



Symphony of Time and Architecture

Research:
Symphony of Time and Architecture

Graduation studio Explore Lab
TU Delft Faculty of Architecture and the Built Environment
Architecture Track

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All visual material is produced by the author if not stated otherwise.

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Acknowledgements Graduation

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To everyone who has supported and inspired me throughout this journey, thank you.

Acknowledgements Post Graduation

25.07.2023

Three months have passed since the completion of my graduation project. In this time, the performance aspect of the Arctic Symphony has taken on a life of its own. New collaborations have formed, ideas have crystallized, and the project has evolved beyond the initial conception. It's thus fitting to extend my gratitude to the individuals who have significantly contributed to this journey and its evolution.

I want to express my deepest appreciation to Ewa, for her dedication and innovative approach in developing the dance performance. Her ability to encapsulate the essence of the arctic landscape through dance has truly elevated the project.

To Bintang, your musical creativity and patience has brought life to our Arctic Symphony. Your belief in this project has been a source of great inspiration and I thank you for it.

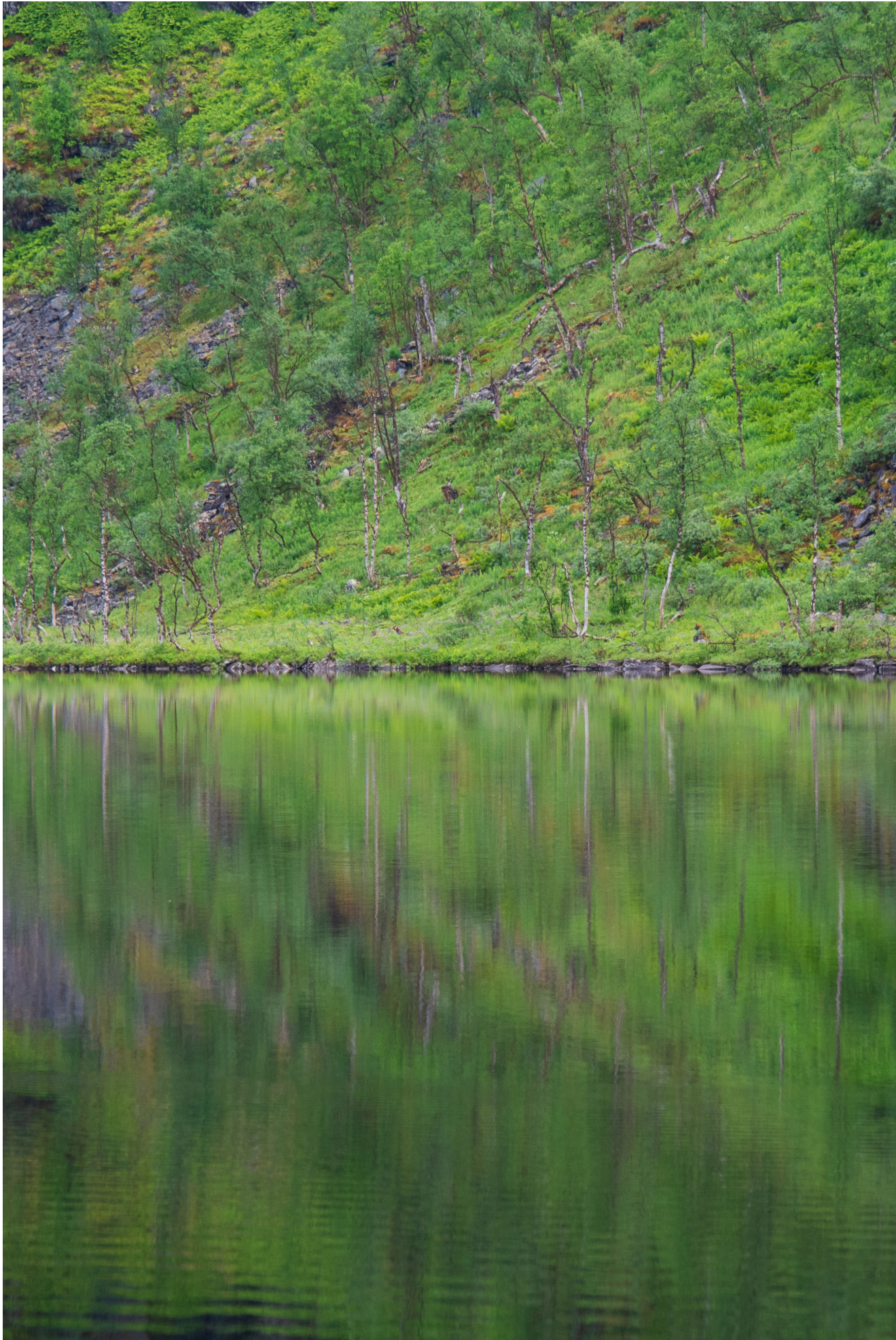
Alex, your talent for filming and video-editing has been invaluable. You've successfully captured the spirit of our project, translating it into an engaging visual experience.

The Sun Studio deserves a special mention for their generosity in providing us with a space to explore, rehearse, and ultimately, bring our vision to life.

Further, I want to extend my heartfelt thanks to Lara, Pam, and Miriam. Your expertise, constructive criticism, and innovative ideas have pushed the boundaries of this project, guiding us towards a meaningful direction.

Lastly, I must pay tribute to the Arctic landscape itself. It has not just been a setting, but an integral part of the project, its fluctuations and unique characteristics inspiring every aspect of the work.

The Arctic Symphony project continues to evolve, and this wouldn't have been possible without your contributions. Thank you all for being part of this journey.



Unge folk i gamal tid
fann seg her eit bole,
lafta tre frå Styggelid
over kjellarholet
streid og levde - fall i frå.
Utom stoveglas
står ein hegg og blømer nå -
Glennebekken kan ein song -
skogen tek deg att eingong,
kviskrar han i graset.

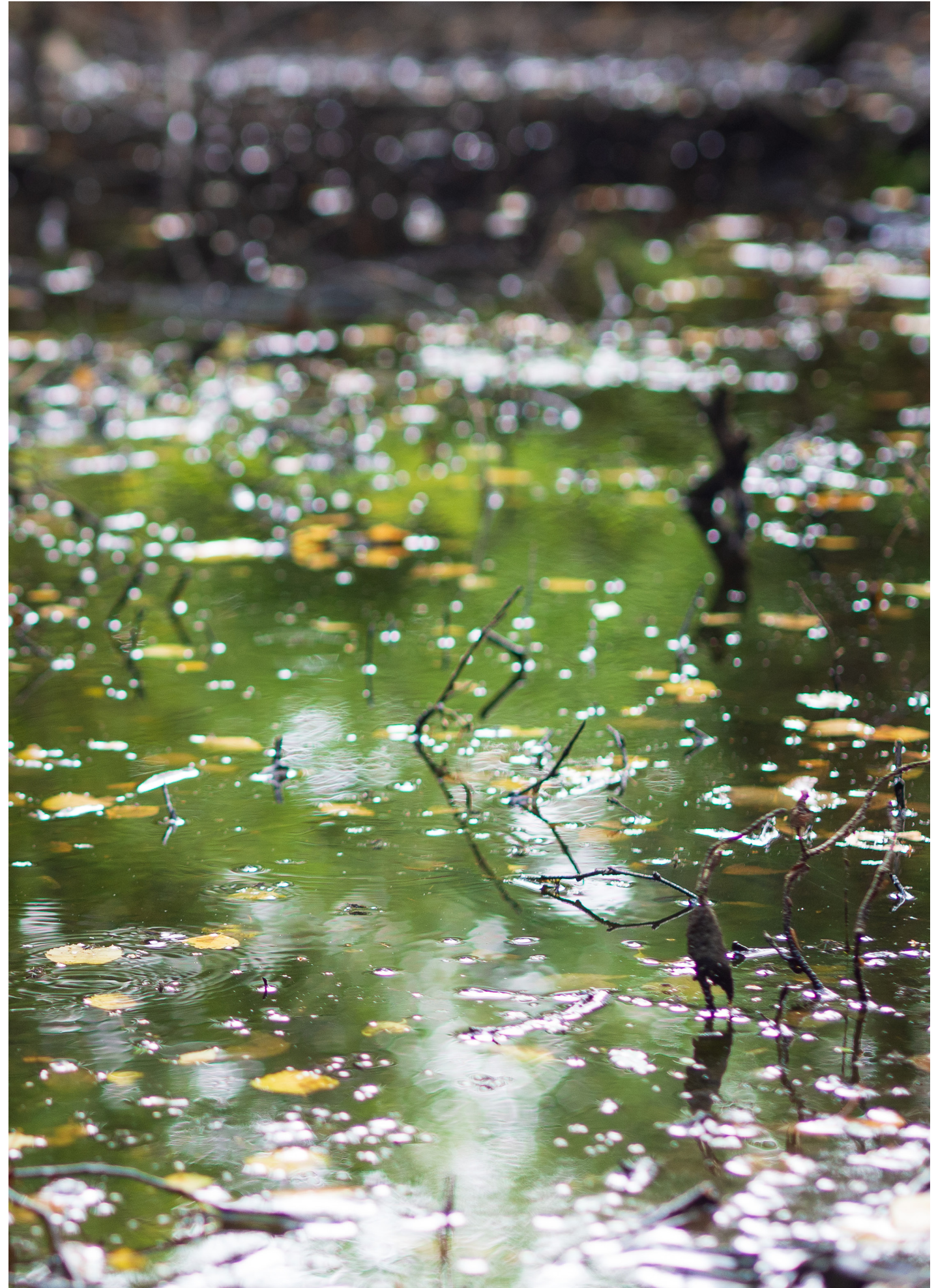
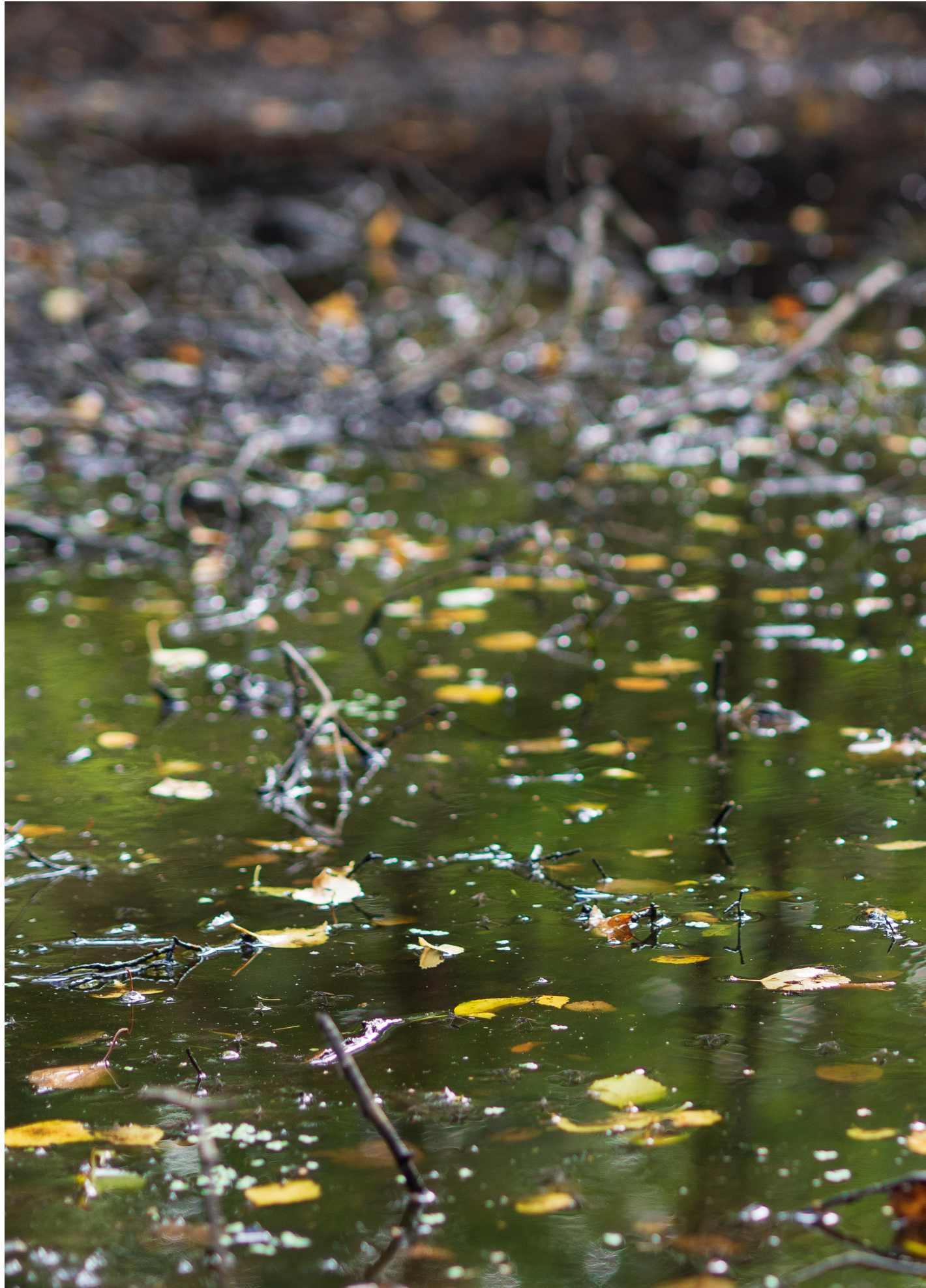
Aslak K. Flatin
1911 - 87

Young folks in ancient times
here they found a place to stay,
a notched cabin from Styggelid
built above a basement void
strived and lived - it fell apart.
Beyond the front room, in the garden
a meadow grows and blossoms in the view -
The old lake knows a song -
'at last - the forest swallows her.'
he whispers in the grass

Translation and personal interpretation from the poem
above by me:

Poem by
Aslak K. Flatin
1911 - 87

Poem Aslak K. Flatin



For ‘time’ is weird

I closed my eyes and let the passage of time pass in front of me. Memories came flooding back – the pond nestled in the heart of the forest, a place I frequented as a child. It was a short distance from my parents’ house, and the journey there could be long or brief, depending on the sights I encountered along the way. Sometimes it lasted no longer than it took to enjoy a cup of warm tea, from heating the water to savoring the last sip, leaving behind the residue at the bottom of the mug. As I studied the patterns left by the wet leaves, I wondered if they held any meaning. That was about the time it took to reach the pond from my childhood home – the time to make and consume a cup of tea.

The pond was small but spacious enough for a child to frolic around or for a dancer to move gracefully in an uncluttered room. Larger than a puddle, it could be traversed in five big steps. Though not far from where I grew up, one had to venture off the common path to find it, hidden behind some dense trees and a small rocky incline. Tall grass obscured what seemed like a natural entrance to the pond. As I approached, the trees parted, and their low-hanging branches required my father to lift them for us to pass underneath. Beyond the trees and the tall grass, the pond emerged, a hidden oasis within the forest. As a child, I hunted frogs and salamanders in this pond and observed the ice melting in the early spring.

The melting had its own tempo, with droplets from thawing leaves providing a steady beat as they fell to the ground. The ice receded first from the pond’s edges, then gradually from the center. I recall that frogs laid their eggs along the water’s edge while the center remained frozen. The ice’s persistence slowed the tempo within the pond, creating different paces at various points and moments. Life stirred at the edges, with grass and small plants breaking through the once-barren soil, while the center remained suspended in time. Time moved more slowly at the center and accelerated toward the edges – and even faster within the surrounding forest.





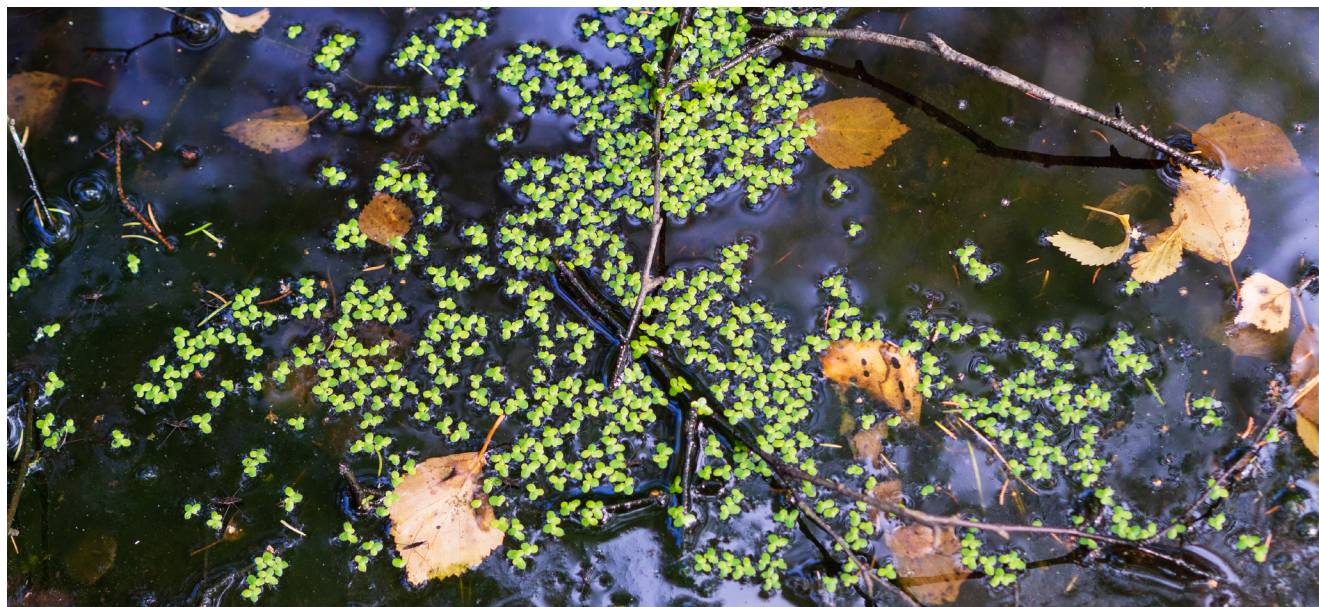
For time is indeed strange.

Unaffected by politics, disasters, or human life, the rhythms of the pond continued uninterrupted. The pond was indifferent, guided by the sun, the moon, the wind, and the rain. With the arrival of spring's southern breeze, the ice melted, and the frogs laid their eggs. The forest's heartbeat remained constant, marked by rustling leaves in the wind and ripples in the water from emerging tadpoles. Disconnected from human concerns and anxieties, even here, time refused to stand still.

For time is undeniably peculiar.

Time isn't just the present, the past, or the future – it is everywhere. Time is neither what was nor what will be; it is a fluid that permeates everything, always. Time is not the opposite of stillness, nor is it motion. Time is change. It is the most powerful force, capable of achieving anything – given time. Yet without time, nothing occurs. With time, everything changes. Everything must change.

For time is undoubtedly weird.





Harold Fisk, 1944, Meander Map of the Mississippi River

Introduction

I was born in Norway, and I grew up in a small neighborhood nestled between a forest and the fjord of Oslo on the other side - a fjord that divides the southeast from the southwest of the country. Growing up in a culture that values the outdoors, I spent countless hours exploring the forest and fjord, which served as my playground throughout the seasons. The landscape would transform drastically throughout the seasons, from the snowy winters, the energizing spring, the lively summer and the colourful autumn. These rhythmic changes captivated me not only in their visual beauty but also in the way they affected the landscape itself.

After spending years in this environment, I developed a deep understanding of its changes. I wasn't just observing them systematically, but rather feeling them through my body and memory. This fascination with the transformation of time, whether it be small or grand, motivated me to explore the dynamic relationship between time, change, and the spaces we occupy.

Transformation is a complex idea that encompasses much more than just changes in the physical environment. While the constant erosion and sedimentation of the landscape may be a part of it, change also involves the erosion of our history and the fading of memory from the past. Despite this loss, objects that have been eroded still hold a wealth of history and stories within them, preserving them for future generations to discover.

In today's world of constant change, where the political situation and climate change are ever-present challenges, comprehending the essence of change and transformation has become increasingly important. By exploring innovative methods of adapting to an unpredictable environment, we can create more resilient societies and construct better-suited buildings. By accepting the transitory nature of our surroundings, we can tap into the wisdom that comes with an ever-evolving world.

There is great pleasure in entertaining the thought that what **exists** today **differs** from what was yesterday, and realizing that it yet will continue to **transform** tomorrow.

As we grow older, we tend to lose the joyful bond we once shared with our surroundings during our childhood. My goal is to revive this feeling of curiosity and interaction, by transcending the typical human tendency of dominating nature and instead, gaining knowledge from it through firsthand encounters.

Everything around us changes, moves, and breaks down over time. Colors fade, shapes distort, and structures crumble, but after each transformation, new beauty emerges. This cycle of death and rebirth is not limited to living beings, but applies to all aspects of our surroundings. It is a reminder of the constant progression of time that cannot be halted.

While we are happy to accept the natural environment's constant flux, we resist change in the built world. We strive to maintain our buildings in a pristine state, fixing and repainting if needed. But what if we allowed our buildings to change and adapt, just as nature does? Can we create structures that not only withstand the forces of time but also embrace them?

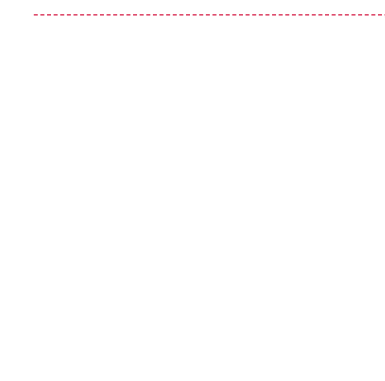
This thesis is an exploration of the meaning of time and its huge impact on landscapes, architecture, and ourselves. As we travel through the stories of transformation, we seek a deeper understanding of the forces that shape our world and our place within it.



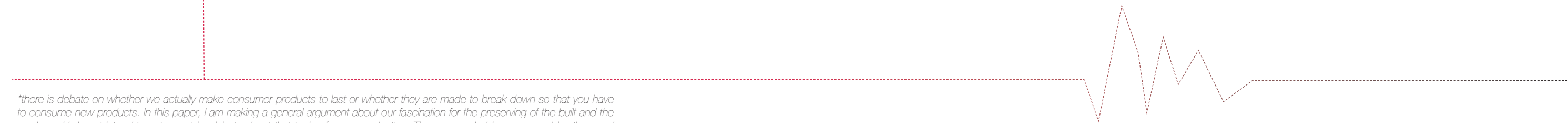
Problem statement, theory
and question

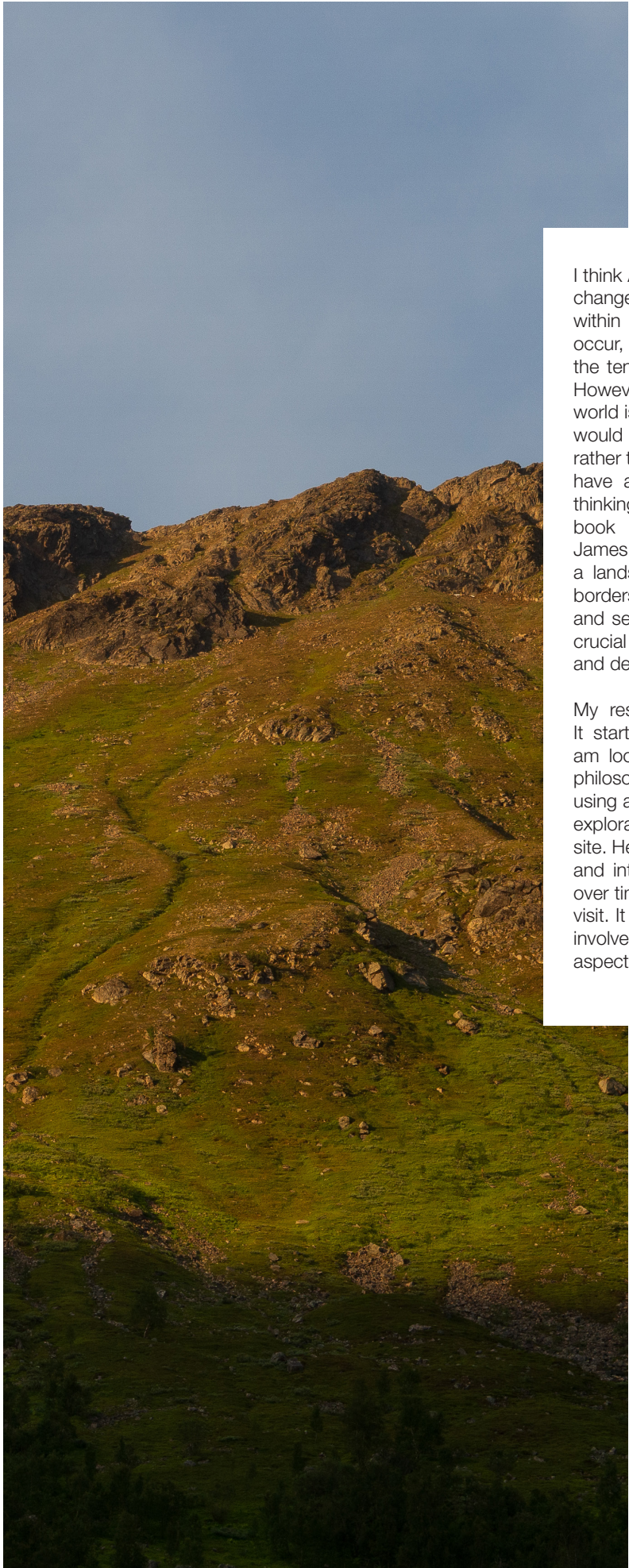
In the world of architecture, as well as in most of design and engineering worlds, the focus often lies in preserving and protecting the deterioration of what we create. Materials are carefully chosen for their durability and ability to withstand natural wear and tear, as well as human use. The materials selected for building facades are selected based on how well they are suited for specific climates and their ability to require minimal maintenance over time. Similarly, car components are chosen for their ability to endure the various forces exerted upon them during use. For instance, engines are subject to friction, heat, and various chemicals, all of which affect the lifespan of individual parts. In the case of a house, we strive to maintain its facade by repairing broken windows, repainting faded paint, and removing fallen leaves from the lawn. This is all driven by our desire to preserve a particular romantic image of how things once were and how we present ourselves to others.

In our relationship with our creations and possessions, I see a paradox. On one hand, we strive to make things durable and unchangeable. We want our furniture to withstand wear and tear, our clothes to remain vibrant, and our broken windows to be replaced with identical ones. On the other hand, we are fascinated by change and constantly seek new experiences. We enjoy creating and acquiring new things, and we find pleasure in witnessing nature's transformations. This paradox arises from our simultaneous desire to preserve the status quo while also embracing change. We set boundaries between what we want to keep static and what we allow to change. While we may mourn a cracked phone screen, we find joy in the changing colors of autumn leaves. But can we blur these boundaries?



**there is debate on whether we actually make consumer products to last or whether they are made to break down so that you have to consume new products. In this paper, I am making a general argument about our fascination for the preserving of the built and the made and I do not intend to enter a wider debate about that topic of mass production. There are probably many considerations and exceptions to my claims. For now, let us just assume that for most of the things we design and engineer there is a need and a want to produce things and structures that are not supposed to break down.*





I think Architects often overlook the inevitability of change in their designs, designing static elements within dynamic environments. When changes occur, such as a house deteriorating over time, the tendency is to restore it to its original state. However, it is important to remember that the world is constantly changing and I would argue it would be more beneficial to accept these forces rather than opposing them. Landscape architects have a long-standing tradition of this type of thinking, as demonstrated by Ian McHarg's book "Design with Nature" (McHarg, 1969). James Corner, a former student of McHarg, is a landscape architect who also deals with the borders between built and natural environments and serves as an inspiration for my project. It is crucial to acknowledge that nature is not static and design accordingly.

My research has three parts woven together. It starts with an exploration of what time is; I am looking at time from a historical, scientific, philosophic, and poetic perspective. I am also using a specific site as a case study for temporal exploration, which further evolved into my project site. Here I have been curious about how external and internal forces have and will affect the site over time. The last part of the research is the site visit. It is an extension of the case study but also involves a personal experience of the temporal aspects of time.

In light of the discussion on temporality that this research aims to answer these following questions:

Main research questions:

What is time? Is there a common understanding within "the flow of time" that can be used as a guiding theme in architecture?

How does human intervention transform in, interact with and respond to a temporal arctic environment like the Alta river?

In conclusion, this thesis aims to understand time in a broader context within our universe and us as humans, but also to the specific site, Alta. It is the groundwork for the design and architectural proposal. Understanding how time works as a physical property, as a force on the site, how it works together with the proposed architecture, and how it works in the human mind - gives us some critical lessons beyond this specific project.

Sub questions:

What has been the impact of time on the arctic environment of the Alta river?

Can we guide changes and deteriorations to landscapes or landforms with interventions?

Can we predict changes to landforms?

What are the local parameters that influence how the landscape will change over time?

How can we use historical data to understand future changes?

How does time affect the formation or the transformation of an object or an entire landscape?

Can we plan and design with the intention of the building/intervention to change and evolve with the landscape over time, and can we predict the changes?

Can we embrace the control and the lack of control that is involved in such a project?





Part 1

«What then is time? If no one asks me, I know what it is. If I wish to explain it to him who asks, I do not know.»

Saint Augustine

What then is now when now is not then and then is not when now is?

What does it mean to be in the present - to be in this moment? As you read these words and hold them between your fingers, you lift them towards your ears so you can listen to them. And as you're tasting them on your lips while you try to articulate them, you are trying to understand them and what they mean - at this very moment.

- but by now -

the words you've just read, the images you just saw of them between your fingers, the sound you heard as you listened to them, and the flavor you perceived as you tried to articulate them,

-

are now already in the past -

-

While new words and meanings will come in the future, you can only perceive the 'moment' in relation to the memory of what has just passed and with the expectations of what is about to happen. We are immersed in time; we cannot escape it, the past has happened, and the future is still to come. The clock ticks with a steady beat, with no interruptions and no slowing or speeding. While this might be true for the clock on the wall, this is not true for human perception. An hour with a tedious task feels like infinity, while a fun game on a Friday night feels like it was all over before it started. With this as a starting point, I want to explore the definition of 'time.' What it is, what it means, and what it means to my project.

A brief understanding of time

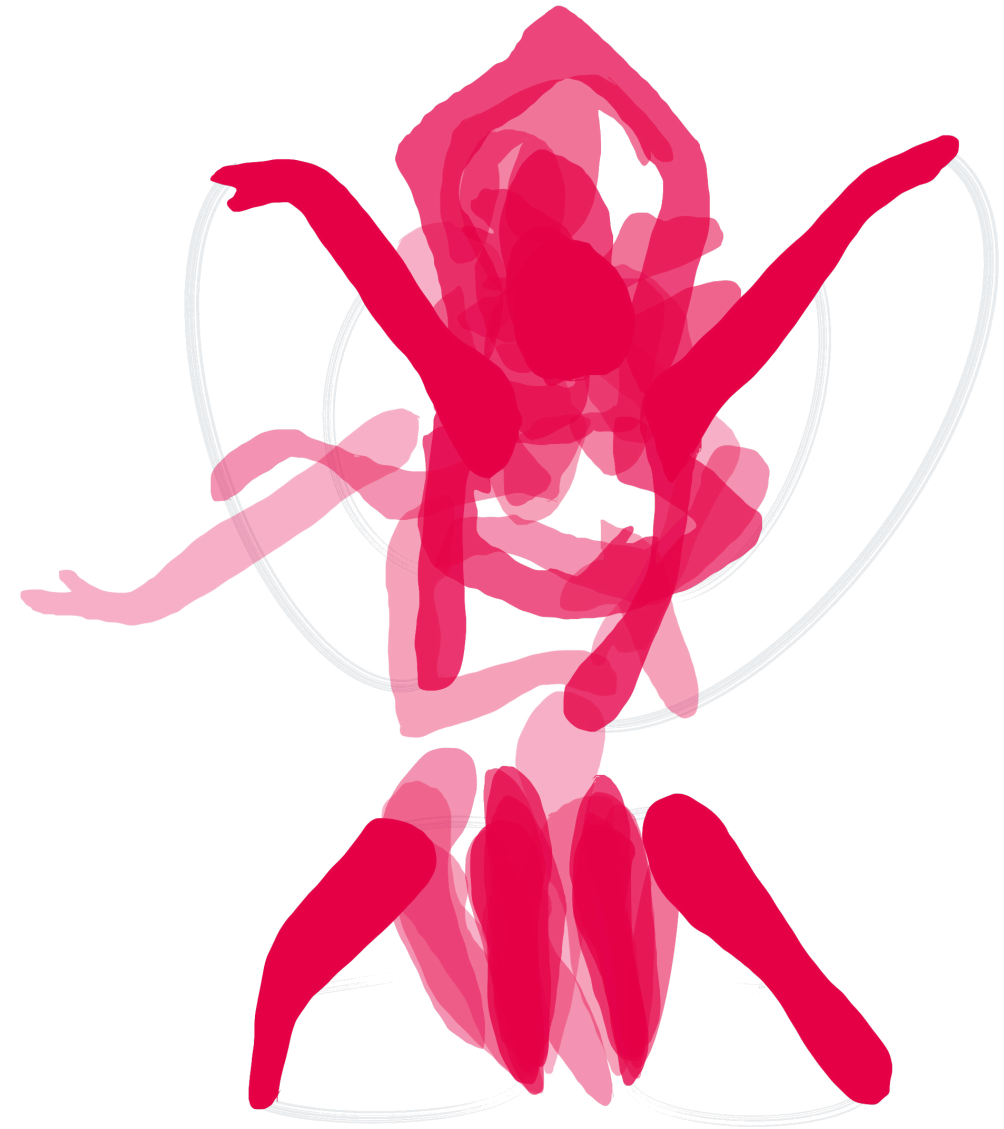
When a physicist talks about time, things can get even more complicated. As it turns out, the “flow of time” is poorly understood. There are some grand theories on how time behaves and, to some degree, ‘flows,’ but at the core, we still don’t have a good understanding of how it works. Carlo Rovelli describes in his book «the order of time, page 7» how we conventionally think of time as something simple that flows along with a steady pace and that the duration of time is equal for everyone. It was not always like that.

We inherited this idea from Newton and his equations in physics. Before Newton, time was not understood as equal to everyone, nor was it understood as moving. Time to most pre-Newtonians was understood as a sequence of events. People knew within them that time moves differently for everyone; time moves differently in the winter than the summer, one holiday succession another. For a long time before Newton proved that time moved with a steady beat equal for everyone - a day was divided by 12. 12 hours from sunrise to sunset. The summer hours would be longer than the winter hours because dawn marked the start. The sunset marked the end (add reference to Carlo Rovelli page 53). The lives of a human before the 14th century in Europe were organized and structured around events and natural patterns, not according to the hour and the minute on a watch. Today we see the benefit of clocks in the fact that they show the same time. But in a time without fast travel with trains, cars, and airplanes, it made no sense to organize our lives around one standard time. Every city had its own sundial registering the midday of their town, marking only when the sun passed specific positions in the sky. Due to this, no city had the same hour; everyone had their own time. Life in one city was organized according to the sundial in that specific town, and another city according to theirs. When traveling, you would adapt to the local time. Not before trains and the telegraph arrived during the nineteenth century was there made an attempt to synchronize the hours to make travel and communication between more considerable distances more convenient. As a matter of fact, the very first proposal was to create a universal time for the whole world. Say

12:00 would mark the midday in Oslo; in Rio de Janeiro, the midday would occur around 16:00. Midday would not be equal to 12 o’clock as we are used to today, but independent of each city. As we know today, that proposal was never taken into effect, and we ended up with a compromise of dividing the world into several un-equal parts where 12 o’clock would be close to midday in most places.

Time for most people was when the sun followed the darkness of the night, and the night followed the heat of the day. A cyclic event oscillating between day and night, counting days, months, and years. Aristotle was one of the first to ponder the question of time. He argued that time is the measurement of change and defined time by the counting of change. If nothing happens, if nothing changes, time ceases to exist. Aristotle’s definition of time continues by explaining that time is the measurement of movement. If nothing changes, if nothing moves, time stops. What then happens when we close our eyes and do not register any external activity? When we close our eyes in the dark, something will move within our mind, thus also moving - the time. Time is nothing more than the registration of movement. (number 9 chapter 4 Carlo Rovelli)

When Newton appeared in the 19th century, he proposed the exact opposite of Aristotle. Newton believed that there was a universal time governing everything, everywhere. Even when space, place, and motion are frozen, time is still moving, regardless. He argued that proper time is only indirectly accessible; natural days are not truly a time measurement. Even though most of us count them as if they are. So who is right? Aristotle or Newton? Aristotle, with his idea that time is a measurement of change? Or Newton, who believed that time is absolute and independent flowing of whether change occurs or not. For many of us, it seems obvious today that Newton was right. Time is independent and moves freely of things, and my watch shows the same as your watch regardless of where we stand in the universe. There is just one problem; neither Newton nor Aristotle was utterly right.



A representation of a dancer performing a dance condernced into one ‘instance’



That time is sequential, where the past is fixed and the present moment flows towards an open future. This idea has proven to be entirely inaccurate. Time is everything but equal for everyone, not just the perception of time, but indeed the physics of it. Einstein was the first to prove that time passes differently based on the speed and the gravity an object is experiencing (Carlo Rovelli). This was long before we had the precise enough tools to measure that difference. In his equations, time would move slower the higher gravity or speed you experienced. Einstein was looking for an explanation for how masses in space could attract each other through empty space. He imagined that two large masses in space do not attract each other directly but that each of them is acting on what is between them. He concluded that the masses must bend the time around them to attract each other.

“Your now is not my now; and again, your then is not my then; but my now may be your then, and vise versa. Whose head is competent for these things?”

Charles Lamb (1817)

Carlo Rovelli describes how Einstein looked for a plausible explanation for how the sun and the earth can “attract” each other without touching

“he found one by imagining that the sun and the Earth do not attract each other directly but that each of the two gradually acts on that which is between them. And since what lies between them is only space and time, he imagined that the sun and the Earth each modified the space and time that surrounded them, just as a body immersed in water displaces the water around it. This modification of the structure of time influences in turn the movement of bodies, causing them to “fall” toward each other.”

Carlo Rovelli
Albert Einstein, “Die Grundlage der allgemeinen Relativitätstheorie,” Annalen der Physik 49 (1916): 769–822.

This small sentence describes the essence of Einstein’s famous theory of general relativity. A person in space will experience time faster than someone closer to the ground. So will a person traveling with the speed in relation to somebody or something else. The implication is that time is not moving at an equal rate at any given point in space. Every single point will experience time slower or faster depending on the amount of gravity or speed which is acting on the body in question. That means that time is not a linear arrow with one direction, as if we are all on one boat drifting down a river at an equal rate for everyone, but a manifold geometric shape within every point in space has different speeds. In this regard, time is very much like a river. Sometimes faster, sometimes slower, but always on the move.

So if time moves at different speeds at different positions in space, what does that mean to us? When an astronaut returns to earth after a year in space, he is 9,1 milliseconds younger than one that never left the surface. But while someone on the ground only experienced 365 days and nights, one in space would have experienced more than 11 000 sunrises and sunsets. Time is the fluid in which we flow along. Or is time a sequence of events? Anyways. What is more important to us?

The Psychologist and the Time Traveler

«You know of course that a mathematical line, a line of thickness nil, has no real existence. They taught you that? Neither has a mathematical plane. These things are mere abstractions.»

“That is all right,” said the Psychologist.

“Nor, having only length, breadth, and thickness, can a cube have a real existence.”

“There I object,” said Filby. “Of course a solid body may exist. All real things—”

“So most people think. But wait a moment. Can an instantaneous cube exist?”

“Don’t follow you,” said Filby.

“Can a cube that does not last for any time at all, have a real existence?”

Filby became pensive. “Clearly,” the Time Traveller proceeded, “any real body must have extension in four directions: it must have Length, Breadth, Thickness, and—Duration.»

Gleick, J. (2016). Time Travel: A History (4th ed.). Pantheon.



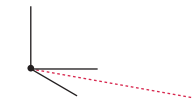
Time and geometry

In light of the conversation between the Psychologist and the Time Traveler, it is clear that no object can exist without the presence of duration - time. In geometry, we operate with three dimensions, all of which are derived from a point as a starting point. The first point, also often referred to as the zero-dimension or the nildimension, has a graphical illustration of a point. From the nildimension, one can draw a line that forms the 1st dimension. Interestingly the first dimension does not need to be straight. What is essential in this dimension is that you have one direction. Along this direction several points can be constructed along this path. It is only one direction in which one can move - forward or backward along the same way. The second dimension has two directions in which a point can move freely. In this dimension, you have vastly more freedom, and you have the opportunity to move forwards, backward, to the right, and to the left. Suppose we disregard the fact that we as humans have a height. In that case, we, for almost all of human existence, have only been experiencing the universe in two dimensions - along the surface of the earth. Gravity was, for a long time, limiting our movement along this two-dimensional space we call the earth's surface. Modern technology has allowed us to escape gravity, and we can now move freely in the height dimension of space. This brings us to the third dimension, representing the

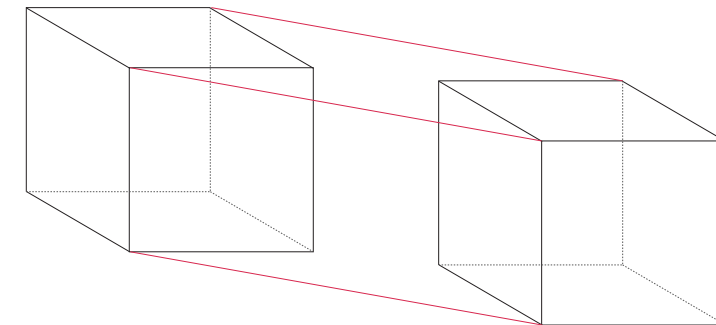
world in which something can move freely in three dimensions - forward, backward, right and left, and up and down. It is the dimension we are most familiar with. At least in theory. As we just saw in the conversation between the Psychologist and the Time Traveler, it makes no sense to talk about an object that only exists in the blink of an eye and does not have a time duration.

This leads us to the fourth dimension. The dimension in which we exist. The dimension in which everything you know, have ever learned, will ever experience lies within. It is the dimension in which you were born and the one in which you will die. This dimension holds the time, and it is here that we can be present both as a being with three directions and also in which we create memories of past events and anticipate scenarios for different futures. In this dimension an object is not only present, but it can also change. It can move, slide, halt and transform. It is peculiar and different from the three first dimensions since you have no control over its direction. In the three first dimensions, you can move back and forth, to the right or left, and up or down. In time, there is only one direction. There is no choice involved, the past does not come after the future, and broken glass can not be un-broken, only fixed. Always carrying with it a sense of memory of past experiences.

4. Event



Direction: Duration



0. Point



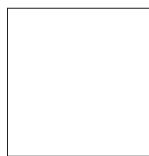
No Direction

1. Line



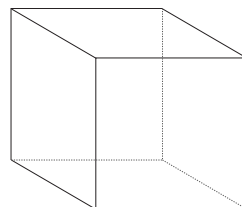
Direction: X

2. Plane



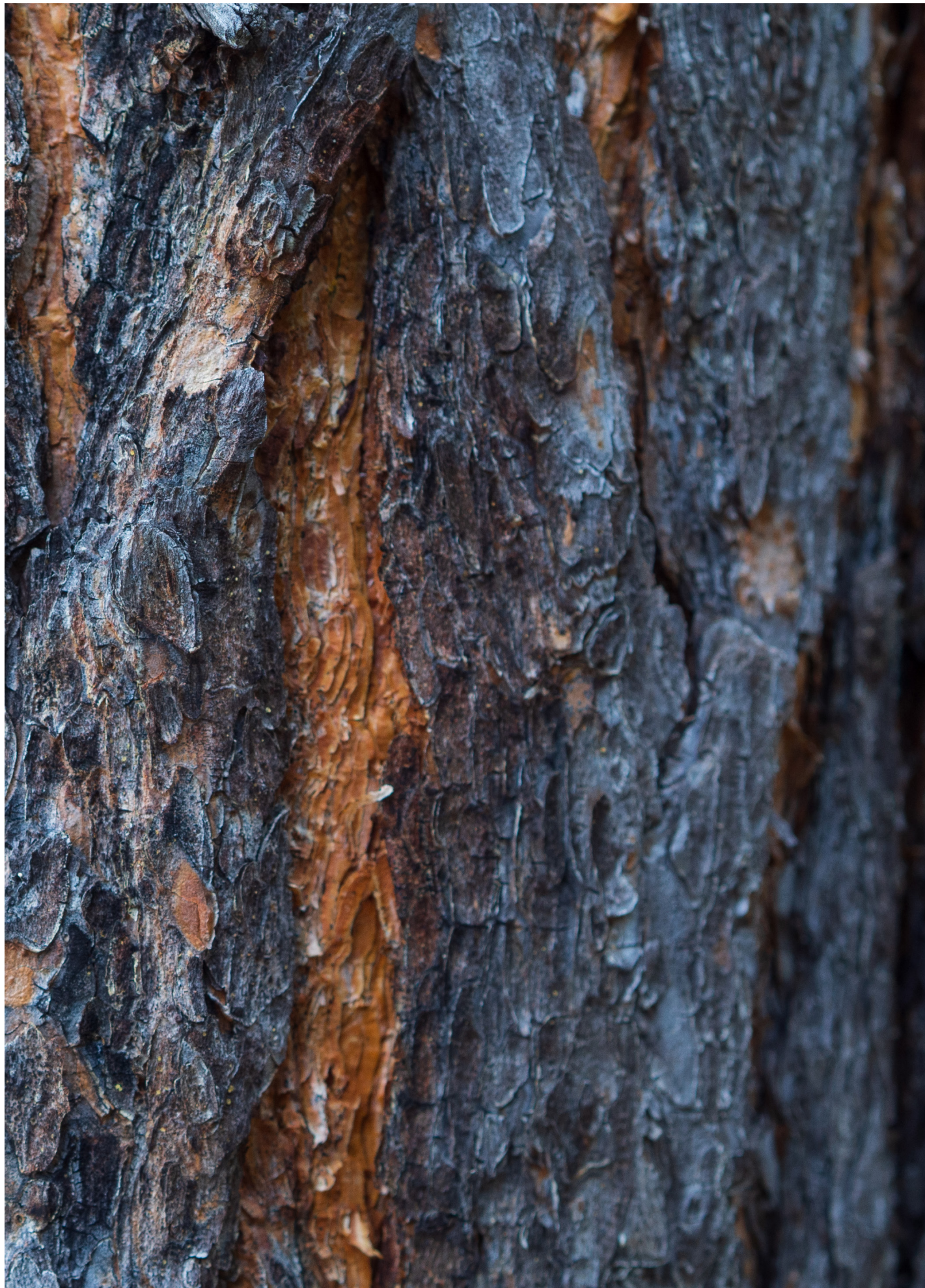
Direction: Y

3. Form



Direction: Z







Entropy

The energy that keeps you warm in the winter months as you read a book in front of the fireplace. The same energy you avoid in the scorching summer heat. When you are waiting for your fresh bread to finish baking in the oven - heat is the source that transitions the bread from soft to fluffy and then crusty.

Heat is peculiar.

If you stretch a rubber band and release the tension - heat is formed. When a spinning wheel slows down due to friction - heat is released. A ball falling from a height will hit the ground and bounce, then fall again and bounce anew. As it touches the ground and reduces speed over time - heat is produced.

Heat cannot move from a cold body to a hot one, and it is that characteristic of the heat energy that makes heat so unique. Heat is one-directional. In physics, heat is the only process differentiating the past from the future. What is most peculiar is not that heat distinguishes the past from the future but that no other laws in physics do so. A rotating wheel that slows down over time is slowed down by friction. And friction produces heat. Heat is constantly moving from warm to cold and never in reverse. The quantity of this change in only one direction has gotten the name of entropy and is the second law of Thermodynamics. Within it, it carries the equation for the arrow of time.

There is a lot to be said about the formulation that describes entropy. Still, it is essential to know that it is the basis for understanding the grammar of our world. Not only what things are but how things become. What is, is not what will be. And entropy is responsible for that change. The reason why time exists is due to entropy. Entropy is the measurement of the randomness of a system. In other words, chaos. Time is the result of order moving towards chaos.

That change, entropy, is the description of the physical phenomenon of how the world moves towards chaos, also called equilibrium. Everything around us will change and break down. Plants will stop growing and die. Colors will fade, elements will move or distort, and structures and walls will collapse. Over time, all we surround ourselves with will break down. But during this period of breaking down, new colors emerge as old ones fade, and distorted elements will have a new angle to appreciate. And collapsed walls can find themselves helpful in a new and unexpected way.

Change, reduction, erosion, and decay can be beautiful and are not something we need to try to contain or defeat. Entropy is change, decay, and erosion. But entropy is also time. Thus, change, decay, and erosion are not only an effect of time. It is time.

With no heat, there is no change.
With no change, there is no time.

$$\Delta S > 0$$

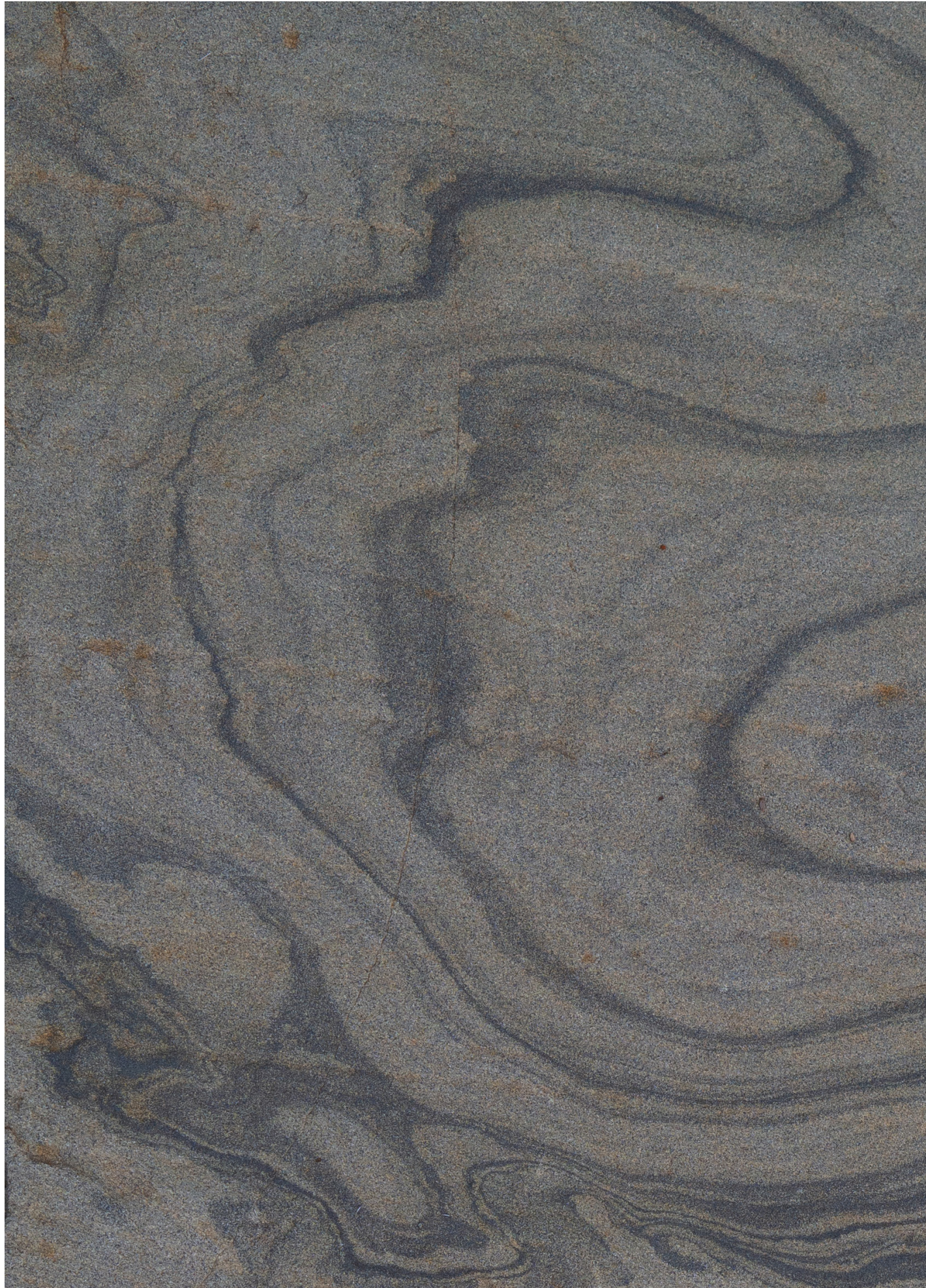
The equation for entropy. The only equation in fundamental physics that has a difference between the past and the future.



"Moral. The 2nd law of Thermodynamics has the same degree of truth as the statement that if you throw a tumblerful of water into the sea, you cannot get the same tumblerful of water out again."







Tempo, Rhythm, Pace, Pulse, Beat, Cadence, Flow, Pattern

*Oscillation, Fluctuate, Wobble, Dangle, Flicker,
Ripple, Pivot, Sway, Swing, Switch, Vibrate,
Wave, Whirl, Wiggle, Pendulate*

For thousands of years, humans lacked precise methods of measuring time. We could count heartbeats for short durations or use sundials to observe the sun's movement and estimate the time of day. While these methods were useful in their own contexts, they were not particularly accurate by today's standards.

The flow of time eludes simple quantification. In our world, we use milliseconds to define seconds, which in turn define minutes, hours, and so on. However, the precision of our clocks and machines does not reflect how we experience time. Time's flow need not be as steady as a second, and its rhythm can be perceived in the rippling water of a stream or a leaf twisting in the wind. In this context, the tools employed by our ancestors may seem more appropriate. Nevertheless, even the seemingly constant rhythm of sunrise and sunset fails to maintain a consistent pace in places where the sun never sets in summer or fails to rise in winter. Additionally, the experience of temporal speed varies throughout the seasons, with water flowing rapidly in spring and standing still in winter.

"Time is the substance I am made of. Time is a river which sweeps me along, but I am the river; it is a tiger which destroys me, but I am the tiger; it is a fire which consumes me, but I am the fire."

In the light of Jorge Luis Borges quote, time is not the river. Time is the fabric that enables the river to flow. It is the force that propels the river in various, primarily downward, directions and facilitates movement and interaction with obstacles. In some places, the river flows swiftly; in others, it slows down. Time is not the river—we are the river, but time allows us to flow.

This concept of time has practical applications in both architecture and landscape design when considering rhythm and tempo. Architectural features such as beams and columns can create a sense of rhythm within a structure, while the temporal rhythm of landscapes can be observed through seasonal changes, weather patterns, and natural processes. Understanding the rhythms and tempos of these elements allows for a deeper appreciation of their interaction with the passage of time.

Just as a river flows at varying speeds, the rhythms of buildings and landscapes also ebb and flow, shaping our experiences and perceptions of space. By considering the temporal aspects of architecture and landscape, we can develop an awareness of how these elements intertwine with the continuous flow of time. This understanding can enhance our appreciation of the built environment and inspire the creation of spaces that resonate with the evolving rhythms of nature and human experience.

- The oscillation of the moon
- The pace of the sun
- The rhythm of the waves crashing on the edge of the river
- The swaying of trees in the wind
- The chirping of insects at night
- The meandering of the arctic rivers
- The ebbs and flows of the fjord
- The migration of fish in the river
- The growth of plants and trees
- The movements of reindeers herding across the plateau of Finnmark
- The movement of the fjord
- The sound of cracking ice
- The slow-moving patterns and the appearance and disappearance of the northern lights



Memory

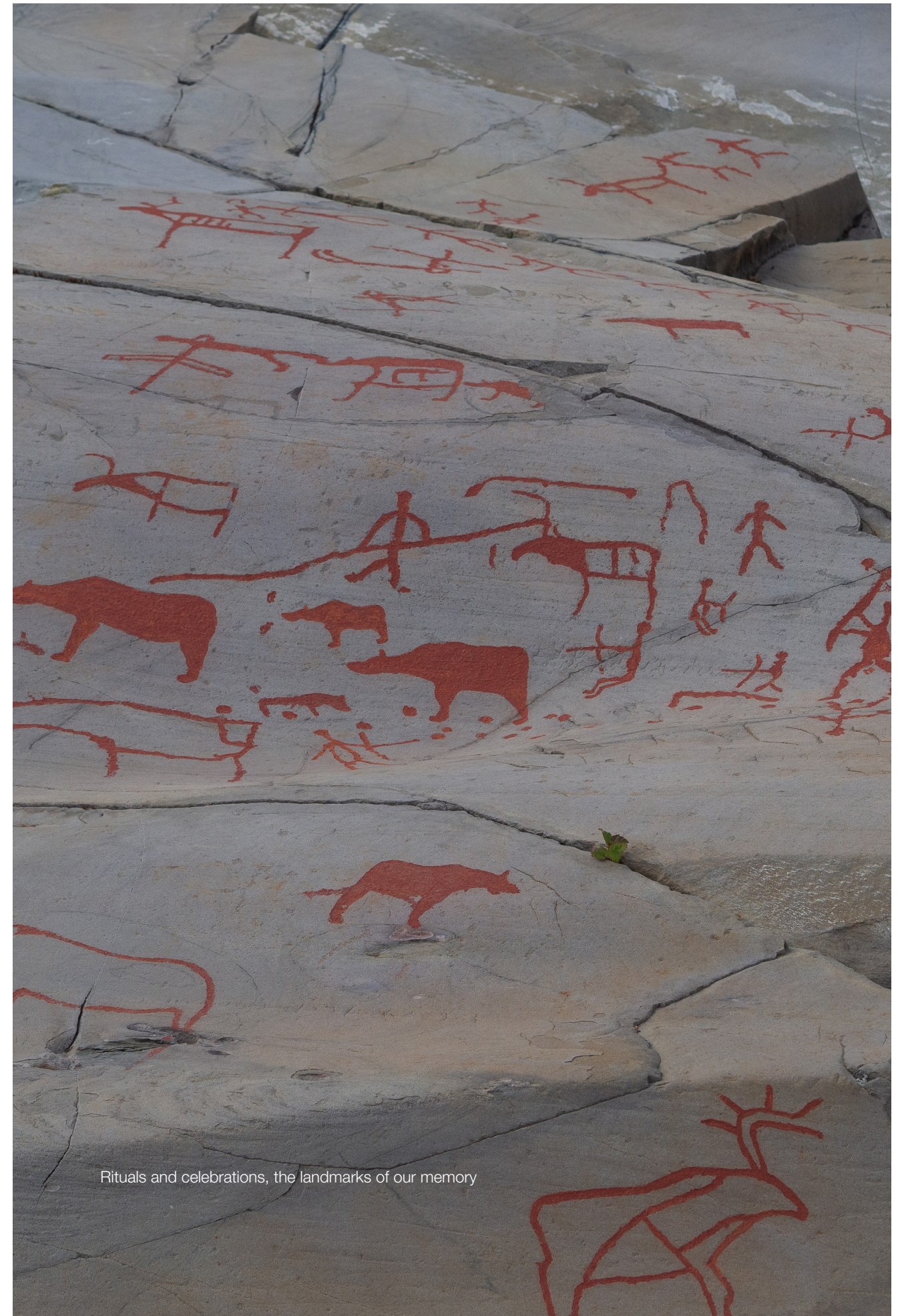
Memory is crucial to our comprehension of time. It not only stores information but also retrieves it, allowing us to reminisce about past events and anticipate the future. Memories help us experience time as a continuous flow, building upon each moment that preceded it. They are not merely isolated pieces of information but are organized sequentially, allowing us to discern the order of events. Expanding the concept of memory to include objects, we can embody memories of past events, processes, or experiences. These memories offer valuable insights into historical and cultural contexts and provide a tangible connection to the past.

Memory also empowers us to learn from the past and make informed decisions about the future. By recalling previous experiences and outcomes, we can predict potential future events and adjust our actions accordingly. Our memories help us make sense of the world and establish a coherent understanding of our place within it.

Furthermore, memory plays a crucial role in our perception of historical time. Collective memories of societies and cultures enable us to connect with the past, learn from our ancestors, and build upon prior generations' knowledge and experiences. Without memory, we would be incapable of capitalizing on the accomplishments and progress made in the past, leaving us trapped in a cycle of repeating the same mistakes and failures.

In summary, memory is a fundamental aspect of our understanding of time. It allows us to construct personal narratives of our lives, learn from the past, and connect with the shared memories of our societies and cultures. By appreciating memory's role in both personal and historical contexts, we can foster a deeper connection to the past and a more profound appreciation for the passage of time.

- River meanders: The shape and pattern of a river's meanders can provide clues about its history, including past flood events and sediment deposition.
- Rock carvings: these carvings tell a story of the lives the prehistoric humans lived and experienced their surroundings
- Tree rings: The annual growth rings of a tree can provide information about its age, past environmental conditions, and climate history.
- Glaciers: Layers of ice in glaciers can hold information about past climates and atmospheric conditions.
- Fossils: Fossils carry the memory of prehistoric life, providing insights into the evolution and ecology of ancient organisms.
- Sedimentary rocks: The layers in sedimentary rocks can reveal information about past environments and geological events.
- Soil horizons: The various layers within soil profiles can indicate the history of soil development, past vegetation, and environmental changes.



Rituals and celebrations, the landmarks of our memory

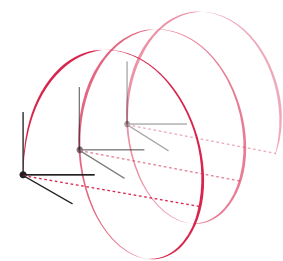
The fifth dimension

Space, time and performance

In this section, we will explore the concept of the fifth dimension. This dimension is unique in its cyclical repetition and temporal loops, which have a significant impact on how we experience and comprehend time. It goes beyond the fourth dimension of spacetime, permeating various aspects of our lives. On a personal level, we encounter the fifth dimension through life cycles and repeated exposure to art, music, or literature. These experiences continually shape and refine our understanding, leading to a dynamic process of transformation. The fifth dimension also manifests itself in nature, architecture, performance, and the human experience, providing a diverse range of expressions. Here are some examples:

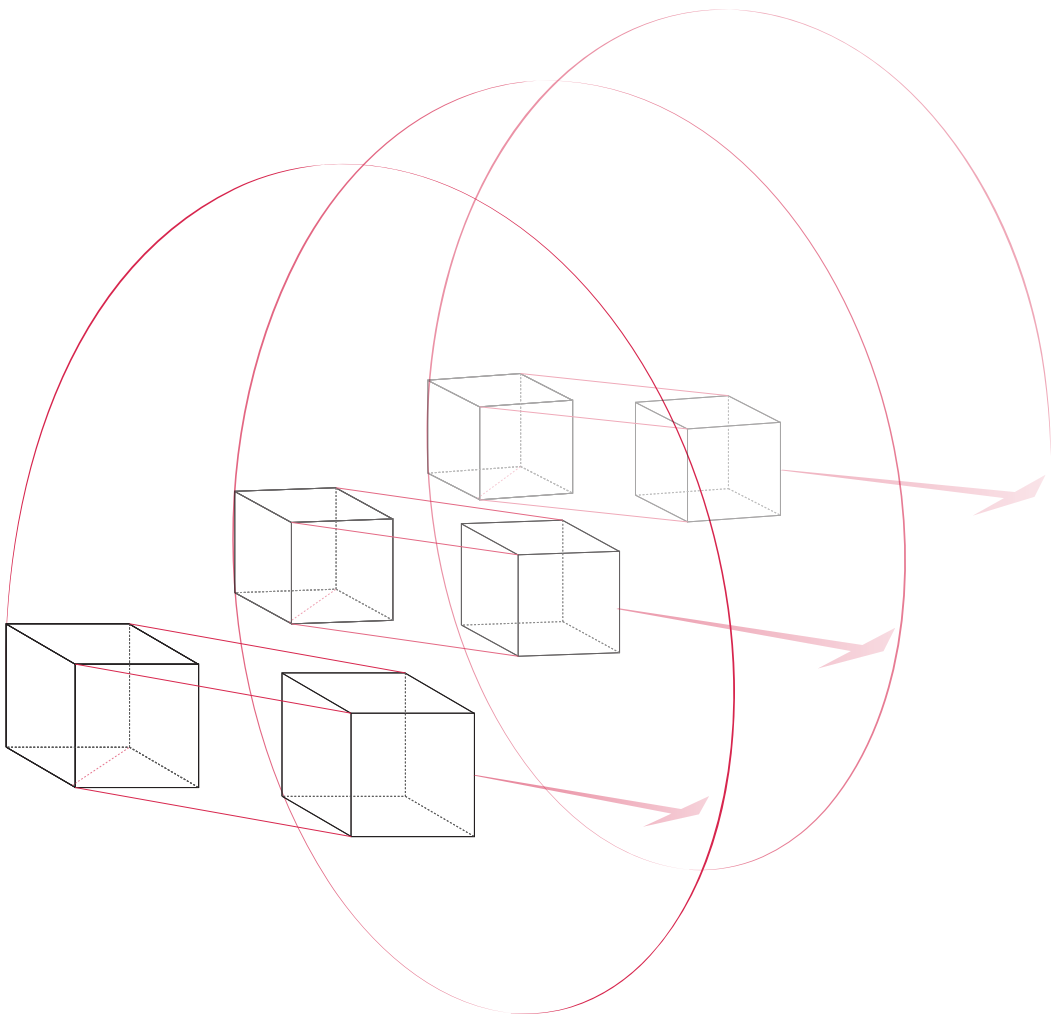
- Nature: The cyclical nature of the fifth dimension is evident in the natural rhythms of the changing seasons, the life cycles of flora and fauna, and the pattern of day and night. These recurring processes exhibit variations, reflective of the impact of external factors and the passage of time.
- Architecture: Buildings and structures have the potential to incorporate the fifth dimension by utilizing repeating patterns, modular designs, and adaptive reuse. As these structures develop, they can adapt to meet the changing needs of society and reflect the cyclical nature of human progress.
- Performance: Performance, whether it be in music, dance, theater, or sports, often involves repetition and cyclical elements. Through revisiting and reinterpreting familiar themes and motifs, performers create a connection that spans time and space. This cyclical nature reflects the temporal loop proposed by the hypothetical fifth dimension.
- The Human Experience: Our existence is characterized by a series of recurring patterns, ranging from mundane routines to momentous events like birth, marriage, and death. Each cycle is distinct, shaped by our individual encounters and the larger societal and cultural milieu. The perpetual flow of cycles and repetitions epitomizes the very essence of the fifth dimension.

5. Sequence of events



Direction: Cyclic time

The concept of the fifth dimension presents an intriguing thought experiment that encourages us to contemplate the impact of recurring patterns and how time loops back on itself in the world and how time is perceived. Through exploring the intersections between the fifth dimension and elements such as nature, architecture, performance, and human experience, we can gain a more profound comprehension of the intricate and fluid connection between space and time and how it shapes our existence.



Conclusion on time

Time is a complex and multi-dimensional concept that continues to evolve as we explore its various aspects. From the basics of geometry to the cyclical nature of the fifth dimension, our understanding of time is constantly evolving. It is intertwined with every aspect of our lives, from the physical world to our memories and human experiences.

Understanding time enables us to appreciate the ever-changing world and our place within it, fostering an appreciation for the continuous flow of time. It is not just a mere measurement, but a fundamental aspect of our existence and a vital component of the human experience and the evolving environment we surround ourselves with.

By exploring the different dimensions of time, we can develop a deeper connection to the world around us and unlock a greater appreciation for the passage of time. This newfound understanding can inspire us to create experiences that resonate with the complex rhythms of nature and human existence, ultimately enhancing our appreciation of the world we inhabit.





Alta

I started this project with a desire to explore the concept of time within a specific landscape, moving beyond theoretical understanding. I wanted to use this landscape as a case study to answer my research question: What is time? Is there a common understanding within “the flow of time” that can be used as a guiding theme in architecture? I also wanted to use the landscape as a means to delve into the topic of time within a particular context. Our perception of time is profoundly influenced by the natural cycles that occur around us. As the sun rises and sets, marking the end of one day and the beginning of another, our bodies adjust accordingly. However, these natural cues vary across the world. It is often easier to perceive and understand temporal natural events when we step outside our familiar environments. I decided to explore this idea in Norway, a landscape that I am very familiar with.

Despite sharing many cultural similarities with the Dutch, Norway's landscape is vastly different. The country stretches 1770 km from its southernmost point to the north. The northern region extends beyond the Arctic Circle, where the sun remains absent in winter and refuses to set in summer. The northern parts of Norway benefit from the Gulf Stream, which keeps temperatures relatively mild compared to other locations along the same latitude. The stark contrast between summer and winter, the proximity to the vast ocean, and the dramatic landscape make it an ideal environment for studying time in a context like no other. A context so familiar, yet so alien to many of us, where day and night are not dictated by the beat of the sun. It is a place where time ticks at a different pace than in the city, and where the rules that define our temporal understanding are bent.

The inspiration for my graduation project stemmed from a fascination with the patterns made by erosion and deposition in vast landscapes. Consequently, my search for a specific location was primarily driven by an attempt to find areas in the Arctic landscape with an accumulation of deposits and visible traces of erosion. Intrigued by the idea of working with a river, I began exploring river basins in northern Norway, eventually settling on the Keutokeino River basin. This relatively large basin collects water from several minor rivers stretching across parts of northern Finland, over the Finmark plateau, and down through various valleys before merging into one river that flows into the Alta Fjord.

The map on the right shows the location of Alta, illustrating its remote nature. The red lines on the map represent train connections in Europe, with Narvik in Norway being the northernmost point accessible by train on this map.



Alta in context

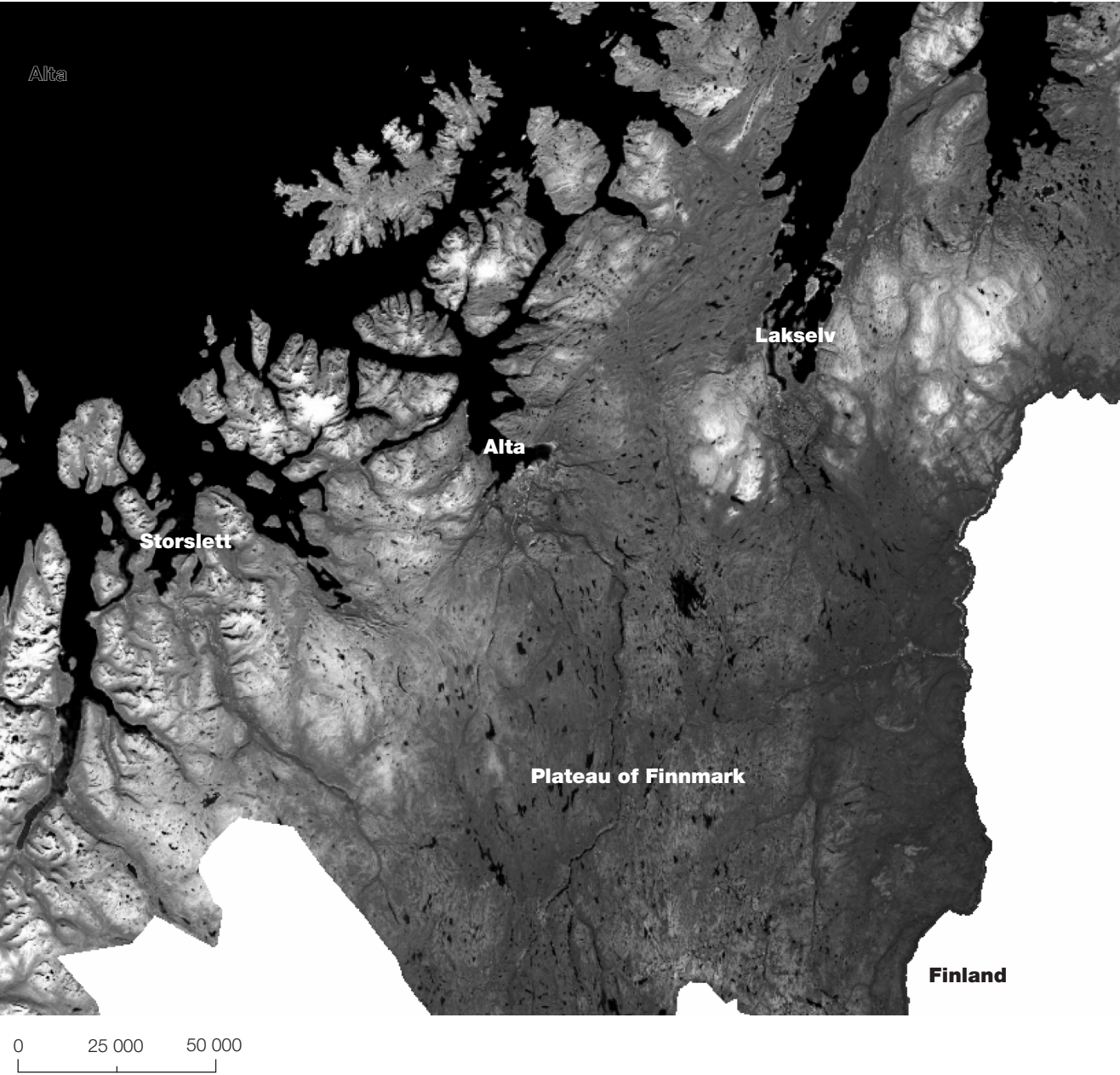
Alta is a town and municipality situated within Finnmark county. Home to 20,000 inhabitants, Alta lies at the river's estuary, facing the northern part of the fjord. The municipality of Alta includes the town itself, the Alta Fjord, the Alta River (part of the Keutokeino basin), and several islands adjacent to the fjord. The nearest towns are Storslett to the west and Lakselv to the east. The Alta Fjord connects the Finnmark plateau in the south to the North Sea in the north.

The landscape within and around Alta undergoes dramatic seasonal shifts, with windy, snowy winters and green, wet summers. Like many other places, it is also vulnerable to climate change. The area faces more humid, wet, and warmer summers, melting permafrost, diminishing vegetation to hold the ground together, and increasingly unpredictable seasons. Beyond the harmful effects of the climate crisis and the potential dangers it brings, the landscape will also transform in appearance. Warmer summers and milder winters may attract new plant and animal species, altering the landscape's appearance. The warmer climate could entice more people to settle in these remote areas, and increased human activity might negatively impact the landscape. While many of these concerns are speculative, this chapter will examine some of the effects that climate has on the landscape and the project site in general.

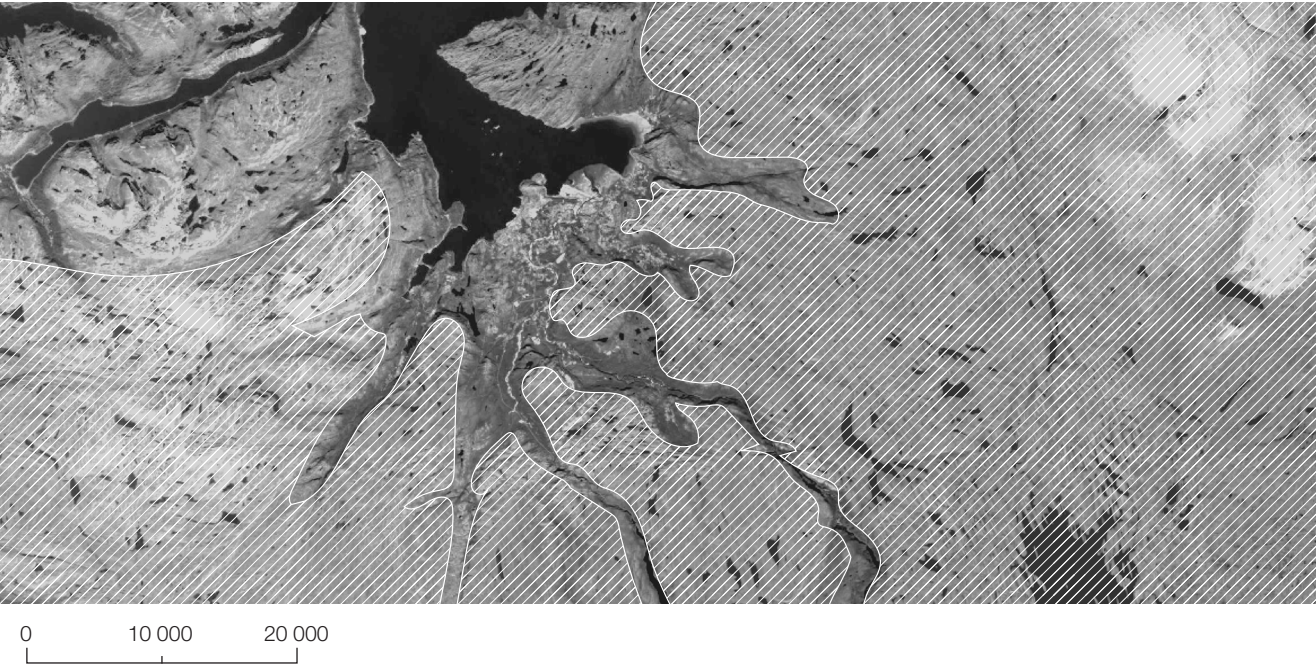
Numerous processes have contributed to shaping the northern landscape. Around 100,000 years ago, northern Scandinavia, including parts of northern Finland and Russia, was covered by a vast ice sheet (Ramberg, I. B., Bryhni, I., Nøttvedt, A., & Rangnes, K. 2006). This glacier was frozen to the ground and remained mostly stationary, leading to the formation of the Finnmark plateau. However, in later stages, the melting of the initial ice resulted in smaller glaciers that slid from higher to lower points, carving out the dramatic fjords seen along the coast today.

Currently, the Finnmark plateau is the largest in Norway, spanning over 22,000 km² (Askheim, S. 2022). The plateau sits between 300 and 500 meters above sea level and is relatively flat compared to the striking mountain landscape found closer to the shore, as illustrated in the maps on the right.

Plateau of Finnmark - wide flat landscape



Plateau of Finnmark - engraved in white





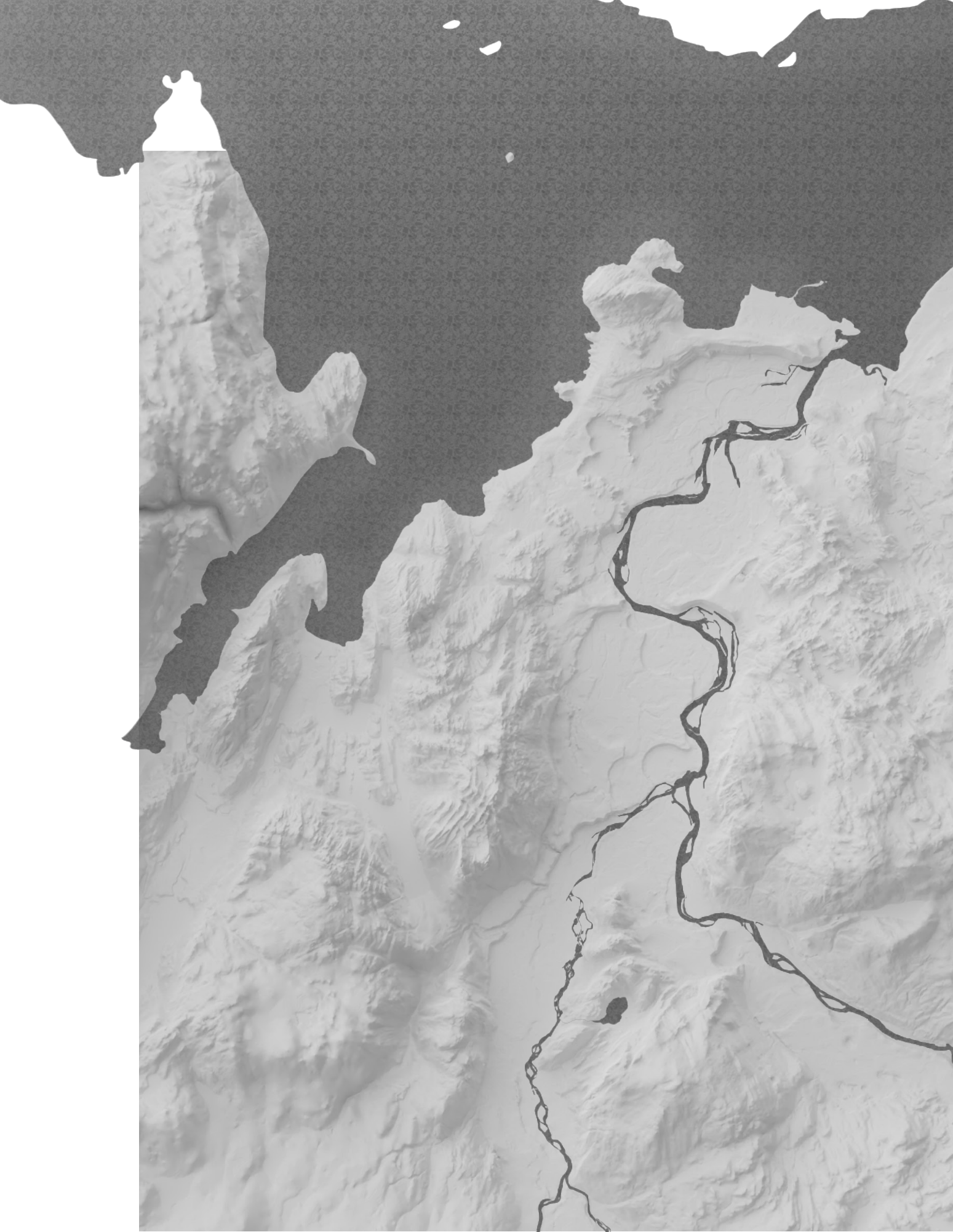
A measure of change

Alta boasts a rich history of human activity, with evidence of human settlements dating back between 5,000 and 10,000 years ago (Svendsen, T. O., & Askheim, S. 2022). Among these remnants are a series of rock carvings spanning several thousand years; the youngest is approximately 2,000 years old, while the oldest is around 5,000 years old. The image on the left depicts some of the newer carvings, made more visible by red paint. What intrigues me about the landscape is the contrast between the region's solid and softer material composition. While primarily consisting of solid rock, the landscape is interspersed with softer sediments like sand and clay nestled among the mountains.

The images on the right capture a time-lapse of an entire farm vanishing into the Alta Fjord in under five minutes. To me, this highlights a fundamental aspect of the site and the project: we are dealing with a landscape that is both sturdy and resistant to change, yet certain elements and areas are transforming so swiftly that establishing anything with permanence is impossible. In such a context, what should we aim for? Do we desire a lasting footprint, or should we strive for something adaptable and capable of evolving with the rapidly changing landscape?



Jan Egil Bakkedal - 2020



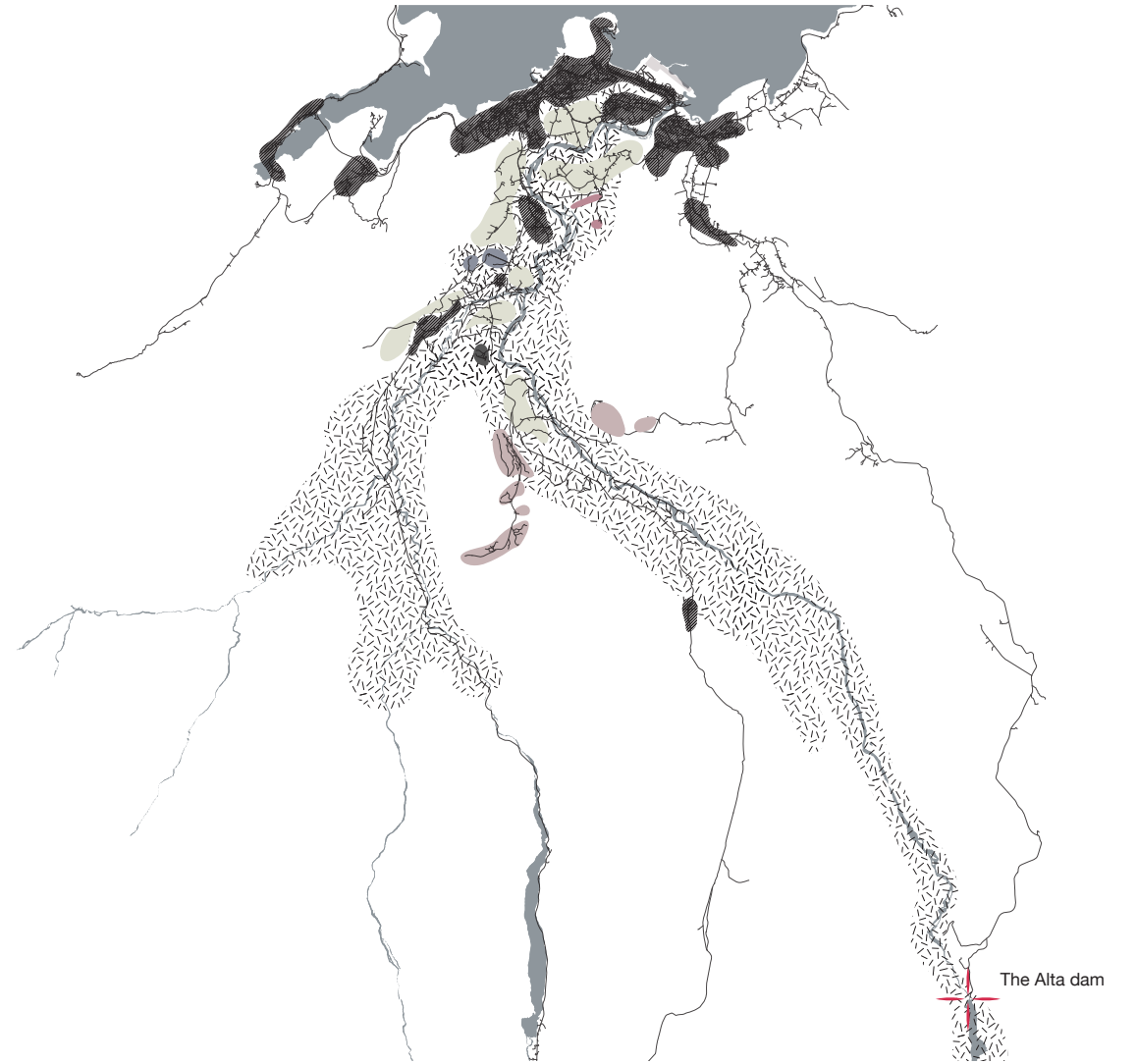
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The rivers and the fjord of Alta

The expansive river basin that gathers and flows through the Alta Valley and into the fjord is known as the Kautokeino basin. Stretching as far as to the Finnish border, it is the lower portions of the basin that I selected for further analysis in my project. The two primary rivers that converge into the Alta River are Gammelbollo and Eibyelva. Gammelbollo has a more substantial water flow and is considerably more stable due to its dam, maintaining a relatively predictable flow year-round. Nonetheless, like all rivers, it is still influenced by natural precipitation throughout the seasons. Eibyelva, on the other hand, is a “wild” river, with flow patterns that vary dramatically depending on the season. During spring, when mountain snow melts, the river experiences a significant increase in volume, rendering its path highly unpredictable. However, this fluctuation diminishes as summer progresses. These two rivers converge at the point where the Alta Valley begins and continue flowing through the town of Alta before reaching the fjord.

The landforms where Eibyelva meets Gammelbollo primarily consist of sediments from the last glaciers that once covered the fjord, as well as river sediments. The terrain here is relatively flat and fertile, allowing plants and animals to flourish. Dense forests envelop the lower valley, and numerous fish migrate up the rivers to spawn. This renders the area highly attractive to sport fishers and other nature enthusiasts. Since the land is so low in this portion of the landscape, the rivers meander widely across the lower regions, significantly altering the environment’s appearance within a few years. Only the mountains to the east and west serve as barriers that constrain the river along its course.



Anthropocene

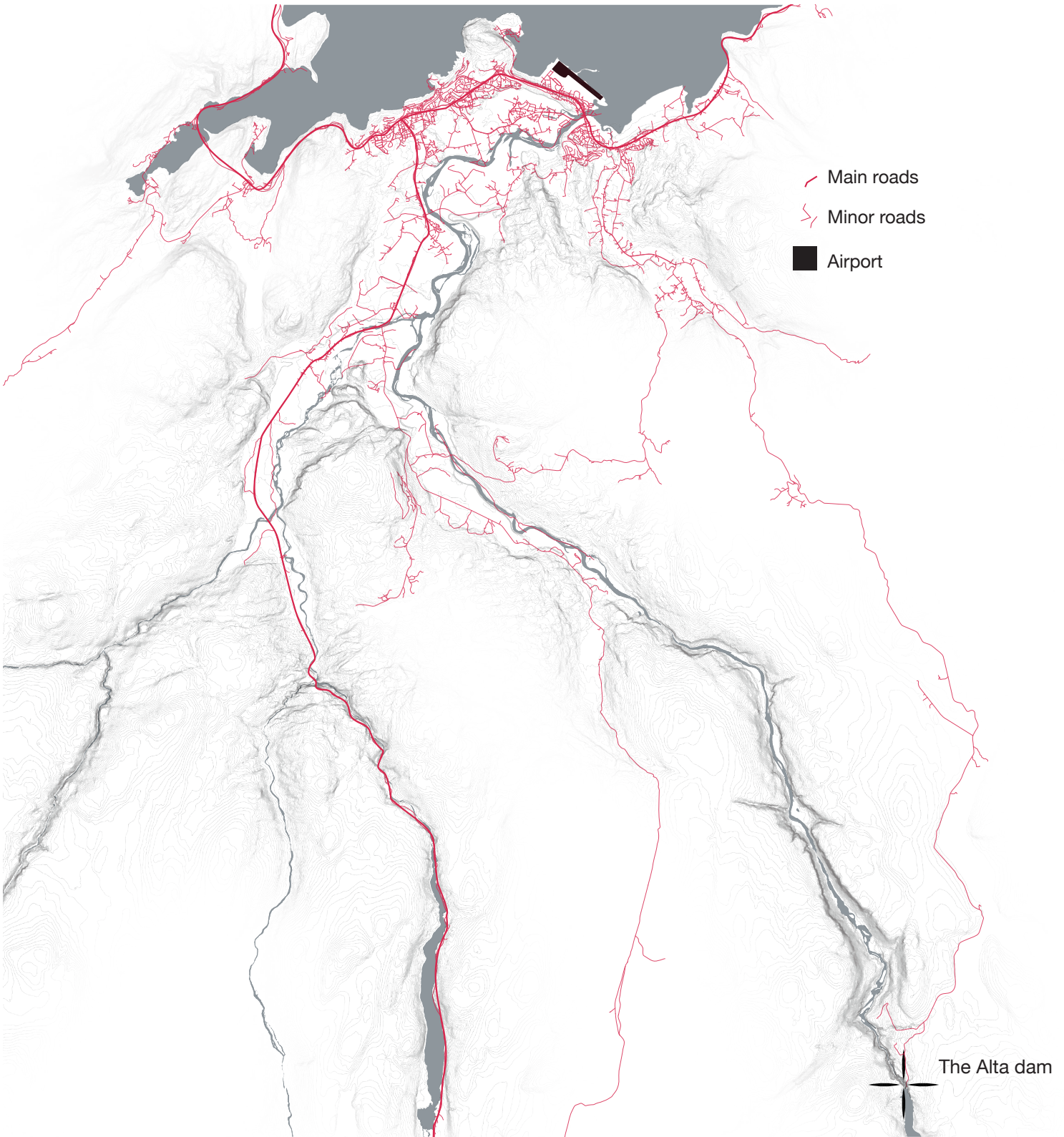
Although Alta is a small town, much of the land surrounding the estuary is heavily developed. The usable flat land in the narrow fjord is scarce, necessitating new developments to expand southward, away from the ocean. While the town is situated near the estuary, the accessible flat lands to the south are dedicated to agriculture, industry, and stone and gravel quarrying. Some forestry activities take place in and around the area.

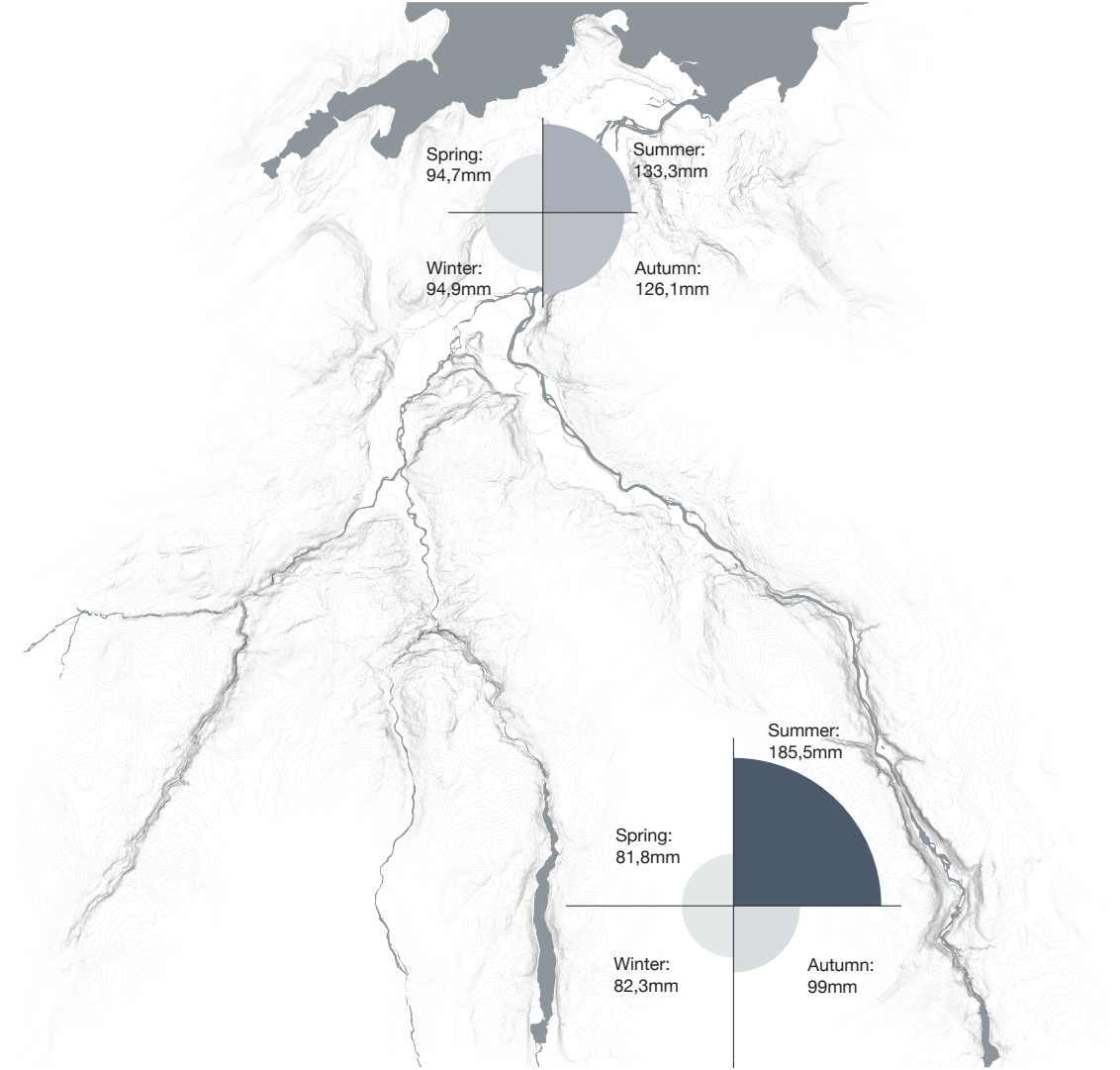
-  Urban
-  Farmlands
-  Industry
-  Sand and gravel quarry
-  Slate quarry
-  Forest

Infrastructure and the town of Alta

The town's remote location poses challenges when it comes to connecting with the rest of the country. In order to drive to Alta from the capital, the fastest route would be from the south through Sweden and Finland. Another connection exists along the entire coast of Norway, but it is disrupted by the numerous fjords, making it a less direct and slower path. Like many arctic towns, the most efficient way to access Alta is by flight. The town serves as a crucial junction point for several smaller northern towns, boasting a relatively busy airport that transports travelers from Oslo to Alta before distributing them across the region.

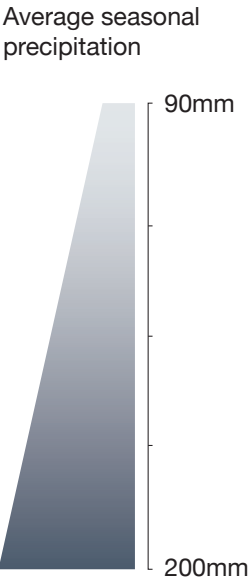
Over time, humans have impacted the landscape of Alta in many ways, including by building the Alta dam, which has altered the natural water flow of the river Gammelbollo. Also, various infrastructural projects have led to habitat fragmentation for animals and plants. As tourism grows in Alta, particularly due to the rock carvings in the town and the Northern Lights, it puts pressure on the local environment. As human activities impact on the landscape, it becomes increasingly essential to consider sustainable development practices and conservation efforts to preserve this unique and fragile ecosystem.





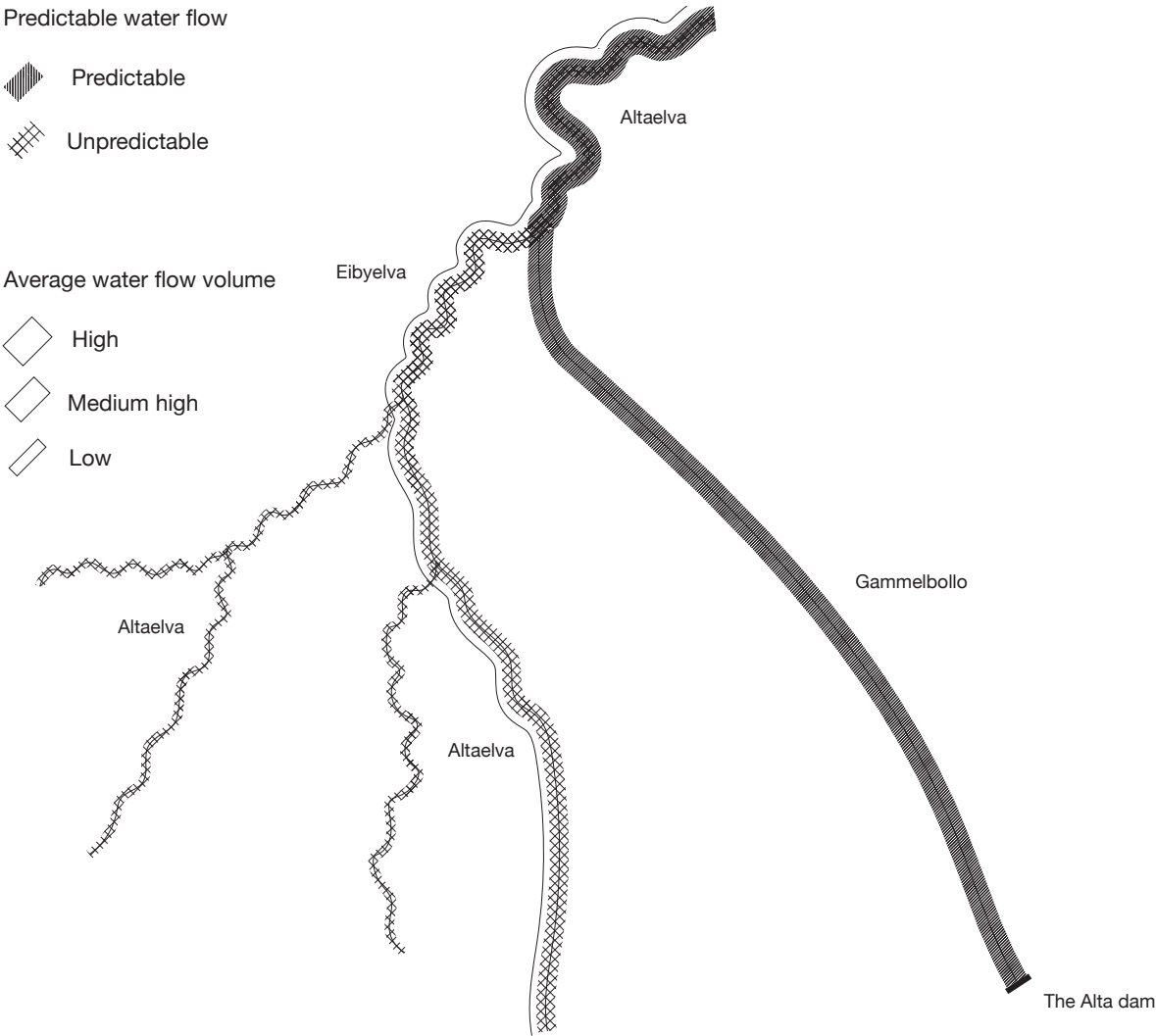
Average seasonal precipitation

The map illustrates the average seasonal precipitation in the mountains and by the coast for the whole year. What this map poorly shows is that the precipitation all year is on average pretty high. What it does show very well is the relative difference between the summer and winter months, especially from the plateau. The winter precipitation is very different from the summer precipitation in that it accumulates from late autumn and it stays frozen at the plateau until the sunny spring melts the frozen. By that point it floods the fjords, creating a peak in water flow. Throughout the summer the flow stays unpredictable, something you have to be aware of as a visitor of the location. The fluctuations in high and low water flow throughout the year is a marker of change.



Predictability of the water flow

The map demonstrates the differences in scale and predictability of the rivers throughout the year. Originating from the east, Gammelbollo is the largest river before merging with Eibyelva from the west to form Altaelva. Gammelbollo's flow, regulated by the Alta dam, is considerably more predictable. Although Eibyelva may have a lower average volume, its wild nature causes the river's flow to be quite unpredictable, with moments when its volume surpasses that of Gammelbollo.

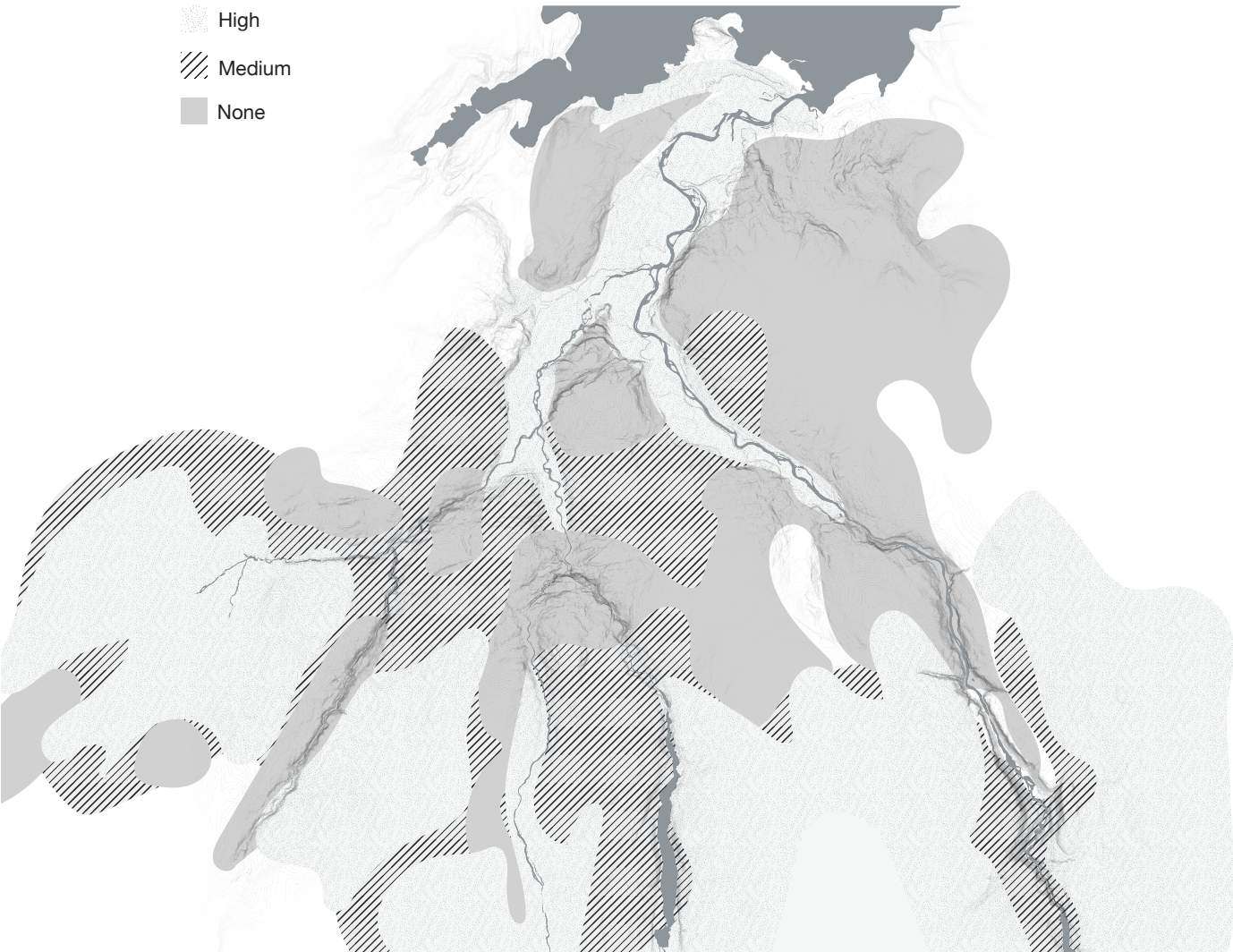


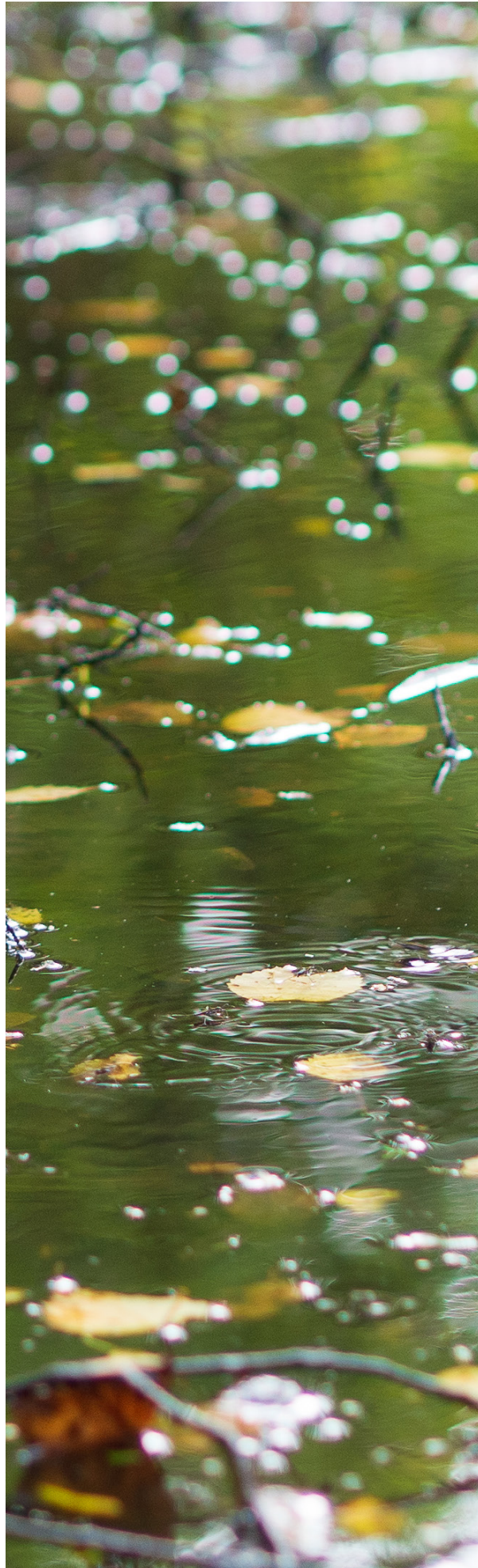
Infiltration ground

Ground infiltration plays a vital role in the ecology of the landscape. The map below demonstrates the distribution of high and low porosity in the region, indicating the permeability of the ground. In areas with higher infiltration, water accumulation often leads to a more diverse ecosystem, supporting a variety of plants and animals. Additionally, ground infiltration can impact the rate of erosion and the transformation of the landscape over time. In parts of the map with higher infiltration values, the ground may erode faster, depending on the composition of the soil and the species inhabiting the area. on the other hand, areas with low infiltration capacity, such as hard rock or mountainous terrain, tend to resist erosion to some degree.

capabilities, while the plateau to the south and the central parts of the fjords exhibit a high degree of infiltration.

The map below illustrates the infiltration capacity of the fjord and the areas to its south. It is evident that the exposed rocks to the east and the west of the fjord have minimal water absorption



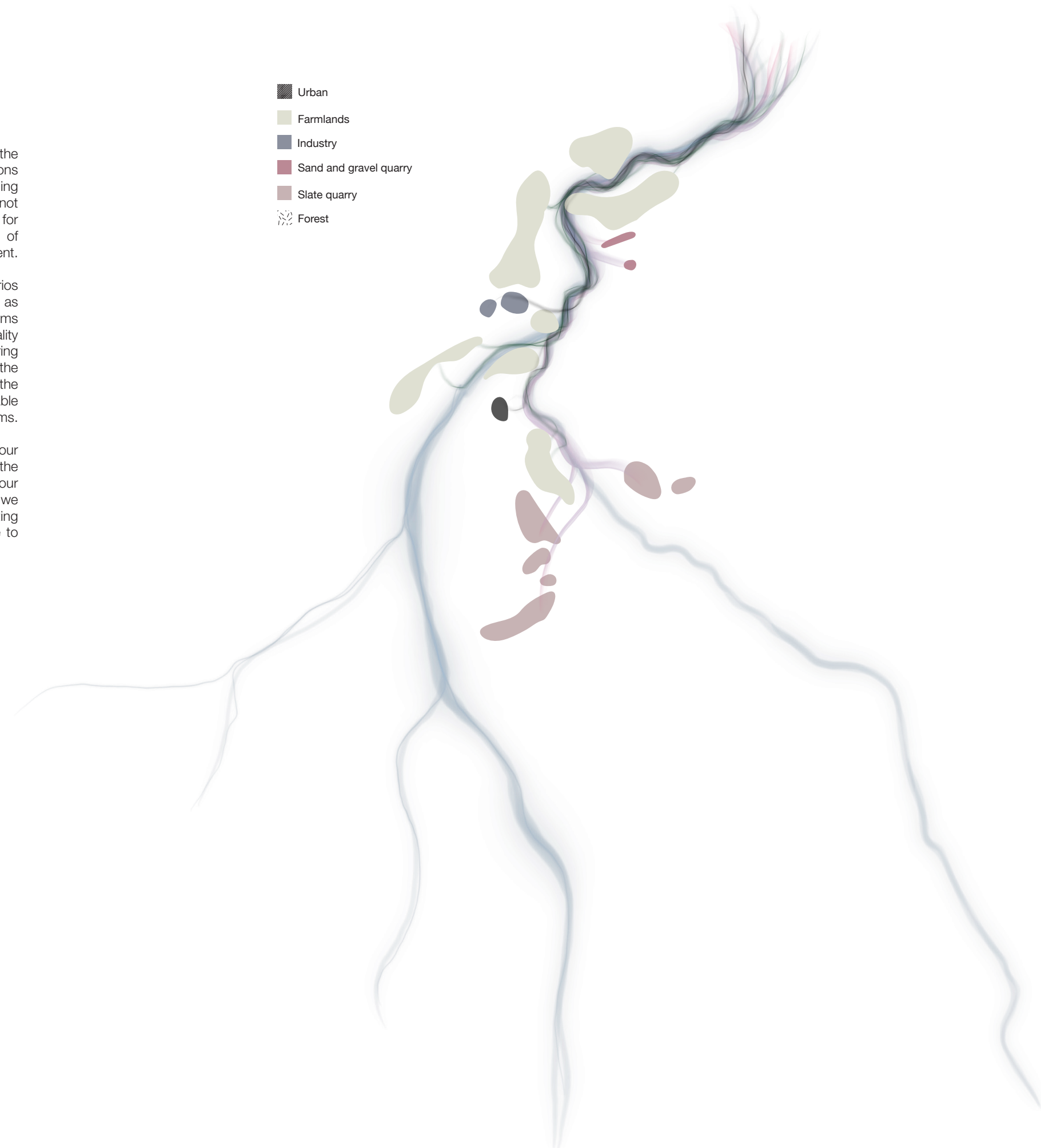


Water flow

Here is a conceptual map that explores the potential effects of Anthropocene interventions on the river landscape, especially regarding runoff to the rivers. Even though this map is not based on any existing data, it acts as a tool for understanding the possible consequences of human-made changes on the environment.

The map encourages us to consider scenarios in which anthropogenic actions such as infrastructure development and different forms of activity might alter the natural flow and quality of water within the river system. By considering these scenarios, we can better appreciate the balance between human activities and the natural world and the importance of sustainable practices in preserving our ecosystems.

The map also invites us to think about our responsibility as a society in shaping the landscape. As we continue to expand our presence on our planet, it is important that we remain aware that our actions will have a lasting effect on the environment and that we strive to minimize that effect.



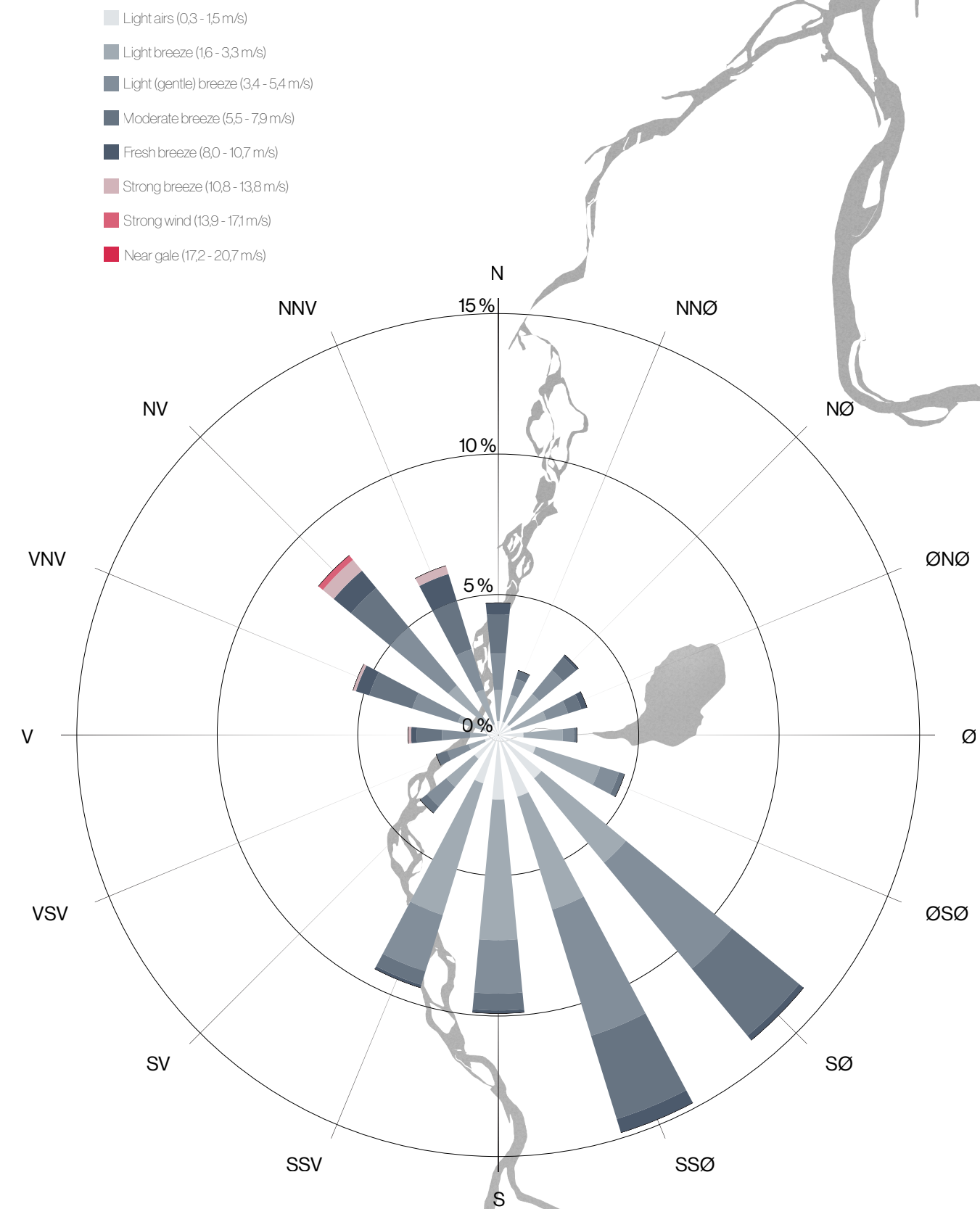
Dominant wind direction

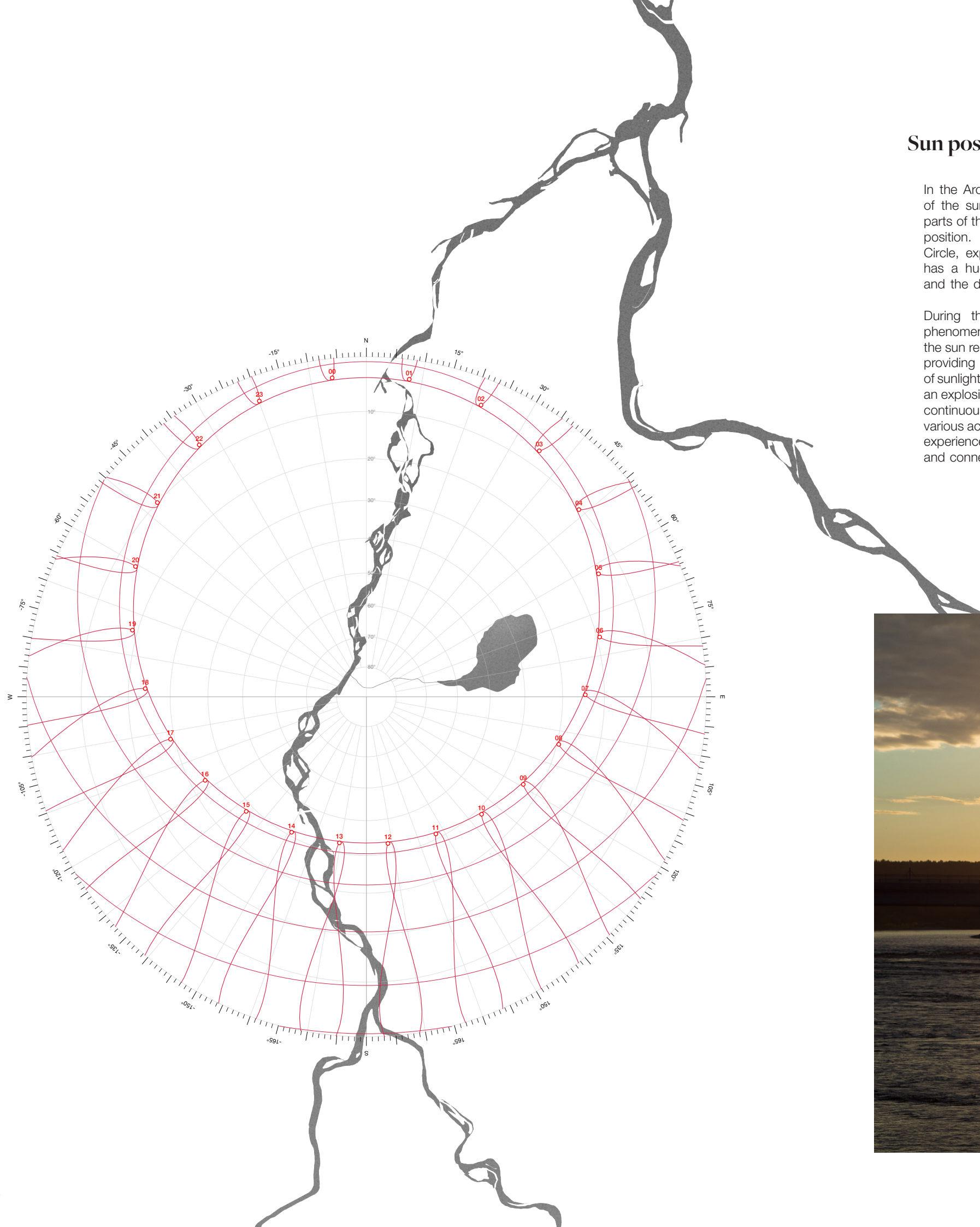
The wind rose to the right provides us with information about the direction and strength of the wind patterns that influence the area. Two wind directions stand out: The northwest and the south east winds.

The winds from the northwest are stronger in intensity but are less frequent than the southeastern winds. These winds are likely caused by bigger storms throughout the year.

The southeastern winds, on the other hand, are more frequent and has an impact on the site all year round. Due to their frequency, these winds are likely the biggest factor to wind induced erosion.

By taking these winds into account, we can plan the for the impact of the erosion on our project.





Sun position

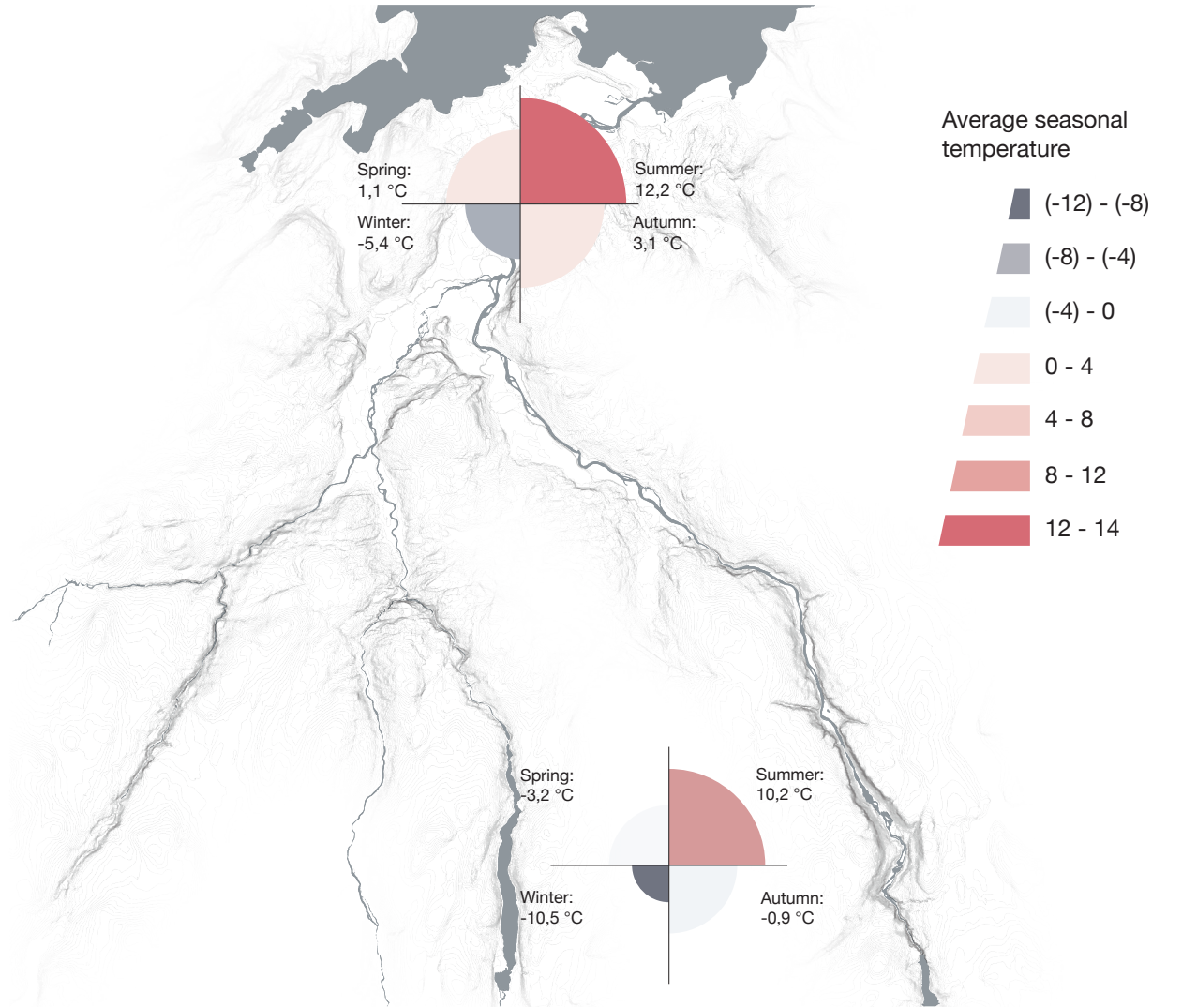
In the Arctic region, the movement and impact of the sun is very different compared to other parts of the world due to its unique geographical position. Alta, situated well within the Arctic Circle, experiences a unique solar pattern that has a huge impact on its landscape, climate, and the daily lives of the people who live there.

During the summer, Alta is flooded in the phenomenon known as the Midnight Sun, where the sun remains above the horizon day and night, providing continuous light. This extended period of sunlight not only warms the region but also fuels an explosion of growth in the flora and fauna. The continuous daylight offers a unique opportunity for various activities, and both locals and tourists can experience the extended daytime hours to explore and connect with the natural beauty of the area.

On the other hand, in the winter months, Alta experiences the Polar Night, a time when the sun remains below the horizon. This leaves the region with a continuing darkness that lasts for months. Although the absence of sunlight starkly contrasts the summer months, it offers an opportunity to witness the amazing beauty of the Northern Lights as the skies come alive with vibrant colors.

Understanding the sun's movement and its impact on the Arctic landscape is essential for anyone dealing with this landscape.





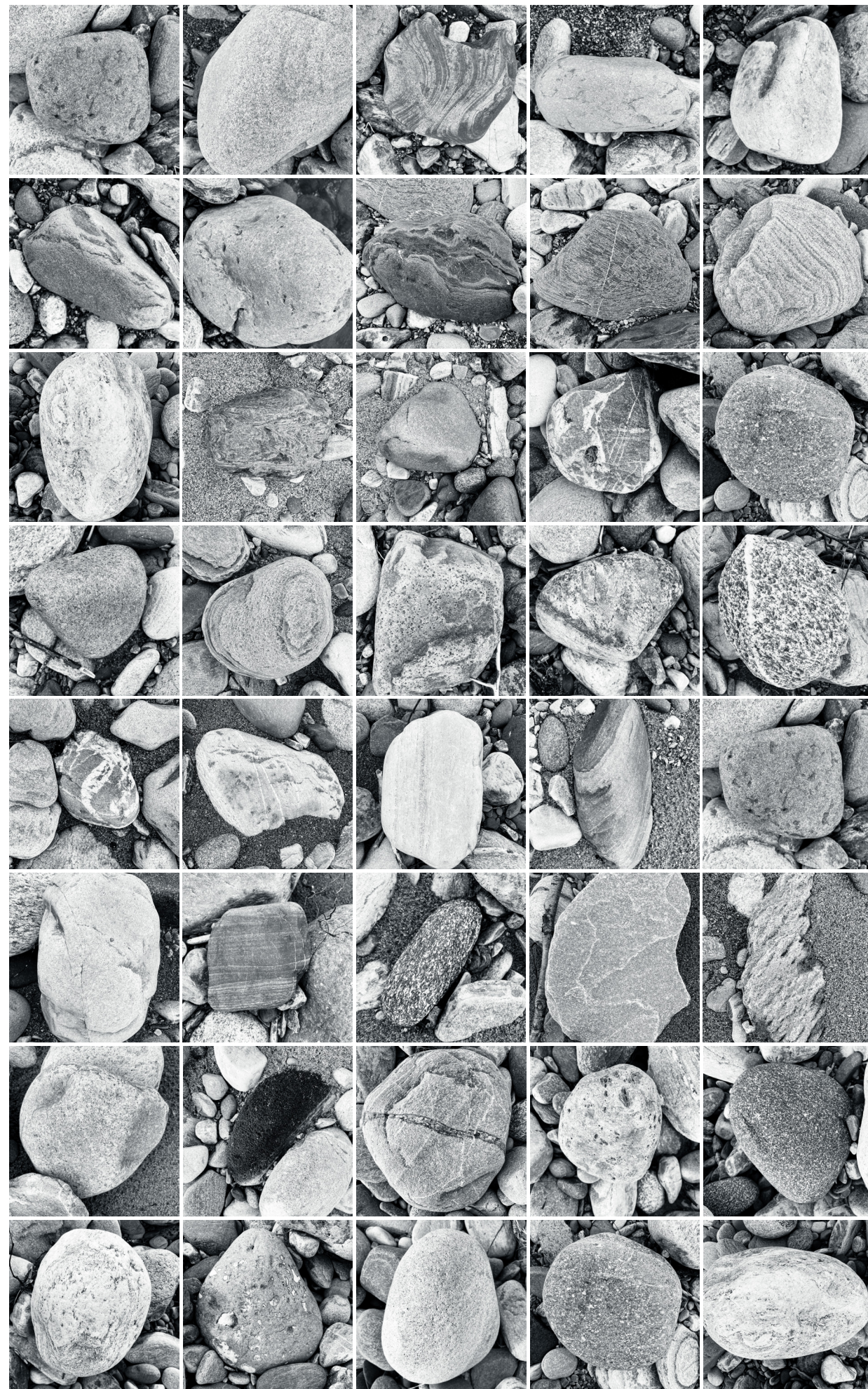
Average seasonal temperature

The Alta region experiences notable differences in average temperatures throughout the year. In the fjord of Alta, the winters are relatively mild with an average temperature of -5.4°C, while summers bring warmer temperatures averaging 12.2°C. This milder climate can be attributed to the proximity of the nearby ocean.

Further inland, at the Finmark plateau south of Alta, the temperatures vary more dramatically. The winters here are colder, with an average temperature of -10.5°C, while summers are slightly cooler, averaging 10.2°C. The absence of the ocean's influence results in more extreme temperature fluctuations in this region.

These differences in temperature have a direct impact on the landscape. In the fjord of Alta, the milder temperatures result in a landscape that is more resilient to the effects of freezing and thawing, whereas the Finmark plateau experiences more dramatic seasonal changes due to the greater temperature variations. The distinct temperature profiles in these two areas contribute to the diverse ecosystems and unique features found in the Alta region.





Geological layers

The river meanders through a diverse array of geological layers, each with unique characteristics and responses to the water's persistent flow. Among the various layers, meta-arkose, granodioritic gneiss, quartzite, claystone, and siltstone play crucial roles in shaping the river's landscape. Further downstream, the river encounters tillite, metagreywacke, siltstone, meta-arkose, limestone, and greenstone before ultimately meeting the fjord.

Meta-arkose, the dominant layer in this region, is a metamorphic rock derived from sandstone, composed of feldspar and quartz. It is relatively resistant to erosion, giving it the ability to maintain its structure even under the constant pressure of the river's flow. In contrast, granodioritic gneiss, a metamorphic rock originating from granite, is more prone to weathering and erosion.

Claystone and siltstone, both sedimentary rocks, are much softer and more susceptible to erosion. The river's waters easily carve through these layers, gradually sculpting the landscape.

As the river flows through these geological layers, it transports various rock fragments, shaping and rounding them over time. The riverbed's abundance of palm-sized stones is indicative of the river's erosive power and the various rock types it encounters. The stones' rounded shapes result from the constant tumbling and grinding against other rocks and sediments during their journey downstream.

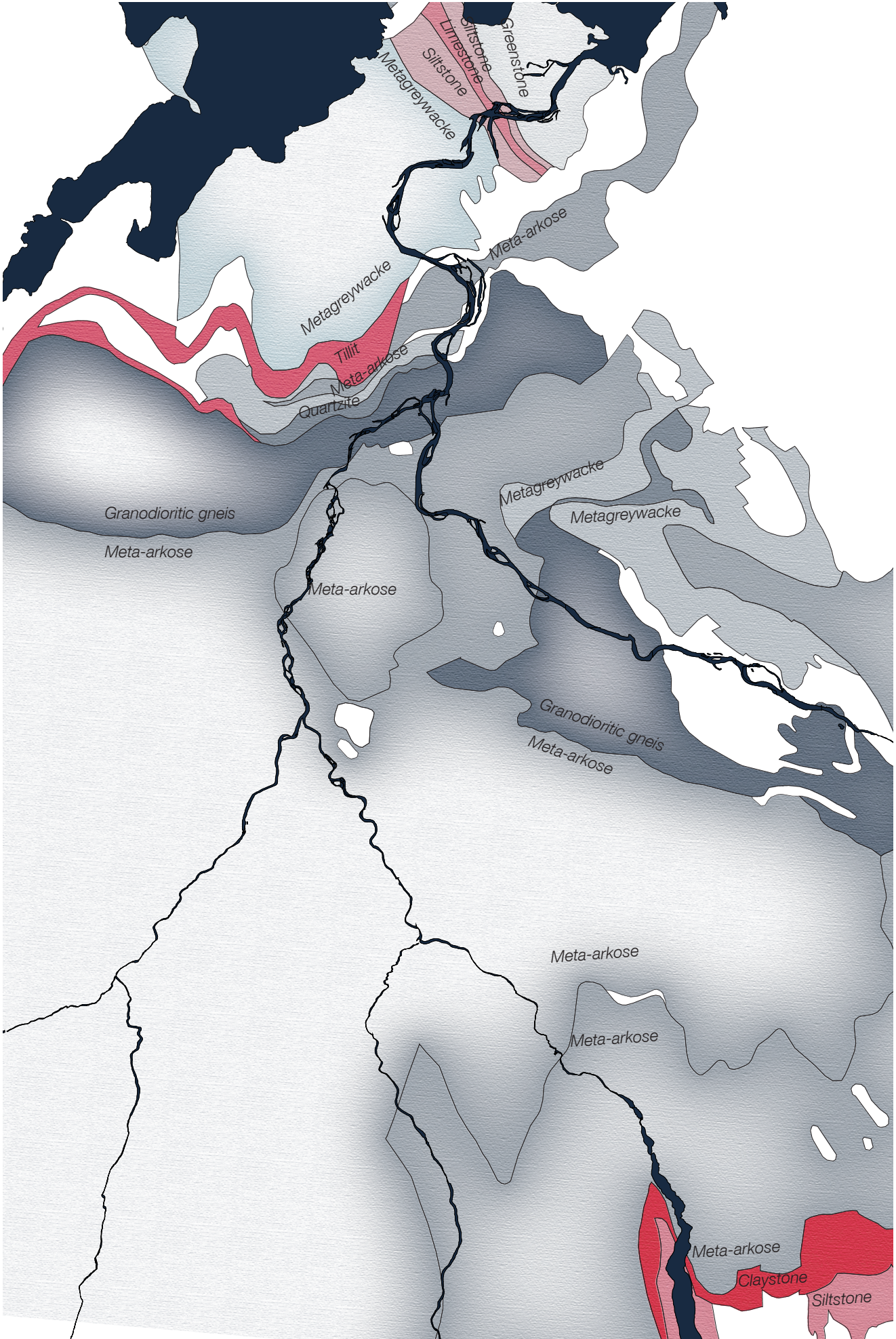
In summary, the diverse geological layers found along the river play a critical role in shaping both the landscape and the stones that line the riverbed. The water's relentless flow influences each layer differently, resulting in a dynamic and ever-changing environment that reflects the geological history of the region.

Sedimentary Rock

- Siltstone
- Limestone
- Tillitt
- Claystone

Metamorphic rock

- Greenstone
- Metagreywacke
- Granitic gneis
- Meta-arkose
- Quartzite
- Granodioritic gneis



The rocks

Sedimentary Rocks



Siltstone



Limestone

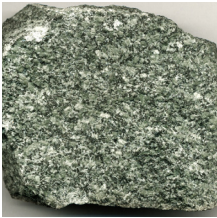


Tillite



Claystone

Metamorphic Rock



Greenstone



Quartzite



Metagreywacke



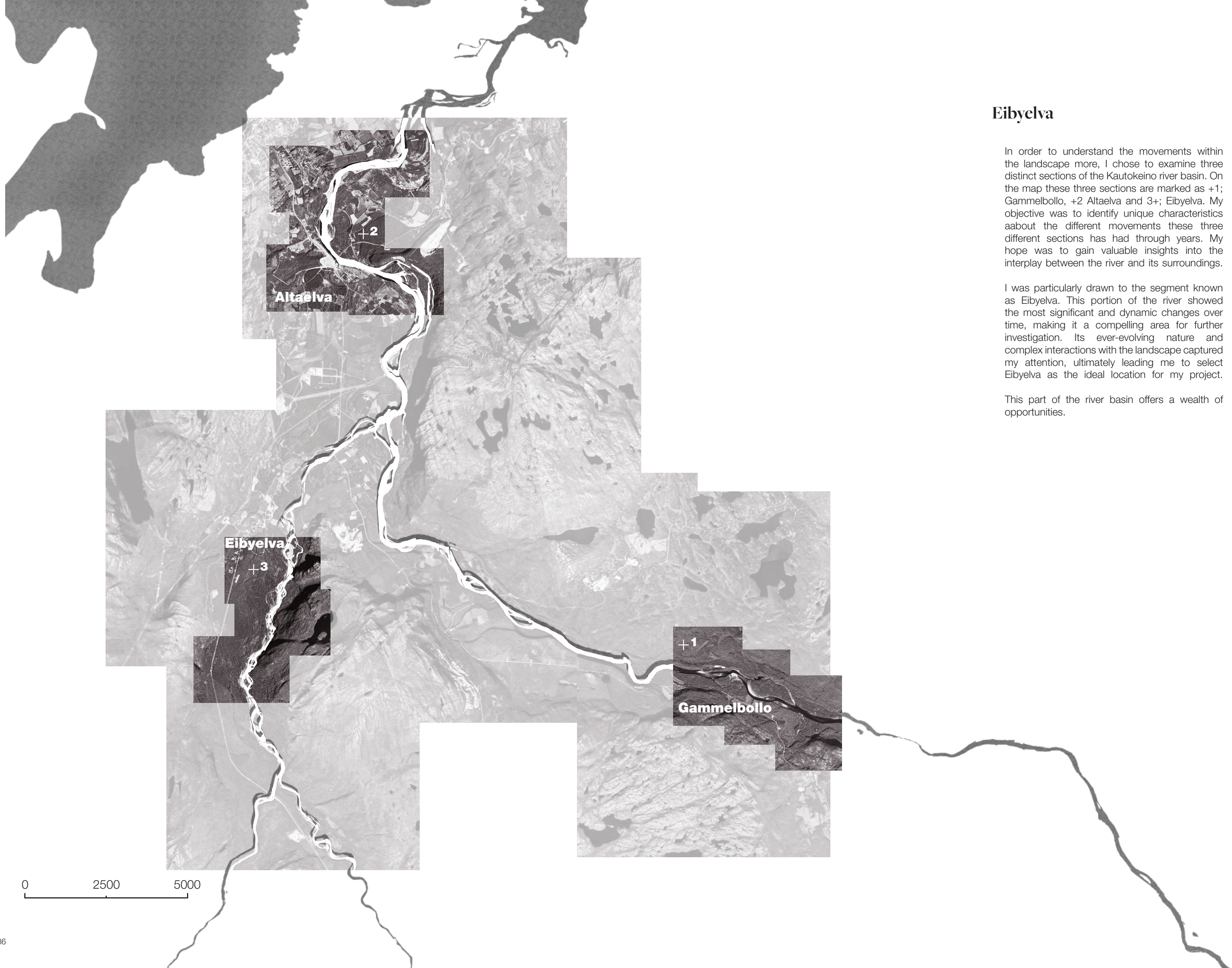
Granodioritic gneiss



Granitic gneiss



Meta-arkose

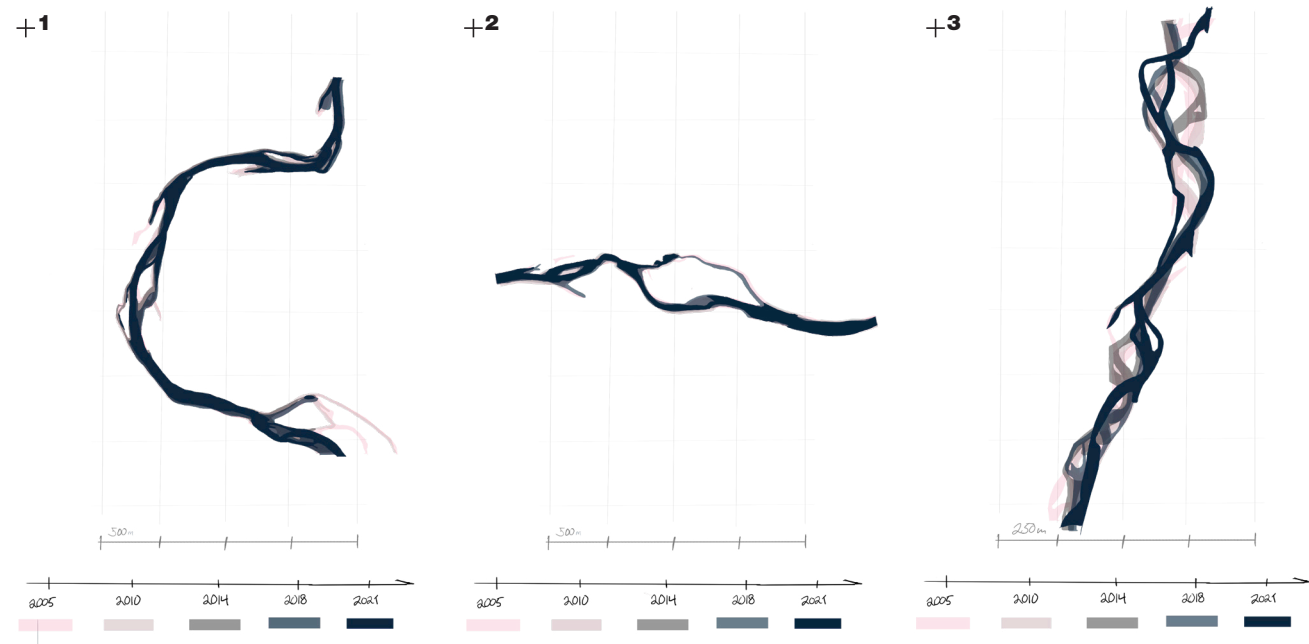


Eibyelva

In order to understand the movements within the landscape more, I chose to examine three distinct sections of the Kautokeino river basin. On the map these three sections are marked as +1; Gammelbollo, +2 Altaelva and 3+; Eibyelva. My objective was to identify unique characteristics about the different movements these three different sections has had through years. My hope was to gain valuable insights into the interplay between the river and its surroundings.

I was particularly drawn to the segment known as Eibyelva. This portion of the river showed the most significant and dynamic changes over time, making it a compelling area for further investigation. Its ever-evolving nature and complex interactions with the landscape captured my attention, ultimately leading me to select Eibyelva as the ideal location for my project.

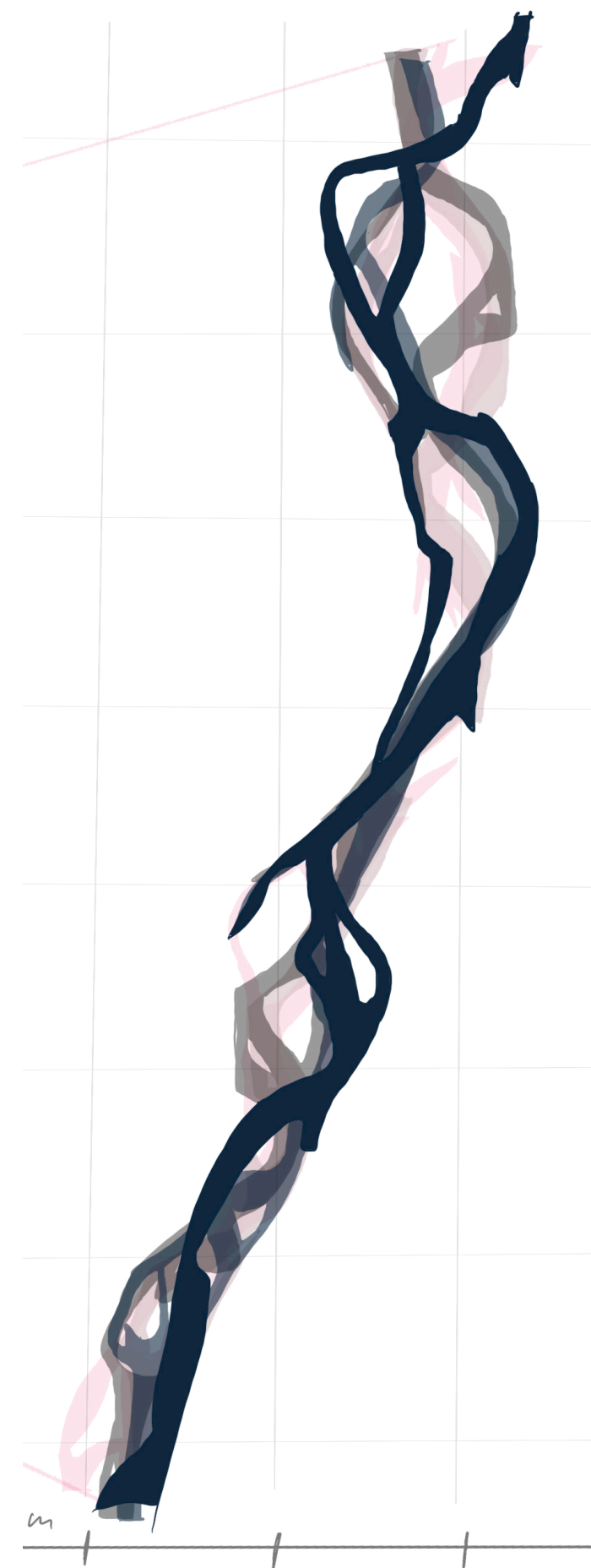
This part of the river basin offers a wealth of opportunities.

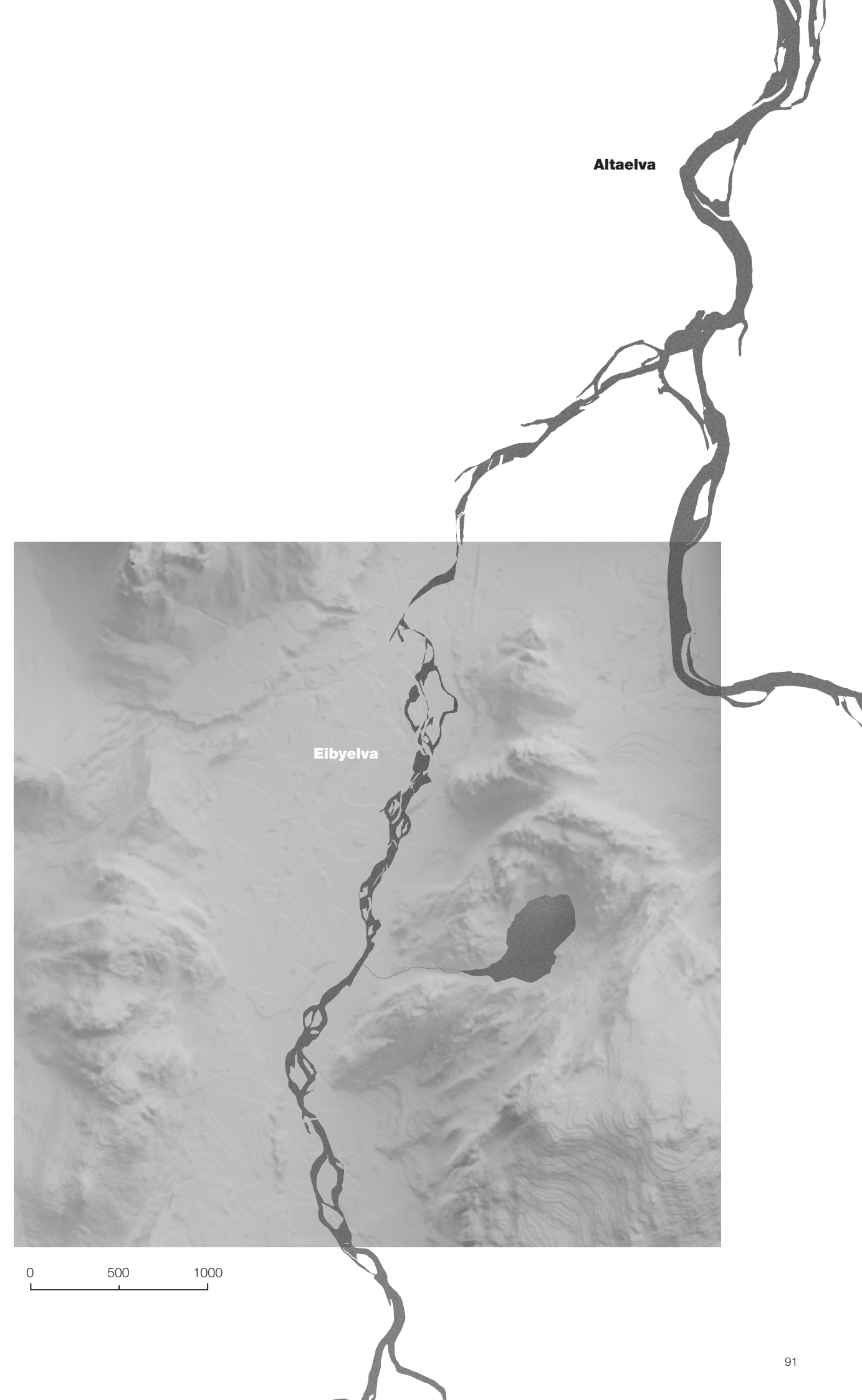
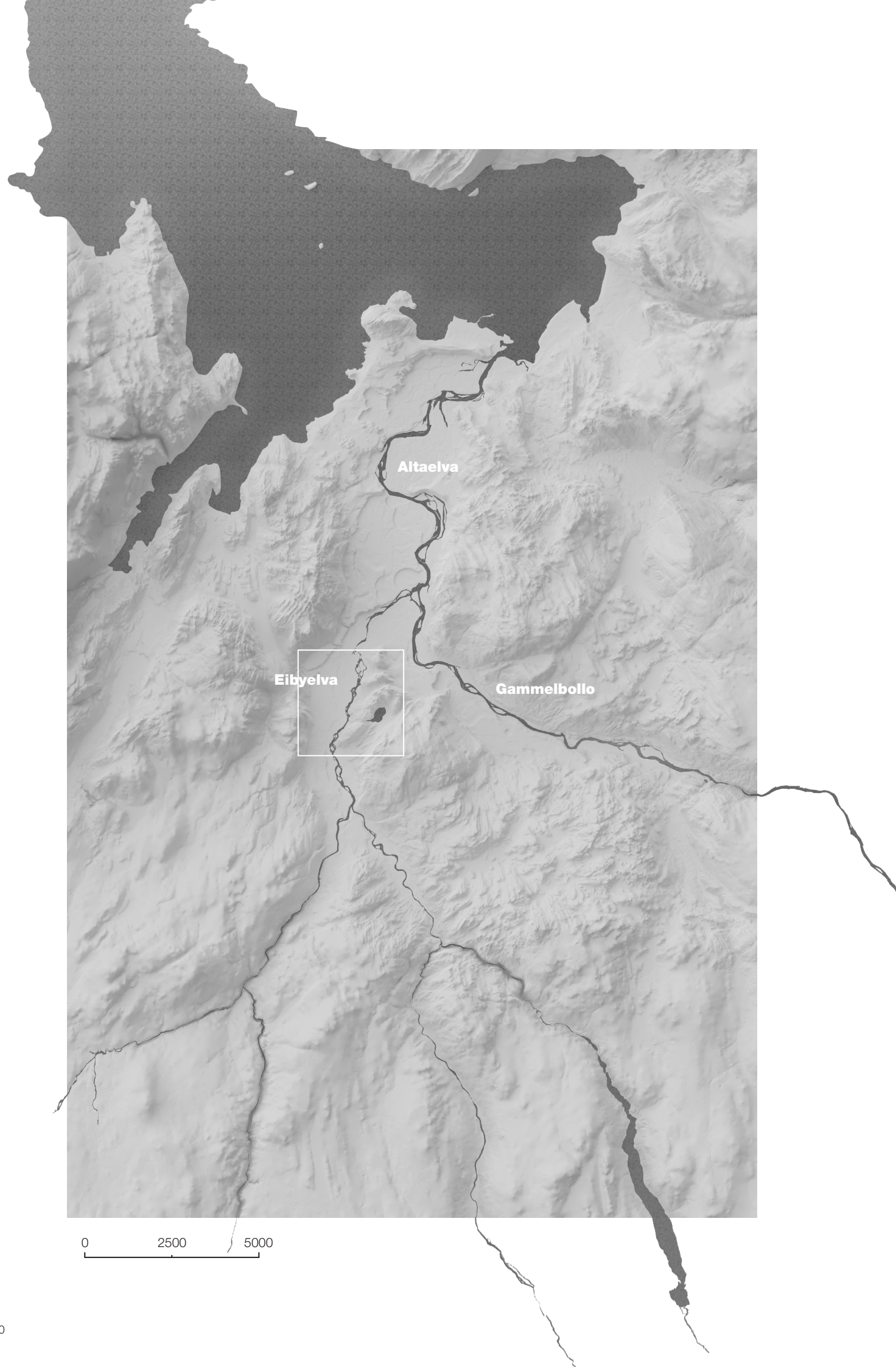


The Alta River is a fantastic example of nature's ever-changing dance, gracefully shifting its course through time, creating a mesmerizing performance documented through these drawings. Much like a dancer moving gracefully across a stage, the fluid movements of the river in the landscape embody the elegance and unpredictability of a live performance.

The meandering path of the river, as documented in the accompanying maps, shows us the river's journey, evoking themes of the looping nature of time as we have seen with our exploration of cyclic time. As the river changes its course, it retraces steps, loops back upon itself, and carves new paths, reflecting the cyclical patterns found in nature. This fluid movement of the river is a testimony to the impermanence of the landscape and the inevitable passage of time.

The movements made by the Alta River is an intricate dance between the elements, the land, and the forces of nature that shape it. It invites us to appreciate the beauty of change and the profound connections between space, time, and our environment. By embracing this dance, we can better understand the complex relationships that define our world.









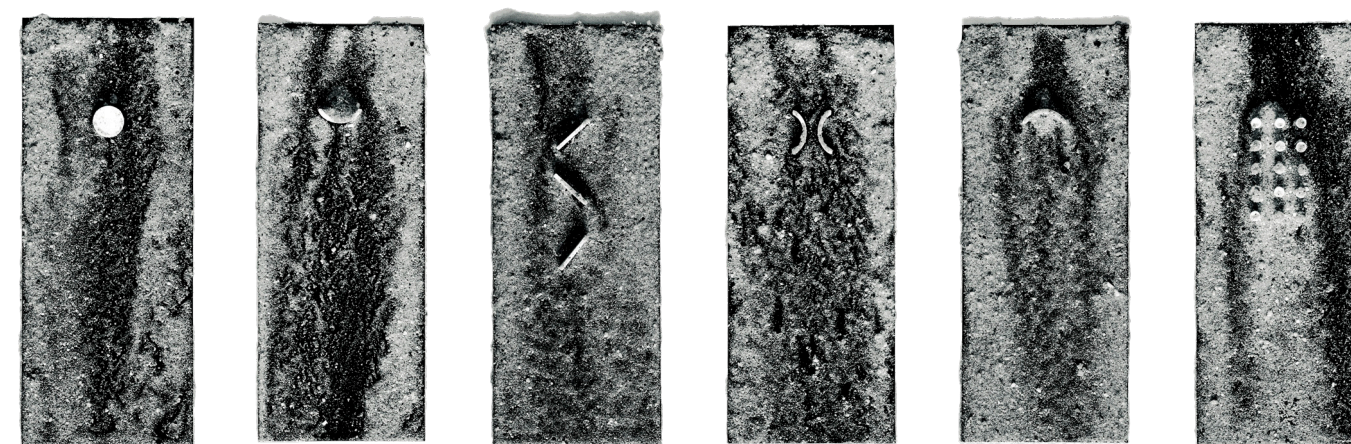
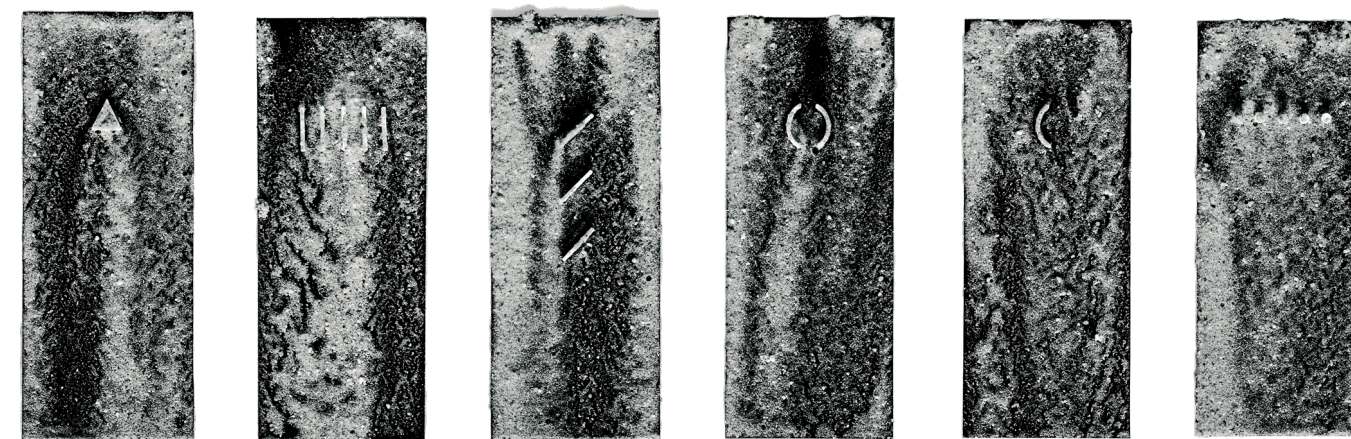
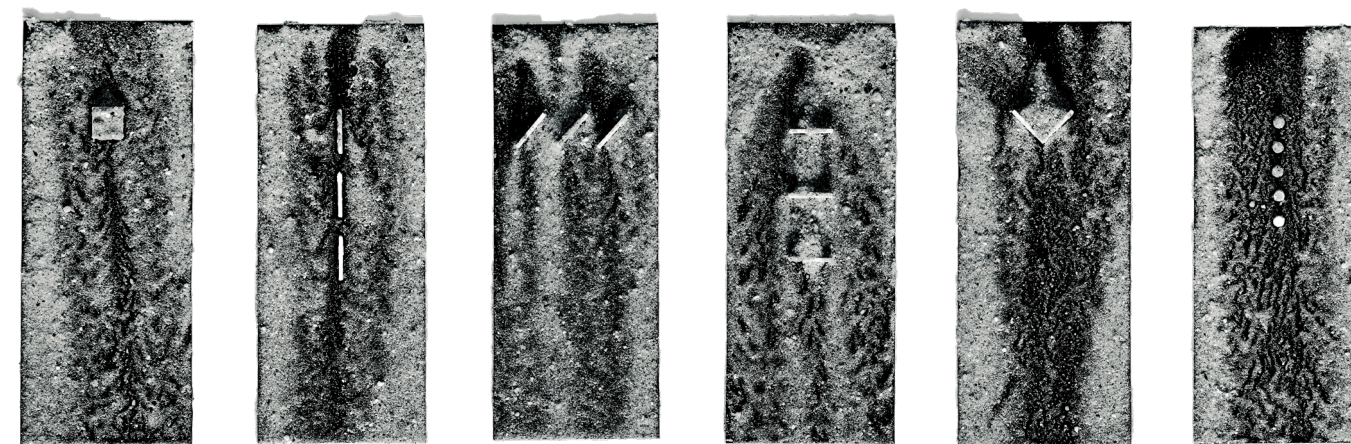
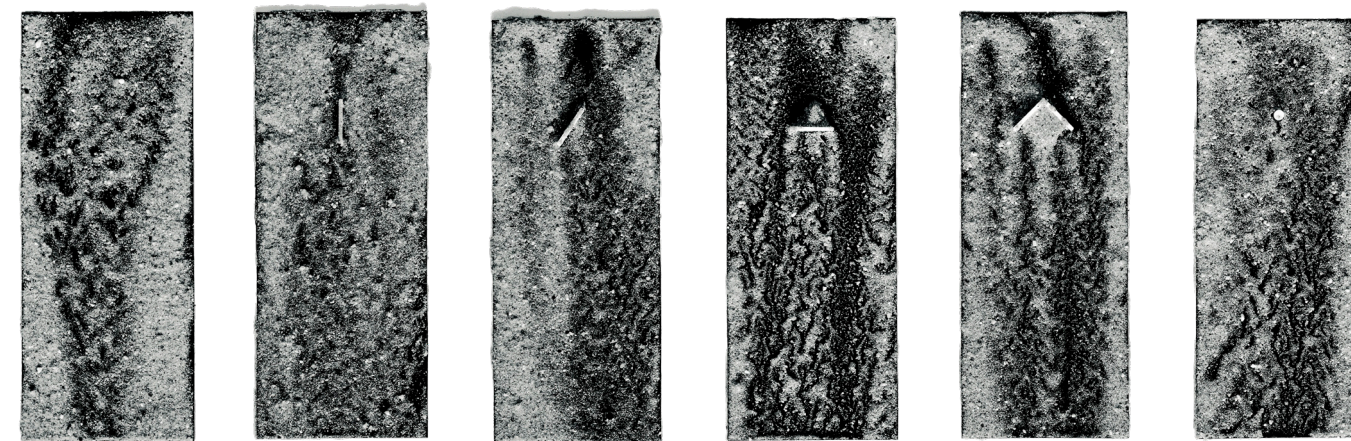
Erosion studies and their impact on the project

During the research, I conducted a series of erosion studies using sand to investigate the effects and patterns of different interventions within a river system. These experiments aimed to gain insights into the relationship between architectural interventions and the natural environment, particularly in the context of river dynamics and sediment accumulation.

The findings revealed that single elements, such as a column or a simple structure, have minimal impact on sedimentation, leaving only a small amount of accumulated sediments. Some of them even seem to repel sediments and leave a void behind them. However, when these elements are grouped together, forming clusters or more complex structures, the rate of sediment accumulation significantly increases.

Incorporating these findings into the project, it is possible to explore the potential for creating dynamic, responsive structures that work in harmony with the natural processes of sedimentation and erosion. By designing architectural interventions that promote or mitigate sediment accumulation as needed, we can play with the river in a harmonious way.

Moreover, these erosion studies can serve as a starting point for further research and experimentation. By continuing to investigate the complex dynamics of sedimentation and erosion, it is possible to refine the design strategies and create innovative solutions that enhance the symbiosis between the built environment and the natural world.



Reflection

Over the course of the research, I explored various themes related to time and the landscape. I first started by examining what time is, and then looked at the specific site and the temporal agents that act on the landscape.

By examining time through four distinct lenses – entropy, memory, tempo, and cyclic time – I learned new perspectives on how we perceive and interact with our surroundings.

Entropy sheds light on the inevitable change, decay, and transformation of our environment, emphasizing the importance of embracing the beauty of these natural processes. By observing the constant shifts and adaptations in the Alta region, such as the dramatic changes in the direction of the river we can draw parallels with the concept of performance. The fluid movements of the river can be compared to a dance, where the landscape and the elements are the performers.

Memories play a critical role in shaping our perception of time, allowing us to learn from our experiences and connect with shared memories. Reflecting on the history and cultural significance of the Alta region offers us the opportunity to learn from the memory that is stored in the landscape. Just like the rings of a tree can say something about the conditions in the different previous years, the landscape can teach us something about the conditions in the time that has already passed.

Tempo and cyclic time highlight the importance of natural rhythms and recurring patterns in our environment. By studying the seasonal adaptations and environmental conditions of the Alta region, such as temperature fluctuations and wind patterns, we can better understand how to integrate these natural rhythms into future architectural and landscape projects.

The research conducted in the Alta region has provided a rich understanding of the landscape, as well as opening up possibilities for new ways of thinking about architecture and its relationship with the environment. By acknowledging the performative aspects of the natural world, such as the river's dynamic movements, we can envision projects that not only adapt to the environment, but actively participate in its evolution.

It is clear that these insights have the potential to inform and inspire future projects. By embracing the concept of entropy, memory, tempo, and cyclic time, we can develop architectural and landscape projects that are more in tune with the natural world but also foster a greater sense of connection and collaboration between humans, animals, and the environment. This holistic approach to design will undoubtedly pave the way for more sustainable, harmonious, and innovative projects in the years to come.

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Appendixes

I. Reading the Temporal Landscape: A Performance in Architecture and Nature

II. Documenting the Temporal Landscape: A Journey through Seasons in Alta - Summer

III. Documenting the Temporal Landscape: A Journey through Seasons in Alta - Winter

Arctic Symphony
Simon Flatin
TU Delft
21.04.2023

MSc Architecture