

# **RSF Advances in El-Fasher as Conflict-Related Damage Intensifies, 14-20 May 2024**

21 May 2024

**Yale** SCHOOL OF PUBLIC HEALTH  
*Humanitarian Research Lab*

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This report was independently produced by the Yale School of Public Health's Humanitarian Research Lab with the support of the Avaaz Foundation. Learn more at <https://medicine.yale.edu/lab/khoshnood/> and <https://avaaz.org>.

The Faculty Director of the Humanitarian Research Lab (HRL) at the Yale School of Public Health is Dr. Kaveh Khoshnood. The analysis and production of this report was overseen by HRL Executive Director Nathaniel Raymond and Caitlin Howarth. Analysis and report production was conducted by the Humanitarian Research Lab's Conflict Analytics team.

Citation | Caitlin N. Howarth, Kaveh Khoshnood, Nathaniel A. Raymond et al. "RSF Advances in El-Fasher as Conflict-Related Damage Intensifies, 14-20 May 2024" 21 May 2024. Humanitarian Research Lab at Yale School of Public Health: New Haven.

## I. Key Findings

The Yale School of Public Health's Humanitarian Research Lab (HRL) identifies significant new conflict-related damage to the northeastern, eastern, and southeastern neighborhoods of El-Fasher between 14 – 18 May 2024. Yale HRL observes RSF forces gaining ground in several directions: conflict-related damage visibly encircles the southeast of El-Fasher and there is additional new damage in the northeast.<sup>i</sup> Yale HRL observes new damage in the neighborhoods of Kharaba (near the power station), Ashishat, Stock Exchange, Almahad, Tijaniya Extension, and Al Takamul.

The total area in El-Fasher confirmed as damaged between 14 – 18 May 2024 is approximately 0.467 square kilometers. This area is equivalent to 39 football pitches.<sup>ii</sup> The total area of El-Fasher that has sustained conflict related damage since 21 March 2024 confirmed through satellite imagery analysis is 1.393 square kilometers, approximately one third of which occurred between 14 – 18 May 2024.<sup>iii</sup>

Multiple sources report damage to Abu Shouk IDP camp in the northwest of El-Fasher due to both RSF munitions and SAF aerial bombardment on 20 and 21 May 2024.<sup>iv</sup> Artillery impact points on or near defensive positions have been observed in satellite images. Yale HRL has observed RSF vehicles in multiple locations and multiple directions around El-Fasher. The imagery and analysis of these locations are being withheld for reasons of human security.

Yale HRL corroborates conflict-related damage to the Umm Defso market, near the city center of El-Fasher locality, in satellite imagery between 18-20 May 2024. Open sources report that the market was damaged by RSF bombardment which allegedly killed at least seven people.<sup>v</sup> Yale HRL corroborates conflict-related damage to the Grand Market (Souk) in the city center of El-Fasher between 18-20 May 2024.<sup>vi</sup> There is no visible conflict-related damage in satellite imagery to the buildings near either the Umm Defso market or the Grand Market (Souk) at present.

Outside El-Fasher city, Yale HRL has identified eight communities between 28 – 59 km west, northwest, and southwest of El-Fasher that have sustained fire-related damage consistent with arson between 5 – 20 May 2024. These communities are referred to as Ammar Jadid, Unidentified Community 13, Unidentified Community 15, Unidentified Community 17, Unidentified Community 18, Unidentified Community 19, Unidentified Community 20, and Unidentified Community 21. Some of these communities have sustained damage on multiple occasions. Unidentified Community 17 and Unidentified Community 18 are the first communities identified with damage to the southwest of El-Fasher since 21 March 2024. Unidentified Community 17 is located approximately 59 km west of El-Fasher city; Unidentified Community 18 is located near the A43 road between Nyala and El-Fasher. The attacks on these communities indicate that RSF's forces may be within 40 km to the south of Zamzam IDP camp. To date, Yale HRL has documented 30 communities around El-Fasher that have sustained fire-related damage consistent with arson between 21 March – 20 May 2024. This total is greater

than the total number of arson-attacked communities identified across all of Darfur over more than three months between 15 April – 30 July 2023.<sup>vii</sup>

## II. Human Security Analysis

The fight for El-Fasher is fully underway with significant civilian impacts, including the death of 85 civilians and the injury of over 700 others from 10 – 20 May according to Medecins Sans Frontieres (MSF).<sup>viii</sup> MSF Sudan has reported that on 20 May 2024 the Southern hospital received 60 casualties, nine of whom died from injuries.<sup>ix</sup> If the current combat trajectory in El-Fasher remains unchanged, RSF encirclement and defeat of SAF's 6th infantry division and aligned forces through attrition is highly likely in days to weeks. RSF could then target civilians, especially those from non-Arab ethnic groups, in and around El-Fasher at will. These at-risk populations have no clear route to safely escape El-Fasher before this scenario may occur.

The state of full-fledged fighting in El-Fasher has resulted in damage to dwellings and civilian displacement. The International Organization for Migration (IOM) reported an estimated 184 households were displaced due to combat on 15 May alone, of which approximately 134 households sought refuge in Dar As Salam locality, North Darfur; other households sought refuge across the El-Fasher locality.<sup>x</sup> IOM later reported that the 20 May clashes between SAF and RSF in El-Fasher resulted in approximately 250 additional households displaced to other locations within El-Fasher locality.<sup>xi</sup> This displacement is occurring while there are reports that civilians are blocked from leaving El-Fasher.<sup>xii</sup>

Healthcare facilities continue to report conflict-related damage to their facilities: the Saudi Hospital complex is reportedly out of service due to conflict-related damage, presented as RSF indiscriminate bombardment, which allegedly injured ten people.<sup>xiii</sup> At this complex the Saudi Hospital for Obstetrics and Gynecology's water tank and electrical system were reportedly damaged.<sup>xiv</sup> This critical infrastructure is essential for the functioning of the hospital, which is a special protected object under international humanitarian law.

### *Methodology*

Yale HRL utilizes data fusion methodologies of open source and public and commercially available remote sensing data. Yale HRL produced this report through the cross-corroboration of open source and remote sensing data, including satellite imagery and thermal sensor data.

Place names were identified using UN P-codes obtained via the United Nations Humanitarian Data Exchange (HDX) and International Organization for Migration (IOM)'s Displacement Tracking Matrix (DTM) Sudan. This baseline source of information was then verified and informed through open source analysis by Yale HRL's analysts with relevant cultural and linguistic skills. In some cases, communities may have names similar to other communities or may be known by multiple names.

Specific coordinates have been provided to support the further identification and disambiguation of specific place names and community locations. Human security concerns were accounted for as part of the decision to release specific coordinates; potential civilian risk was rated minimal because these communities have already been visibly attacked, and in the case of combat activity and coordinates are released, it is assessed that the combatants are aware of this situation.

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<sup>i</sup> Sudan Tribune, “مسيرات مجهولة تستهدف الميناء النهري بكوستي وتجدد القصف المدفعي في الفاشر” May 17, 2024, <https://sudantribune.net/article285708/>, <https://perma.cc/68AJ-6ABH>; International Organization for Migration, “DTM Sudan Flash Alert: Conflict in Al Fasher locality (Al Fasher Town), North Darfur,” Displacement Tracking Matrix: Sudan, May 16, 2024, <https://mailchi.iom/dtm-sudan-flash-alert-conflict-in-al-fasher-locality-al-fasher-town-north-darfur-update-027>, <https://perma.cc/7ARX-4ZV9>.

<sup>ii</sup> The definition of football pitches aligns with the FIFA standard football pitches. FIFA recommends a dimension of 105 meters x 68 meters, an area equivalent to 0.071 kilometers squared.

<sup>iii</sup> Caitlin N. Howarth, Kaveh Khoshnood, Nathaniel A. Raymond et al. “Escalating Conflict-Related Damage in Eastern and Southeastern Neighborhoods of El-Fasher, 10-14 May 2024” 15 May 2024. Humanitarian Research Lab at Yale School of Public Health: New Haven, [https://medicine.yale.edu/lab/khoshnood/publications/consolidated-el-f-20escalating-10-14-may-2024\\_478818\\_284\\_26865\\_v1.pdf](https://medicine.yale.edu/lab/khoshnood/publications/consolidated-el-f-20escalating-10-14-may-2024_478818_284_26865_v1.pdf), <https://perma.cc/X5ZZ-RCAU>.

<sup>iv</sup> Ayin Network, “قتلى وجرحى مدنيين جراء قصف للدعم السريع في الفاشر,” May 20, 2024, <https://3ayin.com/alfashir/>, <https://perma.cc/LU6S-PE62>; Radio Dabanga, “قتلى وجرحى في قصف للدعم السريع,” May 20, 2024, <https://www.dabangasudan.org/ar/all-news/article/%d9%82%d8%aa%d9%84%d9%89-%d9%88%d8%ac%d8%b1%d8%ad%d9%89-%d9%81%d9%8a-%d9%82%d8%b5%d9%81-%d9%84%d9%84%d8%af%d8%b9%d9%85-%d8%a7%d9%84%d8%b3%d8%b1%d9%8a%d8%b9-%d8%b9%d9%84%d9%89-%d9%85%d8%b9%d8%b3%d9%83>, <https://perma.cc/3EZF-AS8B> ; HRL\_MMC\_0013 ; HRL\_MMC\_0014 ; Darfur Victims Support (@dvs2030), “قزات الدعم السر” May 20, 2024, <https://x.com/dvs2030/status/1792553054518002009>, archived at <https://perma.cc/AAN4-QM8H>

<sup>v</sup> Sudan Tribune, “12 قتيل في أحدث معارك الدعم السريع والجيش بالفاشر,” May 20, 2024, <https://sudantribune.net/article285852/>, <https://archive.ph/9cKck>; Ayin Network, “قتلى وجرحى مدنيين جراء قصف للدعم السريع في الفاشر,” May 20, 2024, <https://3ayin.com/alfashir/>, <https://perma.cc/LU6S-PE62> ; HRL\_MMC\_0013; Darfur24, “قتلى وجرحى في قصف جوي ومدفعي على أحياء الفاشر,” May 20, 2024 <https://www.darfur24.com/2024/05/20/%D9%82%D8%AA%D9%84%D9%89-%D9%88%D8%AC%D8%B1%D8%AD%D9%89-%D9%81%D9%8A-%D9%82%D8%B5%D9%81-%D8%AC%D9%88%D9%8A-%D9%88%D9%85%D8%AF%D9%81%D8%B9%D9%8A-%D8%B9%D9%84%D9%89-%D8%A3%D8%AD%D9%8A%D8%A7%D8%A1-%D8%A7/>, <https://perma.cc/9E57-NS35>

<sup>vi</sup> Darfur24, “قتلى وجرحى في قصف جوي ومدفعي على أحياء الفاشر,” May 20, 2024 <https://www.darfur24.com/2024/05/20/%D9%82%D8%AA%D9%84%D9%89-%D9%88%D8%AC%D8%B1%D8%AD%D9%89-%D9%81%D9%8A-%D9%82%D8%B5%D9%81-%D8%AC%D9%88%D9%8A-%D9%88%D9%85%D8%AF%D9%81%D8%B9%D9%8A-%D8%B9%D9%84%D9%89-%D8%A3%D8%AD%D9%8A%D8%A7%D8%A1-%D8%A7/>, archived at <https://perma.cc/9E57-NS35> ; Ayin Network, “قتلى وجرحى مدنيين جراء قصف للدعم السريع في الفاشر,” May 20, 2024, <https://3ayin.com/alfashir/>, <https://perma.cc/LU6S-PE62> ; HRL\_MMC\_0013; Darfur24, “قتلى وجرحى في قصف جوي ومدفعي على أحياء الفاشر,” May 20, 2024 <https://www.darfur24.com/2024/05/20/%D9%82%D8%AA%D9%84%D9%89-%D9%88%D8%AC%D8%B1>

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<https://perma.cc/9E57-NS35>

vii Caitlin N. Howarth, Kaveh Khoshnood, Nathaniel A. Raymond et al. “EVIDENCE OF ALLEGED WIDESPREAD, SYSTEMATIC, AND TARGETED MASS ATROCITIES IN DARFUR, 15 APRIL – 10 JULY 2023” 14 July 2023. Humanitarian Research Lab at Yale School of Public Health: New Haven.

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viii Medecins Sans Frontieres, “Flashquote about the current situation in El Fasher Darfur, Sudan by MSF Head of Emergency: Claire Nicolet,” May 21, 2024,

[https://prezly.msf.org.uk/flashquote-about-the-current-situation-in-el-fasher-darfur-sudan-by-msf-head-of-emergency-claire-nicolet?utm\\_source=prezly.com&utm\\_medium=campaign&utm\\_campaign=SUDAN%20Flashquote%20about%20the%20current%20situation%20in%20El%20Fasher%20Darfur%2C%20Sudan%20by%20MSF%20Head%20of%20Emergency%3A%20Claire%20Nicolet&utm\\_content=story%20title&utm\\_id=f9efb43a-baaf-496a-ae7-d9f8897cec9b](https://prezly.msf.org.uk/flashquote-about-the-current-situation-in-el-fasher-darfur-sudan-by-msf-head-of-emergency-claire-nicolet?utm_source=prezly.com&utm_medium=campaign&utm_campaign=SUDAN%20Flashquote%20about%20the%20current%20situation%20in%20El%20Fasher%20Darfur%2C%20Sudan%20by%20MSF%20Head%20of%20Emergency%3A%20Claire%20Nicolet&utm_content=story%20title&utm_id=f9efb43a-baaf-496a-ae7-d9f8897cec9b),

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<https://perma.cc/528R-U675>.

x International Organization for Migration, “DTM Sudan Flash Alert: Conflict in Al Fasher locality (Al Fasher Town), North Darfur,” Displacement Tracking Matrix: Sudan, May 16, 2024, <https://mailchi.mp/iom/dtm-sudan-flash-alert-conflict-in-al-fasher-locality-al-fasher-town-north-darfur-update-027>, <https://perma.cc/7ARX-4ZV9>.

xi International Organization for Migration, “DTM Sudan Flash Alert: Conflict in Al Fasher locality (Al Fasher Town), North Darfur,” Displacement Tracking Matrix: Sudan, May 21, 2024, <https://mailchi.mp/iom/dtm-sudan-flash-alert-conflict-in-al-fasher-al-fasher-town-north-darfur-update-029>, <https://perma.cc/HV8E-RWTT>.

xii Sudan Tribune, “قتيل في أحدث معارك الدعم السريع والجيش بالفasher” 12 May 20, 2024,

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xiii Sudan Tribune, “قتيل في أحدث معارك الدعم السريع والجيش بالفasher” 12 May 20, 2024,

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xiv Radio Dabanga “قصف في نيالا والفasher والخرطوم واستمرار الانتهاكات بالجزيرة,” May 20, 2024,

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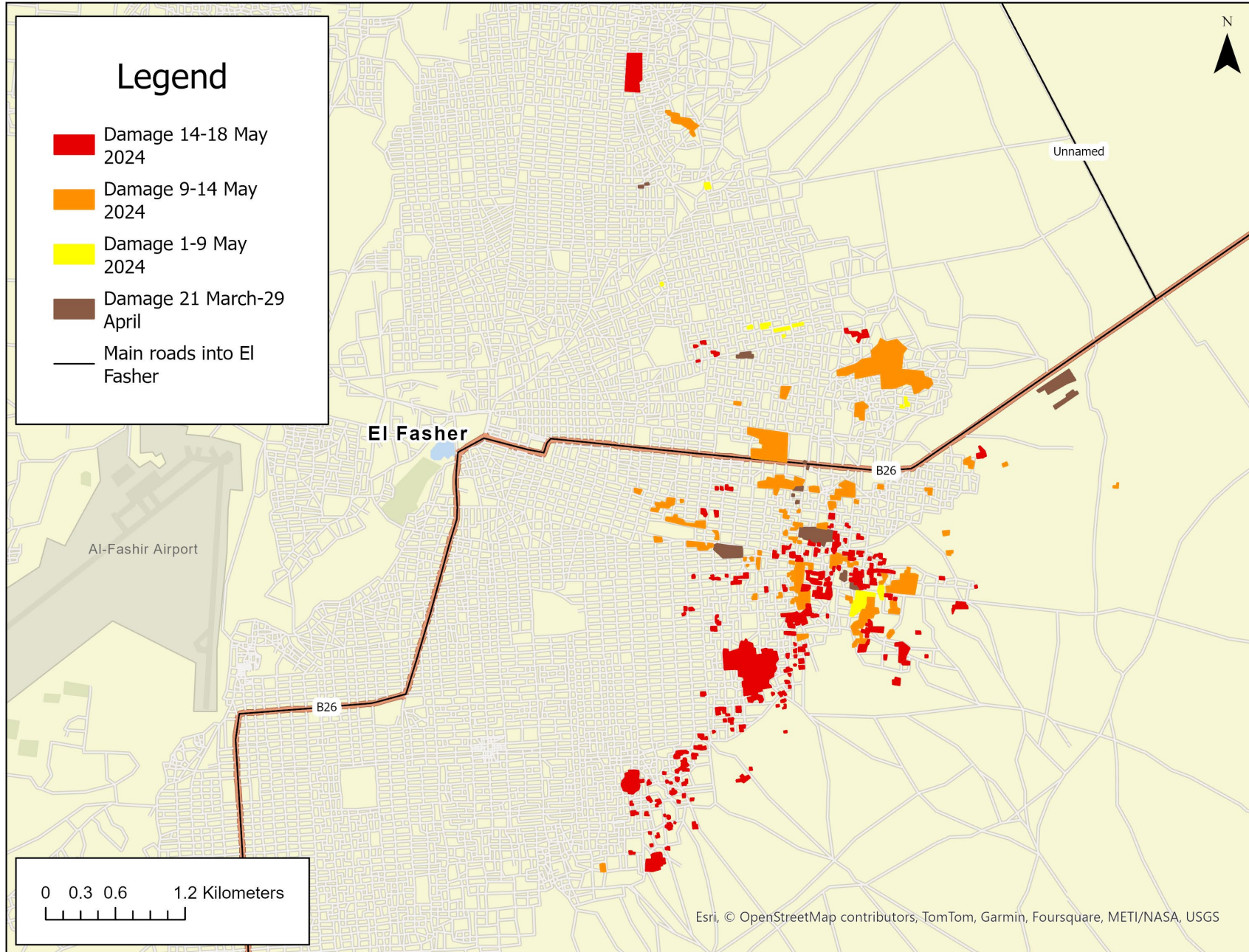
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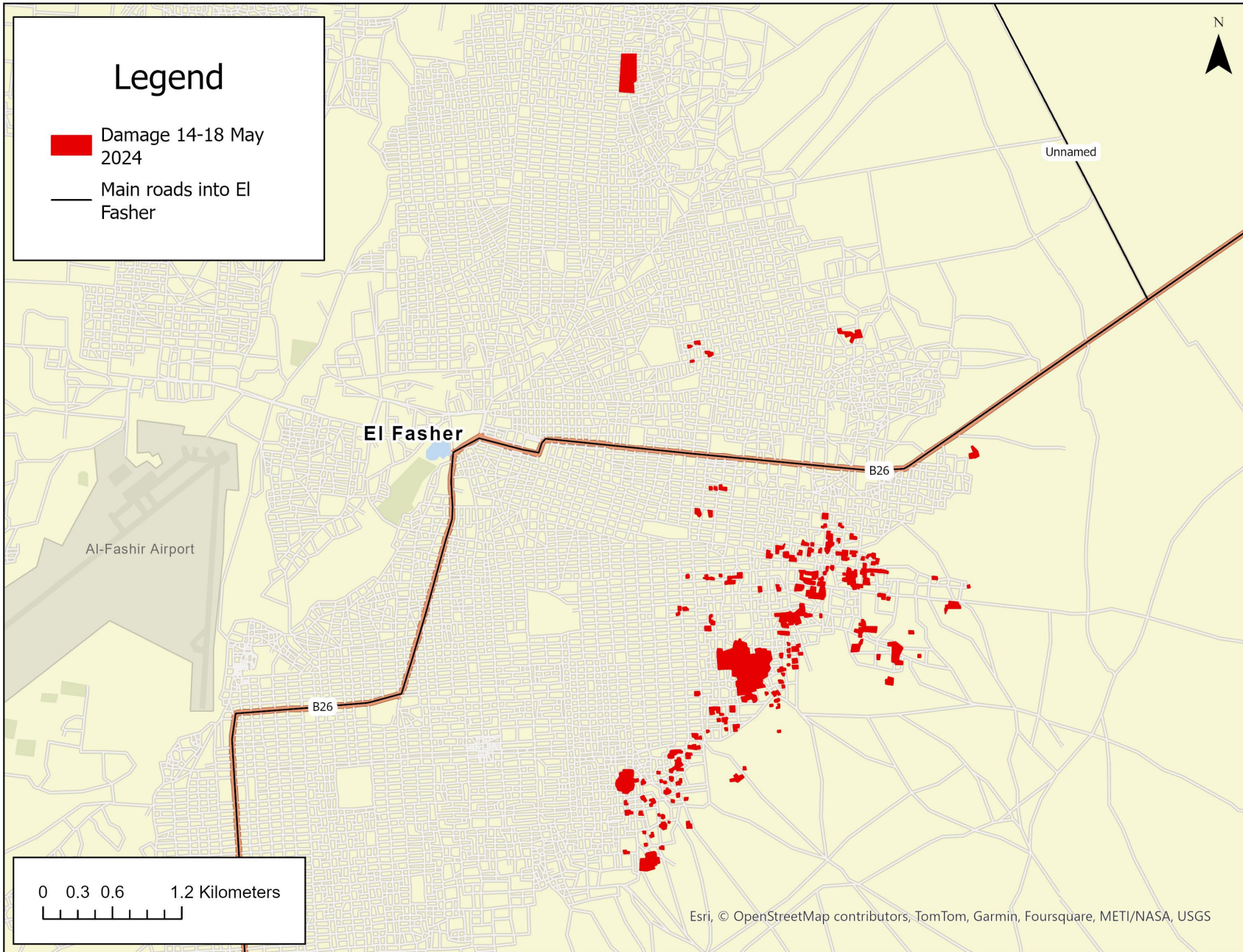


# Thermal scarring observed at El-Fasher between 21 March and 18 May 2024





# Thermal scarring observed at El-Fasher between 14-18 May 2024

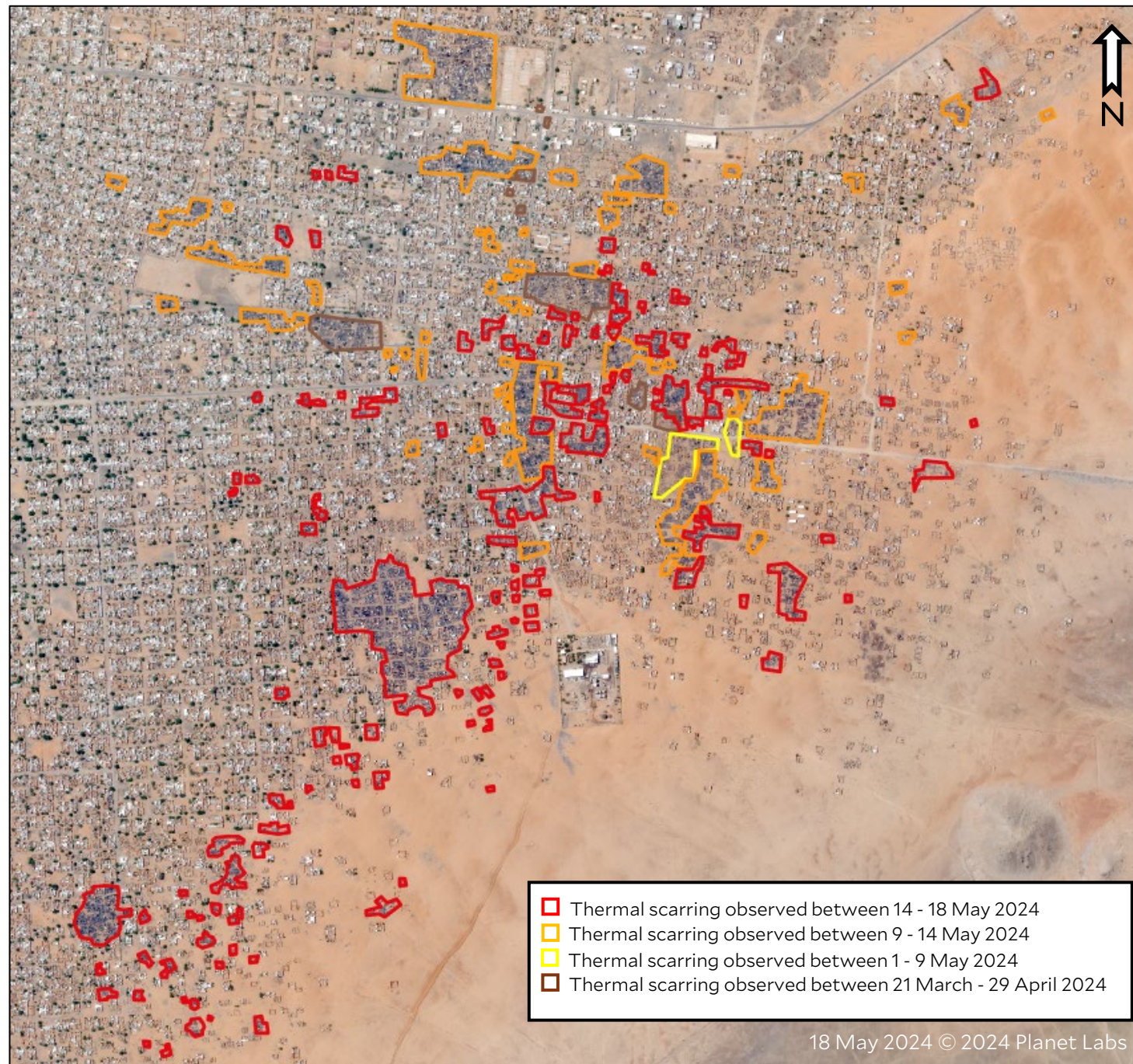


Esri, © OpenStreetMap contributors, TomTom, Garmin, Foursquare, METI/NASA, USGS



# Thermal Scarring in East and Southeast of El-Fasher

OBSERVED BETWEEN 21 MARCH AND 18 MAY 2024



# Grand Market (Souk), El-Fasher

## CONFLICT-RELATED DAMAGE TO GRAND MARKET BETWEEN 18 - 20 MAY 2024

According to imagery analysis, damage was observed at the Grand Market (Souk) in El-Fasher between 18 and 20 May 2024.

There is no visible conflict-related damage to other buildings near the damage identified to the Grand Market (Souk) in satellite imagery at present.



18 May 2024 © 2024 Maxar, USG-Plus



20 May 2024 © 2024 Maxar, USG-Plus



# Umm Defso Market, El-Fasher

## CONFLICT-RELATED DAMAGE TO UMM DEFISO MARKET BETWEEN 18 - 20 MAY 2024

According to imagery analysis, damage was observed at the central area of El-Fasher between 18 and 20 May 2024.

There is no visible conflict-related damage to other buildings near the damage identified to the Umm Defso Market in satellite imagery at present.

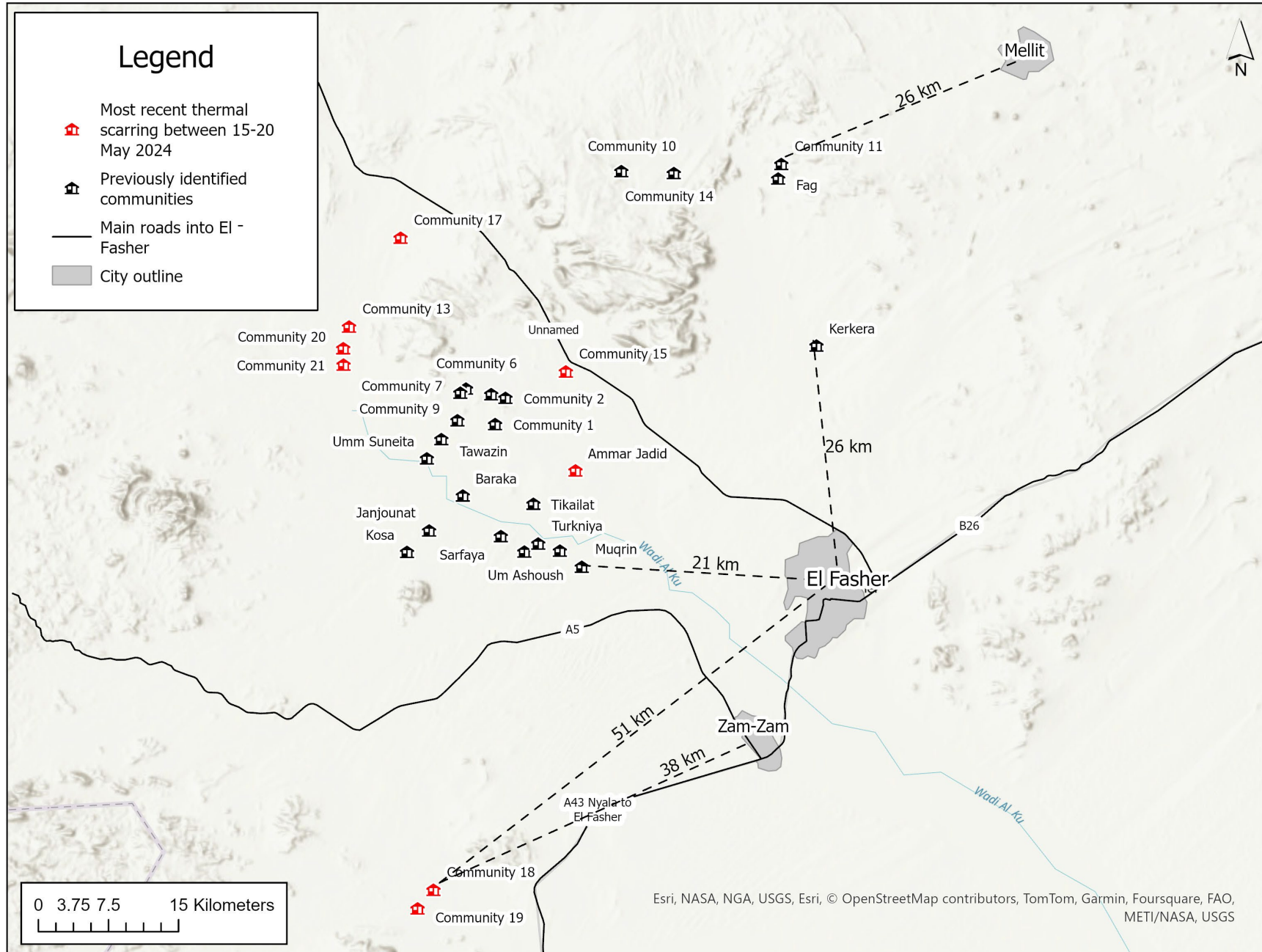


18 May 2024 © 2024 Maxar, USG-Plus



20 May 2024 © 2024 Maxar, USG-Plus

# Thermal scarring of communities between 5 and 20 May 2024





# Unidentified Community 17, North Darfur

## NEW THERMAL SCARRING OBSERVED BETWEEN 15-18 MAY 2024



24.9469349°E 13.9622369°N

15 May 2024 © 2024 Maxar, USG-Plus

According to analysis of satellite imagery, thermal scarring was observed between 15 and 18 May 2024, within the village 59 km west of El-Fasher. According to analysis of VIIRS data, the time of new thermal scarring can be narrowed down to 16 May 2024.

This instance of thermal scarring is the first instance of damage observed to this community since 31 March 2024.



24.9469349°E 13.9622369°N

18 May 2024 © 2024 Maxar, USG-Plus

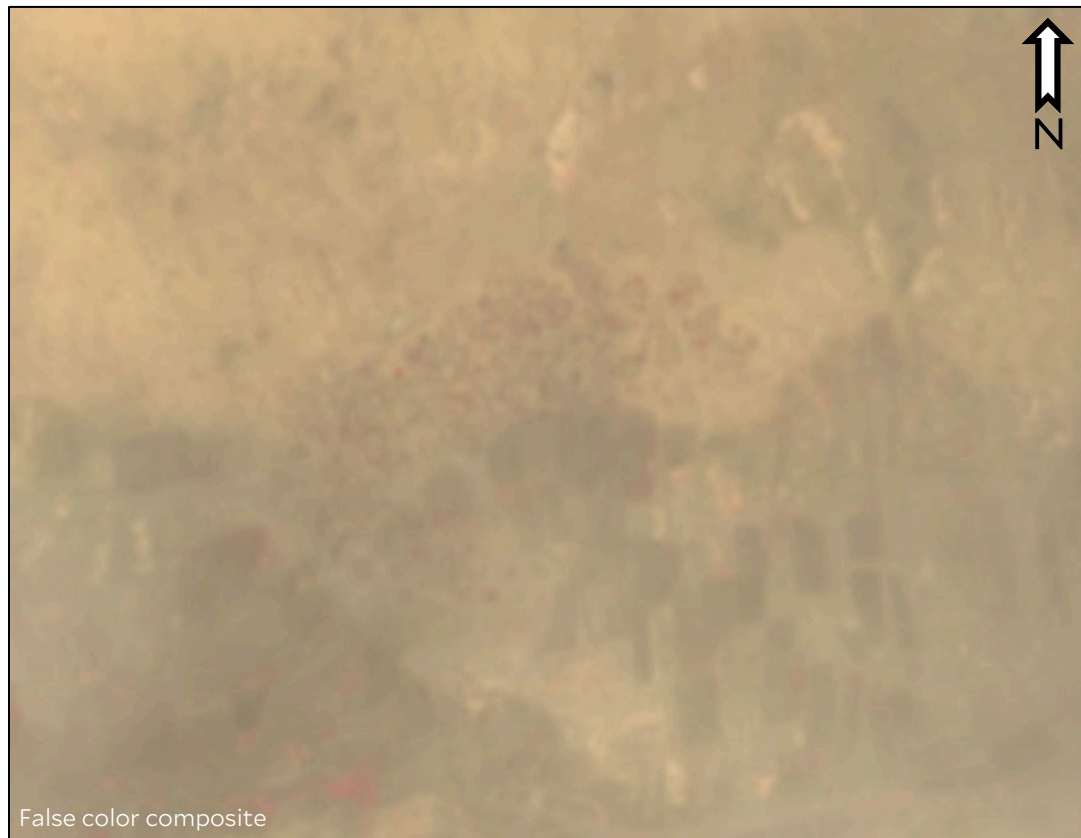


# Unidentified Community 18, North Darfur

## NEW THERMAL SCARRING OBSERVED BETWEEN 15-20 MAY 2024

According to analysis of satellite imagery, thermal scarring was observed between 15 and 20 May 2024, within village 51 km south-west of El-Fasher. According to analysis of VIIRS data the time of most recent thermal scarring can be narrowed down to 17 May 2024.

This is the first instance since 21 March 2024 that Yale HRL has observed thermal scarring in this community.



False color composite

24.9784597°E 13.3508751°N

15 May 2024 © 2024 Sentinel



False color composite

24.9784597°E 13.3508751°N

20 May 2024 © 2024 Sentinel

# Unidentified Community 19, North Darfur

## NEW THERMAL SCARRING OBSERVED BETWEEN 5-20 MAY 2024

According to analysis of satellite imagery, thermal scarring between 25 and 30 April, 25 April and 5 May, 5 and 20 May 2024 was repeatedly observed, within village 54 km south-west of El-Fasher.

VIIRS data was registered at the community on 1 May 2024.



24.9631096°E 13.3337493°N

25 April 2024 © 2024 Sentinel



24.9631096°E 13.3337493°N

20 May 2024 © 2024 Sentinel



# Unidentified Community 20 & 21, North Darfur

## NEW THERMAL SCARRING OBSERVED BETWEEN 5-20 MAY 2024

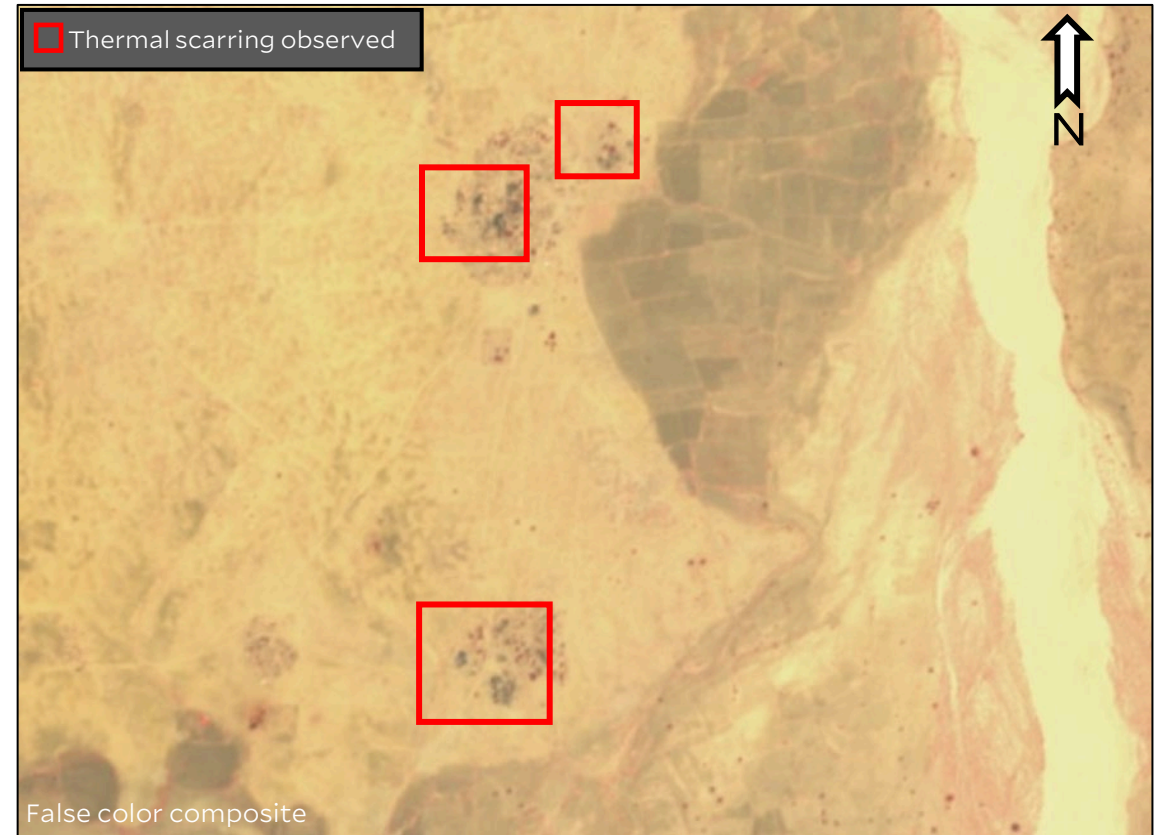
According to analysis of satellite imagery, thermal scarring between 20 - 25 April, 30 April - 5 May, and 5 - 20 May 2024 was repeatedly observed within communities 57 km north-west of El-Fasher.

VIIRS thermal anomaly data was registered at “Unidentified Community 21” on 19 May 2024.



24.8913359°E 13.8529431°N

25 April 2024 © 2024 Sentinel



24.8913359°E 13.8529431°N

20 May 2024 © 2024 Sentinel

# Ammar Jadid, North Darfur

## NEW THERMAL SCARRING OBSERVED BETWEEN 18-20 MAY 2024

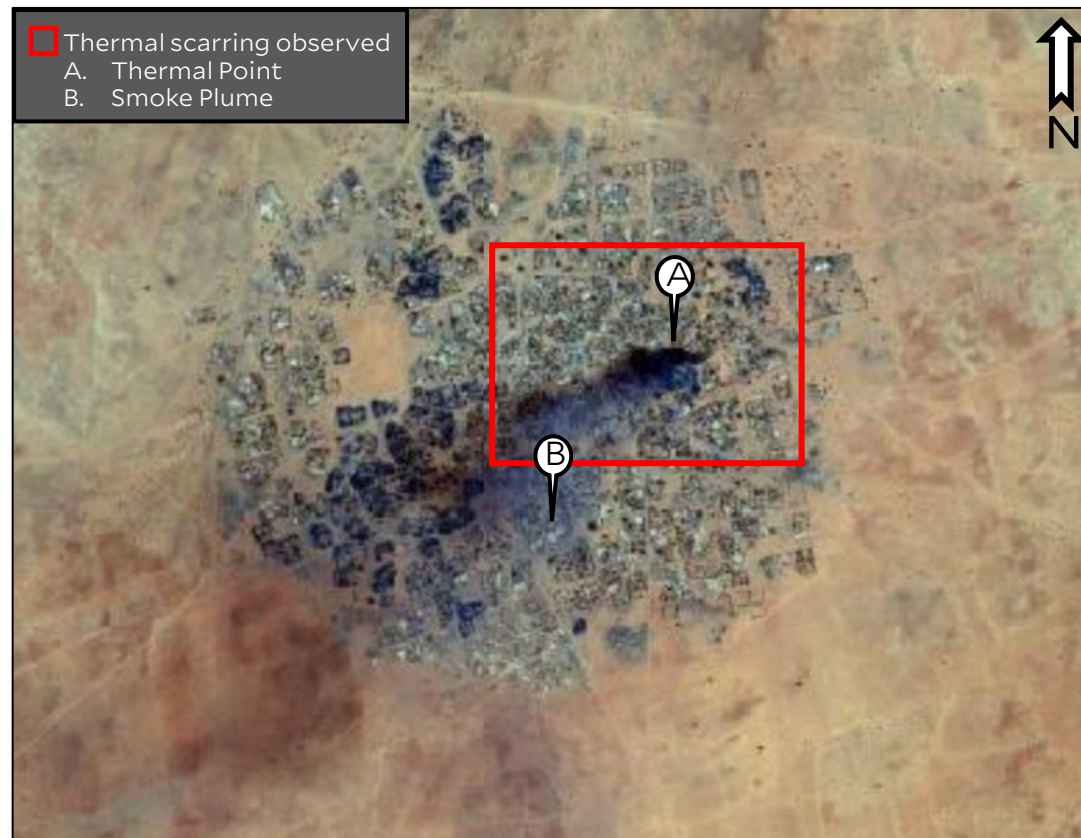
According to analysis of satellite imagery, additional thermal scarring was observed between 18 and 20 May 2024 within the village of Ammar Jadid 28 km west of El-Fasher.

Thermal scarring at the same community was previously observed between 15 and 20 April 2024. According to analysis of VIIRS data, the time of new thermal scarring can be narrowed down to 20 May 2024. Yale HRL first reported damage to this community on 29 April 2024.



25.1145456°E 13.7445487°N

18 May 2024 © 2024 Maxar, USG-Plus



25.1145456°E 13.7445487°N

20 May 2024 © 2024 Maxar, USG-Plus

SOURCE | <https://firms.modaps.eosdis.nasa.gov>; Caitlin N. Howarth, Kaveh Khoshnood, Nathaniel A. Raymond et al. "Visual Confirmation of Additional Burned Communities and RSF Forces in El-Fasher" 29 April 2024. Humanitarian Research Lab at Yale School of Public Health: New Haven, [https://medicine.yale.edu/lab/khoshnood/publications/el-fasher-burners-rsf-sudan-2024-04-29\\_477718\\_284\\_26865\\_v1.pdf](https://medicine.yale.edu/lab/khoshnood/publications/el-fasher-burners-rsf-sudan-2024-04-29_477718_284_26865_v1.pdf), archived at <https://perma.cc/9WHR-SGWF>.



# Unidentified Community 15, North Darfur

## THERMAL SCARRING OBSERVED BETWEEN 18-20 MAY 2024

According to analysis of satellite imagery, additional thermal scarring was observed between and 18-20 May 2024, in a village 36 km north-west of El-Fasher. Thermal points and smoke plumes are visible in the satellite imagery.

Thermal scarring at the same community was previously observed between 3 and 9 May 2024 and VIIRS detections registered on the 8 May 2024. This community is located near Faki Khalil, North Darfur. Yale HRL first reported damage to this community on 15 May 2024.



25.1055830°E 13.8370364°N

18 May 2024 © 2024 Maxar, USG-Plus



25.1055830°E 13.8370364°N

20 May 2024 © 2024 Maxar, USG-Plus

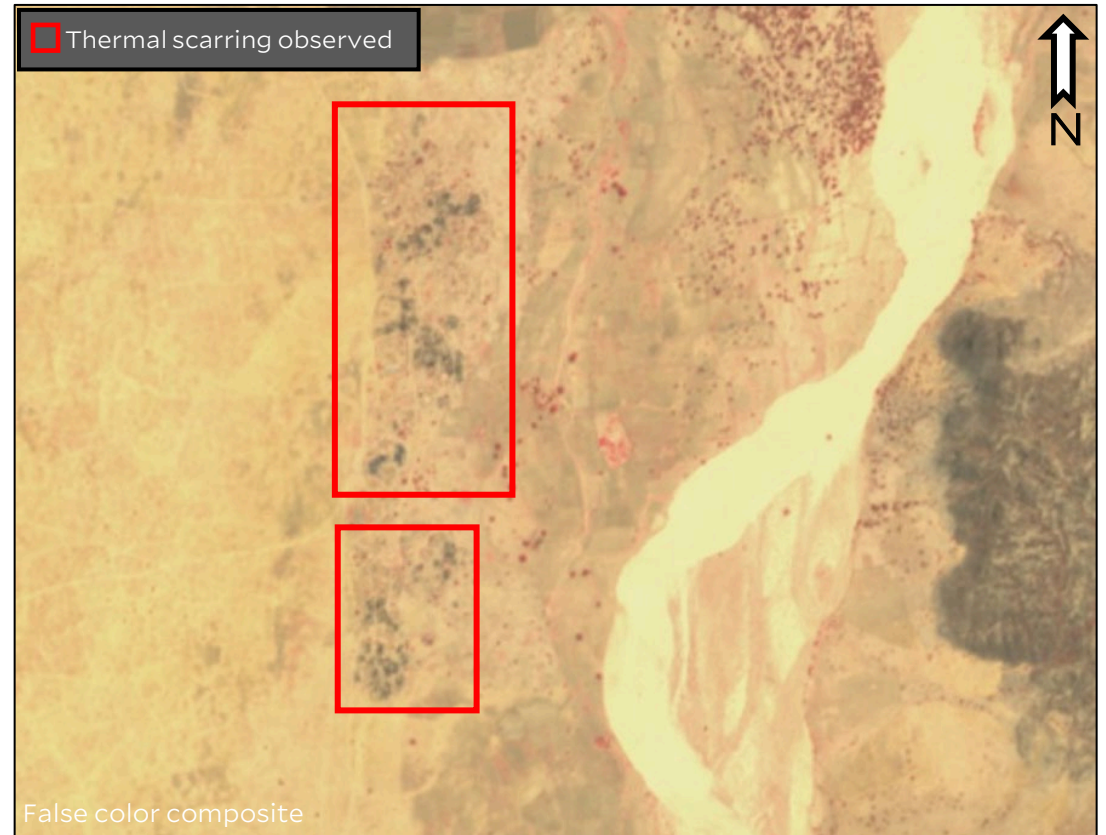
SOURCE | <https://firms.modaps.eosdis.nasa.gov>; Caitlin N. Howarth, Kaveh Khoshnood, Nathaniel A. Raymond et al. "Escalating Conflict-Related Damage in Eastern and Southeastern Neighborhoods of El-Fasher, 10-14 May 2024" 15 May 2024. Humanitarian Research Lab at Yale School of Public Health: New Haven., [https://medicine.yale.edu/lab/khoshnood/publications/consolidated-el-f%20escalating-10-14-may-2024\\_478818\\_284\\_26865\\_v1.pdf](https://medicine.yale.edu/lab/khoshnood/publications/consolidated-el-f%20escalating-10-14-may-2024_478818_284_26865_v1.pdf), archived at <https://perma.cc/X5ZZ-RCAU>.

# Unidentified Community 13, North Darfur

## NEW THERMAL SCARRING OBSERVED BETWEEN 15-20 MAY 2024

According to analysis of satellite imagery, thermal scarring between 15 and 20 April, 20 and 25 April, 25 and 30 April, 30 April and 5 May, 5 and 15 May and 15 and 20 May 2024 was repeatedly observed within a community 55 km northwest of El-Fasher.

VIIRS thermal anomaly data was registered at this community on 28 April, 2, 8, 19 May 2024. Yale HRL first reported damage to this community on 15 May 2024.



24.8972743°E 13.8783364°N

• 15 April 2024 © 2024 Sentinel

24.8972743°E 13.8783364°N

• 20 May 2024 © 2024 Sentinel

SOURCE | <https://browser.dataspace.copernicus.eu>; <https://firms.modaps.eosdis.nasa.gov/>; Caitlin N. Howarth, Kaveh Khoshnood, Nathaniel A. Raymond et al. "Escalating Conflict-Related Damage in Eastern and Southeastern Neighborhoods of El-Fasher, 10-14 May 2024" 15 May 2024. Humanitarian Research Lab at Yale School of Public Health: New Haven., [https://medicine.yale.edu/lab/khoshnood/publications/consolidated-el-f%20escalating-10-14-may-2024\\_478818\\_284\\_26865\\_v1.pdf](https://medicine.yale.edu/lab/khoshnood/publications/consolidated-el-f%20escalating-10-14-may-2024_478818_284_26865_v1.pdf), archived at <https://perma.cc/X5ZZ-RCAU>.



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