

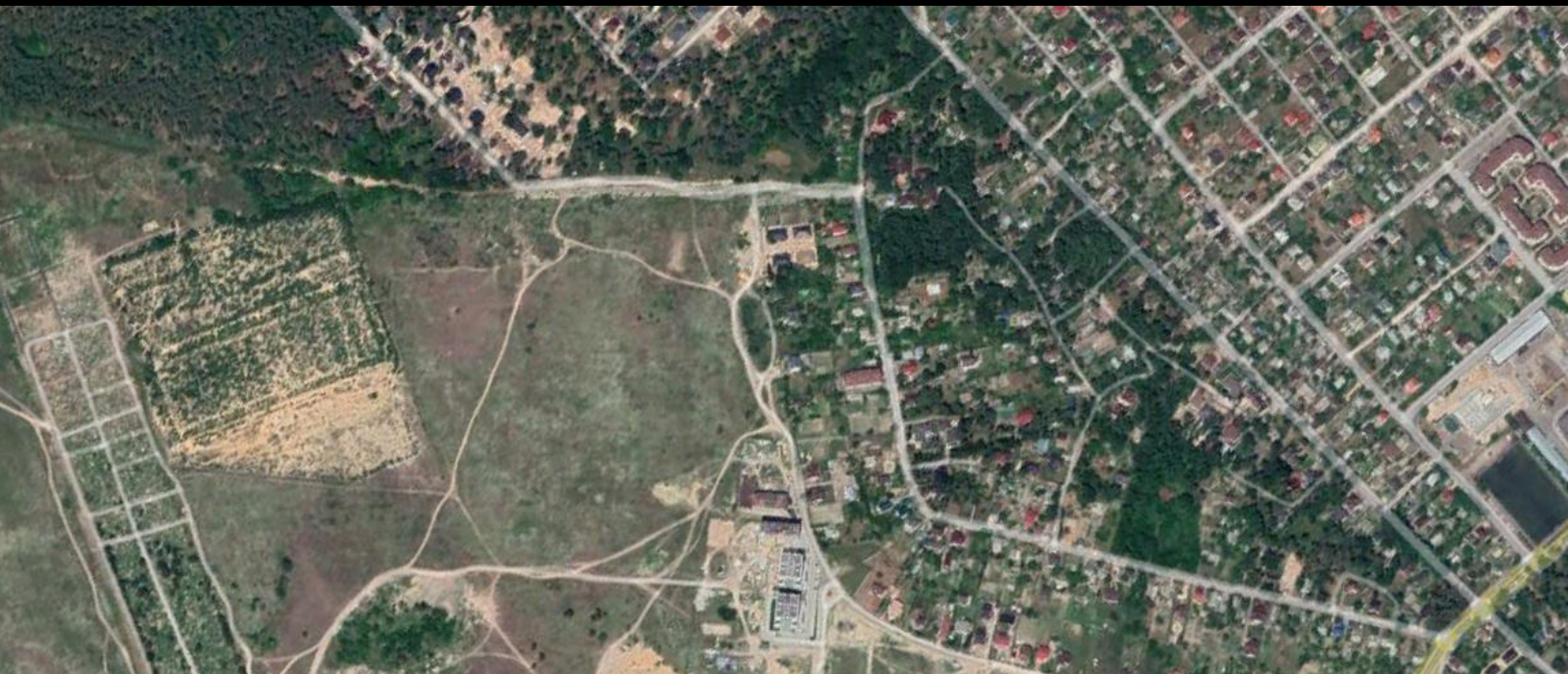
**Centre for
Information
Resilience**

Mass graves after the Russian invasion

Bucha, Mariupol, Chernihiv, Kherson

By Eman El-Sherbiny and Benjamin den Braber

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The Centre for Information Resilience's Eyes on Russia (EoR) is an open-source investigations project to map, document and verify significant incidents during the conflict in Ukraine.

Our aim is to provide reliable information on the conflict through verified open-source evidence. The lead resource of the Eyes on Russia project is the [Russia-Ukraine Monitor Map](#).

This investigation is a result of that work. The verification seen in this report will be logged in a central database where the material is archived for future use by researchers, reporters as well as justice and accountability bodies.

PLEASE NOTE:

This report contains descriptions of graphic imagery / violence which some readers may find distressing. Additionally, where graphic footage has been verified by EoR investigators it is linked in the footnotes with the explicit warning of "graphic footage."

1. Executive Summary

The Eyes on Russia team has been monitoring the expansion of several mass graves and gravesites in Ukraine since the beginning of Russia's invasion of Ukraine in February 2022. This is the first report of its kind to review, update and bring together data on burial sites around Ukraine. It provides a comprehensive, visual overview of the death toll resulting from Russian military action in Ukraine.

Many of the identified graves have been only viewable remotely, with access to many of the sites largely restricted due to the areas being under Russian occupation, making analysis of satellite imagery all the more important.

The Eyes on Russia team started to closely examine many of these sites after Russian forces left the town of Bucha. Grim stories emerged of the unlawful treatment and killing of civilians, as well as mass graves.

Updated satellite imagery contained in this report shows the scale of grave sites and burials that have occurred in or near areas under the control of Russian forces. The report identifies graves in areas that have been under extreme bombardment from Russian firing positions.

Analysing the available details of six grave sites, this research specifically explores the following areas: Chernihiv, Kherson, Bucha, Mariupol's Starokrymske Cemetery, Vynohradne and Manhush. The locations of these sites are mapped out in *figure 1*.

This report shows a significant expansion, possibly doubling, of the Mariupol cemetery since previously reported on by some news media. The research adds to the growing body of evidence documenting Russia's targeting of civilians as part of its ongoing invasion of Ukraine.

CIR seeks to share this research with policymakers and justice and accountability bodies, as well as the public at large to help hold the perpetrators accountable.



Figure 1: Overview of mass grave sites in Ukraine

2. Mass graves overview

In this section, Eyes on Russia investigators detail the expanding mass burial sites and cemeteries in Ukraine along with the events that happened within close proximity.

1. Chernihiv's mass burial site
 - Analysis of open source material
 - Contextual analysis
2. Kherson Cemetery
 - Analysis of open source material
 - Contextual analysis
3. Bucha's mass grave
 - Analysis of open source material
 - Contextual analysis
4. Mariupol's Starokrymske Cemetery
 - Analysis of open source material
 - Contextual analysis
5. Pioners'ke's graveyard
 - Analysis of open source material
 - Contextual reporting
6. Manhush's mass grave
 - Analysis of open source
 - Contextual reporting

The following is an analysis of the six grave sites and the available imagery, providing a context where possible.

2.1 Chernihiv

In the weeks following the Russian invasion of Ukraine in February 2022, the city of Chernihiv experienced heavy bombardment from Russian troops approaching the Ukraine-Belarus border.

As Russian forces withdrew from the area in April 2022, more evidence emerged of the civilian toll of the invasion. The civilian casualties from Russian bombardments mounted, and Chernihiv residents were required to make space for their dead.

Past reports by CIR revealed a series of mass graves in Yalivshchyna Forest, which formed between 26 February and 6 March and expanded throughout the month of March.¹ The location of the site can be seen below in *figure 2*.



Figure 2: Location of the Chernihiv mass burial site.

¹ <https://www.info-res.org/post/the-yalivshchyna-burial-site-mass-graves-after-russian-invasion/>

The initial estimate of the deceased buried at the Yalivshchyna sites, based on the number of headstones visible in open-sourced imagery, lies between 323-381.

Though it is unclear whether more than one body was buried in the same grave.

Analysis of open source material

After the discovery of mass graves in Bucha, the Eyes on Russia team began investigating other potential mass burial sites in areas that experienced heavy fighting during Russia's invasion in the Kyiv and Chernihiv oblasts.

The team discovered images attached to an article that was published 4 April, 2022 released in Latvian-based Russian-language news site, Meduza, said to correspond to a burial site in the 'Yalivshchyna' forest.²

This aligned with claims made in an article from The Washington Post published 5 April, suggesting the presence of a mass burial site in Chernihiv, although providing no locational or photographic evidence.³

After identifying the forest of Yalivshchyna in the north of the city of Chernihiv, the team began using satellite imagery to identify a site matching *figure 3* published to Meduza of the reported burial site.

Figure 3 shows recently dispersed soil and dozens of identification cards, used as headstones, as well as an existing cemetery in the background.

² <https://meduza.io/en/feature/2022/04/01/mom-please-make-it-stop/>

³ <https://www.washingtonpost.com/world/2022/04/05/chernihiv-scene-death-destruction/>



Figure 3: Mass grave site in Chernihiv (Credit: Lilia Yapparova / Meduza).

Sentinel-2 imagery, accessed via SentinelHub, provided clear imagery of the area between 26 February and 18 March.

The imagery reveals that, between 26 February and 11 March, three large areas (*geolocated to: 51.527611, 31.302965*) were cleared of trees near the existing burial ground at Yalivshchyna. The clearing area is visible in *figure 4*.

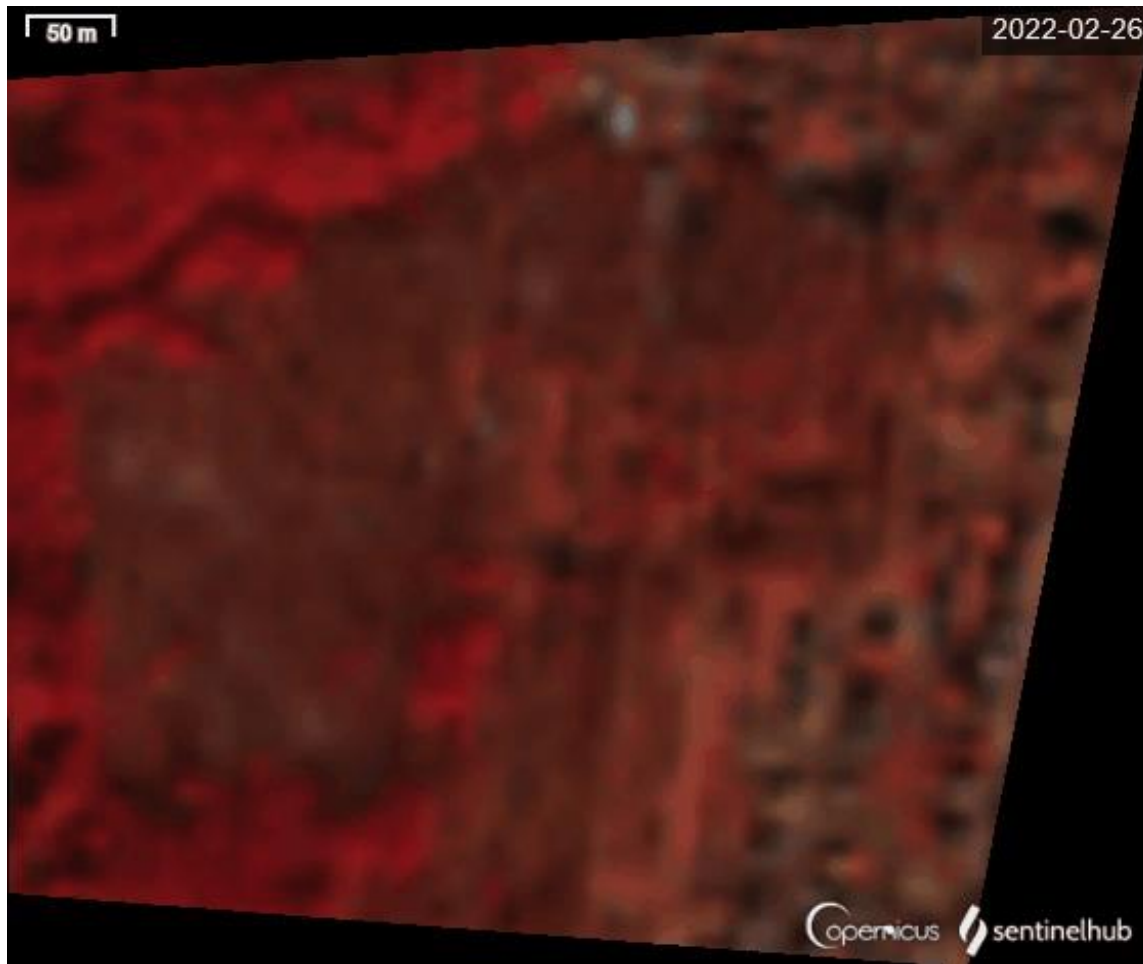


Figure 4: Satellite imagery showing the area cleared of trees.

Further imagery, acquired from Planet, was required to provide more information on the expansion of the grave site. *Figure 5* shows the Planet imagery of the three sites connected by a dirt road.



Figure 5: Planet imagery of the three sites from 26 February and 18 March respectively.

The team designated three clear and distinct burial sites, as seen in *figure 6*: site A, site B and site C.



Figure 6: Planet satellite imagery showing the three burial sites in Yalivshchyna Forest.

Investigators then geolocated the Meduza image from *figure 3* to Site C, which is spatially the smallest of the three sites, using an additional video discovered on Telegram by the Eyes on Russia team.⁴



Figures 7a and 7b: Footage showing the burial site identified as site C in figure 6.

The grave site can also be seen in a video which began widely circulating on 6 March.⁵

The video shows a trench at the North edge of Site C. Residents can be seen lowering dozens of caskets into the trench, which is visible in *figure 8*.

The fact that it was shared on 6 March narrows down the window of the events that prompted the need for mass graves between 24 February to 6 March, as further detailed in the contextual reporting section.

⁴ <https://t.me/kazansky2017/2379/>

⁵ <https://twitter.com/golub/status/1500470109894238208/>



Figure 8: Citizens lowering caskets into trenches at gravesite.

A visual count of the headstones - based on an estimate made through the available sources outlined above, suggests that there are between 229-263 individuals buried at Yalivshchyna sites B and C.

This count does not include Site A which, based on initial imagery in *figure 6*, contains between 94 and 118 headstones at a minimum.

This takes the total count of headstones across Sites A, B and C to between 323-381.



Figures 9a and 9b: images from the grave sites.

Site A is spatially the largest of the three sites. Planet satellite imagery from 18 March shows trenches being dug to the north edge of Site A, as seen in *figure 10*.

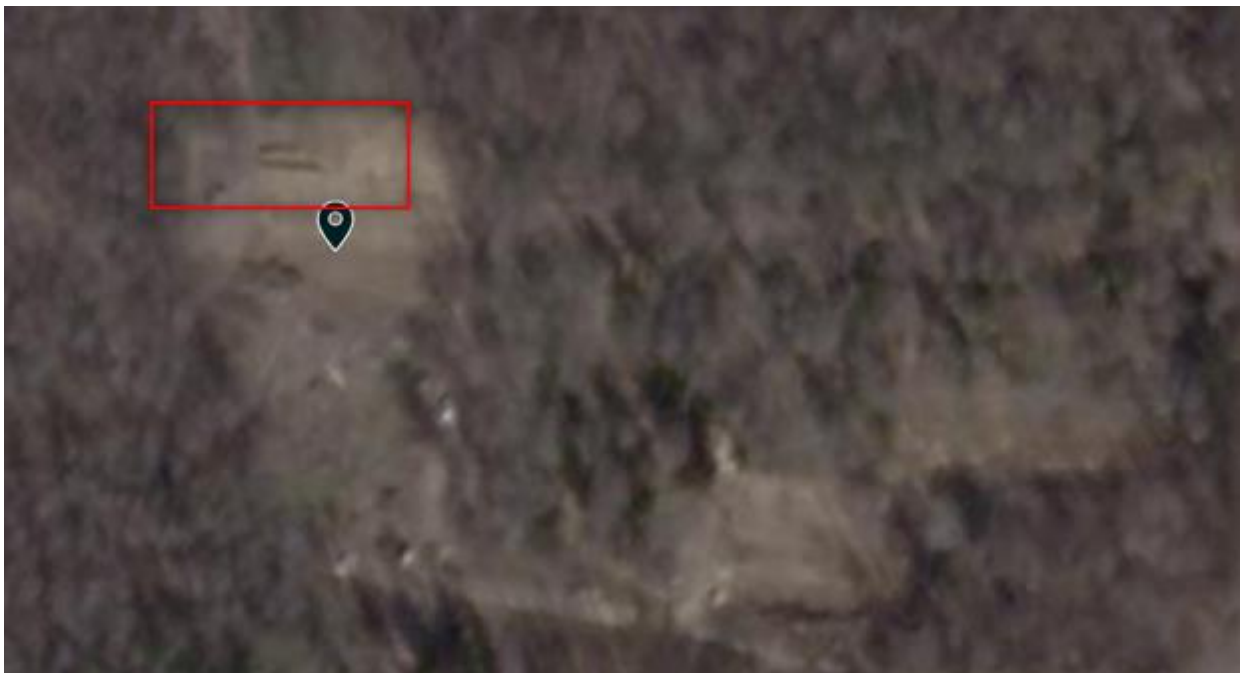


Figure 10: Trenches being dug at Site A

Maxar imagery seen in *figure 11* from 19 and 22 March provides more detailed accounts of the status of all three sites.

In the space of two days, it would appear that new trenches had been dug at Site A, and the disturbed land at Site B had expanded.

No new activity is recorded at Site C, except the removal of displaced earth from prior trenches.

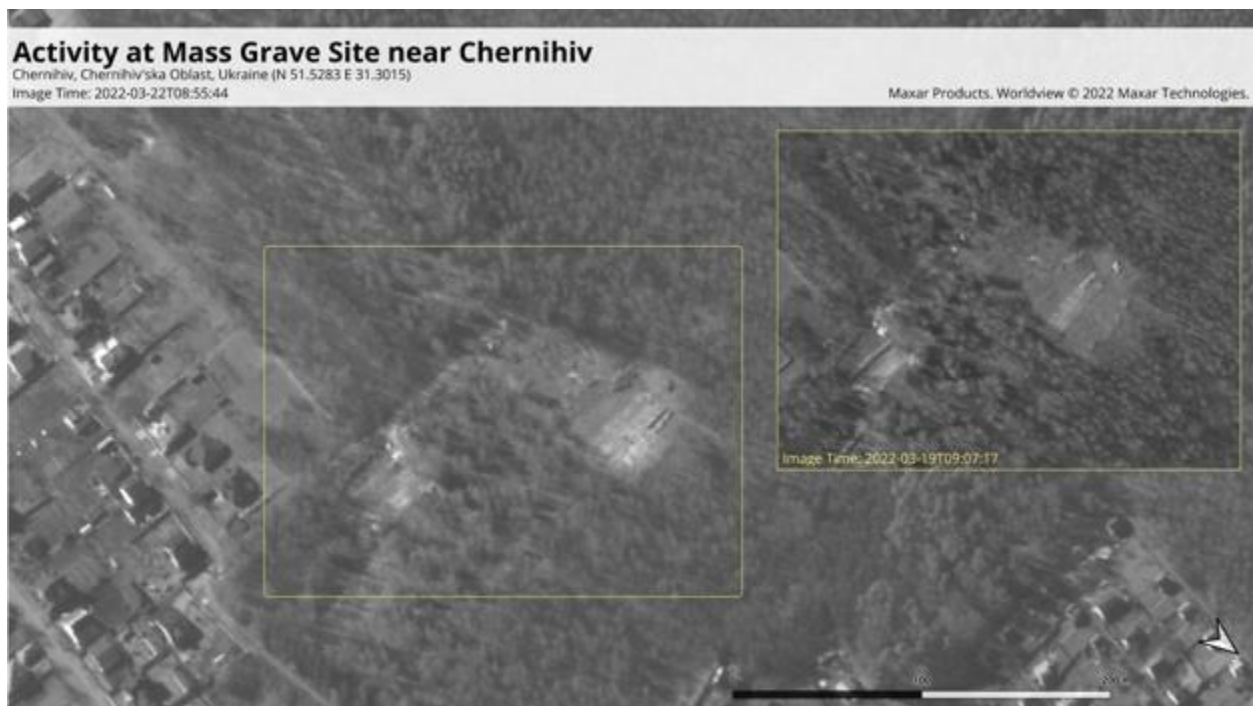


Figure 11: Maxar imagery showing the grave sites near Chernihiv.



Figure 12: Satellite imagery showing an increase in rows at the grave site in Yalivshchyna between 19-22 March.

Contextual Reporting: Related events and civilian casualties in Chernihiv 24 February to 6 March

Strikes on 3 March

Using a variety of OSINT channels CIR's EoR team were able to identify 3 March as a particularly intense day of Russian strikes.

Civilian residential and industrial sites were targets, as documented in two cases below:

- *Large Strike in Residential Area (geolocated to: 51.499945, 31.278308)*

Multiple civilian casualties at a junction less than 4 kilometres from the Yalivshchyna Graves. The strike hit a pharmacy and residential buildings. Unverified reports by the Chernihiv regional state administration state the attack may have led to up to 47 civilian fatalities.⁶

- *Strikes on Chernihiv Oil Storage Site (geolocated to: 51.484738, 31.24221)*

Videos of Chernihiv's Oil Storage Depot burning after a strike were shared on 3 March, after an apparent Russian strike. The facility is located just over 3 kilometres from a residential area.

⁶ <https://suspilne.media/213635-vid-bombarduvanna-rosijskoi-aviacieu-cernigova-zaginuli-47-ludej/>

2.2 Kherson

On 2 March, Ukrainian authorities announced that the southern city of Kherson had fallen into Russian hands. The Ukrainian city was still under the control of Russian forces at the time this report was published.⁷

The Eyes on Russia team has documented a significant presence of Russian forces in and around Kherson since 2 March, and has verified much of that imagery publicly on the Russia-Ukraine Monitor Map.

Analysis of open-source material

After the discovery and investigations into mass graves in Bucha and Chernihiv, the Eyes on Russia team began investigating other potential mass burial sites in areas that experienced heavy fighting during Russia's campaign, this time focusing on the Kherson Oblast area.

Russian forces had established a significant presence in Kherson, specifically at an airbase just west of the city at these coordinates: 46.676, 32.508.

Numerous military vehicles with 'Z' markings have been identified at the base, with many positions being dug in. This is seen in the satellite images in *figures 13a* and *13b*, taken by Maxar on 7 April, 2022.

⁷ <https://twitter.com/AFP/status/1499202696179757056?s=20&t=jSvdvtv1JWVpv3pVr0vILw/>



Figure 13a: Maxar satellite imagery from the Kherson airport.



Figure 13b: Maxar satellite imagery from the Kherson airport.

These developments at Kherson's airbase took place west of Kherson's main cemetery where numerous new rows have been added since Russia's occupation of the area.

The cemetery site can be seen in the white box on the right of the overview in the satellite image in *figure 14*.



Figure 14: Satellite image of cemetery site in Kherson.

From the very first hours of the Russian occupation of Kherson, civilians began protesting against the Russian forces.

For example, in this video (*geolocated to: 46.640389, 32.615333*) filmed on 2 March, we can see a civilian waving Ukrainian flags in front of Russian soldiers.⁸ These protests quickly grew in size, bringing out many civilians.

⁸ https://twitter.com/Tar_Milus/status/1499009127808487427?s=20&t=va-cKNWZ7skN0Zonio_-IQ/

Russian forces cracked down on the protests with tear gas and dispersed the crowds with warning shots.

As protestors have been silenced, and with limited information circulating about Kherson, the EoR team has been monitoring grave sites at Kherson to identify where there may be expansions. Specifically, where the expansions may be larger than regular graves that are dug at those sites.

By looking at Planet satellite imagery from 28 February to 15 April at the Kherson cemetery (geolocated to: 46.669554, 32.530406), investigators identified lines of graves that were dug or filled. This can be seen in *figure 15*.



Figure 15a: trenches dug at grave site

Still images of this figure can be seen below in *figures 15b* and *15c*, which shows the difference between 28 February 2022, and 2 June 2022.



Figure 15b: An early satellite imagery dating to 28 February of Kherson Cemetery.



Figure 15c: A satellite imagery showing trenches dug at grave sites in Kherson.

On 2 April, researcher Nathan Ruser analysed an image provided to the EoR team estimating that approximately 824 grave plots have been dug in Kherson Cemetery since the beginning of the invasion to early April.⁹ This is visible in *figure 16*.



Figure 16: An approximate number of graves dug in Kherson cemetery from the beginning of the Russian invasion until early April.

Contextual Reporting

21 March

- *Russia violently dispersed protesters (geolocated to: 46.64078330, 32.61531456)*

During protests opposing the Russian invasion, EoR investigators managed to verify footage showing the Russian army opening fire at protesters under heavy tear gas on Svobody Square in Kherson.¹⁰

⁹ <https://twitter.com/Nrg8000/status/1510544022951329795?s=20&t=JUvM1620LnhNb9LKXHDqTQ/>

¹⁰ <https://t.me/ukrainetopnews/12771/>

2.3 Bucha

Bucha had been captured and liberated twice from Russian troops. It was first invaded between 27 February and 12 March and again on 29 March until the Russian troops retreated entirely on 31 March according to the town's mayor Anatolii Fedoruk.¹¹

Footage circulating from Bucha was analysed and verified by the EoR investigative team showing extensive damage to the town, and multiple murder scenes with signs of restraints and torture.

Russia's Foreign Minister Sergei Lavrov also made the claim that images of the bodies seen in multiple videos were "staged".

Lavrov's claim was made in the face of geolocated and verified imagery showing the presence of human bodies strewn on the streets of Bucha by EoR investigators.

According to Ukrainian officials, hundreds of bodies had been retrieved from one specific mass grave which was dug up in a churchyard. Maxar images also show bodies on the streets of Bucha dating back to 19 March.¹²

¹¹ <https://kyivindependent.com/uncategorized/bucha-liberated-by-ukraine-says-mayor/>

¹² <https://www.nytimes.com/2022/04/04/world/europe/bucha-ukraine-bodies.html/>

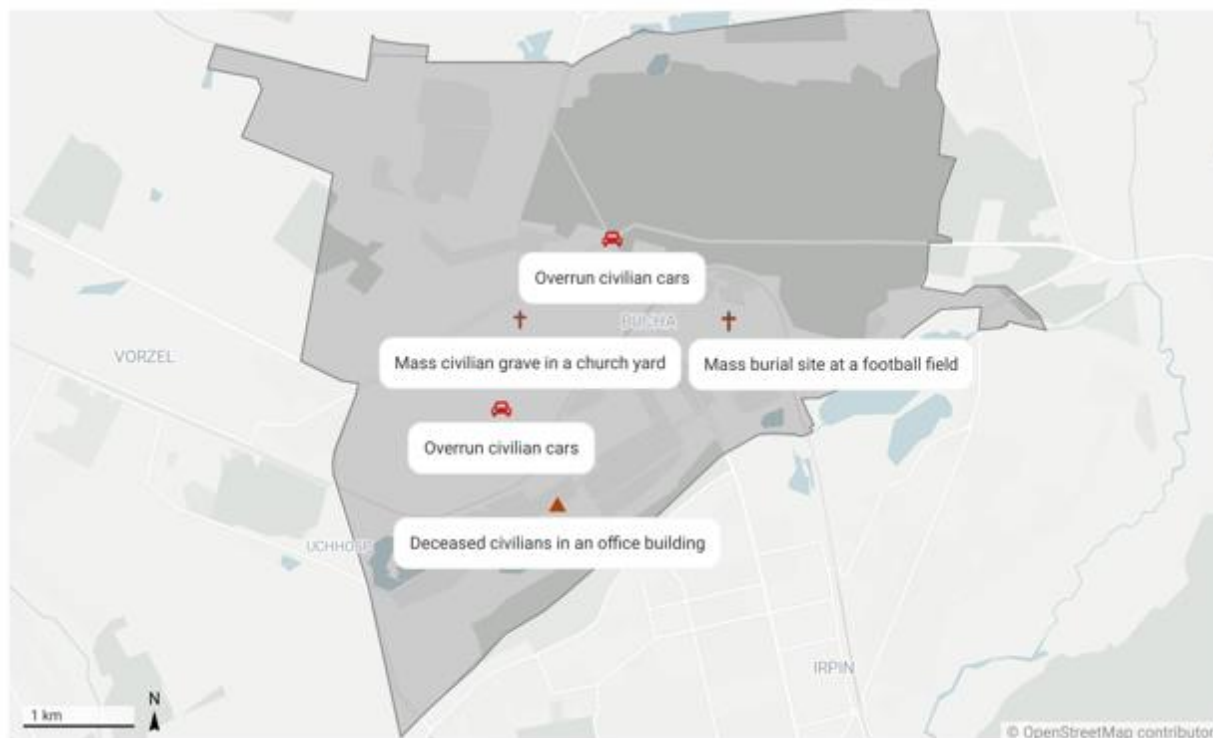


Figure 17: A map showing mass burial sites and events in Bucha.

Analysis of open source material

The EoR team began an investigation into Bucha’s potential mass burial sites. Footage that came out in early April, following the city’s liberation showed mass graves in a churchyard, as seen in *figure 17a*.¹³

The image was taken in the yard of the Church of St. Andrew Pyervozvannoho All Saints in central Bucha (*geolocated to 50.548252, 30.2055940*).

¹³ <https://twitter.com/olliecarroll/status/1510623861779349507?s=20&t=GaZ0k0rDpVZBp7fx-bNOzw/>



Figure 17a: A Gravesite at Church of St. Andrew Pyervozvannoho All Saint.¹⁴

¹⁴ <https://twitter.com/olliecarroll/status/1510623861779349507?s=20&t=GaZ0k0rDpVZBp7fx-bNOzw/>

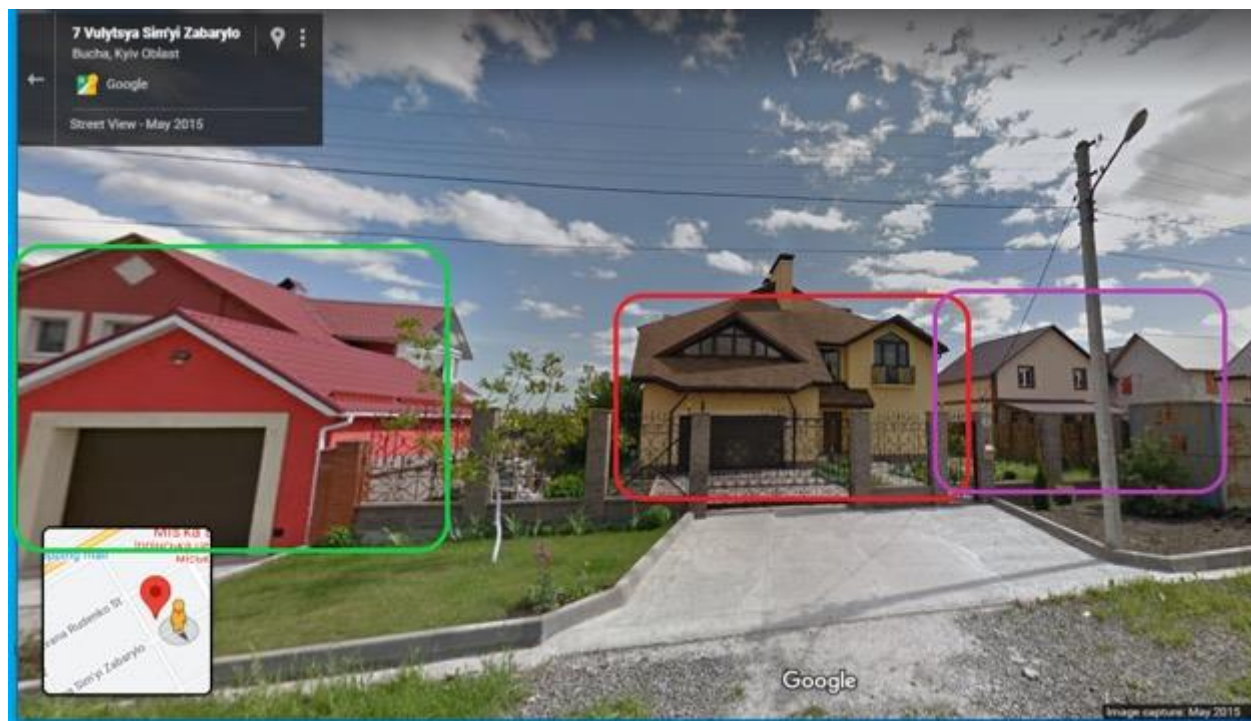


Figure 17b: A Geolocation of the Church in Bucha where the graves were discovered.

EoR investigators also examined older satellite imagery in *figure 18* showing visible dug trenches dating back to at least 11 March. The trenches were also visible on imagery from 12 March, as seen in *figure 18*.



Figure 18: Google Earth image showing graves being dug on 12 March.



Figure 19: Maxar imagery from 22 March showing the change in dug-up areas to include more graves.

The EoR team had previously identified and verified a video of civilian mass graves in Bucha (geolocated to 50.548531, 30.205102) around the same area as the church yard from 13 March.¹⁵

The video was published by a Ukrainian media Facebook page with a caption written in Italian. *Figures 20a* and *20b* show the geolocation of the Church.

In the video, people can be seen carrying and dragging what looks like body bags from pick-up trucks and into a long trench just in front of the Church of St. Andrew Pyervozvannoho All Saints.

At least 12 body bags can be seen laid down in the grave. In *figure 21*, people can be seen carrying a body bag in a trench.

¹⁵ <https://www.facebook.com/watch/?v=293784559556020>.

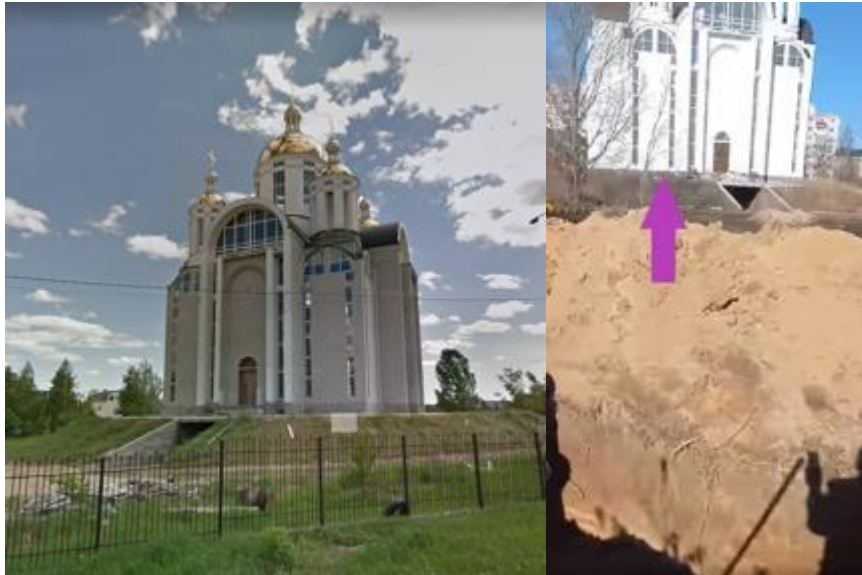


Figure 20a (left): image showing the church¹⁶ and 20b (right): screenshot taken from the video at the site of the trenches.



Figure 21: footage of people carrying a body bag in a trench.

¹⁶<https://www.google.com/maps/@50.5492526,30.2059582,3a,75y,175.14h,102.77t/data=!3m6!1e1!3m4!1sl7rDXCIYLACoCPOIKizUhw!2e0!7i13312!8i6656/>

As additional footage of the churchyard mass grave was released, bodies exhumed, forensically examined, and buried again, photos and videos of other makeshift graves also surfaced.¹⁷

An example is the Reuters photo published on 6 April showing graves in what appears to be a football field (*geolocated to: 50.548504, 30.232052*).¹⁸

The makeshift graves are located two and a half kilometres from the main mass grave and just one kilometre away from Yablunska St: indicating violence perpetrated in the wake of the Russian invasion of Bucha until its liberation.

Figure 22a shows the graves on the football field (below).

¹⁷ <https://twitter.com/lAPonomarenko/status/1512783813230927882/>

¹⁸ <https://www.reuters.com/world/europe/us-europe-plan-russia-sanctions-ukraine-warns-more-civilian-deaths-2022-04-05/>



Figure 22a: An image of graves on a football field in Bucha.

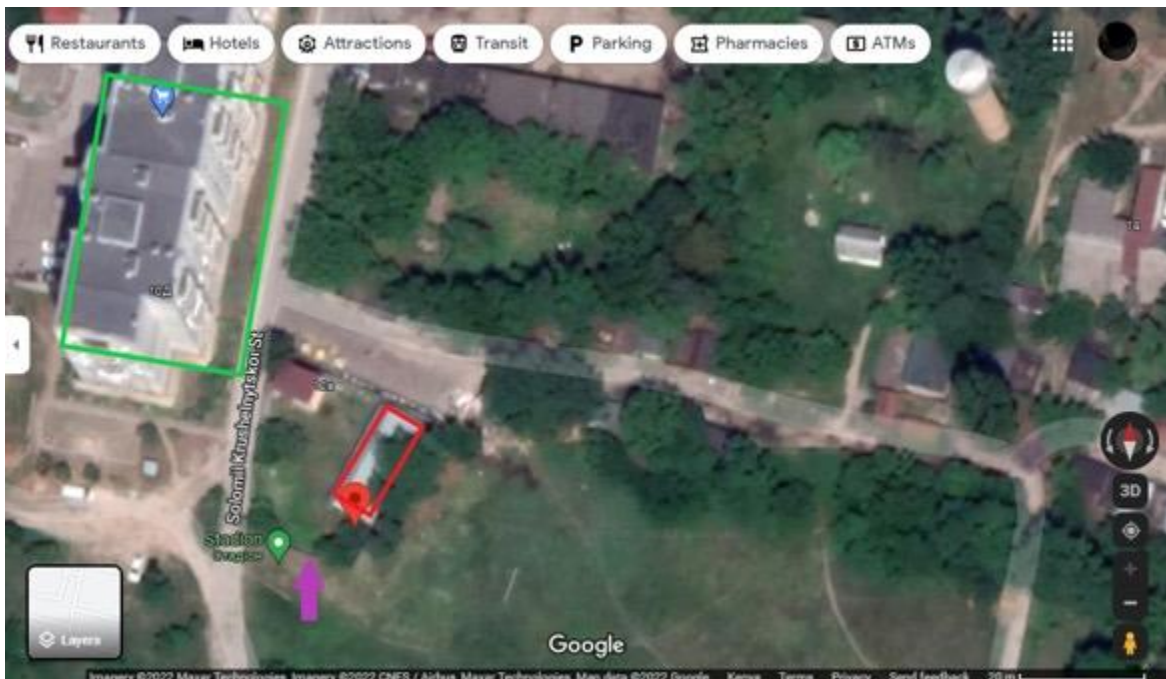


Figure 22b: An image showing the geolocation of the graves on the football field.

By late April, a Reuters report quoted police forces in Bucha saying they found a shallow grave of three civilians near the village of Myrotske seven kilometres northwest of Bucha, with a high likelihood of torture.¹⁹

Contextual Reporting: related events and civilian casualties in Bucha

3 March to 19 April

The EoR team examined additional evidence and satellite imagery of Bucha. The following events may contribute to the occurrence of the mass grave site in the city:

- *3 March: explosions (geolocated to 50.532903, 30.206266)*

The EoR team found and verified drone footage showing explosions over an area of Bucha, only around two kilometres away from the mass grave.²⁰

- *5 March: Yablunska Street III: torture and execution (geolocated to:50.541169, 30.229105)*

Allegations of torture and execution have also been voiced by families of victims in Bucha.²¹ In a video, that was verified by the OSINT community, a woman tells the story of her husband who was killed by people claiming to be Russian troops.²²

“On 5 March, we heard an explosion. Half of our house was gone,” the woman said. She added that her husband Oleg and his father came out raising their hands and announcing that there are peaceful people on the premises.

¹⁹ <https://www.reuters.com/world/europe/kyiv-police-find-three-bound-men-they-say-were-executed-by-russian-occupiers-2022-04-30/>

²⁰ <https://twitter.com/markito0171/status/1499838283202899969/>

²¹ <https://twitter.com/StratcomCentre/status/1514682651537391630?s=20&t=vAEUfijOij066LNfJWkVsw/>

²² <https://twitter.com/michaelh992/status/1511299069846638598?s=20&t=21EtwxXjMs5IPkB-N0h7uQ/>

“The house began to burn. Oleg ran to put out the fire, they didn't let him put it out, they took him out, put him on his knees, and shot him in the head,” she stated. The wife and father-in-law could not move his body until the troops were gone, adding that while the troops claimed to be Russian, with St. George Ribbons, they had an accent and are believed to allegedly be “Kadyrovs” or Chechen fighters.

The EoR team confirmed that the video was filmed just off Yablunska St.

- *31 March: Destroyed military vehicles and residential areas (geolocated to 50.543945, 30.226708)*

Roughly two kilometres from the mass burial site, a satellite image over that part of east Bucha from 31 March showed multiple destroyed military vehicles and shelled residential areas coinciding with heavy Russian military presence.

- *1 April: Yablunska Street I: bodies on side of the road (geolocated to: 50.541694, 30.229604)*

A video published on 1 April shows multiple bodies strewn on the road along Yablunska Street.²³ Media reports that followed claimed people were also being executed at close range.²⁴

- *3 April: Destroyed vehicles (geolocated to: 50.555553, 30.217723)*

Videos that surfaced online following the Russian army's retreat showed cars that were reportedly run over by Russian tanks with people inside of the cars. One of these videos is taken 650 metres from the shelled residential area mentioned above.²⁵

- *3 April: Cyclist shot by Russian tanks (geolocated to 50.542205, 30.231058)*

²³ <https://twitter.com/ViktoriiUAH/status/1509985789404459011?s=20&t=xWjouzhyE4I92eD31kbv9A/>

²⁴ <https://www.nytimes.com/2022/05/19/world/europe/russia-bucha-ukraine-executions.html/>

²⁵ https://twitter.com/ZMiST_Ua/status/1510677746951004161/

Footage of a cyclist who was shot at by two different Russian tanks was widely circulated and picked up by multiple media outlets. This montage connecting two videos shows the body of the cyclist around Yablunska Street.²⁶

- *8 April: Yablunska Street II: dead bodies at an office building (geolocated to: 50.533670, 30.210215)*

The EoR team carefully analysed videos that were initially geolocated by the OSINT community on Twitter.²⁷

The footage was also from 144, Yablunska St. which proved to be an office building.

One video (WARNING: GRAPHIC) begins by showing dead bodies, one of which had head and chest gunshot wounds.²⁸

The shape and apparent pattern of tissue injuries to the head of the victim suggest the deceased were most likely to have received gunshots to the front of the head at a relatively close range, and that the manner of death is homicide.

The EoR team came across a video news report about the bodies on 144 Yablunska St. and managed to verify the location through the surroundings of the head of the funeral service seen in the footage.²⁹

A recent New York Times investigation pointed out a man who wore a distinctive shirt who was executed.³⁰ The EoR team identified him as the same man in a blue shirt lying on the ground in the previous video.

- *14 April: Destroyed vehicles (geolocated to 50.541278, 30.20267)*

²⁶ <https://www.youtube.com/watch?v=Z9gcV00bMo/>

²⁷ <https://twitter.com/Qwerty525911893/status/1512527887102009349/>

²⁸ <https://twitter.com/Qwerty525911893/status/1512527887102009349/>

²⁹ <https://www.youtube.com/watch?v=j3qx-3eTY50/>

³⁰ <https://www.nytimes.com/2022/05/19/world/europe/russia-bucha-ukraine-executions.html/>

A video shows damaged cars, with alleged victims inside, located almost two and a half kilometres from the destroyed cars mentioned above.³¹

- *Destroyed infrastructure*

Preliminary data from Bucha's city council in April stated that 25-28% of infrastructure has been destroyed in Bucha, highlighting the gravity of the destruction inflicted by Russian and Russian-allied forces.³²

2.4 Mariupol

The EoR team has long-monitored and assessed footage and reports coming out of the Russian-controlled southern port city of Mariupol, in Donetsk Oblast.

As Russian and Russian-allied troops progressed, they continued to shell residential buildings, hospitals, shopping centres and the Donetsk Academic Regional Drama Theatre which has been serving as an air raid shelter since the start of the siege of Mariupol.

It was reported by the Ukrainian government that 300 people were killed due to a Russian airstrike on 16 March.³³

The Associated Press later estimated around 600 people were killed in the bombing according to its investigation.³⁴ Mariupol's importance for Russia lies in connecting Crimea and the Donbas region and controlling much of Ukraine's black sea.

Russia announced in May that it seized full control of Mariupol.

³¹ <https://twitter.com/GoncharenkoUa/status/1514525152394063874/>

³² <https://strana.digital/news/387162-kak-vosstanavlivajut-osvobodzhennuju-buchu-pod-kievom.html/>

³³ <https://www.bbc.com/news/world-europe-60873435/>

³⁴ <https://apnews.com/article/Russia-ukraine-war-mariupol-theater-c321a196fbd568899841b506afcac7a1/>

On 16 May, Ukraine's deputy defence minister said that 260 Ukrainian soldiers had been evacuated through agreement-based human corridors, where 53 injured Ukrainian fighters were transported to the southern-eastern city of Novoazovsk.³⁵

Since the evacuation started, some 2,500 Ukrainian fighters have left the plant.

Mariupol's Azovstal steel plant has also sustained heavy bombardment and was one of the last standing parts of the city with 2,000 Ukrainian fighters vowing to keep resisting despite depleting weaponry.³⁶

The huge industrial structure, which spans over 11 square kilometres, functioned as an air raid refuge and bomb shelters in the form of sprawling underground tunnels and partitions.^{37,38}

Multiple initiatives to evacuate civilians hiding inside the steelworks factory eventually managed to steer 51 people out over the course of three days in early May, according to the BBC.³⁹

A number of clandestine rescue operations were reported that had taken place in Mariupol before Ukrainian fighters surrendered.⁴⁰

Fighters along with thousands of civilians were trapped inside the plant that doubled as a bomb shelter.⁴¹

Over 1,000 Ukrainian soldiers were taken by Russian troops then transferred to Russia, according to the BBC, meeting a familiar fate to Ukrainian fighters in Russian-held territories in east Ukraine.⁴²

³⁵ <https://www.aljazeera.com/news/2022/5/16/more-than-260-ukraine-troops-evacuated-from-mariupol-plant-kyiv/>

³⁶ <https://apnews.com/article/russia-ukraine-war-aab9f48d6c4941d2f4d4b5d3fa8ed751/>

³⁷ <https://www.washingtonpost.com/world/2022/04/18/azovstal-mariupol-steel-iron/>

³⁸ <https://www.reuters.com/world/europe/ukrainian-fighter-trapped-mariupol-steel-plant-asks-elon-musk-help-2022-05-12/>

³⁹ <https://www.bbc.co.uk/news/world-europe-61362557/>

⁴⁰ <https://www.abc.net.au/news/2022-06-22/ukraine-secret-deadly-rescue-missions-in-besieged-mariupol/101173414/>

⁴¹ <https://www.nytimes.com/2022/04/18/world/ukrainians-mariupol-steel-plant.html/>

⁴² <https://www.bbc.com/news/world-europe-61723282/>

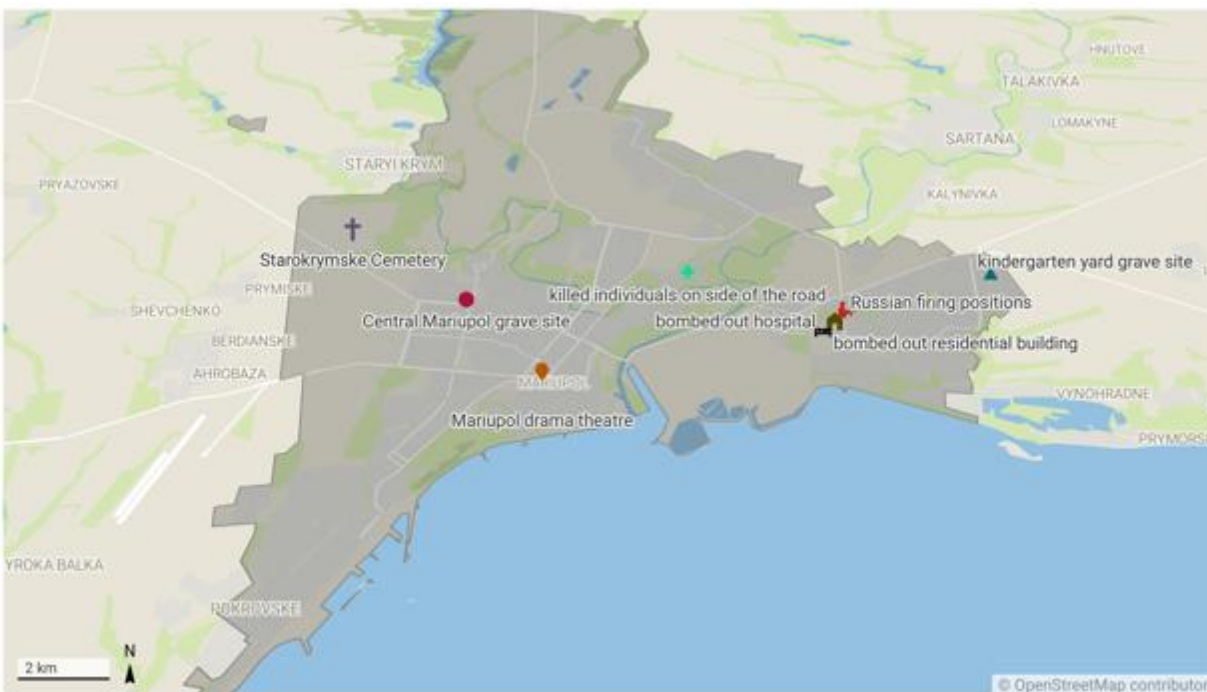


Figure 23: An Overview of mass graves sites in Mariupol.

Analysis of open source material

A wealth of visual data was available in early April through May showing makeshift graves amidst residential buildings in Mariupol as well as schoolyards. Additionally, cemeteries in Mariupol had an increase in grave rows.

Around four kilometres from the drama theatre in central Mariupol, this video was found and verified by the EoR team shows a residential area following an airstrike (*geolocated to: 47.117570, 37.524582*).⁴³

As the video spans across a neighbouring plot, we can see at least six headstones/graves. This can be seen in *figure 24a*.

⁴³ <https://t.me/mariupolnow/5011/>



Figure 24a: An image showing makeshift graves in front of residential buildings.



Figure 24b: geolocation of the makeshift graves.

Images from 8 April that were analysed and geolocated by the EoR team show several graves in the front yard of a kindergarten (*geolocated to: 47.125093, 37.686409*) in east Mariupol.⁴⁴ The graves in front of the kindergarten can be seen in *figure 25a*.



Figure 25a: Makeshift graveyard in front of a kindergarten.

⁴⁴ <https://t.me/mariupolnow/5610>

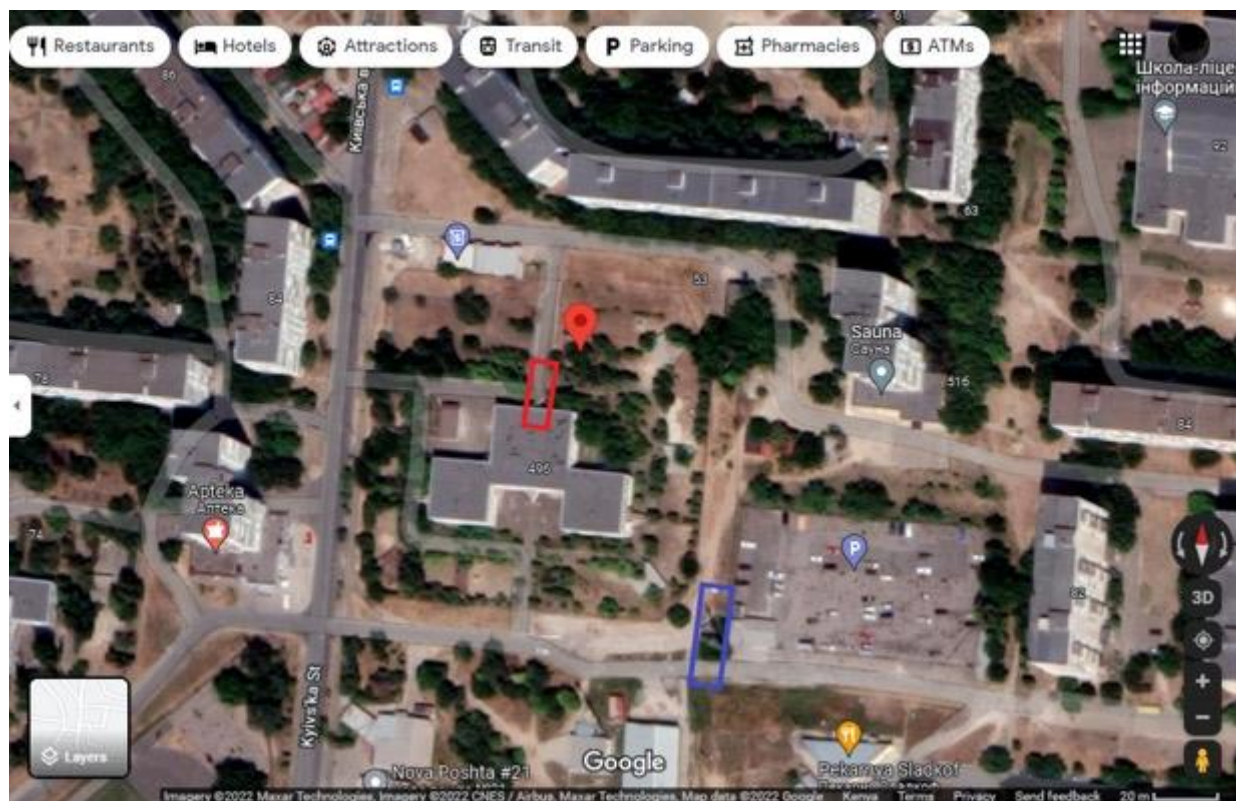


Figure 25b: Geolocation of the graveyard in front of the kindergarten.

Reports following the efforts to evacuate civilians and Ukrainian forces were marred by footage coming out of Mariupol’s Starokrymske Cemetery, west of the city.⁴⁵

Planet imagery of Mariupol’s cemetery was obtained and analysed by the EoR team with an estimated 1,141 new graves, as seen in *figure 26*, being dug up from around mid-March to 12 May (geolocated to 47.138388, 37.485231).

⁴⁵ <https://twitter.com/TpyxaNews/status/1523585540444270595?s=20&t=RCbM6oY-v7UaCW1A1woGxw/>



Figure 26: An estimated 1,141 new graves at Mariupol cemetery visible on imagery from Maxar.

An image of dug graves was geolocated by the EoR team to the newest expansion at the south of Mariupol's Starokrymske Cemetery (*geolocated to 47.138388, 37.485231*).⁴⁶ Although the image shows the eastern section of the expansion, hundreds of graves are visible in the footage.

Figure 27 shows a comparison between the newly dug graves and an older image of the cemetery.

⁴⁶ <https://t.me/kazansky2017/2730/>



Figure 27a: A comparison between an older image of the cemetery⁴⁷ (left) and of the newly dug section (right).⁴⁸



Figure 27b: Geolocation of the image, in comparison to high resolution satellite imagery.⁴⁹

⁴⁷https://www.google.com/maps/place/Starokrymske+Cemetery/@47.1432948,37.4889628,3a,75y,90t/data=!3m8!1e2!3m6!1sAF1QipPjWwdCs0XA5L8XsavhnDtGnLHHeiUISZ3_oH8m!2e10!3e12!6shttps:%2F%2Fh5.googleusercontent.com%2Fp%2FAF1QipPjWwdCs0XA5L8XsavhnDtGnLHHeiUISZ3_oH8m%3Dw203-h135-k-no!7i4898!8i3265!4m5!3m4!1s0x40e6e23a95b001e9:0xb635713259c723a6!8m2!3d47.1432948!4d37.4889628

⁴⁸ <https://t.me/kazansky2017/2730>

⁴⁹ <https://t.me/kazansky2017/2730/>

The Mariupol city mayor Vadym Boichenko had stated in late April that local authorities harbour evidence that Russian troops trade burials for food.⁵⁰

Circulated drone footage from 30 May of the cemetery, suggested that hundreds more graves were dug up.⁵¹ The footage came as the adviser to Mariupol's mayor stated that the death toll of those killed since Russian troops invaded Mariupol has reached 22,000 and could turn out to be a lot higher.⁵²

Contextual Reporting: related events and civilian casualties in Mariupol

16 March to 19 April

- *7 April: Mariupol drama theatre destroyed (geolocated to: 47.0960331, 37.5487414)*

Footage following the bombing of Mariupol's drama theatre on 16 March showed the extent of damage the cultural landmark sustained causing the death of 600 people.⁵³

- *9 April: Russian tanks firing in residential area (geolocated to 47.111873, 37.637566)*

Claims by Russian forces that the Ukrainian military might have attacked and killed civilians were easily debunked using open-source videos.

Footage verified by the OSINT community from 9 April was analysed by the EoR team showing that Russian tanks fired in the middle of a near-wrecked residential neighbourhood.⁵⁴

⁵⁰ <https://tsn.ua/en/ato/locals-dug-graves-to-get-food-rations-another-mass-casualty-burial-site-is-discovered-in-mariupol-suburbs-2047036.html/>

⁵¹ <https://twitter.com/JulianRoepcke/status/1531227775029346304>

⁵² <https://www.ukrinform.net/rubric-ato/3491682-mariupol-death-toll-stands-at-22000-mayors-adviser.html>

⁵³ <https://raport.ba/ukrajina-pacijenti-zarobljeni-u-bolnici-u-mariupolju-prebaceni-na-sigurna-mjesta%EF%BF%BC/>

⁵⁴ <https://twitter.com/zcibrooker/status/1512897871405846537/>

- *15 April: Hospital and residential area bombed (geolocated to: 47.1096936, 37.6315413 / 47.11125, 37.63495)*

A Pro-Russia journalist who was embedded with the Russian security forces published a graphic video on 15 April, claiming a neighbourhood and a hospital were bombed by Ukrainian forces.⁵⁵

Akin to videos that came out about Bucha, there are bodies partially buried under the rubble. They show both signs of torture and restraint synonymous with previous reports and evidence.

The video was geolocated by the OSINT community and reviewed and verified by the EoR team.

- *19 April: People killed on side of the road (geolocated to: 47.137340, 37.581748)*

The EoR team monitored and documented videos of murdered and unarmed civilians in Bucha, Mariupol and other cities. Aside from evident signs of torture and restraint, there is also graphic footage showing people killed who are lying on the side of the road on 19 April.

Similar to footage depicting Bucha victims on Yablunska St. The video geolocated by the OSINT community and reviewed by the EoR team was shown to have been filmed north of the city.⁵⁶

⁵⁵ <https://twitter.com/KremlinTrolls/status/1514874490194386953/>

⁵⁶ <https://twitter.com/MarQs/status/1516405464417947655/>

2.5. Pioners'ke

On 22 April, Mariupol's city council press service announced on Telegram that a mass grave on the outskirts of Mariupol has been discovered, according to the report an estimated 1,000 people were buried there.⁵⁷

The EoR team has analysed satellite imagery from the site.

Analysis of open source material

Between the settlements of Vynohradne and Pioners'ke, 16.5 kilometres east of Mariupol, the graveyard expanded to include trenches (*geolocated to 47.097585, 37.714764*).

Sentinel imagery in *figures 28a* and *28b* shows the expansion of the graveyard to include a new section with trenches.



Figures 28a and 28b: Footage showing an expansion of the graveyard.

⁵⁷ <https://t.me/mariupolrada/9332/>

Upon examining recent imagery in *figure 28c* and comparing it to early May in *figure 28d*, we can still see a noticeable change in the cemetery's apparent structure.



Figures 28c and 28d: Footage showing a change in the shape of the cemetery.

The expansion can also be seen in Planet imagery from 29 March and 12 May. *Figures 29a* and *29b* depict the expansion.

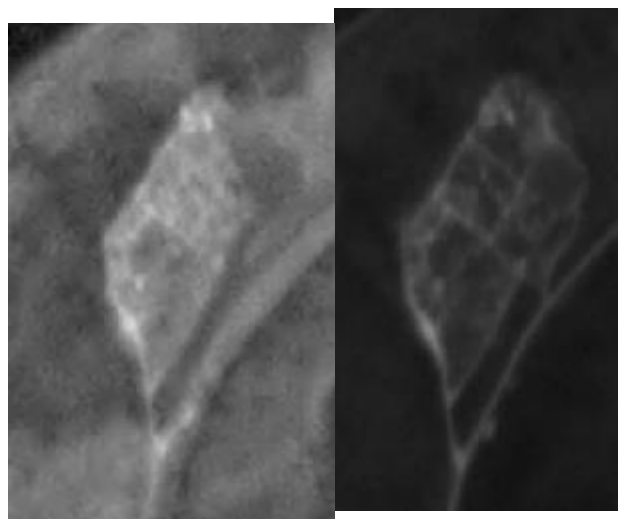


Figure 29a (left): Planet imagery taken 29 March, and figure 29b (right) Planet imagery taken 12 May.

A Timelapse from Sentinel Hub shows the establishment of the trenches coinciding with the newly formed military position (mid-right on the road in the dark brown field *in figure 30*)



Figure 30: Establishment of the trenches coinciding with the newly formed military position.

Maxar imagery shared on Twitter from 29 April shows the expansion in detail, EoR investigators measured the trenches to be around 43m long.⁵⁸

The small black shapes, seen in *figure 31*, at the top right of the trenches are apparently body bags.



Figure 31: Footage showing the expansion of the graveyard.

The site closely resembles footage posted in May, seen also in *figure 32*, claiming to be at the location, including a match on the number of trenches.⁵⁹

⁵⁸ <https://twitter.com/trbrtc/status/1520444886394281984/photo/1/>

⁵⁹ <https://twitter.com/EuromaidanPR/status/1523606177862459392/>



Figure 32: footage showing body bags and trenches.

The earliest imagery showing the expansion is 28 April, however, due to clouded conditions, it is difficult to establish an exact date when this mass grave was established.

For more see *figure 33*.

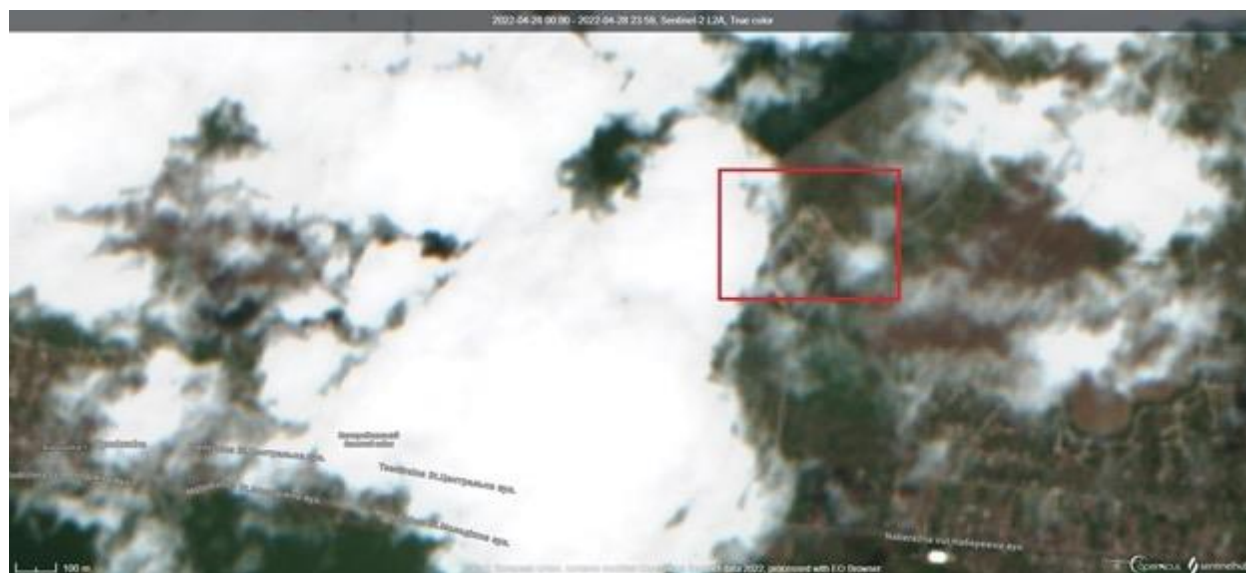


Figure 33: An early satellite image from the gravesite.

Contextual Reporting: Related Events and Civilian Casualties in Pioners'ke:

The adviser to the mayor of Mariupol stated on Telegram that only people who died of natural causes were issued death certificates while those who died of injuries or murdered, do not get a certificate and instead were being buried in a mass grave.⁶⁰

Additionally, Russian firing positions were geolocated by the EoR team around 47.09943, 37.72366 in Pioners'ke from footage published on 20 April.

Further context is outlined in the above section: "Contextual Reporting: Related Events and Civilian Casualties in Mariupol."

2.6 Manhush

As with Pioners'ke, Manhush's mass grave was dug up to bury the victims of heavy fighting and shelling in Mariupol. Manhush witnessed Russian military movements around 9 March.⁶¹

Analysis of open source material

On 21 April, the Centre for Strategic Communications and Information Security in Ukraine announced that locals found a new 30-metre mass grave in Manhush, near Mariupol.⁶²

Mayor Vadym Boychenko said Russian forces "dug 30 metres of mass graves" and "brought bodies by truck, which they are trying to hide there".⁶³

The EoR team has been monitoring this site and the changes in satellite imagery to evaluate the scale of expansion of the site.

⁶⁰ <https://t.me/andriyshTime/1220/>

⁶¹ <https://t.me/Ratnik2nd/3396/>

⁶² <https://t.me/spravdi/5976/>

⁶³ <https://english.nv.ua/nation/russian-invaders-disguising-mass-grave-in-manhush-says-mariupol-city-council-50236812.html/>

On 23 April, Petro Andriushchenko, an advisor to Boychenko said that Russians are clearing debris at the Donetsk Academic Regional Drama Theatre in Mariupol.⁶⁴ The Theatre was bombed on 16 March and Russian soldiers are allegedly taking dead bodies to the nearby Manhush village.

On 25 April The Ukrainian Centre for Strategic Communications and Information Security alleged that 3,000 - 9,000 Mariupol residents are buried in the mass grave.⁶⁵

As shown in *figure 34*, Planet imagery depicts activity at the graves on 28 April.

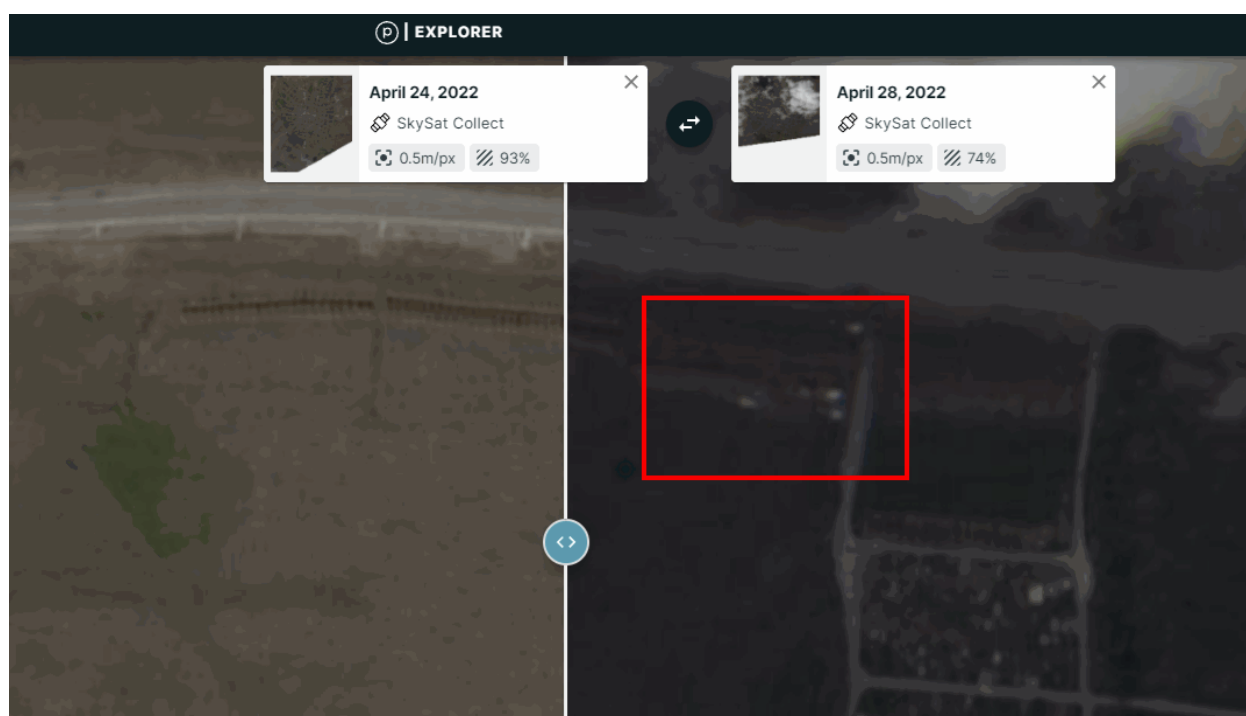


Figure 34: Planet imagery showing activity at the gravesite.

As shown in *figure 34*, Planet imagery also depicts activity at the graves on 24 April from Planet. This was the same day when RT published footage claiming to debunk the site as a mass grave.⁶⁶

⁶⁴ <https://twitter.com/KyivIndependent/status/1517805021148106754/>

⁶⁵ <https://twitter.com/StratcomCentre/status/1518578516090138624/>

⁶⁶ <https://www.rt.com/russia/554617-mass-grave-mariupol-ukraine/>



Figure 35a: Planet imagery showing Manhush gravesite on 24 April.

This satellite imagery can be compared with imagery from 8 May from the same site that shows an increase of graves at the site.



Figure 35b: Planet imagery showing activity at the grave site on 8 May.

Contextual Reporting: Related Events and Civilian Casualties in Manhush (Mar 9)

- 9 March: Russian military movements in Manhush (geolocated to 47.057035, 37.301445)

The EoR team geolocated Russian forces in Manhush en route to Mariupol where heavy bombardment had plagued the city.

Manhush's burial site correlated with the rising death toll in Mariupol, as explained in the above "Contextual Reporting: Related Events and Civilian Casualties in Mariupol."

3. Conclusion

The Eyes on Russia Project continues to monitor cemeteries and mass burial sites in an attempt to highlight the alarming increase in civilian losses across most of the attacked regions in Ukraine.

Based on our analysis, it is apparent that makeshift graves have been increasingly synonymous with cities that were, are, or have been, under Russian occupation.

As we've noted throughout our investigation, Russian and Russian-allied movements, as well as indiscriminate attacks on nearby areas, were geolocated and verified in each respective city.

In cases such as Mariupol, the emergence of multiple mass graves nearby such as Pioners'ke denotes the high fatality rate that correlates with Russian movements and incessant shelling within a reasonable proximity.

The open source evidence presented in this report clearly shows how cities that were, or continue to be, under Russian military occupation have large and growing mass graves in them or in close proximity. This demonstrates a strong correlation between civilian casualties and Russian military activities.

When combined to other open source evidence around Russian targeting of civilian targets and infrastructure, a clear picture emerges of the Kremlin conducting their campaign in breach of international human rights conventions.



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