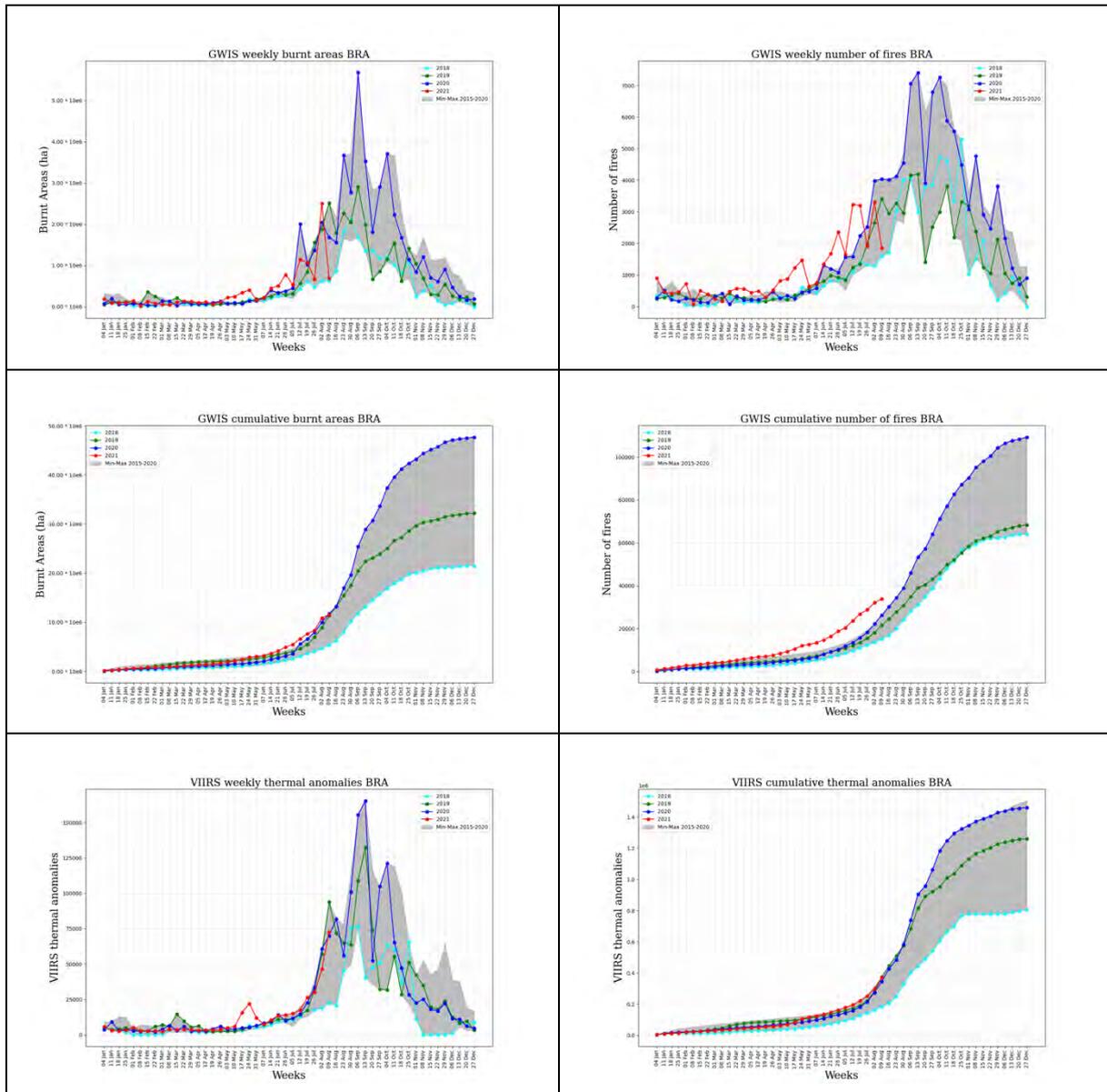


Figure 3. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

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 2.57 Mha ha burnt in Bolivia since January 1 until August 15, 2021, with 151,266 ha 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 328, lower than the number of fires in the same week from the last two years. The number of thermal anomalies until August 15, 2021 (77,277) is the highest value since 2015 for the same period. 7,037 thermal anomalies were detected by VIIRS in the last week.

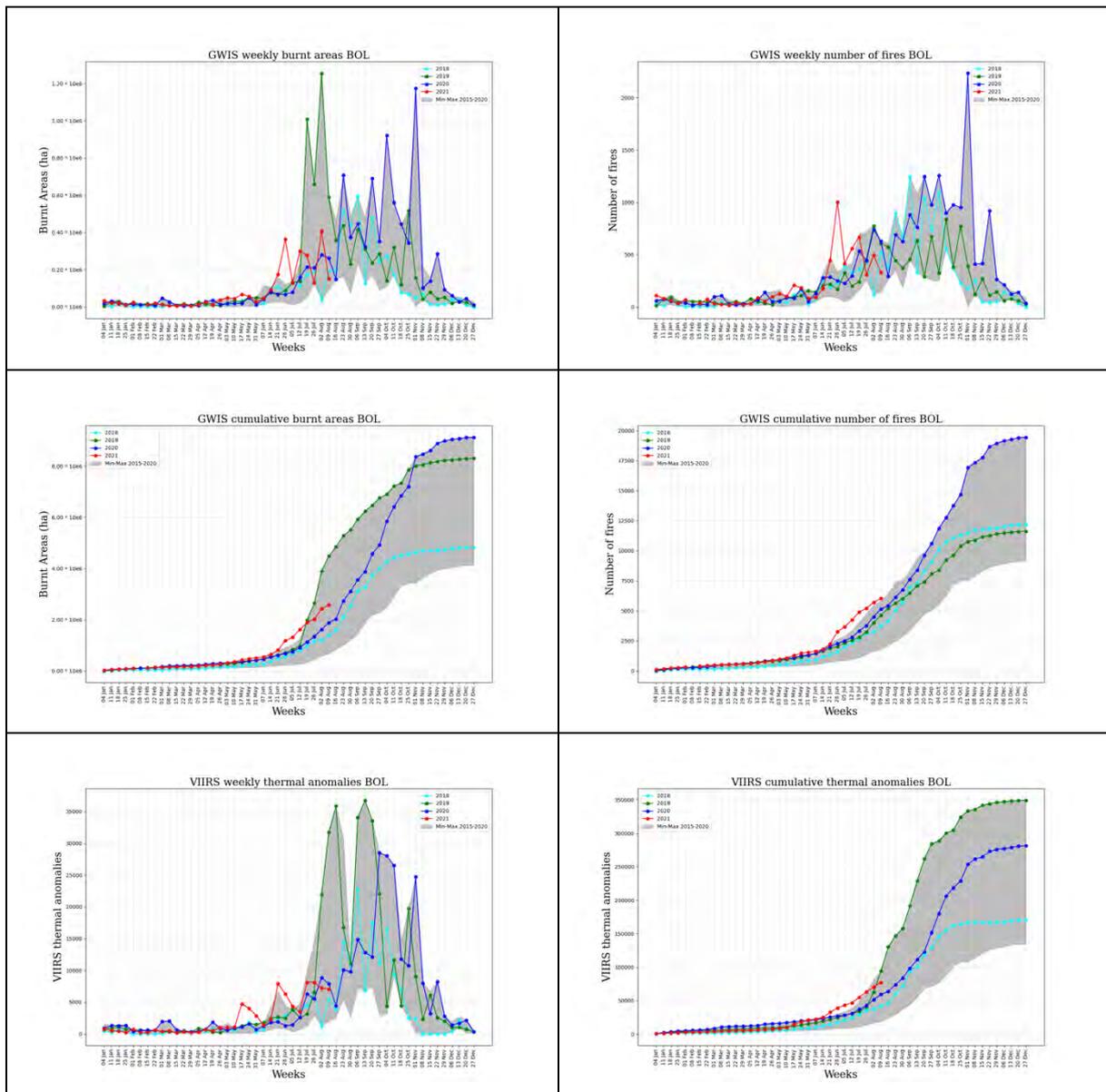


Figure 4. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

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 2.72 Mha burnt in Colombia since January 1 until August 15, 2021. Approximately 11,835 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 62 and the total number of fires since January 1. The number of thermal anomalies until August 15, 2021 (61,943) follows a typical trend in the region with similar values of 2018 but way below of 2019 and 2020. 564 thermal anomalies detected by VIIRS last week.

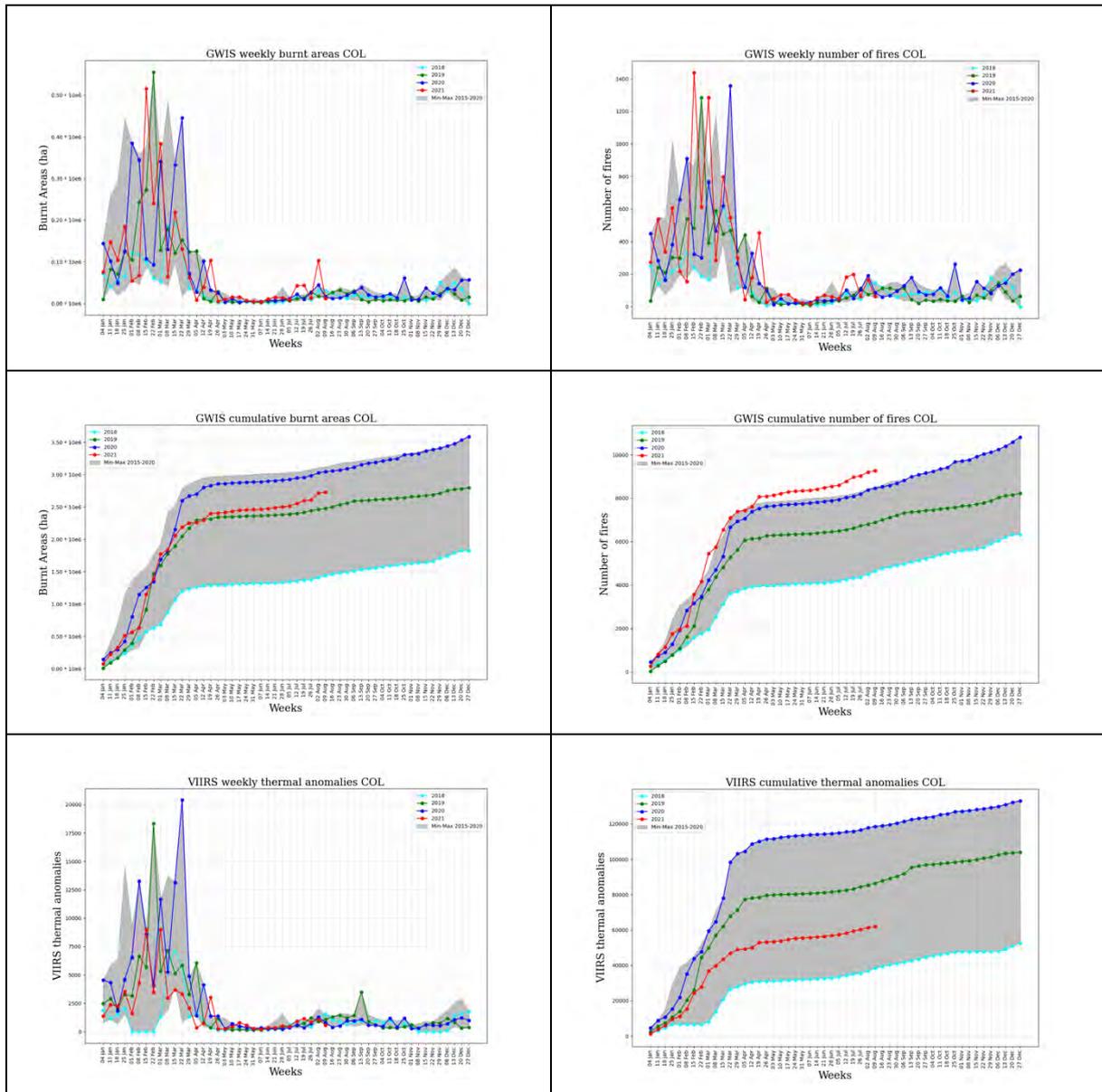


Figure 5. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

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 2.07 Mha burnt in Paraguay since January 1 until August 15, 2021. Approximately 52,020 ha burnt in the country the last week, increasing from the previous week. The number of fires recorded in GWIS in the last week was 205. The number of thermal anomalies until August 15, 2021 (54,057) follows a typical trend in the region. 2,265 thermal anomalies detected by VIIRS last week.

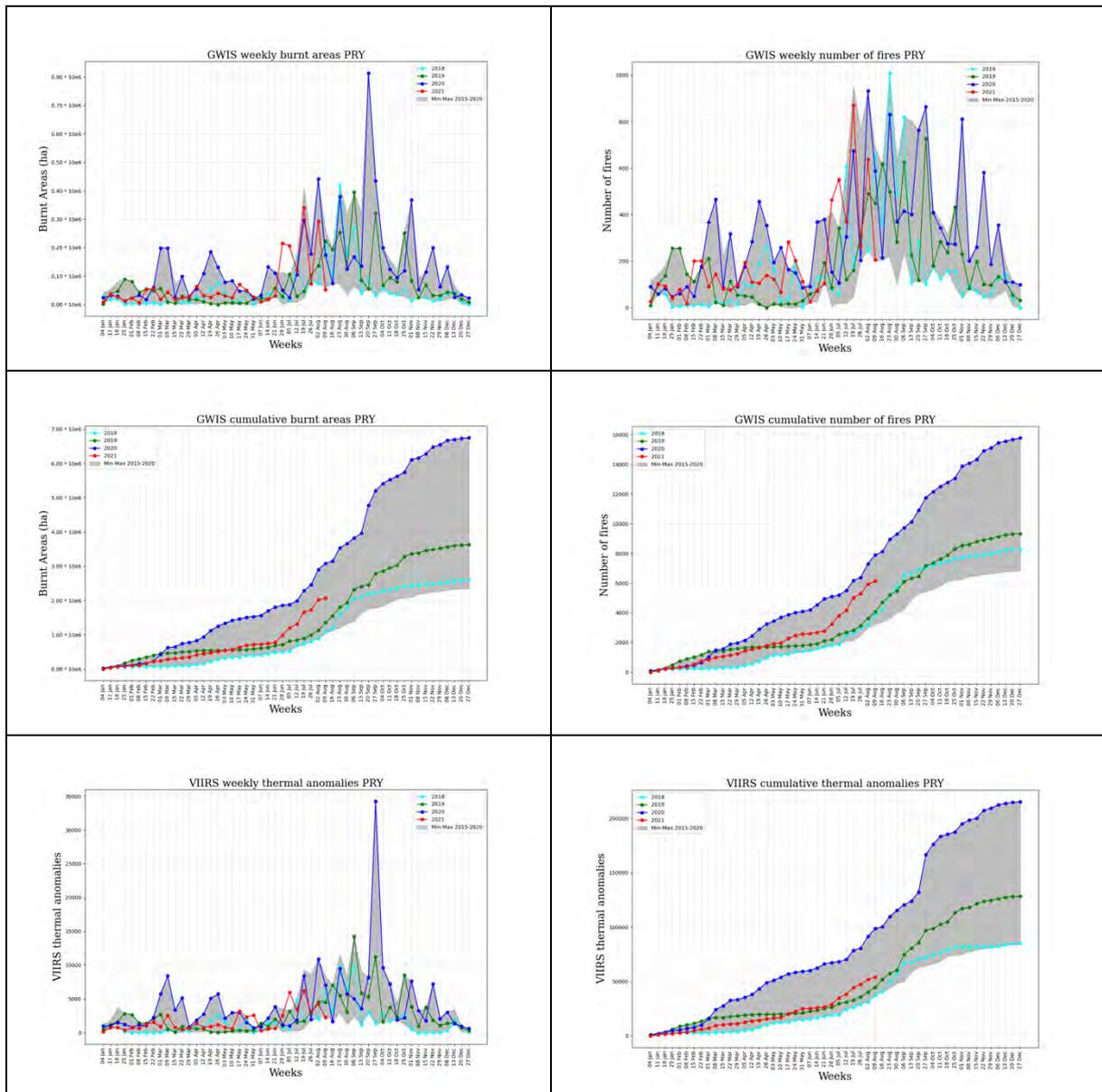


Figure 6. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

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 0.83 Mha burnt in Peru since January 1 until August 15, 2021, the highest value since 2015 for the same period. Approximately 63,617 ha burnt in the last week. The number of thermal anomalies until August 15, 2021 (20,751) shows a typical trend in the region. 2795 thermal anomalies registered last week, increasing after the last week.

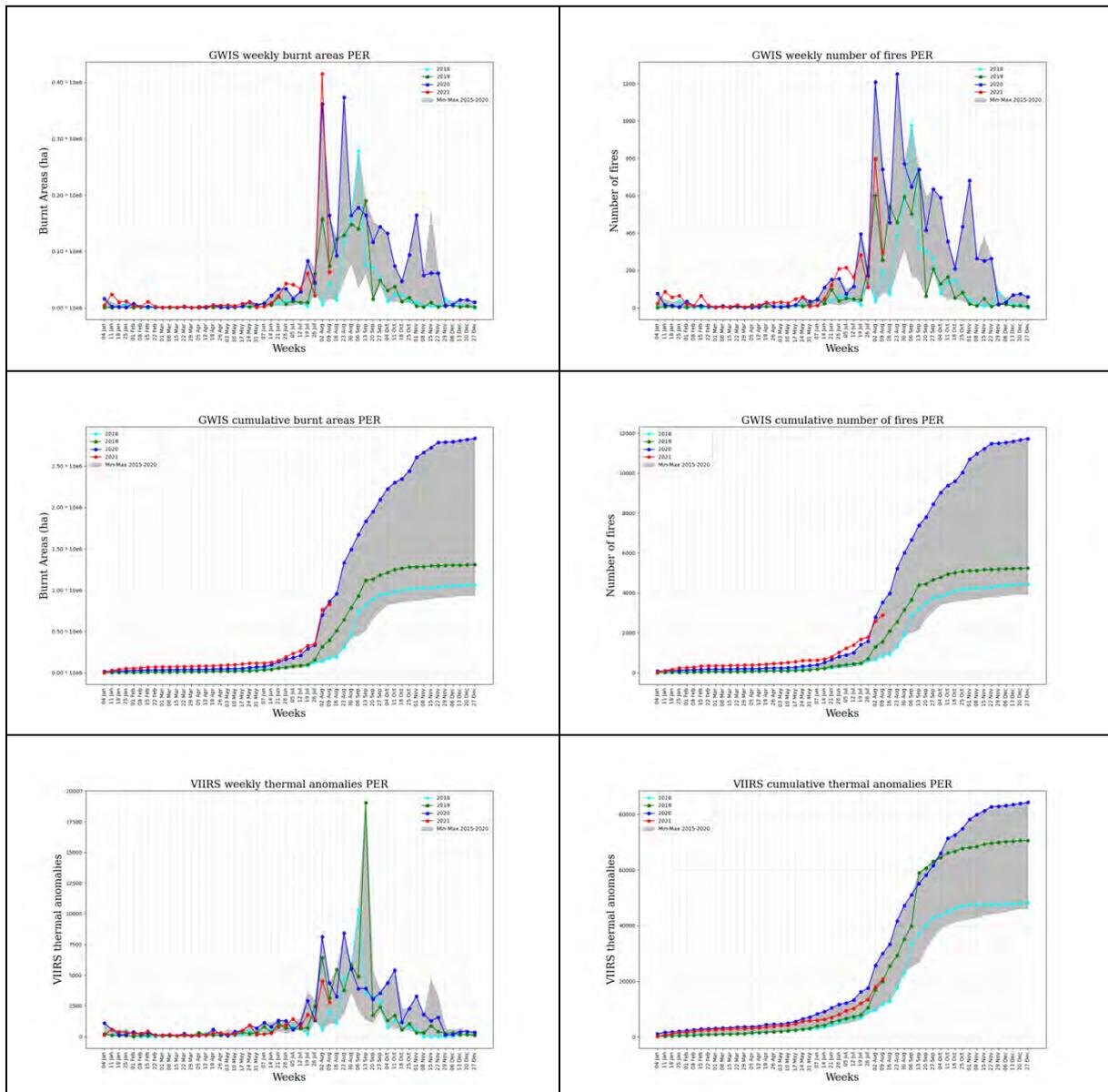


Figure 7. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

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 4.25 Mha burnt in Venezuela since January 1 until August 15, 2021, with 15,472 ha burnt in the last week. The number of fires recorded in GWIS in the last week was 59. The number of thermal anomalies until August 15, 2021 (119,369) shows a typical trend in the region. 1,121 thermal anomalies were recorded by VIIRS during the last week, a value that is the highest since 2015 for the same week.

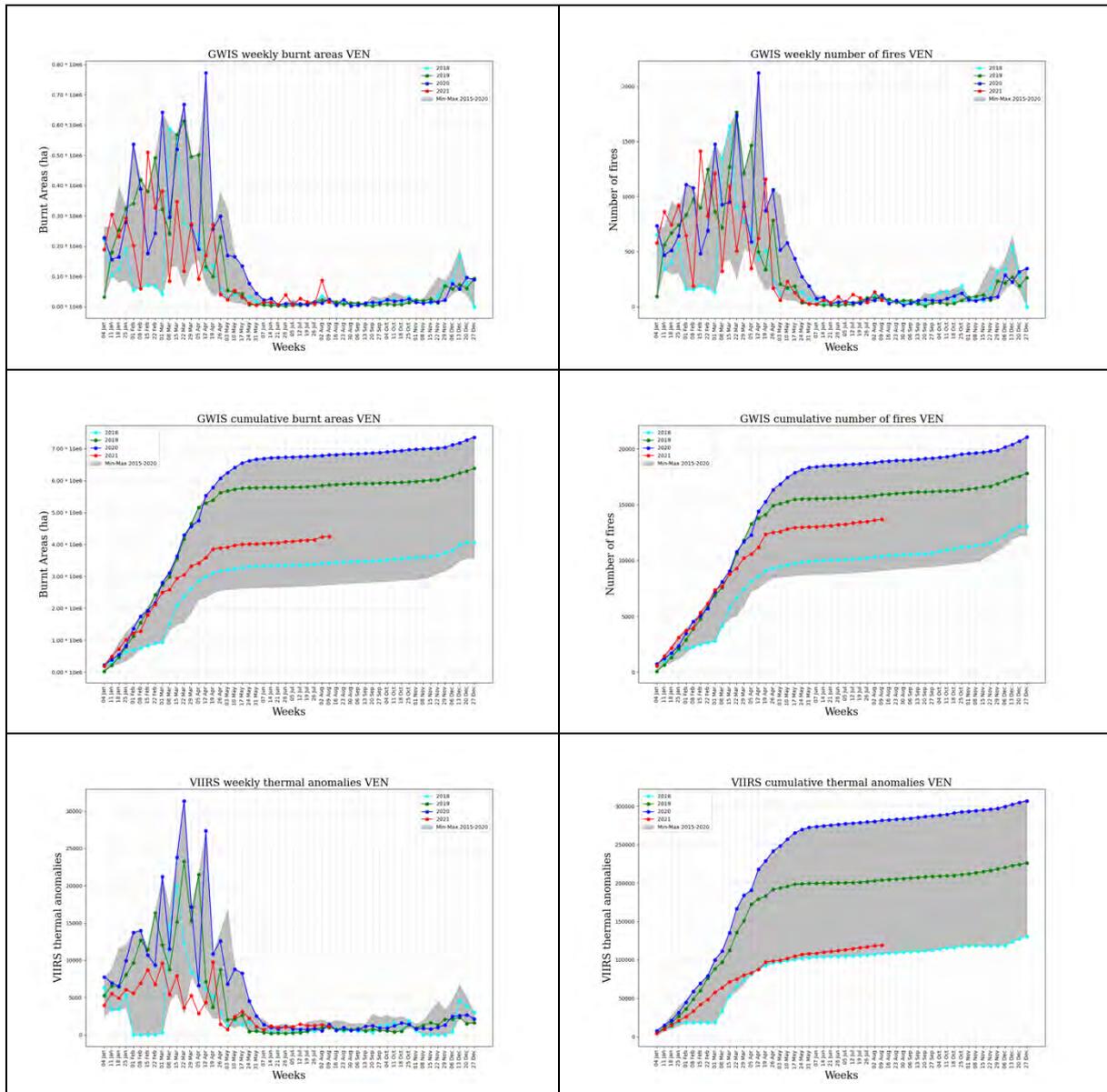


Figure 8. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

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 424,953 burnt in Chile since January 1 until August 15, 2021, with 9,933 ha burnt in the last week. The number of fires recorded in GWIS in the last week was 45. The number of thermal anomalies until August 15, 2021 (12,037) shows a typical trend in the region as compared to the trends during previous years. 358 thermal anomalies were detected by VIIRS during the last week, which is similar to the values in the same week during previous years.

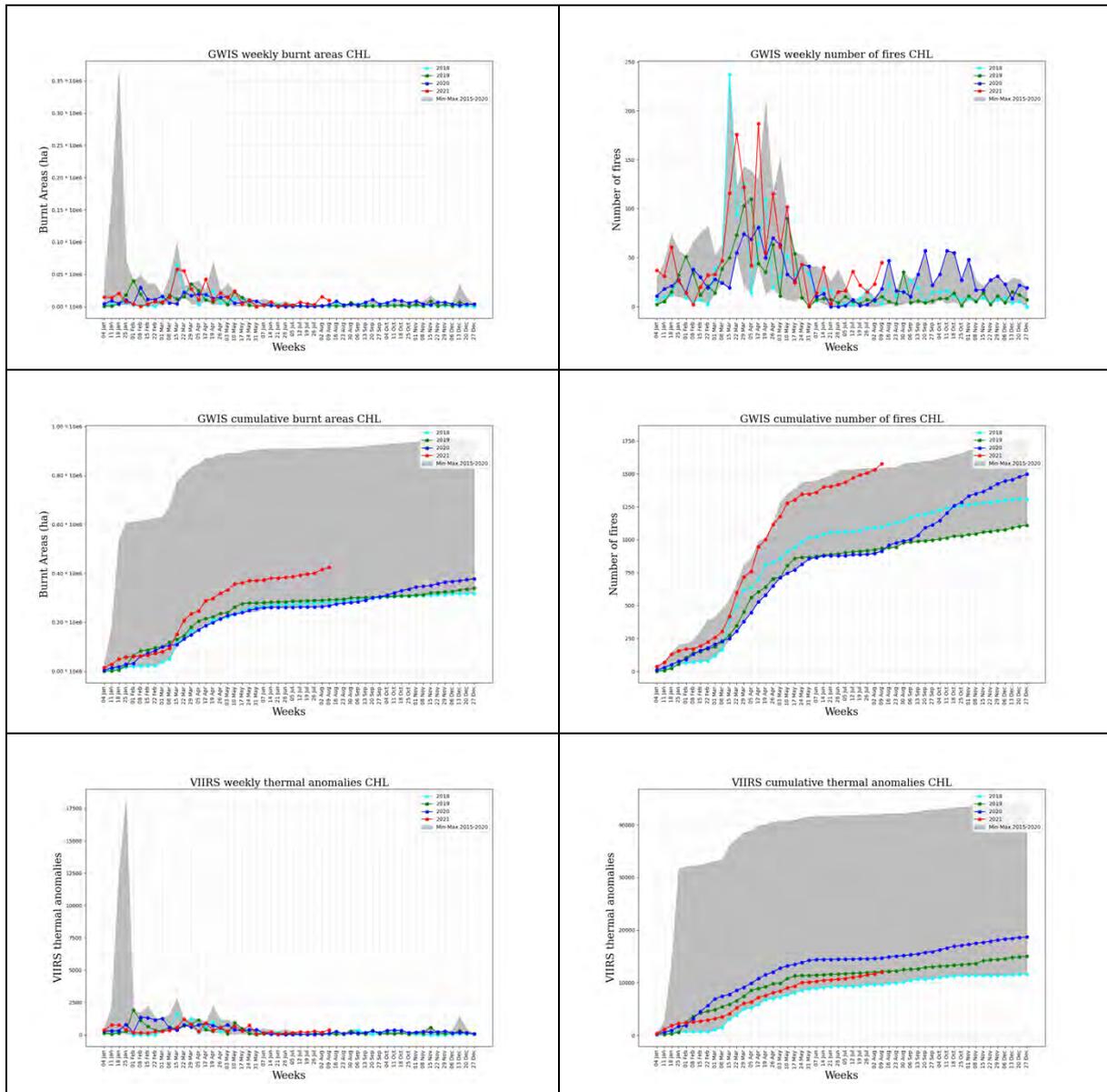


Figure 9. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

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 2,56 Mha burnt in Argentina since January 1 until August 15, 2021, with 86,237 ha burnt in the last week. These values are below of those of 2020. The number of fires recorded in GWIS in the last week was 380; this is the second lowest value since 2015 for the same period. The number of thermal anomalies until August 15, 2021 (71,512) shows a typical trend in the region. 4,810 thermal anomalies were recorded by VIIRS during the last week, a value that is like those recorded in that week for 2020.

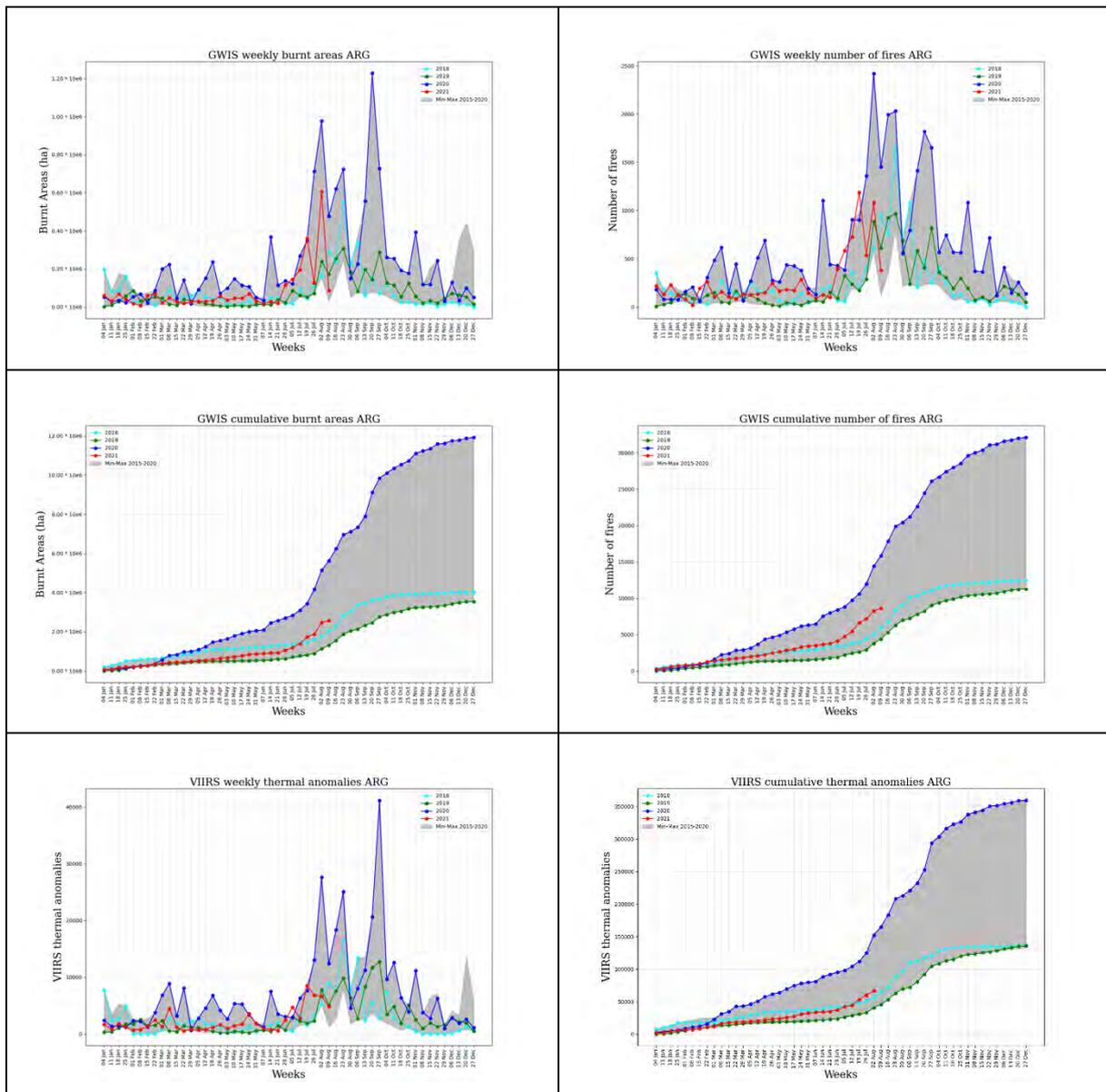


Figure 10. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

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 49,291 ha burnt in Ecuador since January 1 until August 15, 2021, with 1,564 ha burnt in the last week. The number of fires recorded in GWIS in the last week was 5. The number of thermal anomalies until August 15, 2021 (1,609) shows a typical trend in the region. 109 thermal anomalies were detected by VIIRS in the last week.

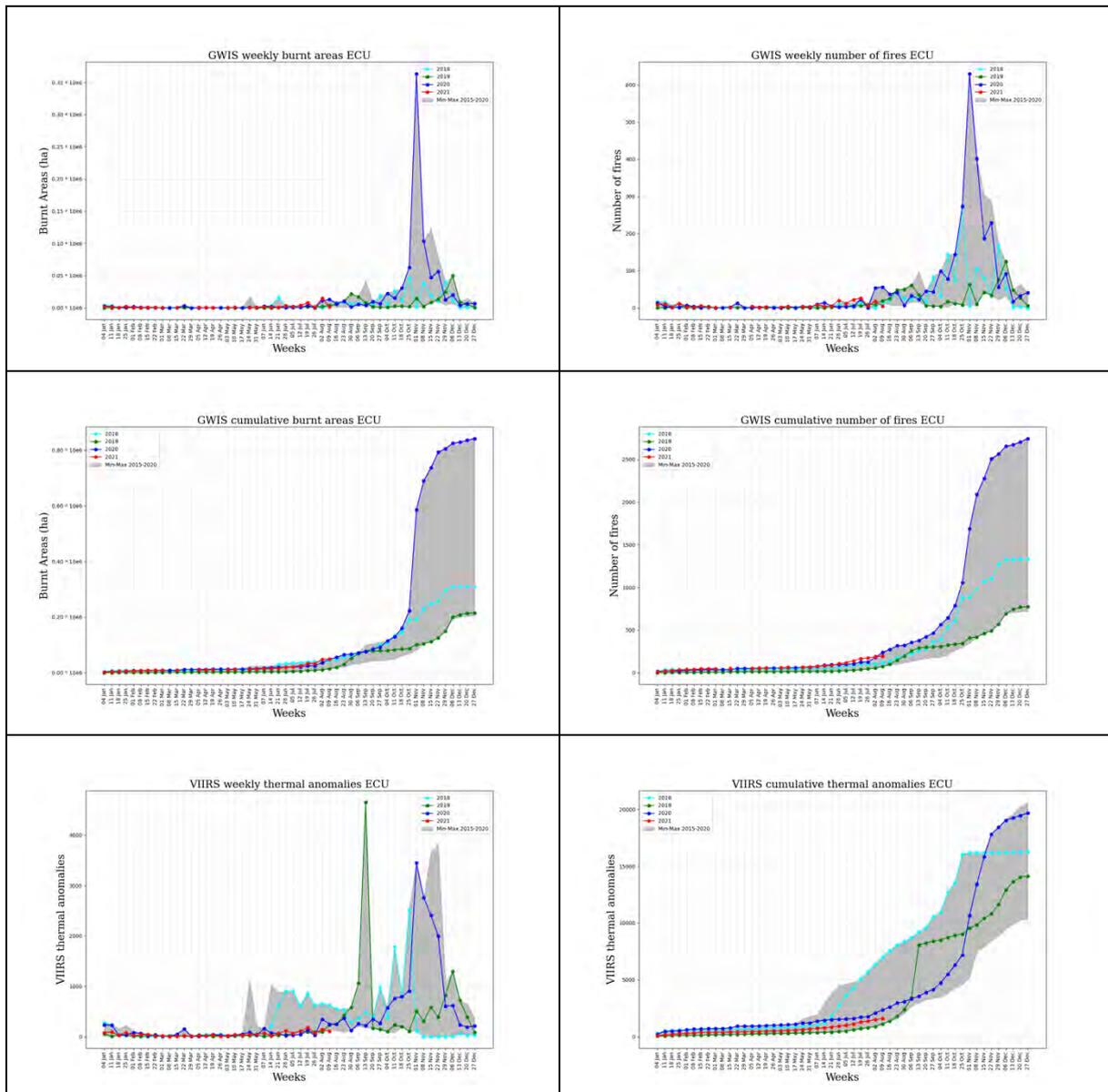


Figure 11. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

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 44,016 ha burnt in Uruguay since January 1 until August 15, 2021, with 442 ha burnt last week, which is the highest weekly value in 2021. 20 fires were recorded last week. The number of thermal anomalies until August 15, 2021 (1,305) shows a typical trend in the region.

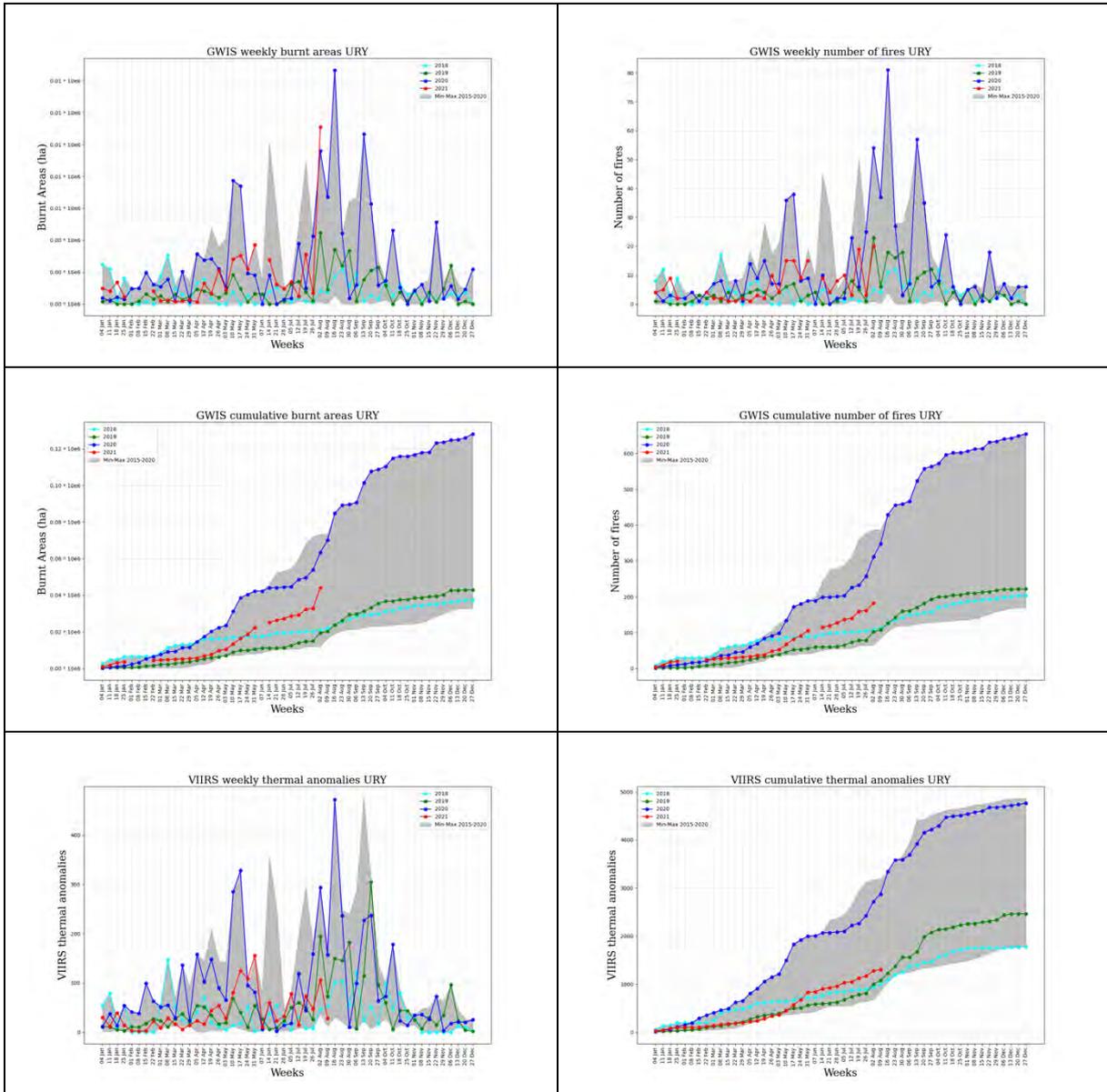


Figure 12. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

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 15, 2021, in Guiana, with no fires recorded last week. The number of thermal anomalies until August 15, 2021 (32) shows a typical trend in the region as compared to the trends during previous years. 0 thermal anomalies were detected by VIIRS during the last week, which is similar to the values in the same week during previous years.

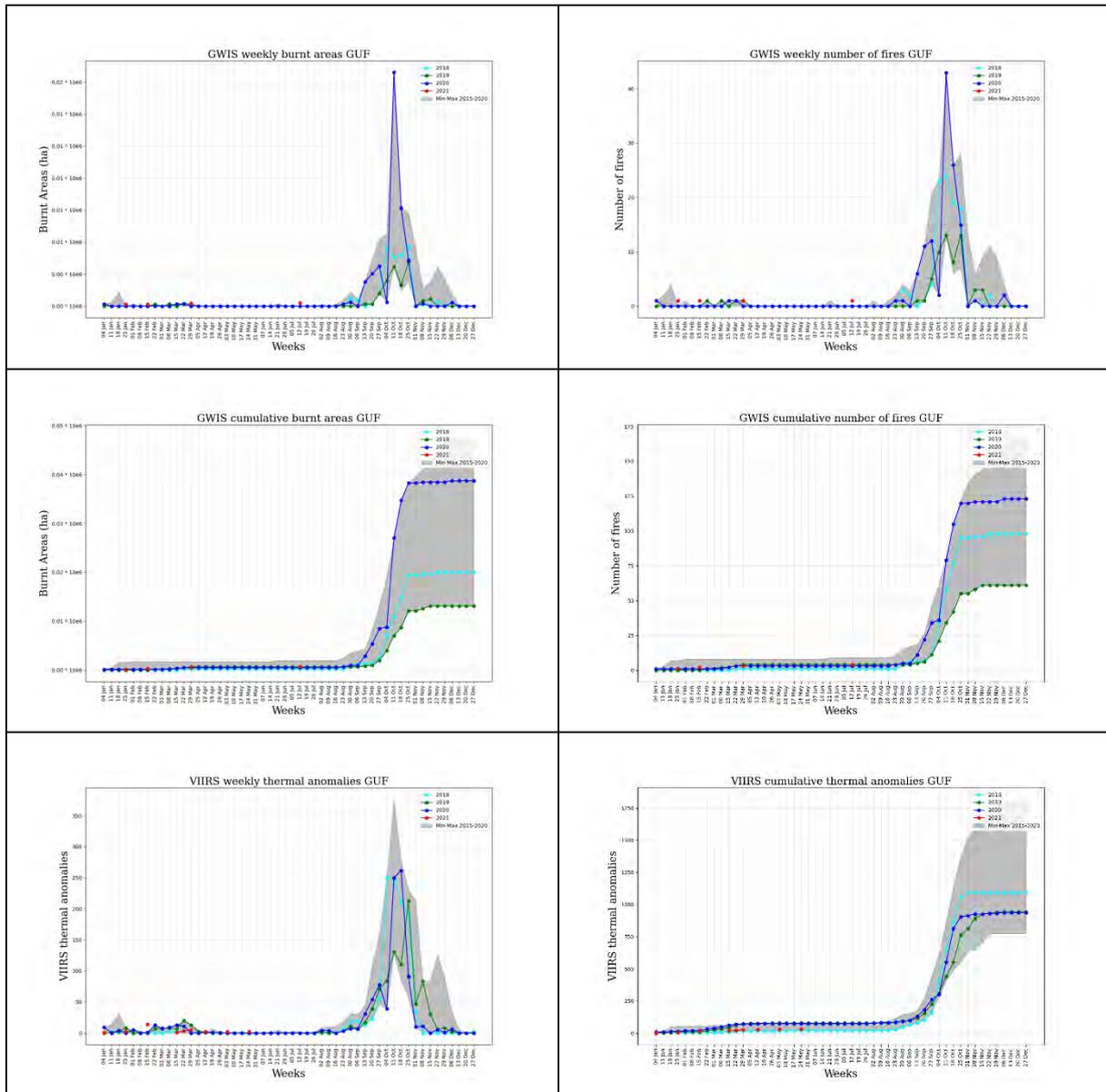


Figure 13. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

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 726 ha burnt in Guyana since January 1 until August 15, 2021, with no fires recorded last week. The number of thermal anomalies until August 15, 2021 (1,572) 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.

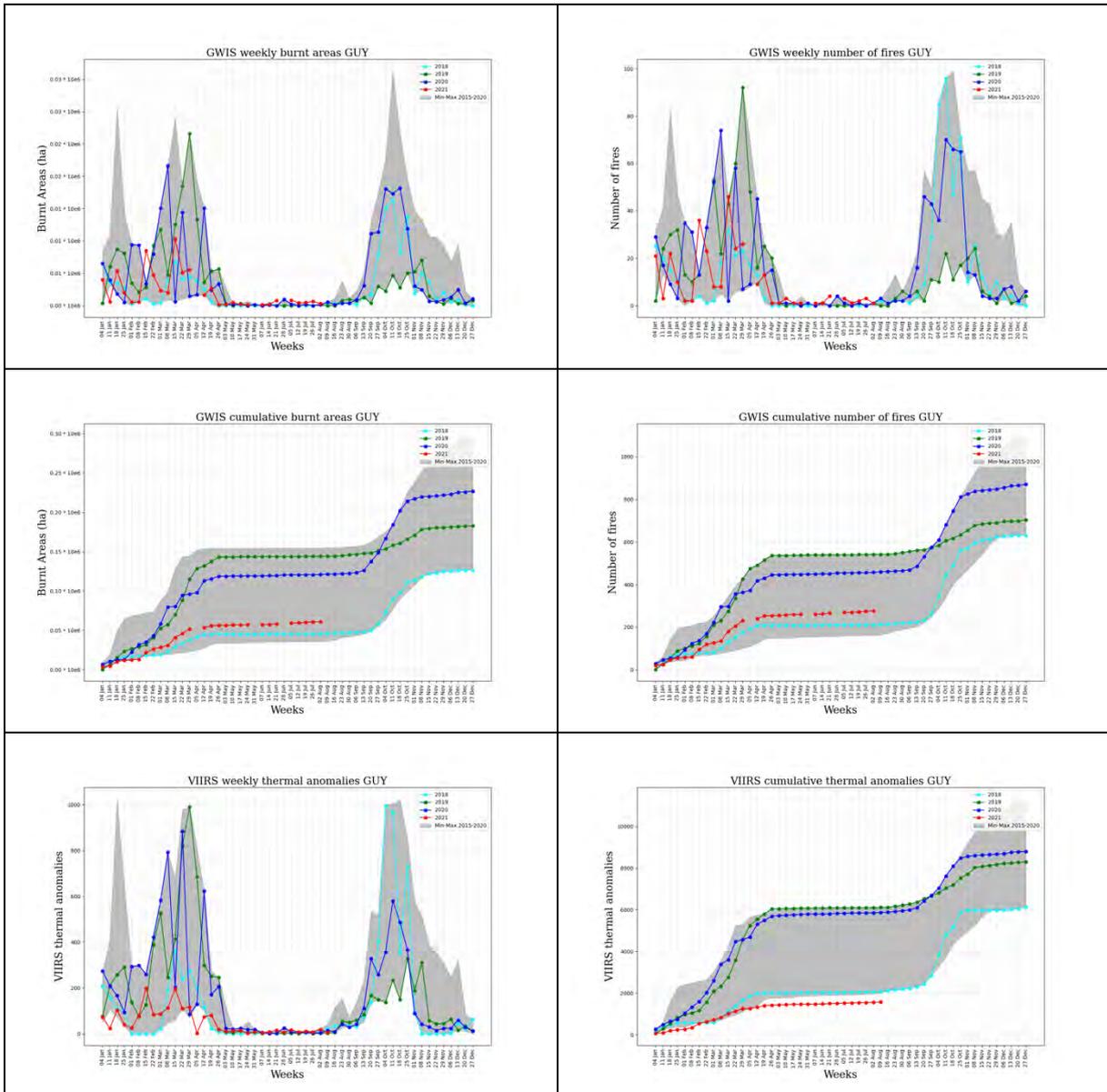


Figure 14. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

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 15, 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 15, 2021 (121) shows a typical trend in the region. 0 thermal anomalies were registered last week.

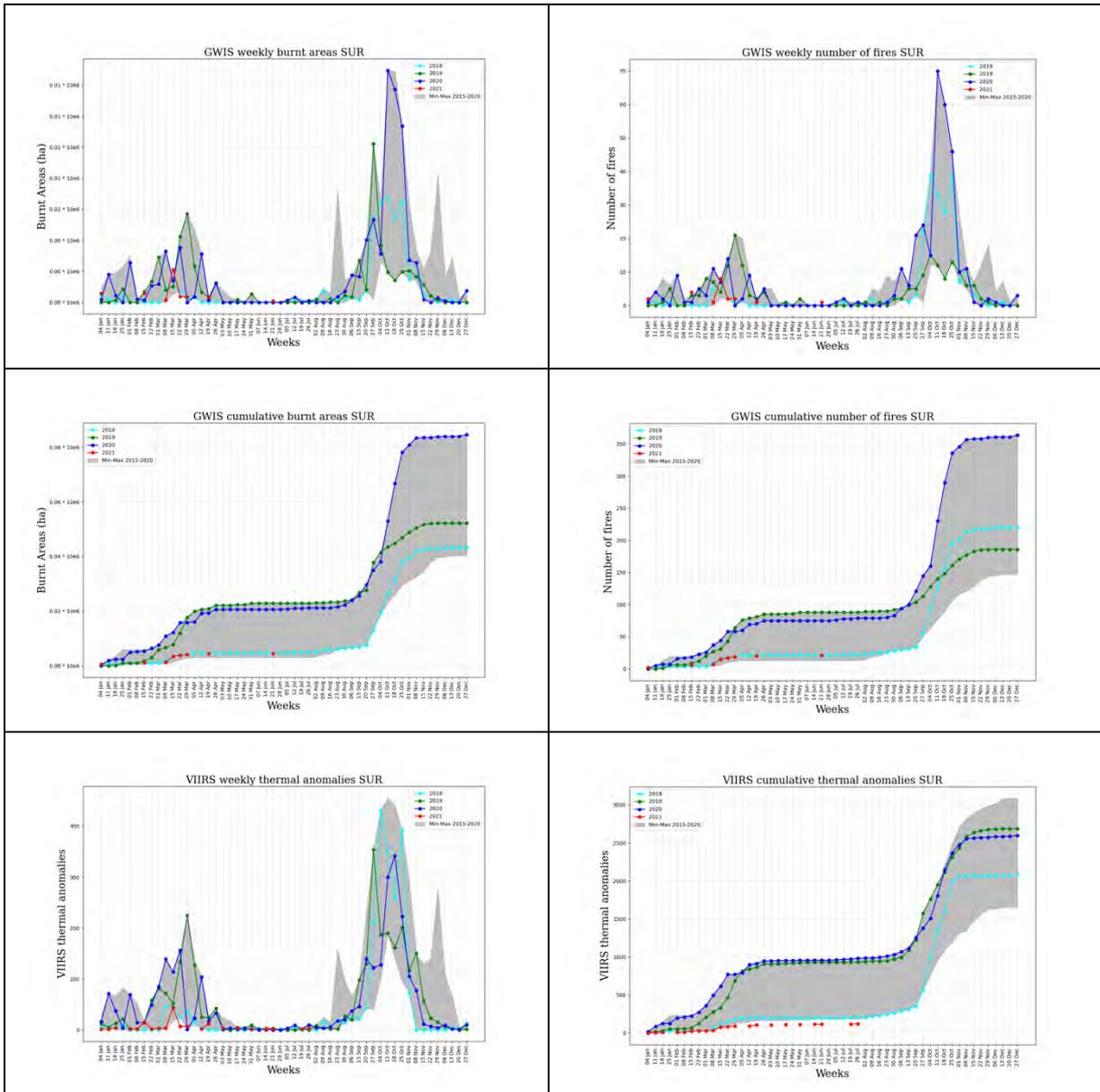


Figure 15. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years.

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 09 to August 15, 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 continue to be very high to extreme in the central and eastern part of Brazil, northern Chile, southern Bolivia and northern Paraguay, and moderate to high in northern Bolivia, southern Paraguay and across eastern Argentina.

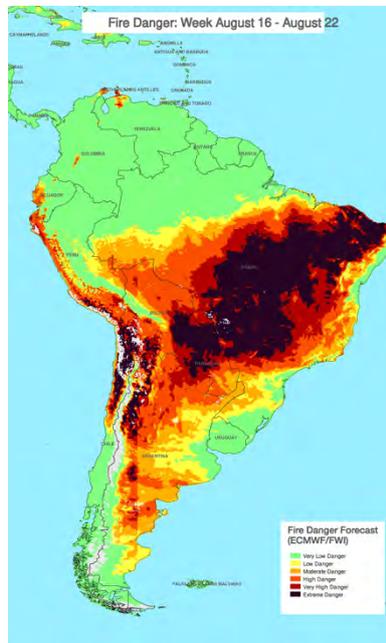


Figure 16. Average Fire danger forecast. Week, August 09- August 15, 2021.

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

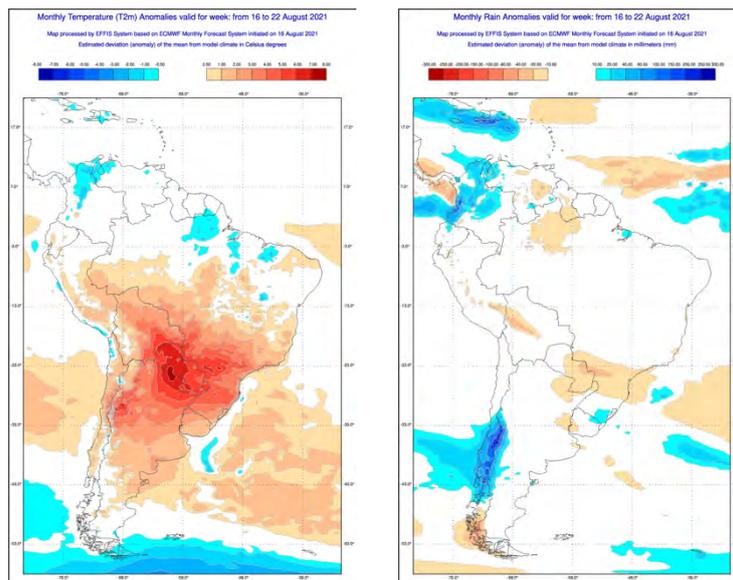


Figure 17. Fire weather anomalies of the current week, August 16 - August 22, 2021.

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

16 List of Figures

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 2

Figure 2 Trend of burnt areas and number of fires as compared to data in the last 5 years..... 3

Figure 3. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years. 4

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

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

Figure 6. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years. 7

Figure 7. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years. 8

Figure 8. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years. 9

Figure 9. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years. 10

Figure 10. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years. 11

Figure 11. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years. 12

Figure 12. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years. 13

Figure 13. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years. 14

Figure 14. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years. 15

Figure 15. Trend of burnt areas, number of fires and thermal anomalies as compared to data in the last 5 years. 16

Figure 16. Average Fire danger forecast. Week, August 09- August 15, 2021..... 17

Figure 17. Fire weather anomalies of the current week, August 16 - August 22, 2021..... 17

GETTING IN TOUCH WITH THE EU

In person

All over the European Union there are hundreds of Europe Direct information centres. You can find the address of the centre nearest you at: https://europa.eu/european-union/contact_en

On the phone or by email

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),
- at the following standard number: +32 22999696, or
- by electronic mail via: https://europa.eu/european-union/contact_en

FINDING INFORMATION ABOUT THE EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: https://europa.eu/european-union/index_en

EU publications

You can download or order free and priced EU publications from EU Bookshop at: <https://publications.europa.eu/en/publications>. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see https://europa.eu/european-union/contact_en).

The European Commission's science and knowledge service

Joint Research Centre

JRC Mission

As the science and knowledge service of the European Commission, the Joint Research Centre's mission is to support EU policies with independent evidence throughout the whole policy cycle.



EU Science Hub
ec.europa.eu/jrc



@EU_ScienceHub



EU Science Hub - Joint Research Centre



EU Science, Research and Innovation



EU Science Hub



Publications Office
of the European Union