

# SUDAN CONFLICT OBSERVATORY

SITUATIONAL AWARENESS REPORT

REPORT 003 | 22 JUNE 2023

Satellite data ©2023 Maxar Technologies, Planet Labs PBC. Icons sourced royalty free from the Noun Project.

All imagery and data analysis ©2023 Humanitarian Research Lab at Yale School of Public Health, PlanetScape Ai LLC.

This report was produced as part of the Sudan Conflict Observatory with the support of the Bureau of Conflict and Stabilization Operations, United States Department of State. This report does not represent the views of the United States Government. Learn more at [Sudan.ConflictObservatory.org](https://Sudan.ConflictObservatory.org).

The Faculty Director of the Humanitarian Research Lab (HRL) at Yale is Dr. Kaveh Khoshnood. Report production was overseen by Nathaniel Raymond, HRL Executive Director, and managed by Caitlin Howarth, HRL Conflict Observatory Director. Analysis was conducted by the Humanitarian Research Lab.

Dr. Andrew Marx is CEO and chief scientist at PlanetScape Ai.

CITATION | Howarth, Caitlin N., Kaveh Khoshnood, Andrew Marx, Nathaniel A. Raymond, et al. "SITUATIONAL AWARENESS REPORT, Report 003", 22 June 2023, Sudan Conflict Observatory: Washington, DC. Available at <https://sudan.conflictobservatory.org>.

# METHODOLOGY



This report was produced as part of the Conflict Observatory with the support of the Bureau of Conflict and Stabilization Operations, United States Department of State. This report does not necessarily represent the views of the United States Government.

## **Mobility Data**

Gravy Analytics ([gravyanalytics.com](https://gravyanalytics.com)) is a commercial company providing hundreds of companies aggregate location information products. All data is commercially available and maintains the highest privacy standards including containing no personal identification information, collected only from users who opt-in to sharing their data and meeting all legal and privacy guidelines including the EU's General Data Protection Regulation (GDPR).

## **Satellite imagery**

© Planet Labs 2023

© Maxar via Google Maps

NASA Fire Information for Resource Management System (FIRMS)

This report was produced by PlanetScape Ai. All research and analysis was conducted by PlanetScape Ai.

To contact PlanetScape Ai, email [info@planetscapeai.com](mailto:info@planetscapeai.com).

# METHODOLOGY

Yale SCHOOL OF PUBLIC HEALTH  
*Humanitarian Research Lab*

Data fusion methodologies combine remote sensing analysis with open-source data to assess and geolocate events. When necessary, sources are redacted for protection purposes; a redacted source list is available to authorized users.

## **Terms**

- NASA FIRMS | NASA Fire Information for Resource Management System
- Reported | Based on credible, verified media reporting

# KEY FINDINGS

- Widespread destruction and razing of civilian structures in El-Geneina – an area of at least 0.7 square kilometers is affected or burned by fire; this area is the equivalent of ninety-eight (98) football fields.
- Systematic targeting and destruction of schools in El-Geneina. An additional three schools have been identified as targeted and destroyed, on top of three previously identified in SCO\_001.
- Open source multimedia and satellite imagery corroborates the reports of corpses lying on the streets of El-Geneina.
- Timeline documenting reports of deteriorating conditions for the sustainment of life, displacement, alleged civilian casualties, and potential alleged atrocities including SGBV and extrajudicial killings in El-Geneina.
- Khartoum satellite-detected building damage continues.
  - 395 buildings in Khartoum have been damaged or destroyed since the start of the conflict as of June 21, while daily destruction continues.
- Darfur is experiencing further isolation with multiple transportation corridors seeing significant (-85%) reduction in mobility.
  - There is active movement to the eastern cities of Port Sudan and Kassala as people who can flee conflict are doing so.
  - The further isolation of cities like El-Geneina increases the risk of mass atrocities.
- Change in Khartoum population mobility persists.
  - The Khartoum City greater area continues to see a slow decline in its estimated population with a 42.2% decrease in mobility from its pre-conflict average (compared to 41.3% a week ago).

# Ongoing Attacks in El-Geneina

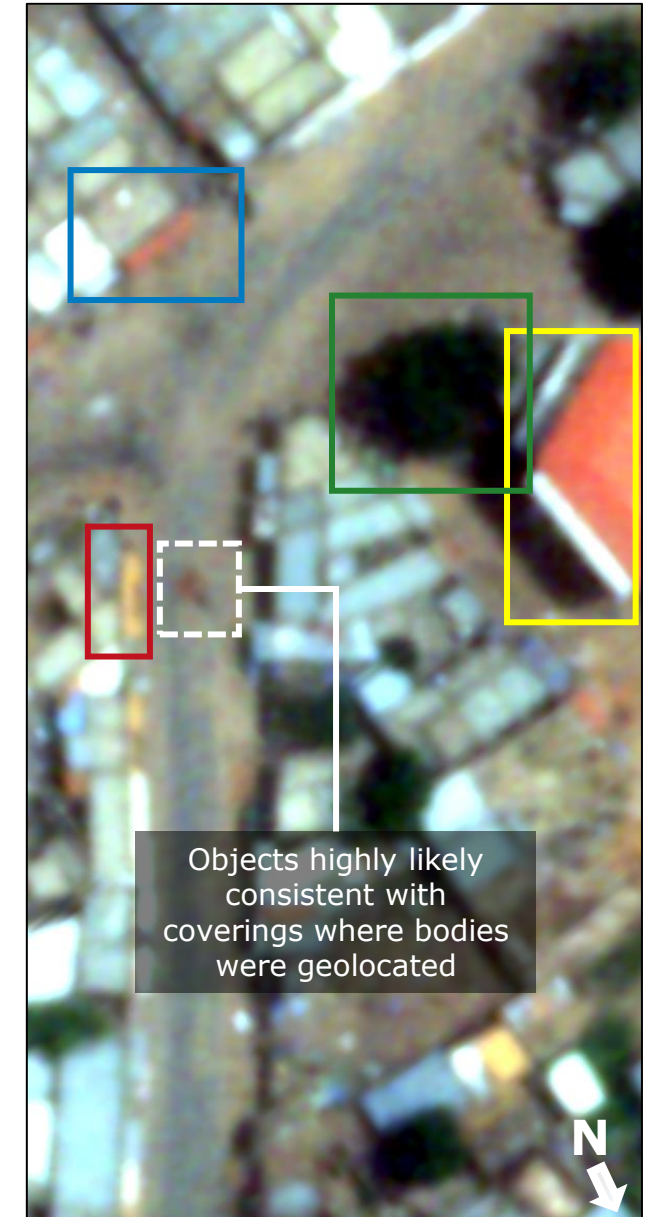
## IMAGERY CORROBORATES THE LIKELY PRESENCE OF BODIES PRESENT ACROSS THE STREETS OF EL-GENEINA

Open-source multimedia, geolocated to El-Geneina, and satellite imagery corroborate the presence of corpses lying in the middle of streets. Reports from the city, as early as 2 May 2023, indicate an onslaught against civilians and civilian infrastructure is ongoing by RSF and RSF supported militias. Objects highly likely consistent with coverings are observed in satellite imagery where corpses were geolocated. This highly likely corroborates the presence of corpses in the street. Violence perpetrated against civilians has led to the killing of thousands and forced tens of thousands to flee from the city. The International Organization for Migration estimates that at least 15,000 individuals, including 3,000 returnees, crossed into Chad between 15 and 17 June 2023 following the heavy clashes reported in El-Geneina.

SOURCES: <https://mena.iom.int/sites/g/files/tmzbdl686/files/documents/2023-06/iom-sudan-external-situation-report-10.pdf> archived at: <https://perma.cc/EJ8R-VNUS>



Posted 20 June 2023 <https://twitter.com/AlHadath/status/1671241507813093377>, archived at <https://perma.cc/BCX7-CJSG>



21 June 2023 | © 2023 Planet Labs

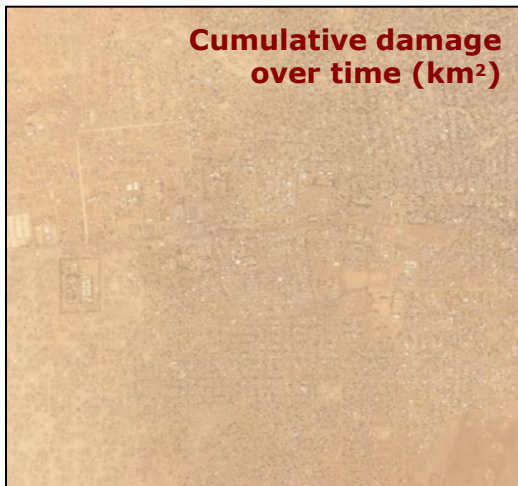


# El-Geneina

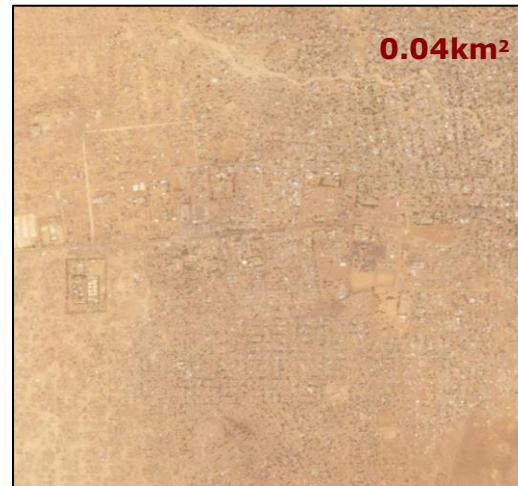
## WIDESPREAD FIRE DAMAGE

Fire-based damage across El-Geneina highly likely to have been caused by RSF and allied armed groups since 15 April 2023. Over thirty-four (34) thermal detections by NASA FIRMS between 15 April 2023 and 21 June 2023 validate the assessment that fire damage is highly likely to have occurred across the entirety of the city.

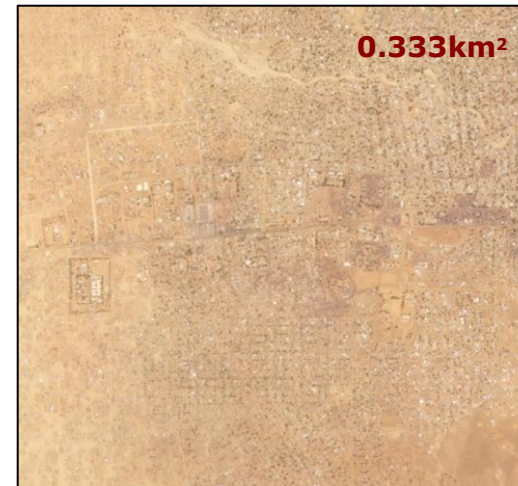
Imagery confirms at least 0.7km<sup>2</sup> of the city is affected or destroyed by fire, with smoke emanations and scorching observed across a range of civilian sites in this reporting period. This scale of destruction is equivalent to approximately 98 full-sized football fields.



16 April 2023 | © 2023 Planet Labs



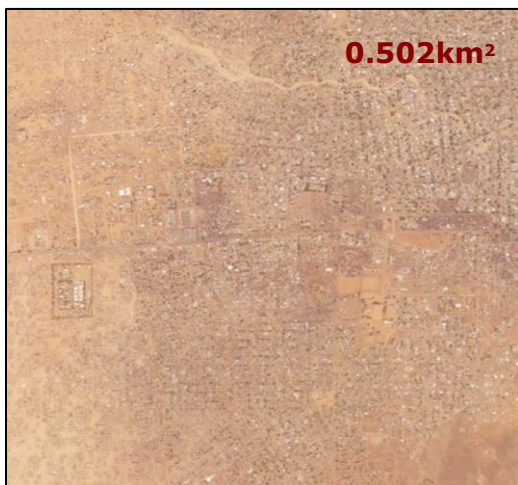
25 April 2023 | © 2023 Planet Labs



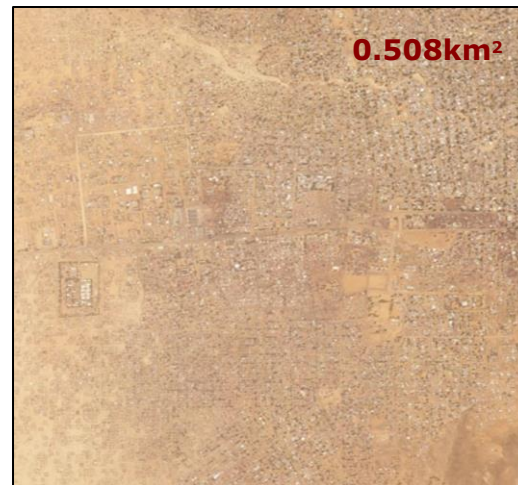
6 May 2023 | © 2023 Planet Labs



21 May 2023 | © 2023 Planet Labs



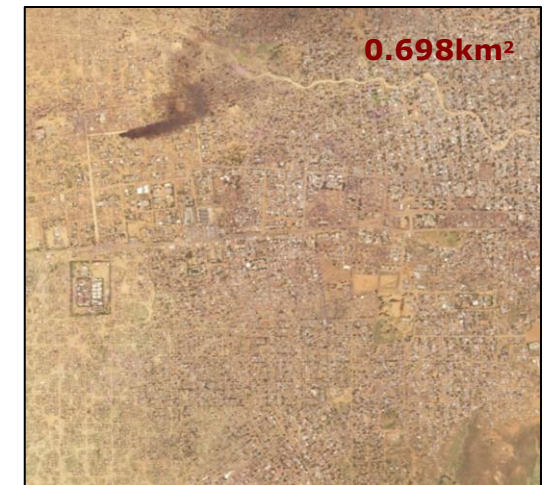
27 May 2023 | © 2023 Planet Labs



3 June 2023 | © 2023 Planet Labs



15 June 2023 | © 2023 Planet Labs



19 June 2023 | © 2023 Planet Labs

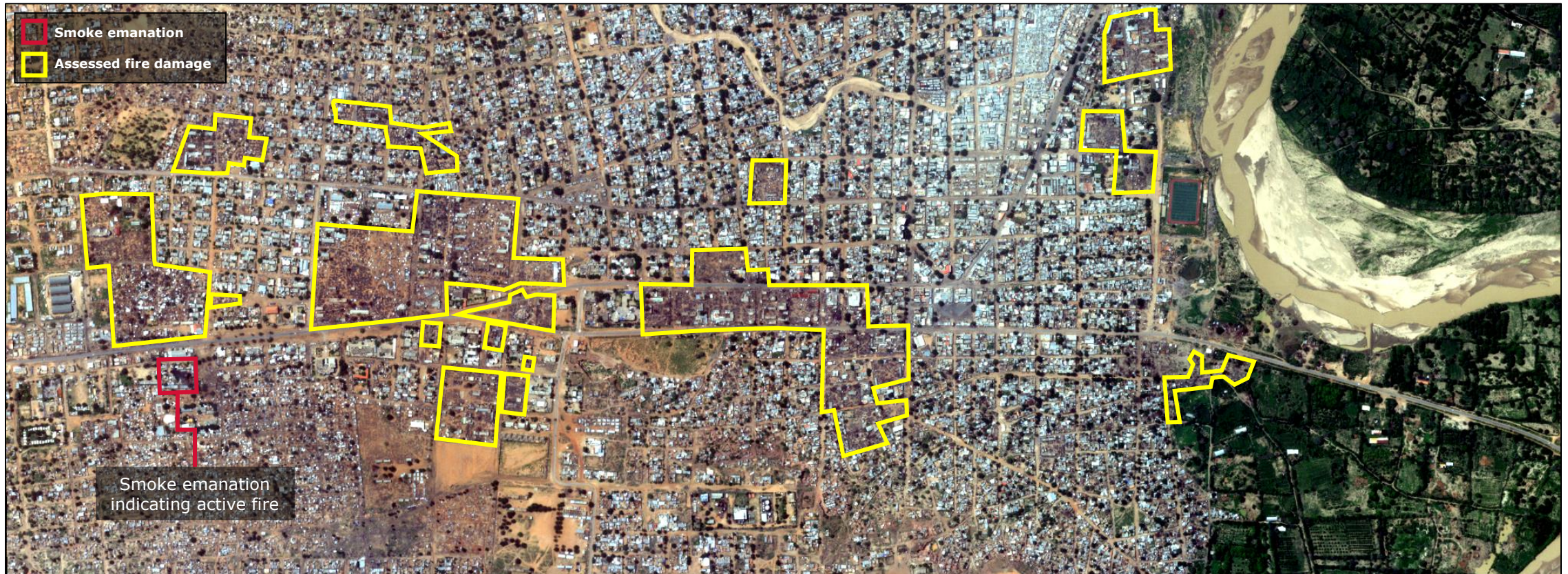


# Visual Confirmation of Damage

Damage in El-Geneina is visually confirmed to be concentrated along the center of the city as of 21 June 2023.

Education sites, humanitarian facilities, places of worship are among the structures affected by fire since 15 April 2023.

**FIRE DAMAGE IS HIGHLY LIKELY CAUSED BY CONFLICT PARTIES**





# Systematic Targeting and Destruction of Schools in El-Geneina

AT LEAST 6 SCHOOLS CONFIRMED DESTROYED IN EL-GENEINA AS OF 21 JUNE 2023

RSF and aligned armed actors are highly likely pursuing a systematic campaign targeting and destroying schools across El-Geneina. Satellite imagery confirms at least six schools have been destroyed by fire since 15 April 2023. This is highly indicative of a strategy intent on the displacement of the civilian population.

Three schools in El-Geneina were previously destroyed as documented in Sudan Conflict Observatory Situational Awareness Report 001.

**El-Geneina Secondary School for Boys**



21 June 2023 | © 2023, Planet Labs

**Farouq Secondary School For Boys**



21 June 2023 | © 2023 Planet Labs

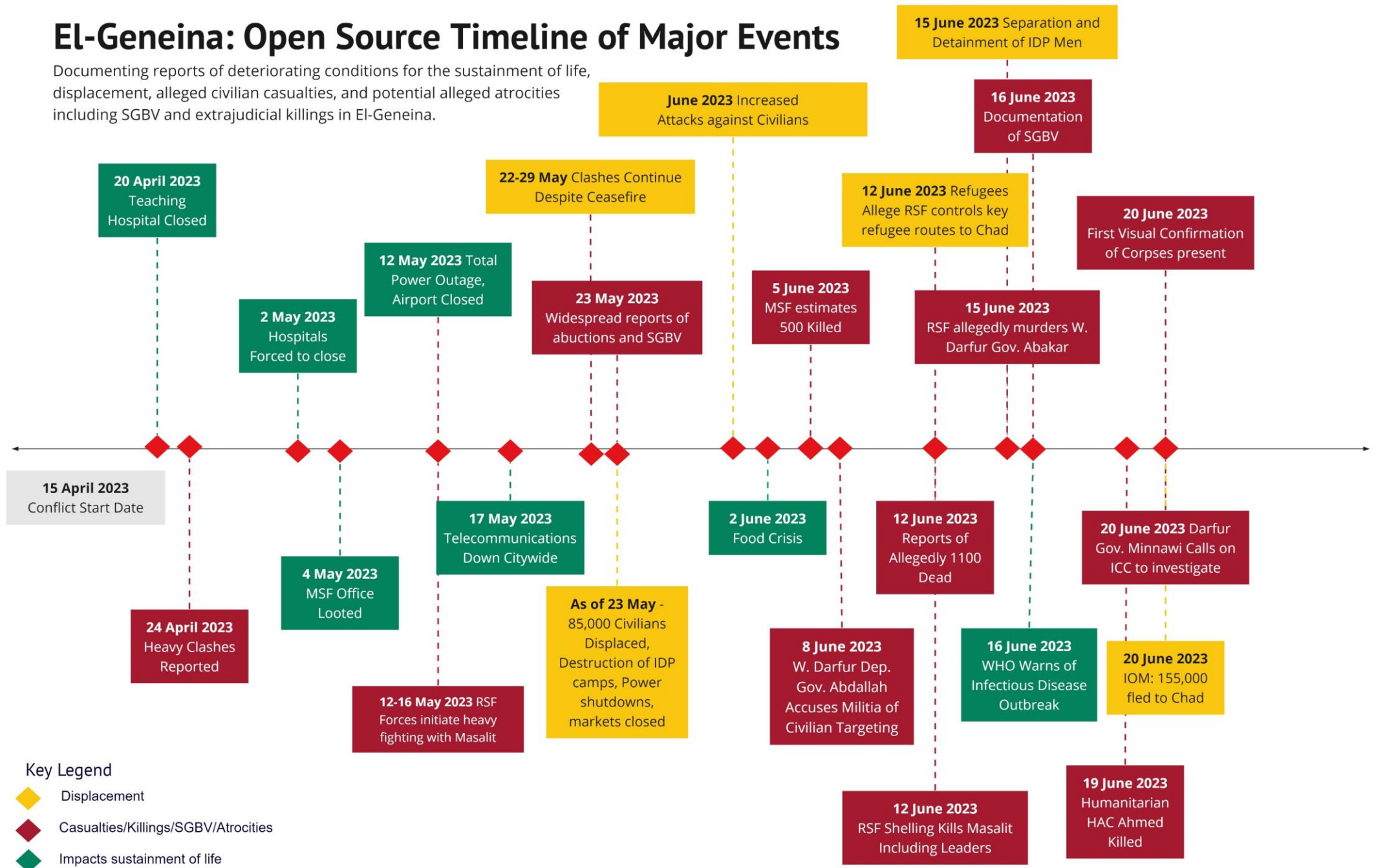
**Salahaldin School**



21 June 2023 | © 2023 Planet Labs

# El-Geneina: Open Source Timeline of Major Events

Documenting reports of deteriorating conditions for the sustainment of life, displacement, alleged civilian casualties, and potential alleged atrocities including SGBV and extrajudicial killings in El-Geneina.



- Key Legend**
- ◆ Displacement
  - ◆ Casualties/Killings/SGBV/Atrocities
  - ◆ Impacts sustainment of life

# Timeline of Events

## EL-GENEINA: APRIL – MAY

- **20 April 2023: Teaching Hospital Closed.** El-Geneina Teaching Hospital has been closed due to violence (<https://reliefweb.int/report/sudan/who-sudan-health-emergency-situation-report-no1-15-april-14-june-2023>, archived at <https://perma.cc/283G-FFNC>).
- **24 April 2023: Heavy Clashes Reported.** Heavy clashes first reported (<https://reliefweb.int/report/sudan/el-geneina-devastating-chronicle-survival-west-darfur>, archived at <https://perma.cc/2K9L-3V6X>).
- **2 May 2023: Hospitals Forced to Close.** El-Geneina Teaching Hospital, the El Sultan, El Rahma Complex, El Shakreen medical complexes are completely out of service. Sudan Doctors Union reported that all hospitals and health facilities in El-Geneina were forced to close. Pharmacies, hospitals, health centers, and markets have been plundered. Attacks are taking place where death toll reached at least 230. (<https://www.dabangasudan.org/en/all-news/article/darfur-update-el-geneina-clashes-continue-truce-holds-in-el-fasher-looting-in-nyala> archived at <https://perma.cc/5JW5-7GYL>).
- **4 May 2023: MSF Looted.** MSF office in El-Geneina was looted (<https://www.msf.org/msf-facilities-looted-medical-activities-impeded-violence-sudan>, archived at <https://perma.cc/3FQD-6KE4>).
- **12 May 2023: Total Power Outage, Airport closed.** The Engineers Syndicate Formation Committee reported a total power outage for the past three weeks in West Darfur, which caused the closure of El-Geneina Martyr Sabira International Airport. Additional reports of attacks have escalated (<https://www.dabangasudan.org/en/all-news/article/heavy-fighting-in-north-darfur-capital-amidst-alarming-increase-in-food-prices>, archived at <https://perma.cc/B7DS-GMVQ>).
- **12-16 May 2023: RSF forces initiate heavy fighting with Masalit.** Reported heavy clashes between Arab and Masalit tribes, (<https://reliefweb.int/report/sudan/sudan-escalating-conflict-situation-update-23-may-2023> , archived at <https://perma.cc/8V42-Y687>) with reports indicating that the Arab Tribes, RSF aligned, initiated the clashes, and taken advantage of the absence of SAF forces. (<https://www.aljazeera.com/news/2023/6/1/families-split-apart-as-sudan-darfur-burns>, archived at <https://perma.cc/Q6XT-PM6N>) (<https://www.aljazeera.com/news/2023/6/1/families-split-apart-as-sudan-darfur-burns> , archived at <https://perma.cc/Q6XT-PM6N>).
- **17 May 2023: Telecommunications down citywide.** Communication and Internet Services are reported down across the city (SUD\_MMC\_0191 - <https://sudantribune.com/article274453/>, archived at <https://perma.cc/2AD7-AJTZ>).



# Timeline of Events

## EL-GENEINA: MAY - JUNE

- **22 May – 29 May 2023: Clashes continue despite ceasefire.** Clashes and violence in El-Geneina continued throughout the 7-day ceasefire between RSF and SAF.
- **23 May 2023: Massive civilian displacement.** 85,000 people are displaced from the city as a result of the violence, with UN reporting that all IDP sites and camps in the city have been burnt. Local markets are reportedly closed, leaving civilians with no food or water supplies. Continued electricity shutdown is also affecting water treatment facilities, further exacerbating potable water shortages (<https://reliefweb.int/report/sudan/sudan-clashes-between-saf-and-rsf-flash-update-no-13-21-may-2023>), archived at <https://perma.cc/JNK6-HK3P>)
- **23 May 2023: Widespread reports of abduction and SGBV.** Sudanese journalist was abducted from her home in El-Geneina. RSF are reported to have sexual assaulted this journalist. (<https://www.dabangasudan.org/en/all-news/article/sudan-war-more-sexual-assaults-rapes-reported> archived at <https://perma.cc/8TEB-QJTS>)
- **June 2023: Increase attacks against civilians.** Increased attacks against civilians and targeting of civilians and Masalit tribes by RSF and RSF aligned forces. (<https://www.dabangasudan.org/en/all-news/article/relatives-of-masalit-sultan-killed-in-renewed-attacks-on-west-darfur-capital>, archived at <https://perma.cc/BDA9-S97K>).
- **2 June 2023: Food crisis.** The surge in prices of staple foods in El-Geneina will most likely rise due to a cessation of trade with El-Geneina (<https://reliefweb.int/report/chad/scores-wounded-flee-chad-conflict-sudan-surges>, archived at <https://perma.cc/YH85-E6HF>).
- **5 June 2023: MSF estimates 500 killed.** According to MSF, in El-Geneina, it is estimated at least 500 people have been killed since the fighting began, and that a similar number of wounded remain trapped in the city, unable to access lifesaving treatment (<https://www.msf.org/el-geneina-huge-needs-arise-following-eruption-conflict-west-darfur>, archived at <https://perma.cc/Q6D7-FXMK>).
- **8 June 2023: W. Darfur Deputy Gov Abdallah accuses militia of civilian targeting.** West Darfur Deputy Governor El Bukhari Abdallah stated in an interview that militiamen deliberately target resources, looting markets and drying up water resources in El-Geneina. The Deputy Governor declared the death toll reached at least 850, with over 2000 injured (<https://www.dabangasudan.org/en/all-news/article/inconceivable-suffering-in-west-darfur>, archived at <https://perma.cc/T2CF-M396>).

# Timeline of Events

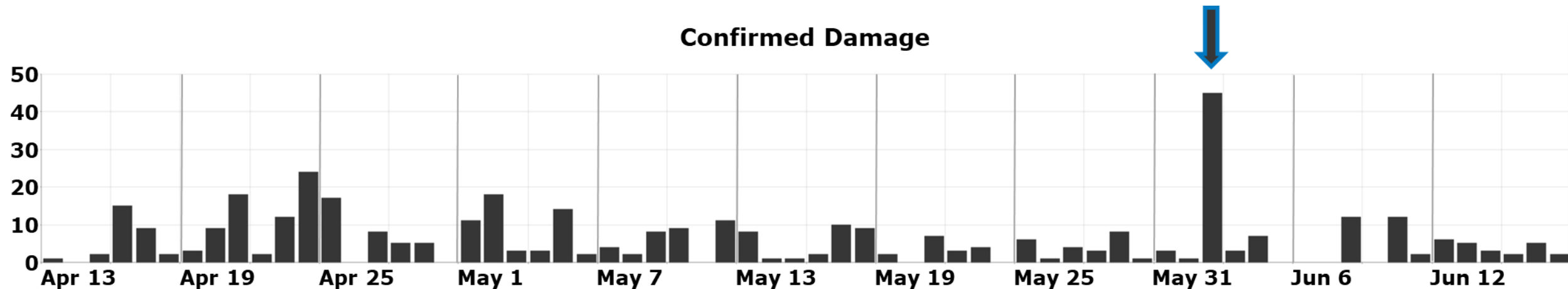
## EL-GENEINA: MAY - JUNE

- **12 June 2023: Reports of alleged 1100 dead.** The number of dead rose to 1,100. More than 2,100 people have been wounded in El-Geneina (<https://www.dabangasudan.org/en/all-news/article/more-than-1100-people-killed-in-besieged-el-geneina-west-darfur>, archived at <https://perma.cc/J3HN-37S6>).
- **12 June 2023: Refugees alleged RSF's controls key refugee route near Chad.** Accounts of refugees fleeing to Chad spoke of RSF's control of the main roads leading into Chad's border (<https://twitter.com/DailySudanPost/status/1668159667825152001> archived at: <https://perma.cc/T7LC-H938>).
- **12 June 2023: RSF shelling kills Masalit including leaders.** Masalit tribe leaders and members were reportedly killed on June 12 in an attack that left 16 dead. ( <https://www.dabangasudan.org/en/all-news/article/relatives-of-masalit-sultan-killed-in-renewed-attacks-on-west-darfur-capital>, archived at <https://perma.cc/E5K8-6VEJ>)
- **15 June 2023: RSF allegedly murders W. Darfur Governor Abakar.** is kidnapped and killed by, highly likely, RSF, following an interview he conducted with TV station Al Hadath. Khamis Abakar reported on the dire situation in El-Geneina and pointed the blame on RSF and RSF aligned militias for the ongoing targeted violence against civilians.
- **15 June 2023: Separation and detainment of IDP men. SCO\_003\_001**
- **16 June 2023: Documentation of SGBV.** The Sudanese Combating Violence Against Women Unit reported more than 13 rape cases in El-Geneina (<https://www.dabangasudan.org/en/all-news/article/reports-on-rapes-continue-to-rise-in-sudan>, archived at <https://perma.cc/K6SD-8NDR>).
- **16 June 2023: WHO warns of infectious disease outbreaks.** World Health Organization reports risk of disease outbreaks, such as malaria, dengue fever, cholera, other diarrheal diseases, measles, and polio has increased substantially in Sudan (SUD MMC\_0203- <https://www.who.int/publications/m/item/who-emergency-appeal--sudan-and-neighbouring-countries---june-december-2023>, archived at <https://perma.cc/F3N5-9P8D>)
- **19 June 2023: Humanitarian HAC killed.** Al Sadiq Muhammad Ahmed, the commissioner of the Sudan Humanitarian Aid Commission (HAC) was killed in El-Geneina. (<https://www.aljazeera.com/news/2023/6/20/darfur-governor-calls-for-international-probe-in-sudan-violence>, archived at <https://perma.cc/EU5U-Y3D9>).
- **20 June 2023: First visual confirmation of corpses present.** Al Hadath video shows corpses across central El-Geneina. Al Hadath videos reveals the conditions within El-Geneina where the video verifies open-source reports of corpses on the ground. - <https://twitter.com/AlHadath/status/1671241507813093377> archived at <https://perma.cc/DDW7-Z7CR>) reporting since 2 May ( <https://www.dabangasudan.org/en/all-news/article/darfur-update-el-geneina-clashes-continue-truce-holds-in-el-fasher-looting-in-nyala> archived at <https://perma.cc/M9EK-L8T3>)
- **20 June 2023: Darfur Governor Minnawi calls on ICC to investigate.** Governor of Darfur Mini Arko Minnawi calls on the International Criminal Court to investigate the ongoing crimes occurring in Darfur as part of the 2004 mandate granted to the court by the Security Council. Minnawi reported that the scale of violence against civilians was widespread amidst reports of assassination, sexual based violence, and targeting of civil society leaders. <https://www.aljazeera.com/news/2023/6/20/darfur-governor-calls-for-international-probe-in-sudan-violence> archived at: <https://perma.cc/23Y5-B3BP>).
- **20 June 2023: IOM: 155,000 fled to Chad.** IOM reported that at least 15,000 individuals, including 3,000 returnees, crossed into Chad between 15 and 17 June following the heavy clashes reported in EL-Geneina bringing the total of people crossing into Chad from West Darfur at 155,015 <https://mena.iom.int/sites/g/files/tmzbd1686/files/documents/2023-06/iom-sudan-external-situation-report-10.pdf> archived at: <https://perma.cc/EJ8R-VNUS>

# Khartoum

## SATELLITE-DETECTED BUILDING DAMAGE

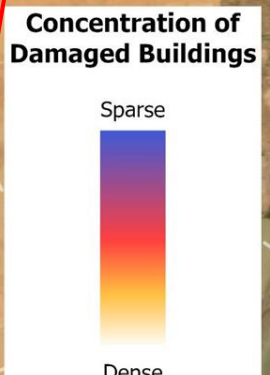
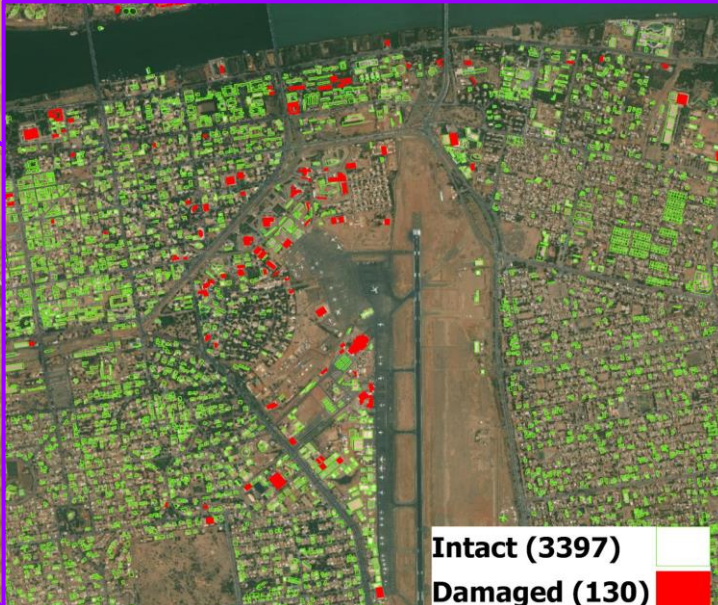
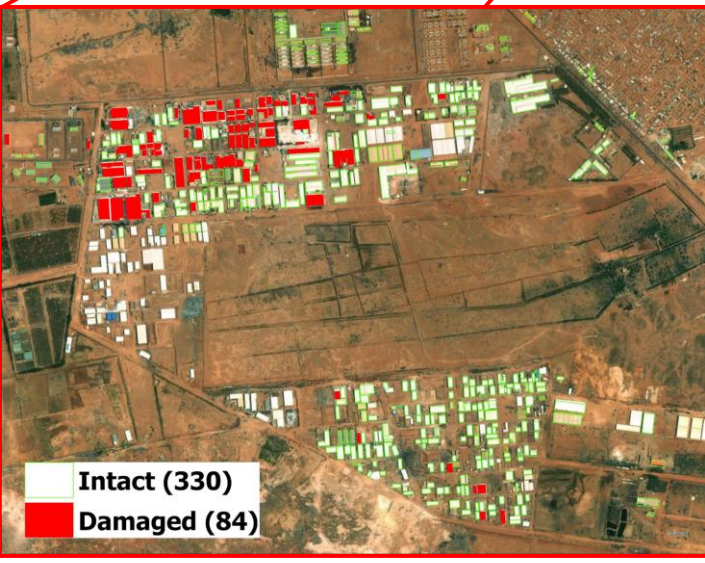
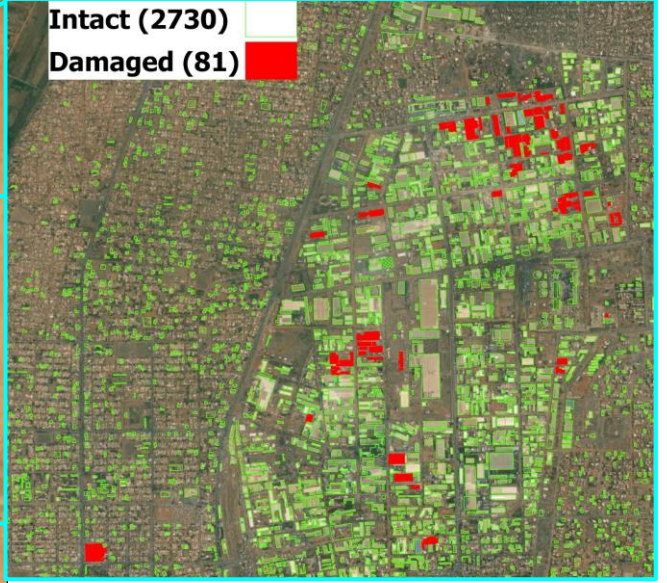
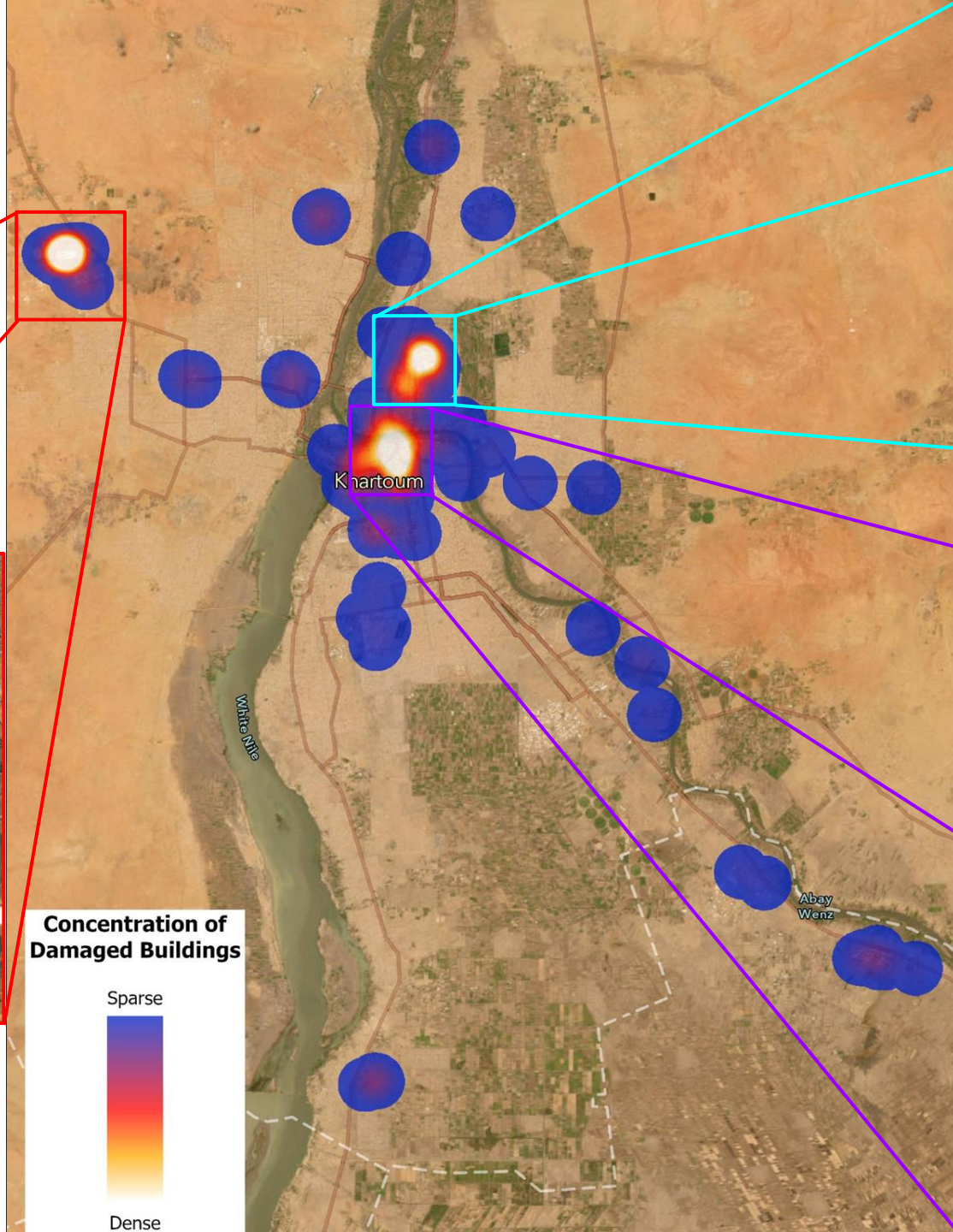
- Since the start of the conflict, 395 large buildings have likely been significantly damaged, based on an analysis of data as of 21 June 2023.
- Destruction has been consistently occurring, with cloud cover causing a lull in detection between 5-7 June 2023.
- The spike in confirmed damaged on 2 June 2023 occurred at a light manufacturing center NW of Omdurman (see lower left image on the next page).





# Khartoum

## SATELLITE DETECTED BUILDING DAMAGE



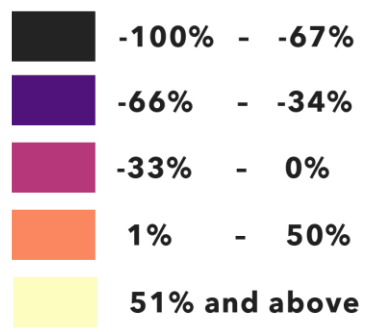
Attack NW of Omdurman, where most of the damage occurred on 2 June 2023.



# Change in Mobility Corridors

1-14 JUNE 2023 VS. PRE-CONFLICT

- Five mobility corridors in Darfur have seen an 85% average decrease in mobility since the outbreak of conflict.
- There is increased movement along routes connecting Khartoum to Port Sudan and Kassala in eastern Sudan, likely due to residents fleeing conflict.
- The increased isolation of Darfur capitals, especially El-Geneina, is likely to increase the risk of mass atrocities in the region.

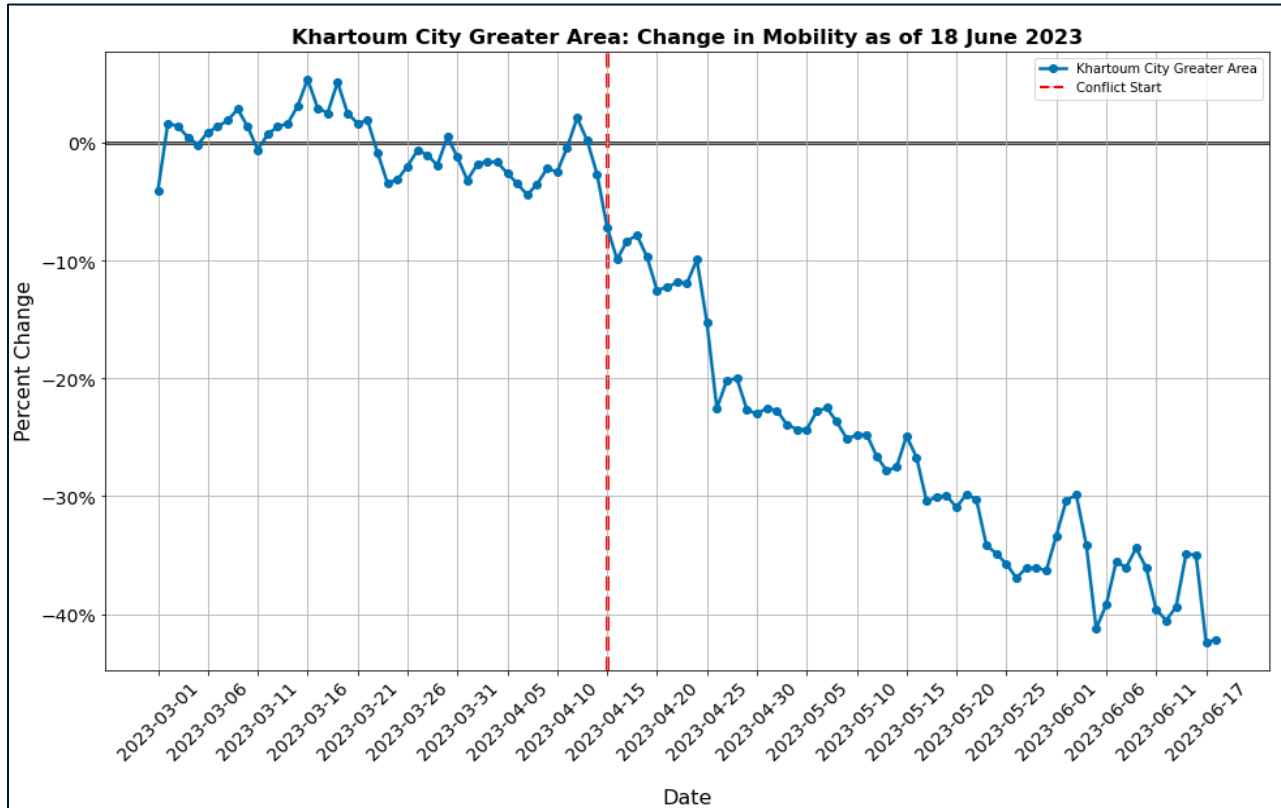


Negative percentages represent a decrease in mobility and positive percentages represent an increase in mobility along these corridors compared to pre-conflict averages.

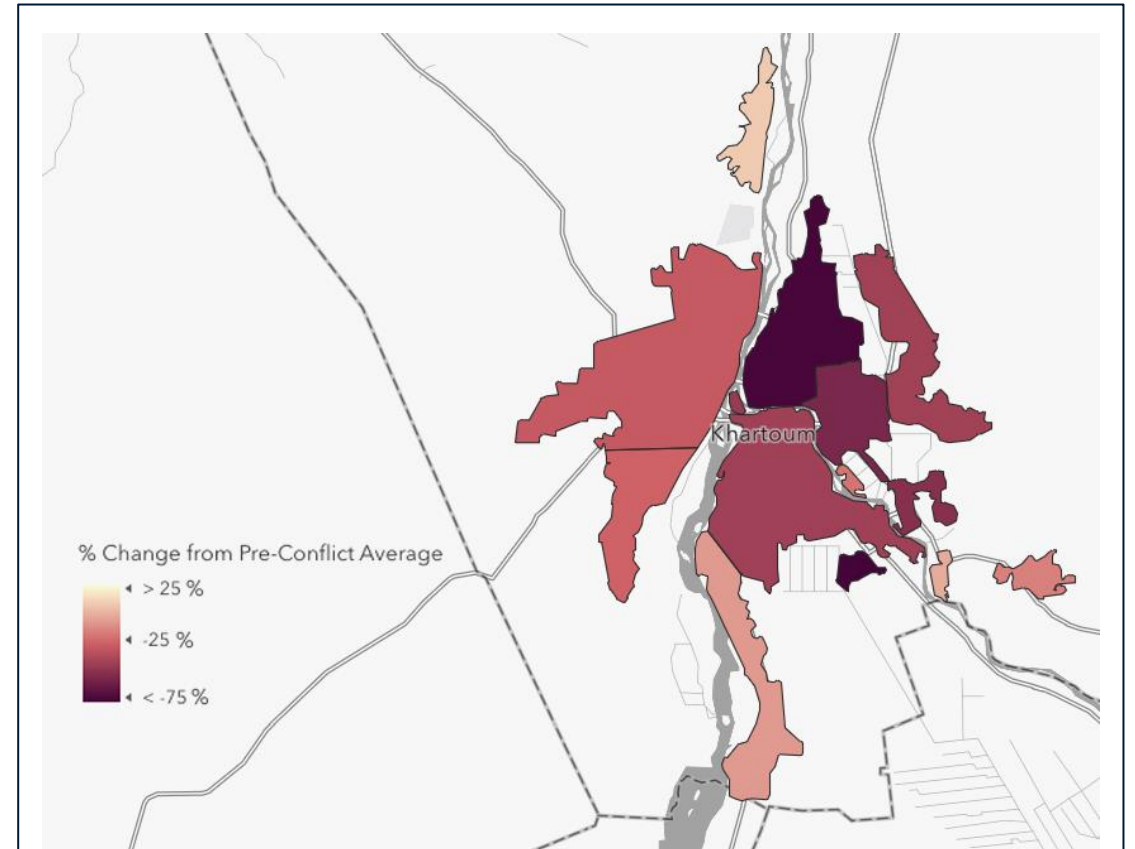


# Khartoum

## DECREASE IN MOBILITY



The Khartoum City Greater Area continues to see a slow decline in its estimated population with a 42.2% decrease in mobility on 18 June from its pre-conflict average (shown above).



Data collected daily within Khartoum City Greater Area highlights sub-areas of the city with higher or lower levels of mobility disruption.



**SUDAN**  
**CONFLICT OBSERVATORY**

[Sudan.ConflictObservatory.org](https://Sudan.ConflictObservatory.org)