



BEYOND TERRITORY

Transforming the frontlines, defensive structures and battlefields
of the Russo-Ukrainian War
into a landscape of peace.

REPORT
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Landscape Architecture Msc 2025



Figure 1-1 A Ukrainian trench in Donetsk, east Ukraine, in March 2023
Source: [businessinsider.com](https://www.businessinsider.com), 2024

REPORT

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MOTIVATION

As a Taiwanese person situated on the fringes of political sensitivity and questions of identity and land, I find myself deeply concerned about the ongoing Russo-Ukrainian War. Witnessing the profound scars that war inflicts upon the land evokes a deep sense of sorrow, especially in a place that carries countless memories. This situation resonates with my understanding of the Ukrainian people, who have endured centuries of border instability throughout European history. Their struggles with land identity, personal identity, ethnic identity, and the pursuit of social cohesion reflect a profound yearning; yet, they are also accompanied by fears of even worse conditions.

However, amidst these challenges, the shared love for the natural and cultural environments of Ukraine among diverse groups emerges as a common language. A suitable landscape environment can stabilize hearts and possesses the power to heal, providing individuals with the courage to face an uncertain future.

Thus, this topic represents not only a landscape experiment but also a journey of personal spiritual growth for me. It invites me to reimagine post-war territories, borderlands, and landscapes, confront the realities of traumatic landscapes, and engage in the processes of restoration and healing. Through this exploration, I reaffirm my connection to the land of my birth and believe that landscape architects can contribute to global peace.

ABSTRACT

The Russo-Ukrainian War has had a profound impact on the land, people, society, and daily life in Ukraine, particularly in the frontline areas where battlefields and defensive structures stretch across the north to the south. As the war continues, this strip of land bears the scars of conflict, featuring devastated landscapes, abandoned agricultural fields, and an environment that feels insecure, sorrowful, and hopeless. This project seeks to explore the reimagination of war-torn territories and the concept of a neutral landscape, interpreting battlefields to create a meaningful and reflective space for remembrance and peace.

Situated at the crossroads of Eastern Europe and Asia, Ukraine has long been a crucial border area. The research field focuses on identifying the landscape characteristics of the borderscape, examining the fragmented and traumatized landscape resulting from conflicts and defensive structures, in search of potential pathways to healing.

Inspired by case studies and precedents, the design proposes a neutral zone that aims to create experiential spaces that narrate the “stories of this border area.” The military artifacts are subtly transitioned, providing memorial spaces while restoring the natural ecosystem and agricultural activities. An elevated pathway gently weaves through these experiential sites along the entire 3,000 km stretch of land.

This project contributes to the broader discourse on the transformation of war landscapes by incorporating the significance of borderscapes with the restoration of the landscape. It offers a sense of comfort to individuals and society dealing with war trauma, serving as a reflection and reminder for the future.

Key words:

Landscape architecture, War landscape, Borderscape, Traumascape, Palimpsest, The Russo-Ukrainian War, Frontline defensive structures and battlefield, Trenches, Terra Nullius, Neutral Landscape, Landscape of peace, The Cultural Route, Land healing, Remembrance, Scars interpretation, Spatial experience

Position: More than Restoration

Many believe that the remnants of war should be left to the natural process of time for restoration. While this may be one approach, it does not fully embrace the responsibilities we have. I believe that the role of landscape architects extends beyond simply restoring damaged land; it also involves the preservation of history, memory, emotional resonance, and the fostering of hope and reflection. The importance of preserving history and memory lies in the fact that these battlefields are not only witnesses to past conflicts but also the starting points for future rebuilding and revitalization.

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INTRODUCTION

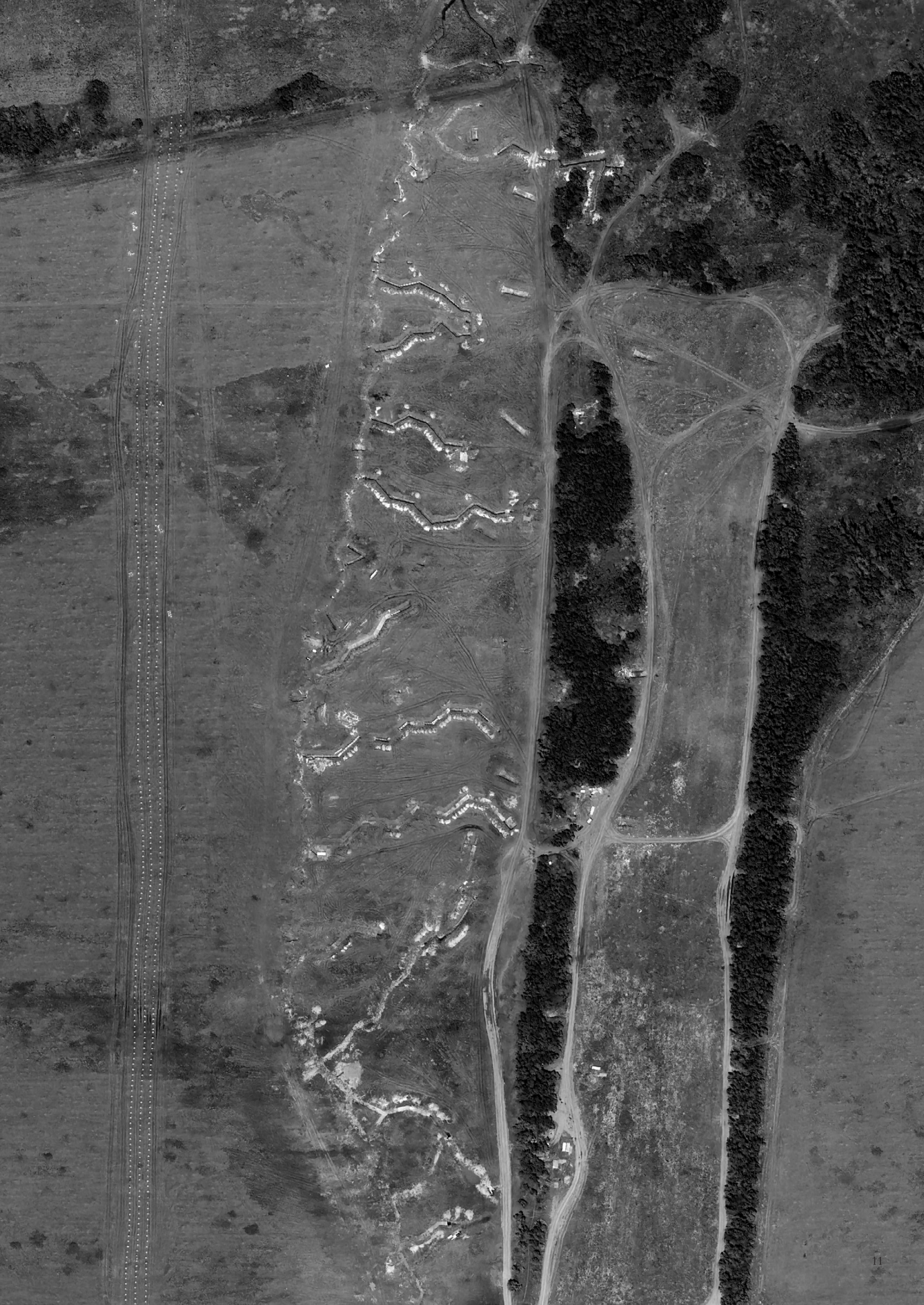
This chapter introduces the impact of the Ukraine-Russia war, which began in February 2022, on Ukraine's landscapes and urban environments, as well as the scars left by the conflict. It presents the perspective of landscape architecture and offers a brief overview of the thesis project.

An aerial photograph of a landscape in Ukraine, showing a river, a road, and a large area of destruction. The river flows vertically through the center of the image, with a road running parallel to it on the left. The surrounding land is dark and appears to be heavily damaged or deforested. There are some small, light-colored patches that might be remnants of buildings or other structures. The overall tone is somber and desolate.

Since the onset of the Russo-Ukrainian war in February 2022, the landscapes and urban environments of Ukraine have been profoundly impacted. As landscape architects, we observe how conflict destroys urban structures and transforms landscape patterns and natural ecosystems.

Battlefields and fortifications, extending from the north to the south, have evolved into traumascapes, characterized by visible fractures and scars upon the land. This devastation not only dismantles the once-vibrant vistas of the "breadbasket of Europe," but also disrupts the interconnections within urban structures and blue-green ecosystems, undermining the continuity of history and culture. The widespread displacement of populations necessitates a reevaluation of borders, territory, and identity, resulting in diminished community cohesion and significant psychological trauma.

In this context of upheaval, ongoing conflict and uncertainty further complicate recovery efforts, rendering time a critical factor in the challenges of restoration and transformation. This intricate complexity impedes the healing of these scars and calls for rigorous reflection on the landscape, urging us to envision a future where renewal and harmony can arise from the remnants of devastation.



A quote from a Ukrainian refugee

" The sky belonged to them. " , referring to Russia.

This quote powerfully highlights
the perspective of those living in a
region constantly affected by war.



Figure 1-4 A trench in position near Bakmut, Donetsk region
Source: en.lb.ua, 2024

THE RUSSIAN DEFENSIVE STRUCTURES

Since the outbreak of the war in 2022, Russia has constructed numerous defensive fortifications as frontline measures to strengthen its control over occupied territories. These structures stretch approximately 6,200 kilometers from Russia to northern Ukraine to southern Crimea, fundamentally altering the original landscape and leaving significant marks on the land.

This thesis will focus on the frontline defensive structures in Ukraine, which span approximately 3,112 kilometers. The entire defense system consists of six key components: anti-tank ditches, dragon teeth obstacles, minefields, trench systems, and bunkers. Among these, the trench system is the largest and most essential element.



Figure 1-5 Set of defensive structures images on the frontline

Source: [businessinsider.com](https://www.businessinsider.com), 2024/ militaryni.com, 2024/ www.scmp.com, 2024

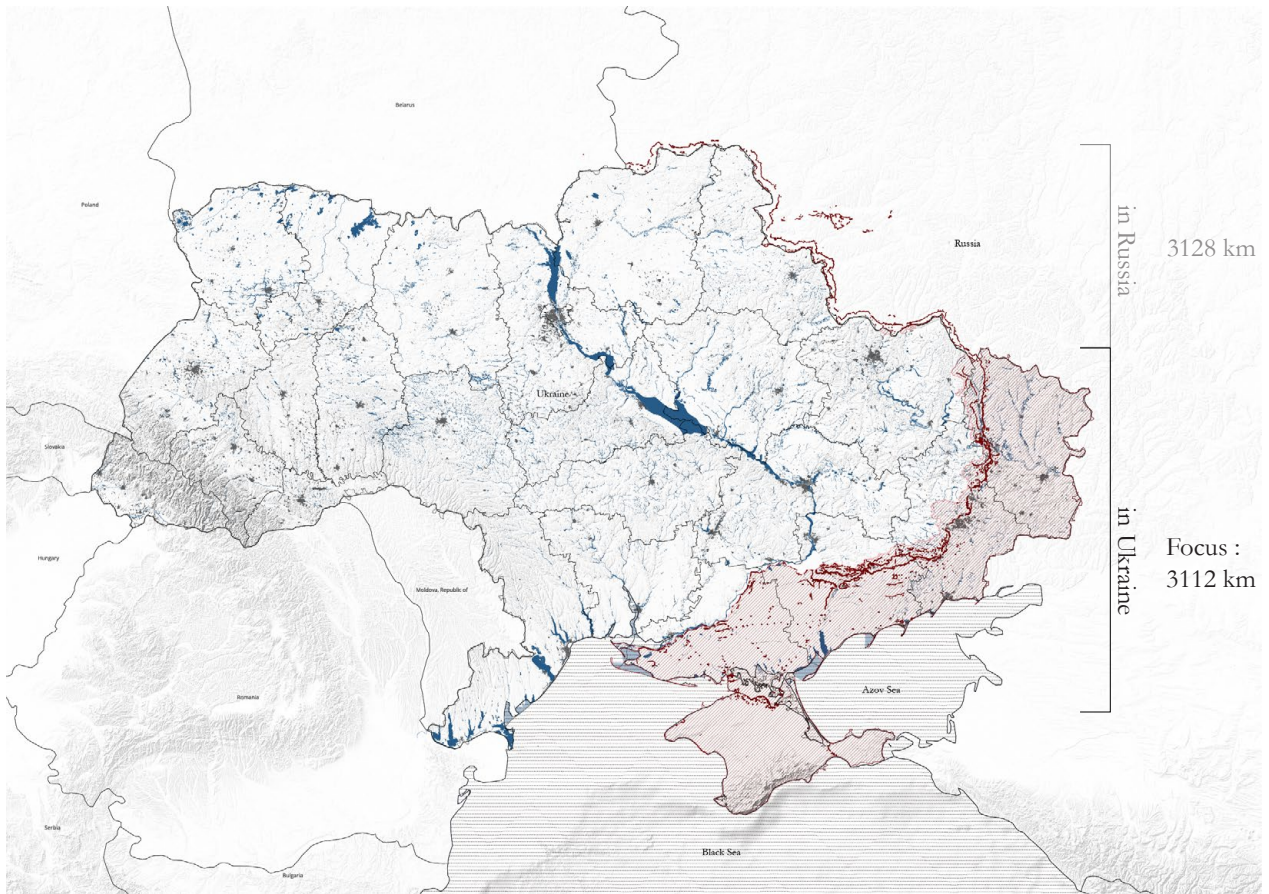


Figure 1-6 The defensive structures of The Russo-Ukrainian War
 Source: drawn by author, information from International Crisis Group, 2024

occupied territory
 trenches

0 50 100 200km N

THE TIMELINE OF WAR

Most of the frontline defensive structures were constructed by Russia between the end of 2022 and July 2023, particularly in the areas where fighting was most intense.

These areas include the Zaporizhzhia, Chernihiv, and Kharkiv regions, and the fortifications were built to reinforce the occupied territories.

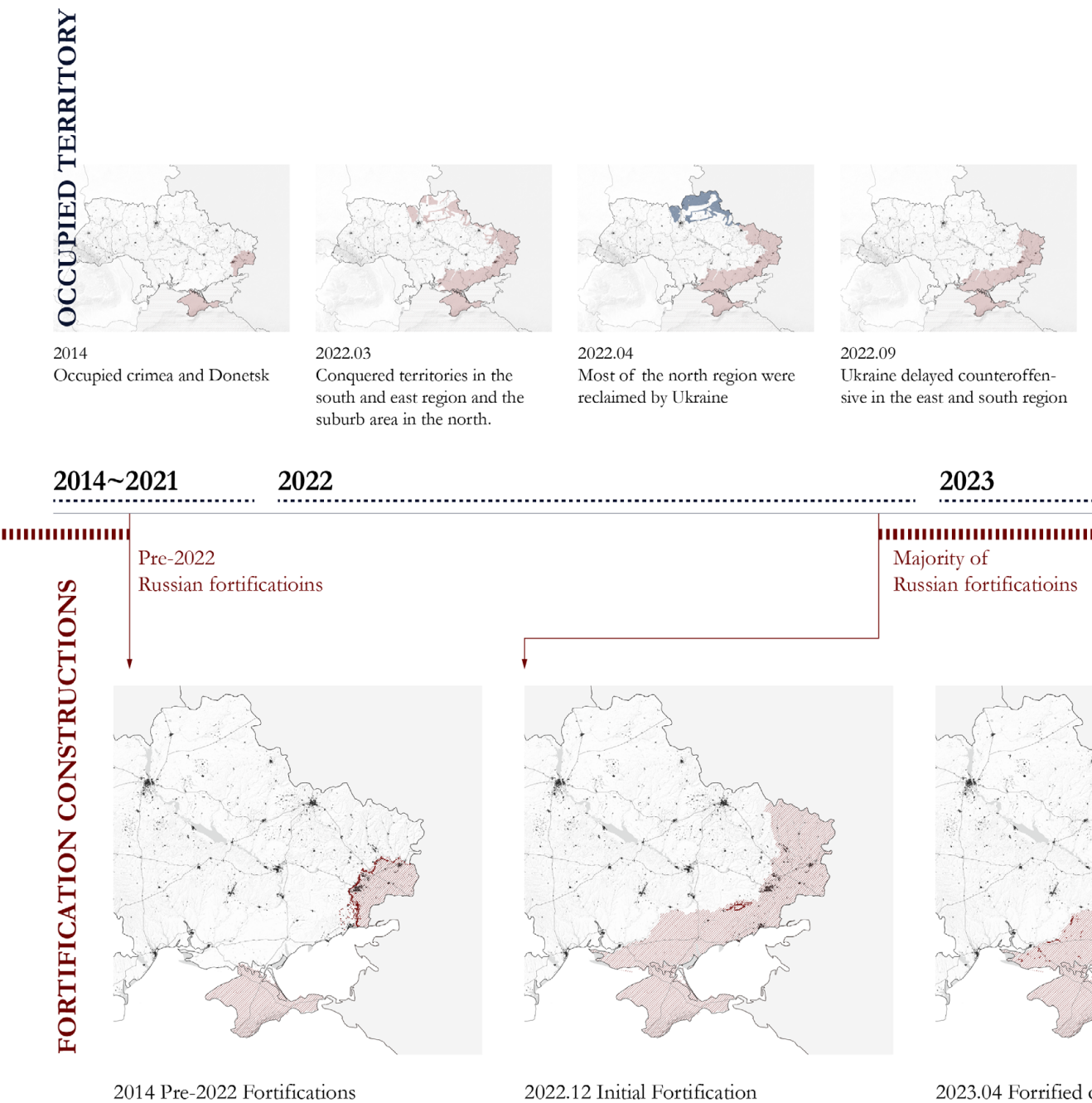
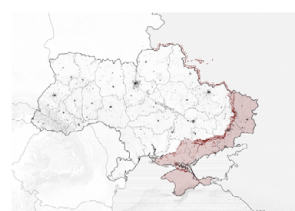
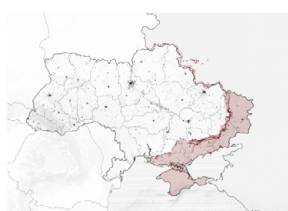


Figure 1-7 The timeline of The Russo-Ukrainian War
Source: drawn by author, information from International Crsis Group, 2024



2023.06
Russia fortified the occupied area



2024.05
Russia attacked the second biggest city, Kharkiv



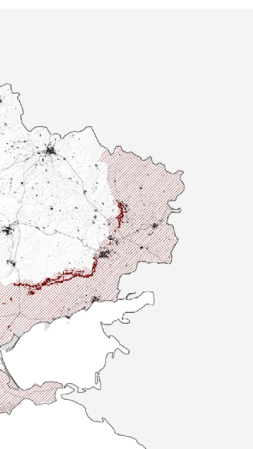
2024.08
Ukraine invasion of Kursk region, Russia



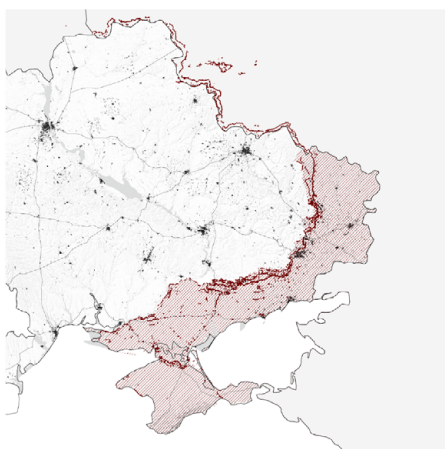
2024.10
Ukraine evacuated the important city in the north-east city near Oskil River valley

2024

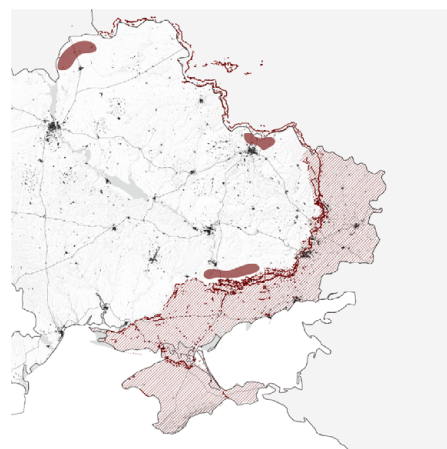
FUTURE



cities and primary roads



2023.07 Russia had fortified occupied area



2024.04 Ukraine defensive lines
New trenches were built in Zaporizhzhia region, Chernihiv region and Kharkiv region.

1

THEORETICAL FRAMEWORK

This chapter explores the two core theoretical foundations of "borderscapes" and "traumascapes." It outlines the development of the theoretical concepts, the research questions, and the design objectives, providing clarity on the methodology.

PROBLEM STATEMENT

The Russia-Ukraine war, which began in February 2022, has left huge and deep wounds on the landscape, stretching from the north to the south of Ukraine, turning the frontlines, battlefields and defensive structures, into “traumascapes“.

These trenches, like open wounds in the land, devastate natural ecosystems, disrupt infrastructure, and hinder agricultural activities, highlighting deeper border issues. Situated at the intersection of East and West, the people living in this region are constantly subjected to the experiences of war and psychological trauma.

The issues go beyond trauma landscapes to deeper border-related challenges. Feelings of insecurity, fear, and mourning are driving a desire for change, an outlet for expression, and a hope for a better future within a broader historical context.

The profound lessons of war shape landscapes and lives, necessitating reflection through the creation of memorial landscapes that foster historical awareness while balancing the restoration of landscapes and the interpretation of war remnants.

" How can the frontline areas, including defensive structures and battlefields of the Russo-Ukraine War, transform from scarred land into territories that reflect the palimpsest of the borderscape and convey a landscape of peace? "

Sub Questions:

1. What landscape characteristics arise in Ukraine due to its position at the cultural and geographical crossroads of Asia and Europe?
2. What are the physical remnants of the frontlines and the psychological effects on people from the Russo-Ukrainian War?
3. What are the perspectives on battlefields and the frontlines' defensive structures from war, particularly from the viewpoint of landscape designers?
4. How can the border zone be physically and visually perceived and experienced? Additionally, what elements should be presented to embody its history, present, and future?
5. How can the features of defensive structures be integrated into the landscape through design interventions, while still offering a sense of peace, tranquility, and reflection for people?

Outcomes:

- Identify the specific landscape characteristics and systems of the borderland of Ukraine.
- Examine the systems, structural properties, and characteristics of trauma landscapes.
- Understand the historical context of Ukraine's borders and propose a possible scenario and concept.
- Propose experimental landscapes and intangible programs that convey a narrative.
- Explore the transformation and materialization of the remnants of war.

Framework

"Borderscapes" and "traumascape" are the primary theoretical foundations of this project, as informed by the historical context and problem statement. The structure of this thesis follows a specific framework. It begins with a classification of borderscapes at a macro scale and progressively analyzes traumascape at a micro scale. Following this, predefined scenarios and perspectives are integrated, which leads to the development of the future borderscape concept and strategy. The thesis then includes an in-depth exploration of concrete spatial landscape design interventions. Several theoretical references support this framework.

Approaches

Several approaches were used in the project for understanding, analysis, and concept proposal.

- Literature study

To learn more about the background knowledge and current situation of the Russo-Ukrainian War and the historical context of Ukraine.

- Analysis: Borderscape

To identify the landscape characteristics of Ukraine's borderscape throughout history and map them as a palimpsest.

- Analysis: Traumascape

This analysis focused on mapping the destroyed ecological landscape, including the hydrological and urban context networks. To classify various layouts of defensive structures in different landscape types along the frontlines. To examine the collective memory and sensory experiences of soldiers, which were influenced by the diverse defensive elements.

- Precedent study

1. Review precedent studies from WWI to understand landscape transformation, potential design approaches, and the emotional resonance and spatial experiences derived from visiting these sites.
2. Examine precedent studies concerning the feasibility and appeal of establishing a free land, as a transition zone at the border. This included exploring strategy and design interventions that connect and narrate a themed zone, evoking reflections.

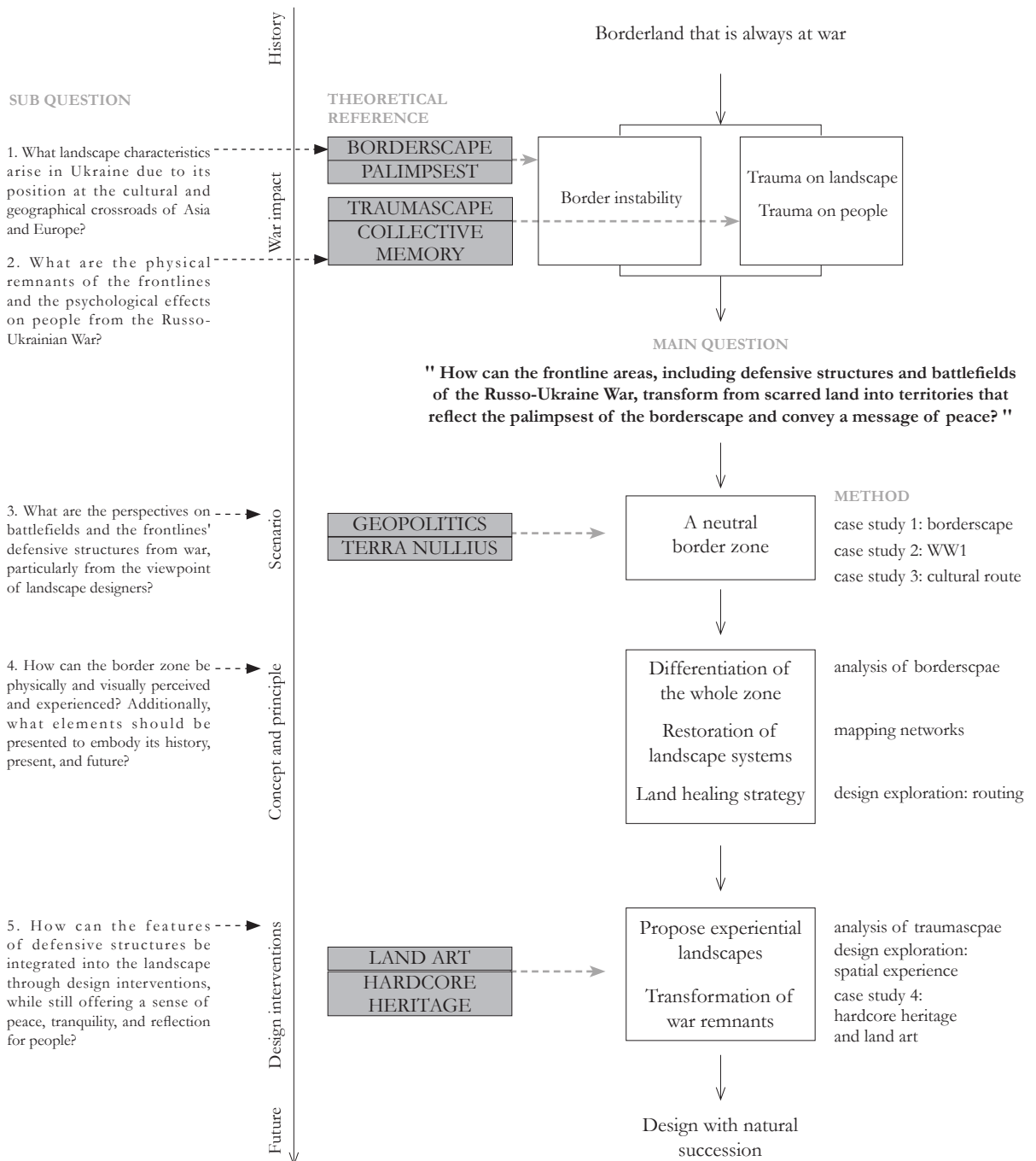


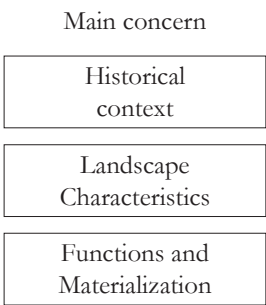
Figure 1-8 Methodological flowchart
Source: drawn by author

BORDERSCAPES

A "Borderscape" transcends the notion of fixed lines on a map as merely a military tool; it represents the dynamic and evolving characteristics that reflect the ecological, cultural, social, economic, and environmental experiences of people living in border areas.

It encompasses all the landscape factors within these environments, including the physical location and material aspects of a border, as well as the intangible practices that emerge in these spaces. These factors are the landscape characteristics shaped by natural topography, cultural practices, border functions, and architectural materials.

Borderlands are strongly supported by the idea of "landscape as palimpsest" due to the continuous rewriting of borders. The physical development of these spaces reflects the area's history. The so-called "scars" from the frontline defensive structures should be considered within the context of the border's existing characteristics.

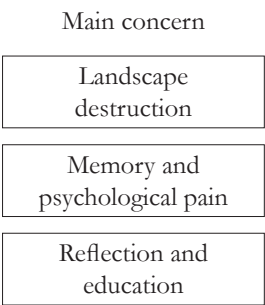


Brambilla, C. (2014). Exploring the critical potential of the borderscapes concept. *Geopolitics*, 20(1), 14–34. <https://doi.org/10.1080/14650045.2014.884561>

TRAUMASCAPES

Refer to an area that has been impacted by significant tragedies. The site reflects physical changes, such as the destruction of buildings or environmental degradation, but also carries psychological and emotional pain and memory.

Traumascapes act as crucial reminders of historical significance, fostering reflection, emotional engagement, and education about past lessons, all while seeking meaning and hope in the face of contemporary tragedies. Additionally, these locations possess a powerful appeal, drawing people from around the world who wish to understand the significance of the traumatic events that unfolded there.



Tumarkin, M. M. (2005). *Traumascapes: The power and fate of places transformed by tragedy*. Melbourne Univ. Publishing.

PALIMPSEST

Palimpsest thinking is one of the four key perspectives in the Delft Landscape Architecture Master track, alongside perception, process, and scale continuum.

Landscape can be viewed as a palimpsest, representing the layered stories that have unfolded over time. This includes the fundamental forms of the natural landscape, the structures, patterns, and materials of the cultural landscape, as well as the politics, society, and economy of the urban landscape. While these stories change over time, the form of the landscape reflects its origins, with traces that are sometimes implicit but always present.

The landscape architectural design aims to provide a thoughtful response to the previous layers and add a new layer to them. The transformation focuses not just on the physical or spatial forms but on making the landscape "readable" and expressive of its identity.

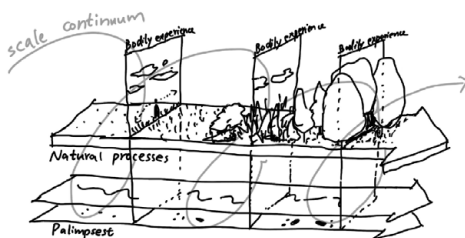


Figure 1-9 Four landscape perspectives
Source: drawn by Junhui Zhang, 2024

COLLECTIVE MEMORY

Collective memory refers to the shared recollections of a social group regarding a specific event. It reflects the historical values of society as a whole. After a war, when governments, communities and landscape architects create memorial sites, they often do so with a particular perspective in mind, using collective memory to influence the reconstruction or transformation of landscapes or buildings. However, memory is complex and dynamic, influenced by political, economic, social, educational, and other factors. The significance of these landscapes may change over time and depending on the context.

Therefore, memorial spaces created from a critical viewpoint or from the perspective of a specific affected country may not fully capture the complexity of collective memory. In essence, memorial spaces both reflect and shape collective memory. They should not only preserve or represent history but also create meaningful spaces or room for individual reflection and interpretation, generated by society, the public, and even soldiers, after encountering the memorial landscape.

GEOPOLITICS

Ukraine's geographical location holds significant strategic value, which is one of the key reasons for Russia's attack on the country. Situated in a central area of Eastern Europe, Ukraine has increasingly aligned itself with the West in recent years. Additionally, due to NATO's continuous expansions, Russia aims to use Ukraine as a defensive barrier. Justifying the invasion is part of Russia's strategy to ensure its national security.

The geopolitical landscape influences not only international relations but also land use, economic activities, the distribution of natural resources, and urban development within Ukraine. For instance, the fertile black soil plains in eastern and southern Ukraine, along with the country's abundant mineral and natural gas resources, have been heavily impacted by geopolitical dynamics, making them targets for exploitation.

TERRA NULLIUS

The term "terra nullius" refers to land that is not claimed by any party. This Latin expression dates back to the 16th century. Spain attempted to claim land in America despite the presence of people living on and using that land. Researchers argued that Spain did not gain legal rights to these territories simply through discovery. In reality, when a state or entity refers to land as terra nullius, it is often already occupied, either by a nation or a minority. However, this term has frequently been used to justify state occupation and colonization.

There are currently three territories sometimes regarded as terra nullius. These unclaimed areas exist due to boundary demarcation errors and transitional regions caused by changing river boundaries over time.

HARDCORE HERITAGE

Hardcore heritage can be viewed as a type of non-conservation way to preserve heritage, emphasizing historical significance and fostering appreciation. Through deliberate destruction, changes in context, and contradictory additions to existing heritage, trying to create tension, and discussion about the relationship between the present, past, and future of heritage. Interventions in hardcore heritage provide spatial experiences that stimulate imagination and interpretation, while also drawing attention to the surrounding landscape that may have previously gone unnoticed.

Bunker 599, a cultural heritage transformation by RAAAF|Atelier de Lyon in the Netherlands, is an essential example of hardcore heritage. It cuts through the existing structure and allows people to look at the surroundings, which is the World Heritage-nominated New Dutch Waterline.



Figure 1-10 Bunker 599 by RAAAF | Atelier de Lyon
Source: frontiersin.org, 2017

LAND ART

land art

Land art emerged in America in the late 1960s and early 1970s. It emphasizes the relationship between humanity and the land, moving beyond aesthetics, commercialization, and institutionalization. Land art transcends geographical borders, encouraging people to develop a deeper understanding and appreciation of their surroundings, including nature, culture, and politics.

" The purpose of art is not to replicate reality, but to reveal the unseen truths of our existence. "

- Christo Vladimirov Javacheff



Figure 1-11 Running fence by Christo and Jeanne-Claude
Source: photographize.co

2

THE IMPACT OF WAR

This chapter examines the characteristics of the borderscape in Ukraine's history, and the destruction of the landscape caused by the Ukraine-Russia war on both regional and human levels, including the psychological impact.



Figure 2-1-1 European Russia after its gradual enlargement since 1462
Source: oldmapsonline



REWRITING THE BORDER AGAIN?

BORDERSCAPES PALIMPSEST

Borders through time

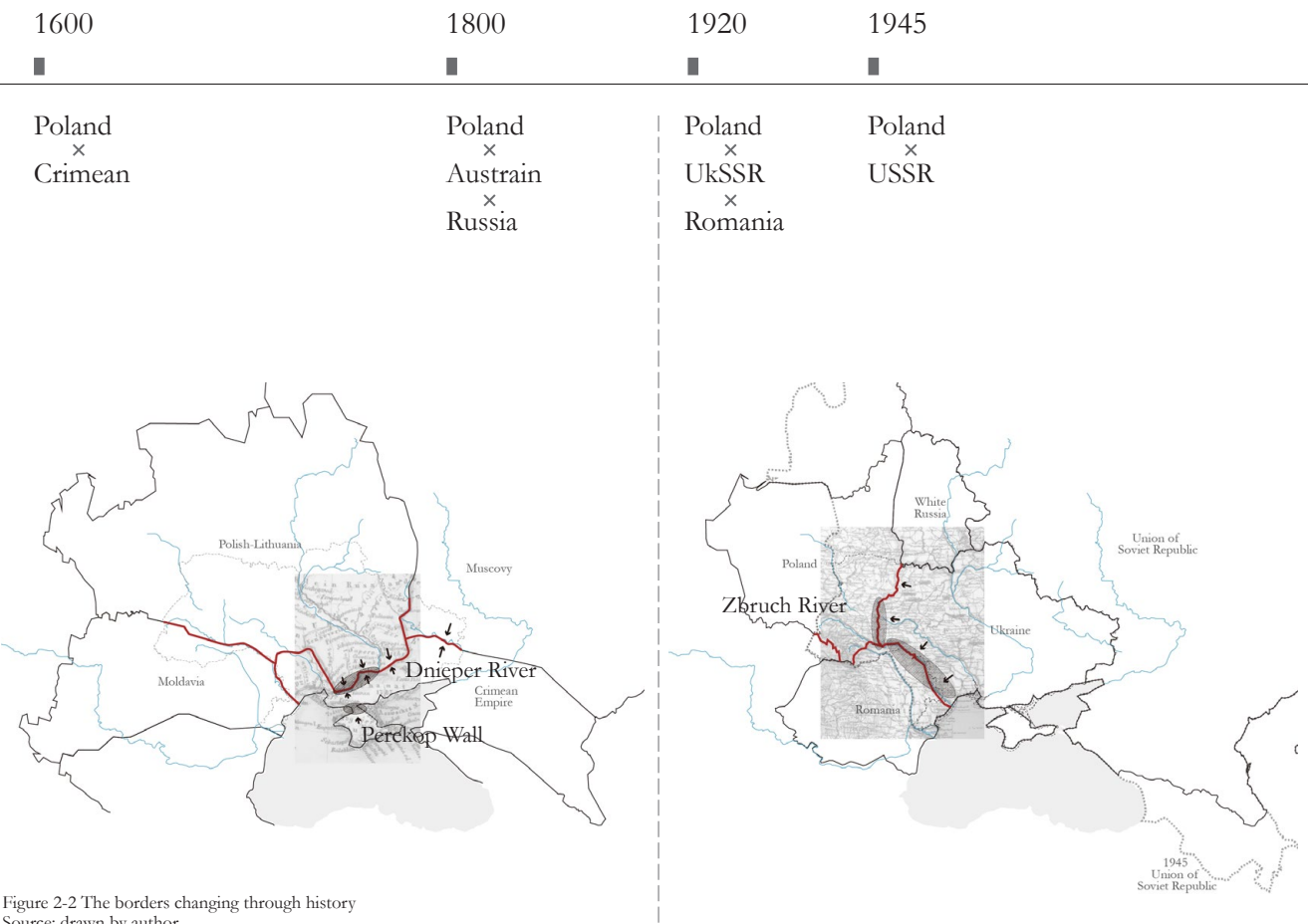


Figure 2-2 The borders changing through history
Source: drawn by author

Ukraine is situated at the edge of Asia and Russia. Since the 16th century, the borders have changed a lot under different empires and countries through time. Each borderscape has its own functions and characteristics. (For example, the border between Poland and Crimea in the 16th century was marked by a huge ditch, which still exists today.)

Since Ukraine became independent in 1994, its borders have become more diverse. Sometimes, they share similar agricultural practices with neighboring countries, sometimes there are trading connections, and sometimes there are physical barriers (like the Carpathian Mountains).

1994



Ukraine (independence)



2022



Russo-Ukrainian War



BORDERSCAPES PALIMPSEST

Borderscapes palimpsest

1600 Poland and Crimea

The border between Poland and Crimea in the 16th century was marked by a huge ditch, which still exists today.

Borders are not just barriers; they also serve as points of contact. For instance, there was a trade in slaves from Poland to the Ottoman Empire.



Figure 2-3 The fortification of Perekop
Source: perekop.org

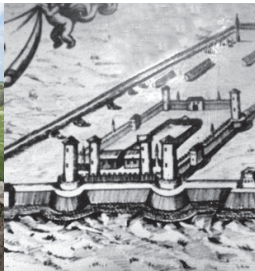


Figure 2-4 Historical drawing of the fortification of Perekop
Source: armgov.ru



Figure 2-5 The ditch of Perekop
Source: perekop.org



Figure 2-6 Historical drawing of the ditch of Perekop
Source: armgov.ru



Figure 2-7 Dnieper River
Source: www.freepik.com



Figure 2-8 Dnieper River 1667
Source: wikimedia

1600~1800



Figure 2-9 The border map in 1600~1800
Source: drawn by author

BORDERSCAPES PALIMPSEST

Borderscapes palimpsest

1920 Poland, UkSSR and Romania

The border partly followed the Zcruch River, with stones marking it to this day. The villages on both sides of the river shared similar cultural activities.

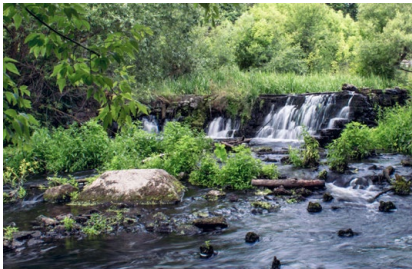


Figure 2-10 A concrete border sign of Zbruch River border
Source: dsnews.ua



Figure 2-11 The border of Ruusia and Austria-Hungary Zbruch River
Source: wikimedia



Figure 2-12 A bridge of Zbruch River border
Source: dsnews.ua



Figure 2-13 The border of Ruusia and Austria-Hungary Zbruch River
Source: wikimedia



Figure 2-14 Krintsilov village at Zbruch River border
Source: dsnews.ua



Figure 2-15 History photo of Krintsilov village
Source: dsnews.ua

1800~1994



Figure 2-16 The border map in 1800~1994
Source: drawn by author

BORDERSCAPES PALIMPSEST

Borderscapes palimpsest

1994 Ukraine (independence)

Since Ukraine became independent in 1994, its borders have become more diverse. Sometimes, they share similar agricultural practices with neighboring countries, sometimes there are trading connections, and sometimes there are physical barriers like the Carpathian Mountains. Today, the borderland between Ukraine and Poland is an important trading route connecting Asia and Europe.



Figure 2-17 The border with Russia Source: ukraina.ru



Figure 2-18 The border with Belarus-Pripyat wetland Source: savepolesia.org



Figure 2-19 The border with Romania-Carpathian Mountains Source: freepik.com



Figure 2-20 The border with Romania-Carpathian Mountains Source: freepik.com



Figure 2-21 The border with Hungary-Tisza River Source: newseu.cgtn.com



Figure 2-22 The border with Poland-trading road Source: businessinsider.com

1994~Current



Figure 2-23 The border map in 1994~Current
Source: drawn by author

BORDERSCAPES PALIMPSEST

Borderscapes palimpsest

To illustrate the evolution of the borderscape over time, this palimpsest map depicts the ongoing processes of expansion and retreat, conflict and surrender, as well as takeover and resistance—all of which narrate the story of this distinctive border region.

The frontline defensive structures from the Russo-Ukrainian War are represented by the pink lines on the map; these serve as relatively tangible evidence of historical conflict. In contrast, other border lines, while less visually prominent as physical objects, nonetheless embody the diverse landscape characteristics of the borderscape and convey the continuity of the region's historical significance as a borderland.

LANDSCAPE CHARACTERISTICS OF BORDERSCAPES

Borderscapes palimpsest

The four main characteristics I identify from the historical borderscapes are: border type (natural or artificial), form (material), function (barrier, contact, filter), and industrial activity (similar, related, different). (For example, in terms of function, borders are not just barriers; they also act as contact points, such as the trade of slaves from Poland to the Ottoman Empire in the 16th century. Plus, the borderland between Ukraine and Poland is now a key trading route from Asia to Europe.)

These characteristics will inform the analysis of the current frontline areas and support the further strategy of borderscape.

characteristics

BORDER TYPE

- Natural
- Artificial

FORM

- Architectural
- Material

FUNCTION

- Barrier
- Contact
- Filter

INDUSTRIAL ACTIVITY

- Similar
- Related
- Different

1600	1800	1920 1945	1994	2022			
■ ■ ■ ■ ■							
P O L A N D / C R I M E A N		P O L A N D / U K S S R	U K R A I N E (I N D E P E N D E N C E) / R U S S I A / P O L A N D / R O M A N I A / B E L A R U S				
Perekop wall	Dnieper River	Zcruch River	Agreculture area	Trading route	Carpathian	Lowland	
natural: huge ditch artiftiual: castle	natural: river	natural: river	artificial: fence	artificial: fence and roads	natural: mountain artificial: border markers	natural: Polesian lowland	
invisible: soil material: stones	invisible: water	material: stones and wood fences	material: steel	material: steel	invisible: mountain material: concrete	invisible: river plain	
barrier and contact (Crimean traded slaves from Poland to Ottoman)	barrier	barrier and filter (villages of both riversides)	barrier	barrier and contact (important trading route from asia to european)	barrier and filter (Euroregion Bug)	barrier and contact (ecological connection)	
related: trading	similar: agriculture	similar: agriculture	similar: agriculture	related: trading	similar: recreation	similar: agriculture	

Figure 2-25 The main landscape characteristics of borderscapes
Source: drawn by author



Figure 2-26 Agricultural fields peppered with artillery craters
Source: ifpri.org

A black and white photograph of a dry, cracked landscape. In the upper left, a large, gnarled tree trunk leans over the ground. The foreground and middle ground are filled with parched, cracked earth and sparse, dry vegetation. The overall tone is somber and desolate.

TRAUMA ON LANDSCAPE

LANDSCAPE CHANGE

Current landscape

The landscape has changed significantly, from the once vibrant "breadbasket of Europe" to a landscape of war



Figure 2-27 The landscape at war
Source: drawn by author



Figure 2-28 The landscape before war
Source: drawn by author

DESTRUCTION OF SPATIAL SYSTEMS

Ecological network

The ecological network, which includes forests, national parks, and wetlands, is disrupted by defensive structures, shelling and land burns.



Figure 2-29 Set of damaged landscape and nature images
Source: the washington post, 2022/business insider, 2024
the san diego union-tribune/

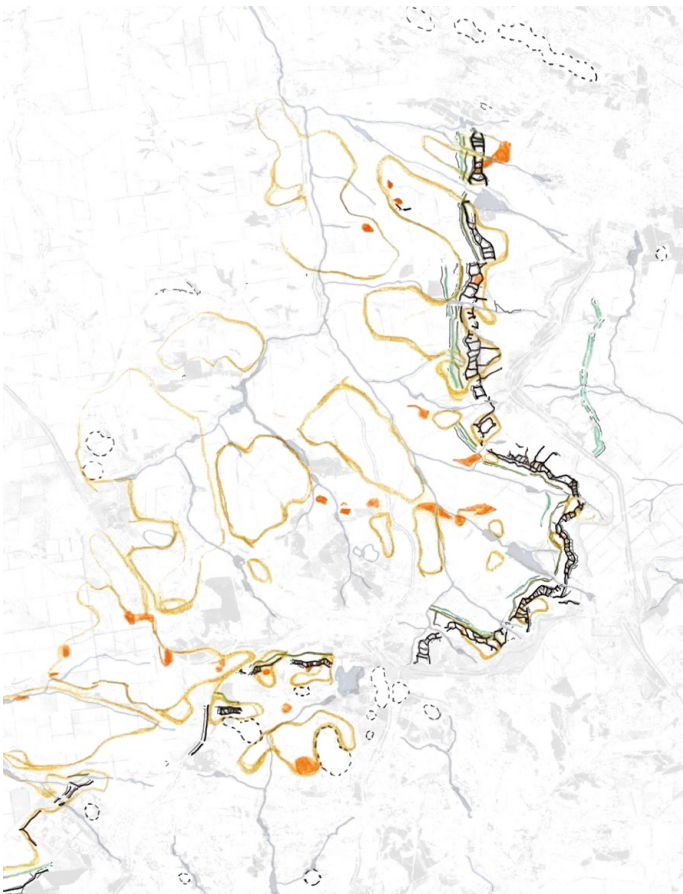


Figure 2-30 The varied damage on the frontline near Holivka
Source: drawn by author

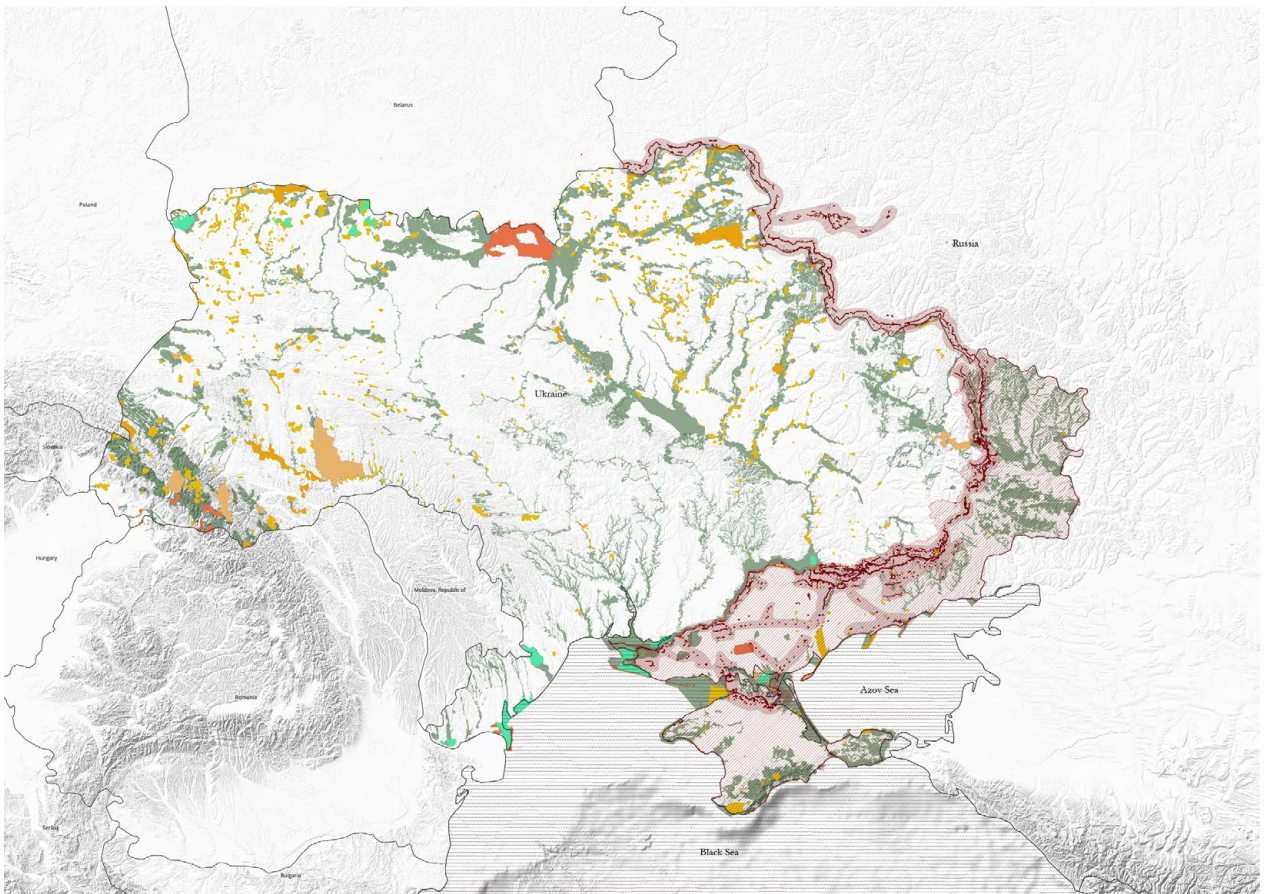
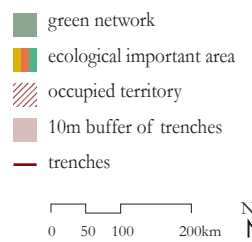


Figure 2-31 The ecological network disrupted by defensive structures
Source: drawn by author



DESTRUCTION OF SPATIAL SYSTEMS

Hydrological network

The defensive structures, landmines and explosives, are situated near the watersheds of three basins, adversely affecting agricultural practices.



Figure 2-32 Set of damaged riverside images
Source: the new york times, 2022/militaryland.net, 2022 tagesanzeiger.ch, 2023/

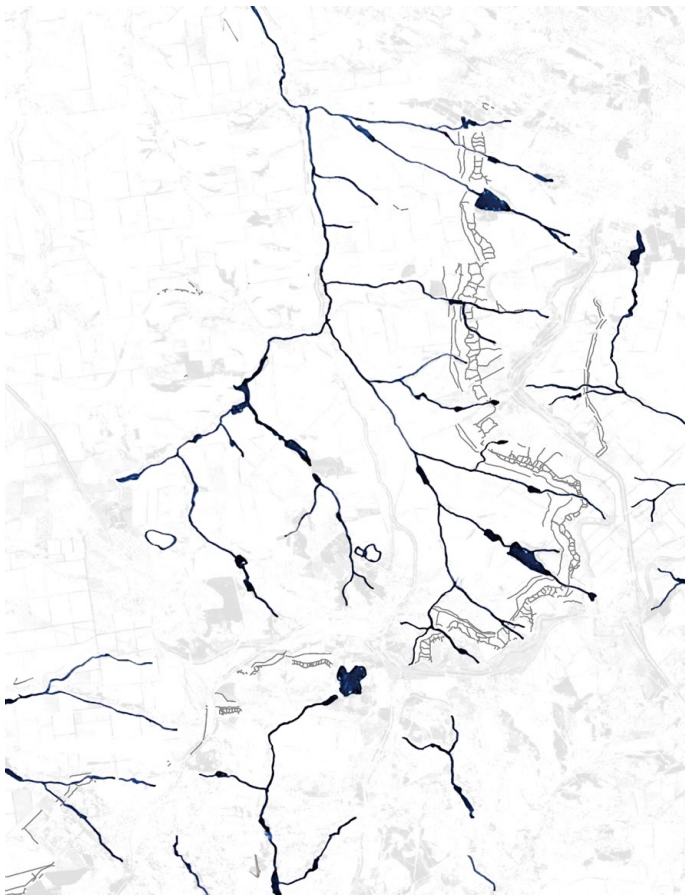


Figure 2-33 The disrupted river system on the frontline near Holivka
Source: drawn by author

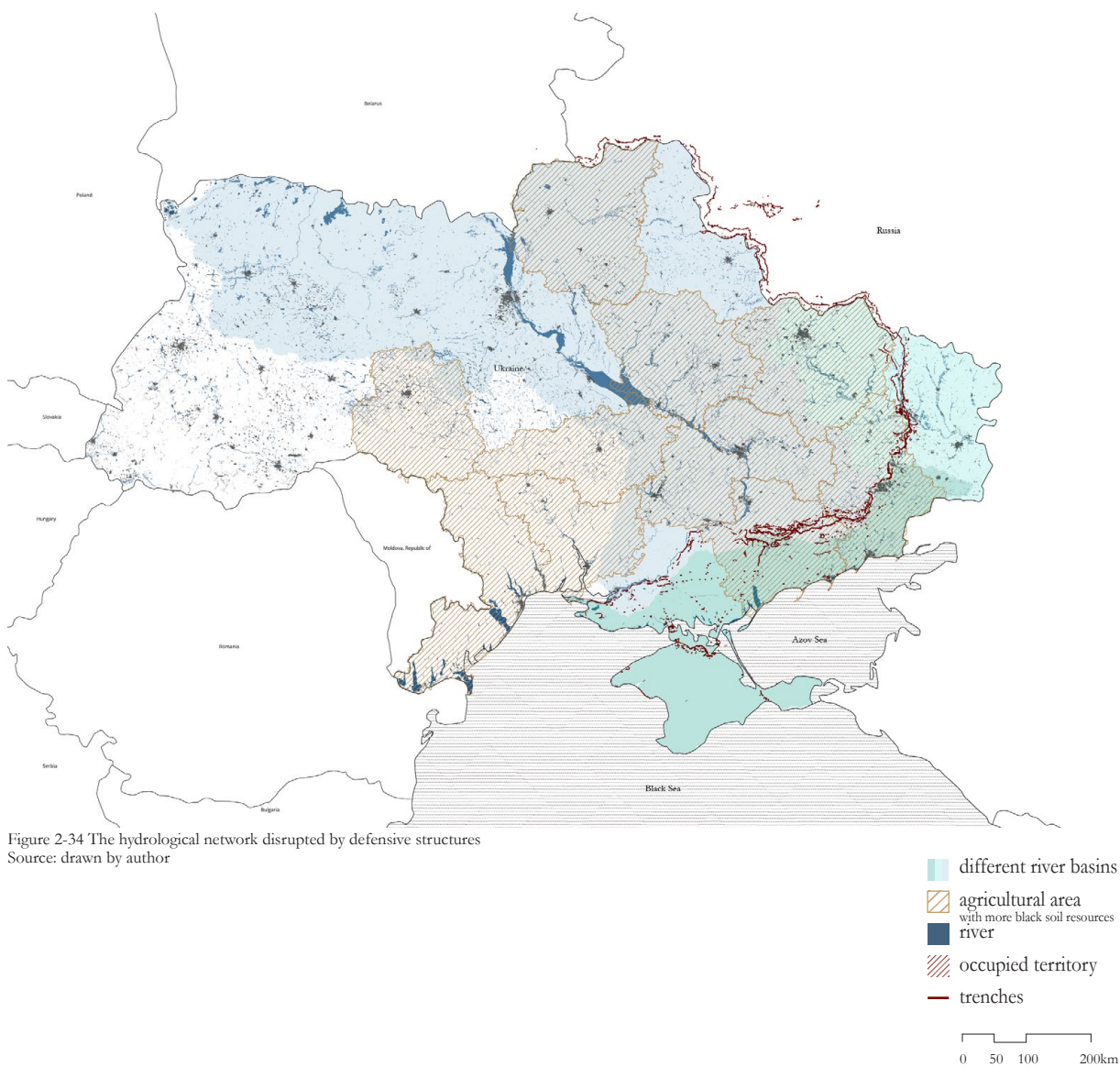


Figure 2-34 The hydrological network disrupted by defensive structures
Source: drawn by author

DESTRUCTION OF SPATIAL SYSTEMS

Urban context and Infrastructural network

The urban infrastructure is hindered, particularly the key routes connecting inner cities to seaports.



Figure 2-35 Set of blocked infrastructures images
Source: suedkurier.de, 2022/the new york times, 2022 kyivindependent.com, 2024/ ESRI World Imagery

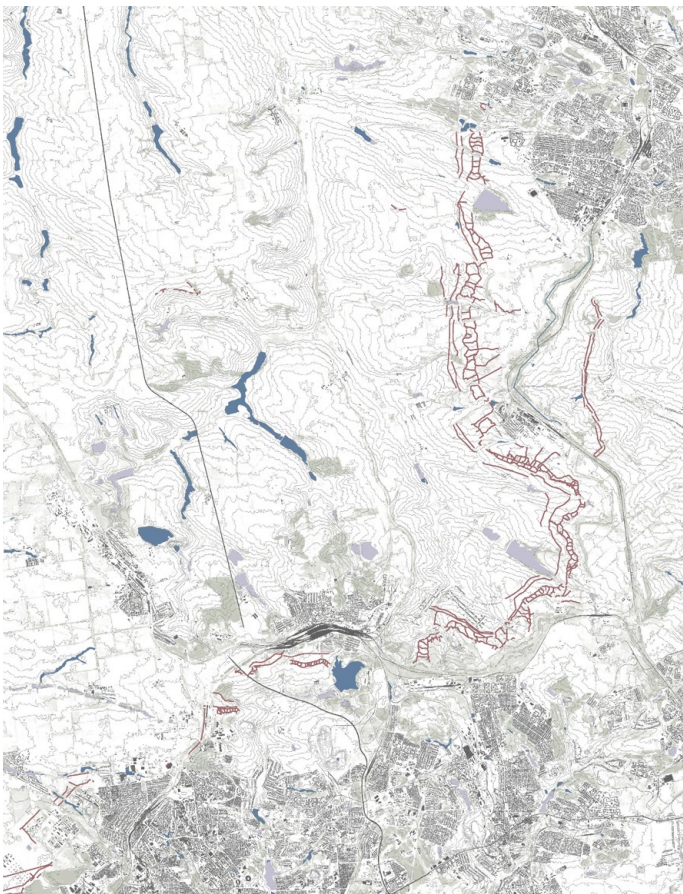


Figure 2-36 The disrupted infrastructure system on the frontline near Holivka
Source: drawn by author

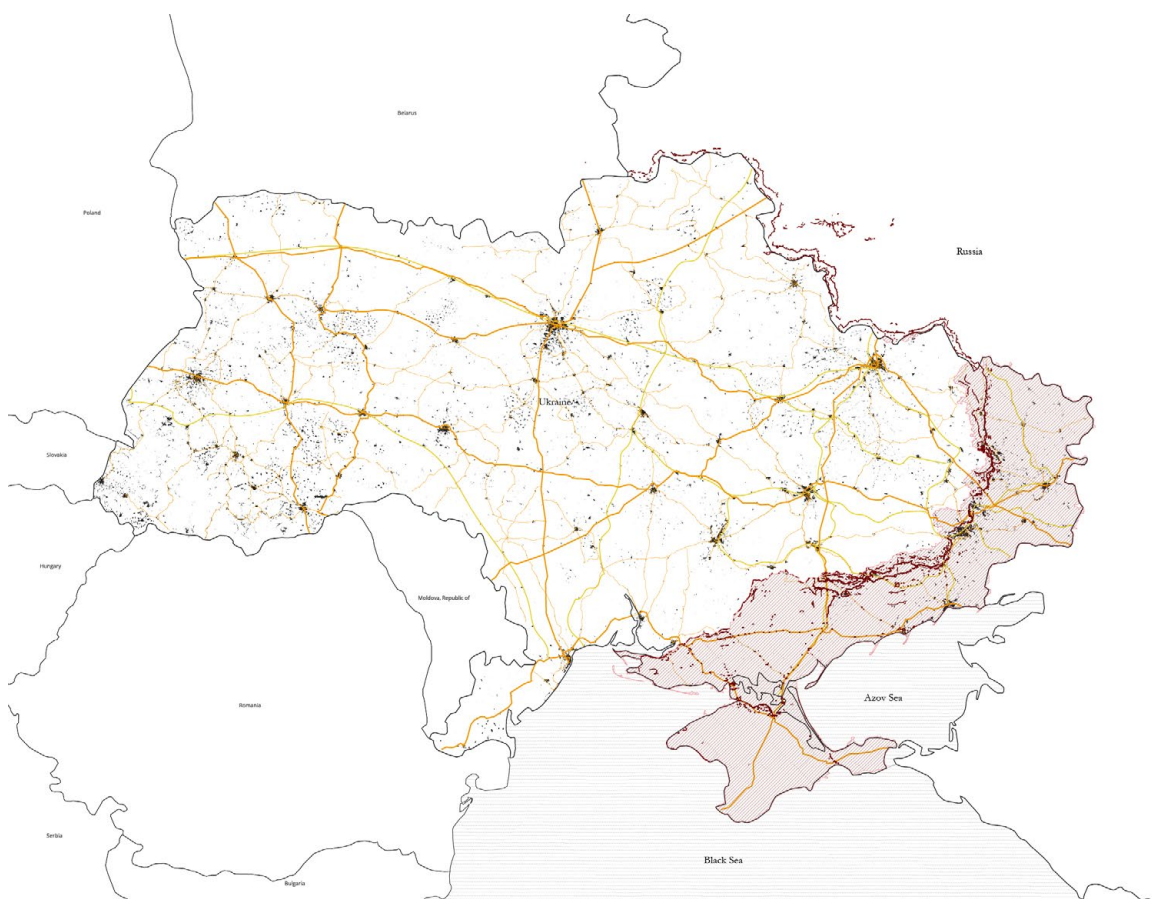


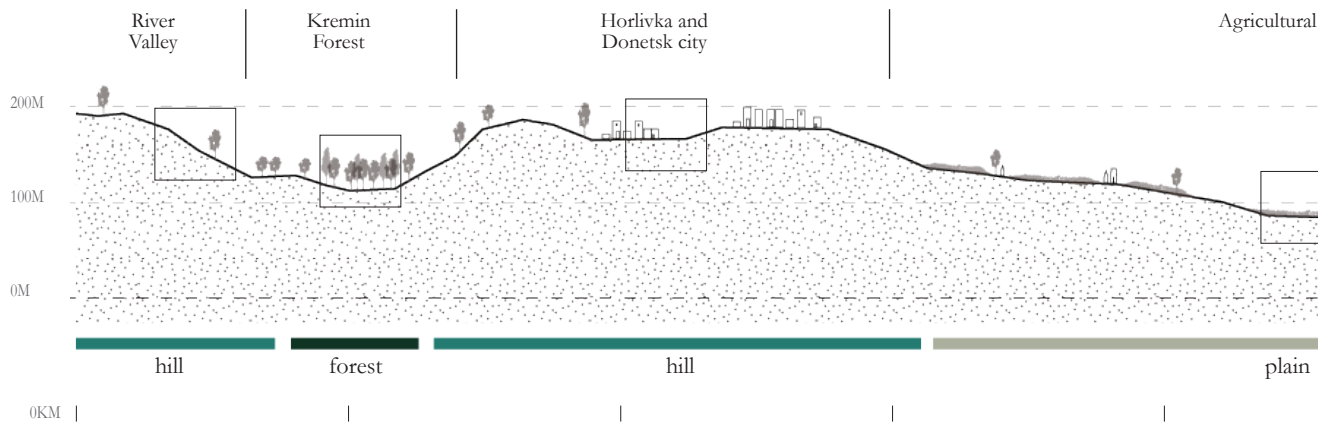
Figure 2-37 The infrastructure network and urban context disrupted by defensive structures
Source: drawn by author

- urban context
- primary road
- railway
- ▨ occupied territory
- trenches

0 50 100 200km N
↑

SYSTEM OF DEFENSIVE STRUCTURE

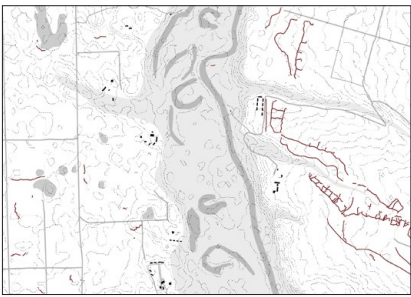
Arrangements of defensive structures across different types of landscapes



River valley



Forest



Between cities

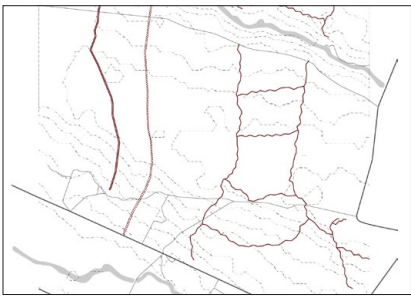


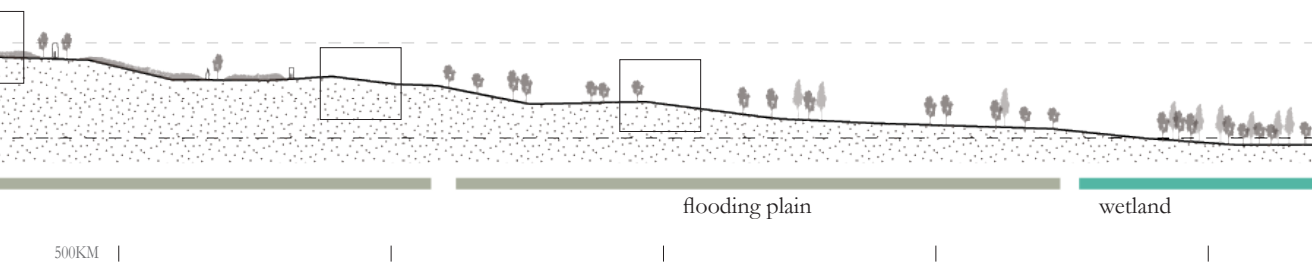
Figure 2-38 The diverse landscape elements that the defensive structures cross through and the arrangements of defensive structures across different types of landscapes
Source: drawn by author

The defensive structures cross a range of natural resources, including the Dnieper River, forest, wetland, and national reserve parks. They also extend to the edge of Donetsk and Holivka city, the trading route from the southeast seaports, like Mariupol, and the humanitarian route

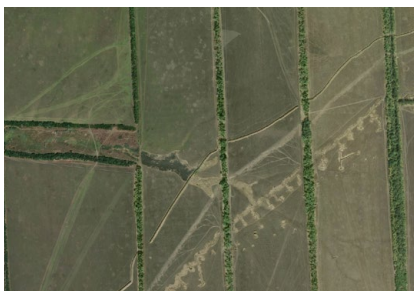
used to rescue refugees from the conflict. Of course, the defensive structures primarily pass through agricultural land and some mining areas. Six distinct types of landscape refer to various components, organizations, and layouts of defensive structures.

land

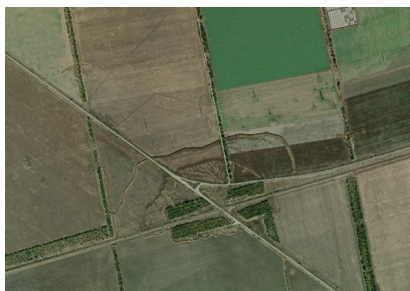
Dnieper River Flood Plain



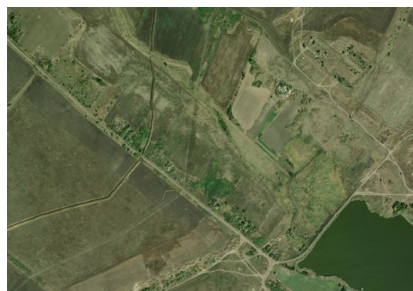
Agricultural land



Road crossing



River cliff



SYSTEM OF DEFENSIVE STRUCTURE

Frontline deffensive section

UKRAINIAN
CONTROLLED TERRITORY

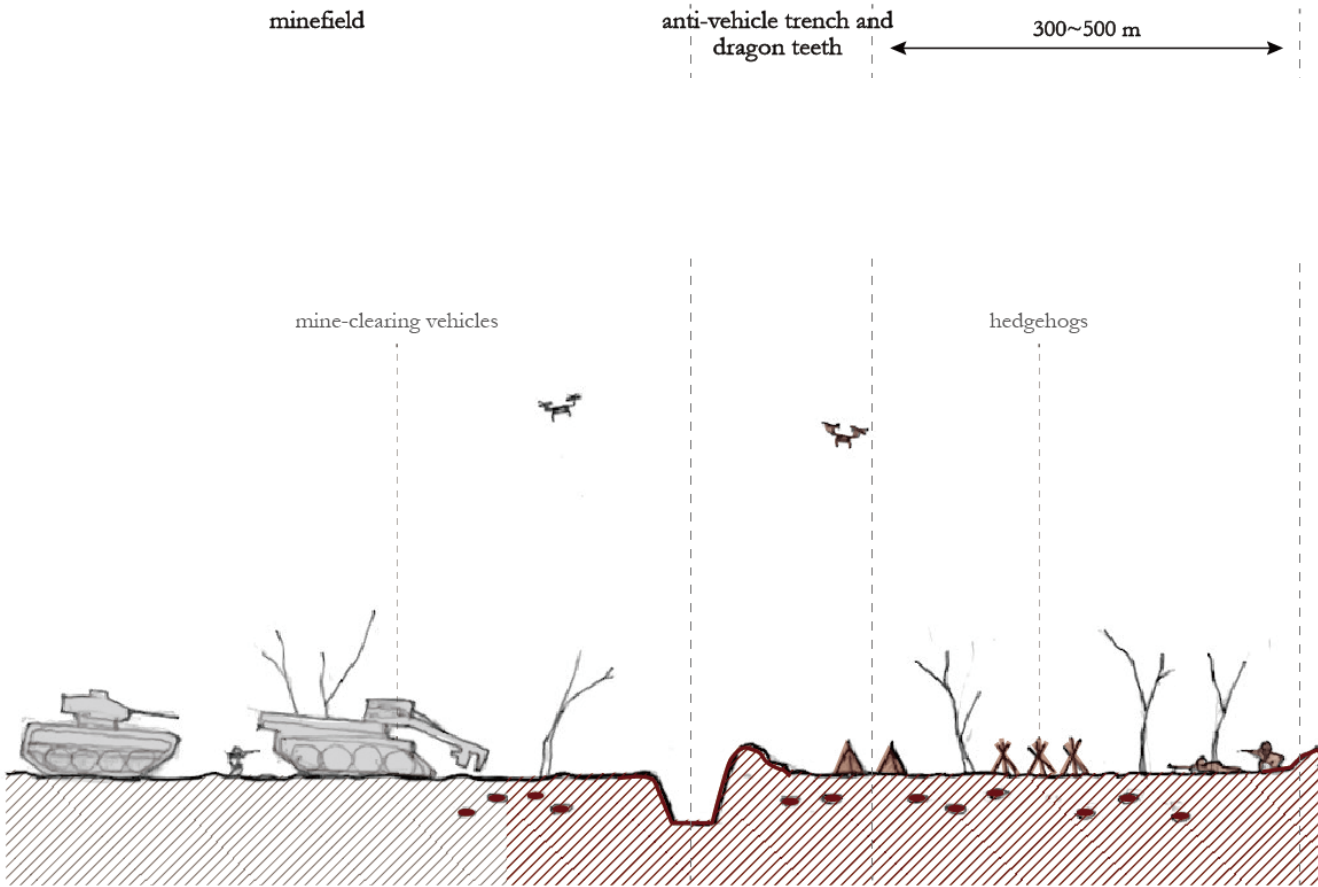


Figure 2-39 The section of frontline defensive structures
Source: drawn by author

The frontline is a complex system made up of layers of defensive structures. It has a distinct front and back, stretching from Russia toward Ukraine. In the frontline area, there are approximately four to six layers of defensive elements, each serving different functions and

purposes. The width of this area varies depending on the types of landscapes it traverses, typically ranging from 1 km to 3 km.

**RUSSIAN
CONTROLLED TERRITORY**

trenches and
bunkers

tree lines and
camouflaged area

300~500 m

trenches
second layer

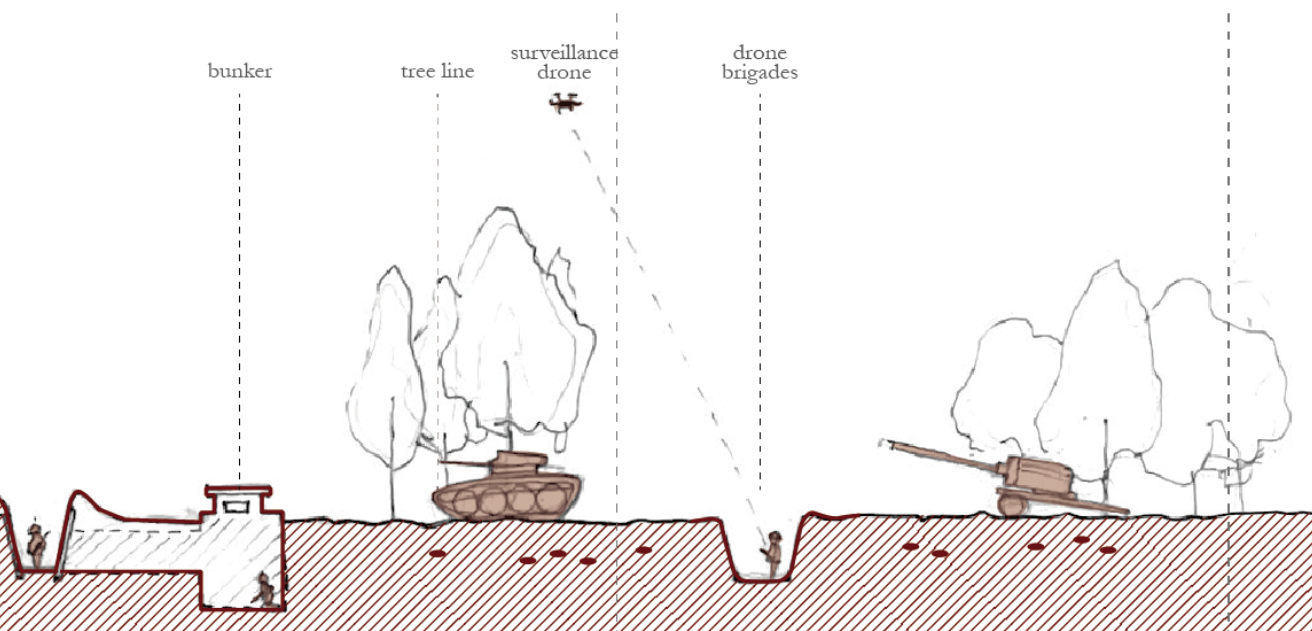
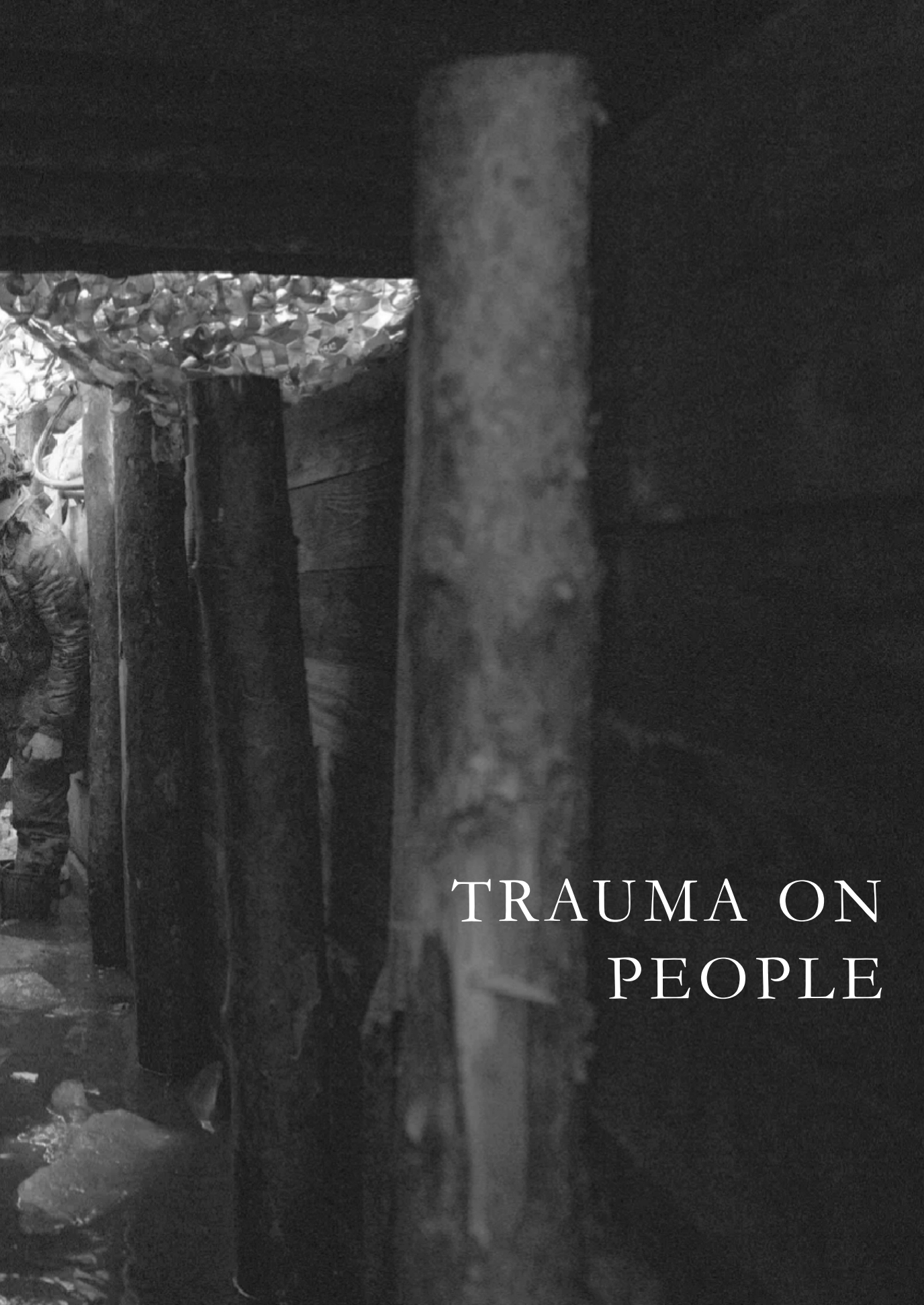




Figure 2-40 A Ukrainian soldier walking in the mud of the trenches
Source: Johanna Maria Fritz / Agentur Ostkreuz / DER SPIEGEL



TRAUMA ON PEOPLE

DEFENSIVE ELEMENTS

Defensive elements

The defensive elements consist of anti-vehicle ditches, dragon's teeth, hedgehogs, minefields, drone nets, trench systems, and bunkers. Each of these elements serves a specific purpose and is associated with various collective memories and sensory experiences of soldiers who encountered them during the war.

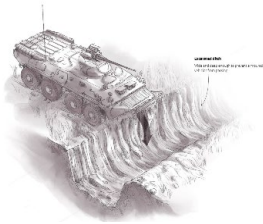
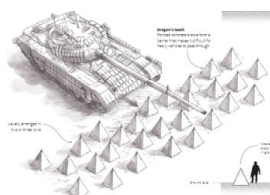


	Military artifacts	Anti-tank ditch	Dragon teeth and Hedgehogs
			
	Function	Obstacles that prevents vehicles and soldiers from passing	Barriers for tank that damage tank's tracks
	Sensorial experience	wide and deep	concrete and eerie silence
	Emotional experience	The tension fear of approaching enemy tanks	The powerful presence of military artifacts in the landscape, embodying the concept of 'objet trouvé'
	Scale in landscape	 Anti-tank ditch	 Dragon teeth and Hedgehogs

Figure 2-41 The function and experience of different defensive elements of the frontline defensive structures
Source: drawn by author/ REUTERS, 2023

Minefield



Concealed explosive traps that detonate upon pressure

Expansive and desolate, lifeless

The uncertainty and anxiety about moving across open terrain



Minefield

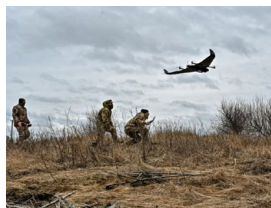
Drones and Anti-drone Nets



Modern equipment used for detection, precision strikes, logistics

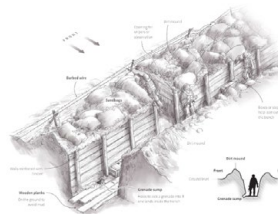
Constricting, and being overshadowed
sound of drones buzzing

The fear of being exposed in open spaces and being under surveillance.



Drones and Anti-drone Nets

Trench systems



Provide defense, concealment, and distant shooting

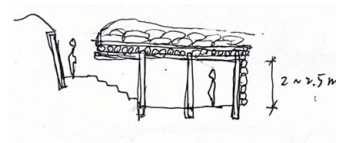
narrow, oppressive, hidden, dark and damp, muddy

Experiences of survival in cramped, muddy conditions under fire and the companionship with animals



Trenches system

Dogouts and Bunkers



Fortified living quarters and equipment storage

claustrophobic and bored
smell of metal and dust

A sense of safety and refuge, contrasted with the stress of being hidden and under siege



Dogouts and Bunkers



Figure 2-42 The scenes in the frontline defensive structures and battlefields
Source: drawn by author

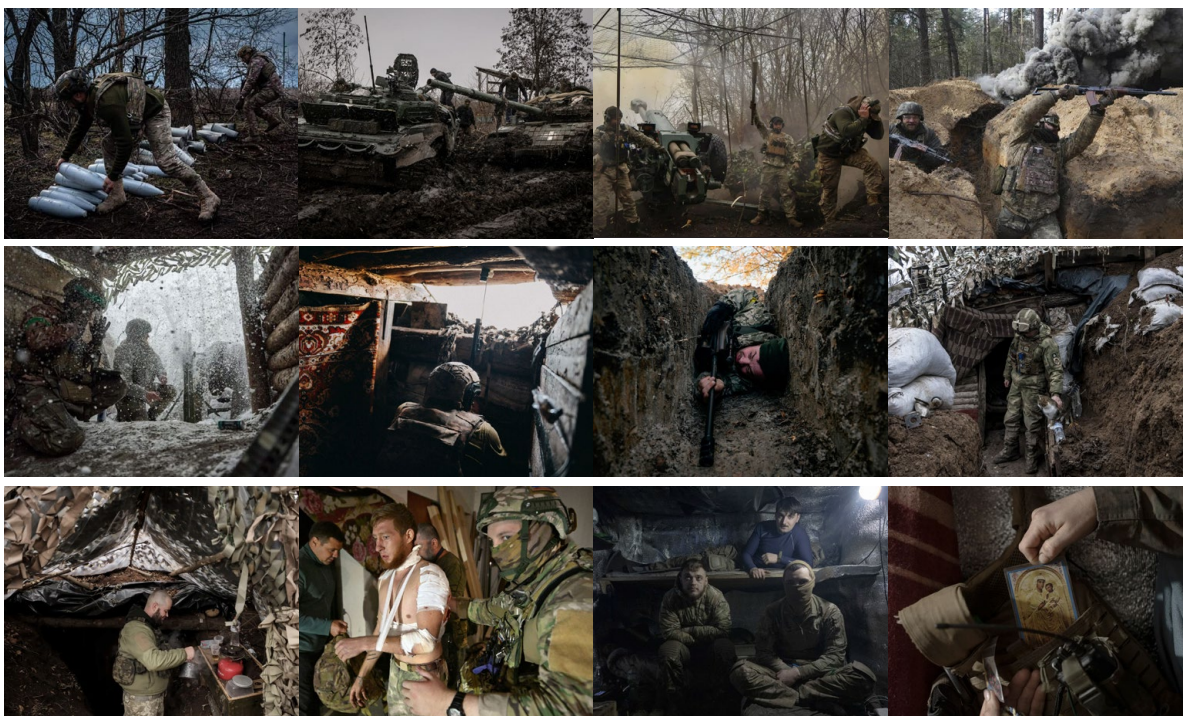


Figure 2-43 Set of images in the frontline defensive structures and battlefields
 Source: [spiegel.de](https://www.spiegel.de)/ [theguardian.com](https://www.theguardian.com)/ [thestar.com](https://www.thestar.com)/ [businessinsider.com](https://www.businessinsider.com)

SENSORIAL EXPERIENCE ON SITE

The sensory experiences on site include light and darkness, loud and silence, narrow and wide, dry and muddy. Each of these elements contributes to the healing process and the potential for reflection and education traumascape provide.

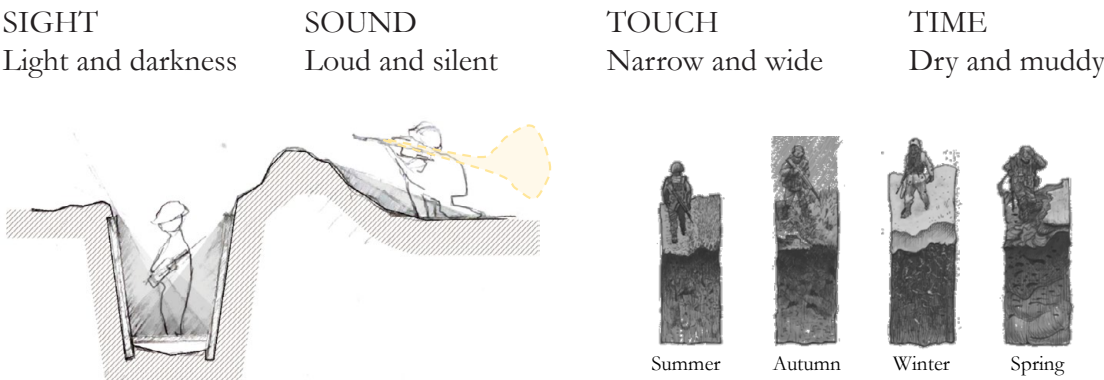


Figure 2-44 The sensorial experience of soldiers on site
Source: drawn by author

Figure 2-4 The seasonal experience of soldiers on site
Source: South china morning post, 2024

" Very, Very bored "
" 90% of war is standing around waiting "
- Roma, Ukrainian soldier

Time stand still here.

The difficulty of perceiving the passage of time is a common experience among soldiers. For them, time seems to stand still as they endure day after day on the front lines. This feeling is shared by those living in the frontline areas. The abandoned agricultural fields serve as a stark illustration of the halted daily routines.

PRECEDENT STUDY AND SCENARIO

Propose possible future scenarios and pathways for the area along the frontlines, supported by relevant precedent studies.

Some precedent studies concerning transitional border areas demonstrate the potential for integrating or addressing specific landscape characteristics within these regions. Additionally, one of the three “Terra Nullius” sites in the world serves as an important reference, illustrating how unclaimed territories can be approached by humans.

NO MAN'S LAND or LIBERLAND

A piece of land on the Croatia-Serbia border is one of the few "Terra Nullius" areas in the world. Since 2015, a group has self-proclaimed it as a libertarian community, building their lives there.



Figure 3-1 Liberland - Self-proclaimed land
Source: drawn by author

Conclusion:

This reflects people's desire for "Everybody's land" rather than "No Man's Land," which is often fenced off and inaccessible.

CHARACTERISTICS INTEGRATION

ECOLOGICAL CORRIDOR

The river along the border of the Netherlands and Germany is well-maintained to preserve its benefits for agricultural activities on both sides.



Crombach river
Parkstad, Netherland and Aachen, Germany



“Jungle” refugee camp
Calais, France

Figure 3-2 Precedents of borderscape
Source: mapio.net

The border between East and West Germany, once marked by heavy fortifications, fences, guard towers, and land mines, is now undergoing rewilding and transforming into a green belt.



the German Green Belt
between the states of Bavaria and Thuringia, Germany

Figure 3-3 The German Green Belt
Source: www.atlasobscura.com, 2019

Conclusion:

The treatment of the border area is not merely a line with fences but involves integrating landscape characteristics, taking an area that ensures the continuity and harmony of the landscape.

Conclusion:

The strip of land is largely visible due to natural recovery, which enhances the ecosystem. However, it also creates a spatial and visual separation within the landscape and, to some extent, erases the original landscape characteristics.

Several case studies, including the Cultural Routes of Europe, Hardcore Heritage, and Land Art, explore diverse methods of narrating and expressing cultural, historical, and aesthetic significance. These projects illustrate the importance of interpretation in storytelling, preserving history, and engaging people's experiences.

CULTURAL ROUTE

Themed routes that promote shared heritage across Europe. There are currently 48 certified routes currently.



Figure 3-4 The Cultural Route of the Council of Europe
Source: www.coe.int

Conclusion:

The concept of introducing a pathway to facilitate experiences is highly applicable to this 3,000 km frontline area. It would offer a sequential series of observations along a simple and gentle route, allowing visitors to engage with the landscape.

HARDCORE HERITAGES

This involves the removal, destruction, or alteration of remnants or heritages to reveal immaterial qualities of the environment that would otherwise remain unnoticed.



Figure 3-5 Deltawerk and Bunker 599
Source: www.raaaf.nl

Conclusion:

It sparks my imagination about how military artifacts can be represented or interpreted to reveal and deepen the understanding of the surrounding environment and landscapes.

LAND ART

Encourage people to develop a deeper understanding and appreciation of their surroundings.



Figure 3-6 Precedents of land art
Source: carusostjohn.com, 2024/ nos.nl, 2016

Conclusion:

The method of land art can be incorporated into this project as a temporary strategy to evoke awareness and attention among individuals and society.

PRECEDENT STUDY: DESIGN APPROACHES IN MEMORIAL LANDSCAPE

Design approaches of memorial space from WW1
















ERASE	PRESERVE	RESHAPE	REPRESENT	RECOVER
Langemark-Poelkapelle Langemark-Poelkapelle, Belgium	Sanctuary Wooden Ypres (Hill 62), Belgium	The Vimy Memorial Girenchy-en-Gohelle, France	Memorial Trees Frontline Ypres Salient, Belgium	High wood, Somme valley Somme, France
				
Fromelles farmland Fromelles, France	Trench of Death Diksmuide, Belgium	Battlefield of Verdun Verdun, France	The Bluff Ypres, Belgium	Le Plateau de Californie Californie, France
				
Ypres farmland Ypres Salient, Belgium	Bayernwald trenches Ypres Salient, Belgium	Beaumont-hamel Memorial Park Somme, France	Etzenrade Castle Garden Jabeek, Netherlands	Messines Ridge Ypres, Belgium
				
	Sanctuary Wooden	The Vimy Memorial	The Bluff	Messines Ridge
Purpose	Preserve history Interaction Education	Preserve history Mourning Restore landscape	Preserve history Restore landscape	Restore landscape
Emotional resonance	violent, overwhelming reflective, contemplative	sad, heartbroken soothing, tender calm, serenity	calm, serenity reflective, contemplative	calm, serenity reflective, contemplative
Management	Private museum	Government operation (Canada)	Government operation	Government operation

Figure 2-3-6 Design approaches of defensive structures from WW1
Source: drawn by author

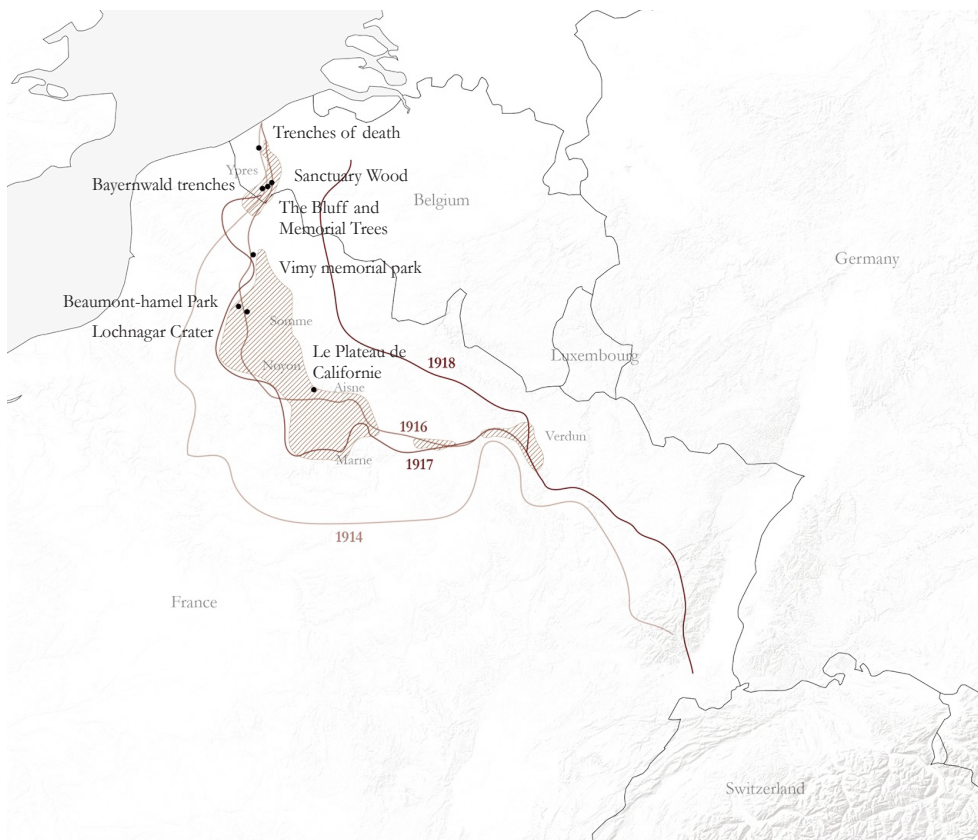


Figure 3-7 Locations of WWI frontlines and landscape transformation projects
Source: drawn by author

Some possible design approaches for defensive structures from WWI can be categorized into five main strategies: erase, preserve, reshape, represent, and recover. Each of these approaches offers specific experiences and evokes a range

of emotional responses. These responses are important when considering the narratives and perspectives that landscape conveys to visitors.

PRECEDENT STUDY: DESIGN APPROACHES IN MEMORIAL LANDSCAPE

Design approaches of memorial space from WW1

Sanctuary Wood
Museum (Hill 62)

Location: Ypres (Hill 62), Belgium
Year: Early 2000
A private museum owned by the grandson of the farmer. It preserved almost all the features of war, with metal material trenches that visitors can enter to get the immersive experience of humidity and darkness.

The Vimy Memorial and
National
Commemorative Park

Location: Girenchy-en-Gohelle, France
Year: The Monument 1925/Park 2007
The large battlefield has gradually healed through natural processes and animal grazing, which help maintain the visibility of these scars in the landscape. The monument is well-integrated into the surroundings.

The Bluff and
Memorial Trees Frontline

Location: Ypres, Belgium
Year: 2015
A long decked pathway in this unique landscape has been executed subtly and without disturbing the underground, providing visitors with a rare experience, a lookout point at the highest elevation, and a view of nature that has spontaneously taken over this area.

As a visitor, I felt lost in the well-preserved war landscape. In the broader historical context, I realized I was missing certain aspects of the surrounding area and the unique characteristics it offered. Conversely, I felt a sense of comfort

and found it easier to reflect on the war when the scarred landscape was represented in a subtle and gentle manner. For example, Vimy Park in France and The Bluff in Belgium exemplify this transformation.



Figure 3-8 The memorial spaces of WWI in France and Belgium
Source: photoed by author

Conclusion:

Using animal grazing to keep the scars visible and maintain the landscape's openness is not only applicable but also sustainable and ecologically beneficial. The interpretation of scars through trees and hedges is gentle yet helps shape both

the physical space and the visitors' imagination. The elevated path provides visitors with a suitable distance to observe and reflect on the surrounding environment, while allowing space for nature to take over.

SCENARIO

War to end soon



Figure 3-9 The frontline area need careful treatment
Source: drawn by author

THE WAR WILL COME TO AN END

A new boundary is being established?

Regardless of who ultimately owns the territory currently occupied by Russia, this strip of land requires special consideration and treatment.

It has the potential to serve as a buffer, a reminder, offer a sense of healing and peace, and carry the historical significance of the borderscape.

SCENARIO

A neutral landscape

A NEUTRAL LANDSCAPE

A buffer that achieves neutrality

I would like to refer to the concept of ‘Terra Nullius’ for this area.

‘Terra nullius’ refers to a region of land that is not claimed by any party. Historically, during the colonial era, it was used as a justification for countries or entities to acquire land. However, this concept could lead to a different outcome if we think creatively. What if ‘Terra Nullius’ were to remain a neutral territory, avoiding involvement in conflicts with other states, and serving as a buffer zone to promote peace and stability?

This neutrality would allow us to rethink borderlands, integrate dynamic characteristics, restore the environment, and provide comfort to those living in the region.

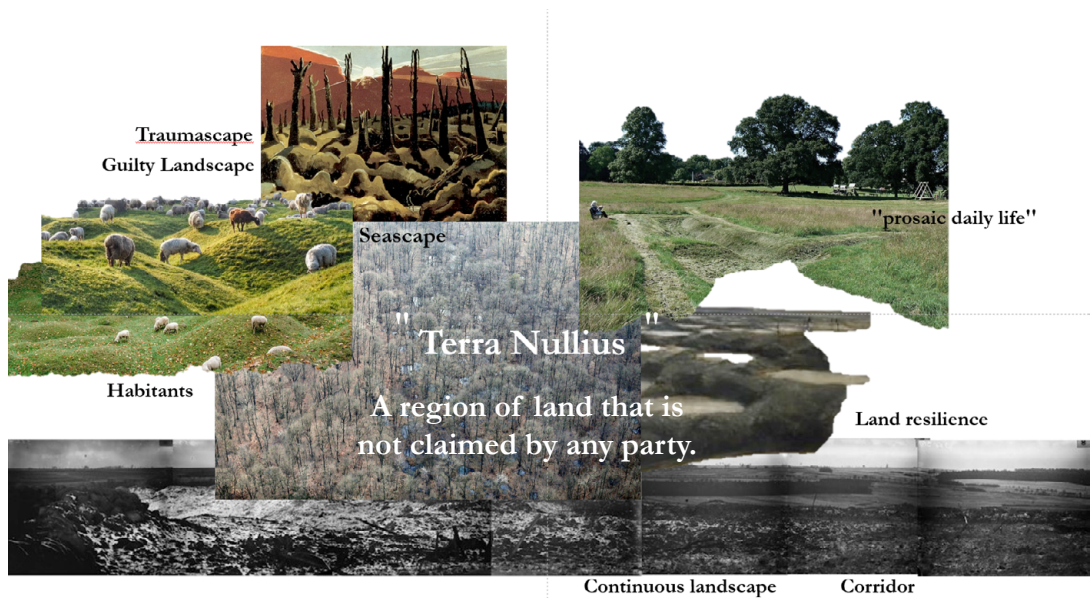


Figure 3-10 The concept of "Terra Nullus"
Source: drawn by author

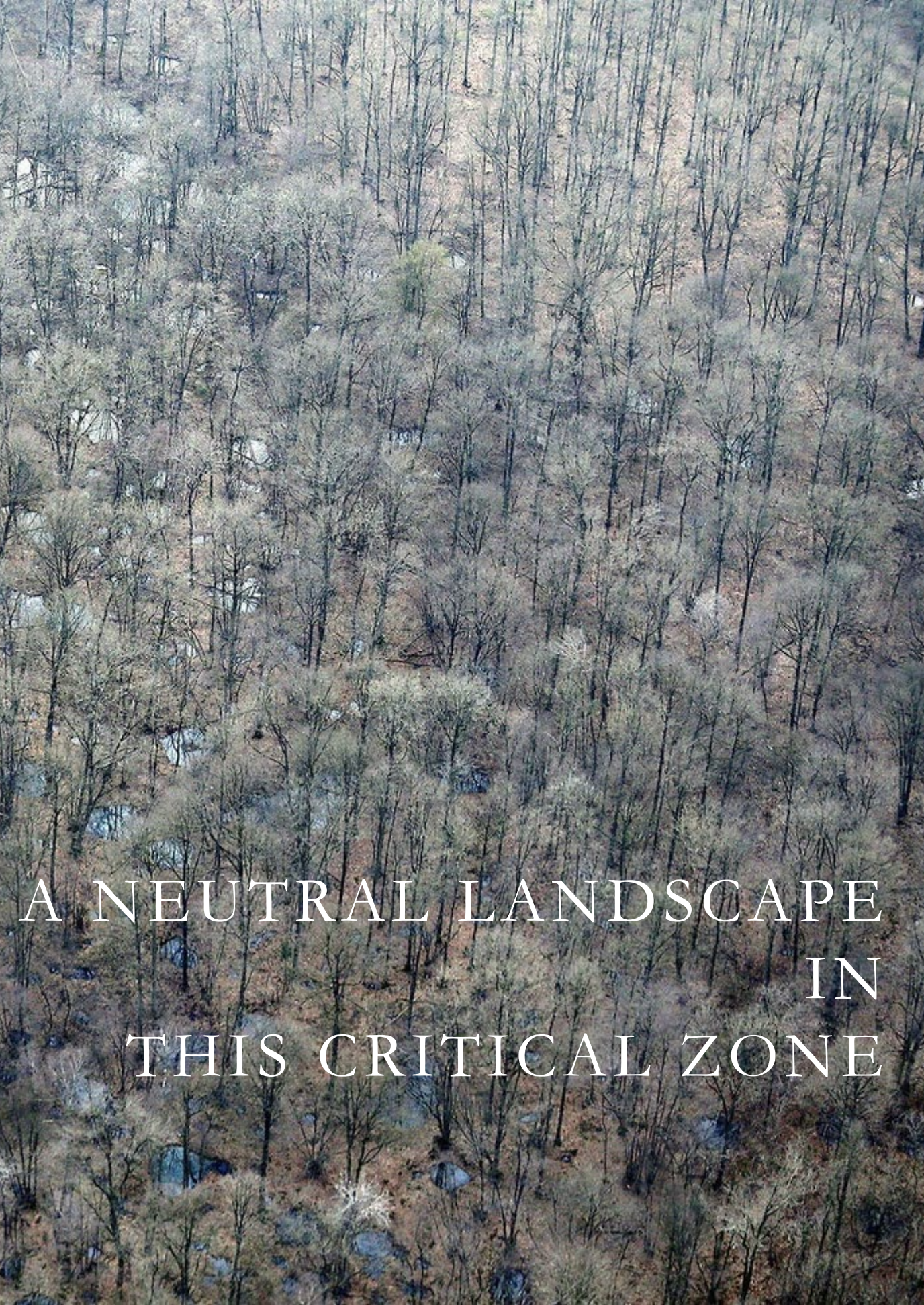
4

A NEUTRAL ZONE

This chapter explores the concept of establishing a neutral border zone and illustrates the landscape characteristics that are identified, integrated, and preserved within this area. The proposed approach aims to achieve neutrality and a sense of peace, supported by several land healing strategies



Figure 4-1 Le Plateau de Californie, battle field of WW1 in Californie, France
Source: www.theatlantic.com, 2018



A NEUTRAL LANDSCAPE
IN
THIS CRITICAL ZONE

Why this strip of land ?

Viewing this borderland in the larger context of European history, Ukraine, situated at the edge of East and West, has always been and will be a critical zone. The warfare and the continuation of pushing and retreating, fighting and surrendering, and taking over, all tell the story of this unique borderland. The frontlines, with their military artifacts from the Russo-Ukrainian War, are tangible evidence that summarizes the continuity of history. The 'neutrality' of this zone is not just a buffer for geopolitical concerns, but a crucial aspect of its geopolitical significance, passing on its historical importance to the future.

What to encompass ?

The zone will consist of military artifacts, the frontlines' defensive structures, because they are the clearest sign of warfare. Also, the landscape areas that illuminate the distinctive characteristics of the border region should be incorporated to reveal the underlying realities of conflict, such as fertile soil, food production, natural resources, minerals, and trade functions. The landscape serves as a powerful narrative tool, enriching the story of this unique and dynamic borderscape. The neutral border zone is an area with width, not only a line alongside the artifacts' edges.

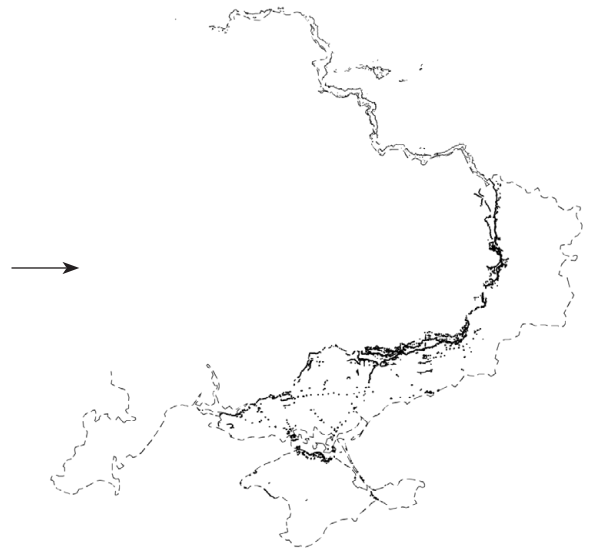


Since the 16th century, borders have changed under different empires and countries in this region.

Figure 4-2 Narrative of the neutral zone
Source: drawn by author



A variety of characteristics of border landscapes exist in this region.



The traces of military artifacts visualize the border's identity in this region.

" A Neutral Zone "

with size, length, width, surface and potential

A zone designed to achieve a neutral landscape aims to promote a sense of peace and stability. This area strives to be "neutral" in several ways. Firstly, it seeks to distance itself from political power struggles, allowing international organizations to take responsibility rather than placing that burden on Ukraine or Russia. Secondly, in terms of its physical landscape, this zone is not just a boundary that separates or distinguishes two regions. Instead, it serves as a place for integration and communication.

This zone collects a comprehensive narrative that encompasses historical significance, the landscape characteristics of borderscape, the impacts of war, and ecological context, all presented in a way that fosters a non-biased, balanced, and perceptible environment.

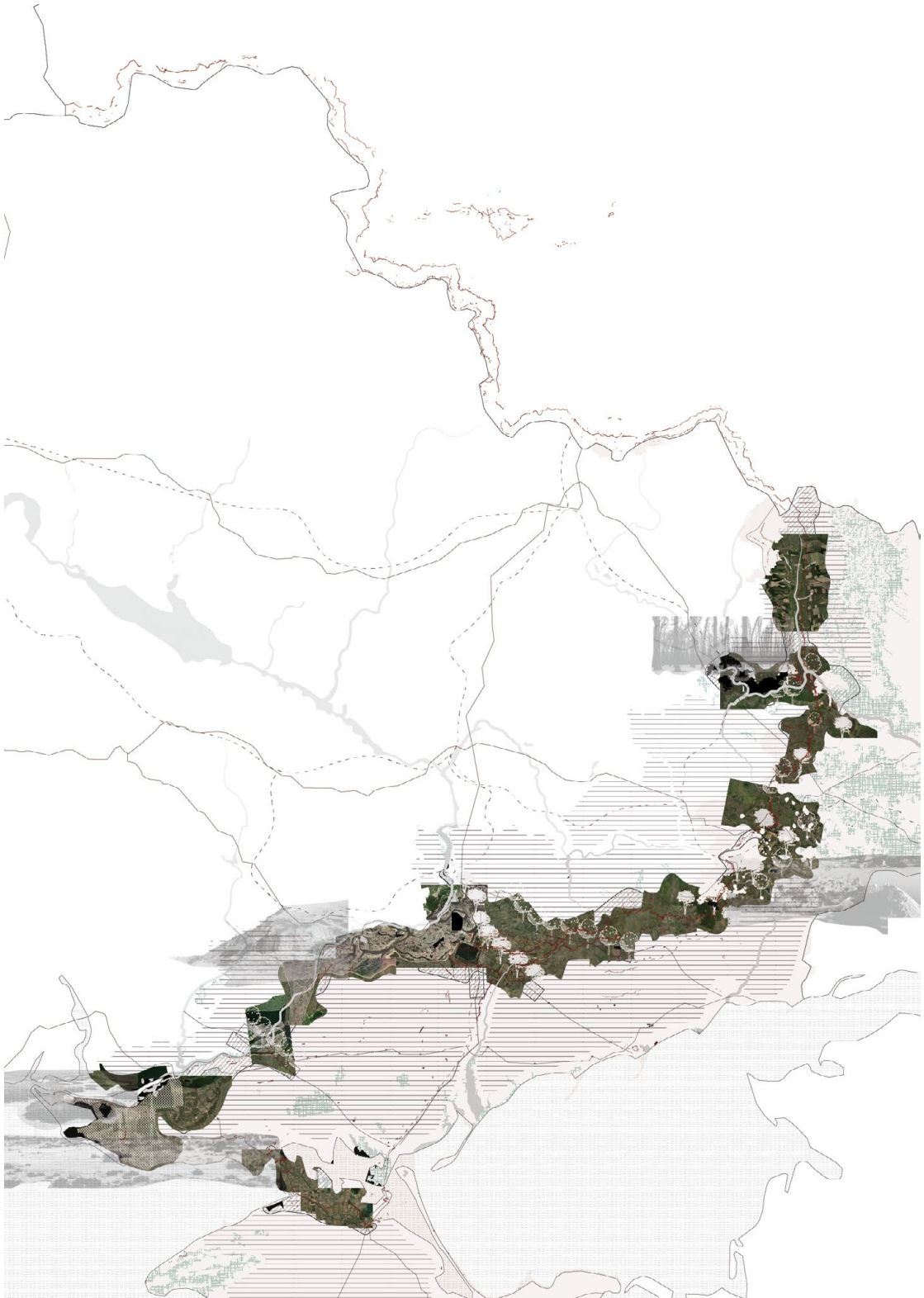


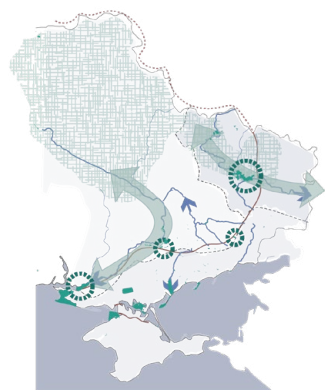
Figure 4-3 Vision of a neutral zone
Source: drawn by author

LANDSCAPE CHARACTERISTICS OF BORDERSCAPE

Characteristics and principles

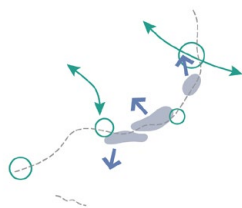
The diverse landscapes characteristics of the area contribute to the establishment of a neutral border zone. However, these features have been diminished or fragmented due to the impacts of war. Two prominent green corridors have been

destroyed by forest fires. The upstream sources of rivers have become polluted. Agricultural activities ceased and declined due to contamination from explosives. Additionally, key freight routes were damaged, blocked, and disconnected.



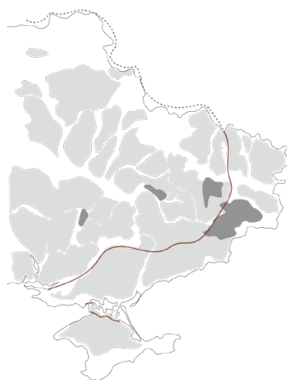
Ecology and Hydrology System

impact of war
↓
pollution destruction



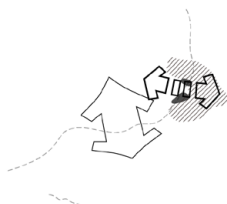
Reconnect and recover neutral system

Natural succession, along with strategic planting plans, aims to enhance the water system and promote biodiversity.



Industrial Activity System

↓
contamination suspension



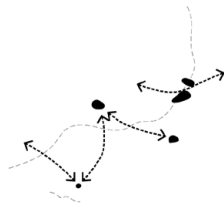
Restore and continue agricultural land

Restoring abandoned agricultural land through demining and phytoremediation to maintain the continuity of vast agricultural landscapes.



Urban context and Infrastructure

↓
damaged disconnect



Identify and reconnect essential routes

Reconnecting key routes, both physically and visually, through interventions to highlight their important interaction function.

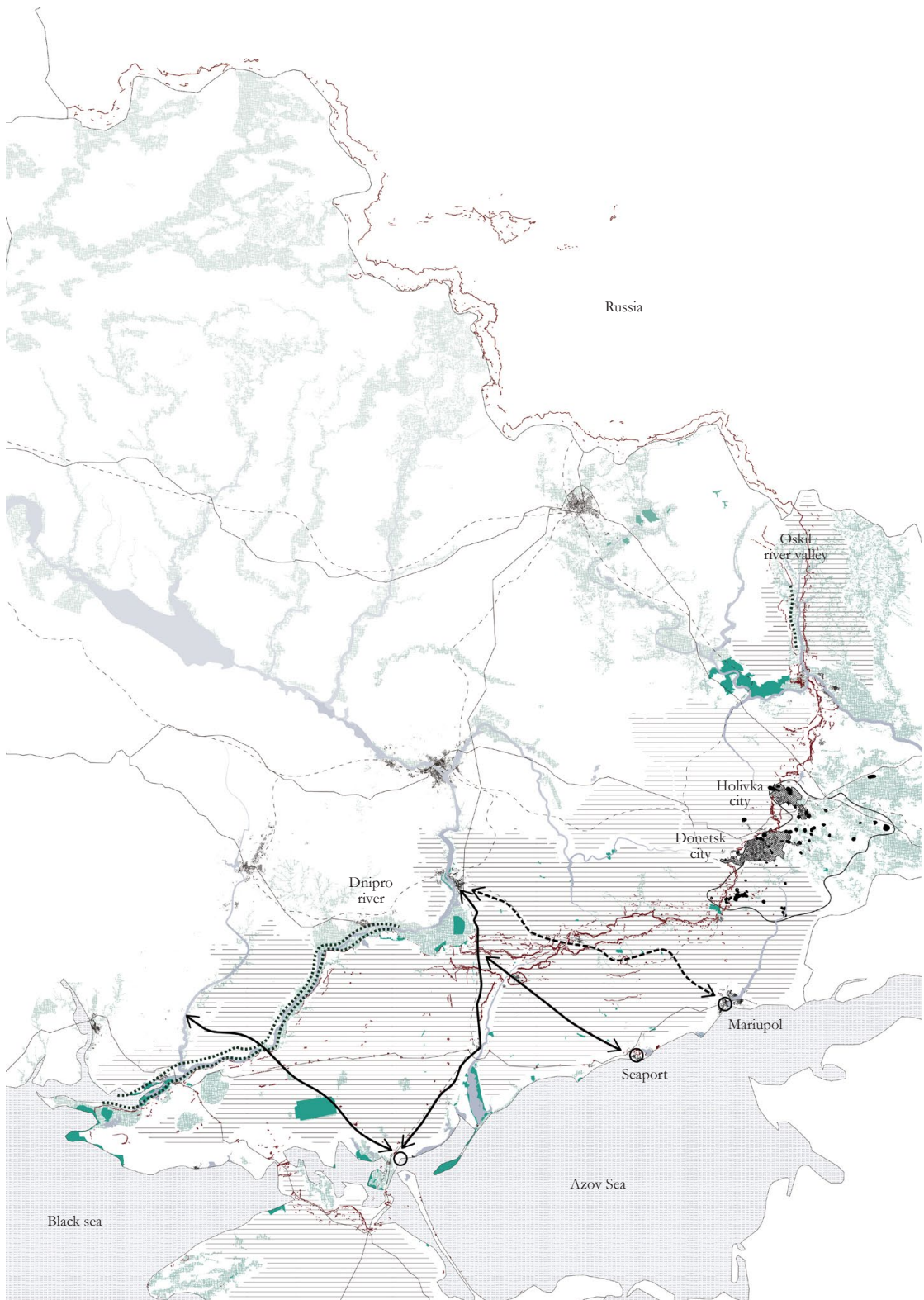


Figure 4-4 Landscape characteristics of the border zone
Source: drawn by author

LANDSCAPE CHARACTERISTICS OF BORDERSCAPE

Profile of landscapes along the defensive structures

The defensive structures cross a range of natural resources, including the Dnieper River, forest, wetland, and national reserve parks. They also extend to the edge of Donetsk and Holivka city, the trading route from the southeast seaports, like Mariupol, and the humanitarian route used to rescue refugees from the conflict. Of course, the defensive structures primarily pass through agricultural land and some mining areas.

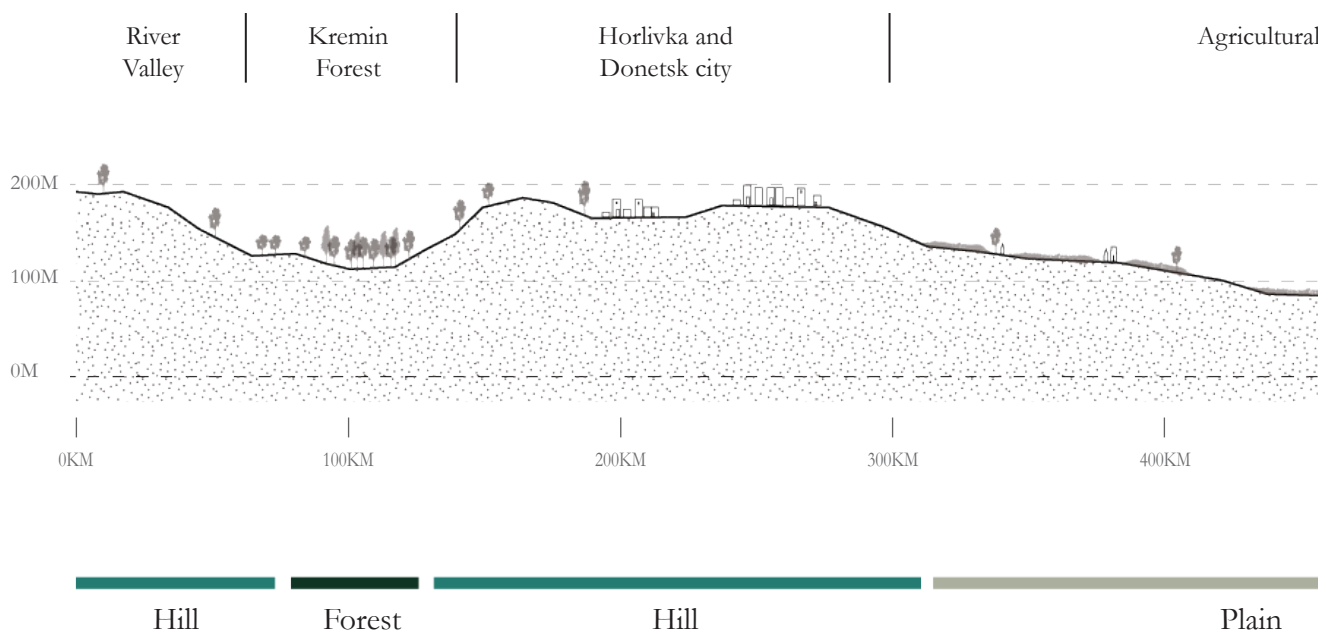
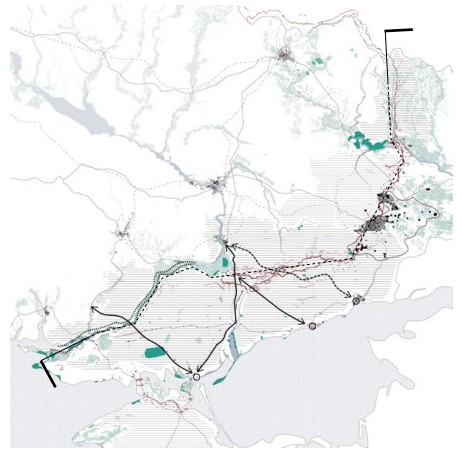
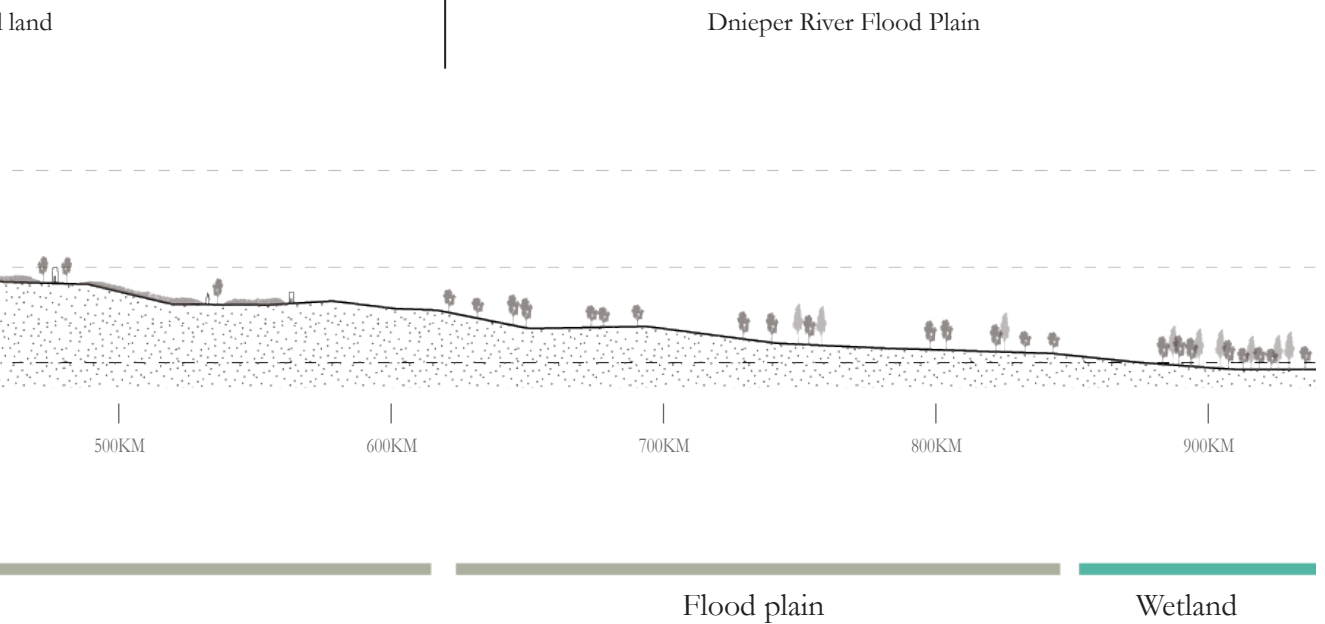


Figure 4-5 Profile of different landscapes traversed by the defensive structures
Source: drawn by author



Key map



LANDSCAPE CHARACTERISTICS OF BORDERSCAPE

Terrain affected by the construction of defensive structures - before

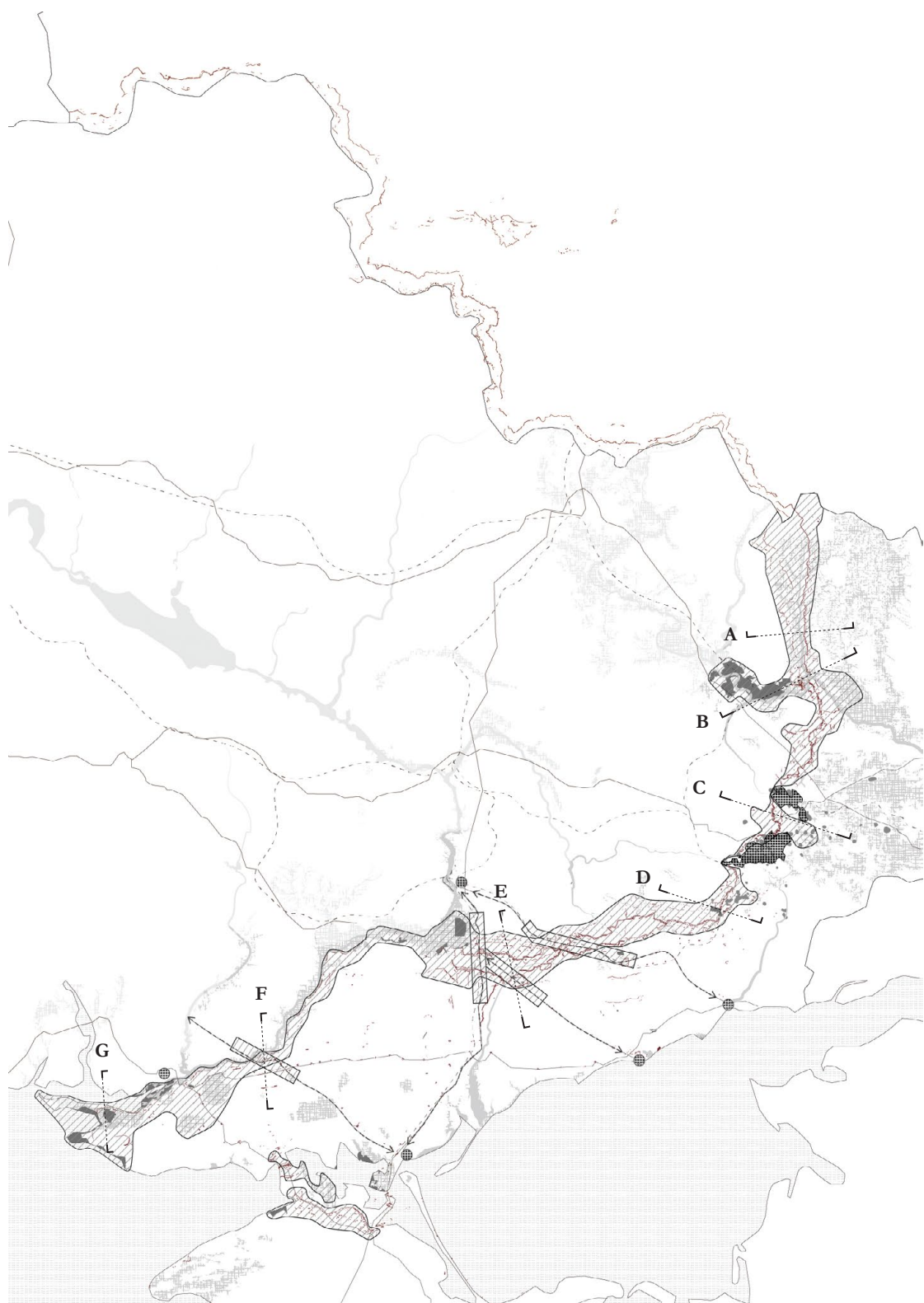
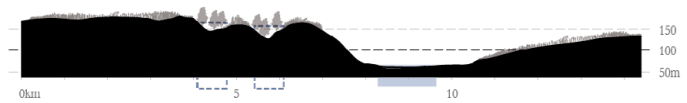


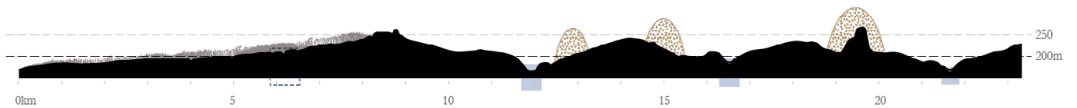
Figure 4-6 The outlines of the zone
Source: drawn by author



Valley /A



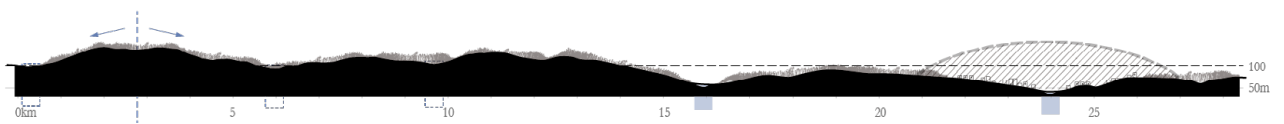
National Nature Park /B



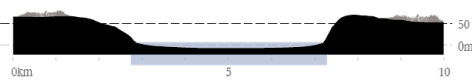
Between Agricultural and Mining activities /C



Forest Reserve /D



Agricultural Land, Watershed and Village /E



River Hillfort /F



Wetland and Biosphere reserve /G

scale (L:H=1:10)

Figure 4-7 The diverse topographies and landscape features
Source: drawn by author

LANDSCAPE CHARACTERISTICS OF BORDERSCAPE

Terrain affected by the construction of defensive structures - after

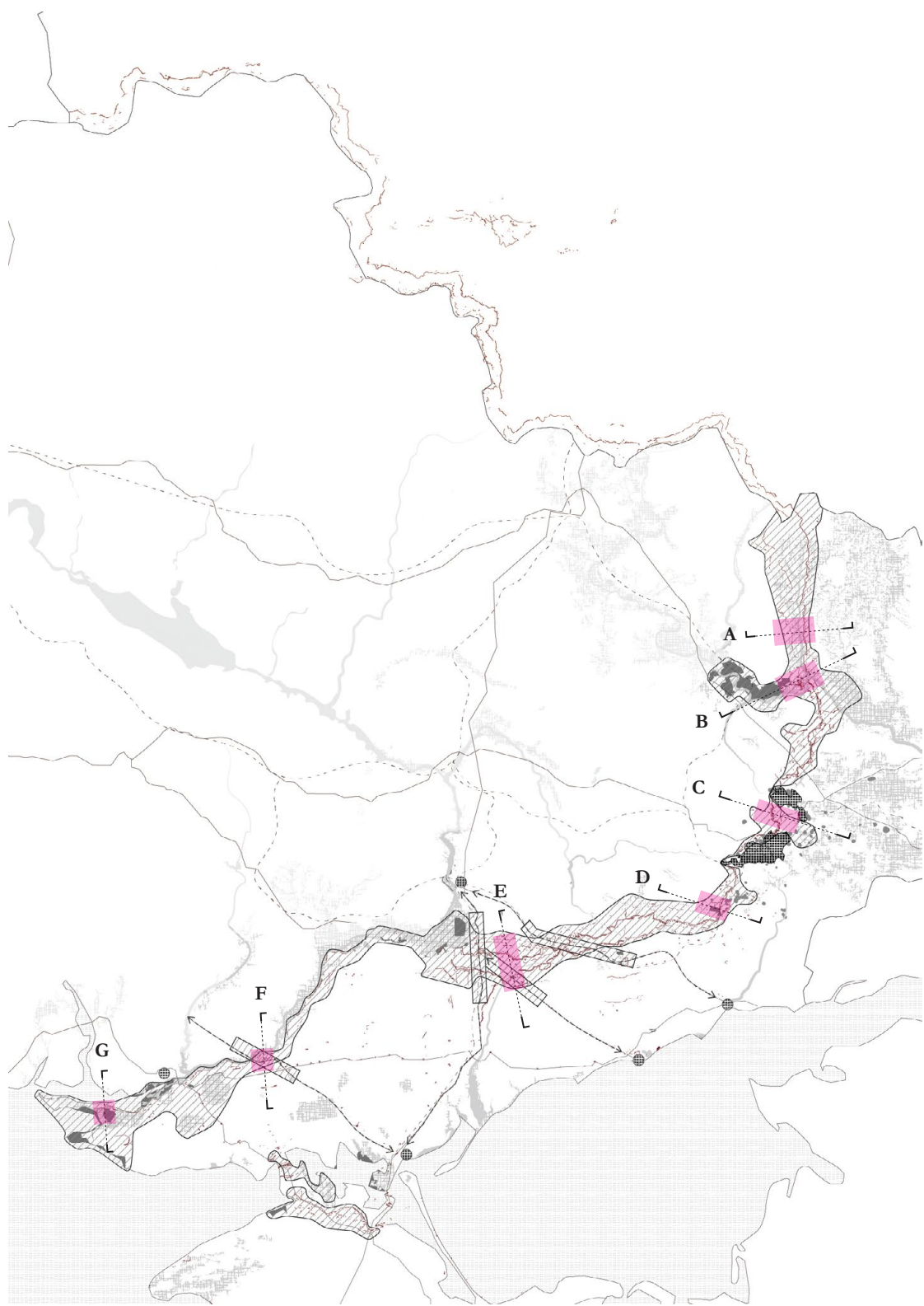
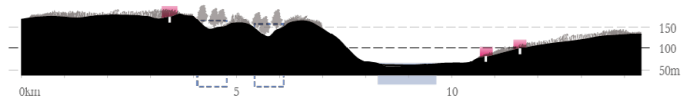


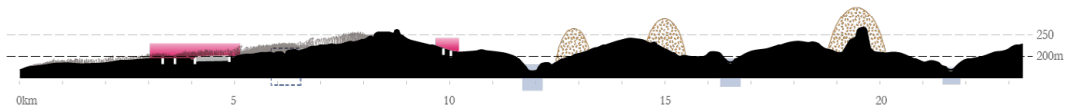
Figure 4-8 The outlines and the locations of cross-sections of the zone
Source: drawn by author



Valley /A



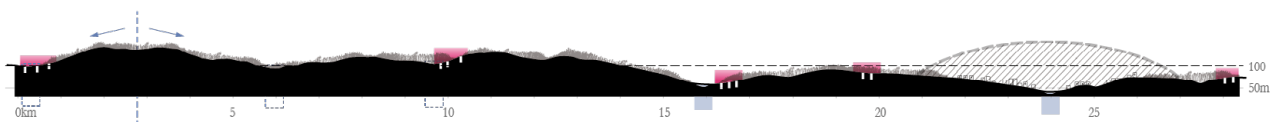
National Nature Park /B



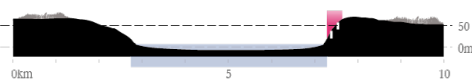
Between Agricultural and Mining activities /C



Forest Reserve /D



Agricultural Land, Watershed and Village /E



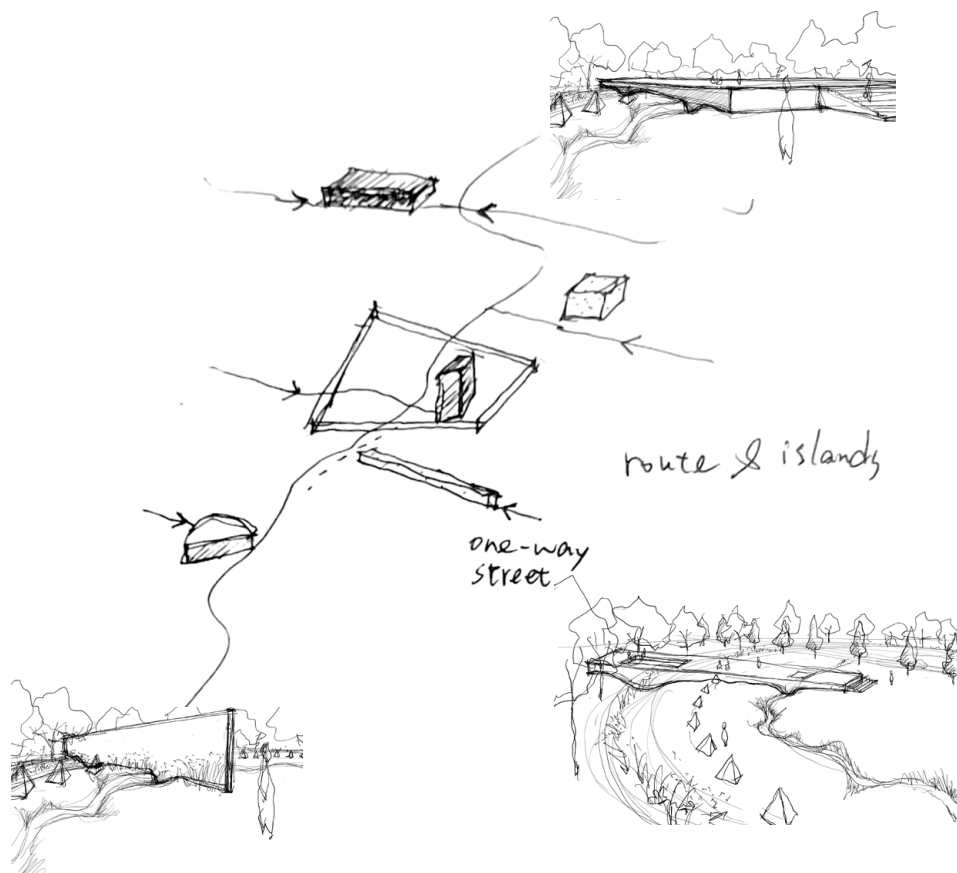
River Hillfort /F



Wetland and Biosphere reserve /G

scale (L:H=1:10)

Figure 4-9 The diverse topographies and landscape features with which the defensive structures interact
Source: drawn by author



Distant but Deeply Perceiving

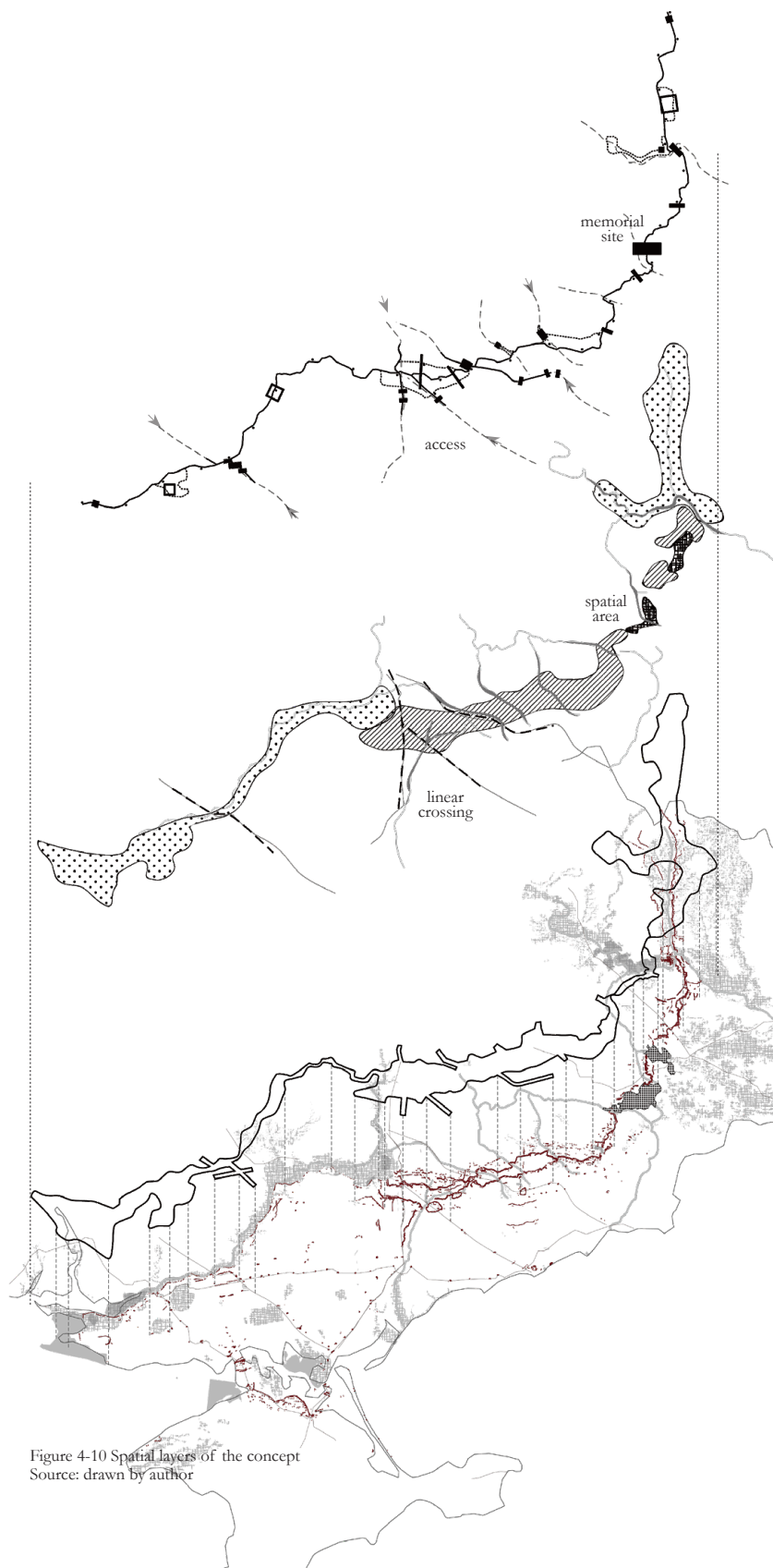
The backbone of peace along the Eurasian border.

Achieving neutrality by creating a sense of distance and separation is intended to create room for individuals to engage in their own observation and interpretation rather than becoming immersed in military structures like soldiers.

By incorporating subtle spaces such as paths, furniture, and platforms within the landscape, individuals are reminded of the surroundings, topography and the genuine testimonies of military artifacts.

The design features repetitive yet diverse “nodes” connected by a continuous path that weaves through locations rich in stories waiting to be told.

However, the design still enables individuals who are knowledgeable and curious about history to go into the landscape, move through it, discover it, and touch it, which will give individuals a reenactment-like experience. This space is intended to be accessible to everyone.



ROUTE AND "NODES"

Incorporate subtle landscape elements into the zone for individuals to go in, see, and experience.

- "Islands"- subtle landscape elements
- The cultural route

FIVE "SECTORS"

Differentiate the entire zone into five sectors, three feature spaces and two linear crossings, highlighting the landscape characteristics that contributing to the borderland narrative.

- Monumental sector
- ▨ Agricultural sector
- ⋯ Natural sector
- River crossing sector
- Road crossing sector

NEUTRAL ZONE

The zone includes the defensive structures and some landscape areas that illuminate the distinctive characteristics of the border region.

Figure 4-10 Spatial layers of the concept
Source: drawn by author

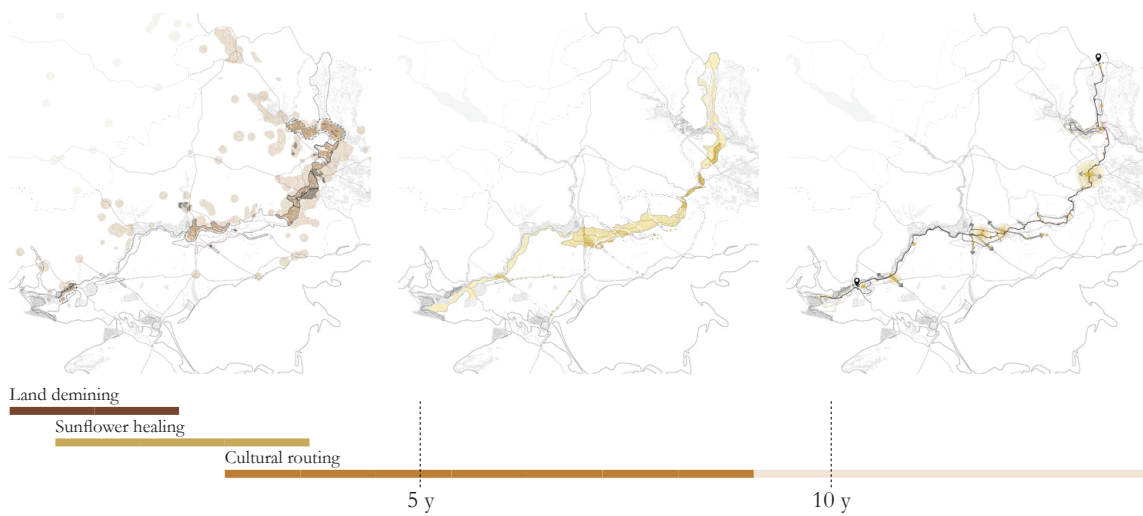
In the initial phase of establishing the border zone, two regional strategies will be implemented to support land restoration, land demining, and sunflower cultivation. These efforts are expected to take approximately three years. They are not intended to erase the scars and remnants of war, but rather to restore portions of the land. This restoration is the first step in continuing the landscape characteristics of borderscapes. At the same time, the temporary strategies implemented will also leave their own marks.

The third regional strategy involves introducing an elevated pathway along the border zone, which will become the 49th Cultural Route of the Council of Europe. This pathway will narrate the story of the borderscapes and the war, while providing a unique experience for visitors.

Land demining

Sunflower healing

Cultural routing



LAND HEALING STRATEGY

Demining process and Phytoremediation



Figure 4-11 Land demining
Source: Reuters, Oct. 2024

LAND DEMINING

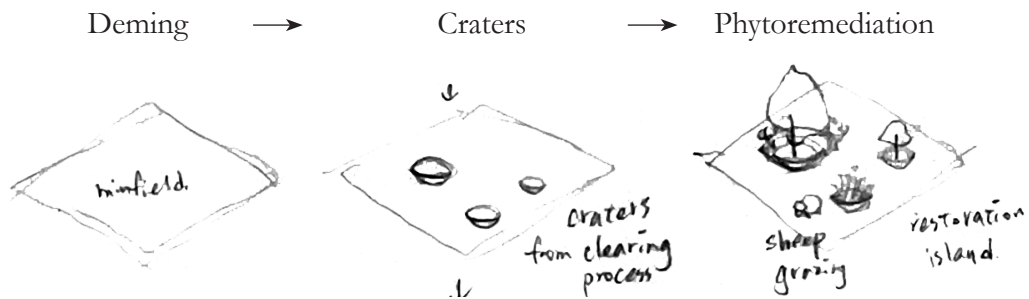
The first step of land healing

A Revival of Land Trapped by Landmines

After approximately 10 months of land demining in the entire zone(32027.8 km²), the land will no longer be hazardous to humans and all residents. The remnants of war buried beneath the soil will be uncovered and brought to the surface during this process.

LAND HEALING STRATEGY

Demining process and Phytoremediation



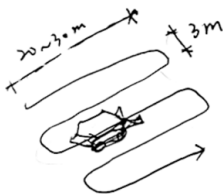
Potentially 23 percent of its land at risk of contamination with landmines and unexploded ordnance.

Demining process will create craters, with different sizes because of different types of landmines.

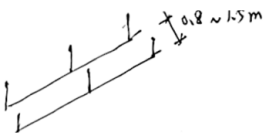
Planting specific types of vegetation in these craters that helps with removing the metal pollutant from landmines and will become a trace of war in the landscape.

Demining process

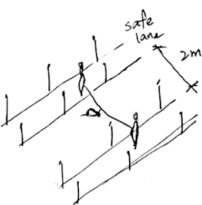
1. Large and flat terrain area:
Mine clearance machine



2. Narrow and hilly terrain area:
Step1: Safe lanes by metal detections

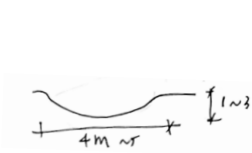


Step2: Mine detection with dogs or rats

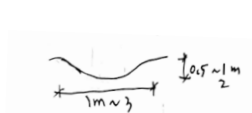


Sizes of craters

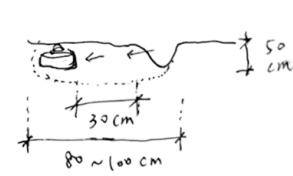
Anti-tank mines



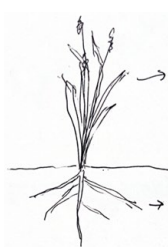
Anti-personnel mines



Step3: mines removed by hand



Phytoremediation process



Stored in the roots, stems, or leaves.
Changed into less harmful chemicals within the plant.
Changed into gases that are released into the air as the plant transpires (breathes).

Species



Tree
Populus alba
(most common)
Betula spp.

Herbaceous
Sunflower
(most common)
Arabidopsis thaliana
Festuca arundinacea

During the demining process, craters of different sizes can form in the land, depending on the method used, whether land clearance machines or manual techniques. Planting specific types of vegetation in these craters not only aids in removing metal contamination but also marks

the locations of hidden landmines, facilitating land restoration. The demining operation is expected to take 2.5 months for the estimated contaminated area of landmines and explosive remnants, which covers 8,781.2 km² (estimating a rate of 5000 km² per 6 weeks). The entire border

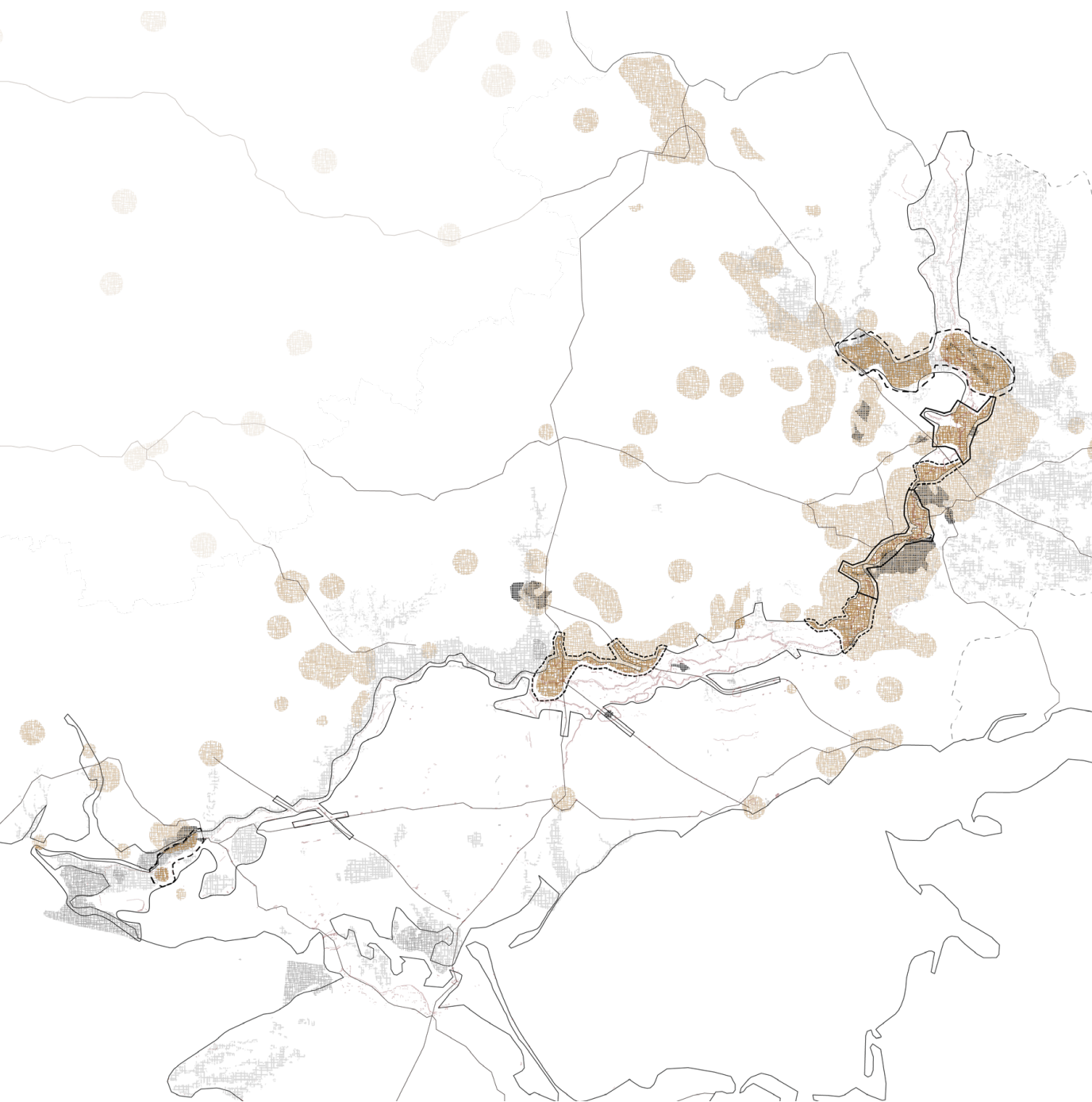





Figure 4-12 The estimated contaminated area of landmines within the border zone
Source: drawn by author

zone will require approximately 9.5 months to clear (32027.8 km²). The first phase of the project will focus on the memorial sector between Holivka and Donetsk, an area that experienced heavy fighting and significant casualties. (United Nations Development Programme, 2024)

 estimated contaminated area
 first phase
 defensive structures

0 50 100 200km N

LAND HEALING STRATEGY

Sunflower field healing



Figure 4-13 Sunflower power
Source: timeforkids.com, 2022

Throughout Ukraine's history, the sunflower has symbolized peace. During the war, displaying the sunflower has become a way to show that the world must continue to exhibit the courage demonstrated by Ukrainians.



Figure 4-14 Soldiers in sunflower field
Source: financialtime.com

SUNFLOWER HEALING

" SONIASHNYKY "- Sunflower in Ukrainian

A symbol of peace and the return to normalcy

After land demining, sunflowers will be planted along the entire length of the zone for three years. The blooming of the sunflowers symbolizes rebirth and signifies the land's "return to normalcy" to the world. Additionally, they help remove contaminants from the soil that were left by the war.

LAND HEALING STRATEGY

Sunflower field healing

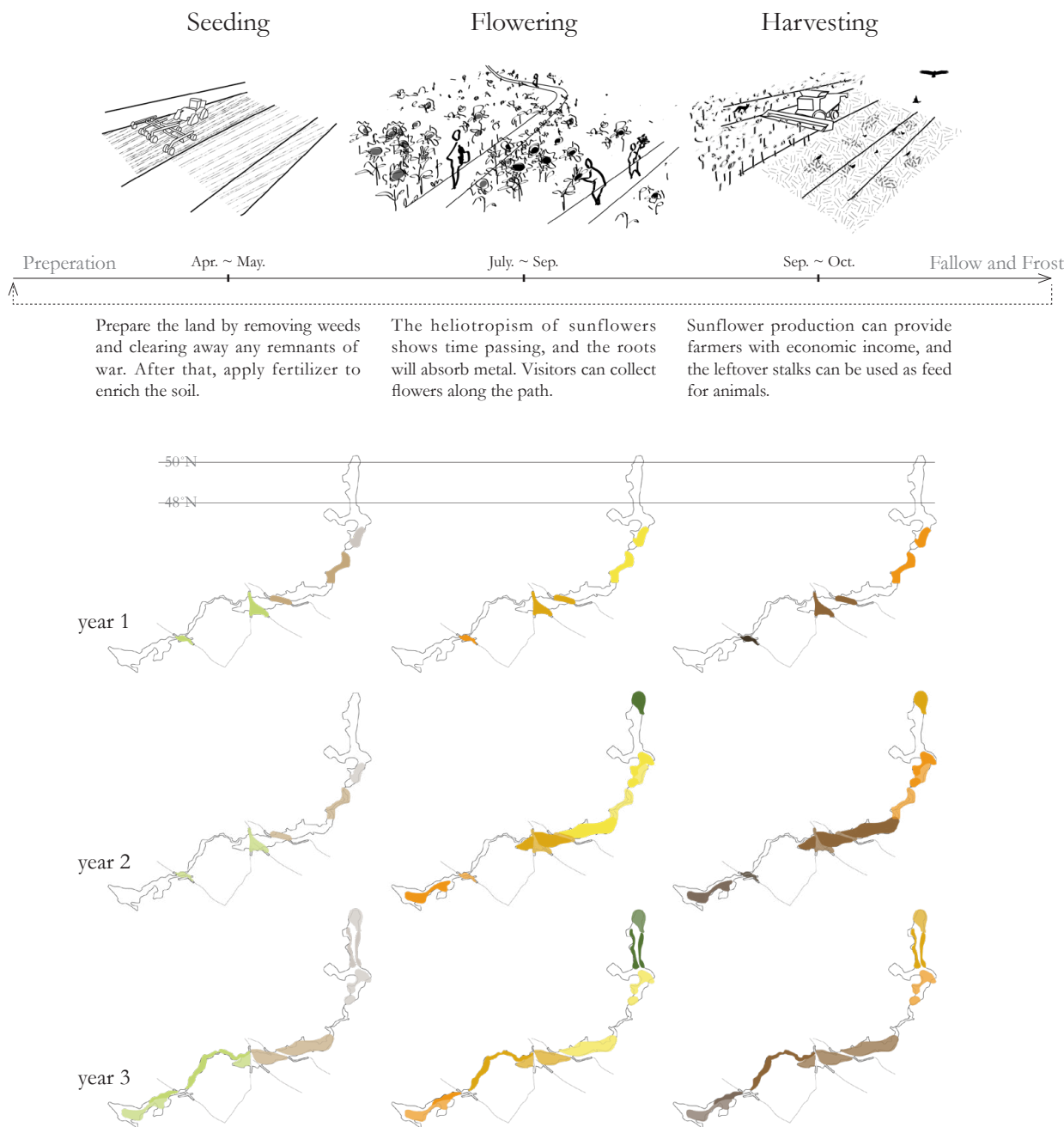


Figure 4-15 Color scheme of the sunflower field program
Source: drawn by author

Approximately six months after the land demining strategy was implemented, a three-year plan of sunflower healing began. This plan symbolized the recovery of the land after more than three years of brutal conflict. Over these three years, the colors of the landscape in this border area

will continuously change with the cycles of sunflower cultivation. Since the border area spans about five latitudes, the region will showcase a variety of colors, even within the same season, reflecting the passage of time. Additionally, sunflowers are widely recognized for their role in

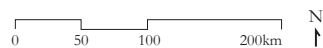
Sources: Kamil M. AL-Jobori & Athar K. Kadhim (2019). Evaluation of sunflower (*Helianthus annuus* L.) for Phytoremediation of lead contaminated soil



Figure 4-16 The sunflower cultivation area within the border zone
Source: drawn by author

phytoremediation, which helps restore land and eliminate contaminants from the war. Research indicates that sunflowers can reduce metal substances in the soil to 10% of their original concentration within approximately two years. (Kamil M., 2019)

- sunflower field-phase 1
- sunflower field-phase 2
- sunflower field-phase 3
- defensive structures



LAND HEALING STRATEGY

The 49th Cultural Route



Figure 4-17 The elevated pathway in The Bluff, Ypres
Source: photoed by author

AN ELEVATED PATHWAY

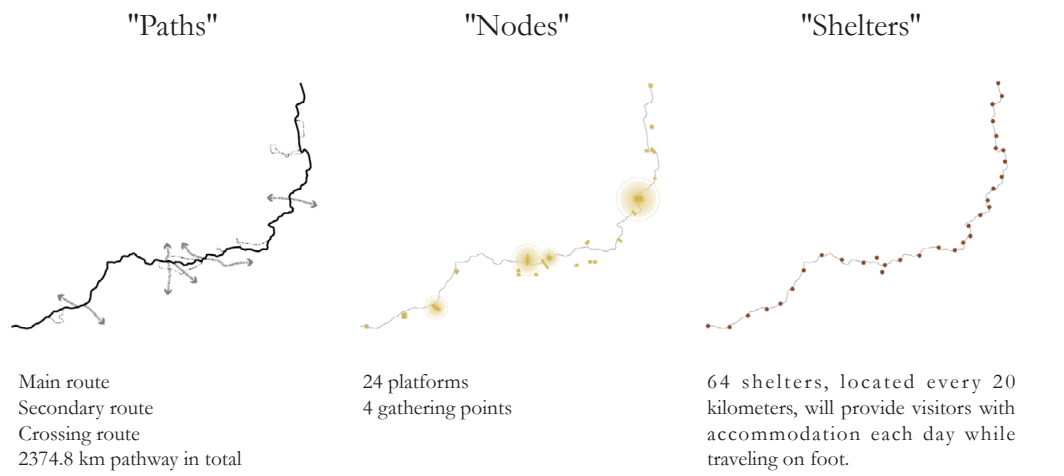
The 49th cultural route at the border of East and West

A path of stories and spaces to experience

A 2,374.8 km pathway will stretch across the entire strip of the zone, weaving through various nodes and shelters where visitors can stay during the two-month journey on foot. This pathway brings the narrative of the neutral zone to life, making it more tangible for those who experience it.

LAND HEALING STRATEGY

The 49th Cultural Route



Neutral Materilization selection :

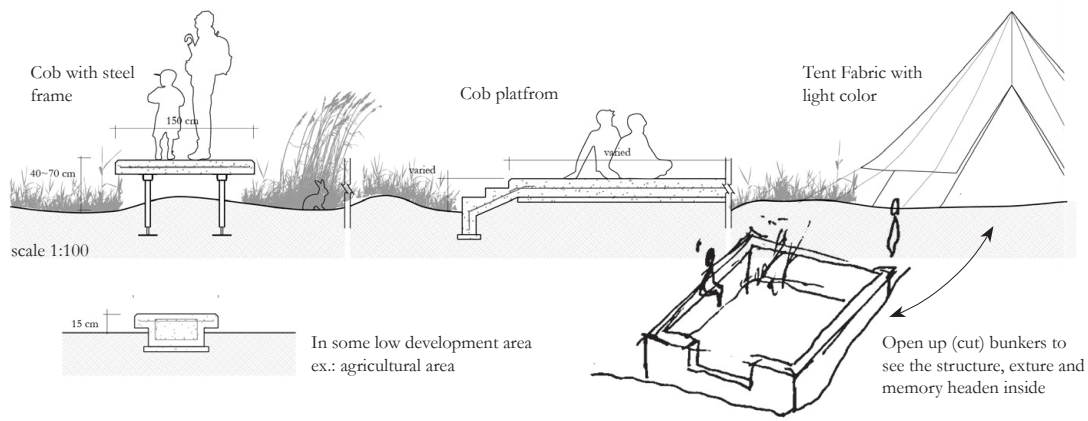


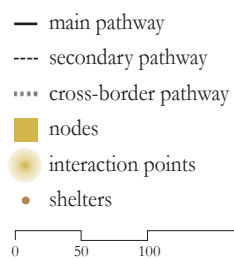
Figure 4-18 Reference images of the landscape elements along the route
Source: landezine.com, 2013/ www.artsy.net/ www.remodelista.com, 2024

An elevated pathway will traverse the entire length of the border zone, accompanied by several nodes and shelters. This pathway will become the 49th cultural route of the Council of Europe and will be the longest cultural route at the boundary of Eastern Europe and Asia. Some nodes along

the path will represent the concept of "islands," which are subtle landscape structures or elements designed for individuals to enter, explore, and experience.



Figure 4-19 The paths, nodes and shelters of the cultural route within the border zone
Source: drawn by author



5

DESIGN EXPLORATIONS OF THE NEUTRAL ZONE

This chapter delves into the design explorations of five "Sectors" and "Nodes" along the neutral zone, illustrating their unique landscape characteristics and concrete design interventions. It aims to provide a comprehensive understanding of the narrative continuity and integrity of the neutral zone.

"SECTORS" and "NODES"

" SECTORS "

Every sector requires specialized restoration treatments that reflect its unique landscape characteristics, offering experiences and reflections for individuals.



" NODES "

In each sector, “Nodes” are landscape objects that are subtly introduced into the environment, inviting individuals to enter, observe, and experience from a suitable distance.

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The Memorial Sector

The Agricultural Sector

The Nature Sector

The Route Crossing Sector


The River Crossing Sector

]

]

Spatial area

Linear crossing

 Zoom in Locations

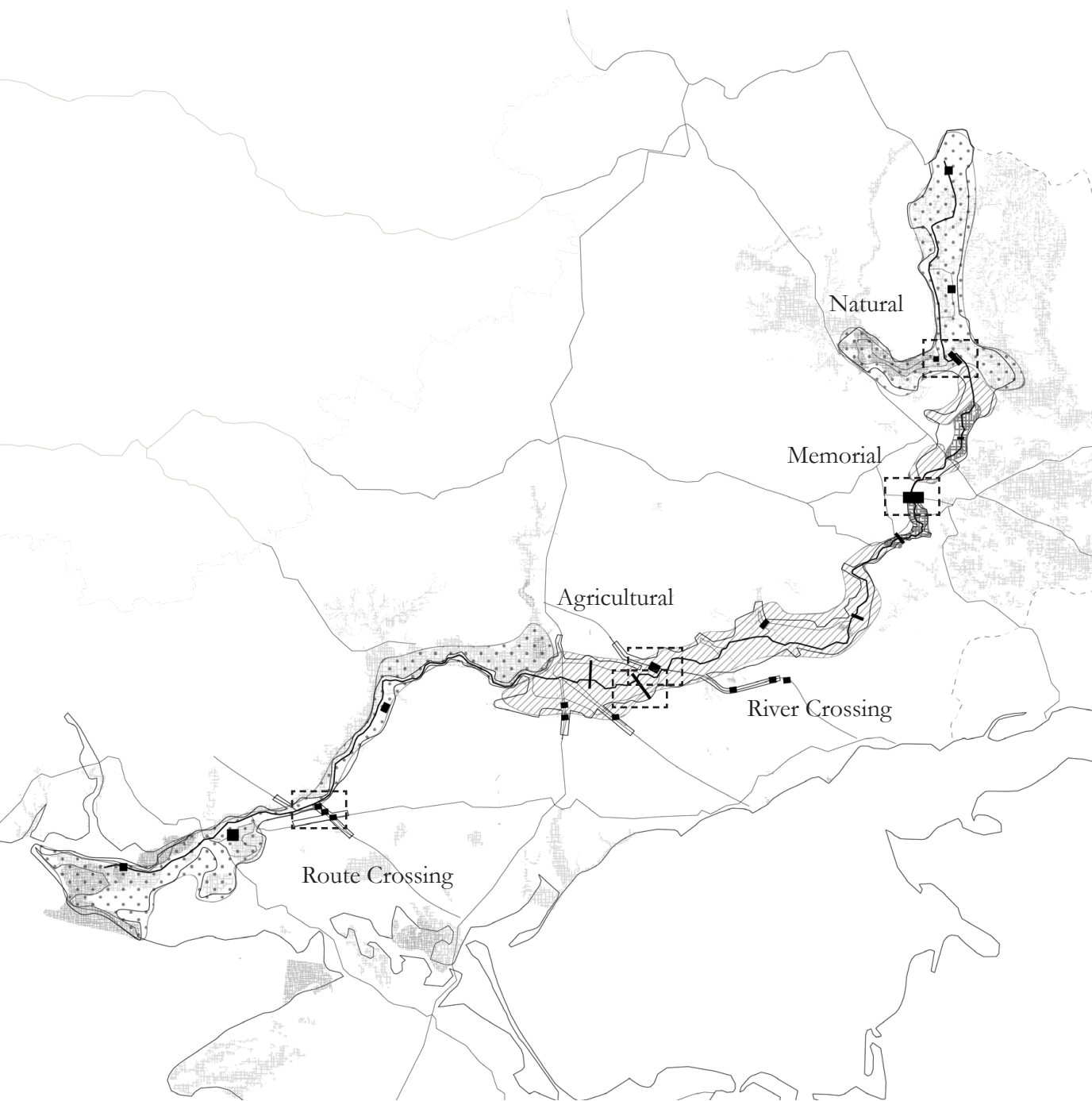


Figure 5-1 The zoom in design location in each sector
Source: drawn by author

"SECTORS" and "NODES"

Overview concept and visualization

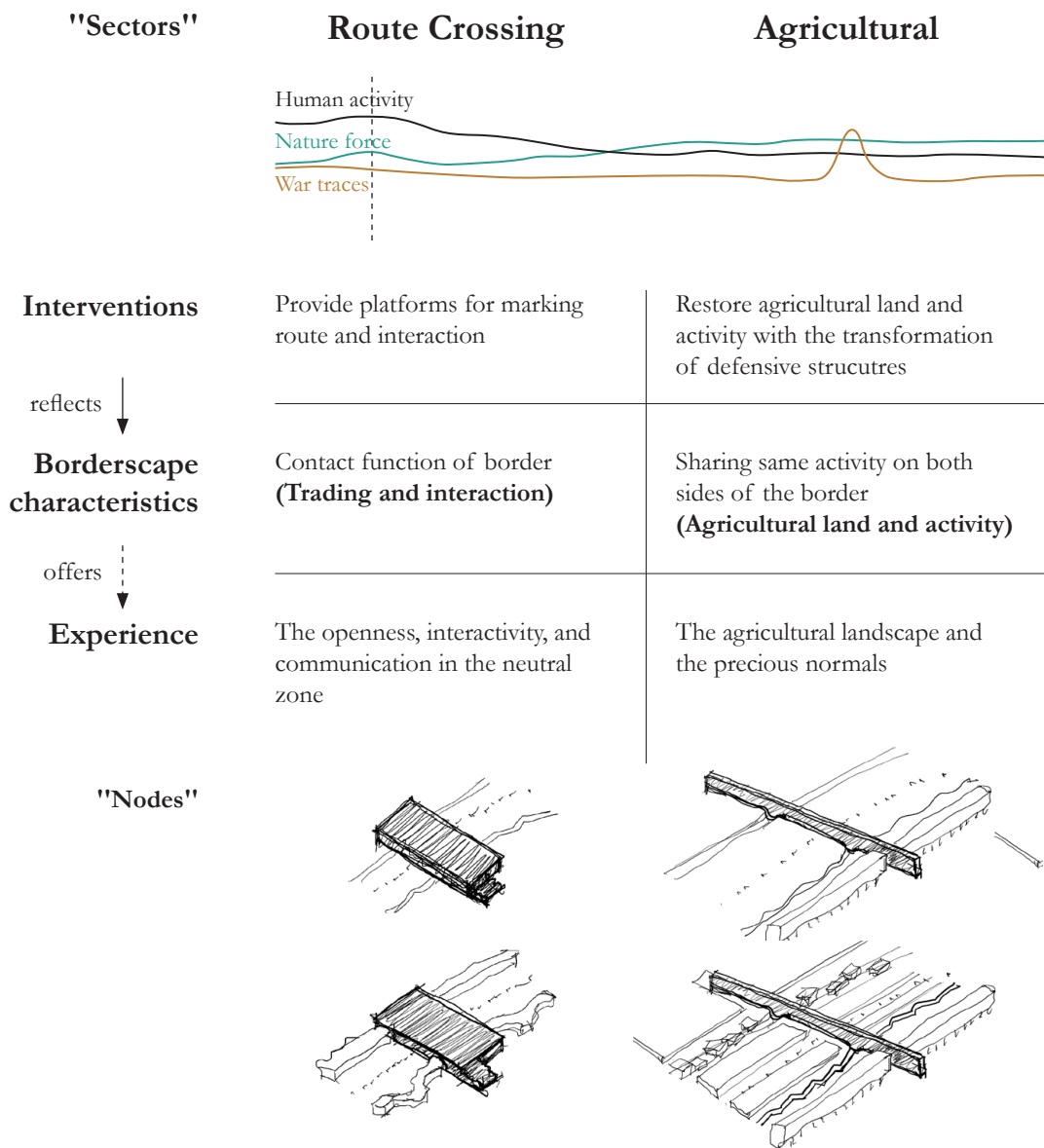


Figure 5-2 The overview design concept of "Sectors" and "Nodes"
Source: drawn by author

The differentiation of five sectors and nodes aims to capture and showcase the diverse landscape characteristics of borderscapes and the remnants of war along the neutral zone. A series of landscape-related experiences will be created to provide visitors with opportunities to stop,

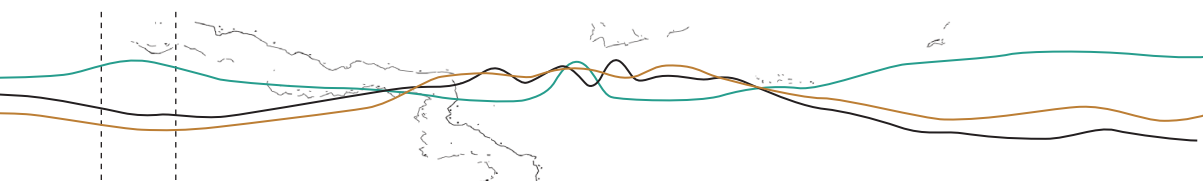
observe, reflect, and encourage them to explore this 3,000 km linear zone.

The series begins with a crossing route and a subtle platform, serving as an accessible threshold into the zone. Visitors then enter a wide

River Crossing

Memorial

Natural



Accelerate riverbed ecological recovery

Keep war traces visible
Provide observation and memorial spaces

Implement ecological treatment based on natural succession

Natural type of border
(River)

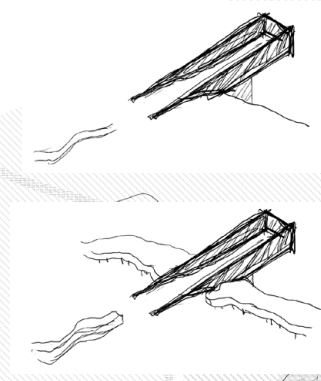
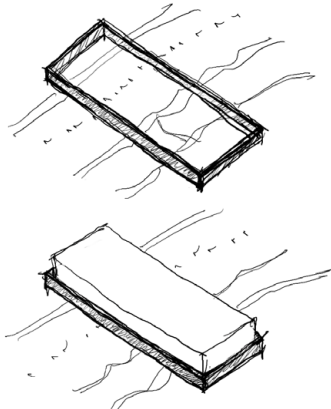
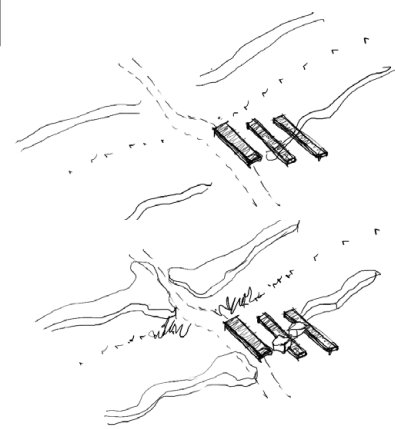
Filter function of border
(heavy battle and scars)

Natural type of border
(River)

The natural force of river

The trauma of war, nature's reclaiming and solace found in witnessing the passage of time

The diversity of the natural recovery process

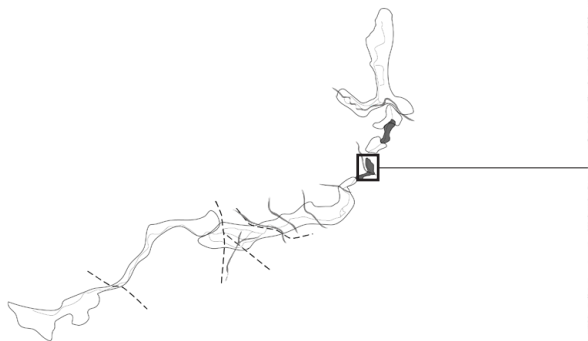


agricultural landscape, which offers expansive views and farming activity. Gradually, visitors encounter a series of streams interwoven within the farmland, where subtle topography and planting create moments of enclosure. The path then leads to the most impactful and spatially

dense part of the site—the memorial zone—where the landscape conveys the memory of war. Finally, visitors are released into a more organic setting, where the landscape is defined by natural succession, symbolizing healing and continuity through the quiet resilience of nature.

SECTOR 1: MEMORIAL SECTOR

Zoon in analysis



The memorial sector is located near Donetsk and Holivka, where the heaviest battles and casualties occurred.

Region: Donetsk Oblast

Area: 1310.9 km2

Landscape Features:

The area is primarily characterized by agricultural land, interspersed with streams.

Defensive Structures:

Due to its proximity to two major cities, the region boasted a robust front-line defensive layout. The first layer consisted of an anti-tank ditch, which was followed by a line of dragon's teeth and an extensive minefield. Beyond these, a grid-like structure formed by double-layered ditches provided additional defense, culminating in a series of bunkers that served as the final stronghold.

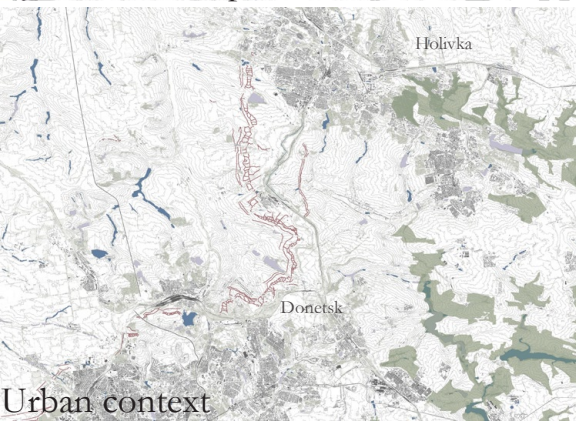
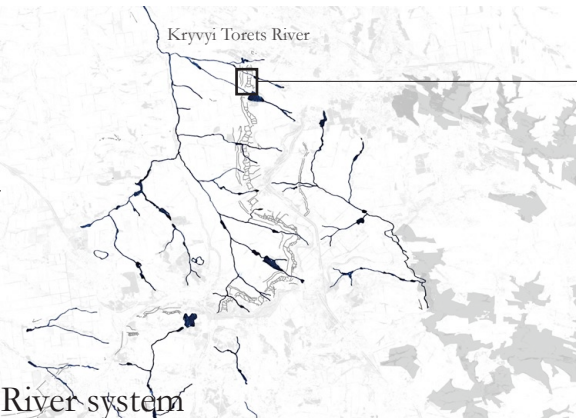


Figure 5-3 Spatial systems of the memorial sector
Source: drawn by author

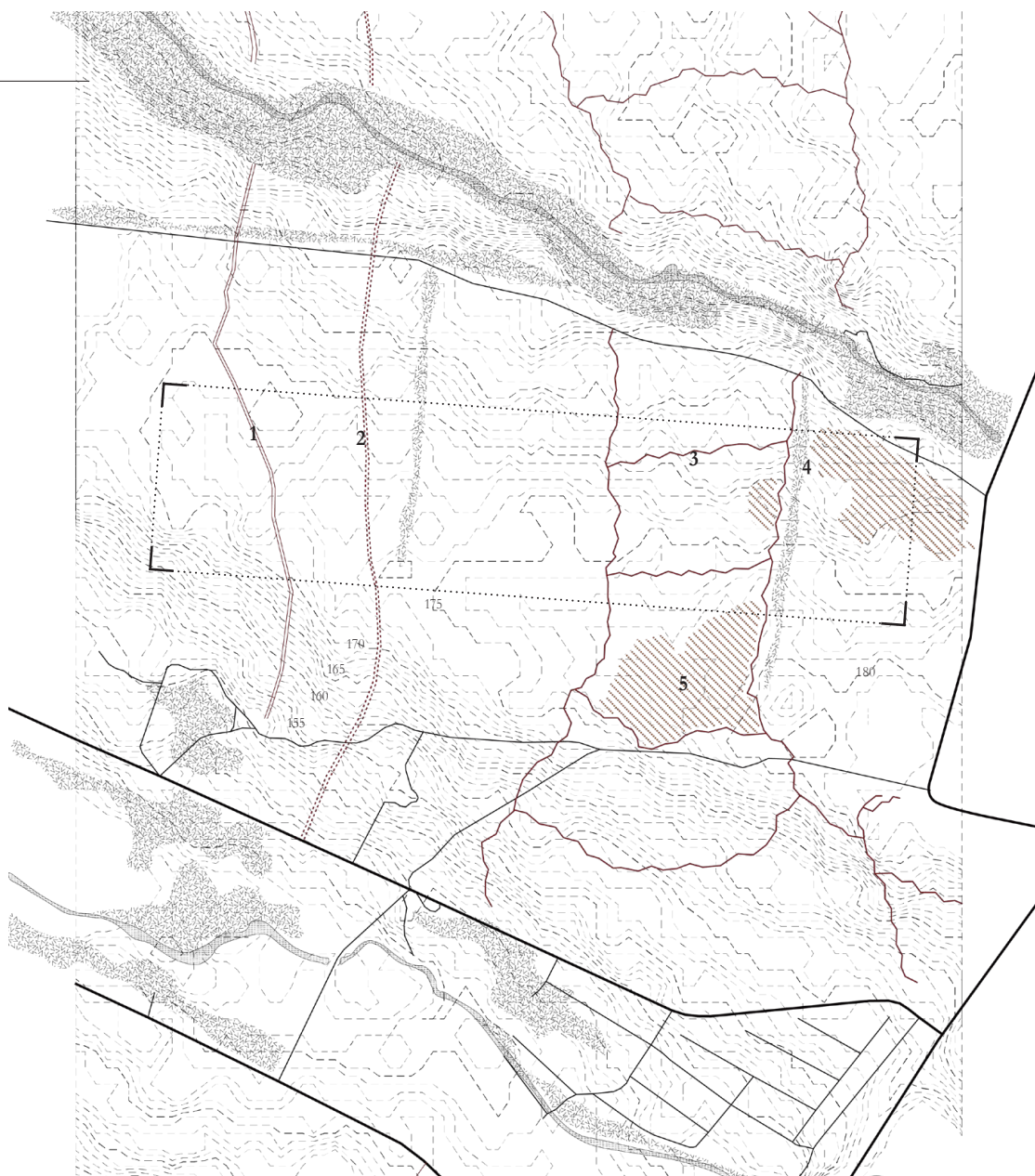


Figure 5-4 The current map of the memorial sector
Source: drawn by author

- | | |
|--------------------------|---------------|
| 1 Anti-tank Ditch | Vegetation |
| 2 Dragon's Tooth | Water body |
| 3 Double trenches system | Burnt land |
| 4 Bunkers | Roads |
| 5 Burnt land | Contour lines |

0 100 500m

N
↑

SECTOR 1: MEMORIAL SECTOR

Typical section of the sector

The memorial sector aims to preserve and reinterpret the physical traces of war, ensuring history remains visible in the terrain. Through minimal interventions, it offers spaces for

observation, reflection, and remembrance. Visitors are invited to engage with the trauma of the past, where the remnants of conflict meet the slow, healing processes of nature.

SECTION: Before war

SECTION: Current

0.3~0.8km

Anti-tank ditch

0.3~0.8km

Dragon's tooth

SECTION: Design



Betula pendula



Populus alba



Ulmus laevis



Robinia pseudoacacia



Miscanthus giganteus



Helianthus annuus

Phytoremediation species



Vulpes



Voles



Eastern imperial eagle

Farming Area

Livestock from nearby farms are brought to this area for grazing during spring, summer, and autumn.

Animal Grazing Area

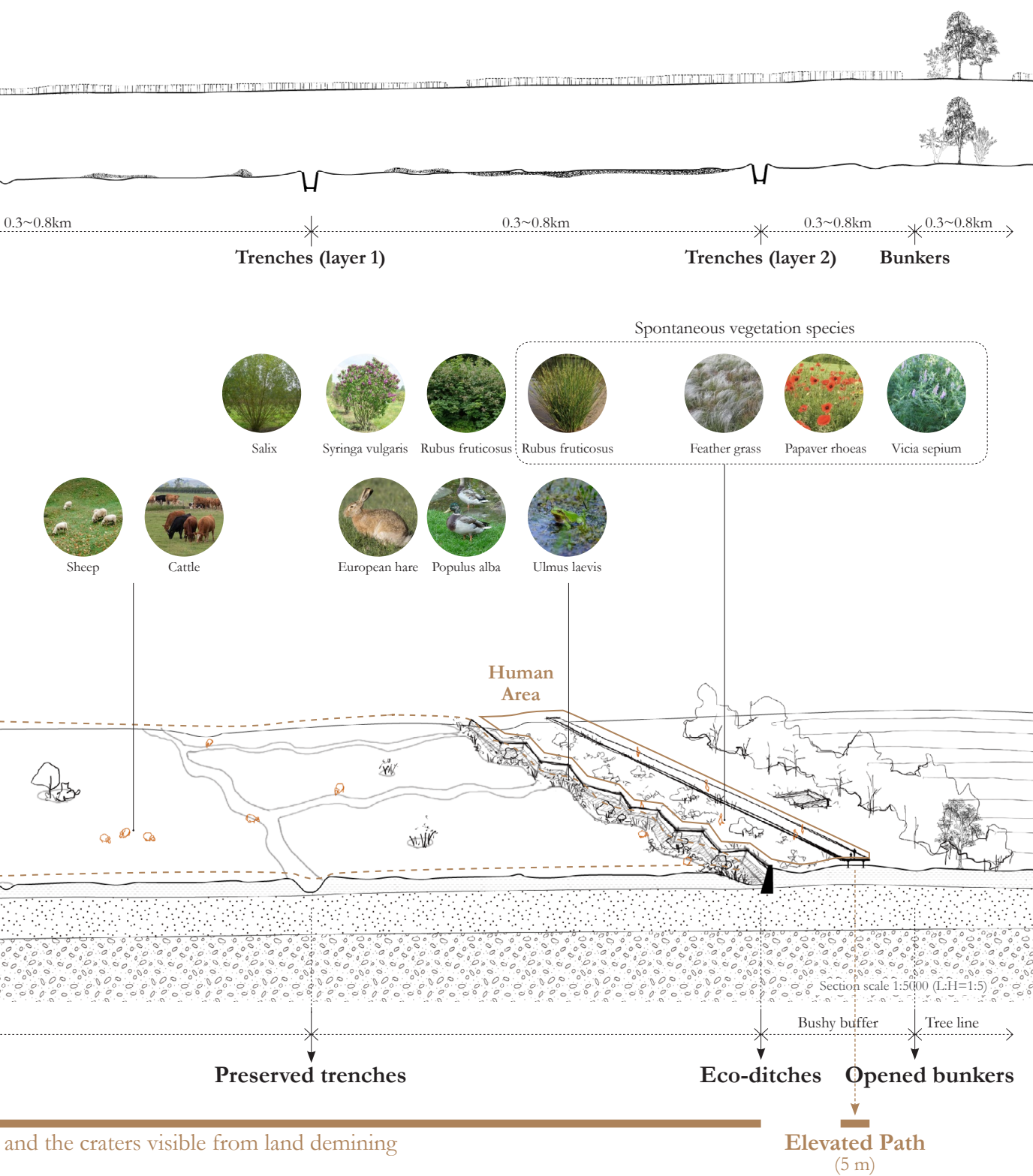
Agricultural field

Tree group indicators

Objet trouvé

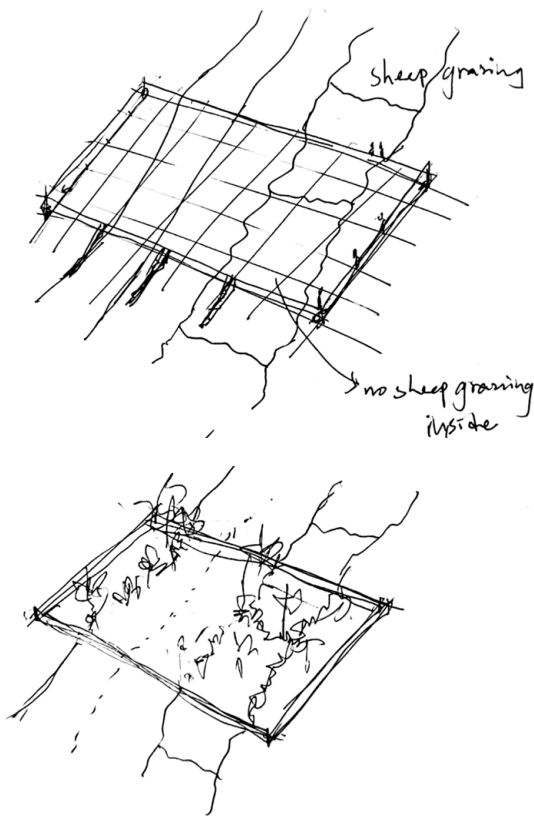
Figure 5-5 Design section of the memorial sector
Source: drawn by author

Scars Memory land - Grazing keeps the openness, the scars
(1.5~3 km)

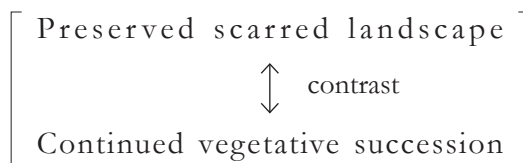


SECTOR 1: MEMORIAL SECTOR

Concept



Witnessing the Passage of Time

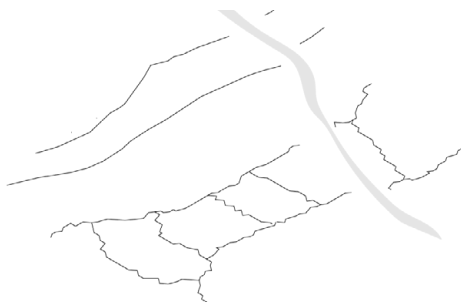


By fencing off a portion of the land, the design creates a framed contrast between two conditions: one side lies a scarred landscape that bears the physical marks of war, while on the other, natural vegetative succession is taking over.

The contrast of preserved memories and continued growth symbolizes life, renewal, and the passage of time, fostering a sense of comfort, healing, and reflection on the trauma of war.

SECTOR 1: MEMORIAL SECTOR

Masterplan



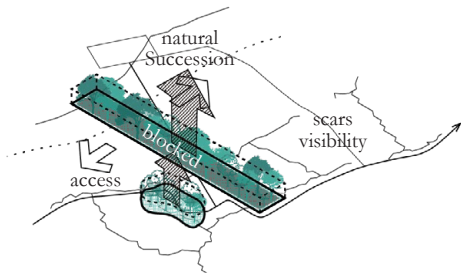
Current situation

A robust frontline defensive layout with some burnt land in between.



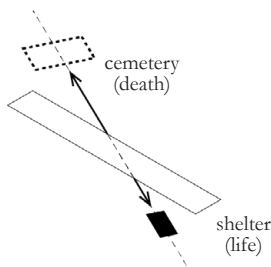
Preserving scars

Interpreting trenches, anti-tank ditches and using grazing as a management tool.



Framing the Space and time

A design of "Node" is incorporated into the landscape to provide experiential qualities of time passage and comfort.



Axis of life and death

The axis represents both life and death, with the cemetery and visitor shelters located at each end.

Figure 5-6 Design steps of the memorial sector
Source: drawn by author

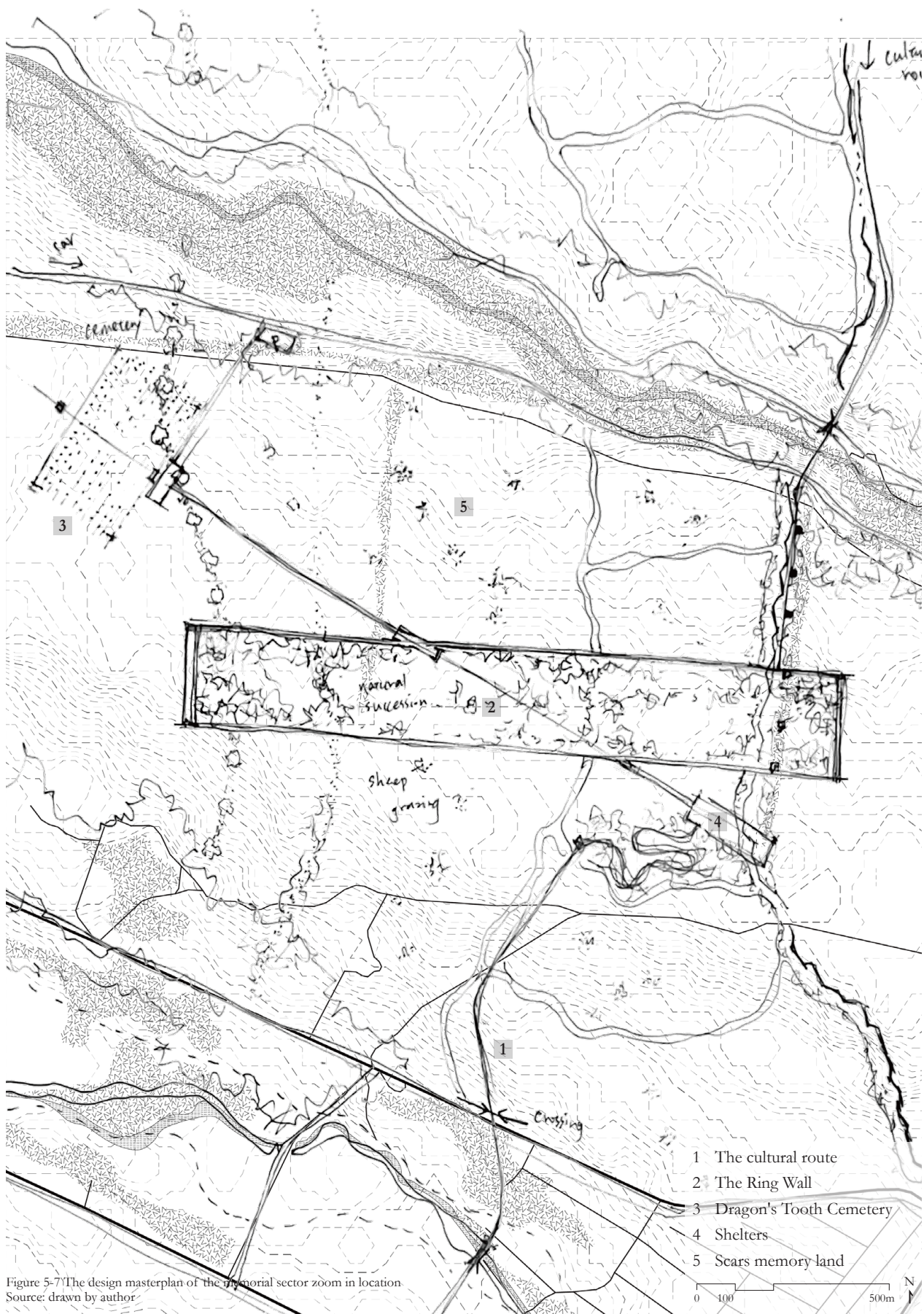


Figure 5-7 The design masterplan of the memorial sector zoom in location
Source: drawn by author

SECTOR 1: MEMORIAL SECTOR

Design spatial experience

Eco-ditches

The second layer of the double trench system is transformed into as eco-ditches. The wall of the trench that faces Russia is reinforced with a concrete structure to replace the original wooden one, which would deteriorate over time. On the opposite side, it features a natural, gentle slope, making it easily accessible for livestock. The contrast symbolizes the threat of invasion from the Russian side.

Additionally, it spatially separates areas for people and livestock grazing, creating a barrier similar to a "haha wall." The continuous, horizontally aligned wall reflects subtle variations in the terrain. The eco-ditches serve as water sources and promote biodiversity, supporting ecological development in the region.





SECTOR 1: MEMORIAL SECTOR

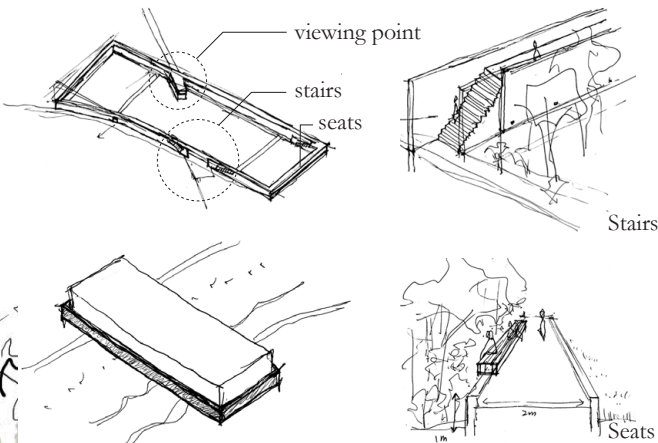
Design spatial experience

Time Ring Wall

Building walls for visitors to climb up, allowing them to gain their own perspective on the landscape, distinct from that of the soldiers who fought there.

The entire loop will be a 30-minute walk along the top of the wall. Visitors will be able to observe natural succession on one side and, on the other, the intact scars of warfare.

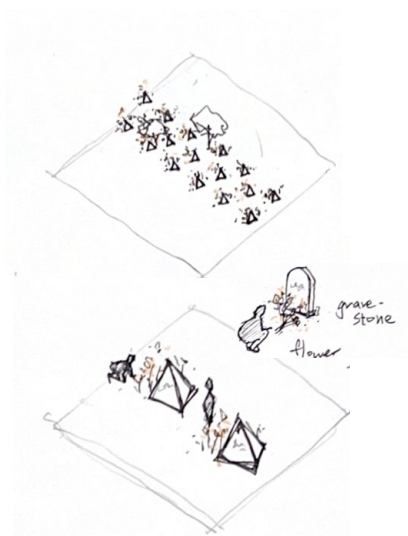
Dimensions:
L: 1.5km*W: 0.25km*H: 1.5-2m
(varied according to terrain)



Dragon's Teeth Cemetery

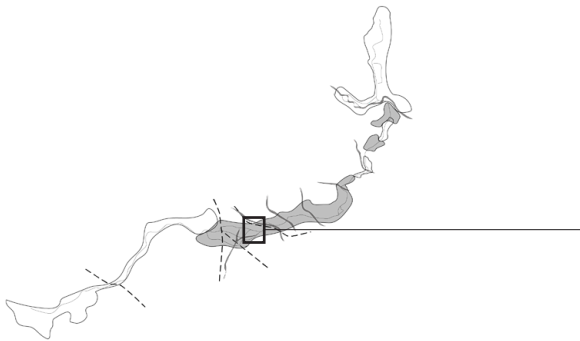
Dragon's teeth, as the "objet trouvé" in the war landscape, are rearranged and reassembled to create a cemetery.

The spontaneous growth of vegetation is influenced by soil accumulation and changes in microclimate, both of which are caused by the dragon teeth. This imagery evokes a graveyard adorned with flowers in front of the gravestones.



SECTOR 2: AGRICULTURAL SECTOR

Zoon in analysis



The agricultural sector is located in the expansive agricultural land, with lots of small creeks, which is the most typical landscape of eastern Ukraine.

Region: Zaporizhzhia Oblast and parts of Donetsk Oblast

Area: 12741.9 km²

Landscape Features:

The area is primarily characterized by agricultural land, interspersed with streams.

Defensive Structures:

Due to its location within a vast agricultural landscape, the front-line defensive layout was repeated every 5 to 10 kilometers, appearing once or twice throughout the area. Each layout typically began with an anti-tank ditch, followed by a row of dragon's teeth, and an extensive minefield. This was then succeeded by a line of trenches and bunkers, culminating in several fire points where Russian tanks were positioned to face Ukraine in certain zones.

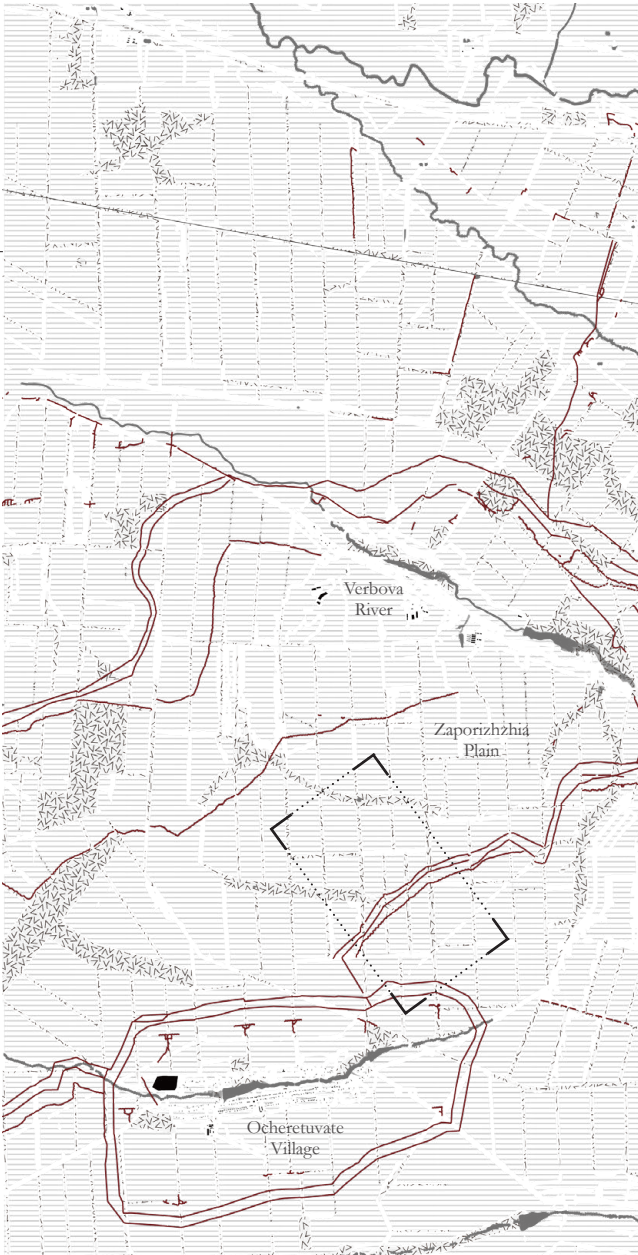








Figure 5-8 The current map of the agricultural sector
Source: drawn by author



-  Vegetation
-  Water body
-  Buildings
-  Agricultural land
-  Roads
-  Defensive structures



SECTOR 2: AGRICULTURAL SECTOR

Typical section of the sector

The agricultural sector aims to restore farmland and agricultural activities by demining landmines and transforming existing defensive structures into functional, sustainable spaces.

The elevated path invites visitors to see the agricultural landscape, the normalcy, and the cultural importance of local farming activities within the terrain.

SECTION: Before war

SECTION: Current

SECTION: Design

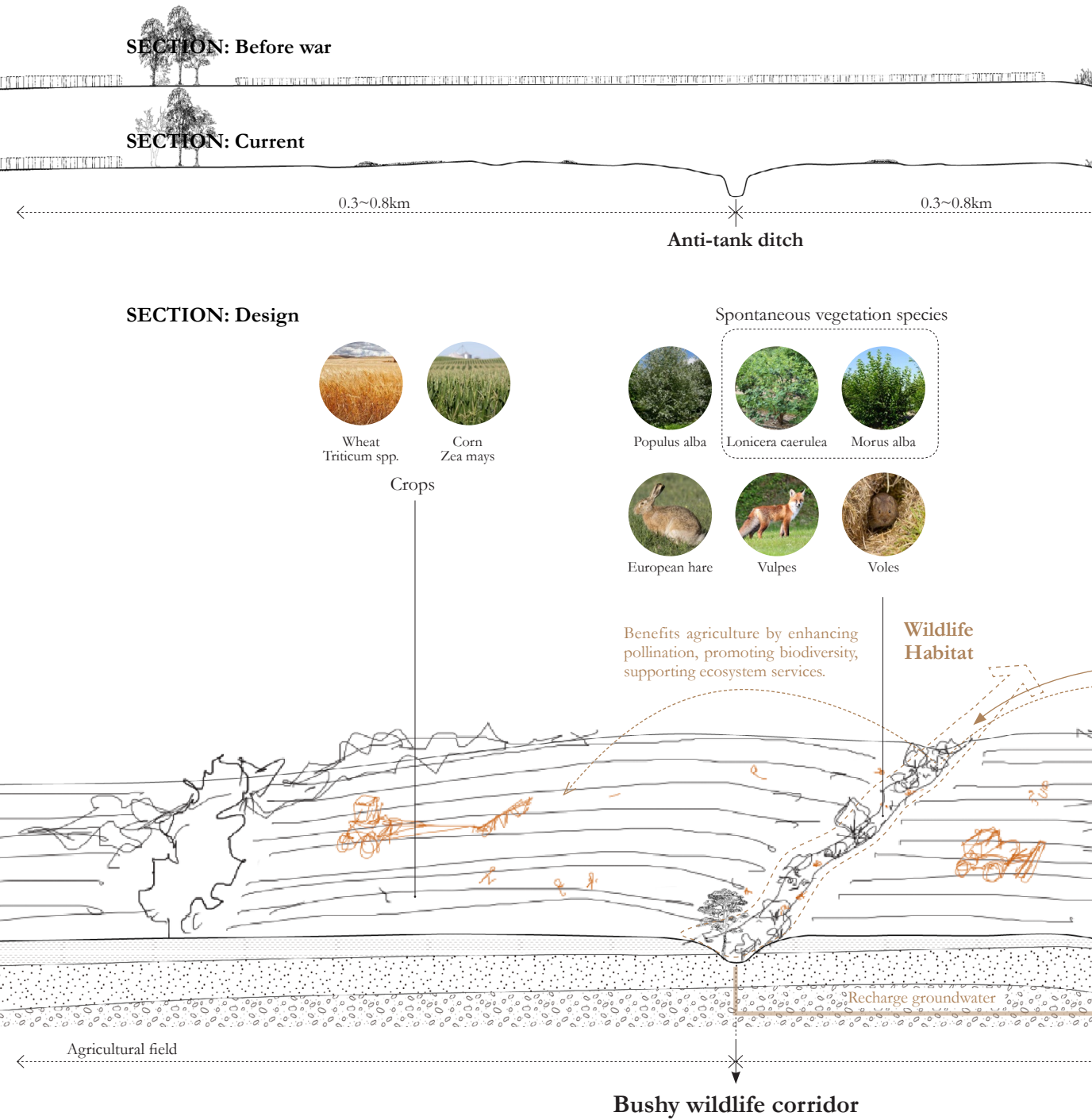
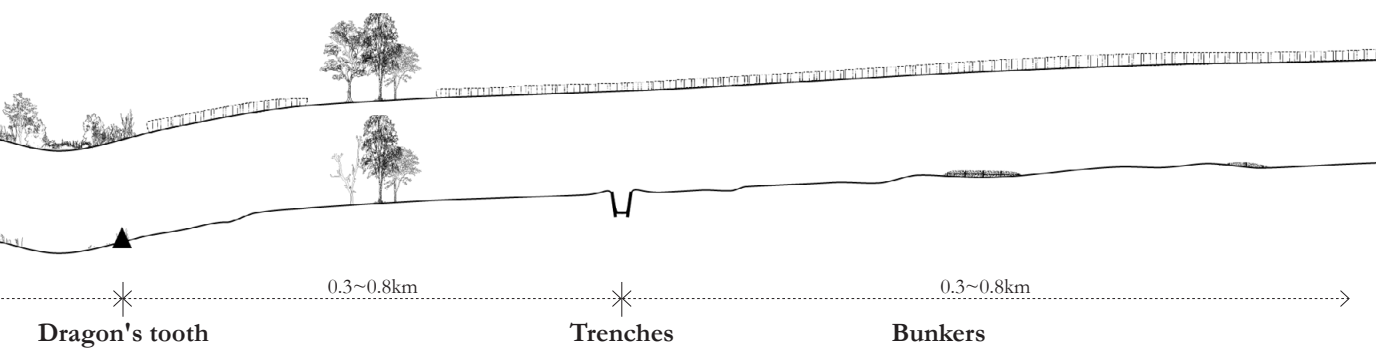


Figure 5-9 Design section of the agricultural sector
Source: drawn by author

Agricultural Continuity
(1.5~3 km)



Salix



Syringa vulgaris



Rubus fruticosus



Typha orientalis



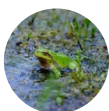
Tilia cordata



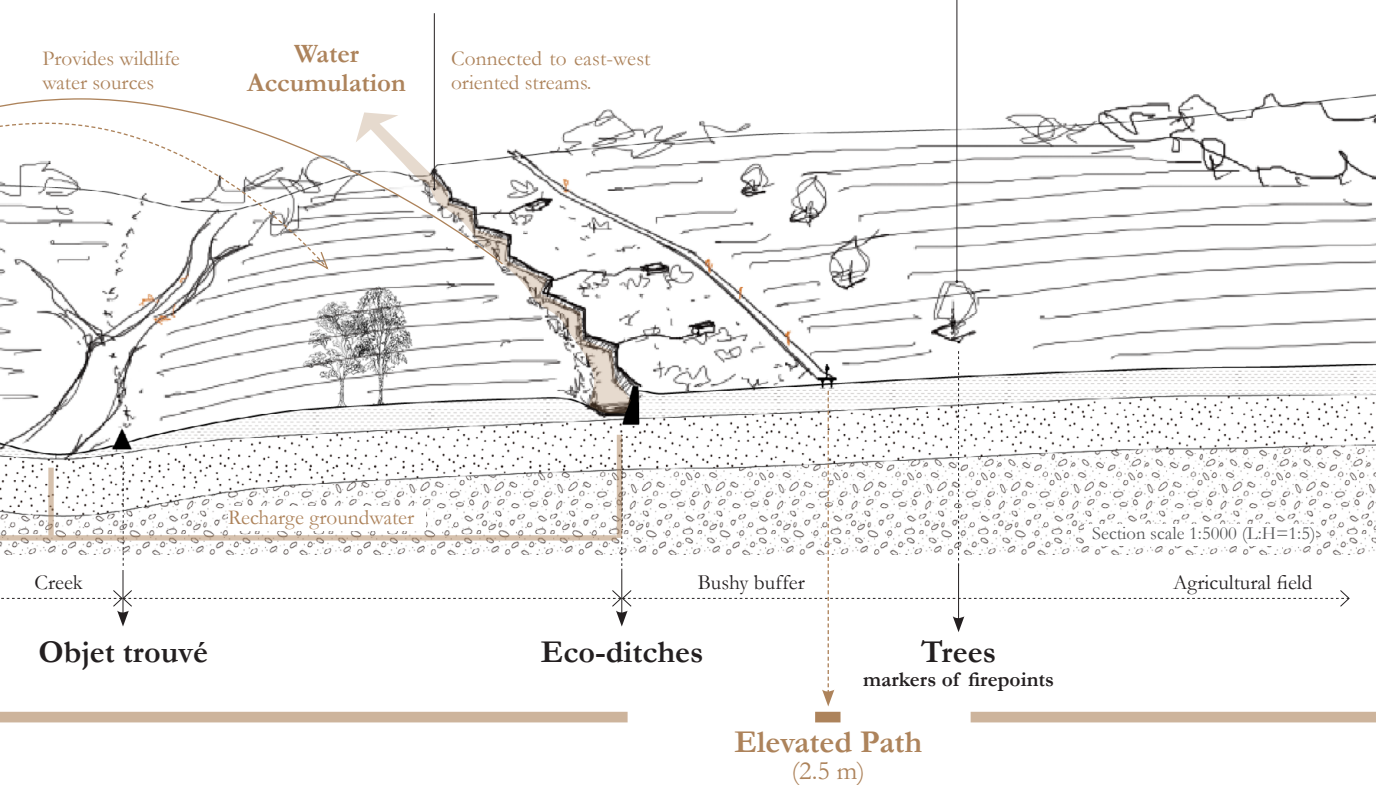
Papaver rhoeas



Populus alba

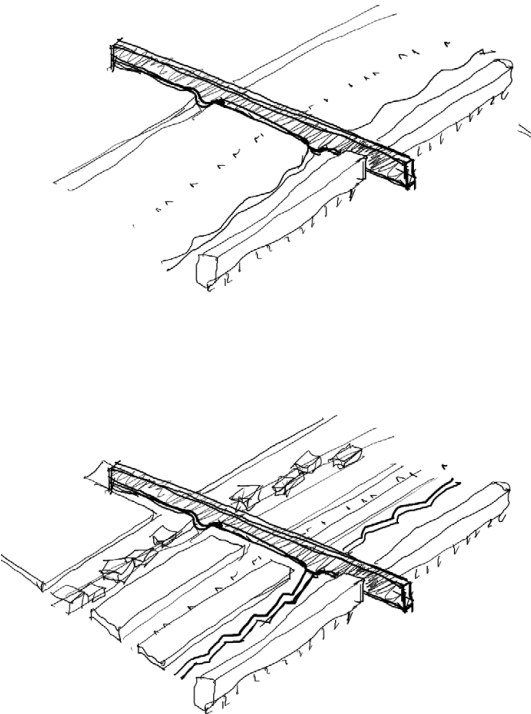


Ulmus laevis

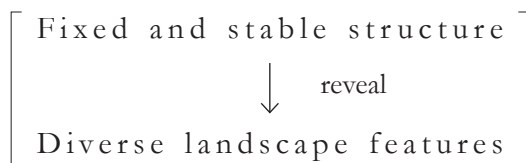


SECTOR 2: AGRICULTURAL SECTOR

Concept



Revealing the Legacy of War Remnants and Agriculture

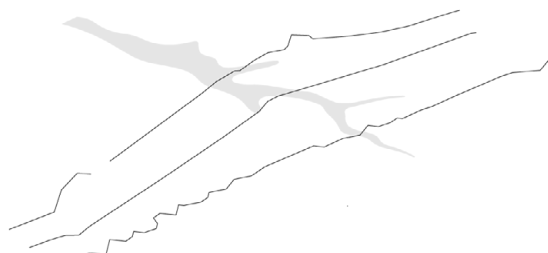


By placing a wall within the restored agricultural land, highlighting the subtle variations in the terrain that have been shaped by the defensive structures from war.

This fixed wall showcases the transformation of the site, illustrating the coexistence of repurposing remnants of conflict and the ongoing continuity of agricultural land across both space and history.

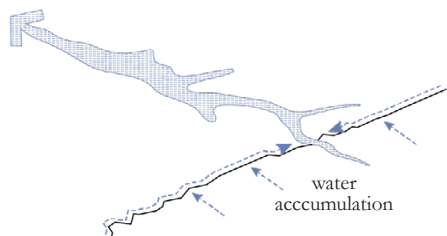
SECTOR 2: AGRICULTURAL SECTOR

Masterplan



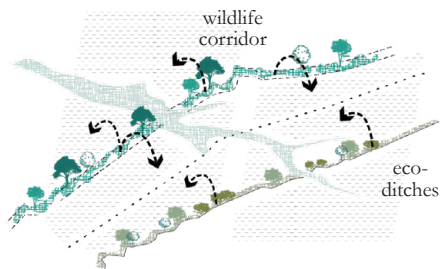
Current situation

Abandoned agricultural land marked by defensive structures and shelling scars.



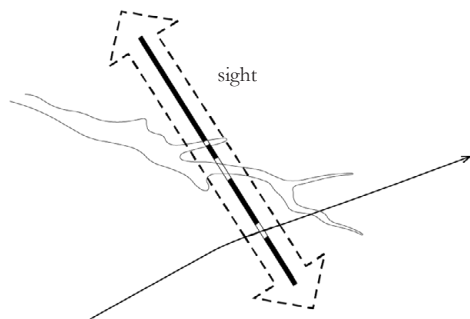
Hydrological system connection

Eco-ditches, repurposed from trenches, collect water and will be integrated into the existing hydrological system.



Agricultural field restoration

Wildlife corridors and ecological ditches, repurposed from defensive structures, support agricultural activities.



Experience and Visual guiding

A wall is placed in the landscape to create spatial experiences and serve as a visual guide toward the landscape features.

Figure 5-10 Design steps of the agricultural sector
Source: drawn by author

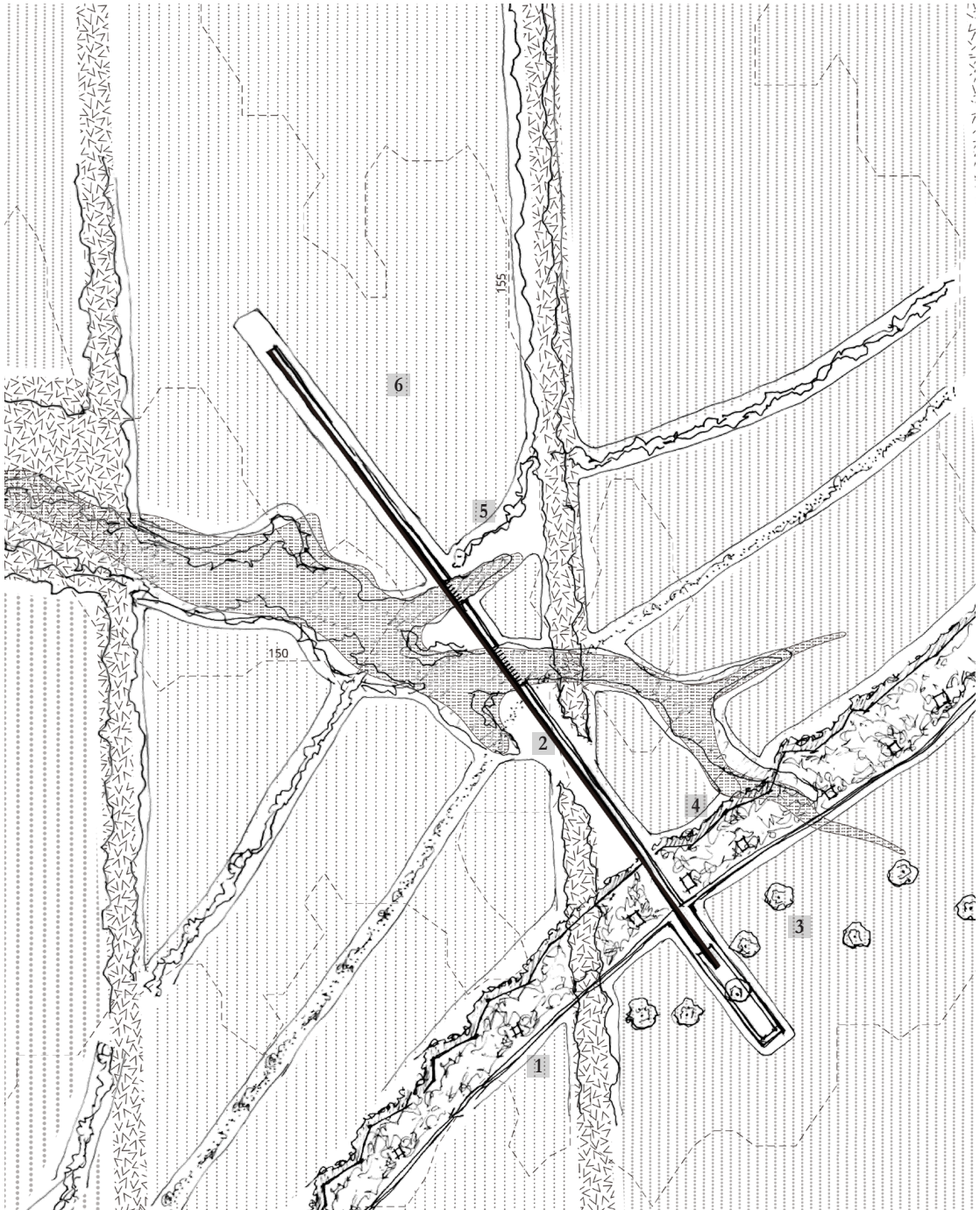


Figure 5-11 The design masterplan of the agricultural sector zoom in location
Source: drawn by author

- 1 The cultural route
- 2 The Wall
- 3 Markers of firepoints
- 4 Eco-ditch
- 5 Bushy wildlife corridor
- 6 Crop fields

0 50 100 200m







SECTOR 2: AGRICULTURAL SECTOR

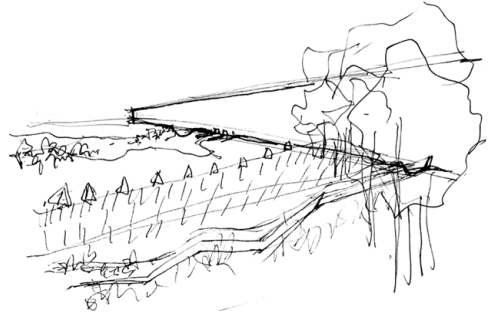
Design spatial experience

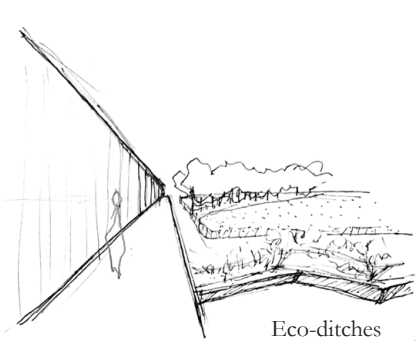
The Living Legacy Wall

The wall runs through the agricultural land, providing different viewpoints that highlight various features. It transitions from eco-ditches to intersections with small creeks, then to the Objet trouvé of dragon's tooth, and the wildlife corridor, eventually leading into the heart of the crop fields.

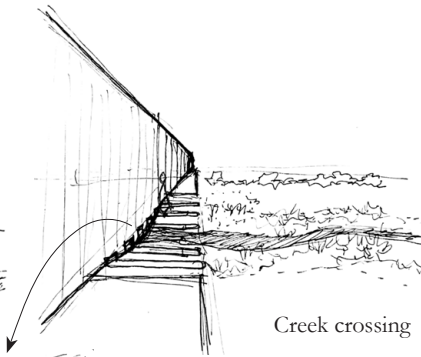
Dimensions:

L: 1.2km*W: 0.3m*H:3.5~5 m
(varied according to terrain)

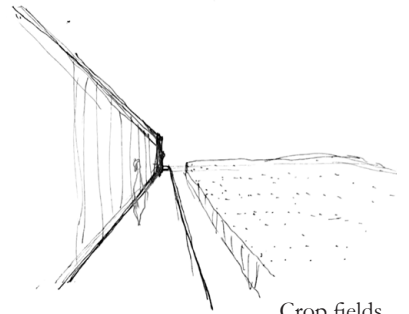




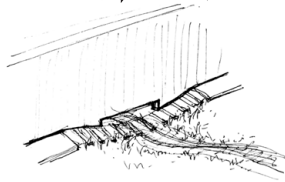
Eco-ditches



Creek crossing



Crop fields



SECTOR 2: AGRICULTURAL SECTOR

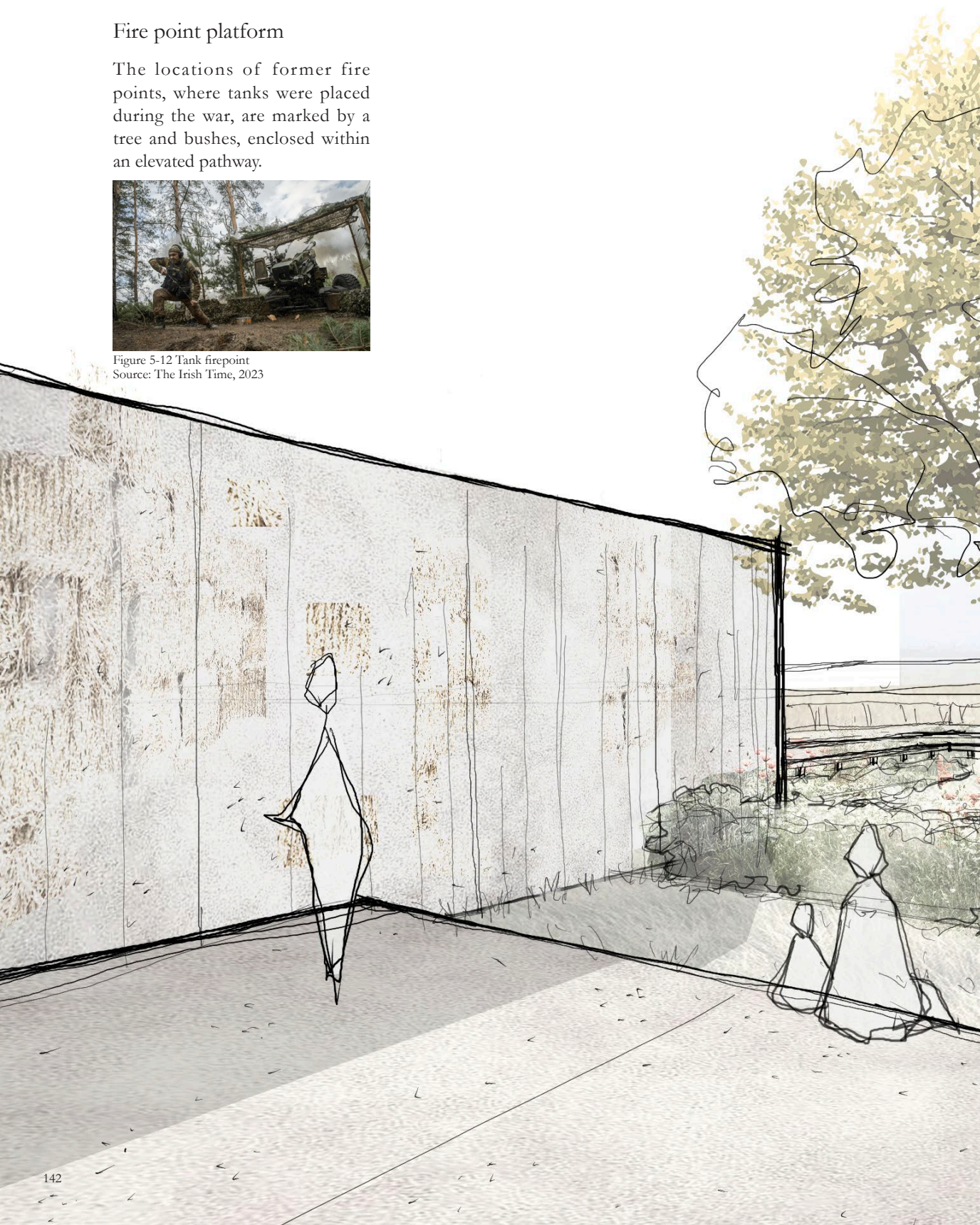
Design spatial experience

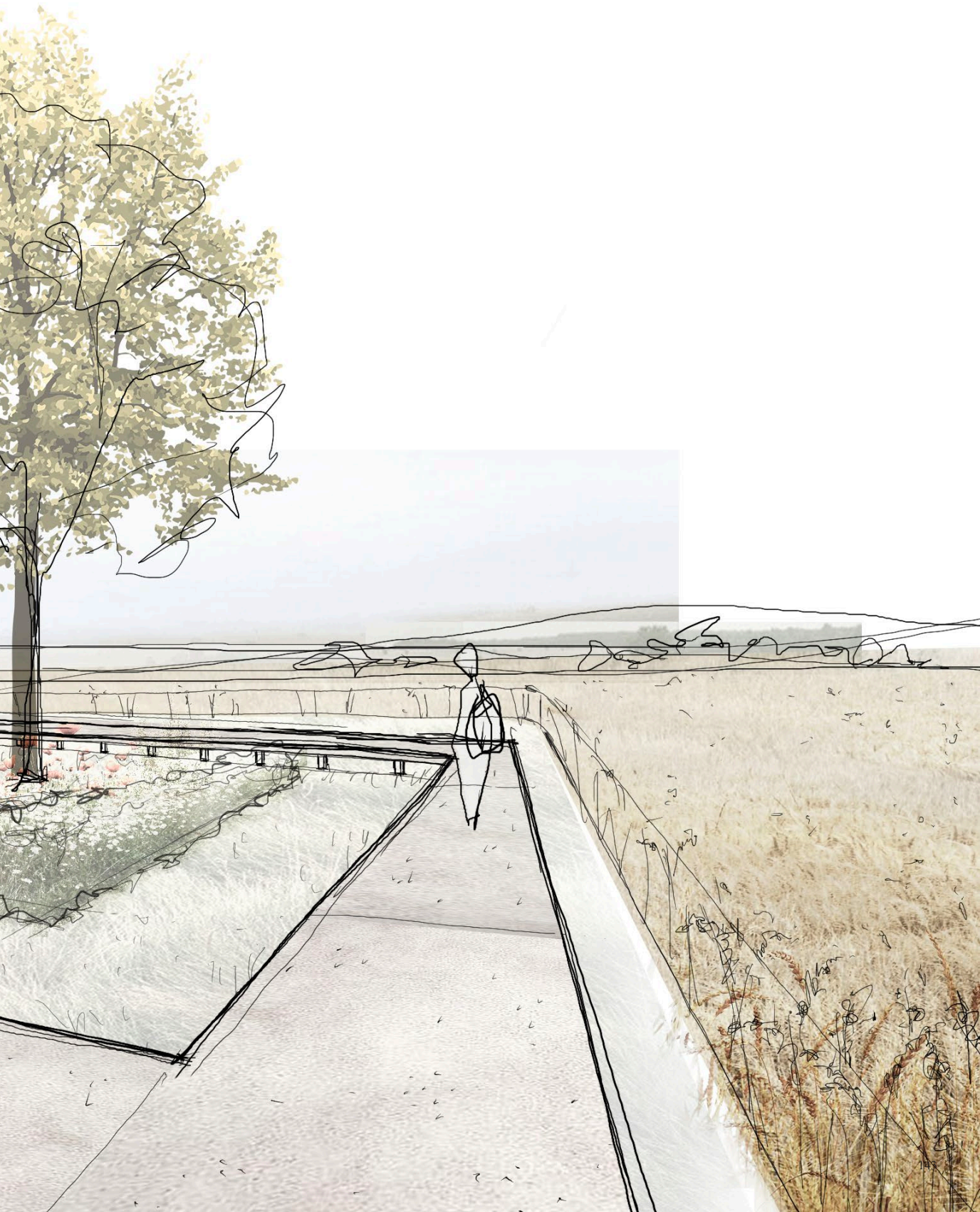
Fire point platform

The locations of former fire points, where tanks were placed during the war, are marked by a tree and bushes, enclosed within an elevated pathway.



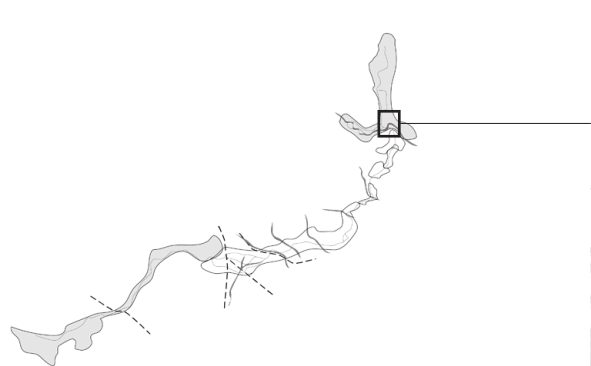
Figure 5-12 Tank firepoint
Source: The Irish Time, 2023





SECTOR 3: NATURAL SECTOR

Zoon in analysis



The natural sector is located in areas rich in natural resources, such as wetlands, forests, and river valleys.

Region: Kherson Oblast, parts of Donetsk Oblast and Luhansk Oblast

Area: 17742.8 km2

Landscape Features:

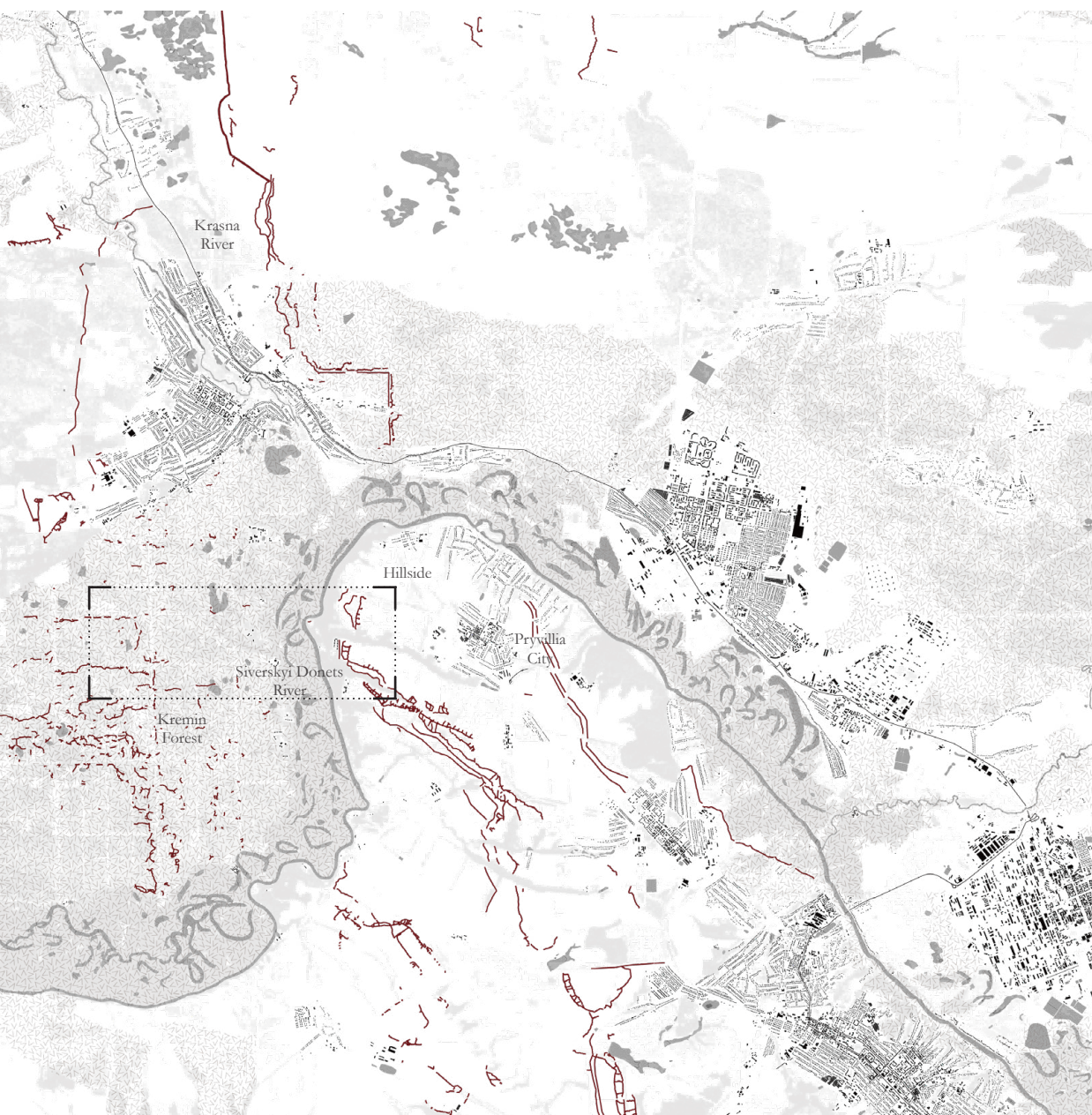
This area is abundant in natural resources that need to be restored and integrated back into the existing ecological systems. I have chosen to focus on the Kremin Forest, a protected area situated alongside the Siverskyi Donets River, which faces a steep slope on the opposite bank.

Defensive Structures:

In the forest, there are scattered trenches that vary in length from 10 to 500 meters, distributed irregularly. On the hillside opposite the river, most of the trenches are positioned along the edge of the slope, accompanied by sporadic, linear arrangements of dragon's teeth.



Figure 5-13 The current map of the natural sector
Source: drawn by author



- Vegetation
- Water body
- Buildings
- Roads
- Defensive structures



SECTOR 3: NATURAL SECTOR

Typical section of the sector

The natural sector aims to support the ecological recovery of a devastated forest through a variety of plant species that align with natural succession.

A viewing platform is subtly incorporated at the edge of the hillside opposite the forest, providing an overview of the ongoing natural recovery process as it unfolds over time.

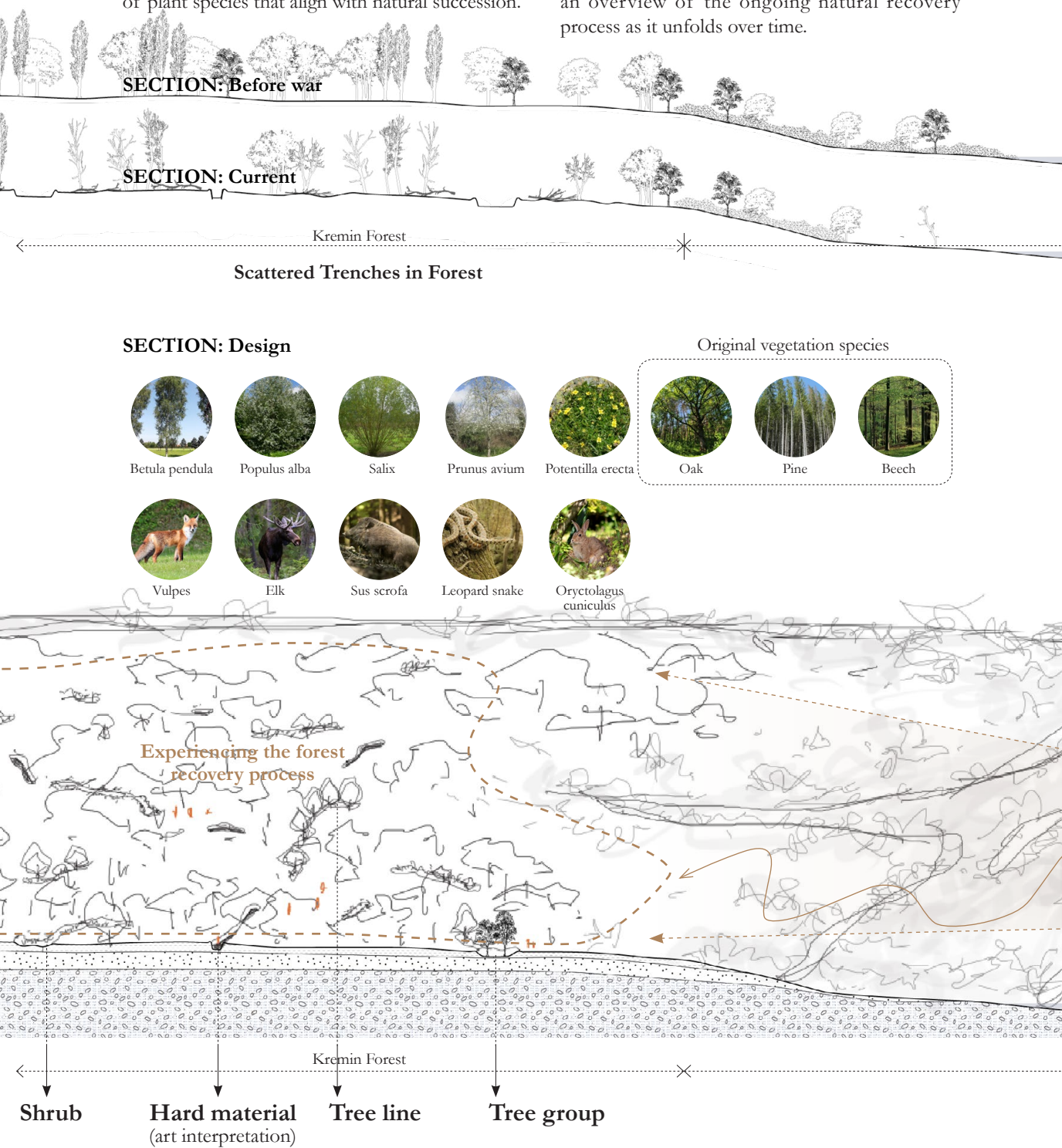
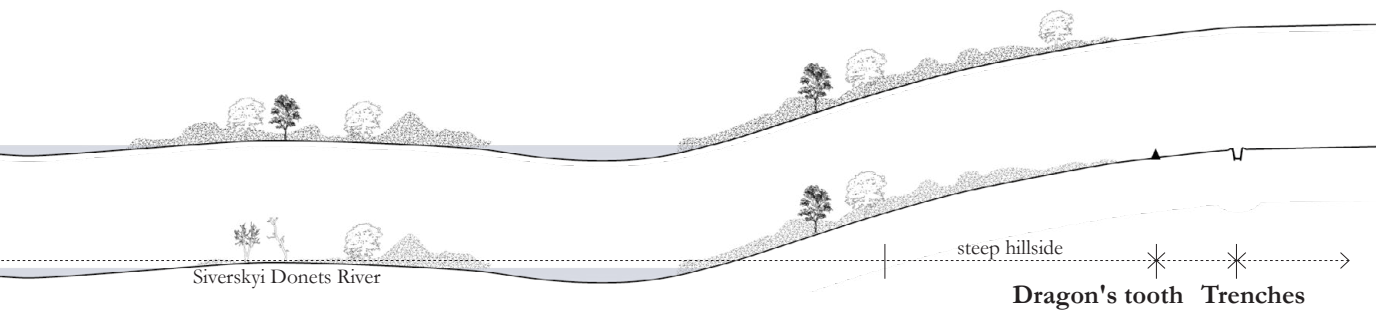


Figure 5-14 Design section of the natural sector
Source: drawn by author

Forest Ecological Recovery
(Variety of plant species: Tree, shrub etc.)



Spontaneous vegetation species



Tilia cordata



Lonicera caerulea



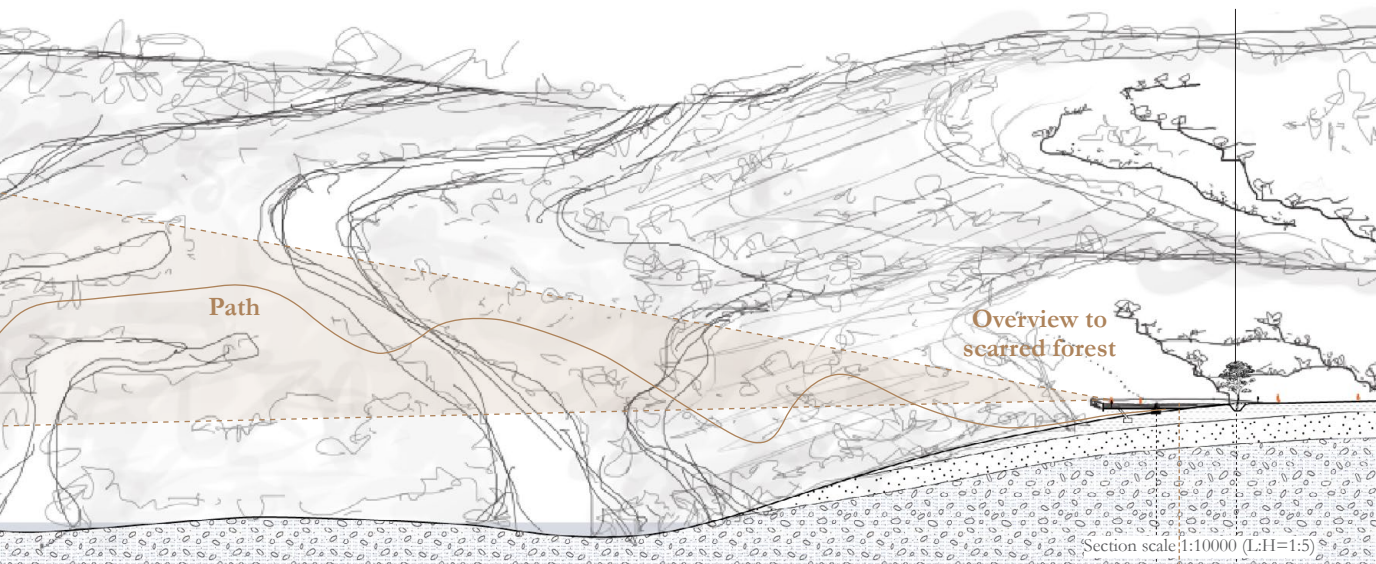
Morus alba



European hare



Voles



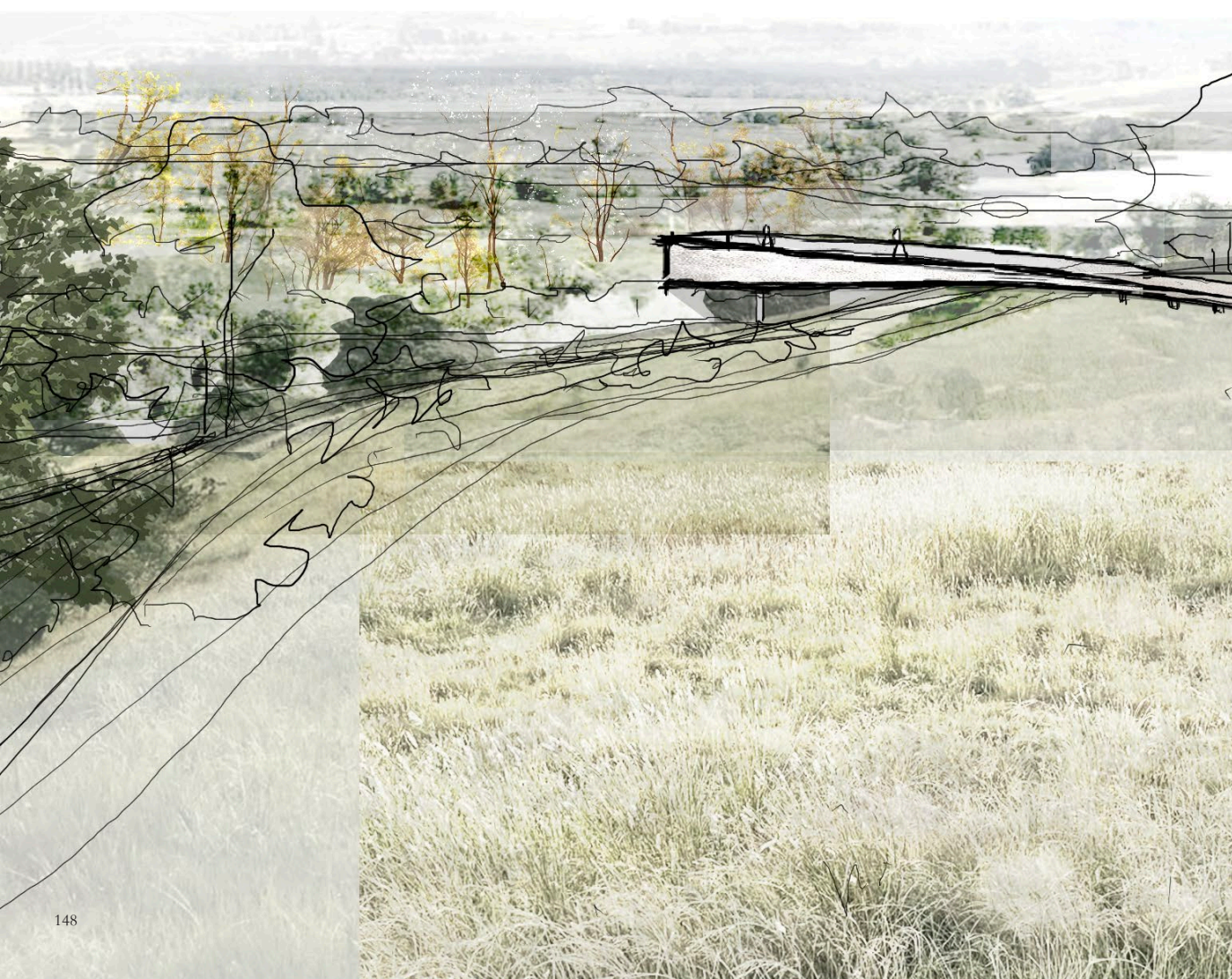
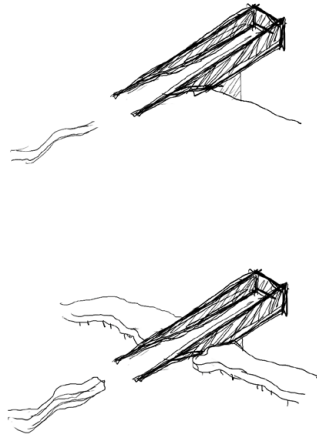
SECTOR 3: NATURAL SECTOR

Design spatial experience

Viewing platform

A viewing platform is thoughtfully integrated and suspended at the edge of the hillside by the riverbank. This platform provides a panoramic view of the ongoing natural recovery process in the forest, allowing visitors to easily observe the contrast between the original forest trees and the newly regrown ones.

The platform's sharp architectural design contrasts with and accentuates the natural variability of the landscape.





Forest Ecological Recovery

The devastated forest will undergo a natural recovery process, reconnecting with the broader ecological system. The soil in the 2-meter-deep trenches is more humid and prone to water accumulation, making it suitable for moisture-loving plants, in contrast to the original tree species.

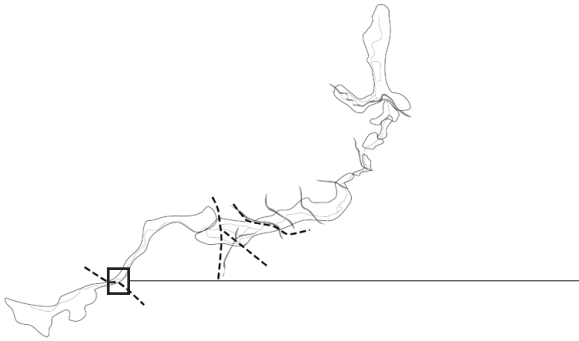
By planting a variety of plant species, the design highlights the diversity of ecological restoration and succession while also reflecting the scars of war within the forest. Additionally, some trenches are filled with hard materials to represent water accumulation, using land art techniques to emphasize the water retention in these areas.





SECTOR 4: ROUTE CROSSING SECTOR

Zoon in analysis



The route crossing sector is situated along a key trading route to the seaport, which was blocked by a series of defensive structures spaced every few kilometers.

Region: Kherson Oblast and parts of Zaporizhzhia Oblast

Area: Four key routes

Landscape Features:

This linear crossing area spans approximately 5 meters on each side of the key connection routes, along with an oval-shaped zone—about 1 to 1.5 kilometers in diameter—where defensive structures obstruct the path. Originally, the area was farmland.

Defensive Structures:

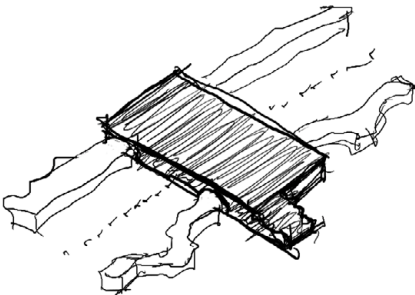
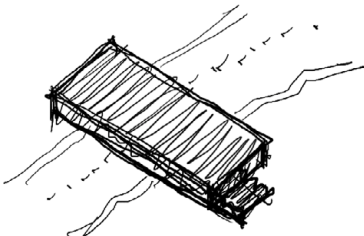
Along this key route, oval-shaped defensive layouts are positioned approximately every 3 to 5 kilometers. Each oval zone features a clear distinction between the front, which faces Ukraine, and the rear, which faces Russia. The first layer includes an anti-tank ditch, followed by a line of dragon's teeth, and culminates in a denser, enclosed trench system. Together, these elements create a fortress-like base designed to trap anything approaching from the Ukrainian side.



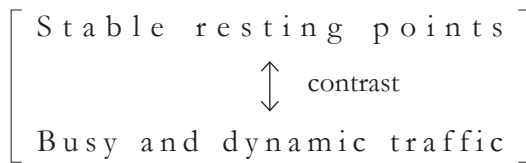
Figure 5-15 The current map of the route crossing sector
Source: drawn by author

SECTOR 4: ROUTE CROSSING SECTOR

Concept



Fostering Interaction and Communication

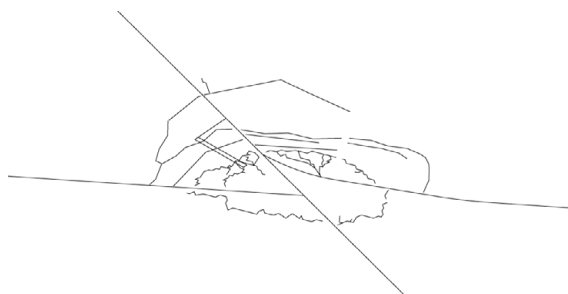


By providing a platform for coming together and interaction, fostering communication among people from around the world who enter or traverse this neutral zone.

The stable platform serves as a resting point, contrasting with the busy and dynamic traffic of the crossing route. It illustrates the contact function of borderscapes, which includes trading and economic interactions.

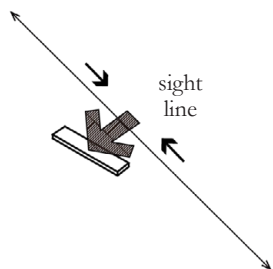
SECTOR 4: ROUTE CROSSING SECTOR

Masterplan



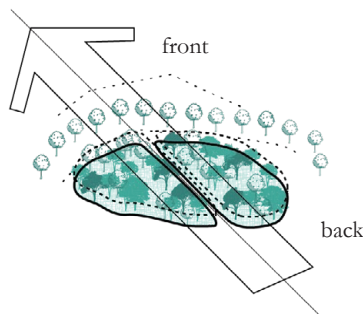
Current situation

A nearly oval-shaped defensive layout located along the key route



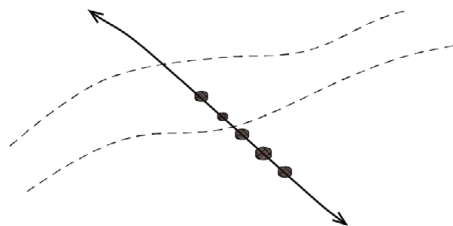
Space for Interaction

A deck is placed in the landscape to provide a space for people to come together and communicate.



Frontline layout marking

The arrangement of vegetation for planting highlights the unique defensive layout.



Route indicators

The landscape design for the oval-shaped defensive layout appears several times and serves as indicators along the main route.

Figure 5-16 Design steps of the route crossing sector
Source: drawn by author

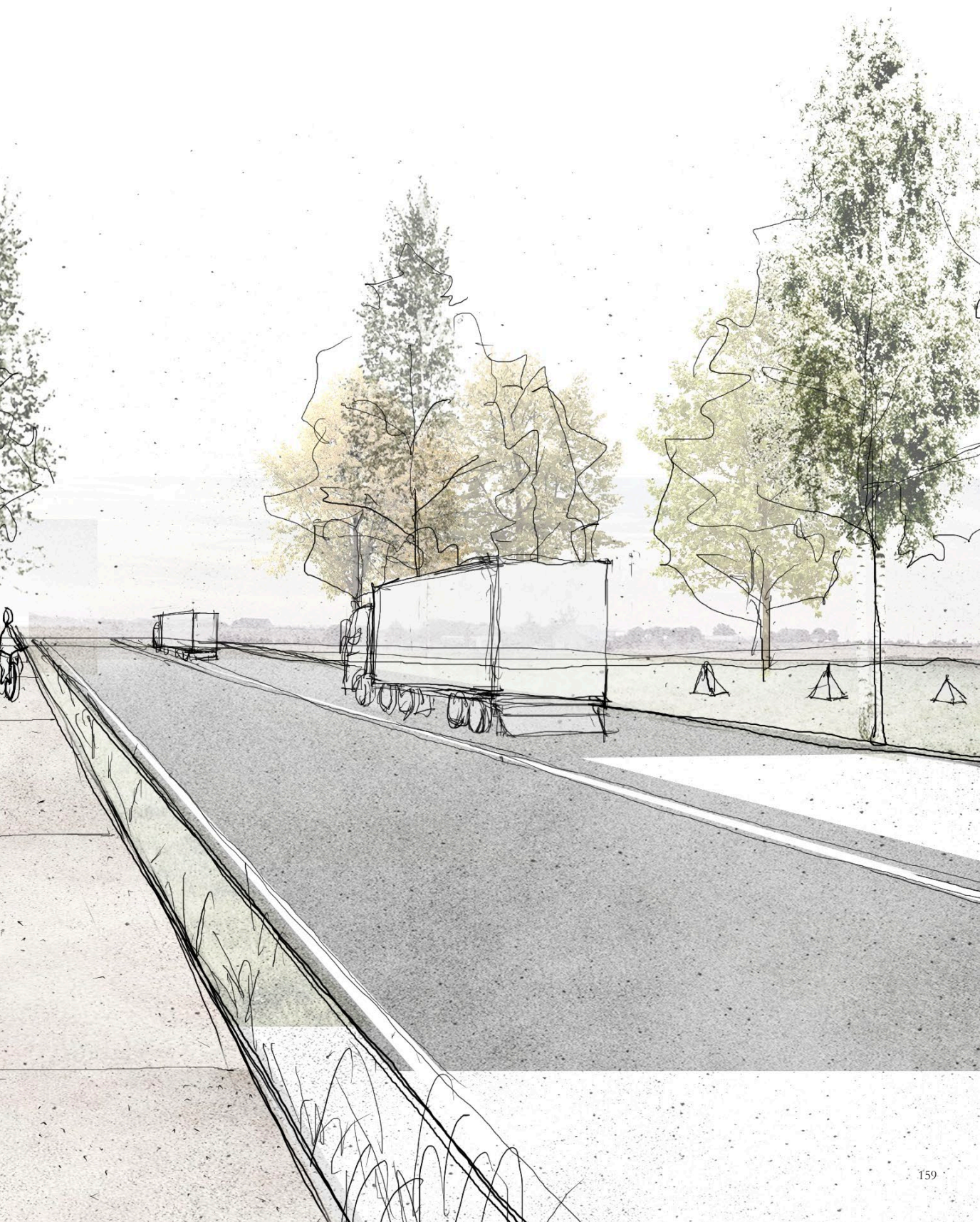


Figure 5-17 The design masterplan of the route crossing sector zoom in location
Source: drawn by author

- 1 The cultural route
- 2 Dialogue Deck
- 3 Linden Trees
- 4 Eco-ditch
- 5 Bushy wildlife corridor
- 6 Crop fields

0 100 500m N





SECTOR 4: ROUTE CROSSING SECTOR

Design spatial experience

Dialogue Deck

The deck is thoughtfully placed in the landscape, featuring a sharp and clean architectural style that brings out the landscape profile of the war traces.

Dimensions:
L: 400m*W: 50m*H: 1.5m



Lime Trees

Lime trees are planted to mark the unique layout of defensive structures in this route crossing sector. They also provide shade for the dialogue deck and contribute to a peaceful atmosphere, reflecting their historical significance.

In Slovakian culture, the linden tree is considered sacred, symbolizing peace, unity, and protection. It is also associated with truth and justice; in the past, tribes in the Western Slovak regions would hold official proceedings beneath the branches of lime trees, as they believed that a person could not lie in their presence.

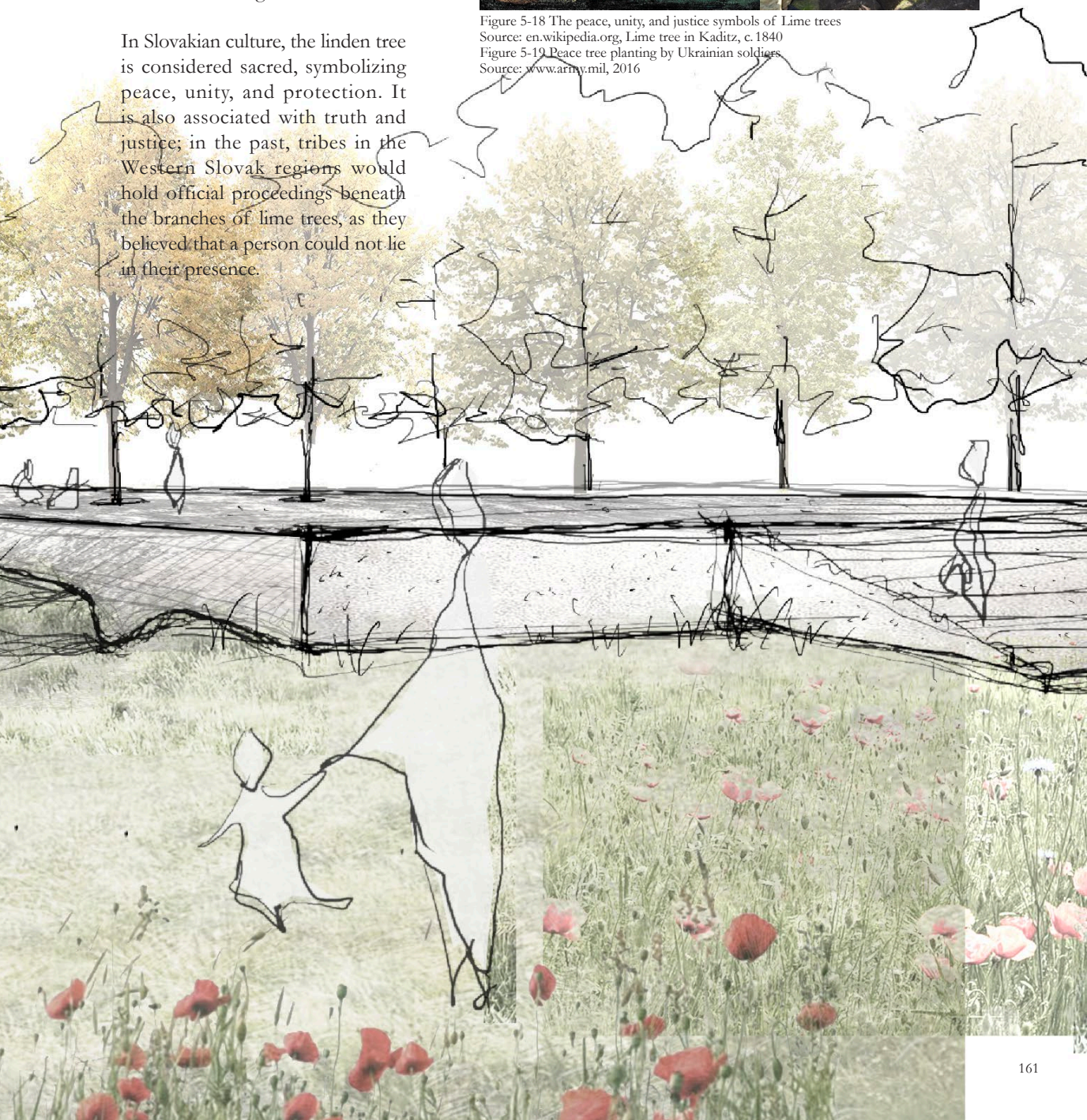


Figure 5-18 The peace, unity, and justice symbols of Lime trees

Source: en.wikipedia.org, Lime tree in Káditz, c. 1840

Figure 5-19 Peace tree planting by Ukrainian soldiers

Source: www.army.mil, 2016



SECTOR 5: RIVER CROSSING SECTOR

Zoon in analysis



The river sector is situated in areas where creeks cross the neutral zone, flowing between vast agricultural lands.

Region: Kherson Oblast and parts of Donetsk Oblast

Area: Seven rivers

Landscape Features:

These rivers are situated along upper ridgelines, where shallow, seasonally variable water levels sustain a diverse range of vegetation.







Defensive Structures:

It consists of three defensive layers—an anti-tank ditch, dragon’s teeth, and a trench—extending down the slope of the river bank and ending at the stream’s base flow level, where natural forces can’t be easily altered by human intervention.



Figure 5-20 The current map of the river crossing sector
Source: drawn by author



-  Vegetation
-  Water body
-  Buildings
-  Agricultural land
-  Roads
-  Defensive structures



Path and Bridge

The river crossing sector focuses on accelerating the ecological recovery of the riverbed, allowing natural processes to restore the ecosystem.

A small bridge is incorporated to cross the river, offering views of where the defensive structures intersect with the waterway. It allows visitors to observe nature gradually reclaiming the area, showcasing the overgrowth on the concrete dragon's tooth and the soil collectors involved in ecological restoration, which is influenced by seasonal water level variations.





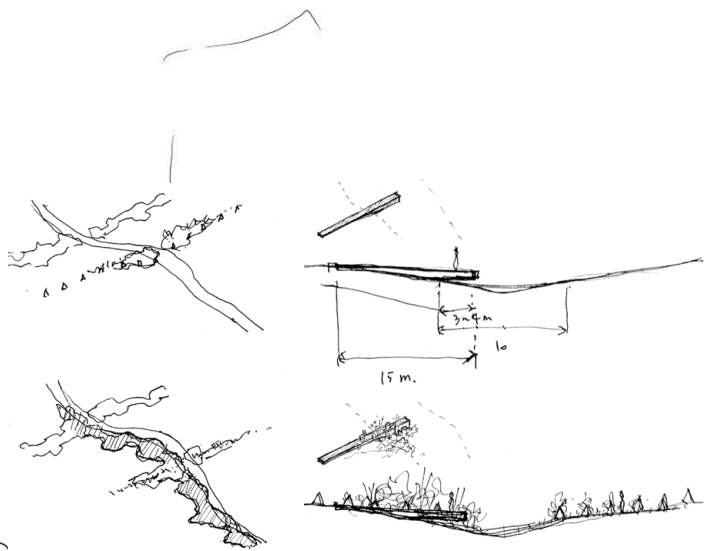
SECTOR 5: RIVER CROSSING SECTOR

Design spatial experience



Soil collectors

Soil collectors constructed with gabion structures capture and retain soil, facilitating vegetation growth along the riverbed. This method supports ecological restoration by promoting natural plant development and stabilizing the terrain.



Ecological markers: Dragon's tooth

Dragon's tooth will be altered to include several holes, which will allow spontaneous vegetation to grow and respond naturally. As water levels change throughout the seasons, the plants that grow on the structure will reflect the ecological conditions, serving as an indicator of the dynamics of the environment.

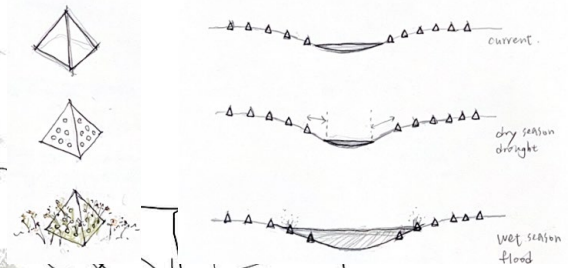
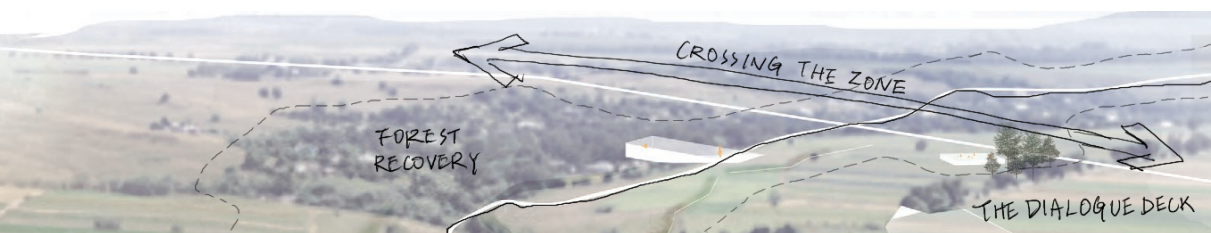




Figure 5-21 The overview design interventions of the neutral zone
Source: drawn by author



FUTURE PHASES

Evolving Landscape Over 50 Years



0~5 Year



5~10 Year

Figure 5-22 Future phases of the neutral zone
Source: drawn by author



10~30 Year



30~50 Year

6

VISUAL EXPERIENCE ALONG THE ROUTE

This chapter illustrates the overall visual experience of a visitor along the route, including the repetitive use of materials in the constructions as well as the subtle presence of military artifacts within the landscape.

"Nodes"
Artifacts Made in Earth
Cob material

The material of "Cob" will be the primary material used for the pathways and "nodes" throughout the entire zone. Cob is made from a mixture of clay, sand, and straw—materials that come directly from the land. This approach reflects a deep connection to the earth and the landscape of the neutral zone, particularly the vast agricultural fields.

Historically, cob was a traditional building material used in vernacular architecture in rural areas for centuries. Its adaptability is a hallmark of Ukrainian earthen building traditions, demonstrating a harmonious and sustainable relationship between builders and their environment.



Figure 6-1 Traditional cob buildings
Source: eartharchitecture.org, Oct. 2024



Figure 6-2 The construction material of cob
Source: www.heritagecobandlime.com, 2018

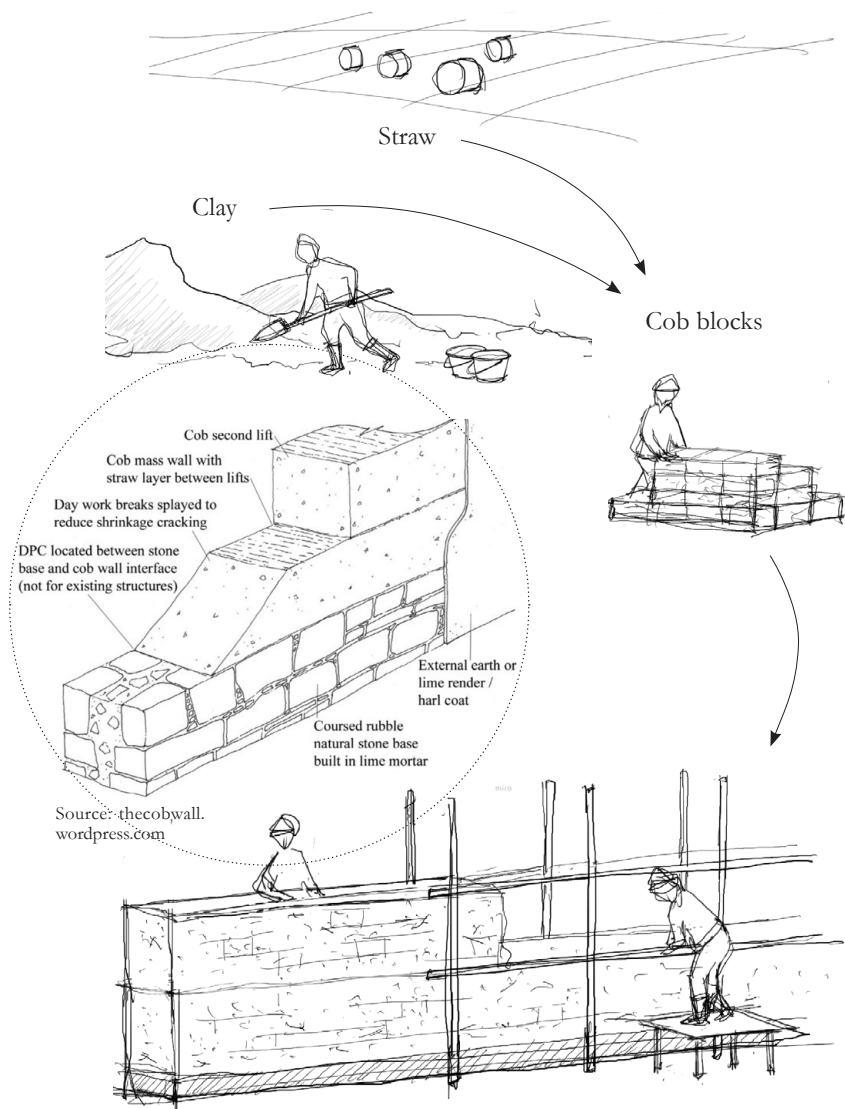
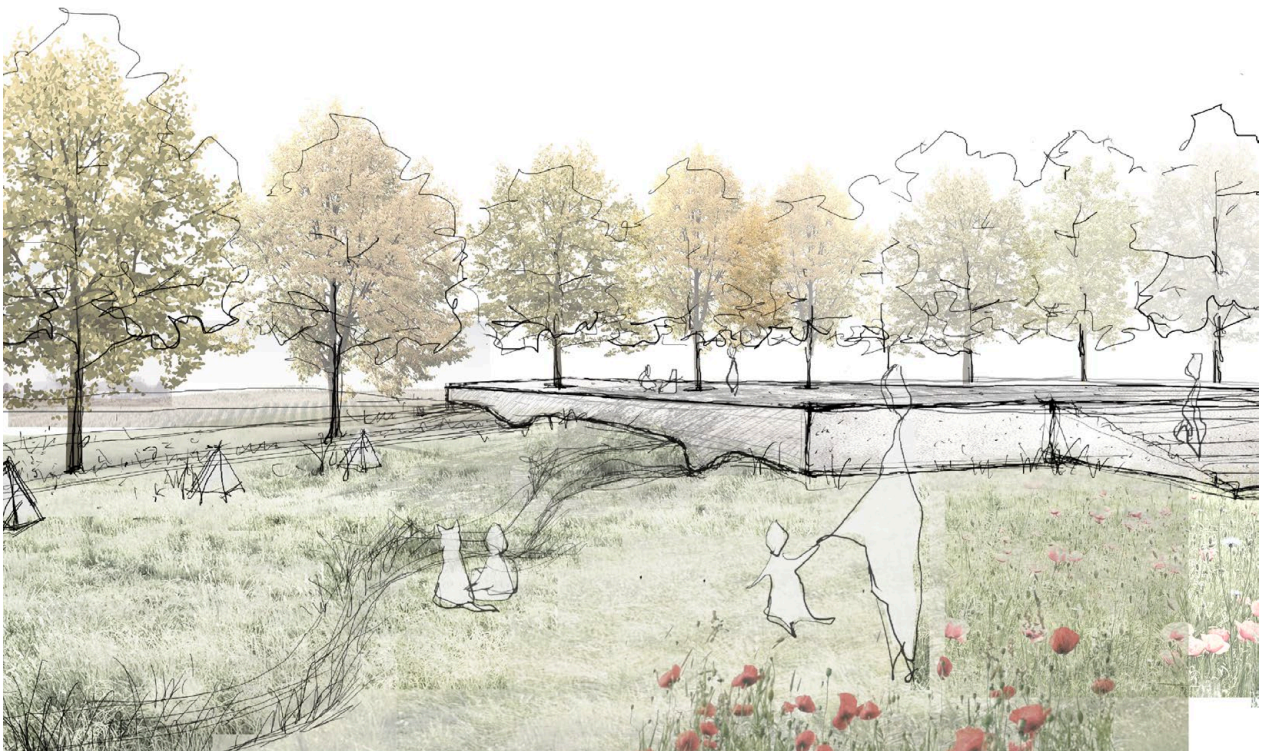


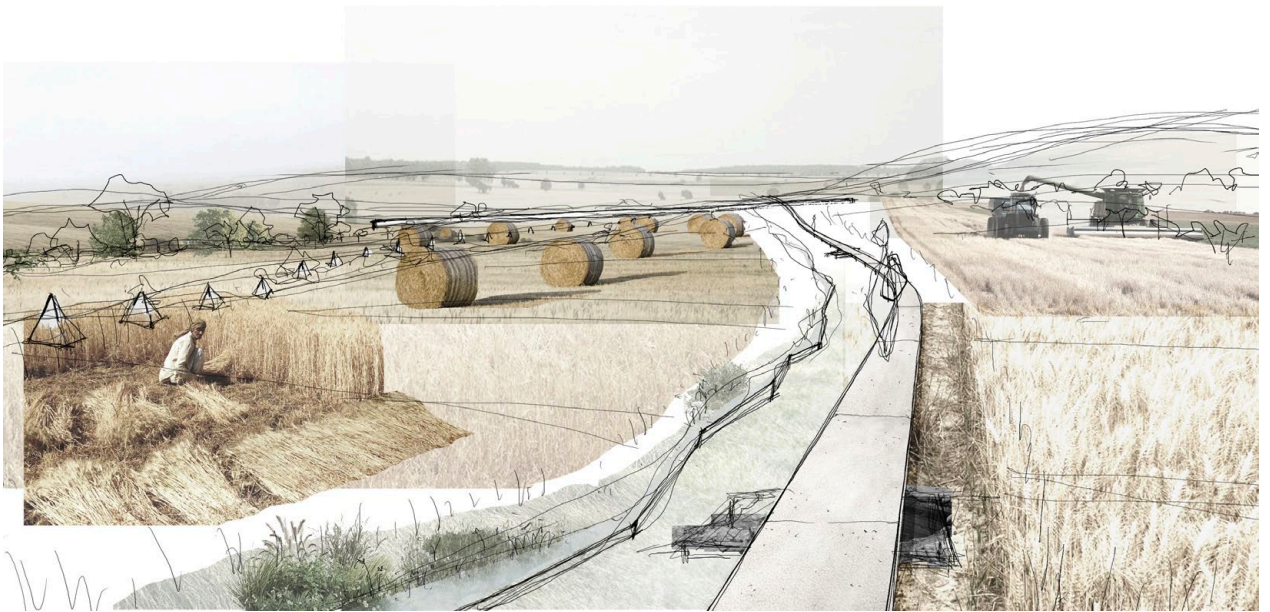
Figure 6-3 Steps of constructing cob wall
Source: drawn by author



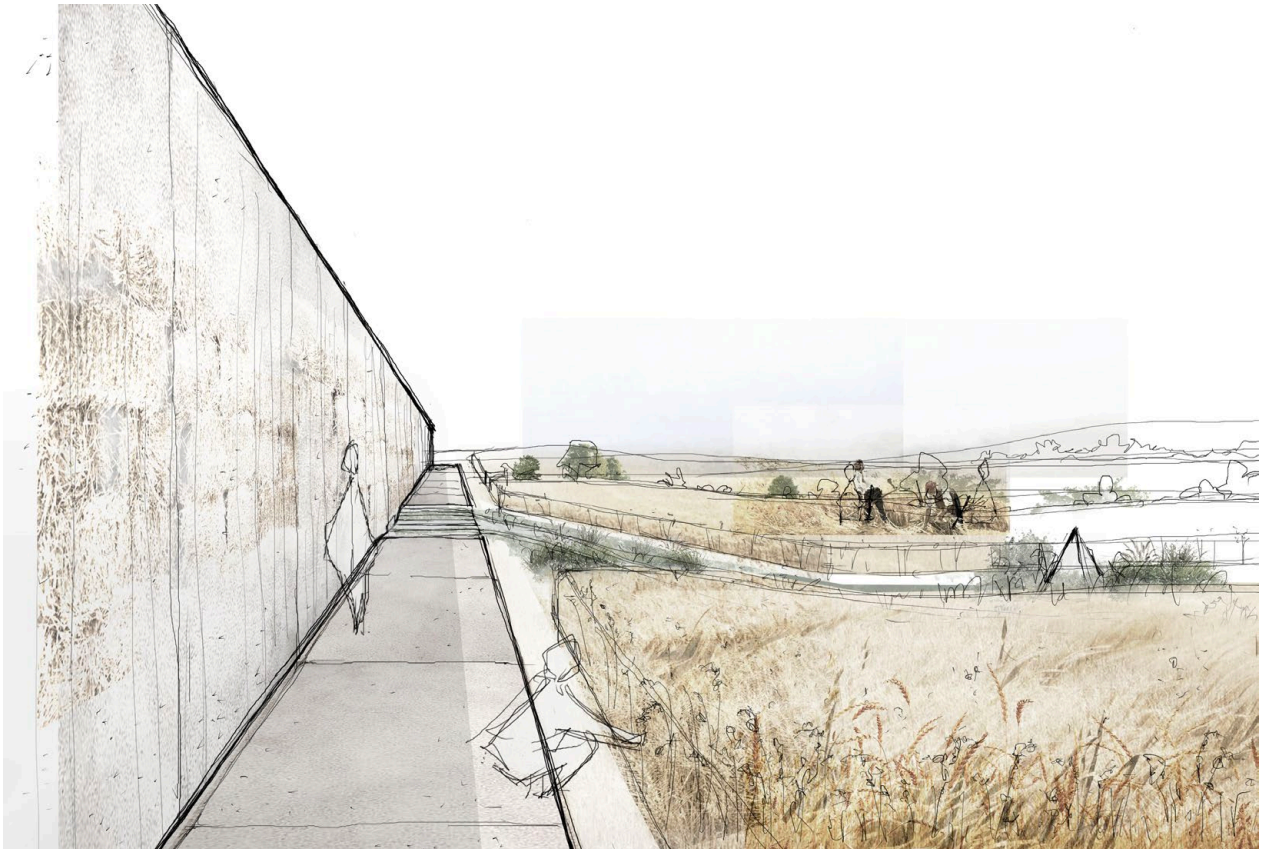
THE ROUTE CROSSING SECTOR



THE DIALOGUE DECK



THE AGRICULTURAL SECTOR



THE WALL



THE RIVER CROSSING SECTOR



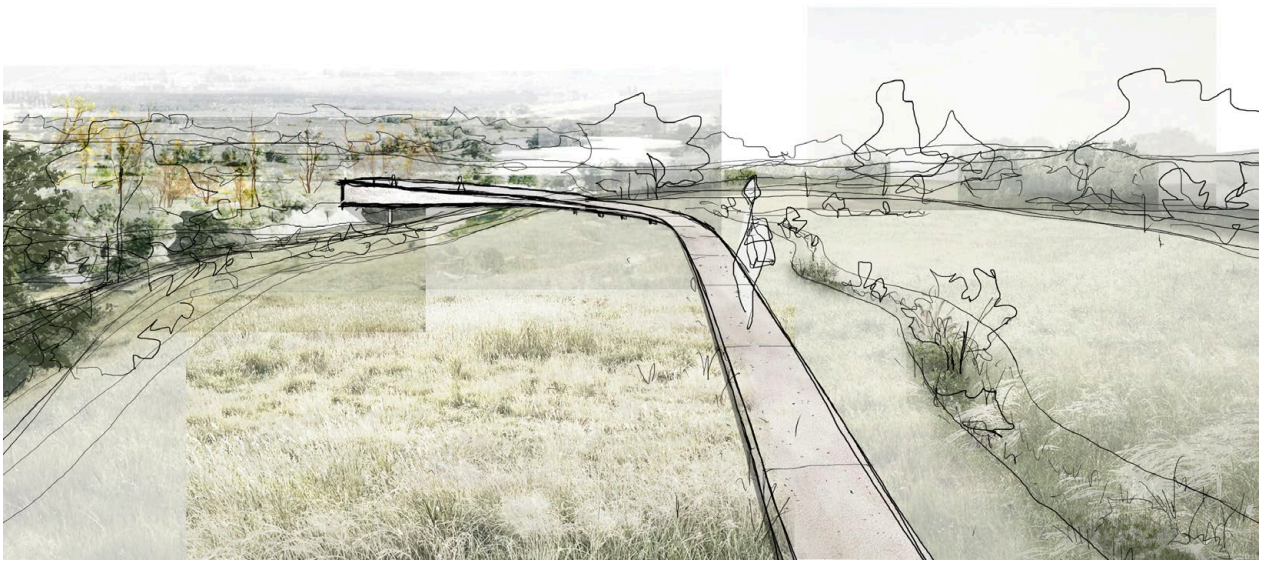
SOIL COLLECTORS



THE MEMORIAL SECTOR



THE RING WALL



THE NATURAL SECTOR



FOREST RECOVERY

7

REFLECTION

CONCLUSION

The project starts from identifying the issue within a broader historical context. To navigate the complex and diverse landscape of Ukraine's borderscape, I realized that the scars of war extend beyond mere land restoration. This journey emphasizes the historical significance, cultural layers, and the importance of psychological healing.

The idea of creating a neutral zone presents a new perspective on the relationship between people and territory. This neutral landscape could serve as a means to reflect all historical layers, including the ongoing conflict. It also relates back to the research question and design objectives: how to cultivate a landscape of peace that offers a reflective space for remembrance.

To foster a sense of neutrality and peace, the concept involves creating space for individuals to engage in their own observations and interpretations, rather than being absorbed by military structures. The initial focus will be on healing the land, which includes demining and planting sunflowers, helping to move away from the heavy traumas associated with war. Subsequently, the entire strip of the zone will be differentiated into five areas that interpret battlefield and defensive structures, integrating them subtly into the landscape. Ultimately, several key features referred to as “nodes” will be introduced and connected by the cultural route to create perceptible spaces for visitors, serving as reminders of the surrounding environment.

The main goal of this project is not to create a perfect, polished environment or an idyllic natural paradise. Instead, it aims to reflect the landscape's history while respecting its existing characteristics. Through subtle interventions, the landscape can tell its own story, inviting people to explore and understand it at their own pace.



Figure 7-1 The battlefield of Ypres, Belgium in WW1
Source: photoed by author

1. Limitations and Challenges in Creating a Neutral Landscape

The project aims to propose a neutral zone at the intersection of Eastern Europe and Asia. Analyzing the borderscape supports this concept and informs the design approach, but it also highlights the complexity and challenges of capturing all relevant factors through analysis alone. Integrating research and design is essential; however, I recognize that relying solely on these tools may overlook significant cultural and social perspectives associated with the landscape's notion of 'neutrality.'

2. Developing a Consistent Approach for a Complex Border Area

The project covers approximately 3,000 km of Ukraine's frontline, which presents significant complexity due to its scale. Rather than attempting to map or categorize every detail, I focus on developing a consistent approach—a clear strategy for engaging with such an extensive and diverse border zone.

The aim is not to achieve complete coverage but to establish a flexible methodology that guides phased interventions and creates meaningful, human-scale experiences. This process begins with regional concepts and strategies, followed by five distinct categorizations of the area referred to as "sectors." The goal is to balance respect for the landscape's diversity with the delivery of adaptable and coherent design strategies. However, the attempt to categorize the entire zone into just five typologies risks underestimating its inherent diversity, and I acknowledge that many other possibilities remain unexplored within this border landscape.

" A neutral zone "



Three Land Healing Strategies

Regional scale programmes



Five "Sectors"

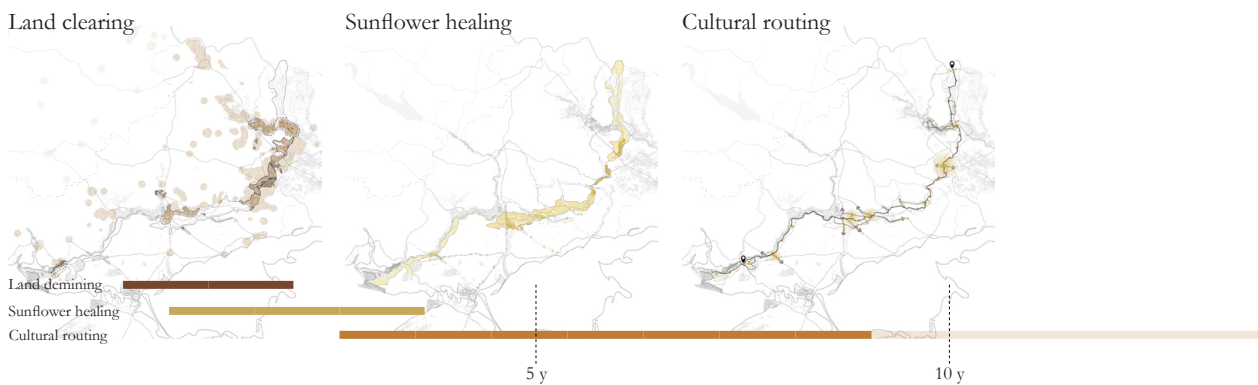
Site specific interventions



"Nodes"

human scale structures

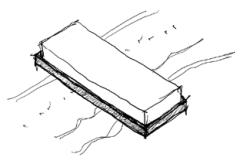




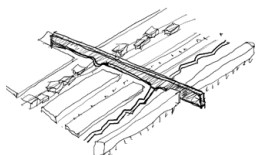
spatial area			linear crossing	
Memorial Sector	Agricultural Sector	Natural Sector	River Crossing Sector	Road Crossing Sector



The Ring Wall



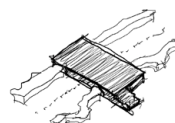
The Wall



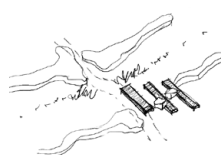
Viewing platform



The Dialogue Deck



Soil collectors



3. Abstract Strategies Toward Improved Landscape Systems

This project explores the design concept at a higher level of abstraction by focusing on restoring the landscape characteristics of borderscape, land healing strategies, and the cultural route program. The goal is to create a neutral space layered with diverse stories, emphasizing historical, cultural and environmental continuity.

Although not the primary focus, improvements in visibility, accessibility, and the reconnection of ecological and hydrological systems would have been achieved simultaneously. These enhancements contribute to a more functional, sustainable, and meaningful landscape that integrates ecological resilience with cultural narratives and historical significance.

Visibility and accessibility

4. Balancing Restoration, Interpretation, and Storytelling

Balancing landscape restoration and storytelling is a key challenge in this project. Restoration can be a powerful means of conveying a narrative, as it provides clear evidence of history while allowing for interpretation. The relationship between these elements is not one of conflict; rather, it is about finding a dialogue between preserving existing features and embracing change. I question whether the approach I employed truly advanced my understanding of how landscape interventions can effectively engage diverse audiences and interpret complex histories without oversimplifying them.

During the design process, I realized that effective storytelling goes beyond simply presenting facts. It requires a nuanced approach that considers multiple perspectives and human interpretations. Restoration, as a form of evidence, can make historical narratives tangible, but integrating subtle design elements adds layers of interpretation that evoke both personal and collective reflections. This creates a delicate balance, restoring to honor the past while subtly transforming the landscape to convey its ongoing story.

My goal is to develop a respectful and thoughtful intervention that acknowledges the landscape's history, allows for meaningful change, and encourages reflection on themes such as borders and conflict. By recognizing that restoration and storytelling are complementary, I aim to create a landscape that serves as both a repository of history and an active site for ongoing dialogue.

Ecological and hydrological systems reconnection

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