

FRONT_BOT

Frontline Reporting & OSINT Node Tracker Bot

Version 0.89

Military conflict	Russian invasion of Ukraine
Opposing parties	Russia – Ukraine
Conflict start date	24. February 2022
Conflict day	1334
Conflict week	191
Reporting period	2025-10-12 → 2025-10-19
GitHub system info	Linux-6.14.0-1012-azure-x86_64-with-glibc2.39 CPU: x86_64 RAM: 8.33 GB
Reporting FRONT_BOT version	0.89
Report writing duration	3 minutes 51 seconds
Project developer	Zsolt Lazar
Developer's website	https://bio.site/zsoltlazar
Project website	[Will be added later]

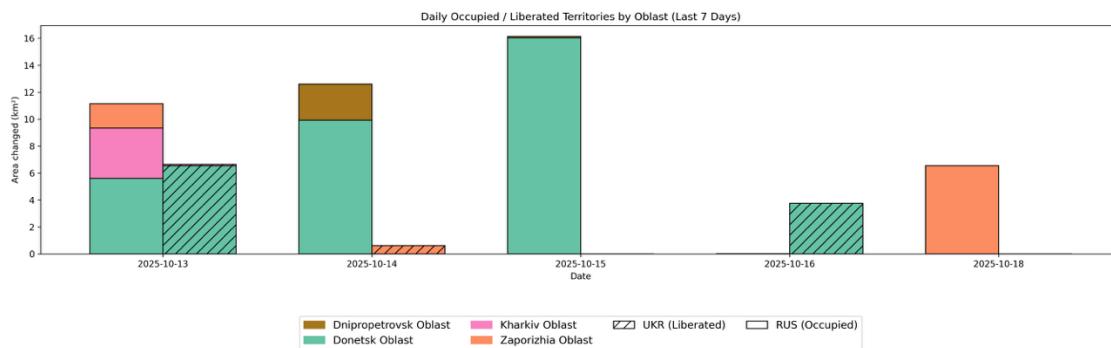
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WEEKLY TERRITORIAL CHANGES

Module 7: Weekly Territorial Change Report (DeepStateMap)

According to DeepStateMap data, between 2025-10-13 and 2025-10-18, Russian and Ukrainian forces continued to contest territory along multiple fronts. Over this 7-day period, Russian gains amounted to 46.4 km^2 , while Ukrainian gains reached 11.0 km^2 . The largest Russian advances were observed in Donetsk Oblast (31.6 km^2), Zaporizhia Oblast (8.3 km^2), Kharkiv Oblast (3.7 km^2). Meanwhile, Ukrainian forces achieved their most notable gains in Donetsk Oblast (10.3 km^2), Zaporizhia Oblast (0.6 km^2), Kharkiv Oblast (0.1 km^2). Overall, the most active oblasts during the week were Donetsk Oblast, Zaporizhia Oblast, Kharkiv Oblast. The peak day for Russian advances was 2025-10-15, while the peak day for Ukrainian advances was 2025-10-13.



Distribution of Gains by Oblast (Last 7 Days)

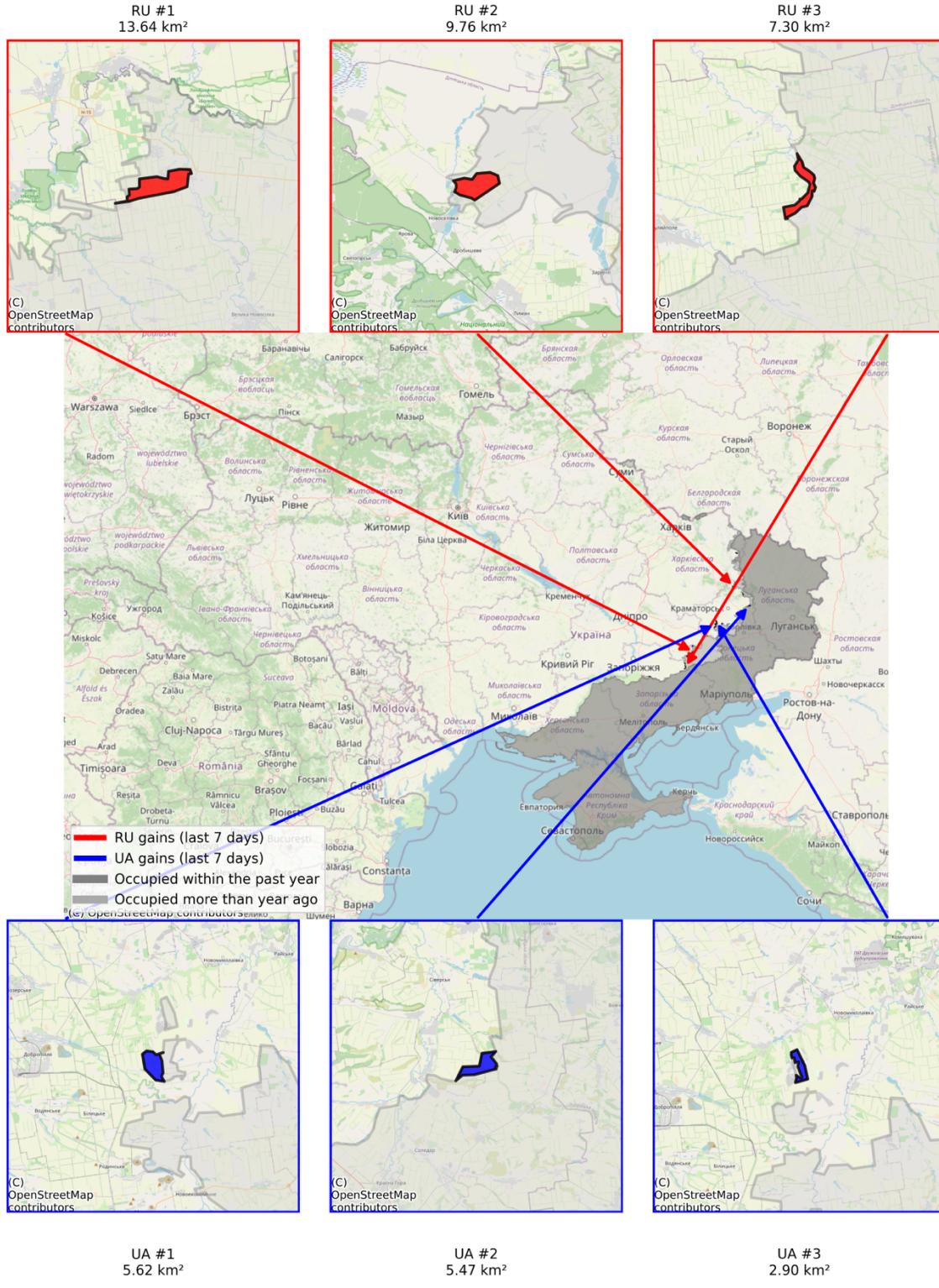


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Module 8: Weekly Territorial Map (DeepStateMap)

Last 7 Days | RU Gains 50.93 km² | UA Gains 16.21 km²
Top 3 territorial changes shown on side maps

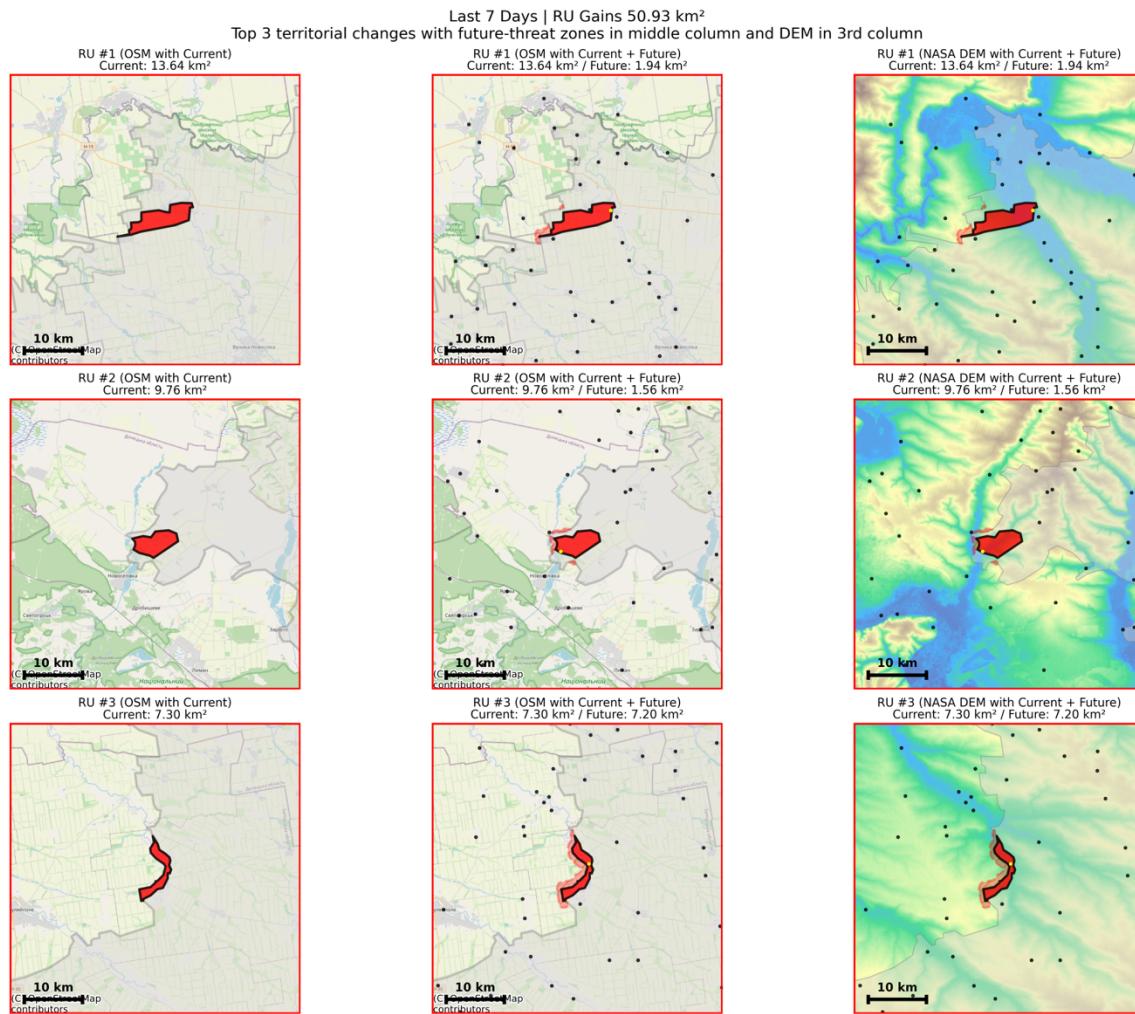


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Module 9: Top 3 Territorial Maps & Narratives (DeepStateMap)



🇷🇺 RU Narrative:

According to DeepStateMap data between 2025-10-11 and 2025-10-18, the following territorial developments were observed for RU forces.

7-Day Comparative Summary

Over the past week, RU forces have gained a total of 50.93 km², with the top three territorial gains accounting for 30.69 km² (60% of the total). In comparison, the opposing side has gained 16.21 km² (top three gains: 13.99 km²).

RU Top Territorial Changes Narrative

The #1 largest gain by RU forces covers approximately 13.64 km², which represents about 27% of total gains this week. Currently, the gain affects the settlement Перебудова. If the advance continues, the following settlements may soon fall within the contested area: Мирне, Воскресенка. The #2 largest gain by RU forces covers approximately 9.76 km², which represents about 19% of total gains this week. Currently, the gain affects the settlement Шандриголове. No additional settlements are predicted to be affected in the near future. The #3 largest gain by

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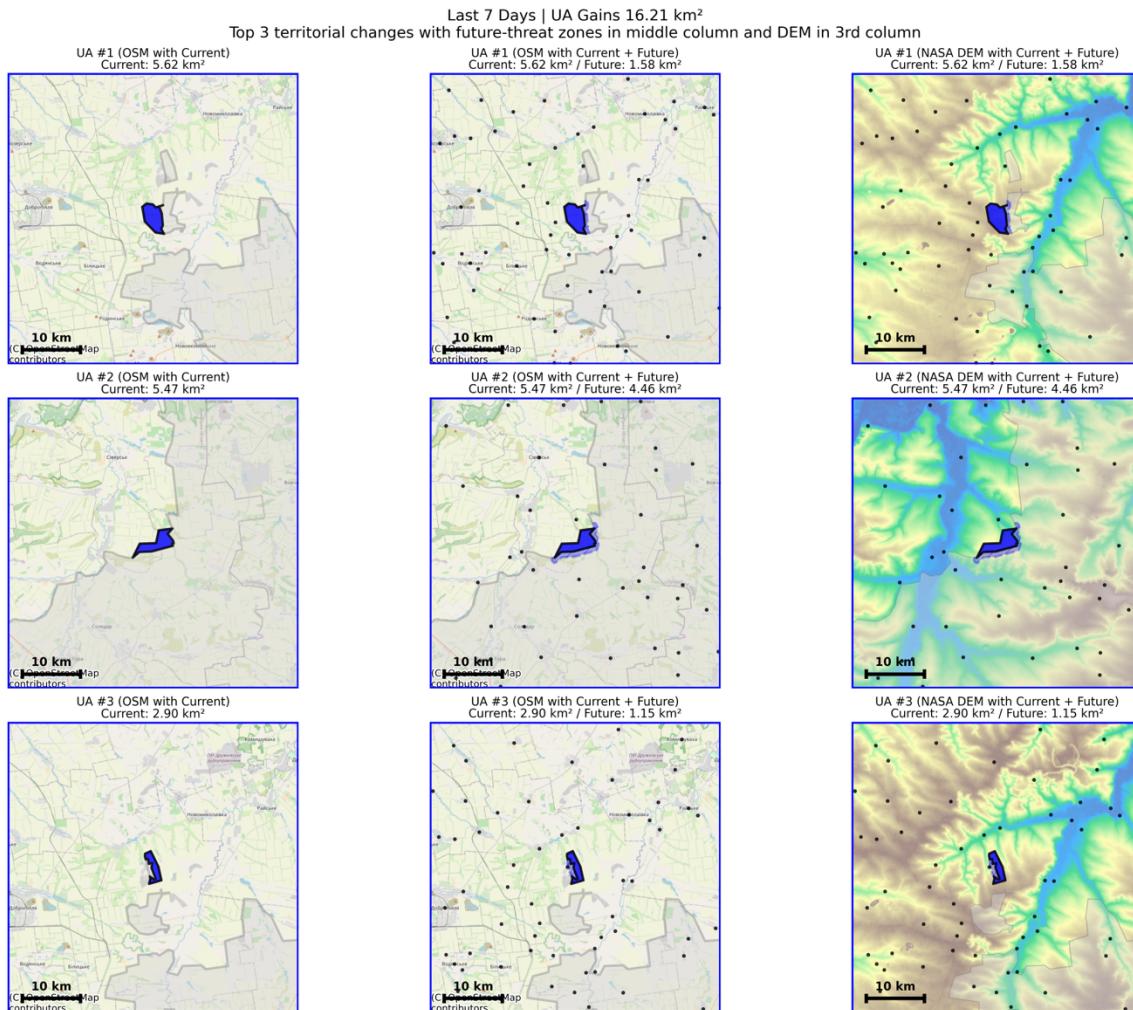
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RU forces covers approximately 7.30 km², which represents about 14% of total gains this week. Currently, the gain affects the settlement Полтавка. No additional settlements are predicted to be affected in the near future.



🇺🇦 UA Narrative:

According to DeepStateMap data between 2025-10-11 and 2025-10-18, the following territorial developments were observed for UA forces.

7-Day Comparative Summary

Over the past week, UA forces have gained a total of 16.21 km², with the top three territorial gains accounting for 13.99 km² (86% of the total). In comparison, the opposing side has gained 50.93 km² (top three gains: 30.69 km²).

UA Top Territorial Changes Narrative

The #1 largest gain by UA forces covers approximately 5.62 km², which represents about 35% of total gains this week. Currently, no settlements are affected by this gain. No additional

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settlements are predicted to be affected in the near future. The #2 largest gain by UA forces covers approximately 5.47 km², which represents about 34% of total gains this week. Currently, no settlements are affected by this gain. No additional settlements are predicted to be affected in the near future. The #3 largest gain by UA forces covers approximately 2.90 km², which represents about 18% of total gains this week. Currently, no settlements are affected by this gain. No additional settlements are predicted to be affected in the near future.

Module 4: Settlements (DeepStateMap) — Narrative

According to data reported by the DeepStateMap project, as of 2025-10-18, covering the period 2025-10-12 to 2025-10-18, the following territorial developments were observed:

Russian forces expanded their control between 2025-10-12 to 2025-10-18, with Russia gaining 116.1 km² (25.9% less than the previous week, which was 156.6 km²), and Ukraine gaining 12.6 km² (39.5% more than the previous week, which was 9.0 km²).

The most occupied oblast was Donetsk Oblast (Перебудова, Кучерів Яр, Шандриголове). Newly occupied settlements include: Кучерів Яр (village, Donetsk Oblast), Перебудова (village, Donetsk Oblast), Полтавка (village, Zaporizhia Oblast), Шандриголове (village, Donetsk Oblast).

Based on the local weekly advance (median ≈ 0.87 km, dynamic buffer 875 m), settlements likely next affected by Russian advances include Котлине (village, Donetsk Oblast) (119 m), Заповідне (village, Donetsk Oblast) (171 m), Зелений Гай (village, Donetsk Oblast) (304 m), Мирне (village, Donetsk Oblast) (359 m), Тернове (village, Dnipropetrovsk Oblast) (643 m), Воскресенка (village, Donetsk Oblast) (693 m).

Module 1: Equipment Losses Weekly Comparison (WarSpotting) — Narrative

According to data reported by the WarSpotting project, between 2025-10-11 and 2025-10-17, Russian forces lost 37 pieces of equipment (cumulative total: 21443), representing a decrease of 7.5% compared to the previous week.

The largest increase was seen in Engineering, which rose to 2 units (+2, +0.0%). Meanwhile, Transport losses dropped to 4 units (-6, -60.0%).

 17 Weekly Retrospective (last 52 weeks):

- Average weekly losses over the past year: 112.3, current week below average (37 units).
- Largest weekly spike: 738 units in week ending 2022-03-28.
- Cumulative total: 21443

Equipment categories with the highest relative increase compared to their yearly average:

- Engineering (+26.8%)
- Towed artillery (+-14.8%)
- Infantry fighting vehicles (+-36.1%)

Categories with the largest decreases:

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- Airplanes (-100.0%)
- Ambulances, medical vehicles (-100.0%)
- Anti-aircraft systems (-100.0%)

Geolocation data was available for 29 of these losses (78.4%), compared to 24 (60.0%) the week before.

The 57th Motor Rifle Regiment recorded the highest number of equipment losses among identifiable Russian units last week.

The most frequently reported location was Razine, Pokrovsk raion, indicating sustained or intensified activity in the area.

Module 2: Equipment Losses Weekly Comparison (Oryx)— Narrative with Retrospective & Category Context

According to data reported by the Oryx project, between 2025-10-12 and 2025-10-18, Russian forces lost 0 units (cumulative total: 22909), while Ukrainian forces lost 0 units (cumulative total: 9974). This represents a decrease of 0.0% for Russia and a decrease of 0.0% for Ukraine compared to the previous week. The RU/UA loss ratio was 2.30, compared to 2.30 the previous week.

17 Weekly Retrospective (last 52 weeks):

- Russia: average weekly losses over the past year 12.7, current week below average (0 units), largest weekly spike: 319 units in week ending 2024-10-23.
- Ukraine: average weekly losses over the past year 8.9, current week below average (0 units), largest weekly spike: 236 units in week ending 2025-03-20.
- Cumulative totals: Russia 22909, Ukraine 9974

◆ Per-Category Weekly Context and Top 3 Highlights:

Russia:

- Tanks: 0 (below average 1.9)
- AFV: 0 (below average 1.7)
- IFV: 0 (below average 3.9)
- APC: 0 (below average 0.5)
- IMV: 0 (below average 0.3)
- Engineering: 0 (below average 0.3)
- Coms: 0 (below average 0.0)
- Vehicles: 0 (below average 1.6)
- Aircraft: 0 (below average 0.2)
- Infantry: 0 (below average 4.8)
- Logistics: 0 (below average 0.3)
- Armor: 0 (below average 3.7)
- Antiair: 0 (below average 0.3)
- Artillery: 0 (below average 0.3)

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▼ Top 3 decreases this week: Armor (-3.7), IFV (-3.9), Infantry (-4.8)

Ukraine:

- Tanks: 0.0 (below average 0.9)
- AFV: 0.0 (below average 0.2)
- IFV: 0.0 (below average 1.1)
- APC: 0.0 (below average 1.5)
- IMV: 0.0 (below average 1.6)
- Engineering: 0.0 (below average 0.2)
- Coms: 0.0 (below average 0.1)
- Vehicles: 0.0 (below average 0.6)
- Aircraft: 0.0 (below average 0.0)
- Infantry: 0.0 (below average 4.2)
- Logistics: 0.0 (below average 0.3)
- Armor: 0.0 (below average 1.2)
- Antiair: 0.0 (below average 0.1)
- Artillery: 0.0 (below average 0.7)

▼ Top 3 decreases this week: APC (-1.5), IMV (-1.6), Infantry (-4.2)

Russia units with the highest relative increase compared to their weekly average were . Units showing the largest decreases were Armor (-3.7), IFV (-3.9), Infantry (-4.8). This indicates which equipment types were most active or affected on the frontlines this week.

Ukraine units with the highest relative increase compared to their weekly average were . Units showing the largest decreases were APC (-1.5), IMV (-1.6), Infantry (-4.2). This indicates which equipment types were most active or affected on the frontlines this week.

Module 3: Occupation Change Analysis (DeepStateMap) — Narrative

According to data reported by the DeepStateMap project, as of 2025-10-18, Russian forces occupy approximately 95372.79 km² in Ukraine, which is 15.87% of the country's total territory. In the last 7 days, the occupied territory has increased by 34.73 km², a growth of 0.01%. Luhansk Oblast has 26548.88 km² occupied, accounting for 99.53% of its territory, which changed by 0.00 km² (0.00%) over the past week. Autonomous Republic of Crimea has 26846.21 km² occupied, accounting for 98.96% of its territory, which changed by 0.00 km² (0.00%) over the past week. Donetsk Oblast has 20208.30 km² occupied, accounting for 75.71% of its territory, which changed by 19.60 km² (0.07%) over the past week.

Module 4: Settlements (DeepStateMap) — Narrative - Future

Settlements likely to be next affected based on current frontline dynamics:

- Potentially threatened by Russian advance (avg advance ≈ 0.87 km, buffer 875 m):
 - Котлине (village, Donetsk Oblast) (119 m)
 - Заповідне (village, Donetsk Oblast) (171 m)
 - Зелений Гай (village, Donetsk Oblast) (304 m)
 - Мирне (village, Donetsk Oblast) (359 m)

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- Тернове (village, Dnipropetrovsk Oblast) (643 m)
- Воскресенка (village, Donetsk Oblast) (693 m)

Module 5: Settlements (DeepStateMap) — Narrative

This briefing focuses on Ukraine overall and on oblasts where occupation levels are between 2% and 95%. Oblasts with less than 2% occupation or more than 95% occupation are excluded from this analysis.

As of the latest update, Ukraine overall is 15.9% occupied. At the current weekly pace, full occupation of Ukraine would take approximately 14564.3 weeks, or about 280.1 years.

Key oblasts under partial occupation:

Donetsk Oblast is currently 75.7% occupied. Over the past week, the occupied area changed by 19.6 km² (0.07%). current trends suggest full occupation could occur in approximately 330.7 weeks (~6.4 years). Zaporizhia Oblast is currently 73.6% occupied. Over the past week, the occupied area changed by 8.7 km² (0.03%). current trends suggest full occupation could occur in approximately 819.5 weeks (~15.8 years). Kharkiv Oblast is currently 4.3% occupied. Over the past week, the occupied area changed by 3.6 km² (0.01%). current trends suggest full occupation could occur in approximately 8359.1 weeks (~160.8 years).

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RAW DATA REPORTS

Module 1: Equipment Losses Weekly Comparison (WarSpotting) — RAW

📊 Equipment Losses Report (2025-10-11 to 2025-10-17):

- Total reported equipment losses: 37 (⬇️ 3 from previous week, -7.5%)

◆ Breakdown by equipment type:

- Drones: 1 (⬇️ -1, -50.0%)
- Engineering: 2 (↗️ +2, +0.0%)
- Infantry fighting vehicles: 22 (▬ +0, +0.0%)
- Infantry mobility vehicles: 1 (↗️ +1, +0.0%)
- Rocket and missile artillery: 1 (⬇️ -1, -50.0%)
- Tanks: 5 (↗️ +1, +25.0%)
- Towed artillery: 1 (↗️ +1, +0.0%)
- Transport: 4 (⬇️ -6, -60.0%)

🧭 Geolocation Summary:

- Last week: 29 geolocated out of 37 (78.4%)
- Previous week: 24 geolocated out of 40 (60.0%)

📍 Units Most Affected (Last Week):

- 57th Motor Rifle Regiment: 2 losses

📍 Locations with Most Losses (Last Week):

- Razine, Pokrovsk raion: 4 losses
- Popiv Yar, Kramatorsk raion: 4 losses
- Shakhove, Pokrovsk raion: 3 losses

Module 2: Equipment Losses Weekly Comparison (Oryx) — RAW

📊 Weekly Equipment Losses Report (2025-10-12 to 2025-10-18):

🇷🇺 Russia (cumulative): 22909 (Δ +0, +0.0%)

🇺🇦 Ukraine (cumulative): 9974 (Δ +0, +0.0%)

⚖️ RU/UA Ratio: 2.30 (prev 2.30)

◆ Breakdown by equipment type (Russia, weekly increments):

- Tanks: 0 (▬ +0, +0.0%)
- AFV: 0 (▬ +0, +0.0%)
- IFV: 0 (▬ +0, +0.0%)
- APC: 0 (▬ +0, +0.0%)
- IMV: 0 (▬ +0, +0.0%)

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- Engineering: 0 (— +0, +0.0%)
- Coms: 0 (— +0, +0.0%)
- Vehicles: 0 (— +0, +0.0%)
- Aircraft: 0 (— +0, +0.0%)
- Infantry: 0 (— +0, +0.0%)
- Logistics: 0 (— +0, +0.0%)
- Armor: 0 (— +0, +0.0%)
- Antiair: 0 (— +0, +0.0%)
- Artillery: 0 (— +0, +0.0%)

◆ Breakdown by equipment type (Ukraine, weekly increments):

- Tanks: 0.0 (— +0.0, +0.0%)
- AFV: 0.0 (— +0.0, +0.0%)
- IFV: 0.0 (— +0.0, +0.0%)
- APC: 0.0 (— +0.0, +0.0%)
- IMV: 0.0 (— +0.0, +0.0%)
- Engineering: 0.0 (— +0.0, +0.0%)
- Coms: 0.0 (— +0.0, +0.0%)
- Vehicles: 0.0 (— +0.0, +0.0%)
- Aircraft: 0.0 (— +0.0, +0.0%)
- Infantry: 0.0 (— +0.0, +0.0%)
- Logistics: 0.0 (— +0.0, +0.0%)
- Armor: 0.0 (— +0.0, +0.0%)
- Antiair: 0.0 (— +0.0, +0.0%)
- Artillery: 0.0 (— +0.0, +0.0%)

Module 3: Occupation Change Analysis (DeepStateMap) — Detailed

Occupation report for Ukraine comparing 2025-10-11 to 2025-10-18:

Overall, occupied territory has increased by 34.73 km² (0.01 percentage points).

Top 3 oblasts with increased occupation:

- Donetsk Oblast: +19.60 km² (0.07%)
- Zaporizhia Oblast: +8.71 km² (0.03%)
- Kharkiv Oblast: +3.63 km² (0.01%)

Top 3 oblasts with decreased occupation:

- Luhansk Oblast: 0.00 km² (0.00%)
- Autonomous Republic of Crimea: 0.00 km² (0.00%)
- Sumy Oblast: 0.00 km² (0.00%)

Oblast with significant occupation (>10% occupied):

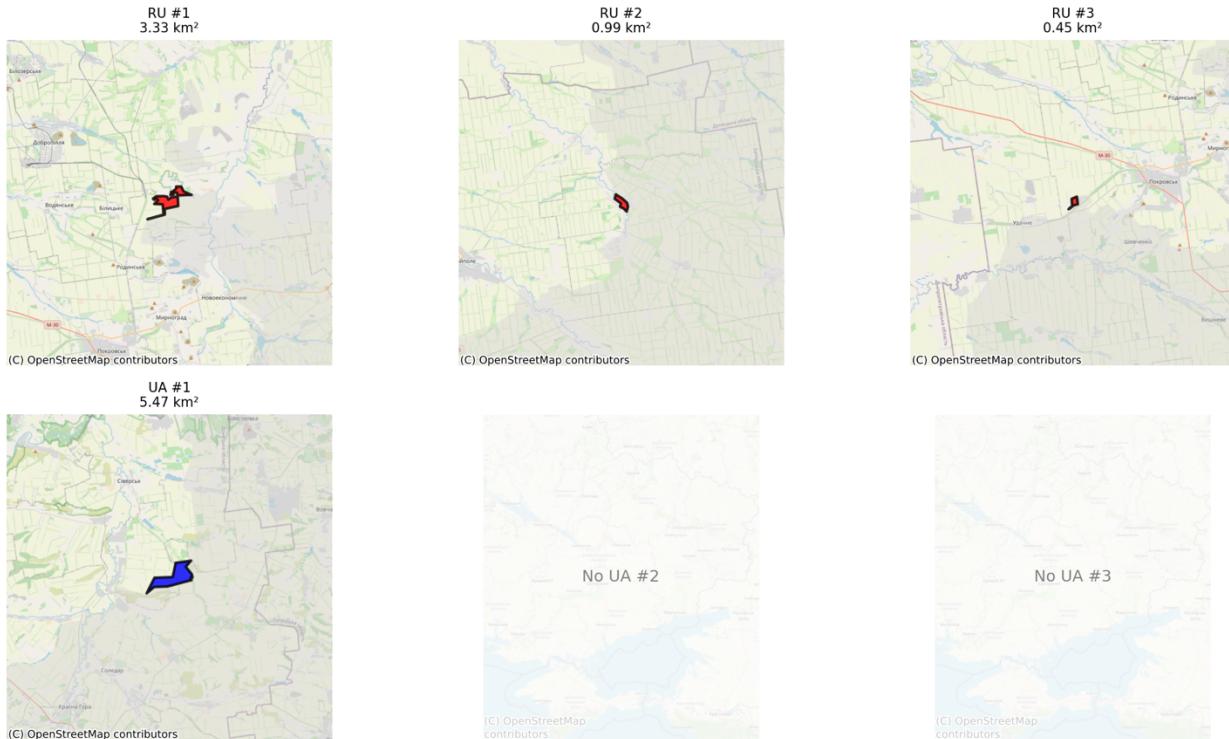
- Luhansk Oblast: 99.53%
- Autonomous Republic of Crimea: 98.96%
- Donetsk Oblast: 75.71%
- Zaporizhia Oblast: 73.64%

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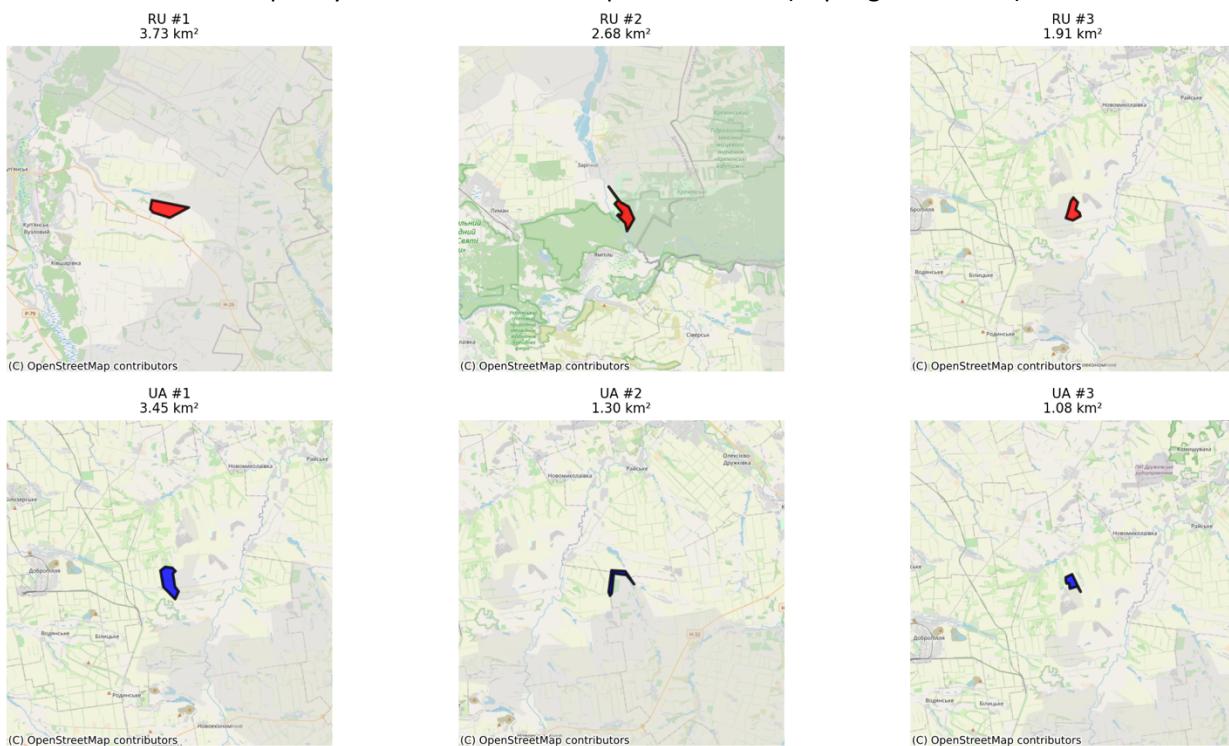
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Module 6: Frontline Map Report

2025-10-12 | Daily Total: RU: 4.77 km² | UA: 5.47 km² (Top 3 gains shown)



2025-10-13 | Daily Total: RU: 11.14 km² | UA: 6.65 km² (Top 3 gains shown)

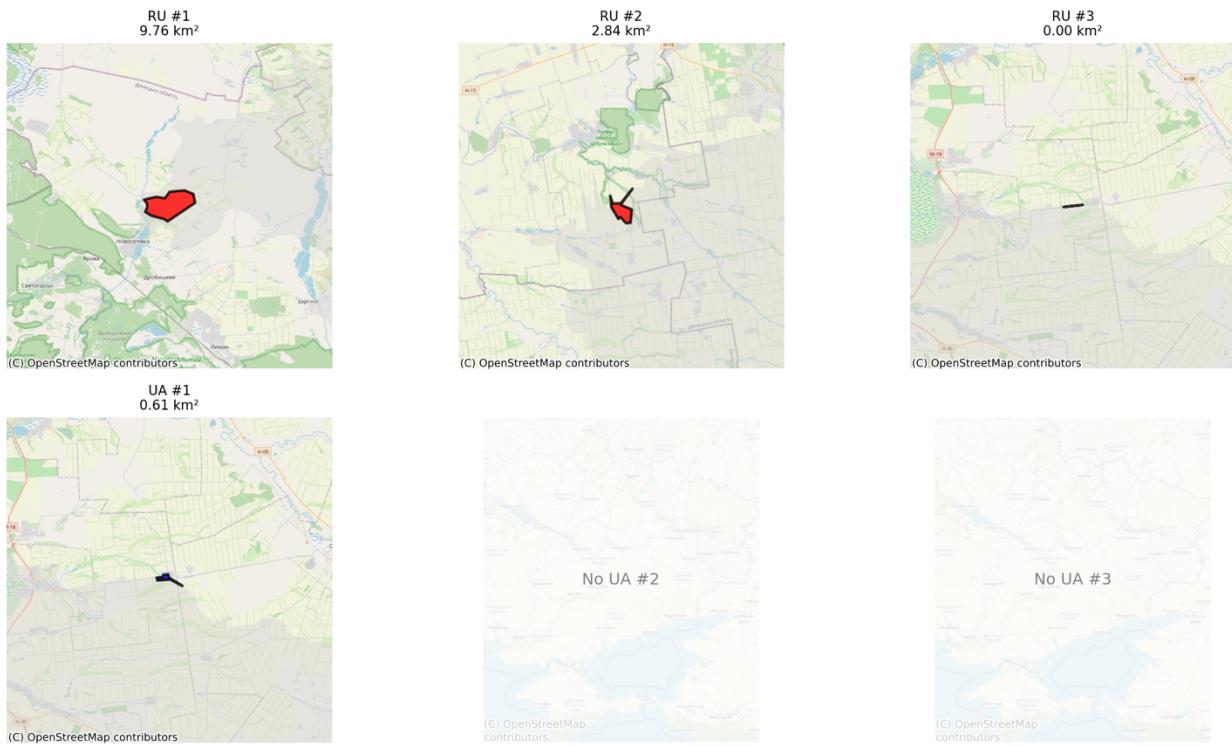


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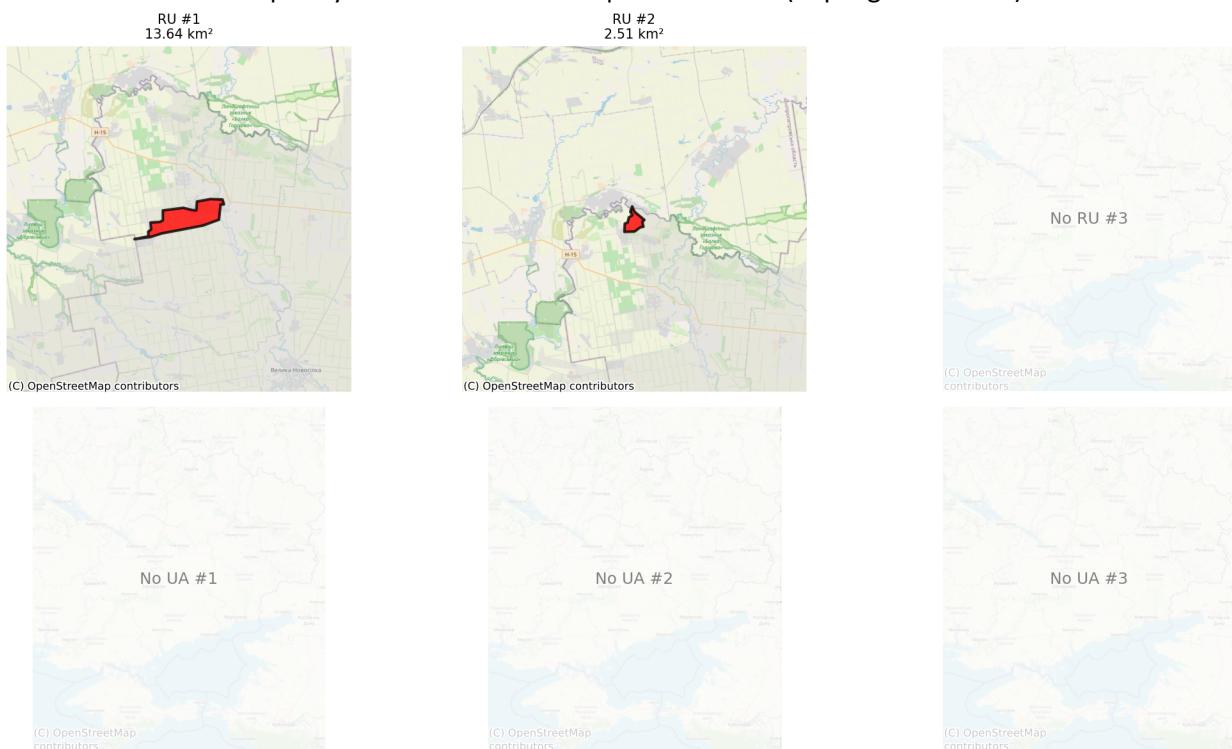
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2025-10-14 | Daily Total: RU: 12.60 km² | UA: 0.61 km² (Top 3 gains shown)



2025-10-15 | Daily Total: RU: 16.15 km² | UA: 0.00 km² (Top 3 gains shown)

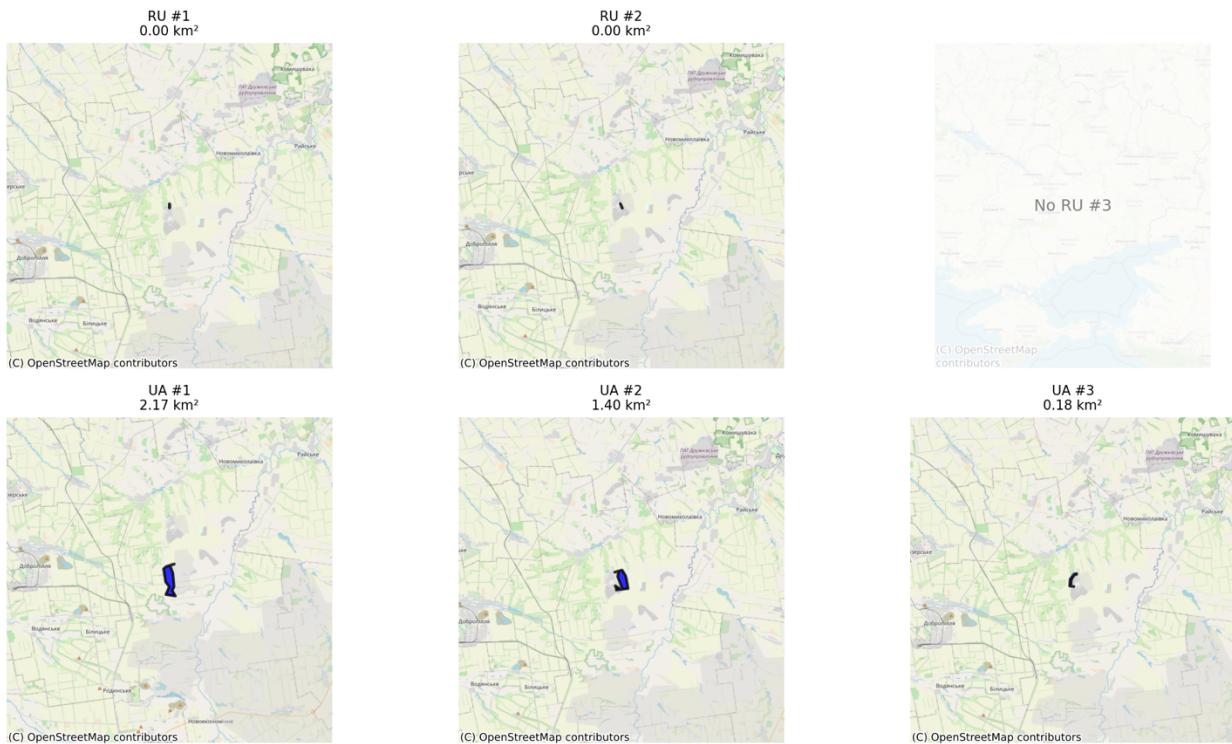


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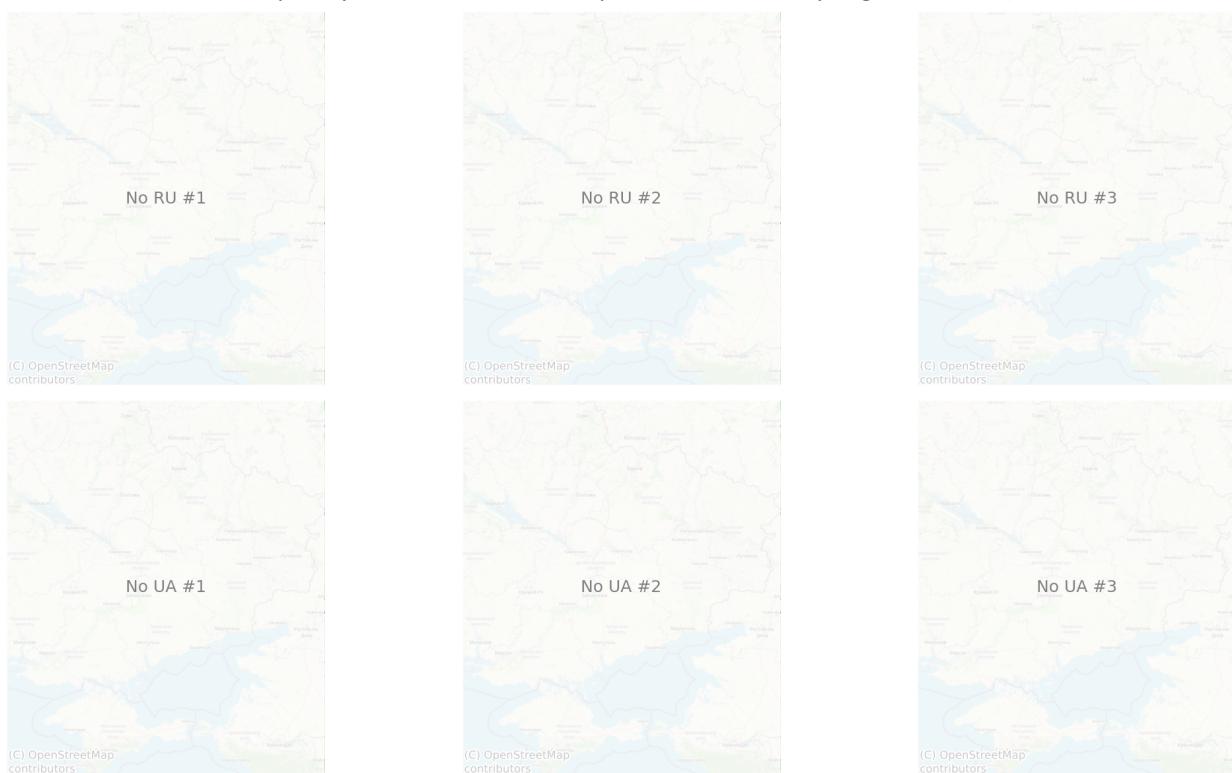
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2025-10-16 | Daily Total: RU: 0.01 km² | UA: 3.75 km² (Top 3 gains shown)



2025-10-17 | Daily Total: RU: 0.00 km² | UA: 0.00 km² (Top 3 gains shown)

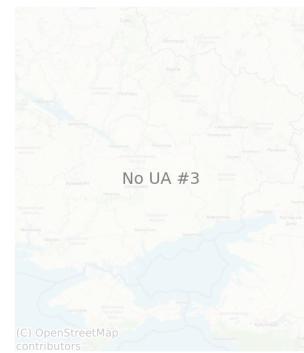
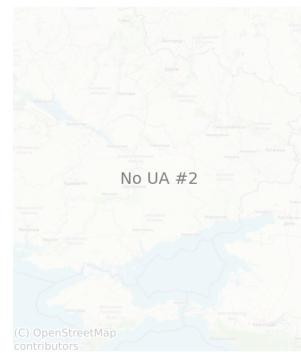
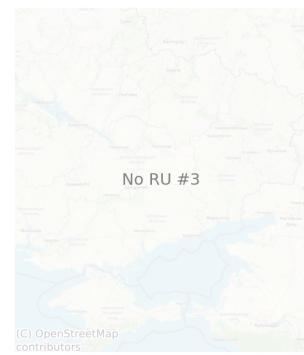
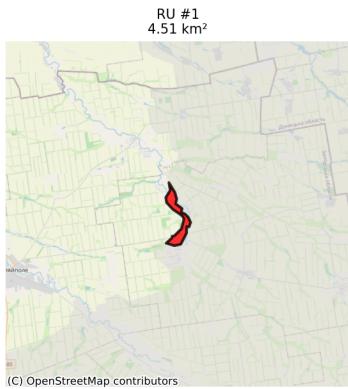


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2025-10-18 | Daily Total: RU: 6.53 km² | UA: 0.00 km² (Top 3 gains shown)



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METHODOLOGY

Module 1: Equipment Losses Weekly Comparison (WarSpotting) relies on open-source intelligence from the WarSpotting database, which aggregates visually confirmed Russian equipment losses reported during the conflict in Ukraine. The module uses an automated pipeline to download the most recent dataset from a controlled Kaggle repository if it is not already present locally. After ingestion, the data is cleaned by parsing the date field, removing invalid entries, and retaining key attributes such as equipment type, unit affiliation, nearest location, and geocoordinates where available. The analytical approach is based on a comparative weekly framework: the last seven-day period ending on the most recent entry is contrasted with the preceding week. For both timeframes, the module calculates total losses, the distribution of equipment types, the proportion of geolocated cases, and the most frequently affected units and locations. It then determines absolute and percentage changes in losses across weeks, identifying the largest increases or decreases by equipment category. Outputs are generated in two forms: a structured statistical summary presenting detailed counts and trends, and a natural-language narrative that highlights key findings in descriptive form.

Module 2: Equipment Losses Weekly Comparison (Oryx) performs a similar comparative analysis of equipment losses but uses the Oryx dataset, which is based on visually verified equipment losses for both Russian and Ukrainian forces. The data is sourced from an automated Kaggle repository and is structured as daily cumulative counts across multiple equipment categories for each side. After loading, dates are standardized and all numerical fields are converted to consistent numeric formats to ensure accuracy in time-series calculations. The analysis computes weekly increments by subtracting cumulative totals from the previous week, producing absolute and percentage changes for Russia and Ukraine separately. It also calculates the ratio of Russian to Ukrainian losses and compares these to the prior week to assess relative attrition trends. Beyond weekly differences, the module incorporates a retrospective component, analyzing up to one year of historical data to contextualize the current week's figures against long-term averages and identifying the most significant weekly spikes. The analysis extends to category-level dynamics, evaluating which equipment types recorded the highest increases or decreases relative to their historical averages, thereby identifying emerging tactical or operational trends. The results are formatted as two outputs: a structured statistical summary and a natural-language narrative enriched with retrospective context and category-level interpretation.

Module 3: Occupation Change Analysis (DeepStateMap) evaluates territorial control dynamics by comparing geospatial frontline data from DeepStateMap across a one-week interval. The module combines daily polygons of occupied areas with official oblast-level administrative boundaries, both projected into an equal-area coordinate system to enable precise areal calculations. Occupied and total oblast areas are computed through geometric intersections, producing the absolute extent of occupied territory in square kilometers as well as the percentage of each oblast under control. The analysis first establishes national-level occupation figures for the latest date and contrasts them with values from seven days earlier, calculating absolute and percentage changes to capture weekly territorial shifts. It then disaggregates results at the oblast level, ranking regions by occupation percentage and highlighting the three with the largest increases and decreases in occupied area. A significance filter is applied to identify oblasts with more than ten percent of their territory under occupation, providing a concise set of regions for targeted monitoring. The narrative consists of a short executive-style summary describing national-level occupation and change, and a more detailed report listing oblast-level increases, decreases, and significant cases.

Module 4: Settlements (DeepStateMap) extends the frontline analysis by linking geospatial control changes to populated places, providing a settlement-level perspective on the war's dynamics. The module integrates daily occupied-area polygons from DeepStateMap with point data of Ukrainian settlements (cities, towns, villages) and oblast boundaries derived from official administrative datasets. Geometries are reprojected into a metric coordinate system to ensure accurate distance and area measurements. Weekly gains and losses are computed by differencing occupied-area unions from the most recent seven-day period with those from the preceding week, yielding net Russian gains and Ukrainian recaptures in square kilometers. These figures are contextualized against the previous two weeks to calculate percentage changes in control dynamics. Newly occupied and newly liberated settlements are identified through geometric intersections of the frontline change polygons with settlement points, while oblast-level aggregation highlights the regions experiencing the most pronounced shifts in control. The analysis further estimates the average advance and retreat distances of frontline segments and applies dynamic buffers to detect settlements most at risk of being directly affected in the near term. The outputs consist of a narrative summary describing weekly territorial dynamics, settlement gains and losses, and oblast-level hotspots, supplemented by a forward-looking report listing threatened settlements based on proximity to recent frontline movement.

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Module 5: Occupation Projections (DeepStateMap) extends the static occupation analysis by introducing forward-looking estimates of territorial control. The module begins with daily DeepStateMap frontline polygons reprojected into an equal-area system and intersects them with oblast-level administrative boundaries. Occupied area and percentage are calculated for both the most recent and the preceding week, producing absolute and relative changes. These figures form the basis of simple linear projections: if an oblast's occupied area has increased, the weekly increment is extrapolated to estimate the time required for full occupation, expressed in both weeks and years. Conversely, where no gains are observed, occupation is assessed as stalled and no projection is generated. The results are organized hierarchically, beginning with national-level occupation dynamics and continuing with oblast-level projections for regions with partial occupation—defined as between two and ninety-five percent. This filtering ensures that analytical attention is focused on contested territories rather than those almost fully occupied or almost entirely liberated. Outputs consist of structured CSV tables with current, past, and projected values, accompanied by a narrative report. The narrative provides an OSINT-style briefing summarizing overall occupation trends, highlighting oblasts with significant changes, and discussing likely trajectories under current conditions. While the projections offer intuitive insights into possible future scenarios, they remain conditional, assuming the continuation of short-term trends. As with all extrapolations, the results are sensitive to fluctuations in operational tempo, sudden offensives, or withdrawals, and should therefore be treated as indicative rather than predictive.

Module 6: Maps (DeepStateMap) provides a visual representation of frontline developments by converting territorial change into geospatial figures. The module processes daily occupied-area polygons from DeepStateMap, reprojects them into a metric coordinate system, and calculates differences between consecutive days over the past week. Gains and losses are expressed as new geometries, each with associated area in square kilometers. The largest three gains and losses for each day are extracted and visualized on static maps, using red polygons for Russian advances and blue polygons for Ukrainian recaptures, overlaid on an OpenStreetMap basemap for geographic context. Each map includes an inset annotation of the areal extent of the change, while a centered title reports daily totals of territorial gains and losses. These daily map panels are structured as a chronological sequence of figures with headings summarizing the balance of territorial shifts for each day. The report provides both a high-level overview of weekly dynamics and a fine-grained spatial account of where control has changed. By integrating geospatial analysis with cartographic outputs, the module transforms numerical calculations of gains and losses into immediately interpretable visual evidence, ensuring that territorial trends are communicated in an accessible form. Limitations include the resolution of input polygons, which may generalize frontline positions, and the focus on the top three changes per side, which may omit smaller but operationally relevant shifts.

Module 7: Graphs and Pie Charts (DeepStateMap) complements the cartographic outputs with a quantitative visualization of territorial changes over the past week. The module calculates daily gains and losses by comparing consecutive occupied-area polygons, intersecting the resulting geometries with administrative oblast boundaries to attribute changes to specific regions. The outputs are aggregated into a structured dataset capturing Russian and Ukrainian area changes in square kilometers, disaggregated by date and oblast. This information is then transformed into a stacked bar chart showing the scale and composition of daily advances and retreats, with separate columns for Russian occupation and Ukrainian liberation. Distinctive colors assigned to each oblast allow for quick identification of where changes occurred, while patterned hatching differentiates Ukrainian gains from Russian gains. Complementing the time-series perspective, proportional pie charts summarize the distribution of total gains by oblast for each side, scaled in size according to overall magnitude. This dual visualization highlights both temporal dynamics and spatial concentration of activity, making it clear which regions contributed most to shifts in control. The module also generates a statistical summary of the week's developments, including total gains for each side, the three most affected oblasts, and the dates on which peak advances occurred. Limitations stem from the resolution of frontline data and the aggregation of small-scale fluctuations, which may mask micro-level tactical shifts while still capturing operational-level trends.

Module 8: Weekly Territorial Map (DeepStateMap) builds a weekly territorial overview by comparing occupied frontline geometries from the DeepStateMap dataset. The method first identifies the seven most recent days of data and establishes a baseline by selecting the last available date before this weekly window. For longer-term context, a secondary baseline is also taken from one year earlier. By applying geometric operations, the method calculates both newly occupied territories (Russian gains) and liberated areas (Ukrainian gains) over the past seven days. These areas are measured in square kilometers and ranked, allowing the identification of the three largest changes on each side. The visualization combines two layers of analysis: side panels zoom into the three most significant gains for Russia and Ukraine, while the central map shows the full Ukrainian theater. This central view highlights one-year-old occupation zones in gray, overlays recent gains in red and blue, and uses directional arrows to link the side maps with

FRONT_BOT is a research prototype for automated military conflict reporting.

Powered entirely by publicly available OSINT datasets and Python-based data analysis pipelines.

⚠ All data is interpreted algorithmically — inaccuracies may occur. Use at your own discretion.

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their precise locations. To ensure interpretability, all geometries are reprojected into equal-area coordinates for accurate measurement, and then into web-mercator projection for basemap rendering. The resulting figure situates short-term developments within the broader strategic picture, showing both the absolute scale of weekly gains and their spatial distribution across the front. A concise summary quantifies total Russian and Ukrainian gains, while the side panels and arrows guide the reader to the most dynamic hotspots of the week.

Module 9: TOP3 Territorial Maps (DeepStateMap) expands the territorial change analysis by focusing on the three largest weekly gains for each side and enriching them with predictive and contextual layers. After isolating the top three polygons of change, the method generates a three-by-three grid of maps: the first column displays current occupation zones overlaid on OpenStreetMap basemaps, the second column projects possible near-future contested areas by buffering the current gains and intersecting them with opposing control, and the third column adds a terrain perspective by draping these areas over a reprojected NASA digital elevation model. To enhance interpretability, each map includes dynamic scale bars, highlighted settlement markers, and frames that visually emphasize the change area. A narrative generator complements the maps by describing the absolute and relative scale of each gain, its share of the weekly total, and the settlements currently or potentially affected if the advance continues. This produces not only cartographic but also textual intelligence, making the output suitable for briefing contexts where both visual and written situational awareness are required.