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# Under the Shadow of Conflict: Understanding the Belligerent Landscapes of the Kyiv Triangle

Oleksandra Ivanova<sup>a</sup> and Ivan Zotsenko<sup>b</sup>

The article examines the defence system of the city of Kyiv in different historical periods, focusing on the territory of the immediate outskirts of Kyiv – the Kyiv triangle – the northern part of the Kyiv Plateau. From the moment the city of Kyiv was founded until the events of the Russian-Ukrainian war of the 21st century, the unique topography of the microregion was used to build the city's defence systems. Today, in the region covered by this study, there are the remains of the ancient “Serpent Ramparts”, fortifications of hillforts and cities, the remains of Cossack, Polish and Moscovian forts, redoubts and outposts, pillboxes from the time of the Second World War, modern military fortifications. All these different types of archaeological monuments form a unique belligerent landscapes that require comprehensive research and protection.

KEY-WORDS: belligerent landscapes, Kyiv triangle, Serpent Ramparts, defence system, fortifications, Kyiv Fortified Region, Russian-Ukrainian War

## INTRODUCTION

This article is devoted to the defence system of the city of Kyiv in different historical periods. In our field of vision came sites and monuments that were formed from the moment of the city's creation and the need to protect it as a political and economic centre. The question of the origin of Kyiv still causes lively discussions, which are outside the topic of the work, therefore the chronology of our research starts with the 10th century.

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To understand the conditions that preceded the formation of defensive lines, it is necessary to consider the geography of the microregion. The city of Kyiv is located on the territory of the Kyiv Plateau. This is an elevated section of the Cisdnipro Upland, which lies on the right bank of the Dnipro. The highest point of the Kyiv plateau is considered to be 241 metres above sea level. The Kyiv Plateau stretches along a narrow strip on the right bank of the Dnipro River, from the northwestern part of Kyiv to Kaniv, Cherkasy Region. The mouth of the Ros River is considered the southernmost point of the Kyiv Plateau. The total length from north to south is about 180 km. Erosive landforms such as ravines and gullies prevail. Denudational transport of rocks by the Dnipro River has taken place. The most common forms of relief are those formed as a result of water erosion (fluvial and glacial forms of relief, as well as gravity forms (landslides and collapses – mainly on the far right bank of the Dnipro), the formation of which is also influenced by the Coriolis force. The Kyiv plateau is heavily incised by permanent water streams. The rivers are the main relief-forming factors of this area. The mouths of the rivers: Irpin, Lybid, Vita, Stuhna, Krasna, Bobrytsia, Skvirka, Leglych and Ros lie on the plateau. The Ukrainian Crystalline Massif is the basis of the tectonic structure of the plateau (Marynych 1989–1993).

In this study, we consider the northern part of the plateau, which is separated from the surrounding area by the already mentioned rivers Irpin, Stuhna, Vita and, of course, the Dnipro. This territory has received the conventional name Kyiv triangle<sup>1</sup> (Fig.1).

In addition to being located at the intersection of a large watershed route from west to east with a large water transport artery – the Dnipro River (length 2201 km), this part of the plateau occupies parts of two major European landscape zones: the Forest and Forest Steppe, a fact that had a positive effect on its economic development. The fertile black earth soils of the forest-steppe zone have long supported a high culture of agriculture here, and the large reserves nearby of swamp iron ore, slate, limestone and other minerals, caused the development of crafts, and as a result – trade (Tolochko 1980: 114).

The need to defend the political and economic centre of Kyivan Rus prompted the development of a unique defence system for the capital.

## KYIVAN RUS, 10TH–13TH CENTURIES

We will start with the defence system of Kyiv, which developed in the period from the 10th to the first half of the 13th century, namely before the devastation of Kyiv by the Golden Horde.

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1 Kyiv triangle – northern part of the Kyiv Plateau, which was surrounded by rivers Irpin, Stuhna, Vita, Dnipro and created a natural defense line for the territories inside of it.

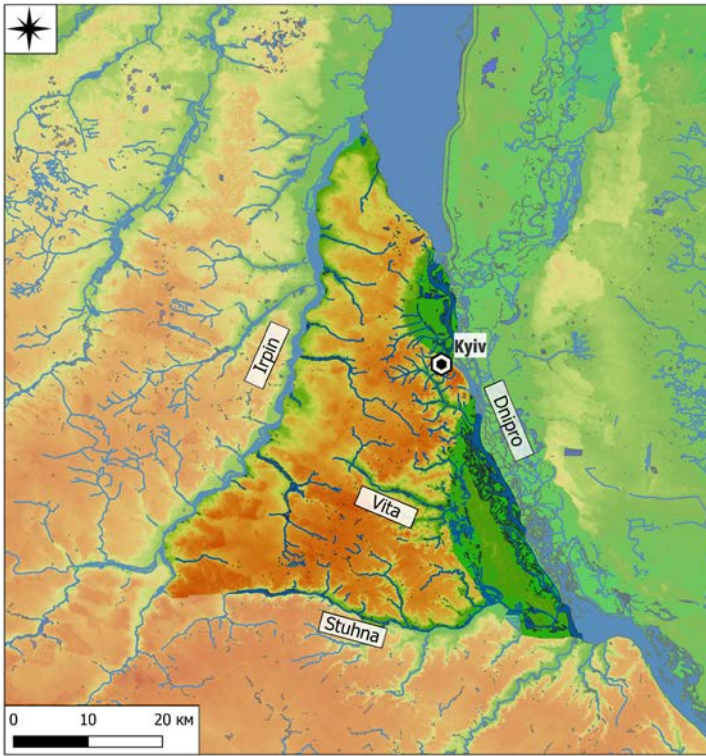


Fig 1. Kyiv triangle on a map. Graphics: Authors.

The territory of the city and land routes to it were already demarcated by natural boundaries – river valleys, which became the basis of the defence system. The valley of the Irpin River demarcates the approaches to Kyiv from the west and north, and the Vita and Stuhna rivers – from the south, the Dnipro protects the approaches to the city from the east. These rivers formed natural obstacles to movement, but the crossings of these rivers therefore became major infrastructure nodes that needed to be protected and controlled. The city was defended by the construction of additional fortifications. In a large area around the city, including in the Kyiv triangle, defensive structures of two types arose during the 10th–13th centuries. The first was the construction of hillforts and cities (surrounded with various types of wooden-earthen walls, ditches and escarpments). The second was the construction of massive earthen embankments, the so-called *Zmiiovi walls* (Serpent Ramparts)



**Fig 2.** Zmiivyi Walls (Serpent's Ramparts) within the Kyiv triangle. Photo from open sources.

located along large rivers and under their direct protection, while other embankments crossed the spaces between the rivers (Fig. 2).

For the era of Kyivan Rus, ramparts were the most effective means of protection against nomads, they were a serious obstacle that widely blocked the ingress of a mobile light cavalry. Ramparts created a danger for the enemy both when approaching Kyiv and on the way back, and facilitated their pursuit by the defenders of the city (Tomashevskiy *et al.*, 2023: 170).

The Ramparts have been repeatedly studied by scientists V. B. Antonovych, A. S. Buhai, M. P. Kuchera, A. V. Borysov and others (Antonovych 1884: 355–370; Buhai 2011; Tomashevskiy *et al.*, 2023: 166–176) There are several versions regarding the period of their construction and operation. However, in our opinion, the most relevant today is the work of M. P. Kuchera *Serpent ramparts of the Middle Dnipro*. While working on this book the author conducted archaeological research on 69 areas of the Ramparts. (Kuchera 1987: 197).

The Serpent Ramparts are wooden and earthen defence structures in the form of long ramparts. The total length is more than 950 km. They were built during

the 10th–11th centuries. In some places earlier (for example, Scythian) defensive fortifications were included in the rampart system. On the right bank of the Dnipro, ramparts were laid along the river valleys – Vita, Stuhna and Ros that cut off Kyiv from the steppe from the south – on their eastern side (the side of the capital). They had the function of redirecting the cavalry that was advancing on Kyiv, towards the locations of fortified cities and settlements.

Not counting Kyiv itself, on the territory of the Kyiv triangle, we know about seven well-fortified towns of the Kyivan Rus period: Vyshhorod, Bilhorod, Peresichen, Vasyliv, Tropol, Khalep, Chornyn and about 10 hillforts: Demydiv, Zhornivka, Budaivka, Vita Poshtova, Zvenyhorod Kyivskiy (Feofania), Khodosivka, Krasen, Tumashch, Zarichchia, Plesetske. A special place in this system is occupied by two hillforts on the left bank of the Dnipro – Protsiv and Horodets PISOCHNY, which are located at river crossing points and were directly connected to the capital. In the same territory, two lines of the Serpent Ramparts are known – the line stretching from the Irpin River's right bank, along the Vita River's left bank to the Dnipro valley. In historiography, the name Bobrynsko-Vitianska Line has been attached to this section of the defences. The second line stretches from the right bank of the Irpin River, along the left bank of the Stuhna River to the Dnipro valley. The total length of earthworks in these areas was approximately 95 km.

At the time of the Siege of Kyiv in 1240, the city's defence system consisted of 95 km of serpentine ramparts and 19 fortresses located at river crossings and watersheds. This defence system was effective against short-term raids by nomads (Pechenegs and Polovtsians, whose goal was robbery, but not land capture), or during internal internecine conflicts. However, this system was not viable against the strategy and tactics of the military operations of Batu Khan's troops. The Golden Horde aimed to seize territories and the number of military formations (according to various estimates from 40,000 to 120,000 people; Wortman 2004: 25–27) significantly exceeded the defence capabilities of the Kyivan Rus principalities. In 1239, Batu's troops captured Pereiaslav and Chernikhiv, after which they moved to the left bank of the Dnipro and, by the autumn of 1240, crossed the Stuhna and Bobrynsko-Vitianska lines of the Serpent Ramparts, devastated and destroyed most of the fortresses on the southern side and besieged Kyiv. On December 6, 1240, the city was captured.

## THE “TREATY OF PERPETUAL PEACE”, 1686

It is important to note that most of the Kyivan Rus sites were used several centuries later during the Cossack Hetmanship. We can trace this using the example of the early medieval settlement in Demydiv, on the north of the Kyiv triangle. In the same village, during the Hetmanship, a garrison and customs post appeared.



We can see the same situation in the south, for example in Trypillia. In the times of Kyivan Rus, the town of Trepol was known here, and played a rather significant role in those times, being considered a “water gate”. Near it merchant ships that travelled on the Dnipro, were moored. Trepol was also an important fortification that protected Kyivan realms from attacks by the Pechenegs, and later by the Polovtsy.

Already after the Union of Lublin in 1569, a Polish garrison was stationed in Trypillia. In the 17th century, the Polish authorities built the Trypil fortress there, with stone and brick walls, the remains of which have been preserved to this day.

In the 17th century, a powerful fortified district was developing around Kyiv across the entire region of the “Kyiv triangle”. This was connected with the liquidation of the Cossack Hetmanate and the delineation of a boundary across the region.

In 1686, after the signing of the so-called “Treaty of Perpetual Peace” between Moscovia and the Polish-Lithuanian Commonwealth, the spheres of influence over the Hetmanate were divided into two parts. According to the annals of Samiilo Velychko, which describes the text of “Perpetual Peace”, Article 3 of the Treaty states that the entire territory of the Left Bank of Ukraine was to remain under the suzerainty of the Russian Tsar. However, Kyiv, located on the right bank of the Dnipro (which still belonged to the Polish-Lithuanian Commonwealth), also came under the authority of Moscovia with the surrounding lands.

In the annals, Moscovia’s possessions on the right bank are described in such a way that Kyiv remained on the tsar’s side with the following demarcation: from the mouth of the Irpin River and its confluence with the Dnipro, down the Dnipro to the towns of Trypillia and Staiky, and from there to the Stuhna River, through the city Vasylkiv, from Vasylkiv a line was to be built to the Irpin River. In this way, all the listed lands remained to Moscovia and demarcated Kyiv with peculiar landscape fortifications. (Velychko 1991: 313–315).

The Kyiv triangle began to fulfil its role of protecting Kyiv, but no longer within the state itself, or as a border between the nomadic and civilised world, but as a border between the two states of Moscovia and the Polish-Lithuanian Commonwealth. According to the agreement, the city of Kyiv went to the Moscovia Empire, but the latter understood that it was impossible to hold the city without controlling the strategically important territory of the Kyiv triangle. As a result, the border is drawn along the above-mentioned rivers – Stuhna and Irpin.

However, this division did not happen in one day, and as a result of numerous peasant uprisings, the Tsar’s decrees of eviction and mass resettlement of residents, the border remained quite mobile for the next decades, and the border towns and villages stood empty. Even at the time of the signing of the Treaty of Andrusovo, this territory was assigned to the Moscow state, nevertheless, it was the site of many important battles, which led to the devastation of the lands and the extermination

of the local population. For example, according to the data of the Moscow military statistician of the Kyiv district, Prince Yuriy Urusov, in 1686 the towns and villages located on the border stood empty – Kagarlyk, Deremezna, Germanivka, Germanivska Slobidka, Usachivka, Hryhorivka, Kopachiv, Mali and Velyki Dmytrovychi, Stari and Novi Bezradichi, Trypillia.

Since these territories were border areas and there was a need for their protection and control, the construction of fortresses, customs posts and outposts began.

Thus, in 1686, the village of Mytnytsia appeared on the Moskovskiy tract, establishing a border on the road leading from Kyiv to Bila Tserkva, where customs posts were established. From that time, a small garrison from the Polish and Russian sides was constantly located at Mytnytsia (Pokhilevich 2005).

The existence of customs posts is also mentioned in the “Register of Ports and Borders Customs” compiled later (in 1756). In particular, in the Kyiv governorate, there are the following: at the Vasylkiv outpost, two small customs posts, Mezhihirska and Staikivska, above and below the city on the Dnipro River, where this river defines the Russian and Polish borders.

We can find records of most customs houses, outposts and fortresses on maps of both Russian military, topographers and foreigners. In particular, in the middle of the 18th century, there were several attempts by the Russian government to clearly define and measure the border between the two states. In 1749, we have a detailed description of the important southern section of the Polish-Ukrainian border along the Stuhna River and the areas adjacent to it, based on the map of 1748 by Oleksandr Rigelman, a Russian military engineer. According to the map, the border ran from Vasylkiv to the Ostrytskyi outpost, then along the Stuhna and Orshynka rivers, Hlybokyy Yar, along the Bilotserkiv road to the Polish town of Germanivka, to the Berestova and Altanka rivers, which again flowed into the Stuhna, passed near the village of Obukhiv, Sovshchyna outpost, to the village Neschuriv (Gurdzhii 1996: 71).

A more detailed recording of the entire section of the Polish-Russian border on the right bank of the Dnipro can be found on the map of the Italian topographer and geographer Giovanni Antonio Rizzi Zannoni, commissioned by the rulers of the Polish-Lithuanian Commonwealth. The section of the border that we are interested in is located in the atlas “Map of Poland, divided into regions and voivodships, as well as districts, reproduced according to numerous demarcations, observations and measurements made on the ground”, on sheet No. 16, which contains a map of the borders of Poland and Russia, which covers part of Northern Ukraine, the course of the Dnipro from Kholmeh to Kyiv, the Desna, Seim and other, less important rivers. The inscription on the map is “Ukraina Moskiewska”. In the map description, it is written that these are the lands lying on the Dnipro interfluvium (Fig. 3).

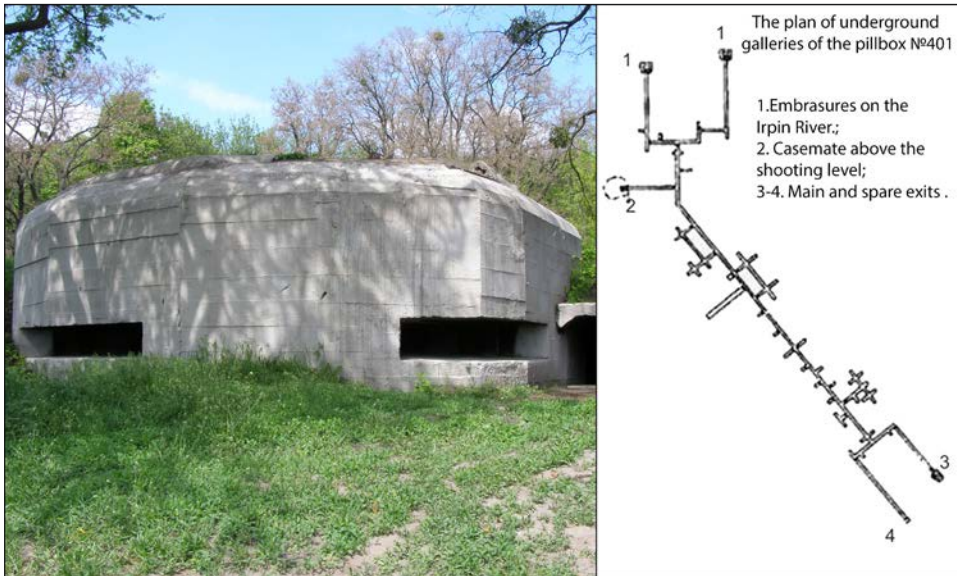




**Fig 3.** Map of the Italian topographer and geographer Giovanni Antonio Rizzi Zannoni, which shows the border between the Moscovian state and the Polish-Lithuanian Commonwealth after 1686.

Of course, the border did not remain stable, and small villages and towns constantly changed hands. The Polish-Russian border was distinguished by its instability: bilateral conflicts, territorial claims, underground migrations, smuggling, and Haidamak movements. On the border outpost turnpikes, large detachments monitored the crossing of the Russian-Polish border. Border movements occurred in the south, in the area of the Stuhna River, while the western border along the Irpin River remained stable.

Thus, we can conclude that the Kyiv triangle continued to play its extremely important role as a special landscape around Kyiv, for the protection of the city. Several fortresses, outposts, redoubts and customs houses were built on the roads and crossings, just as in the Kyivan Rus period.



**Fig 4.** Pillbox № 401 on the Irpin River. Photo from open sources.

## KYIV FORTIFIED REGION, 1929–1945

The next time these natural borders were used to build the defence system of Kyiv was the first half of the 20th century – more precisely, in 1929–1945. Starting in 1929, the Soviet authorities began mass construction of defence lines; the defence system around Kyiv was called the Kyiv Fortified Region.

The Kyiv Fortified Region was a system of defensive structures, long-term and field fortifications, engineering barriers, and artillery positions. The line of defence ran from the Dnipro along the Irpin River to Bilohorodka and further east along the left bank of the Vita River – through the settlements of Vita-Poshtova, Lisnyky, Mryhy and reached the Dnipro River on the left flank.

The Kyiv Fortified Region was divided into 14 battalion districts. The total length of the front edge of the fortifications was 85 kilometres, and the depth of the defensive strip was up to five km. A total of 217 long-term firing points (pillboxes) were built. They were grouped to form strongholds of 6–15 pillboxes (Fig 4).

Mainly, machine gun pits with 1–4 embrasures were built. To strengthen the defence, after 4–5 machine-gun pits, long-term artillery structures were erected – semi-caponiers with two guns, which were built to flank the large floodplains of rivers

or stationary artillery positions. In addition, command posts were built, platforms for installing machine guns, shelters for people and ammunition. Garrisons of pillboxes, depending on the type, consisted of 5–16 men under the command of lieutenants. These structures were built from reinforced concrete and the thickness of the walls of pillboxes reached 150 cm (Kainaran *et al.*, 2011).

It is also interesting for us that, in addition to using the landscape as a line of defence, some bunkers of parts of the Kyiv Fortified Region were built in the fortifications of Kyivan Rus hillforts and settlements (Bilohorodka, Vita-Poshtova, and others), in the fortifications of fortresses and defensive structures of the 17th century (Romanivka, Shevchenkive) and even in the Bobrynsko-Vitianska Line of the Serpent Ramparts.

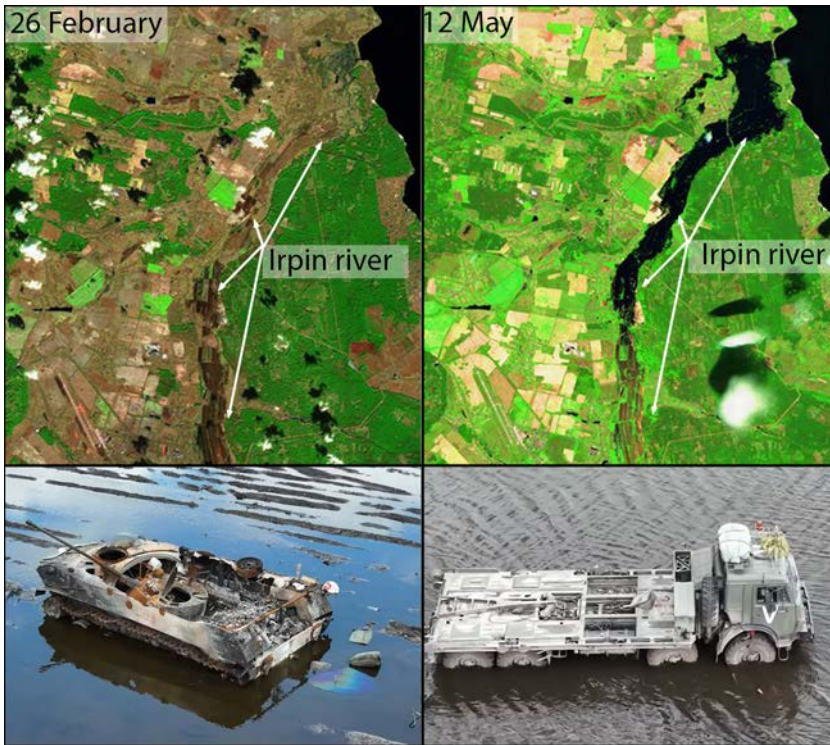
During the Second World War, the Kyiv Fortified Region line was able to restrain the invading German troops on this part of the front for 72 days, which significantly impacted the implementation of the “Barbarossa” offensive plan. At the same time, from 7 July 1941 to 19 September 1941, the battle for Kyiv lasted. The German troops quickly reached the western border of the Kyiv Fortified Region, the valleys and the Irpin River, but they did not have much success here. The southern direction, on which the main attack was concentrated, turned out to be the weakest part of Kyiv’s defence. After protracted battles, the Soviet troops were allowed to retreat from Kyiv.

According to data published in 1993 by the General Staff of the Armed Forces of the Russian Federation, Soviet losses amounted to more than 700,000 people, of which 627,800 were irretrievably lost (Krivosheev 1993). The Battle of Kyiv became one of the bloodiest in the history of the Second World War, in terms of the number of casualties, second only to the battles for Moscow and Stalingrad, which took place later.

## THE FULL-SCALE RUSSIAN INVASION OF UKRAINE. BATTLE FOR KYIV 2022

Another chapter in the defence of Kyiv began in the 21st century, during the recent full-scale Russian invasion of Ukraine and, in particular, the offensive on Kyiv. Even during modern war, the topography of the Kyiv triangle continues to play its natural role in the defense of the capital.

The offensive of Russian forces in 2022 took place from the northwest, from the Chernobyl exclusion zone and Belarus. The battle for Kyiv lasted from February 24 to April 2, 2022, Russian troops were able to advance on the right bank only to the valley of the Irpin River, as had been the case with the German troops in 1941. In the northern part of the Kyiv triangle on February 25, a dam was blown up on



**Fig. 5.** Flooding of the Irpin River, after the dam was blown up, which stopped the advance of Russian troops on Kyiv in 2022. Satellite images. Graphics: Authors.

the Irpin River, as a result of which the river valley was flooded (which has stopped happening in recent decades due to the development of the canal system; Fig 5). As a result, in particular, the village of Demydiv, which was a famous settlement and an important northern outpost of Kyiv in Kyivan Rus times, was flooded. In the times of the Cossack Hetmanship, as mentioned above, there was a famous customs house here, which was also on the northern route to Kyiv.

There were also unsuccessful attempts to ford the river in the villages of Moshchun and Romanivka. Heavy fighting for the towns of Irpin and Bucha prevented the invaders from advancing to the river. The Russians reached the village Bilohorodka, but they were unable to start an offensive in this part due to dense artillery fire, which was coming from the Dytynets (central fortified part of a stronghold) of the Kyivan Rus city of Bilhorod (nowadays the village of Bilohorodka). The Irpin River and the control of the crossings through it once again played one of the key roles in the defence of the city.



The southern part of the Kyiv triangle – the weakest link in the capital’s defence system according to our observations, was attacked by troops (not counting air and missile attacks) only in Vasylkiv. From February 26 to 28, 2022, several groups of landing forces landed in Vasylkiv and the surrounding villages, but they failed to capture the airfield or gain a foothold. The Russians also tried to reach the left bank of Kyiv at a fast pace but were stopped in the town of Brovary (the western outskirts of the modern city of Kyiv). After an unsuccessful attempt to quickly seize the capital, Russian troops retreated (Sonne *et al.*, 2023).

Currently, we are recording, with the help of satellite images and open sources, numerous cases of construction of military-engineering infrastructure (including fortifications) within the Kyiv triangle, which is taking place following the order of the Commander-in-Chief of the Armed Forces of Ukraine to increase the defence capacity of the capital.

## CONCLUSION

Summarising what was stated in the work, we can say that the unique topography of the northern part of the Kyiv Plateau, its water network and the intersection of two different landscape zones of Forest and Forest Steppe made this an area already protected by natural boundaries. The primary analysis of the processed data shows us that the landscape or topography of certain locations was convenient for the formation of belligerent landscapes, and this legacy can be traced back to the time of the construction of Scythian fortifications. Starting from Kyivan Rus times, from the moment the city of Kyiv was founded, anthropogenic belligerent landscapes have been created on this territory.

In 1974, the founder of the science of anthropogenic landscape studies, F.M. Milkov, suggested that all landscape complexes of military origin be combined into a special class of anthropogenic landscapes under the general name belligerent landscapes (from the Latin *beligero* – to wage war). Term “belligerent landscape” and “belligerent landscape complex” can be understood as any landscape complex of military origin, regardless of their method of creation, age and features of modern functioning. Modern approaches to the preservation of belligerent landscapes should be based on two main principles: the indivisibility of natural and cultural heritage and their spatial combination (Denysyk 2017: 13–16).

This is exactly what we see in the example of belligerent landscapes formed as a result of the construction of defence systems in the middle of the Kyiv triangle in different cultural and chronological periods (Fig. 6). Such landscapes include:

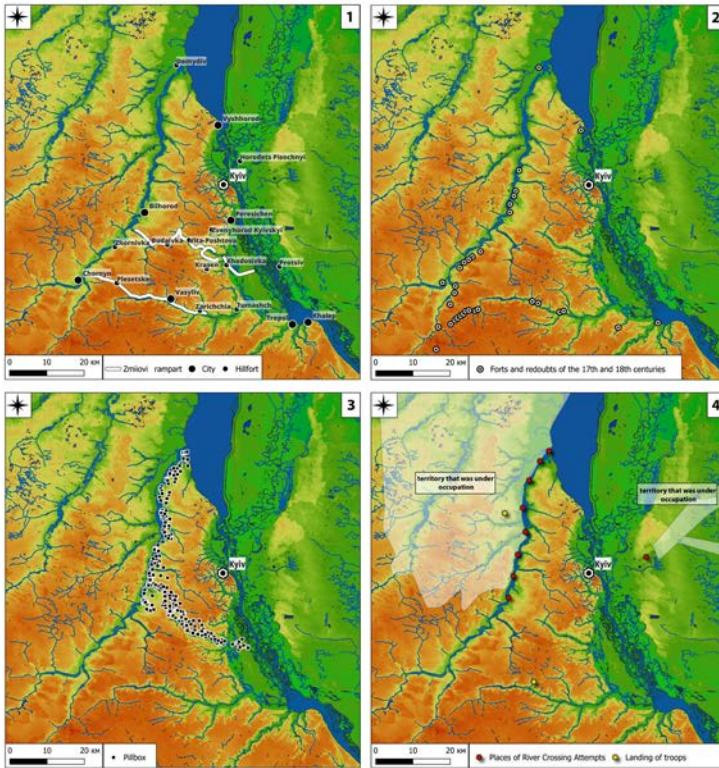


Fig. 6. Localization on the map of belligerent fortifications of different centuries. Graphics: Authors.

- “Serpent Ramparts” of the 10th–13th centuries;
- Fortification of Kyivan Rus settlements and cities (lines of ramparts, ditches, escarpments, egress groups and towers) 10th–13th centuries;
- Cossack, Moscovian and Polish fortresses, redoubts and border outposts of the 17th–18th centuries;
- Fortification of the Kyiv Fortified Region (pillboxes, artillery positions) 1929–1945;
- Modern dugouts, trenches, anti-tank trenches and artillery positions 2022 – ?

Analysing this material, we must understand that the need to defend the city of Kyiv may also arise in the future, due to which the territory of the Kyiv triangle will be supplemented with new types of belligerent landscapes, especially in places



of watersheds and bridges/crossings across rivers. Today, there is a need to carry out rescue and research work on many archaeological sites of various times, which have suffered as a result of the military invasion of the Russian Federation, and to carry out a number of preventive archaeological studies in places of possible development of military engineering infrastructure. In 2022–2023, employees of the Institute of Archaeology of the Ukrainian Academy of Sciences (from the “Monitoring Archaeological Expedition of the Institute Created to Record Archaeological Monuments Damaged as a Result of the Military Aggression of the Russian Federation”) recorded damage to the monuments of the Kyiv triangle in the territory of more than 2,000 m<sup>2</sup> (Fig. 7). All these measures are necessary not only to obtain and preserve archaeological information but also to preserve the unique, centuries-old defence complexes of the capital of Ukraine.

Today, we are conducting active archaeological research related to the monitoring of archaeological sites damaged during the War. Therefore, in future publications, we plan to present the results of these studies more vividly, expand the time frame of the study, and present the classification and list of sites of the belligerent landscapes by period. We have started work on a full-fledged GIS map, with the archaeological sites of belligerent landscapes plotted on it. Also, the studied topic will be included in the PhD thesis of both co-authors of this article and will be developed by the authors in different directions.

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