



CRIMEAN
INSTITUTE
for STRATEGIC
STUDIES



The Center for
Spatial Technologies



Research on the consequences of violations of international humanitarian law in the field of protection of cultural property:

**MILITARIZATION
OF CULTURAL LANDSCAPE:**
Archaeological Sites of Southwestern
Crimea as Spaces of Military Use

MILITARIZATION OF CULTURAL LANDSCAPE: Archaeological Sites of Southwestern Crimea as Spaces of Military Use

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INTRODUCTION

Since the onset of Russian aggression against Ukraine in 2014, the field of cultural heritage protection has faced new challenges. In terms of the nature and scale of violations committed by the aggressor state, the Russian–Ukrainian war has brought to the fore issues comparable to those experienced during the major military conflicts of the 20th century. Following the start of the full-scale invasion in 2022, the destruction, appropriation and use of cultural heritage sites for indoctrination purposes have reached particularly alarming proportions.

At the same time, the experience accumulated by Ukrainian specialists in documenting violations and preserving cultural heritage under conditions of full-scale conventional warfare is unique and requires further reflection and presentation within a broader professional and academic context.

This study constitutes a logical continuation of previous research devoted to the consequences of violations of international humanitarian law in the field of cultural property protection at the UNESCO World Heritage Site Ancient City of Tauric Chersonese and its Chora (2025).

The aim of this study is to analyze the impact of large-scale fortification construction during hostilities in Crimea on the preservation of the historical and cultural landscape of Western Crimea.

The objectives of the study are to:

- identify the structure and stages in the formation of the region's historical and cultural landscape;
- analyze the system of protection of the historical and cultural landscape and the legal status of cultural heritage sites;
- assess current threats to cultural heritage and the consequences of the loss of the cultural layer.

Within the scope of this research, expert attention is focused on cultural heritage sites located along the western coast of the temporarily occupied territory of Crimea, in particular:

- 1 *the archaeological site of national significance* Ust-Alma Archaeological Complex: Hillfort and Necropolis (protection No. 010008-N, Resolution of the Cabinet of Ministers of Ukraine No. 928 of 3 September 2009);
- 2 *the archaeological site of local significance* Panske-I Settlement and Grave Field (protection No. 2367-AR, Order of the Ministry of Culture of Ukraine No. 42 of 28 January 2014);
- 3 *the archaeological site of local significance* Kulchuk Hillfort (Red Mound) (protection No. 1788-AR, Order of the Ministry of Culture of Ukraine No. 42 of 28 January 2014);
- 4 *the cultural heritage site* Beliaus Hillfort and Beliaus Grave Field (Decision of the Crimean Regional Executive Committee No. 595 of 5 September 1969).





Kulchuk Hillfort



Beliaus Hillfort

It should be noted separately that the cultural heritage site Beliaus Hillfort and Beliaus Grave Field belongs to the category of newly discovered cultural heritage sites. While it has been officially recorded, it has not yet been included in the State Register of Immovable Monuments of Ukraine.

The selection of sites of different levels of significance (national and local), as well as sites with the status of newly discovered heritage, is not accidental. This approach makes it possible to demonstrate that, for the occupying authorities, the decisive factor is the spatial location of such sites and their suitability for military infrastructure, rather than their cultural value or formal protection status.

Methodologically, the present study is based on landscape-archaeological and systemic approaches, which treat the cultural landscape as a complex historical and spatial formation shaped through the interaction of natural, social and cultural factors. In addition, the study employs satellite imagery analysis, enabling the tracking of spatial dynamics in land use and the documentation of changes in the condition of sites and adjacent areas resulting from earthworks and construction activities.

This research was prepared through a partnership between the non-governmental organizations Crimean Institute for Strategic Studies (CISS) and the Center for Spatial Technologies (CST), with the support of the International Renaissance Foundation and within the framework of the project Testimonies of Heritage: Spatial Documentation of Crimes in Crimea.



MAP OF RUSSIAN FORTIFICATIONS ON THE WESTERN COAST OF CRIMEA



— *Russian Fortifications*



10 Km



TAURIC CHERSONESE AND ITS INFLUENCE ON THE FORMATION OF THE HISTORICAL LANDSCAPE OF WESTERN CRIMEA

The ancient city of Tauric Chersonese was founded by settlers from Heraclea Pontica in 422–421 BC on the site of an earlier Greek settlement dated to 527–528 BC. These data do not contradict the assumption that, from the late 6th century BC, a trading post or seasonal camp of Ionian sailors may have existed at this location. No architectural remains from the Archaic period have survived within the city. Archaeological evidence from this time is represented primarily by ceramic fragments and isolated terracotta items.

Ionian settlers were the principal driving force behind the first wave of Greek colonization of the western coast of Crimea. After 546–545 BC, alongside an earlier trading post, they founded Kerkitis on the site of present-day Yevpatoria. At the turn of the 5th to 4th centuries BC, this settlement became a base for the development of the Tarkhankut Peninsula and the southwestern coast of Crimea. This process led to the establishment of Kalos Limen (jointly with Olbia), an urban settlement near Lake Panske, the Kulchuk hillfort, agricultural settlements around Lake Sakske, and a dense network of coastal settlements and estates.

The expansion into new territories resulted in the formation of specific relations with the local non-Greek population, primarily the Scythian nomads. On the one hand, Kerkitis was forced to pay tribute to them, as evidenced by Apatorius' "letter" to Nevminius inscribed on an amphora wall; on the other hand, the Tauri and the Scythians resided within the city itself.

From the mid-4th century BC, Chersonese, having acquired a degree of political autonomy, began to develop its own statehood. A system of defensive structures was established, and in the 390s–380s BC the city began minting its own coinage. During this period, the boundaries of the so-called "near chora" were delineated, extending between Akhtiar Bay, Cape Fiolent, Mount Sapun and the Qaran Heights – Sarandinaki Ravine.

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During the early Hellenistic period, the urban layout of Chersonese assumed its final form, with the city covering an area of approximately 29 hectares. The fortifications demonstrate advanced military-engineering solutions and careful planning adapted to the complex topography of the cape. The entire area enclosed by the city walls was divided into rectangular blocks. The city was planned according to the Hippodamian system (grid plan), with two main axes intersecting at the centre.

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Planning Scheme of Tauric Chersonese

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The economy of Chersonese was based primarily on agriculture. Land ownership rights were restricted to citizens of the polis. Initially, their landholdings were located immediately outside the city walls and near fortified settlements on the isthmus of the Maiachnyi Peninsula and in the Berman Ravine.

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In addition to agriculture, Chersonese functioned as an important trading centre, exporting both locally produced craft goods and commodities imported from other Greek cities. Among its principal trading partners in the early period, Heraclea Pontica held a special place. The city also maintained trade relations with centres of the Pontic region (for example, Sinope) and the Eastern Mediterranean, including Athens, Chios, Thasos, Mende, Peparethos and Knidos. By the late 5th and early 4th centuries BC, concurrently with the colonization of the Heraclean Peninsula, inhabitants of Chersonese advanced into northwestern Crimea, where they founded fortified settlements.

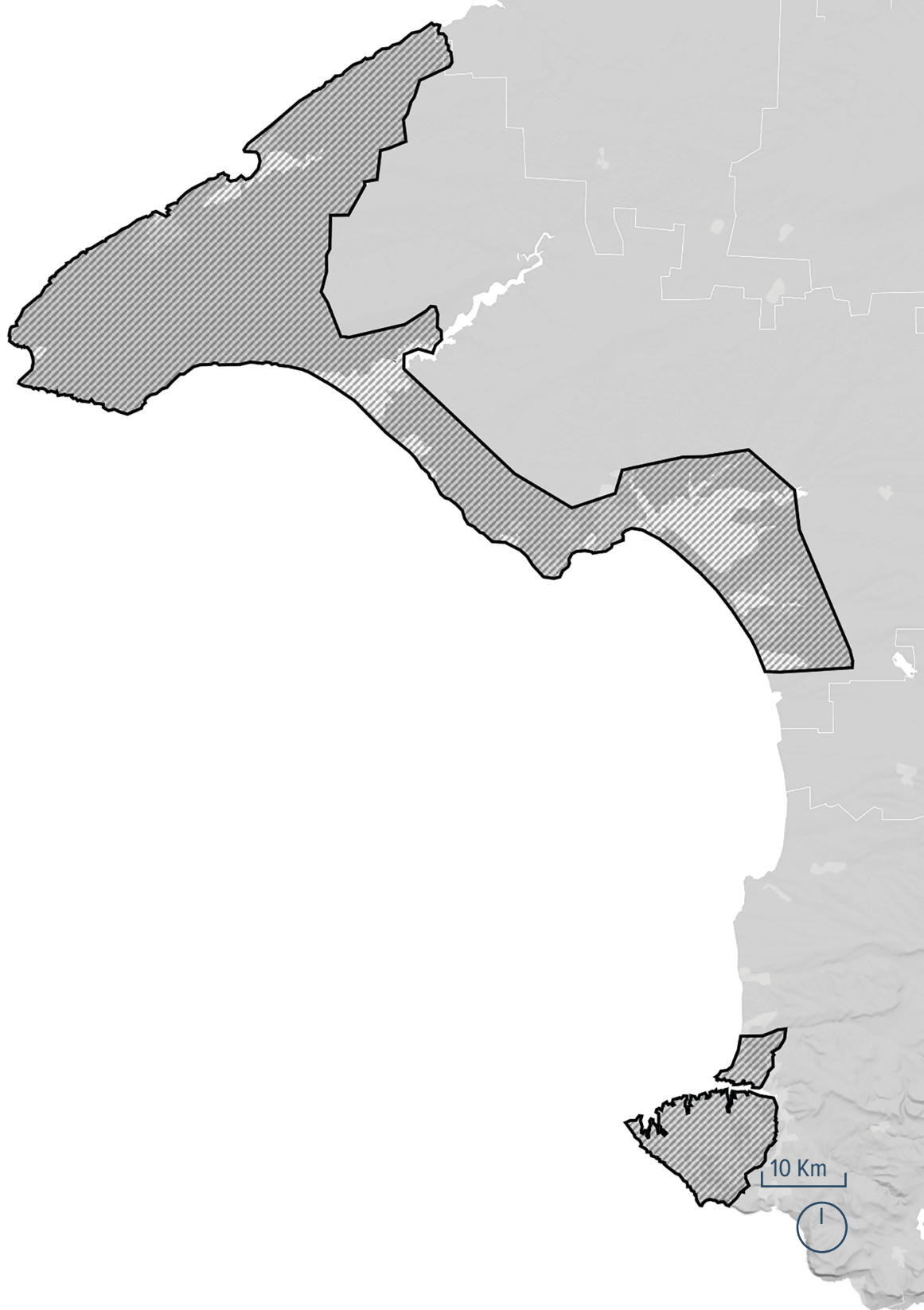
Both Chersonese and its metropolis, Heraclea Pontica, showed particular interest in the lands stretching from present-day Perekop to Lake Donuzlav, which lay within the sphere of Olbia's interests and boasted fertile red soils suitable for viticulture.

Taking advantage of the decline of Kerkinitis and the low population density of the region, by the mid-4th century BC Chersonesites constructed several small fortresses, fortified points and settlements, marking the beginning of a systematic division of land into plots. One of the most remote sites was a fortified settlement near Lake Panske, restored by Chersonesites in the mid-4th century BC on the site of an earlier Kerkinitian settlement. Seven kilometers west of Kerkinitis, in the second half of the 4th century BC, Chersonesites erected a rectangular fortification with six towers, known in scholarly literature as Chaika.

In the final third of the 4th century BC, an armed conflict broke out between Olbia and Chersonese, the latter supported by its metropolis, Heraclea Pontica. Following Olbia's defeat, the lands of northwestern Crimea were absorbed by Chersonese. By the end of the 4th century BC, Chersonese had become a major territorial state formation.

TAURIC CHERSONESE AND ITS CHORA

 — *Polis' Chora*



In the last quarter of the 4th century BC, Chersonese finally annexed not only the chora of the Heraclean Peninsula but also northwestern Crimea. During this period, fortified estates were constructed en masse in the “near” chora, while settlements were established in the “distant” chora, extending from the Alma River valley to the vicinity of Lake Yarylgach along the western coast of Crimea). The colonization of the northwestern chora was not carried out exclusively by Chersonesites; settlers from Heraclea Pontica and other Asia Minor poleis also took part. The precise boundaries of the Chersonese polis have not yet been clearly established. The citizens’ oath of Chersonese from the early 3rd century BC attests to the existence of three principal cities of the polis, namely Chersonese, Kerkinitis and Kalos Limen. The construction of fortified border estates was likely intended to strengthen approaches to Kerkinitis from the Alma River, i.e., from territories controlled by the Scythians.

The situation for Chersonese began to deteriorate when the Scythians, no later than the mid-3rd century BC, transitioned to a sedentary way of life. In addition to settling new territories in the foothills of the Crimean Mountains and the middle reaches of the Alma River, they attempted to seize areas of northwestern Crimea already under Chersonesian control.

In the first decades of the 3rd century BC, the Scythians destroyed a number of Chersonesian settlements on the Tarkhankut Peninsula and occupied the abandoned lands. Even the chora of the Heraclean Peninsula suffered from their raids.

As a result, agricultural production declined by nearly 75%, leading to a downturn in craft production and a significant contraction of trade.

Under these circumstances, at the beginning of the 2nd century BC, Chersonese was compelled to seek assistance from the Pontic king Pharnaces, with whom a defensive treaty was concluded. By the end of the 2nd century BC, the Scythian state, centred at Neapolis (modern Simferopol), controlled Olbia and northwestern Crimea, posing a threat of further advance toward Chersonese.

Consequently, Chersonese citizens appealed to Pharnaces’ successor, Mithridates VI Eupator, for assistance. Mithridates viewed this request as an opportunity to implement his strategic plans for territorial expansion in pursuit of his struggle against Rome. To this end, he immediately dispatched his commander Diophantus to Crimea.

Following the defeat of the Scythians, northwestern Crimea nominally came under Chersonesian authority. In practice, however, the city was unable to consolidate its dominance over the region, which remained under the control of non-Greek tribes divided into separate clan groups centred around settlements.

The Scythian expansion and Chersonese’s loss of its possessions in northwestern Crimea led to profound changes in the social fabric of the polis. The strengthening of the Council (βουλή) and the concurrent weakening of the People’s Assembly (ἐκκλησία) resulted in restrictions on civic rights. Warfare impoverished a significant portion of the population and triggered a deep economic crisis.

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Chersonese itself fell within the political sphere of influence of the Pontic Kingdom and became embroiled in the prolonged military campaigns of Mithridates VI Eupator against Rome. A Pontic garrison was stationed in the city to provide defense and to oversee the payment of tribute to the Pontic king. Although Chersonese proclaimed Mithridates its patron, the regular payment of tribute indicates a substantial limitation of the polis' political autonomy.

Northwestern Crimea subsequently came under the control of the Pontic Kingdom and, after the death of Mithridates VI Eupator, under that of the Bosporean Kingdom. The Scythians returned to war-devastated settlements and continued the transformation of former Hellenic sites into non-Greek cities and fortresses.

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In 45 BC, Gaius Julius Caesar named Chersonese a free city (ἐλευθερία), a status that was not confirmed the following year. Rivalry between the Bosporean Kingdom and Rome for control over Crimea led to regional destabilization and military operations in the 40s AD, during which Chersonese aligned itself with Rome. The conflict was resolved in 62 AD, when an expedition led by Tiberius Plautius Silvanus Aelianus, legate of Moesia, defeated the barbarians near Chersonese, eliminating the threat posed by the Scythians and the Bosporeans.



Tombstone of Aurelius Victor. Chersonesus. Late 2nd century AD. Limestone, marble. Height: 91 cm. Chersonesus Historical and Archaeological Museum. Source: Ancient Art. Kyiv: Mystetstvo Publishers, 1977, No. 144.



THREATS TO THE HISTORICAL LANDSCAPE OF WESTERN CRIMEA DUE TO RUSSIAN FORTIFICATIONS

The complex historical and cultural landscape of Western Crimea developed over a period of three millennia and encompasses sites belonging to different archaeological cultures and historical eras.

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Thus, the historical and cultural landscape of Western Crimea is a multi-layered system encompassing sites from the Early Iron Age to Late Antiquity. It reflects the region's continuous cultural evolution and constitutes an important component of the civilizational heritage of the Black Sea region.

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BRONZE AGE AND EARLY IRON AGE

The earliest layer is represented by sites left by the indigenous population of the Tarkhankut Peninsula. Research into these sites remains at an inchoate stage, as sustained scholarly interest emerged only in the first decade of the 21st century.

SCYTHIAN PERIOD

This period is represented by royal burial mounds in the Donuzlav area and Scythian inlet burials in Bronze Age barrows associated with the Yamna and Kemi-Oba cultures. The Scythian component constitutes one of the key layers of the region's historical and cultural landscape.

PERIOD OF GREEK COLONIZATION

A major turning point in the region's history was the establishment of the first Greek settlements in the 6th century BC as part of Greek colonization. Sites of this period (including Chersonese, Kerkinitis, Kalos Limen and others) defined the spatial structure of the historical landscape, which has largely survived to the present day.

FORMATION OF THE SEDENTARY SCYTHIAN COMPONENT

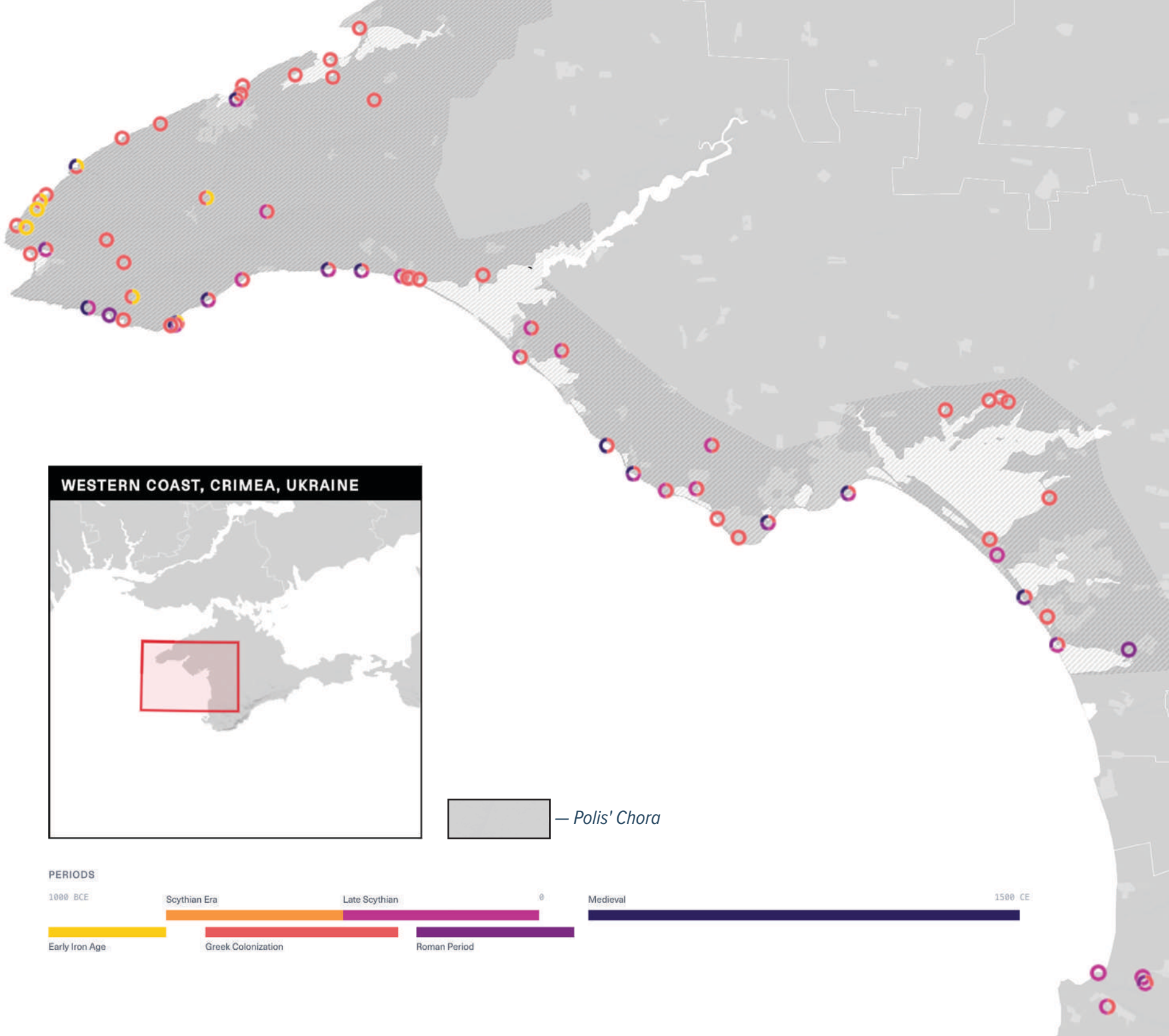
This stage was marked by significant changes in the urban structure of Greek settlements and the development of a network of fortified sites. Necropolises associated with the non-Greek population emerged in their vicinity, particularly in the interfluvium of the Alma and Kacha rivers, including the Bulganak hillfort and the Ust-Alma necropolis.

ROMAN PERIOD

The final historical stage that shaped the region's cultural and historical landscape is associated with the confrontation between Chersonese and the Scythians, as well as with the Roman military presence in the region. This period includes the fortress of Eupaterion (the Kara-Tobe hillfort), the Ust-Alma hillfort and Roman fortifications. With their construction, the region's historical and cultural landscape reached its final form.

MIDDLE AGES

This stage is characterized by the disappearance of Greek settlements; however, several coastal centres continued to exist until the end of the period. The region transformed into a nomadic zone, with Cuman sites penetrating even into areas adjacent to Chersonese on the northern coast of Akhtiar Bay.



WESTERN COAST, CRIMEA, UKRAINE



— Polis' Chora

PERIODS



Formation of Site Protection System before 2014

Unlike Chersonese, which had attracted the attention of archaeologists since the first third of the 19th century, the archaeological sites of Western Crimea remained on the periphery of scholarly interest throughout that period. The legal framework for their protection began to take shape only during the Bolshevik occupation of the peninsula. At the same time, the practical resolution of issues related to their preservation depended largely on decisions taken by local authorities. In particular, employees of the Yevpatoriia Archaeological and Ethnographic Museum—which in the 1920s was responsible for archaeological sites within the city—documented the partial development of ancient Kerkititis as a military resort facility. Despite the adoption in 1934 of the All-Russian Central Executive Committee’s resolution On the Protection of Archaeological Sites, no effective measures were taken to safeguard them. This failure was explicitly noted in reports of the Crimean People’s Commissariat for Education in 1939.

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In the absence of adequate legal protection, archaeological research remained the principal factor contributing to the preservation of monuments in Western Crimea. From the first investigations of the settlement now known as Kalos Limen in 1837 and the 19th-century search for Kerkititis, to the large-scale surveys conducted in the 1920s and 1930s, a significant number of archaeological sites were identified, many of which remain key monuments of the region today.

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In 1929, Lavrentii Moiseev discovered the remains of the Kulchuk hillfort (now designated as the archaeological site of local significance Kulchuk Hillfort (Red Mound)). Between 1932 and 1934, an expedition led by Pavel Shulz surveyed sites located between Lakes Sakske and Yarylgach, burial mounds near the Kara-Tobe hillfort and parts of Kerkititis situated within areas designated for construction.

After the end of World War II, research in Western Crimea was undertaken by the Taurian-Scythian Expedition. In 1948, its Yevpatoriia detachment conducted a visual survey of the ancient settlements of Kyzyl-Yar, Kara-Tobe, Terekli-Konrat, Airchi and Oybur, as well as the fortified sites of Chaika, Kara-Tobe, Beliaus and Karadzhynske. In 1959, additional surveys were carried out at the settlements of Kulchuk, Tarpanchi and Dzhana-Baba, together with its associated burial ground. During systematic explorations in the Yevpatoriia–Lake Donuzlav zone under the direction of O. D. Dashevskaya conducted in 1961–1963, the settlements of Beliaus-Pivnichne and Beliaus-Skhidne, the South Donuzlav settlement, the Berehove hillfort and the Murzachok settlement were discovered.

The expansion of research geography and the growing number of identified sites necessitated their formal registration and documentation. Between 1965 and 1969, the settlements of Chaika, Kerkititis, Masliny, Karadzhynske, Dzhana-Baba, Beliaus, Kulchuk and Kalos Limen were officially registered. For these sites, records were prepared, including site passports, historical descriptions, protection obligations and formally defined boundaries.



In the early 1980s, the registration of monuments continued through resolutions adopted at various administrative levels, which confirmed the status of the sites and established their protection zones. During the same period, numerous barrow groups in Western Crimea were recorded, enabling their protection from economic development.

In 1990, in accordance with Decision No. 300 of the Crimean Regional Executive Committee, the archaeological sites of the Alma and Kacha river interfluvium were transferred to the operational management of the Bakhchysarai Historical and Cultural Museum-Preserve. In 1997, the Kalos Limen Historical and Archaeological Preserve was established. In the 2000s, work commenced for the clarification of the boundaries of monuments in northwestern Crimea, culminating in Order No. 42 of the Ministry of Culture of Ukraine of 28 January 2014, which defined the legal status of a number of components of the historical and cultural landscape.

Consequences of Russian Occupation for Monuments of Western Crimea

Following the occupation of Crimea in 2014, the monuments of Western Crimea were all included in the register of cultural heritage sites of the Russian Federation (Decree No. 17 of the so-called Council of Ministers of the Republic of Crimea, 2017). Subsequently, efforts were undertaken to clarify site boundaries and develop records in accordance with occupying power's legislation. These processes, however, were accompanied by large-scale earthworks, which resulted in damage to the cultural layer. Between 2014 and 2016, as well as in 2019 and 2023, illegal archaeological excavations were carried out at the Beliaus hillfort and its necropolis. Similar activities took place at the Kulchuk hillfort and the necropolis of the Ust-Alma hillfort in 2014–2019, and at the Dzhan-Baba hillfort in 2014–2016, among many other sites.



*Register of objects
affected by russian aggression*

Following the launch of Russia's full-scale aggression against Ukraine, threats to the monuments of Western Crimea intensified as a result of extensive fortification construction undertaken by Russian armed forces along the Black Sea coast from Perekop to Akhtiar Bay. At the same time, the Russian Federation set up regulatory conditions enabling construction activities to be carried out without historical and cultural assessment and, more broadly, simplified approval procedures for such projects. In March 2022, the Ministry of Construction of the Russian Federation began drafting amendments to [the Urban Planning Code of the Russian Federation](#) aimed at excluding a number of categories of development—previously subject to mandatory urban planning expertise, including residential construction—from the general procedure.

In December 2023, [the Government of the Russian Federation adopted Resolution No. 2418](#) On the specific features of the procedure for determining the presence or absence of objects exhibiting the characteristics of an archaeological heritage object in areas subject to the impact of survey, earthmoving, construction, land reclamation and economic activities specified in Article 30 of Federal Law On Cultural Heritage Objects (Historical and Cultural Monuments) of the Peoples of the Russian Federation, as well as forestry-use and other activities. This act abolished several restrictions on excavation works, including those related to interventions up to a depth of 0.5 m and activities carried out in areas previously subjected to economic development. These approaches were subsequently confirmed through [official correspondence between the Ministry of Culture and the Ministry of Construction of the Russian Federation](#).

Construction activities carried out by Russian armed formations on the western coast of Crimea have already caused substantial damage to the region's historical landscape. This damage is complex in nature: not only are individual monuments being destroyed, but the spatial and functional relationships between them are also being disrupted. This process leads to the fragmentation of the cultural landscape and the loss of integrity of the archaeological environment. The large-scale destruction of monuments from different historical periods undermines historical continuity and makes a comprehensive scholarly and cultural interpretation of the region's heritage impossible. Moreover, earthworks and the militarization of territory create heightened risks of loss, removal or uncontrolled movement of archaeological artefacts, further exacerbating the irreversibility of the damage inflicted.



TARKHANKUT, CRIMEA, UKRAINE



- Russian Fortifications
- Site Boundaries
- Conservation Zone
- Polis' Chora

3 km



ARCHAEOLOGICAL SITE OF NATIONAL SIGNIFICANCE

UST-ALMA ARCHAEOLOGICAL COMPLEX: HILLFORT AND NECROPOLIS

No. 010008-N, Resolution No. 928 of the Cabinet of Ministers of Ukraine dated September 3, 2009.

The Ust-Alma hillfort is the largest of the fortified Scythian settlements in southwestern Crimea, located near the mouth of the Alma River and dominating the sea and coastline from the south. Having existed from the end of the 2nd century BC to the 3rd century AD, the settlement was surveyed by M. L. Ernst in the 1920s, P. M. Shulz in 1946, and later O. M. Shcheglov. From 1960 to the early 2000s, research on the site was led by T. M. Vysotska (Crimean Branch of the Institute of Archaeology of the National Academy of Sciences of Ukraine).



According to Vysotska's findings, the hillfort was a fortified late Scythian coastal city known as Palakion. It served as a military and trade outpost on the western border of the late Scythian state. Both Late Scythian and Sarmatian features can be traced in the material culture of the population; there is also evidence suggesting a Greek presence.

From the southwest, the hillfort adjoined the fortified settlement, the area of which has not yet been established, as no archaeological excavations have been carried out in this location. The initial dating of the fortification (the turn of the 3rd and 2nd centuries BC — 3rd century AD) has now been refined. It is believed to have been built at the end of the 2nd century BC or at the turn of the 2nd and 1st centuries BC. The current area of the settlement is about 6 hectares; in ancient times, its territory was larger, but today the coastline is undergoing intense abrasion.

Today, the hillfort has the shape of an asymmetrical rhombus, stretching from west to east. It is bordered by steep cliffs up to 30 m high in the northeast and northwest, while a rampart and moat have been preserved in the southwest and southeast. The nature of the buildings in the early stages of the hillfort's existence has not yet been established. At the turn of our era, there were semi-dugouts near the rampart. In the following period, mainly in the first centuries AD, the inner part was built up with adobe and stone residential buildings. The remains of paved streets date back to the 2nd and 3rd centuries AD.

**Ust-Alma Hillfort,
Crimea,
Ukraine.**

*Property Area
and a 300-metre
Buffer Zone*



-  — Property Area
-  — 300-metre Buffer Zone

In the northeast of the plateau, there is an elevated area of about 0.8 hectares; it is likely that a small citadel was located here. In this place, there is a road leading down to the mouth of the river, where boats and small vessels could dock.

After the death of the Scythian king Ateas (in 358–339 BC) and the collapse of Great Scythia in the 3rd century BC, Crimea became the center of consolidation of the Scythian tribes. At the end of the 4th century BC, the capital of the new Scythian state, Neapolis, emerged, and settlements began to be built around it.

The growth of Scythian political activity at the beginning of the 2nd century BC led to the capture of most of the coastal lands of the Chersonese chora, with Scythian settlements arising on the site of the Chersonese fortresses (Chaika, Biliaus and Pivdenno-Donuzlavskye). However, they did not succeed in conquering Chersonese itself. The desire to establish strong trade links with the Greek world through a large port led to attempts by the Scythians to establish control over Olbia in the 2nd century BC. From then on, it became possible to develop foreign trade using the infrastructure and connections of the ancient Greek colony.

In order to strengthen their position in the region and continue their advance on Chersonese, the Scythians established a stronghold on the high left bank at the mouth of the Alma River, located 48 km west of the capital of Neapolis. The Ust-Alma hillfort provided visual control over the northwestern coast, where the fortresses of Eupatarium (Kara-Tobe) and Kerkinitis were previously located. From here, the late Scythian fortifications located in the valleys of the Alma and Kacha rivers were also visible. At the end of the 2nd century BC, Chersonesites, supported

by the Pontic Kingdom, emerged victorious in a protracted Greco-Scythian war. However, Scythians quickly managed to regain their strength, and by the 1st century AD, they again posed a threat to Chersonese.

The Ust-Alma settlement ceased to exist as a result of Gothic incursions in the third century AD. In the 13th to 15th centuries, the port of Lefi—mentioned in Italian portolan charts—operated at the mouth of the Alma River, near the ruins of the Ust-Alma hillfort.

Necropolis

South of the fortress's defensive structures was a necropolis covering an area of about 4 hectares, where more than 900 burial structures had been explored by 2007; today, there are more than 1,200 (1st century BC–3rd century AD). At the same time, only part of the burial ground has been excavated. A significant number of valuable artifacts were found during the excavations.

Family tombs with multi-tiered burials were discovered, along with individual burials in catacomb crypts. A separate group consists of ground crypts with burials, which are interpreted as the burials of representatives of the Sarmatian nobility and are accompanied by horse burials.

The rites, burial inventory and other archaeological data indicate that at the beginning of the 2nd century AD, representatives of an ancient noble Sarmatian family lived in this area. The burials of the Ust-Alma necropolis are distinguished by a significant number of items made of precious metals.

DAMAGE TO THE SITE AS A RESULT OF THE CONSTRUCTION OF RUSSIAN MILITARY FACILITIES

1. Internal objects of the site that have been damaged: defensive structures.

Type of damage:

construction of earthen fortifications (caponier for military equipment, caponiers/infantry observation cells).

Degree of damage:

partial damage or complete destruction of sections of the front part of the moat, damage and partial destruction of the cultural layer.

Timeframe of works:

2022–2025

Context and significance of the site, nature of losses:

On the southeastern and southwestern sides, the settlement was protected by an earthen rampart and a moat, which were part of a complex multi-layered structure. According to archaeological research, these fortification elements of the first period could have been built at the turn of the 2nd and 1st centuries BC or at the end of the 2nd century BC; it is believed that this happened on the eve of the Crimean campaigns of General Diophantus of Pontus.

At that time, the Ust-Alma hillfort was fortified with a moat 3.5 m deep and 8 m wide at the top and 4 m wide at the bottom. On the surface from which the moat was dug, on the side of the hillfort, the remains of a single-faced wall 1.4 m wide were found, facing the moat. Shortly after completion of construction, the defensive structures were destroyed by fire. The time of destruction corresponds to the period of Diophantus' campaigns in northwestern Crimea.

The second construction period includes a moat located south of the previous one, 2.5 m deep and about 5.5 m wide at the top. To the north of the moat, a 1.7 m wide wall was built of raw bricks and an earthen rampart was erected. This line of defense was destroyed in the 1st century AD. Later, a new earthen rampart about 2 m high and a moat in front of it 1 m deep and 2 m wide were built on this site.



Parts of the front section of the moat of the settlement's defensive system have been lost (partially damaged and, in some places completely, destroyed); so too were the associated cultural layers, which has disrupted the authentic configuration of the fortification elements and limited the possibilities for their scientific interpretation and reconstruction.

Ust-Alma Hillfort

Comparative Analysis of Satellite Images



Satellite image from 2022.

© 2022 Bing.



Satellite image as of 2025.
Trenches and soil dumps
in the buffer zone and all
on the site are visible.

© 2025 Maxar.

-  — Property Area
-  — 300-metre Buffer Zone

Ust-Alma Hillfort

Comparative Analysis of Satellite Images



Areas of illegal archaeological excavations and exploration conducted after 2014.

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Designation of defensive structures visible in the 2025 image.

© 2025 Maxar.

-  — Property Area
-  — 300-metre Buffer Zone

2. Internal objects of the site that have been damaged: buildings of the hillfort

Type of damage:

construction of earthen fortifications (caponiers for military equipment), construction of a sunken shelter using concrete building blocks.

Degree of damage:

partial damage or complete destruction of the cultural layer, building complexes, closed archaeological complexes and utility pits in the central and western parts of the settlement.

Timeframe of works:

2022–2025

Context and significance of the site, nature of losses:

Residential and utility buildings are poorly preserved since they were built of adobe bricks. The layout of the rooms can often only be reconstructed from the remains of mudbrick floors.

Buildings from the 2nd–1st centuries BC have largely been lost. Residential buildings are identified mainly by the presence of square (0.70 and 0.80 m) or rectangular (1.0 × 0.9 m; 0.3 × 0.5 m) hearths. Fragments of stone building bases, the layout of which could not be determined, also belong to this period.

The structures from the turn of the millennium were found mainly in the central part of the settlement. The residential buildings had a rectangular plan (8.5 × 4.5 m; 7.4 × 3.5 m); the adobe walls had stone bases 0.5–0.8 m wide. The mudbrick floors were 35 cm below the level of the bases. In the center of the house, there was a rectangular mudbrick hearth measuring 1.0 × 1.5 m or 1.2 × 0.7 m. The houses were oriented along the northwest-southeast axis. On the eastern side, there was a courtyard paved with pebbles or small stones. Semi-dugouts discovered in the southwestern part near the defensive rampart also date back to this period.

In the 1st–3rd centuries AD, rectangular adobe houses with a small courtyard and a shed for household needs continued to be built. Two-room buildings appeared, but the appearance of the hillfort probably did not change significantly compared to previous periods. Instead of stationary hearths, portable hearths or braziers in stone cladding were often used.



The cultural layer and building complexes of the settlement have been lost (partially damaged and in some places completely destroyed), particularly the closed archaeological complexes and utility pits in the central and western parts, which led to a disruption of the stratigraphy of the site and made it impossible to fully reconstruct the layout and functioning of the residential and utility buildings from different chronological periods.

3. Internal objects of the site that have been damaged: necropolis

Type of damage:

construction of earthen fortifications (caponiers for military equipment), placement of military equipment.

Degree of damage:

partial damage or complete destruction of ground burial structures (crypts, pit graves, ground graves).

Timeframe of works:

2022–2025 pp.

Context and significance of the site, nature of losses:

The Ust-Alma necropolis is a representative late Scythian monument that reflects the material culture of the Scythians of the Roman period. The burial structures include earthen crypts, undercut graves, graves with ledges and horse burials.

A distinctive feature of the burial rite was the use of stones to close the entrance pits to crypts, undercut graves and earthen burials. Gold and silver jewelry are often found in the burial inventory.

Finds from the excavations of the Ust-Alma necropolis were presented in international museum exhibitions in Germany and the Netherlands (exhibition project Crimea: The Golden Island in the Black Sea). After Crimea was occupied, the question of ownership of this cultural property became the subject of a lengthy legal dispute, in which the Russian Federation contested its return to Ukraine. The artifacts from the exhibition have now been returned to Ukraine and are kept at the National Museum of Ukrainian History in Kyiv.



The earthen burial structures of the Ust-Alma necropolis, particularly crypts, undercut and flat graves, have been lost (partially damaged and, in some places, completely destroyed), which has obviously led to a violation of the integrity of the burial complexes and a loss of archaeological context necessary for the scientific interpretation of burial rites and the socio-cultural characteristics of the population of the late Scythian period. Furthermore, this has created the risk of loss, removal or uncontrolled movement of archaeological finds from the disturbed burials.

Ust-Alma Hillfort

Comparative Analysis of Satellite Images



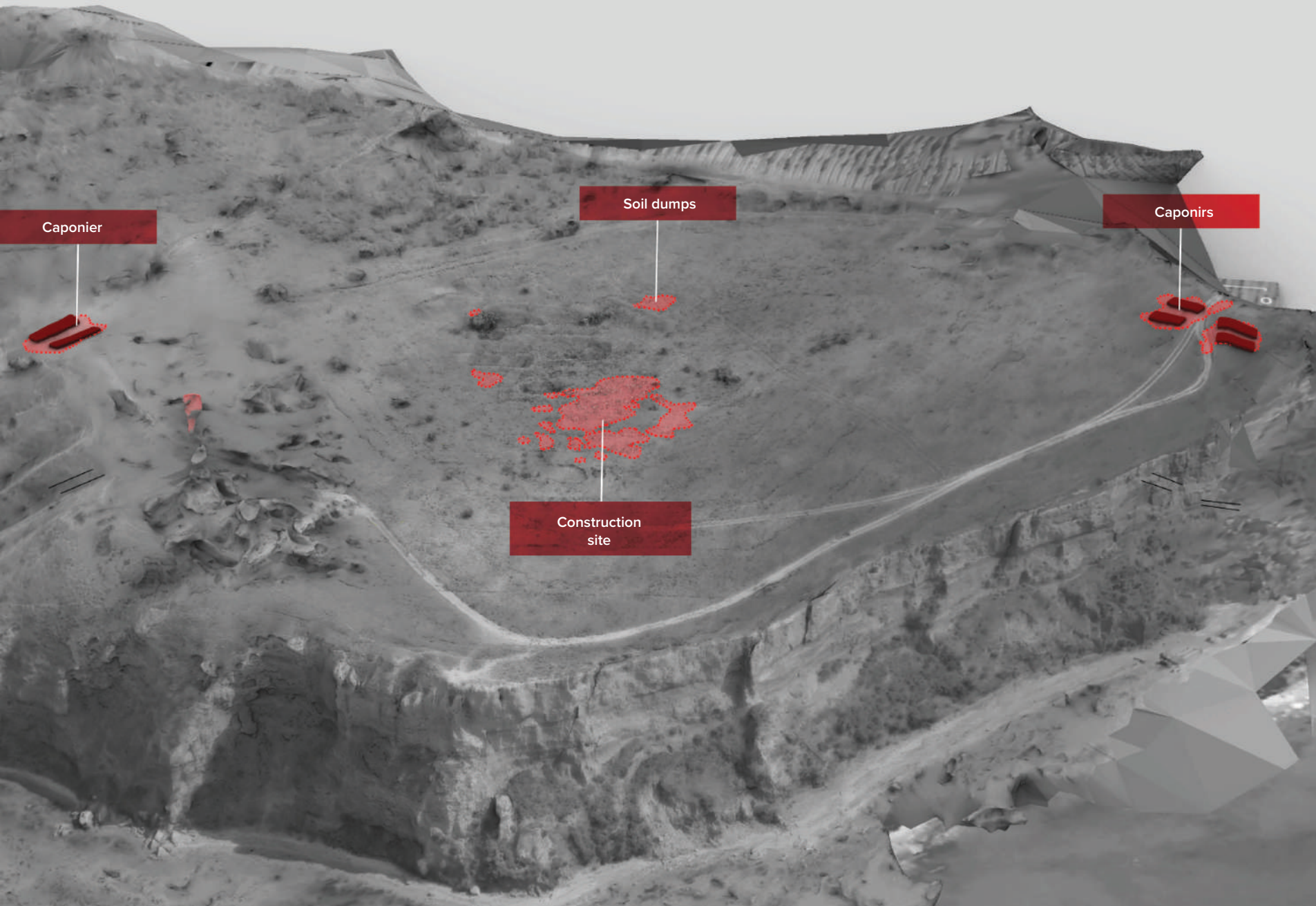
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-  — Property Area
-  — 300-metre Buffer Zone

See the detailed
model here:



Caponier

Soil dumps

Caponirs

Construction
site

4. Internal objects of the site that have been damaged: burial mound from the site Group of Nine Barrows (protection No. 746)

Type of damage:

construction of earthen fortifications in the space around the barrow (trenches).

Degree of damage:

looting, partial damage or complete destruction of the central burial in the barrow, partial damage or complete destruction of burial complexes in the area surrounding the barrow.

Timeframe of works:

2022–2025

Context and significance of the site, nature of losses:

The barrow is about 3 m high and approximately 30 m in diameter. The mound has steep slopes and a flat top.

In the 1990s, the barrow was looted: a square test pit measuring about 1.5–2.0 m was found inside the mound. During the investigation inside the barrow, a stone box was discovered. The burial probably belonged to the Kemi-Oba archaeological culture.

No traces of new looting pits or other signs of destruction were found on the slopes and at the foot of the barrow before the start of fortification works in 2024.

Similar barrows with large mounds sometimes contain Scythian or Cuman burials. The barrow is part of a barrow group distinguished by considerable size and location on the dominant capes of the high left bank of the Alma River. The object is registered as part of the Group of Nine Barrows site, under protection number 746.

Burial mound from the site Group of Nine Barrows (protection No. 746)

*Comparative analysis of satellite
images*

1 — © 2016 Bing.

2 — © 2025 Maxar.





The central burial of the barrow and related burial complexes in the area surrounding the barrow have been lost (partially damaged and, in some places, completely destroyed), which has led to a disruption in the stratigraphy of the mound, loss of archaeological context and limited the possibilities for scientific reconstruction of the burial rites and chronology of the site.

**Burial mound from
the site Group of Nine Barrows
(protection No. 746)**

Comparative analysis of satellite images



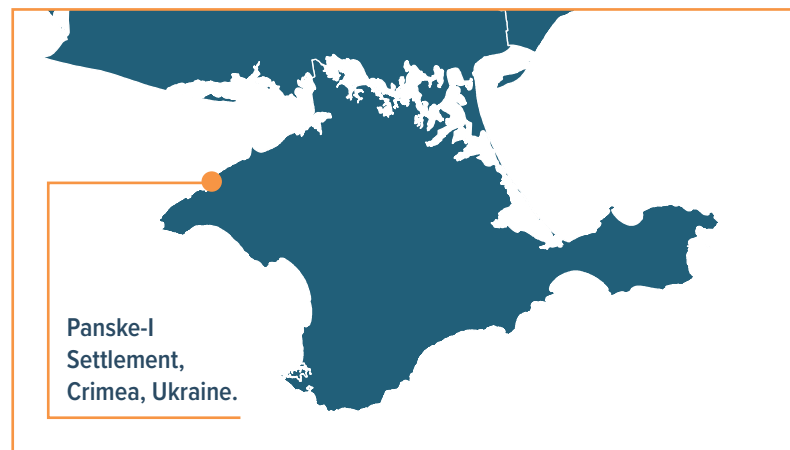
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ARCHAEOLOGICAL SITE OF LOCAL SIGNIFICANCE

PANSKE-I SETTLEMENT AND GRAVE FIELD

No. 2367-AP Order of the Ministry of Culture of Ukraine No. 42 of January 28, 2014

The Panske-I settlement is one of the most representative monuments of Greek colonization of the Northern Black Sea region and beyond. The stratigraphy, size and unique structure and layout of the settlement, which represents an agglomeration of compactly located individual farms, adjacent residential blocks and monumental structures designed for more than one family, distinguish it from other rural settlements in the region. The rich and original material culture demonstrates an impressive intertwining of different cultural components, both Greek and non-Greek.



The Panske-I settlement was founded at the end of the 5th century BC as a fortified post to guard the southeastern borders of the Olbia territory. Around 360 BC, it came under the control of Tauric Chersonese, the connection maintained until the destruction of the settlement around 270 BC.

There is currently no comprehensive idea of the history of the Panske-I settlement due to the fragmentary nature of archaeological research (only a few separate estates have been excavated). At the same time, in the second half and last quarter of the 4th century BC, the settlement experienced rapid growth: at least 14 large rural estates with regular layouts were formed around the former fortress. Despite the site becoming part of the Chersonese polis at this juncture, its population preserved Ionian traditions in the construction of stone and adobe buildings. Stone buildings characteristic of the Chersonese chora have not yet been found at this stage.

At the beginning of the 3rd century BC, the estates were fortified, as evidenced by a defensive tower at excavated estate No. 13. During this same period, other estates in the complex ceased to exist (estate No. 14).

The Panske-I settlement was destroyed as a result of a large-scale catastrophe at the end of the second third of the 3rd century BC. After the destruction, there are no signs of restoration, nor are there any traces of clearing the rubble. However, some estates in the surrounding chora continued to exist until the middle of the 3rd century BC.

The necropolis of the Panske-I settlement is contemporaneous with the settlement. Its distinguishing feature is the presence of ramparts that limited the territory of the necropolis at least from the north and west. The ramparts probably existed on the south and east sides as well, but they have not been preserved.

Burials were carried out both in barrows (ranging from 7 to 25 m in size and 0.3–2.0 m in height) and in flat graves outside their boundaries. Burial structures under the mounds could be simple flat graves, crypts lined with adobe bricks, slab graves, undercut graves, earthen tombs with a dromos and adobe covering of the grave structure. The burial inventory included various pottery items, jewelry, tools and weapons. The barrows were located in small groups and probably belonged to different families or clan groups.



**Panske-I Settlement,
Crimea, Ukraine.**

*Property Area and a 300-metre
Buffer Zone*

-  — *Property Area*
-  — *300-metre Buffer Zone*

Panske-I Settlement and Grave Field

Comparative Analysis of Satellite Images



Satellite image from 2016.

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Satellite image from 2022

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- Property Area
- 300-metre Buffer Zone

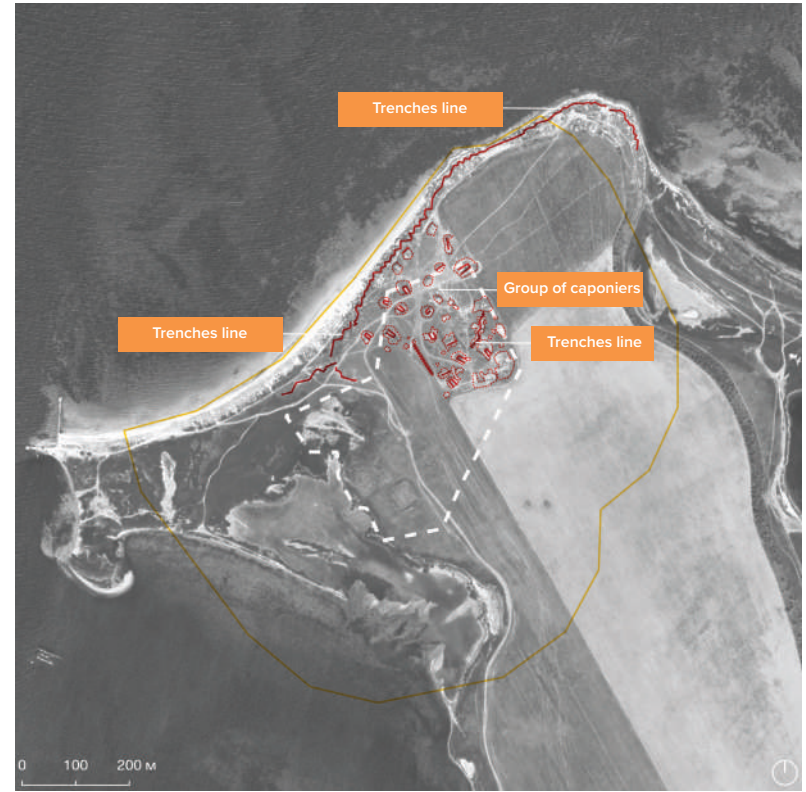
Panske-I Settlement and Grave Field

Comparative Analysis of Satellite Images



Satellite image as of 2025.
Trenches and soil dumps are visible
in the buffer zone and directly
on the site.

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Designation of defensive structures visible
in the 2025 image.

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-  — Property Area
-  — 300-metre Buffer Zone

DAMAGE TO THE SITE AS A RESULT OF THE CONSTRUCTION OF RUSSIAN MILITARY FACILITIES

Internal objects of the site that have been damaged: Necropolis of the Panske-I settlement

Type of damage:

construction of a military field camp,
construction of earthen fortifications.

Degree of damage:

- partial damage and complete destruction of at least half of the barrow mounds of the necropolis;
- probable destruction and looting of burials under the mounds and flat burials in the space between the barrows.

Timeframe of works:

2022–2025



At least half of the barrow mounds of the Panske-I necropolis, along with the sub-barrow and flat burials in the inter-barrow space, have been lost (partially damaged and, in some places, completely destroyed), leading to the destruction of burial complexes, loss of the archaeological context and, presumably, loss or uncontrolled movement of some of the artifacts.

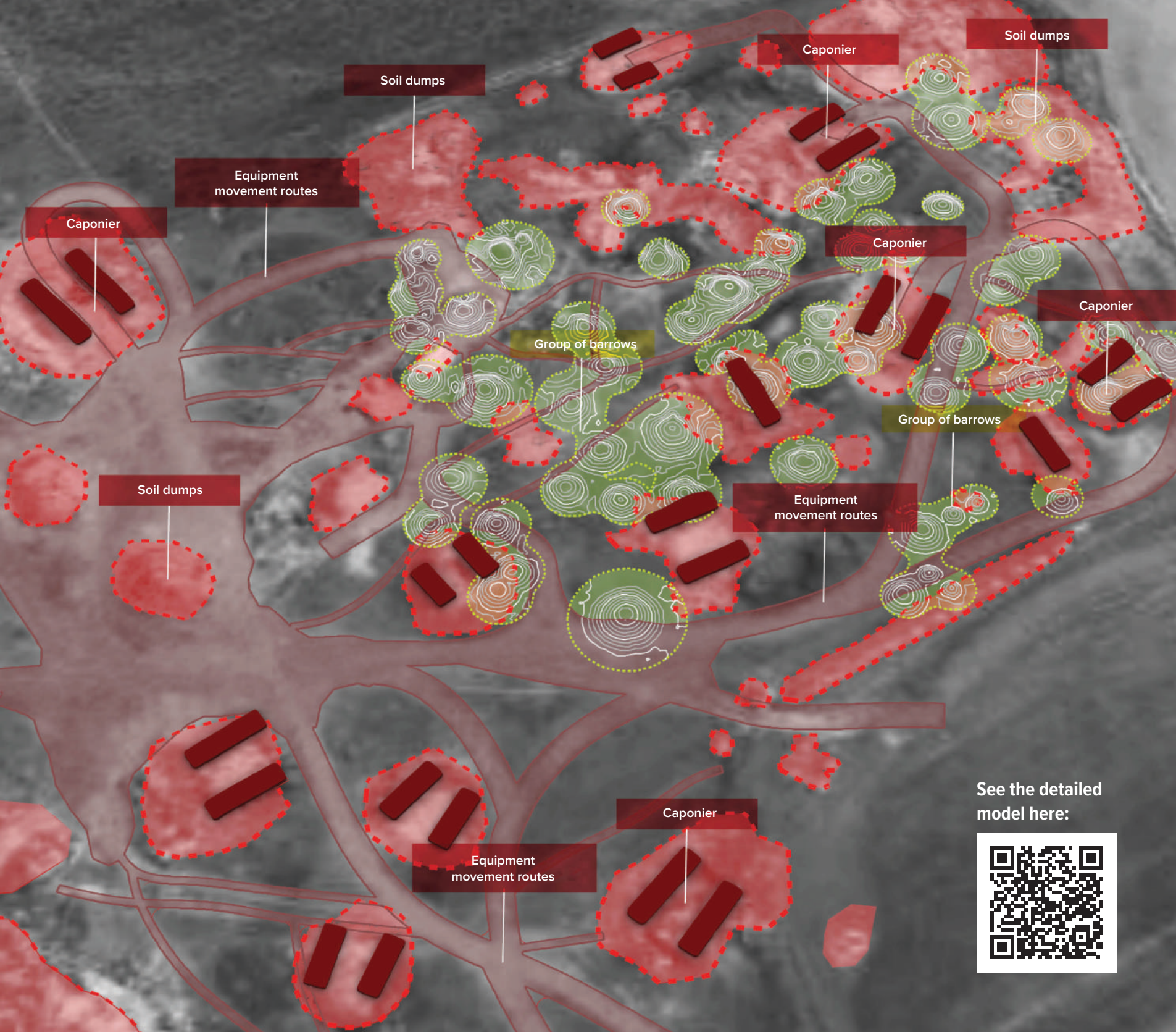
Context and significance of the site: nature of losses:

The necropolis of the Panske-I I settlement is a tumulus field left by the inhabitants of the ancient settlement bearing the same name. The oldest burial sites of the complex are characterized by distinct features of the Ionian burial rite, which is most likely associated with the first settlers from Olbia. Later, especially in the final stage of the necropolis's functioning, the burial rite transforms, acquiring features typical for Chersonese and the cultural environment associated with it.

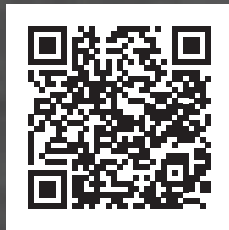
Burials from the last quarter of the 4th century to the end of the first third of the 3rd century BC demonstrate a certain simplification of burial rites: the number of grave goods is reduced, anthropomorphic tombstones appear, and among the burial attributes, Charon's obol is recorded — a coin placed in the mouth or on the lips of the deceased as payment to the ferryman of souls across the River Styx in ancient Greek beliefs about the afterlife.

The territory of the Panske tumulus field is limited on the western and northern sides by earthen ramparts, the remains of what once were adobe walls and fences. In their current state, the ramparts are up to 0.5 m high and nearly 1.5 m wide. The barrows of the necropolis reached a height of up to 2 m with a diameter of up to 25 m. At the time of the start of archaeological research in the 1960s, there were more than 50 barrows here.

During the excavations, which lasted until the 1990s, 32 barrows were explored. The burial inventory included various ceramic items, jewelry, bronze mirrors, arrowheads and tools. Among the pottery items, there were high-quality black lacquered objects, which indicates the close trade relations and cultural contacts of inhabitants of Panske with the centers of the ancient world.



See the detailed model here:



Panske-I Settlement and Grave Field

Comparative Analysis of Satellite Images



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Panske-I Settlement and Grave Field

Comparative Analysis of Satellite Images



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Designation of defensive structures visible in the 2025 image.

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ARCHAEOLOGICAL SITE OF LOCAL SIGNIFICANCE KULCHUK FORTRESS (RED BARROW)

No. 1788-AR Order No. 42 of the Ministry of Culture of Ukraine dated January 28, 2014

The Kulchuk fortress is one of the most important archaeological sites of antiquity in the southwest of Crimea, located on the Tarkhankut Peninsula (Black Sea region, south of the village of Hromove). According to ancient written sources, the settlement is identified with the Tamirak settlement; it was mentioned by Strabo (Strabo, VII, 3, 19), Claudius Ptolemy (III, 5, 2), Arrian of Nicomedia (Arr. PPE, 32 (20H)) and Stephanus of Byzantium.

Field archaeological research was conducted at the Kulchuk hillfort throughout most of the 20th century. In different years, expeditions were led by renowned archaeologists: by L. A. Moiseev in 1929, P. M. Shulz in 1933, A. M. Shcheglov, O. D. Dashevskaya and A. S. Golentsov in 1960–1975 and A. S. Golentsov in 1984–1994. From 2006 onwards, research has been carried out under the direction of S. B. Lantsov.

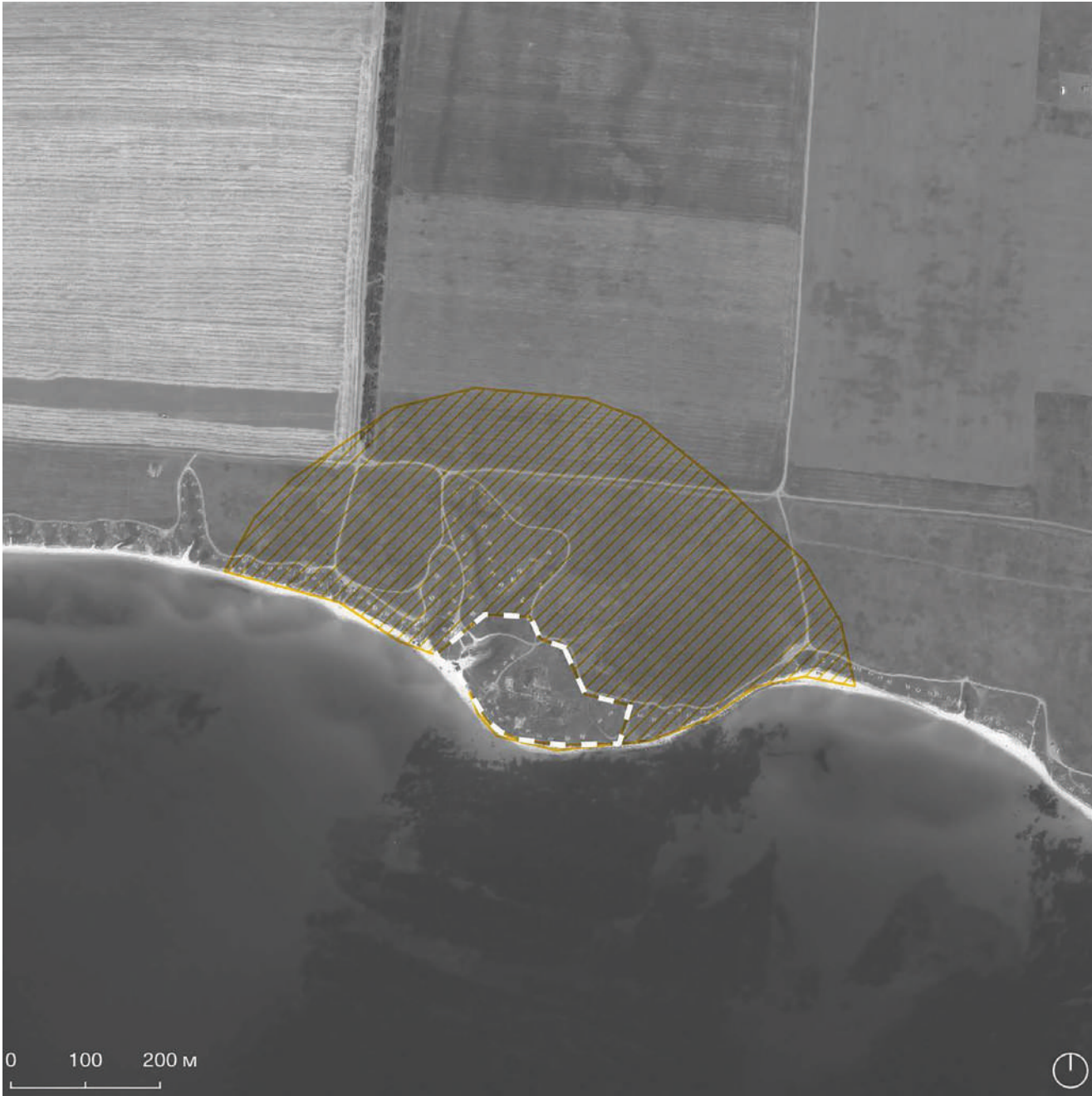


The Kulchuk hillfort was founded in the 4th century BC as part of the Chersonese chora. It is located on a cliff about 11 m above sea level and covers an area of approximately 1.5 hectares; the area of the adjacent grave field exceeds 2 hectares.

The settlement is protected on three sides by deep ravines and precipices, and on the western side it is washed by the sea, which provided natural protection from attacks.

**Kulchuk Hillfort,
Crimea, Ukraine.**

*Property Area
and a 300-metre
Buffer Zone*



-  — *Property Area*
-  — *300-metre Buffer Zone*

The remains of buildings found here are divided into three chronological groups:

- 1 The first group is the oldest and includes several oval-shaped depressions found on the slope of the mainland, which are more than half destroyed by abrasion. The preserved structures were 2.5-4 m long and 0.35-0.70 m deep. The pottery material from the fill of the depressions is dated by its stamps to anywhere from the middle to the third quarter of the 4th century BC. It is the oldest in the hillfort and determines the time of its foundation.
- 2 The second group consists of three estates with towers No. 1 and No. 3. Fragments of walls, pavements and utility pits have been preserved from the southern estate. Tower No. 1, half destroyed by abrasion, was connected to estate No. 1, had a square shape (9 × 9 m) and consisted of three rooms with mudbrick floors. The outer walls of the tower, 1.10 m thick, were built of hewn rusticated blocks. One of the corner blocks still has the stonemason's mark. The tower was almost completely dismantled and covered by later Scythian buildings. Finds from the tower suggest that it was destroyed in the last third of the 4th–early 3rd century BC. The grain storage pits were pear-shaped; their fill contained Hellenistic material, also dating to the last quarter of the 4th–early 3rd century BC.
- 3 The third group consists of fortified estates No. 2 and No. 3, as well as an unnumbered estate with towers No. 2 and No. 3. Tower No. 2 was surrounded by an anti-battering-ram barrier and Chersonese-type defensive walls along the perimeter and was located in the central part of the settlement. Quadras with piers and rusts taken from the walls of the tower of the

previous complex were used. The estate came into being in the first quarter of the 3rd century BC and existed until the settlement was captured by the Scythians in the first half of the 2nd century BC, and later by the Sarmatians.

The Scythian period is characterized by fortifications from late 2nd and 1st centuries BC. They include a rampart and a moat lined with stone on the side of the hillfort. The rampart was supported by the defensive wall of the Chersonese estate. Similar fortifications were previously recorded by O. D. Dashevskaya at the Beliaus hillfort, located 3 km east of Kulchuk. Residential and farm buildings dating back to the second quarter of the 2nd century BC and the 1st century AD were also found at the settlement.

The Chersonese-Pontic garrison, which remained in the city after the end of the Diophantus campaigns, left Kulchuk after the Pontic Kingdom lost in the war against Rome (after 63 BC). After that, traces of Scythian population were once again recorded at the site. During this period, the settlement was barbarized, built up with two-story Scythian houses, and the moat was filled with cinder. Late Scythian Kulchuk was destroyed in a great fire during the campaign of the Bosphoran king Aspurgus in 20 AD.

A small, probably episodic, presence of the population is recorded on the ruins of the Kulchuk fortress in the early Byzantine period. In the 8th–10th centuries, the territory was inhabited by representatives of the Saltovo-Mayaki culture. The settlement with residential buildings and farm complexes functioned in the 13th and 14th centuries, after which the site was abandoned.

See the detailed
model here:



Caponier Line

Illegal archaeological
excavations 2014–2025

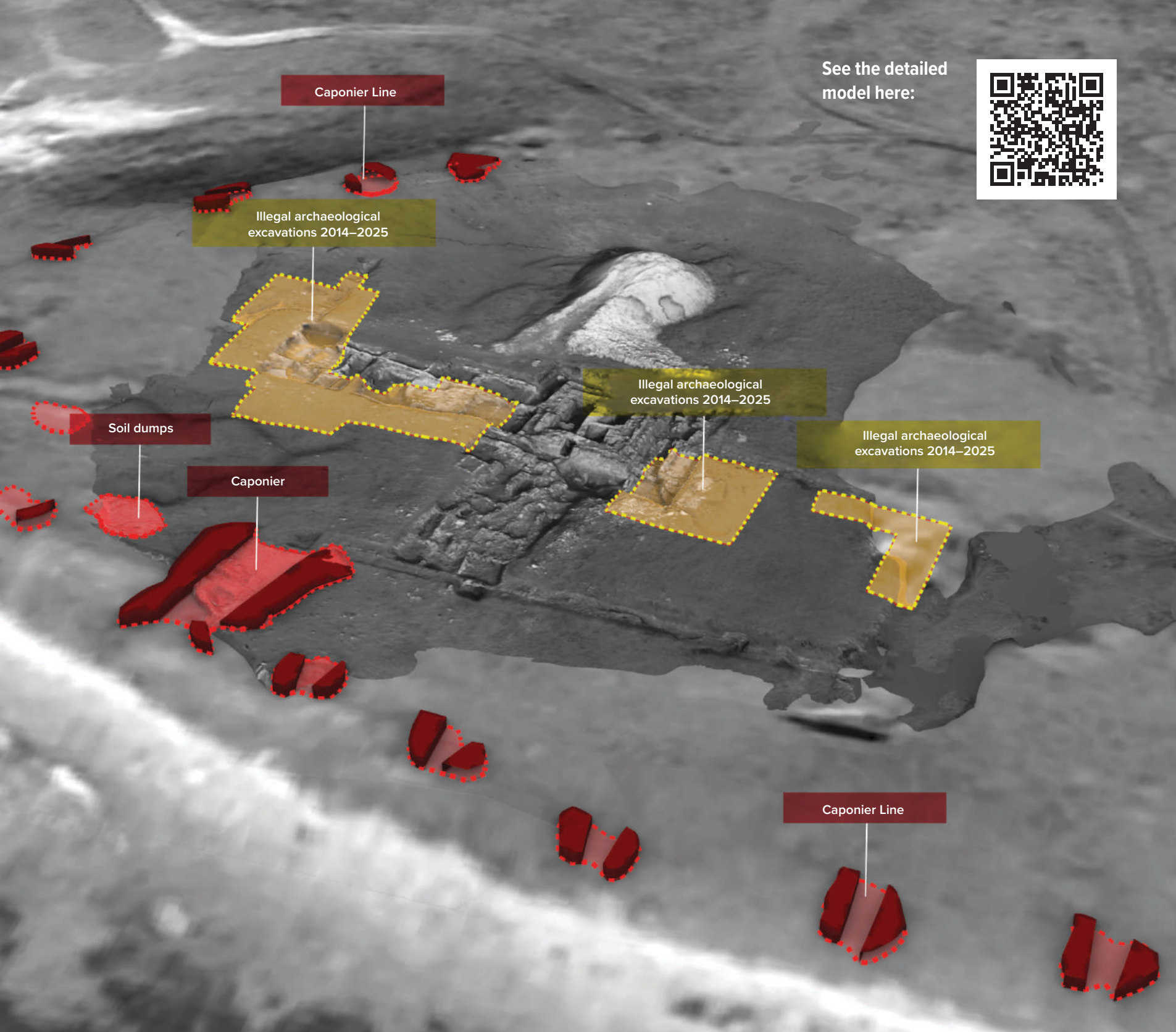
Illegal archaeological
excavations 2014–2025

Illegal archaeological
excavations 2014–2025

Soil dumps

Caponier

Caponier Line



Kulchuk Hillfort

Comparative analysis of satellite images



Satellite image from 2022.

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Satellite image as of 2025.

Trenches and soil dumps are visible in the buffer zone and directly on the site.

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-  — Property Area
-  — 300-metre Buffer Zone

Kulchuk Hillfort

Comparative analysis of satellite images



Satellite image as of 2025.
Trenches and soil dumps are visible
in the buffer zone and directly on the site.

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Designation of defensive structures
visible in the 2025 image.

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-  — Property Area
-  — 300-metre Buffer Zone

DAMAGE TO THE SITE AS A RESULT OF THE CONSTRUCTION OF RUSSIAN MILITARY FACILITIES

1. Internal objects of the site that have been damaged: estate No. 1 with tower No. 1.

Type of damage:

construction of earthen fortifications (caponiers/infantry observation cells).

Degree of damage:

partial damage and complete destruction of the remains of the walls of tower No. 1 and the internal buildings of estate No. 1, building complexes from the Scythian period and the cultural layer.

Timeframe of works:

2022–2025

Context and significance of the site, nature of losses:

Fortified estate No. 1 with tower No. 1 was built in the second half of the 4th century BC and was part of the Kulchuk settlement in the early stages of its existence. As a result of the reconstruction carried out in the first quarter of the 3rd century BC, estate No. 1 was dismantled



This damage is critical for the monument, as it led to the loss of the authentic layout of the site and the destruction of part of the cultural layer and building complexes. This, in turn, significantly limits the possibilities for scientific interpretation and reconstruction of the early stages of the settlement's development.

2. The western estate with tower No. 3 was damaged.

Type of damage:

construction of earthen fortifications (caponiers/infantry observation cells).

Degree of damage:

partial damage and complete destruction of the remains of the internal buildings of the western farmstead, building complexes from the Scythian period, and the cultural layer

Timeframe of works:

2022–2025

Context and significance of the site, nature of losses:

The fortified western estate with tower No. 3 was built in the second half of the 4th century BC and was part of the Kulchuk settlement in the early stages of its existence. As a result of the reconstruction carried out in the first quarter of the 3rd century BC, they were integrated into a new system of defensive facilities and planning structure, within which estate No. 2 and tower No. 2 played the dominant role.



As a result of the works, the cultural layer was destroyed, leading to a violation of the authentic planning and stratigraphic characteristics of the site and making it impossible to fully reconstruct its functioning within the defensive system of the hillfort.

3. Internal objects of the site that were damaged: estate No. 2 with an area of early Greek semi-dugouts and utility pits in the southern part.

Type of damage:

construction of earthen fortifications (caponier for military equipment, caponiers/infantry observation cells).

Degree of damage:

partial damage or complete destruction of the southern defensive wall of farmstead No. 2, the remains of the internal buildings of farmstead No. 2, Greek semi-dugouts, building complexes from the Scythian period, and the cultural layer.

Timeframe of works:

2022–2025

Context and significance of the site, nature of losses:

The semi-dugouts belong to the first stage of the history of the settlement and determine the time of its foundation. They date back to the middle and third quarter of the 4th century BC. Fortified estate No. 2 was built in the first quarter of the 3rd century BC during a large-scale reconstruction of the hillfort. Estate No. 2 occupies a dominant position in the planning structure.



The cultural layer has been lost, which has led to a violation of the authentic planning and stratigraphic structure of the key dominant area of the settlement and made it impossible to fully reconstruct its early stages of development.

4. Internal objects of the site that have been damaged: moat and rampart

Type of damage:

construction of earthen fortifications (infantry observation posts).

Degree of damage:

moderate damage to the architectural elements of the site, destruction of the cultural layer.

Timeframe of works:

2022–2025

Context and significance of the site, nature of losses:

The rampart and moat belong to Scythian fortifications. They date back to the end of the 2nd and 1st centuries BC. The moat was lined with stone on the side of the settlement.



The architectural elements of the Scythian fortifications of the rampart and moat have been damaged and partially lost. In particular, their original configuration has been disrupted and the cultural layer has been partially destroyed, which limits the possibilities for further scientific interpretation and reconstruction of the fortification system of the late 2nd and 1st centuries BC.

Kulchuk Hillfort

Comparative analysis of satellite images



Digital elevation model.



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Kulchuk Hillfort

Comparative analysis of satellite images



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Kulchuk Hillfort
Comparative analysis of satellite images



Areas of illegal archaeological excavations and explorations conducted after 2014.

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**Kulchuk
Hillfort**
*Comparative
analysis of satellite
images*



*Designation of
defensive structures
visible in the 2025
image.*

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BELIAUS HILLFORT AND BELIAUS GRAVE FIELD

Decision No. 595 of the Crimean Regional Executive Committee dated September 5, 1969

The Beliaus hillfort is a unique archaeological site located on the western coast of Crimea near the village of Chornomorske, between the Black Sea and Lake Donuzlav. The history of the settlement dates back to the 4th century BC, when a Greek settlement was founded in this territory, within the sphere of influence of the Chersonese polis.

In the first stage of its existence, approximately in 325–315 BC, the settlement consisted of two fortified towers with courtyards, which were not yet united into a single defensive system. The tower on the seashore probably served as a monumental four-story lighthouse. Already at this stage, Beliaus was of strategic importance for Chersonese as a control point for sea routes along the western coast of Crimea and a key element in the colonization of the Tarkhankut Peninsula.

By the end of the fourth century BC, Beliaus underwent fortification, during which the two original towers were connected to create a single defensive complex. The lighthouse with a courtyard and a wall around it continued to serve its original purpose, while the second tower became part of the estate. At this stage, four estates of this type were built on the territory of the Beliaus fortress.

The architecture and layout of the Beliaus hillfort represent a conglomerate of several fortified estate. This indicates the intention of the inhabitants of the settlement to increase the defensibility of their homes, ensure stability in the event of a military threat and save resources. In the nearby Chersonese chora, where military threats were less acute, such fortified estates were more dispersed and isolated.



In the 270s BC, the Beliaus hillfort underwent a significant strengthening of its defenses, with so-called anti-battering-ram barriers added to Towers 1 and 3. These measures are generally interpreted as a response to the escalating Scythian threat. At the same time, during the second quarter of the third century BC, the Chersonese polis experienced an economic crisis, traces of which were also found in Beliaus.

**Beliaus Hillfort,
Crimea, Ukraine.**

*Property Area
and a 300-metre
Buffer Zone*



-  — Property Area
-  — 300-metre Buffer Zone

However, by the third quarter of the third century BC, economic activity at the settlement had revived and entered a phase of growth. The northern and western estates expanded, with particularly pronounced development in the former, where a bathhouse was constructed.

In the last quarter of the 3rd century BC, the Scythian threat intensified. Researchers of the site suggest that the new fifth (northwestern) settlement of the Beliaus hillfort was founded by refugees from the settlements and villages around the fortress that had been destroyed by the Scythians. The latter appeared in Beliaus at the beginning of the 2nd century BC, prompting the Chersonesites to abandon their chora on the Tarkhankut Peninsula and resulting in a change in the composition of the fortress's population. Beliaus was rapidly barbarized. Initially, the Scythians reused Hellenic houses; subsequently, however, the inner courtyards lost their original function and were repurposed for cinder and refuse. In the second half of the 2nd century BC, the construction of inner courtyards began, and new Scythian houses gradually adjoined the outer walls.

The campaigns of Diophantus at the end of the second century BC disrupted occupation at the site and resulted in partial destruction. The Scythian population likely withdrew in response to the advance of Chersonesitan and Pontic forces. No archaeological evidence indicates any subsequent attempt by Chersonese to re-establish occupation at Beliaus.

“

In the early 1st century BC, the Scythians returned to the fortress and carried out a large-scale reconstruction of the defensive and residential infrastructure. In addition to the old walls of the Chersonese fortress, they built their own system of fortifications: a moat with a rampart, a stone wall, and a tower. A stone bridge with a drainage tunnel was built over the moat leading to the main entrance. Inside the old part of the fortress, the Scythians demolished all the old houses and built their own residential quarters on the vacated land. The space between the old Chersonese wall and the new rampart was built up with two-story houses. Unfortified Late Scythian settlements developed to the west and east of the fortified area, whereas to the north of the fortress a necropolis founded during the Chersonesitan period remained in use.

”

Over time, at the beginning of the 1st century AD, the moat and rampart gradually lost their defensive function: first, the moat was filled with ash, and later its territory was built up. This process continued until the mid-1st century AD. After 63 AD, Beliaus was finally destroyed in a fire, probably during a military campaign by Roman troops from Lower Moesia in response to another Scythian attack on Chersonese. After that, a small number of people returned to the ruins of Beliaus, but the town was not completely restored. The hillfort existed in this form until the end of the 1st century and saw its demise under pressure from the Sarmatian tribes that roamed the north of Crimea.



Beliaus Hillfort

The sporadic presence of people in Beliaus is recorded in the 2nd and 3rd centuries. At the end of the 4th and beginning of the 5th centuries, Hunnic troops were stationed in the area, as evidenced by isolated burials in both the necropolis and the hillfort. The last stage of the site's revival is associated with the Khazar period (8th–10th centuries), from which some buildings and characteristic pottery have survived.

The Beliaus grave field is situated to the north of the settlement and represents its associated necropolis. In terms of burial rites, it shows the closest parallels with those of Neapolis Scythica. Chronologically, the necropolis spans the period from the turn of the 4th and the 3rd centuries BC through the 1st century AD. Among the earliest burial structures identified is a Scythian crypt dating to the turn of the 4th and 3rd centuries BC.

Two cremations in amphorae, characteristic of Greek burial rites, have been discovered; they probably belong to the period when the necropolis was in use during the Chersonesitan stage of the hillfort's existence. At the same time, other objects of the necropolis date back to the second half of the 2nd–1st centuries BC, i.e., the time when the Scythians were present on the territory of the hillfort. A total of 178 burials have been studied on the territory of the necropolis.



Beliaus Hillfort

Beliaus Hillfort

Comparative analysis of satellite images



Satellite image from 2022.

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Satellite image from 2025.
Trenches and soil dumps are visible
in the buffer zone and directly
on the site.

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Beliaus Hillfort

Comparative analysis of satellite images



*Satellite image as of 2025.
Trenches and soil dumps are visible
in the buffer zone and directly
on the site.*

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*Designation of defensive structures
and equipment visible in the 2025 image.*

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Beliaus Hillfort

Comparative analysis of satellite images



Areas of illegal archaeological excavations and exploration conducted after 2014.

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Designation of defensive structures, visible in the 2025 image.

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Beliaus Hillfort

Comparative analysis of satellite images



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DAMAGE TO THE SITE AS A RESULT OF THE CONSTRUCTION OF RUSSIAN MILITARY FACILITIES

1. Internal objects of the monument that have been damaged: Northern farmstead

Type of damage:

installation of a tent/canvas shelter inside the estate building.

Degree of damage:

moderate, probable removal of stones from the walls when using them as a “levee” for the tent/canvas shelter.

Timeframe of works:

2022–2025

Context and significance of the site: nature of losses

The buildings in the northern part of the northern farmstead of the Beliaus hillfort date back to the period of the last economic boom of the Chersonese fortress. This part of the estate was built during its expansion in the third quarter of the 3rd century BC. The buildings had economic and auxiliary functions and were attached to the stone defensive wall.



The authenticity of the northern buildings of the Northern Estate has been lost due to local mechanical interference with the stone masonry, which probably caused the stones to fall out of the walls and partially destabilized the structures of the buildings erected during the expansion of the fortress in the third quarter of the 3rd century BC.

2. Damaged internal objects of the site: Western part of the late Scythian settlement

Type of damage:

construction of earthen fortifications (caponier, trenches).

Degree of damage:

partial damage and complete destruction of the cultural layer, including closed complexes, stone structures and utility pits.

Timeframe of works:

2022–2025

Context and significance of the site: nature of losses

Residential and utility buildings dating to the Scythian phase of the site (second century BC–first century AD) have been identified in the adjacent western sector of the Beliaus hillfort. Finds dating to the ninth–tenth centuries AD were recorded in the upper cultural layers. The investigated areas of the adjoining western territory were occupied primarily by utility complexes featuring bell-shaped pits. Construction in this zone appears to have been irregular, and no evidence of systematic spatial planning has been identified to date.



The cultural layer of the western part of the Late Scythian settlement has been extensively disturbed, with some areas partially damaged and others completely destroyed. In particular, closed archaeological complexes, stone-built structures and utility pits have been lost, resulting in a disruption of the site's stratigraphy and significantly limiting the potential for reconstructing the character of settlement organization and economic activity during the 2nd century BC–1st century AD.

3. Internal objects of the site that have been damaged: necropolis

Type of damage:

construction of earthen fortifications (caponiers), placement of military equipment.

Degree of damage:

partial damage and complete destruction of the necropolis's underground crypts.

Timeframe of works:

2022–2025

Context and significance of the site: nature of losses

The Beliaus grave field is a Scythian monument. The burial structures are represented by earthen and stone crypts, undercut and flat graves, as well as graves with ledges. A distinctive feature of the burial rite was the use of crypts for multiple burials (up to 30 in one crypt), which is characteristic of the late Scythian population. The burial inventory of the necropolis corresponds to late Scythian monuments and has numerous parallels with the materials of the necropolis of Neapolis Scythica.



The earthen crypts of the Beliaus necropolis have been lost (partially damaged and, in some places, completely destroyed), which has led to the destruction of multiple-use burial complexes, loss of archaeological context and, possibly, risk of loss or uncontrolled movement of part of the burial inventory.

Trenches line

See the detailed
model here:



Tent constructions

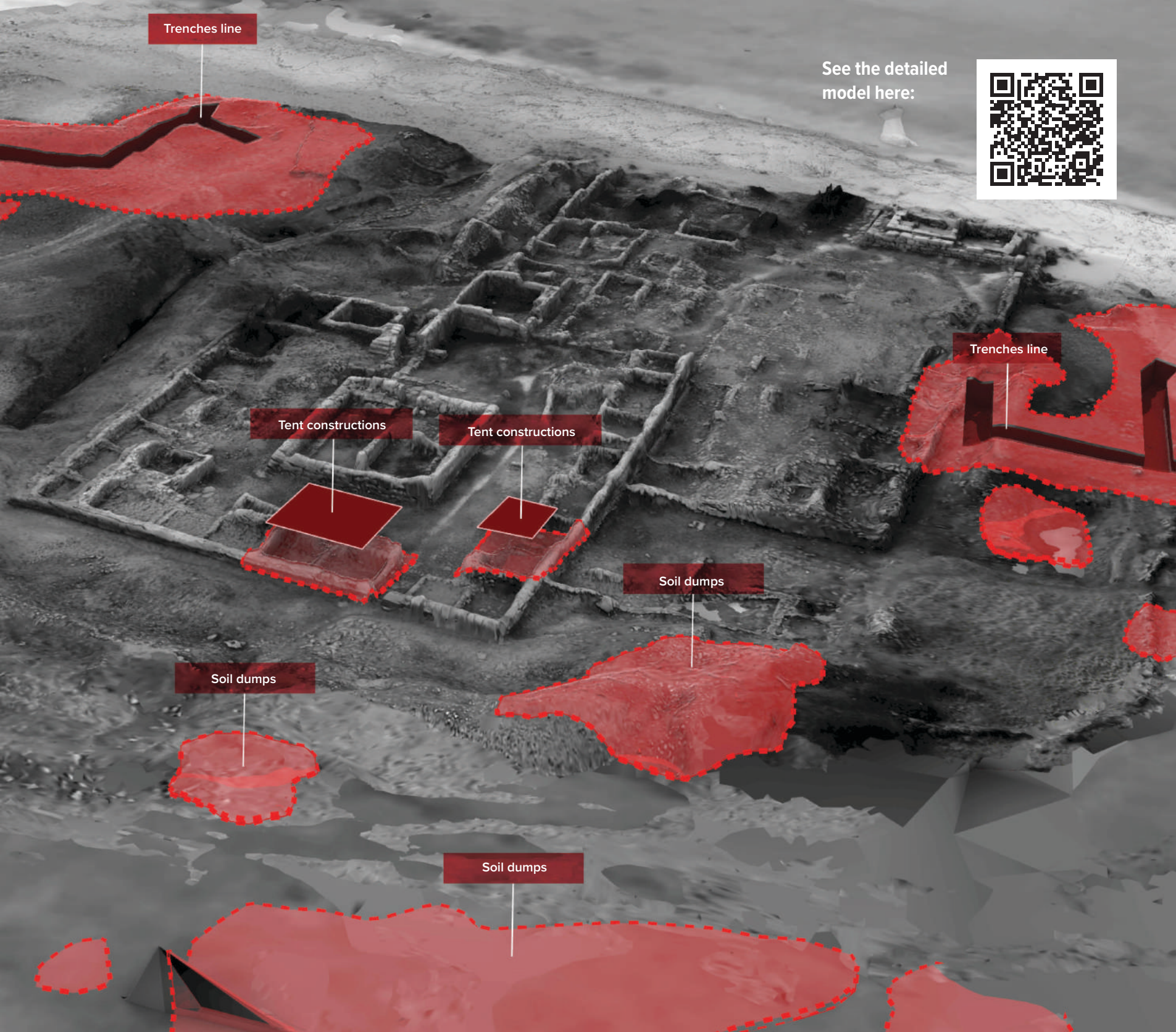
Tent constructions

Trenches line

Soil dumps

Soil dumps

Soil dumps





EXPERT ASSESSMENT OF ENGINEERING AND FORTIFICATION MEASURES TAKEN BY RUSSIAN ARMED FORCES

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(2017–2023)

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The fortification of positions by Russian units in the western part of the Autonomous Republic of Crimea is being carried out with the objective of increasing the effectiveness of all types of weapons and military equipment, as well as enhancing the protection of personnel and facilities against all anticipated means of attack.

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An analysis of the available information and observable indicators of the adversary's engineering activity demonstrates a systematic build-up of fortification works by units of the Russian army at all the identified sites in the western part of the Autonomous Republic of Crimea.

These measures are comprehensive in nature and aimed at establishing a sustainable defensive posture, taking into account the contemporary conditions of armed conflict, the development of precision-guided weapons and the likelihood of active operations by the Defence Forces of Ukraine in the coastal zone.

This material is an expert assessment prepared on the basis of an analysis of engineering, tactical and camouflage-related indicators and is intended for use in analytical and briefing materials.

The available information indicates the construction of platoon strongpoints (terrain areas prepared for defensive operations, equipped with engineering structures and occupied by a platoon for the execution of a combat task), as well as combat positions of mechanized squads, including prepared communication trenches.

The use of camouflage of combat formations, concealment, deception and demonstrative actions cannot be ruled out. These activities are aimed at eliminating or reducing demasking indicators characteristic of military equipment, weapons and their deployment locations (firing positions, command-and-observation posts); at creating false firing positions with mock-ups of artillery and equipment; and at conducting demonstrative actions, which necessitates detailed follow-on reconnaissance.

Given the terrain and soil composition, the use by Russian units of the OZ-1 entrenching charge during the fortification of these positions cannot be ruled out. The OZ-1 is designed for the explosive construction of individual rifle trenches, the excavation of trenches for tanks and combat vehicles, and the creation of shelters for personnel and transport vehicles in frozen or hard soils.

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The altered conditions of armed conflict, the refinement of forms and methods of warfare, the emergence and widespread use of precision-guided weapons, and the adoption of advanced firepower assets, reconnaissance systems, and automated command-and-control systems compel the Russian Federation to undertake timely engineering preparation and camouflage of combat formations, to comply with the requirements for effective fortification of units, and to potentially carry out mining of coastal areas.

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Further build-up of coastal fortification remains likely with the aim of reducing losses of personnel, weapons and equipment in the event of a possible advance or fire engagement by Ukrainian forces toward the western coast of the Autonomous Republic of Crimea, despite the historical value of these areas.

Expert conclusion

Taken together, the analyzed factors indicate that the engineering and fortification measures undertaken by Russian units along the western coast of the Autonomous Republic of Crimea should be assessed as deliberate preparation for prolonged defense, oriented toward countering amphibious landings, ground breakthroughs or fire effect from sea and air. The nature of the works, the probable use of explosive means for engineering preparation and the active employment of camouflage, deception and demonstrative actions indicate the adversary's intention to:

- 1 reduce the effectiveness of reconnaissance;
- 2 complicate the identification of the actual defensive configuration;
- 3 gain time for maneuver and regrouping of forces, etc.

In view of the foregoing, the specified area requires continuous, multi-level follow-on reconnaissance, dynamic comparison of engineering indicators and the consideration of potential mining of the coastal strip in the planning of further actions.



LEGAL ASSESSMENT

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Violations committed by the Russian Federation against Ukraine's cultural heritage in occupied Crimea entail two principal dimensions of responsibility. **The first is the subject-based dimension**, which concerns the question of whose responsibility is at issue—that of Russia as a state or that of individual Russian officials and members of the armed forces who enable, order or otherwise facilitate these violations.

The second is the substantive (thematic) dimension, which relates to the substantive characterization of violations against cultural heritage, namely through:

- a) broader violations involving property and civilian objects;
- b) “specialized” violations directed specifically against cultural property, such as its destruction or looting;
- c) the interrelationship between attacks on cultural heritage and wider violations of international humanitarian law and international human rights law, including violations of the rights to education and of access to culture, even during armed conflict.

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The violations against Ukraine's cultural heritage documented in this and numerous other analytical studies¹ are so targeted, systematic, unpunished and often explicitly sanctioned by central or occupation authorities that they allow us, with a high degree of confidence, to draw conclusions regarding both Russia's state responsibility and the individual criminal responsibility of the persons involved.

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International law clearly provides that, as an occupying power, Russia has a duty to maintain public order and civil life in the territories under its temporary control to the fullest extent possible.² Any alteration of the authentic national legal framework is permissible only insofar as it serves the welfare of the occupied population.³ An occupying power merely administers public immovable property, while preserving its integrity and value.⁴

Under the Hague Conventions of 1899 and 1907, which remain in force and are binding upon both Russia and Ukraine, cultural, religious and historical institutions and property are treated as private property.⁵ Any appropriation, damage, illicit movement or destruction thereof is prohibited and entails criminal liability and an obligation to provide compensation.⁶

Customary international law and treaty obligations binding on both Russia and Ukraine further require that cultural property in occupied territory be administered in close cooperation with the state to which it belongs.⁷ Only in cases of imperative necessity, involving an immediate threat to cultural property and an objective impossibility of coordination with the competent national authorities, may an occupying power adopt exceptional protective measures to preserve cultural property.⁸ However, even in such a scenario, the occupying power must restore interaction with, and follow further guidance from, the state to which the cultural property belongs as soon as possible.⁹

Customary and treaty-based international law also categorically prohibits the use of cultural property in support of military operations.¹⁰ The deliberate, targeted, repeated and ongoing violations of this rule by the Russian Federation, as documented in this publication, manifest themselves in three interrelated ways:

- 1 Damage to or destruction of monuments, knowingly authorized in order to strengthen fortification positions.
- 2 The likely looting and movement, including cross-border, of archaeological finds. Russia may argue that it is not a party to the Second Protocol to the 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict, which provides detailed regulation of the prohibition of archaeological excavations and the decontextualization of artefacts in occupied territory.¹¹ However, Russia's non-participation in this treaty does not in any way legitimize its conduct. Firstly, as noted above, other treaties binding upon Russia, as well as customary international law, prohibit the destruction, appropriation or removal of cultural property.¹² Secondly, many provisions of the Second Protocol reflect already well-established customary norms prohibiting arbitrary archaeological excavations and decontextualization initiatives in situations of occupation.¹³
- 3 The transformation of cultural property into a form of "cultural" human shields. Civilian objects enjoying special protection—such as religious buildings or historical monuments—may lose or see their protection weakened if they are used for military purposes, for example, to quarter troops, conduct attacks or shield military assets. This constitutes a "cultural" analogue of human shielding, which is prohibited under international law and constitutes a war crime.¹⁴ Russia has resorted to such practices systematically since the occupation of Crimea.¹⁵ By doing so, the occupying authorities deliberately place Ukraine before a difficult ethical and military-strategic dilemma: even where protection has been weakened or lost due to military use by Russia, Ukraine will continue to seek alternative military options in order to avoid attacking cultural property or to minimize the consequences of such attacks.

Finally, Russia's violations against Ukraine's cultural heritage in Crimea are closely intertwined with broader rights of the civilian population, which the occupying power is obliged to ensure, including the right to education and the right of access to one's own culture.¹⁶ These issues were partially addressed by the International Court of Justice in the case concerning alleged violations by Russia of the International Convention on the Elimination of All Forms of Racial Discrimination in occupied Crimea.¹⁷ In one of its provisional measures orders, the Court emphasized that Russia must ensure proper functioning of schools, media environment and local self-government, particularly for the Crimean Tatars.¹⁸

Genuine implementation of these requirements is impossible without the ability to use Ukrainian and Crimean Tatar languages without fear, and without access to Ukrainian and Crimean Tatar cultural heritage, properly preserved and presented in a nuanced and critical context.

Russia's policy towards Ukrainian and Crimean Tatar cultural heritage in occupied Crimea has not changed. On the contrary, the dynamics documented and analyzed in this publication demonstrate a pattern of violations encompassing wilful appropriation, destruction, decontextualization, unauthorized removal and the systematic use of cultural property for military purposes. These acts constitute a solid basis for establishing Russia's state responsibility and the individual criminal responsibility of its officials for violations against Ukraine's cultural heritage.

REFERENCES

- 1 Evlien Campfens, Andrzej Jakubowski, Kristin Hausler & Elke Selter. With a contribution of: Kateryna Busol, Elmira Ablyalimova-Chyihoz, Dmytro Koval & Denys Yashnyi, Research for CULT Committee - Protecting cultural heritage from armed conflicts in Ukraine and beyond, March 2023, c. 93-101 [https://www.europarl.europa.eu/RegData/etudes/STUD/2023/733120/IPOL_STU\(2023\)733120_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2023/733120/IPOL_STU(2023)733120_EN.pdf)

Kateryna Busol, Alina Frolova, Cultural Heritage as an Element of National Security: the Crimea Lens, Centre for Defence Strategies, March 2021, c. 8-12. https://drive.google.com/file/d/1CvOjDnEiq9CplxMniG-_oC-3kxGSYcqV/view.
- 2 Convention (IV) respecting the Laws and Customs of War on Land and its Annex: Regulations respecting the Laws and Customs of War on Land, 18 Oct 1907, Art. 43 https://zakon.rada.gov.ua/laws/show/995_222#Text.
- 3 Ibid., Art. 43, 46.
- 4 Ibid., Art. 53, 55, ICRC, International Committee of the Red Cross, Customary International Humanitarian Law, Rule 51. Public and Private Property in Occupied Territory <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule51>.
- 5 Convention (IV) respecting the Laws and Customs of War on Land and its Annex: Regulations respecting the Laws and Customs of War on Land, 18 Oct 1907, Art. 56.
- 6 Ibid. Convention for the Protection of Cultural Property in the Event of Armed Conflict, 14 May 1954, Article 4(3). https://zakon.rada.gov.ua/laws/show/995_157#Text;

Protocol to the Convention for the Protection of Cultural Property in the Event of Armed Conflict, 14 May 1954, Art. I; International Committee of the Red Cross, Customary International Humanitarian Law, Rule 40. Respect for Cultural Property <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule40>, Rule 41. Export and Return of Cultural Property from Occupied Territories <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule41>.
- 7 Convention for the Protection of Cultural Property in the Event of Armed Conflict, 14 May 1954, Art. 5(1).
- 8 Ibid., Art. 5(2).
- 9 Ibid., Art. 5(2). Customary International Humanitarian Law, Rule 41. Export and Return of Cultural Property from Occupied Territories <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule41>.
- 10 Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 Jun 1977, Article 53(b) https://zakon.rada.gov.ua/laws/show/995_199#Text;

Customary International Humanitarian Law, Rule 38. Attacks against Cultural Property <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule38>, Rule 39. Use of Cultural Property for Military Purposes <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule39>.
- 11 Second Protocol to the Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict, 26 March 1999, Article 9(1)(b)–(c), 9(2) https://zakon.rada.gov.ua/laws/show/995_001-99#Text.
- 12 Convention (V) respecting the Laws and Customs of War on Land and its Annex: Regulations respecting the Laws and Customs of War on Land, 18 Oct 1907, Art. 56; Convention for the Protection of Cultural Property in the Event of Armed Conflict, 14 May 1954, Art. 4(3); Protocol to the Convention for the Protection of Cultural Property in the Event of Armed Conflict, 14 May 1954, Art. I; Customary International Humanitarian Law, Rule 40. Respect for Cultural Property <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule40>, Rule 41. Export and Return of Cultural Property from Occupied Territories <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule41>.
- 13 UNESCO, Protection of Cultural Property: Military Manual, 2024, §§ 206–212 <https://unesdoc.unesco.org/ark:/48223/pf0000388298>.
- 14 Geneva Convention (III) relative to the Treatment of Prisoners of War, 12 Aug 1949, Art. 23; Geneva Convention (IV) relative to the Protection of Civilian Persons in Time of War, 12 Aug 1949, Art. 28; Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 Jun 1977, Art. 51(7); International Committee of the Red Cross, Customary International Humanitarian Law, Rule 97. Human Shields https://ihl-databases.icrc.org/en/customary-ihl/v1/rule97#Fn_C7C1EC06_00001.
- 15 “Putin Is Not Concerned About War: ‘We Are Not Going to Fight, Except to Protect People’,” Ukrainska Pravda, 4 March 2014 <https://www.pravda.com.ua/rus/news/2014/03/04/7017522/>.
- 16 Geneva Convention (IV) relative to the Protection of Civilian Persons in Time of War, 12 Aug 1949, Art. 24, 50, 94, 142; International Covenant on Economic, Social and Cultural Rights, 16 Dec 1966, Art. 13, 15.
- 17 International Court of Justice, Application of the International Convention for the Suppression of the Financing of Terrorism and of the International Convention on the Elimination of All Forms of Racial Discrimination (Ukraine v. Russian Federation) <https://www.icj-cij.org/case/166>.
- 18 Iryna Marchuk, Unfulfilled Promises of the ICJ Litigation for Ukraine: Analysis of the ICJ Judgment in Ukraine v Russia (CERD and ICSFT), EJIL: Talk!, 22.02.2024 <https://www.ejiltalk.org/unfulfilled-promises-of-the-icj-litigation-for-ukraine-analysis-of-the-icj-judgment-in-ukraine-v-russia-cerd-and-icsft/>.



The Crimean Institute for Strategic Studies (CISS) is a non-governmental organization founded in Kyiv (Ukraine) in 2014. It focuses on examining the state of protection of cultural heritage sites in the temporarily occupied territories of Ukraine and identifying the main trends in this area through the prism of international humanitarian law. The CISS creates critical, holistic and fact-based content that ensures the right to truthful, unbiased and up-to-date information about the indigenous peoples of Ukraine in the historical, cultural and political dimensions, as well as about violations against cultural heritage in the temporarily occupied territories.



The Center for Spatial Technologies (CST) is a multidisciplinary research organization founded in Kyiv in 2018. The team uses innovative spatial analysis and visualization approaches to explore a variety of topics, developing methods that synthesize and combine data into dynamic spatial models. These models function as research platforms, revealing relationships and contexts that might otherwise go unnoticed. Since 2022, the CST team has focused on analyzing the consequences of the Russian invasion of Ukraine, including crimes against civilians and destruction of infrastructure, as well as crimes against cultural heritage.



