SCHIE STRATEGY

CARE AS INFRASTRUCTURE IN DE SCHIE



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Master of Science
in Architecture
(Urbanism Track)

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DEDICATION

Throughout this thesis journey, I discovered, stumbled, hesitated, and wandered.

I experienced the joy of uncovering something new, of suddenly finding a clue and knowing where to go next. I experienced the overwhelm of not knowing where to look, not knowing whether I was asking the right questions, or whether I was heading in the right direction at all. I experienced the profoundness of urbanism, the feeling of being stranded in a sea of information, humbled by how much there is to learn and how little I only know.

I was adventurous. I was bold. I was stubborn. I was lost. I was sad. I was grateful. I was happy.

Most importantly, I was never alone.

This thesis is dedicated to the people, boats, and companions who carried me through it.

To my beloved Dexter Braunius, who supported me through difficult and unimaginable moments. I cannot begin to express how much comfort, safety, and stability you brought into my life. You somehow always notice when I am anxious, overwhelmed, or quietly struggling, often before I do myself. Sometimes I think you know me better than I know myself. Thank you for listening to endless thesis (and rowing/coaching) stories, for helping me navigate difficult moments, and for reminding me that I never had to carry everything alone.

To my fabulous, imaginative, and endlessly creative mentor Luisa Calabrese, Throughout this thesis, I often felt lost in a forest of ideas, observations, and possibilities. Somehow, you always seemed to be ten steps ahead, quietly pointing toward the direction I would only understand months later. Many of your comments took me weeks or even months to fully grasp, but when the "ah-ha" moment finally arrived, I often found that you had seen it from the very beginning.

Thank you for inspiring me to dream bigger, for helping me uncover the strongest thread hidden within the mess, and for giving me the freedom to find my own way there. That is exactly what I needed.

To my very strong mentor Chris Smith, who repeatedly asked me the questions I often tried to avoid. "Do you understand this?" "Can you work with this?" Those questions kept me grounded whenever I drifted too far. As a wise woman named Chelsea once said, although you cannot walk right now, you somehow made this project fly.

To Alex Huang, who has been there through more versions of myself than anyone else. Eleven years and counting. It is strangely difficult to write this paragraph because there is no single defining moment to point to. You have simply been there for all of them. Through successes and failures, excitement and uncertainty, good decisions and questionable ones. You are calm when I am chaotic, steady when I am overwhelmed, and ambitious in a way that quietly inspires everyone around you. Thank you for being a constant in a life that has otherwise changed so much.

To my supportive and thoughtful Chelsea Vermeulen, every conversation with you somehow brought clarity to a problem that had seemed impossible only moments before. We may be partners in crime, but I am also strangely productive whenever I work alongside you. Your work ethic, attention to detail, and relentless pursuit of quality often pushed me from "ah, this is probably good enough" to "I can do a little better." Play hard, study hard.

To my beloved first Empacher, Rens Sanderse, she carried me through early mornings, dark dawns, winter cold, summer sunsets, my first skiff race, and countless kilometres on the water. Till the end of canal and back.

To Any Dream Will Do, she faithfully carried me through one hundred kilometres of the Ringvaart, through farmlands, scary open waters, narrow bridges, and continues to accumulate many more kilometres.

To Alisha, Matthijs, Anastasia, Giovanni, Pietrob, Roger, Rei, Trevor, Chris, Josh, Jed, Kathy, Chloe, Cathy, Gints, Ruben, Bart, Pascal, Herbert, Sophie, Myrthe, Judith, my fellow planners from opzet skiff poule, my fellow Doorslaan-ders, my coachkids ROWmig, my previous colleagues at Waterfront Toronto and many others who accompanied me throughout this journey.

I am afraid this dedication is too short to properly capture all the ways you contributed to it. Some of you listened to half-formed ideas and somehow treated them seriously. Some of you provided advice, encouragement, and reality checks when they were needed most. Some of you shared snacks, bike rides, rowing sessions, celebrations, complaints, distractions, and laughter. Some of you probably have no idea that you contributed at all.

A thesis is often presented as the work of a single person. In reality, it is built upon countless conversations, friendships, and moments of generosity that accumulate over time. Thank you for making difficult days easier, and for filling the past years with memories far beyond the pages of this document.

ABSTRACT

Schie Strategy
Care as Infrastructure in de Schie

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Critical Environments: Rights of Nature, Radical Design and New Forms of Governance

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Chris Smith

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Sources for additional data are mentioned within the page and at the end of the report.



Care as Infrastructure in De Schie investigates how everyday practices of coexistence along the Schie canal in Delft depend on spatial, ecological, and temporal conditions that are rarely recognised in planning frameworks. Starting from rowing as an embodied way of reading the canal, the thesis maps relations between human and more-than-human actors, including rowers, coaches, fishers, recreational users, coots, geese, vegetation, water, edges, bridges, and maintenance regimes. Rather than proposing a total redesign of the Schie, the project develops an atlas of care capacities and critical conditions through which existing practices can be understood, protected, and gently amplified. The thesis argues that care is not simply a moral attitude or a service, but an infrastructural and spatial condition: a distributed capacity to maintain, negotiate, and repair the relationships that allow a shared landscape to remain alive. The final strategy proposes a spatial co-existence framework that works with existing rhythms, conflicts, and attachments, showing how design and maintenance adjustments can support a more democratic, multi-species public realm.

CARE AS INFRA-STRUC-TURE

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6147038

Critical Environments: Rights of Nature, Radical Design and New Forms of Governance

Luisa Calabrese
Chris Smith



CHAPTER 1 **SITUATING CARE**

Motivation
'Care?'
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CHAPTER 2 **CONTEXTUALIZATION**

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Coach
Recreational Boat

CHAPTER 4 **SCHIE RHYTHM**

Seasonal Behaviour
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'Circadian Rhythm' of Plant
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CHAPTER 5 **SCHIE STRATEGY**

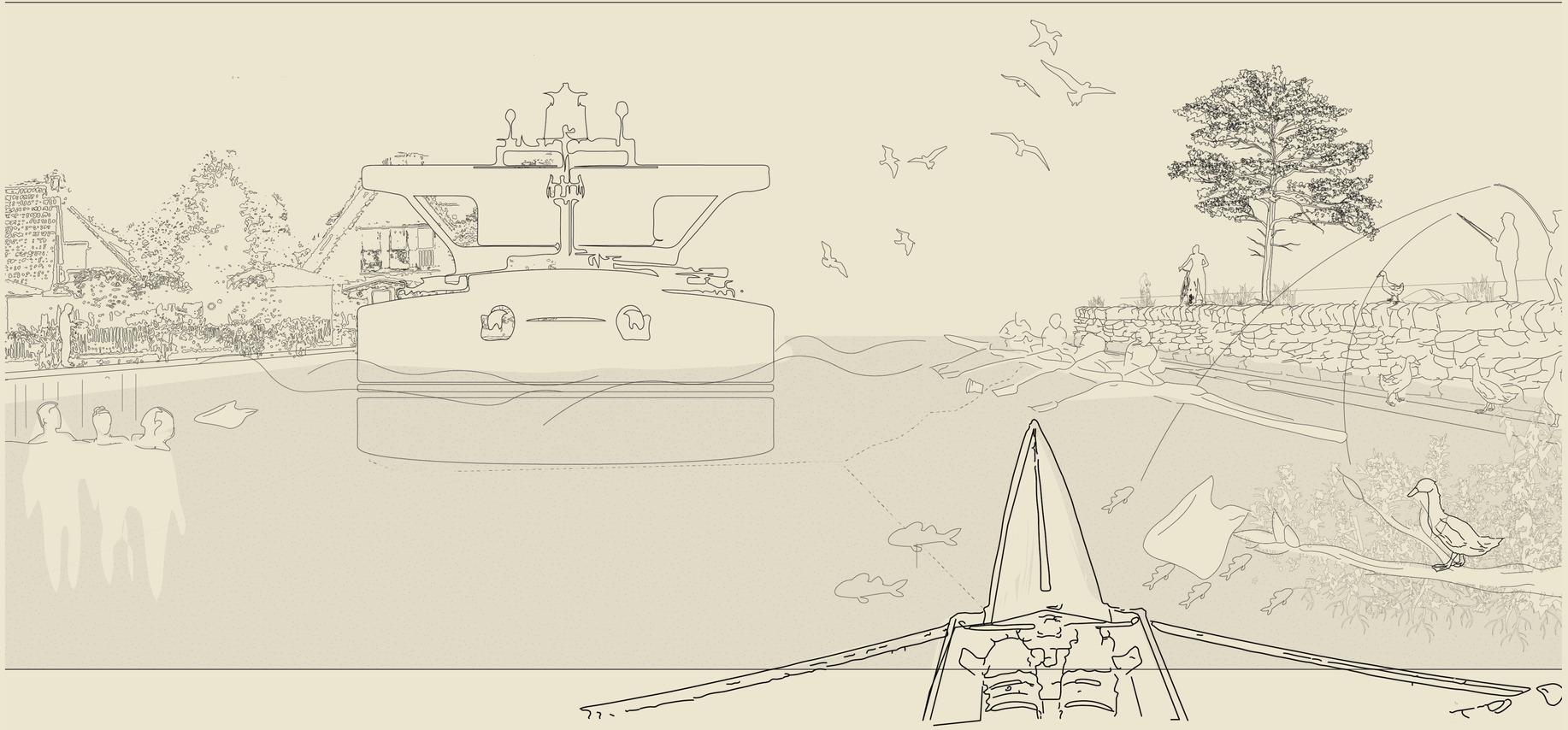
Care Distribution Map
Coexistence Framework
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Arrival & Reflection

CHAPTER 6 **APPENDIX & METHODOLOGY**

Observation, Documentation
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MOTIVATION



Spending many years in Toronto, I became accustomed to a particular understanding of public space. Creating vibrant public life often seemed to require enormous effort. New parks demanded public funding, consultants, landscape architects, community engagement processes, and years of construction. Yet even after completion, the work rarely stopped. Festivals, events, programming, maintenance, and activation strategies were continuously introduced to keep these spaces lively and occupied.

There was often an underlying assumption that public life would not emerge on its own. If people were not gathering, lingering, or interacting, the solution was usually understood as a design problem, a programming problem, or a management problem. We carefully designated where people should play sports, where they should barbecue, where they should sit, and where they should gather. Public life became something that needed to be anticipated, organized, and continuously supported.

Over time, I found myself wondering whether this logic had become so familiar that it was no longer questioned. Why do some spaces require such constant intervention in order to remain active? Why do certain forms of public life seem so dependent on programming, while others emerge with little formal guidance at all?

When I arrived in the Netherlands, these questions followed me. While rowing on the Schie, I encountered a landscape that appeared to operate through a different logic. The canal was not free from conflict, nor was it carefully curated as a public destination. Yet it remained active throughout the day. Rowers, fishermen, recreational boaters, cargo vessels, cyclists, birds, and aquatic species continuously occupied the same corridor. No one appeared to be orchestrating these interactions, yet they persisted.

What fascinated me was that the vitality of the Schie did not seem to originate from programming, but from the countless adjustments made by those who used it. Coexistence was not designed into a fixed arrangement. It was continuously negotiated through everyday practices.

This observation became the starting point of the thesis.

CARE?

Care is already present in everyday life:

how people use spaces, maintain routines, respect unwritten rules, negotiate coexistence, with others and with water.

It emerges automatically through use, repetition, and attachment.

A





Ducks drift across the canal, fishers tend their lines, and rowers navigate between them.

Where activities overlap, coexistence is maintained through repeated acts of adjustment rather than formal coordination.

B

The same canal serves as habitat for vessels of vastly different scales. Cargo ships move through the channel, rowers hold their line.

Through anticipation, restraint, and repeated encounters, safety is maintained without direct coordination.

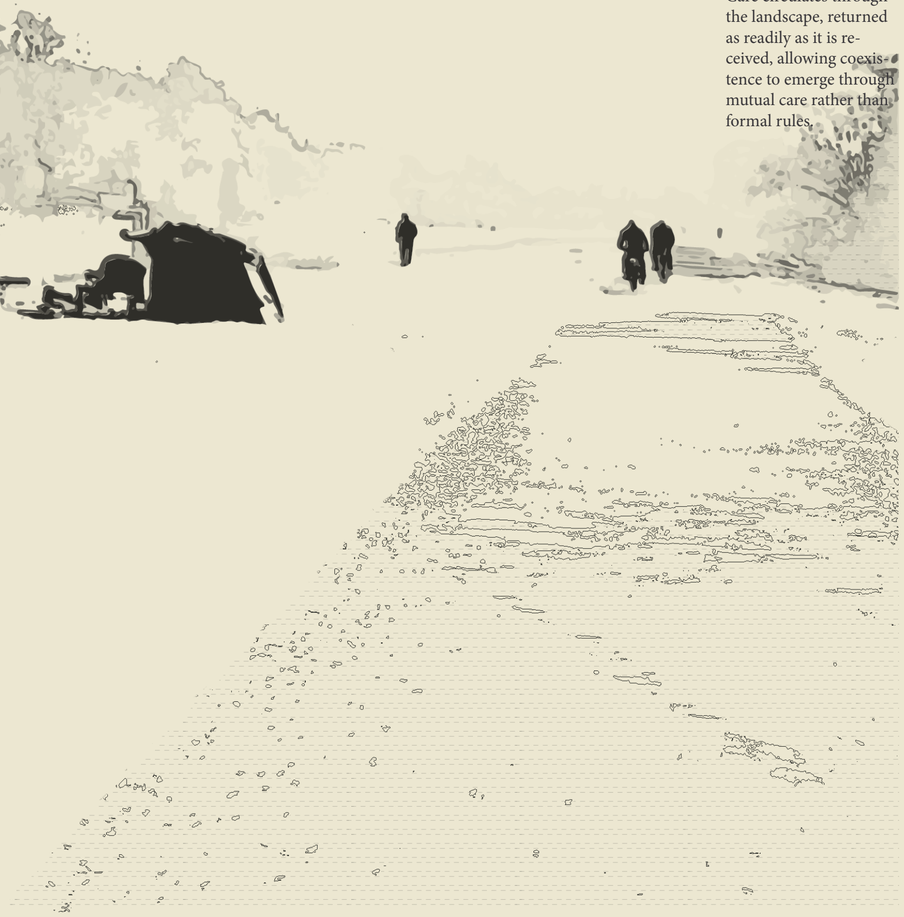
A



B

Early morning brings runners, dog walkers, fishers, and rowers to the canal. Familiar faces appear, brief greetings are exchanged, and small accommodations are quietly offered.

Care circulates through the landscape, returned as readily as it is received, allowing coexistence to emerge through mutual care rather than formal rules.



GLOSSARY

“CARE”

Care can be defined as a relational and temporal capacity to sustain the conditions of living together. Rather than a moral attitude or a fixed service, care operates as an ongoing commitment to “maintain, continue, and repair ‘our world’ so that we can live in it as well as possible”. (Puig de la Bellacasa, 2017)

“PRACTICE OF CARE”

Care practices are the situated, often informal actions through which care is enacted.

They arise through continuous negotiation, adjustment, and restraint among users who share space but do not necessarily share authority.

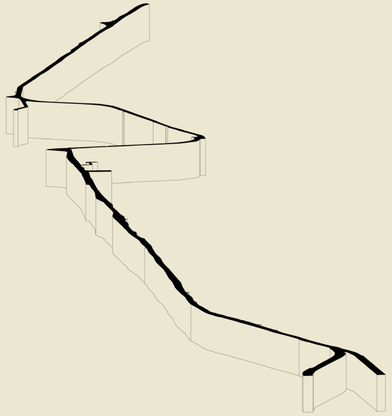
“FRAMEWORK OF CARE”

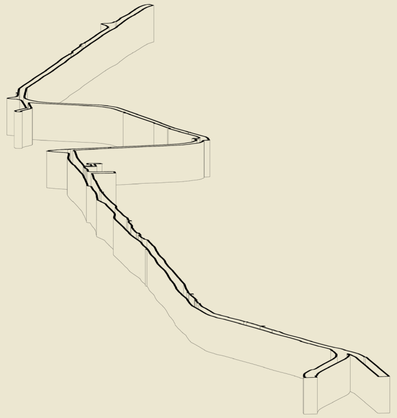
A framework of care refers to the set of conditions that enable care practices to emerge and persist over time.

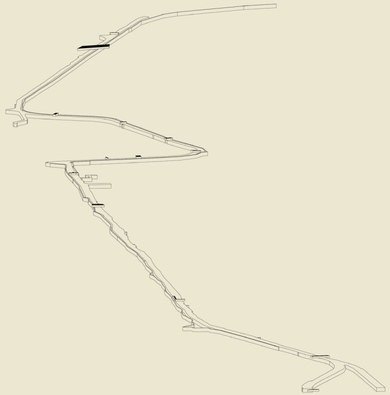
Puig de la Bellacasa, M. (2017). Matters of Care: Speculative Ethics in More Than Human Worlds. University of Minnesota Press.

SITE READING

	Canal as ***Transportation*** Infrastructure	Canal as ***Water Safety*** Infrastructure	Canal as ***Multi-Species*** Infrastructure
LEGITIMATELY PROTECTED?	Yes	Yes	***No***
WHAT'S INCLUDED?	'provincial infrastructure ... to manage and maintain ... safe flow of traffic'	'strong defense... spatial adaptation...anticipating consequences of flooding...'	***Not Included***
WHAT IS 'DE SCHIE'?	a traffic corridor	defense system, drainage, emergency system	***Not Included***
WHAT'S NOT INCLUDED?	not landscape nor cultural space	not a habitat/not about biodiversity	***Not Included***
CHARACTERISTICS	Efficiency, Line, Width	Control, Capacity, Defense	Coexistence, Care, Negotiation
DESIGN ACTIVE AGENT	Industry + Logistics	Waterboards + Engineers	Human + Non-Human Players







Note: Surface water quality is also mentioned in municipal/provincial documentation, activities and multi-species uses are not included as well. Here are the contents: 'clean and beautiful water is a prerequisite for a healthy and attractive living environment', 'water quality' referring to visual clarity, its aesthetic and not ecological

In provincial and municipal planning documents, the canal is treated as infrastructure : a traffic corridor, flood-defense system, and aesthetic surface water.

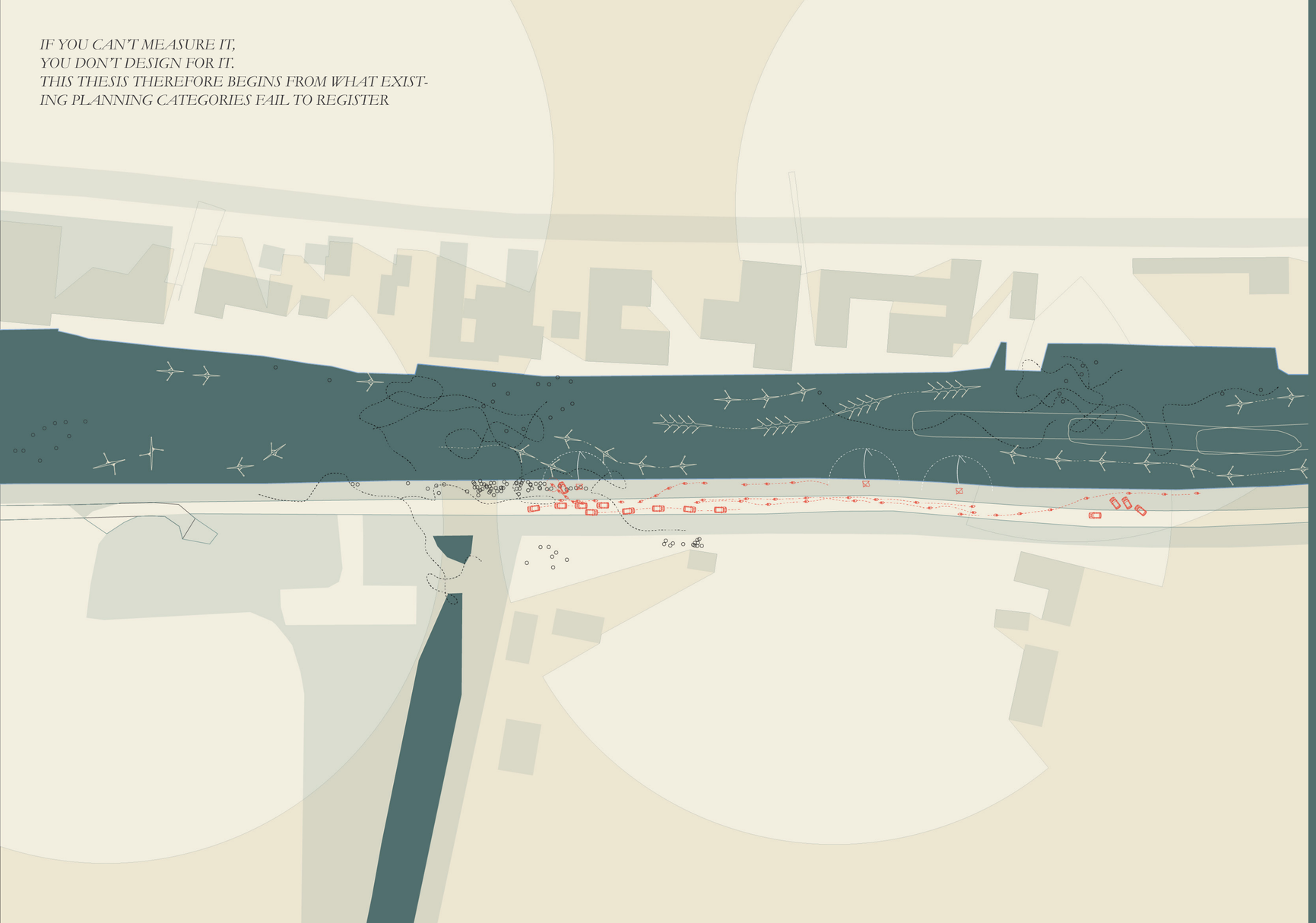
Yet on the ground, it operates as a multispecies and cultural system involving ducks, fish, microbes, rowers, informal practices, and seasonal rhythms.

Because Dutch planning protects landscape functions by separating them into categories : sports, leisure, nature, agriculture ... the canal as a multi-species infrastructure does not fit neatly into any category and therefore remains invisible and unprotected.

SITE READING


DELFT
Zuidpolder
Abtswoudse Polder
Noord Kethel
Zuid Kethel
Hoogeveense Polder
Hoogeveense Polder
Hoogeveense Polder

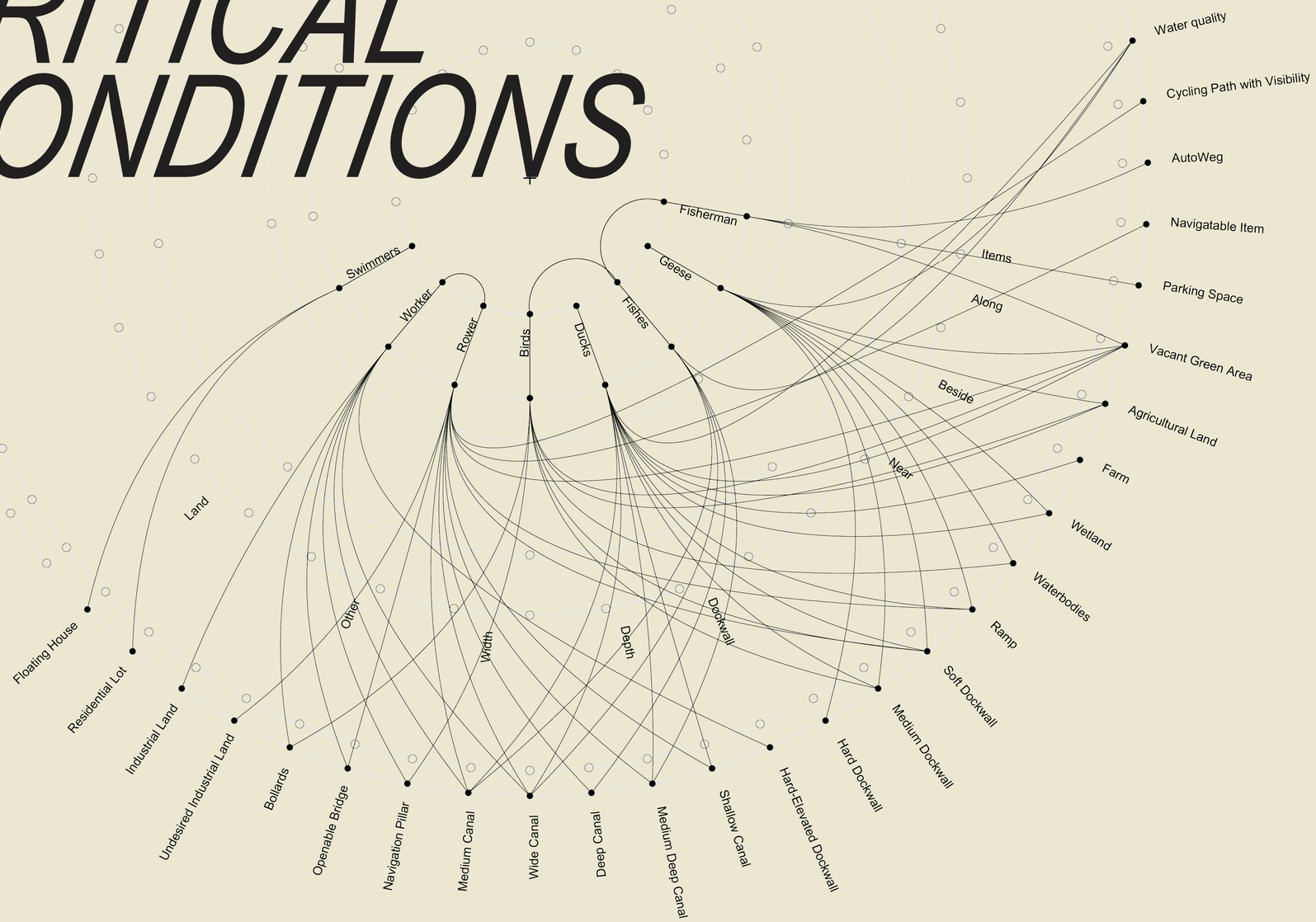
IF YOU CAN'T MEASURE IT,
YOU DON'T DESIGN FOR IT.
THIS THESIS THEREFORE BEGINS FROM WHAT EXIST-
ING PLANNING CATEGORIES FAIL TO REGISTER



In provincial and municipal planning documents, the canal is treated as infrastructure: a traffic corridor, flood-defense system, and aesthetic surface water. Yet it operates as a multispecies and cultural system involving ducks, fish, microbes, rowers, informal practices, and seasonal rhythms.

Because Dutch planning protects landscape functions by separating them into categories : sports, leisure, nature, agriculture ... the canal as a multi-species infrastructure does not fit neatly into any category and therefore remains invisible and unprotected.

CRITICAL CONDITIONS



At first glance, the canal appears as a continuous corridor of water, a blank surface waiting to be occupied. On maps and planning documents, it is often represented as a single spatial entity, largely empty except for the activities assigned to it. Yet everyday observation reveals a far more complex reality. Beneath this apparent simplicity lies a dense network of enabling conditions that make canal life possible. Visibility, shelter, access, continuity, tolerance, and predictability all shape how different actors inhabit the landscape.

1 *HIDDEN CONDITIONS*

These conditions are rarely visible, yet they actively structure everyday use. A sheltered edge becomes a resting place for birds, a fishing spot, and habitat for aquatic species. Open stretches of water provide space for rowing, maneuvering, and navigation. Quiet areas support nesting, while predictable routes allow different users to anticipate one another's movements. What appears as empty space is, in fact, already occupied by countless overlapping requirements.

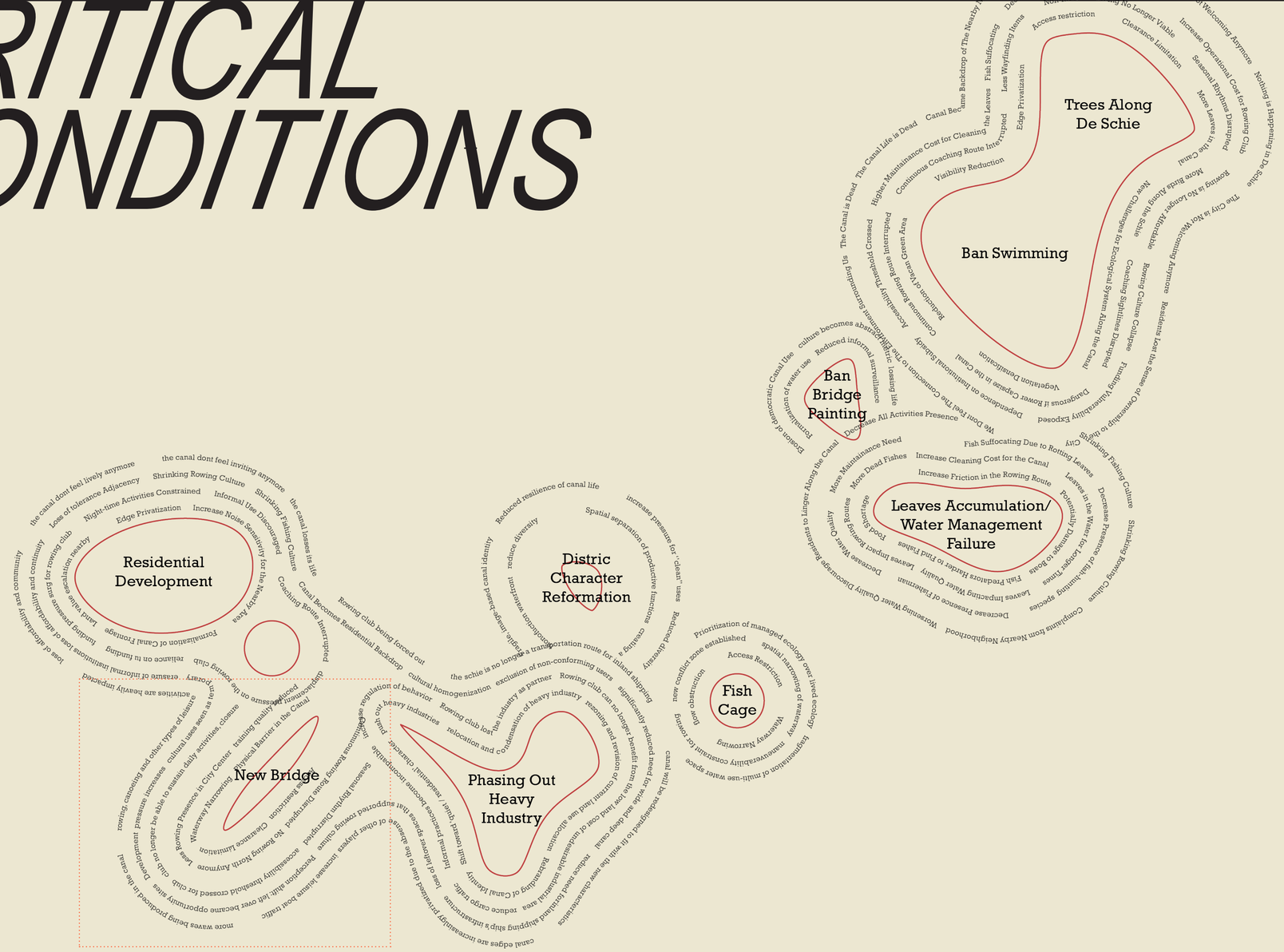
2 *CONTESTED TERRITORY*

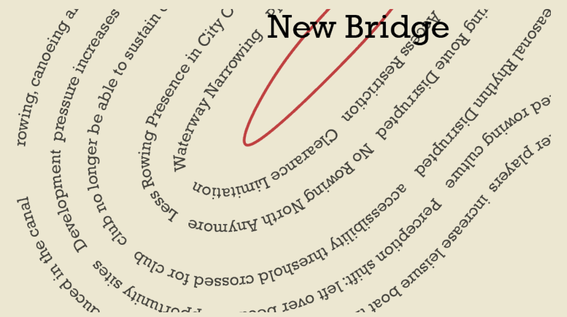
Many of these conditions are shared. Different actors often depend on the same edges, sightlines, sheltered waters, and open corridors. As a result, the canal cannot be understood as a collection of separate territories, each assigned to a single user. Instead, it functions as a contested landscape where access to common resources must be continuously negotiated. Conflict, adjustment, and accommodation are not exceptions to the system; they are the very processes through which coexistence is maintained.

3 *CONFLICT NEGOTIATE ADAPT*

The canal therefore derives its vitality not from the absence of conflict, but from the presence of conditions that allow different actors to repeatedly negotiate, adapt, and remain together within the same landscape.

CRITICAL CONDITIONS



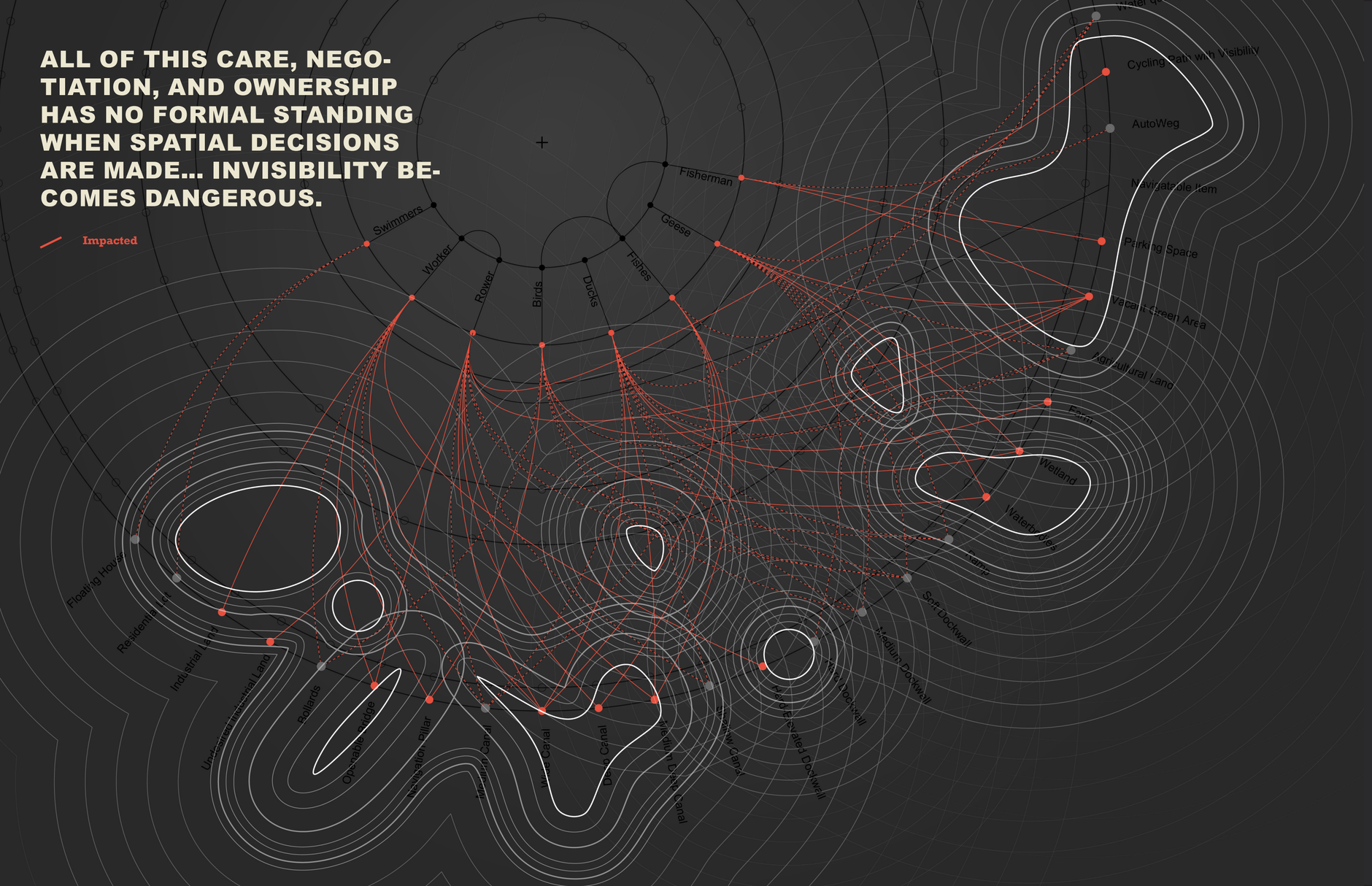


The hidden conditions that support canal life are also particularly vulnerable. Because they are rarely visible in planning documents, policy frameworks, or development proposals, they often remain unaccounted for in decision-making processes. While activities such as rowing, fishing, bird nesting, or informal encounters may appear resilient, they depend upon a delicate set of spatial and operational conditions that can be gradually eroded without attracting attention.

Alongside the Schieoevers redevelopment proposals, numerous policy actions, infrastructure upgrades, ecological interventions, and municipal development initiatives continue to reshape the canal landscape. Each intervention is typically evaluated according to its immediate objectives and site-specific impacts. Viewed in isolation, many of these changes appear reasonable, beneficial, or even necessary.

However, their effects rarely remain isolated. Changes in access, vegetation management, bank conditions, water traffic, development pressure, maintenance regimes, or land use generate ripple effects that extend far beyond their immediate footprint. Over time, these effects accumulate across the landscape, progressively altering the conditions that support everyday practices.

The risk is therefore not a single disruptive intervention, but the gradual disappearance of the underlying conditions upon which canal life depends. What cannot be seen is rarely protected. As these conditions are incrementally compromised, the canal does not suddenly cease to function. Instead, it slowly loses its capacity to support the diverse actors, relationships, and practices that currently coexist within it.



What makes this process particularly difficult to recognize is that few of these interventions are harmful in isolation. Most emerge from legitimate ambitions: improving ecological quality, increasing housing supply, enhancing public access, planting more trees, or creating more attractive waterfronts. Viewed individually, each action appears reasonable, beneficial, and often desirable. Yet when combined, their effects accumulate, generating ripple effects that extend far beyond their intended objectives.

As someone who rows on the Schie almost every day, I found this especially apparent when looking at rowing infrastructure. Rowing is one of the most accessible and widespread sports in the Netherlands, made possible in part by the country's extensive canal system. Unlike many other countries, coaches can follow crews by bicycle along the canal edge, eliminating the need for expensive motorboats and lowering the barrier to participation. This seemingly simple arrangement depends upon a surprisingly specific set of conditions: long continuous waterways, accessible towpaths, clear sightlines between coaches and rowers, affordable waterfront land, and a degree of tolerance from surrounding land uses.

None of these conditions are formally protected as rowing infrastructure, yet together they make rowing possible.

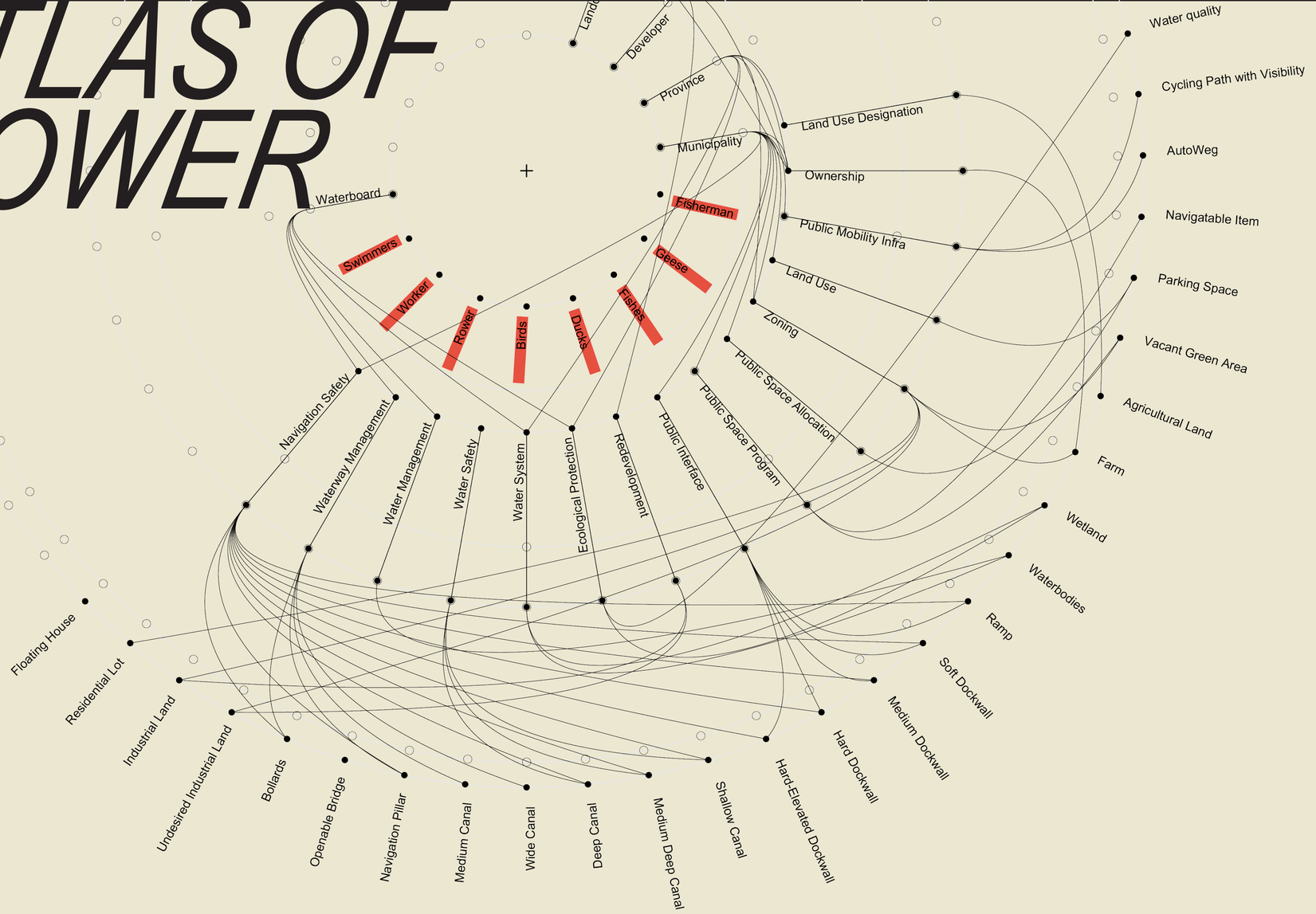
Imagine a proposal to naturalize the canal edge through additional tree planting. From an ecological perspective, the intervention appears entirely positive. However, as trees mature, sightlines between coaches and crews become increasingly obstructed, eventually making coaching difficult or impossible. Consider a second proposal to replace industrial land with mixed-use residential development. Again, the intention is understandable. Yet many rowing clubs occupy precisely these residual industrial spaces because they were historically undesirable for other uses. Locations near bridges, constrained by shipping movements, or disconnected from commercial development became affordable homes for rowing clubs. Similar conditions can be found at student rowing clubs across the Netherlands, including Orca, Euros, and Gyas.

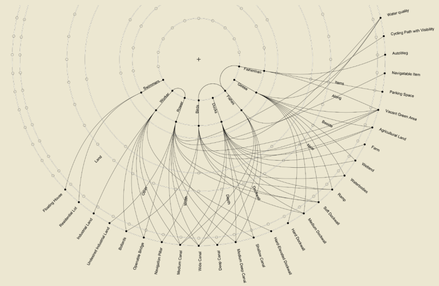
As residential development advances along the waterfront, new expectations inevitably follow. Quiet zones are introduced. Evening activities become contested. Club events face increasing restrictions. Rising land values place pressure on organizations that operate with limited financial resources. The canal remains physically present, but the conditions that made rowing possible begin to disappear.

The same pattern can be observed throughout the canal landscape. Trees that improve one environmental condition may cast shade that reduces aquatic productivity and alters fish habitat. Residential boardwalks and reinforced waterfronts may improve accessibility while removing the sheltered and undisturbed edges required by nesting coots. Public access improvements may inadvertently increase disturbance within areas that previously supported wildlife.

The problem is therefore not any single intervention. The problem is that the conditions supporting canal life remain largely invisible within planning processes. Because they are hidden, they are rarely evaluated, discussed, or protected. What appears as a collection of independent improvements can, over time, accumulate into a fundamental restructuring of the landscape. The canal survives, but its capacity to support the diverse forms of life that once occupied it gradually diminishes.

ATLAS OF POWER





This diagram maps the relationship between canal users and the critical conditions required for their participation, revealing a structural mismatch between dependency and decision-making power.

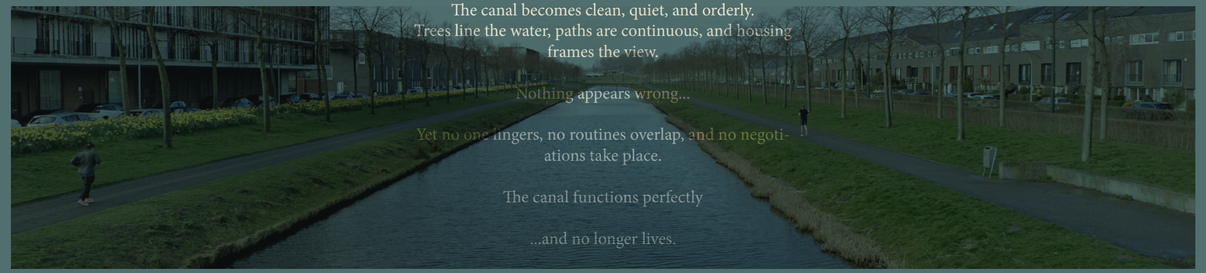
While everyday users such as rowers, swimmers, fishers, recreational boaters, and non-human species depend on a complex set of spatial, visual, ecological, and operational conditions, they possess little direct influence over the mechanisms that regulate them. The conditions upon which canal life depends are largely governed elsewhere, beyond the scale of everyday use.

When the critical conditions identified in the previous analysis are traced back to the institutions capable of altering them, a clear concentration of power emerges. The municipality, province, and waterboard collectively hold the greatest influence over canal access, vegetation management, waterfront development, ecological interventions, water operations, and land-use decisions. Through policy, maintenance regimes, permitting processes, and development approvals, these actors possess the ability to fundamentally reshape the conditions that support canal life.

By contrast, the users most dependent on these conditions have limited formal authority over them. Rowers cannot determine waterfront development. Fishers have little influence over vegetation management. Birds and aquatic species, despite being highly dependent on habitat conditions, have no representation within decision-making processes. As a result, those most affected by changes to the canal are often the least able to influence them.

PROBLEM STATEMENT

What if....?



Ypenburg, Den Haag, NL, Google Earth Street View

Urban environments increasingly rely on everyday **practices of care** to sustain human and more-than-human relationships, yet these practices remain **invisible** within planning and legislative frameworks.

As a result, spaces that function as living, ecocentric public realms become **structurally fragile** when subjected to redevelopment, as the relationships that sustain them lack formal recognition and continuity.

The design task is therefore to make these conditions **visible** enough to be cared for, without converting them into a fully controlled programme.

THEORETICAL FRAMEWORK

DOMAIN OF 'CARE'

ETHICS OF CARE
[Joan Tronto]

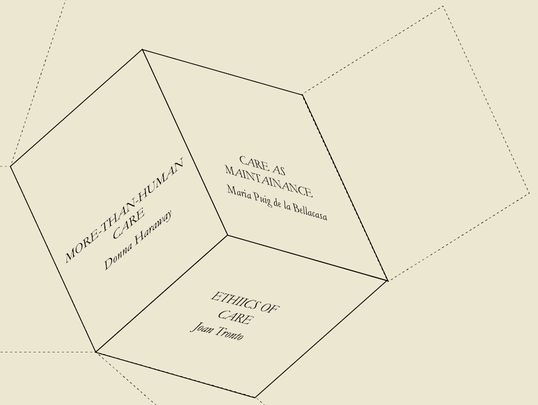
"Care is a species activity that includes everything that we do to maintain, continue, and repair our world so that we can live in it as well as possible."

CARE AS MAINTENANCE
[Maria Puig de la Bellacasa]

Care is everything that is done to maintain, continue, and repair 'our world'
Care is an affective state, an ethical obligation, and a practical labour."

MORE-THAN HUMAN CARE
[Donna Haraway]

"We become with each other or not at all"



DOMAIN OF 'INFRASTRUCTURE'

INVISIBLE INFRASTRUCTURE
[Susan Leigh Star]

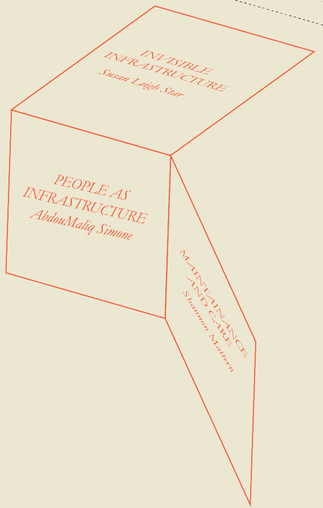
"Infrastructure is by definition invisible, part of the background for other kinds of work"
"Infrastructure becomes visible upon breakdown"

PEOPLE AS INFRASTRUCTURE
[AbdouMaliq Simone]

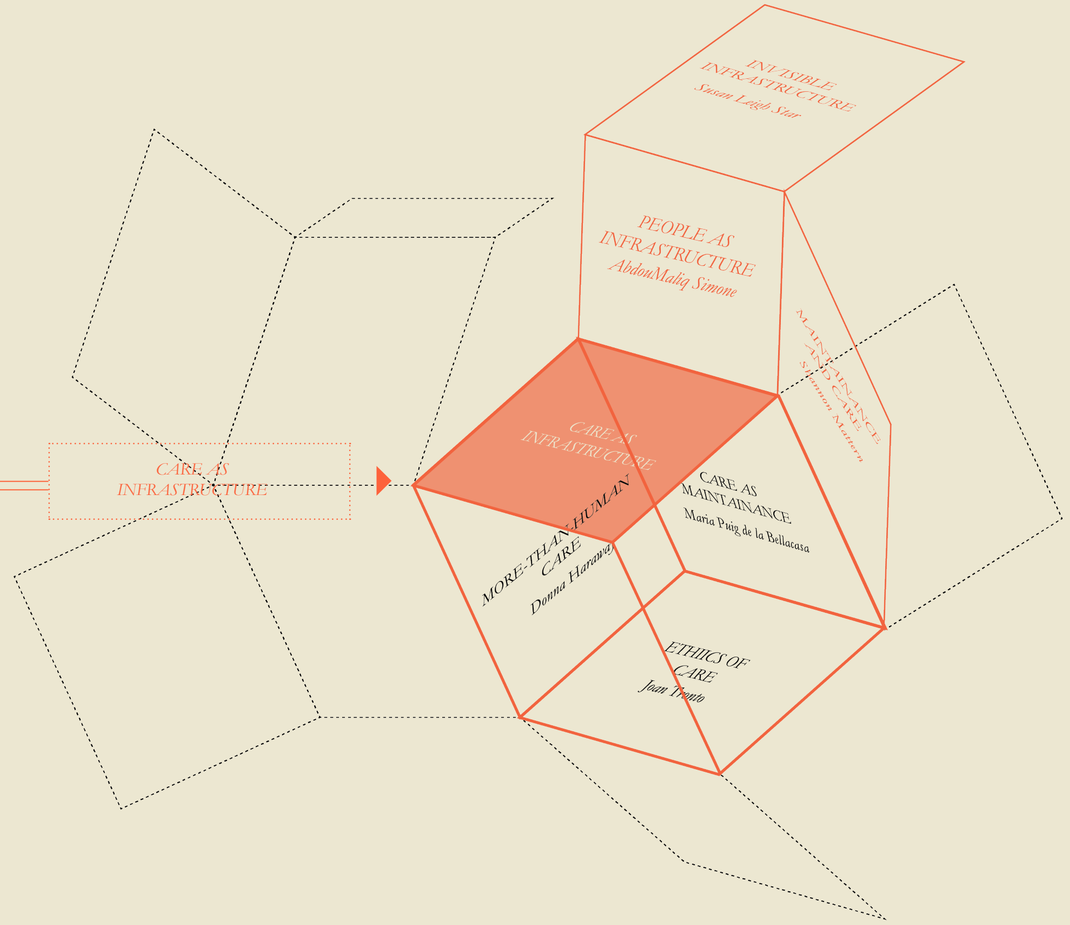
""People as infrastructure: the activities of residents become the infrastructure through which the city operates."
"Residents depend on each other to create combinations of resources, spaces, and opportunities."

MAINTENANCE AND CARE
[Shannon Mattern]

"Maintenance and care are infrastructural practices."



CARE AS INFRASTRUCTURE



Tronto, J. C. (1993). Moral Boundaries: A Political Argument for an Ethic of Care. Routledge.
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Star, S. L. (1999). The Ethnography of Infrastructure. American Behavioral Scientist, 43(3), 377–391.
Shannon Mattern, A City Is Not a Computer: Other Urban Intelligences (Princeton, NJ: Princeton University Press, 2021).

THEORETICAL FRAMEWORK

Situated between Ethics of Care, Care as Maintenance, People as Infrastructure, and More-than-Human theory, this thesis explores how coexistence is sustained through everyday acts of attention, adjustment, and maintenance.

The notion of maintenance foregrounds the continuous labour required to uphold shared environments, while the concept of invisible infrastructure highlights the often-unseen networks of coordination through which people and other species support one another.

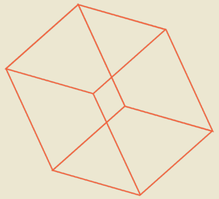
Together, these perspectives bridge the traditionally separate domains of care and infrastructure. Rather than understanding infrastructure solely as a technical system, the thesis reframes it as an ongoing process of caring, maintaining, and negotiating relationships. From this intersection emerges the central proposition of the project: that care itself can function as infrastructure.

Building upon the concept of Care as Infrastructure, this thesis not only brings care into discussions of infrastructure but also applies an infrastructural perspective to the domain of care. Rather than understanding care solely as an ethical principle or social practice, care is approached as a system that can be observed, analyzed, and intentionally designed.

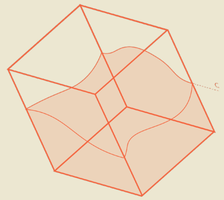
To support this shift, the thesis develops the concept of 'Care Capacity' as an operational framework. Care Capacity translates the often abstract and invisible processes of care into a set of spatially identifiable conditions, enabling care to become actionable, assessable, and applicable within design practice.

Through this framework, acts of care can be mapped, evaluated, and strengthened, allowing designers to identify where care is currently supported, where it is lacking, and how interventions might enhance the capacity for coexistence among human and more-than-human actors.

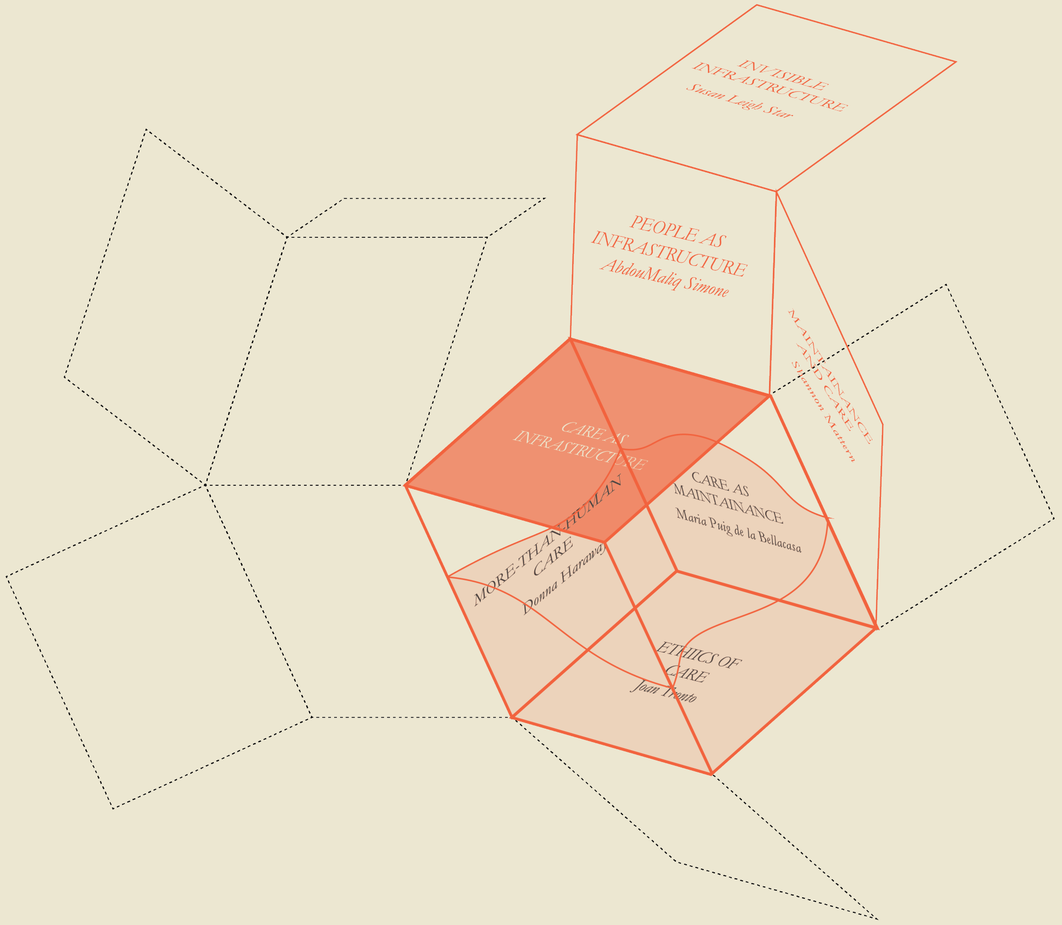
In this way, Care Capacity serves as a bridge between theory and design, transforming Care as Infrastructure from a conceptual proposition into a practical tool for spatial analysis and intervention.



ACTIONABLE FRAMEWORK



CARE CAPACITY



CONCEPTUAL FRAMEWORK

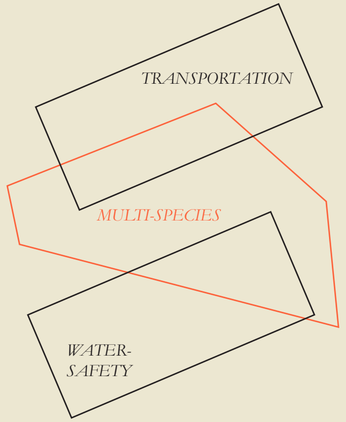
The concept of *care as infrastructure* emerged through the observation that coexistence on the Schie is supported by more than physical infrastructure alone. While canals, towpaths, bridges, and waterfronts provide the visible framework of the landscape, they do not fully explain how such a diverse range of actors are able to occupy the same space. Through observation and mapping, two interconnected layers of infrastructure became apparent.

The first layer consists of what this project refers to as *critical conditions*: that enable different activities and forms of life. These include elements such as visibility, shelter, access, continuity, habitat quality, and predictability. Although rarely recognized as infrastructure, these conditions actively support rowing, fishing, navigation, nesting, foraging, and many other everyday practices. Their absence can render activities impossible even when the physical canal itself remains unchanged.

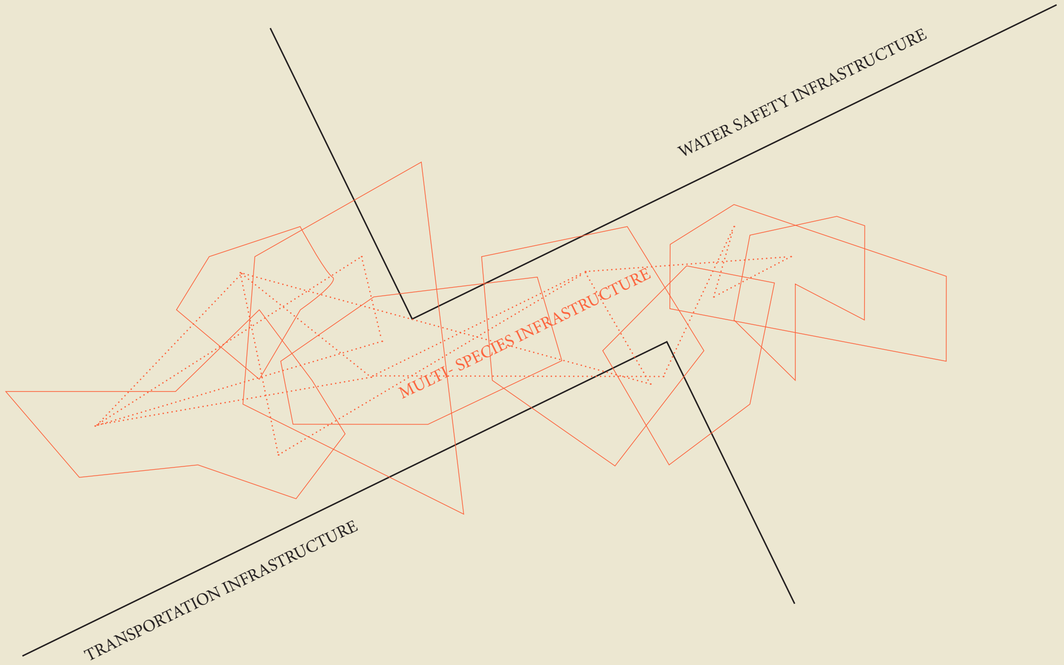
More significant, however, is the second layer. Beyond the conditions that support activities lies a network of everyday negotiations through which actors continuously maintain their ability to coexist. Fishers lift their lines as rowing crews approach. Rowers alter their route around resting birds. Coaches lower their voices near residential areas. Cargo vessels reduce speed when encountering smaller craft. Through countless small acts of adjustment, users respond to one another and collectively sustain the functioning of the canal.

This project understands these practices as forms of care. Care is not treated as an emotion or intention, but as a continuous practice of maintaining relationships. Through care, conflicts are negotiated, disturbances are mitigated, and shared space remains usable for multiple actors simultaneously.

Together, these two layers form the conceptual foundation of *care as infrastructure*. The first provides the conditions that make activities possible. The second maintains the relationships that allow those activities to coexist. The Schie therefore functions not only through its physical infrastructure, but through a continuous interplay between hidden conditions and everyday acts of care.



DE SCHIE





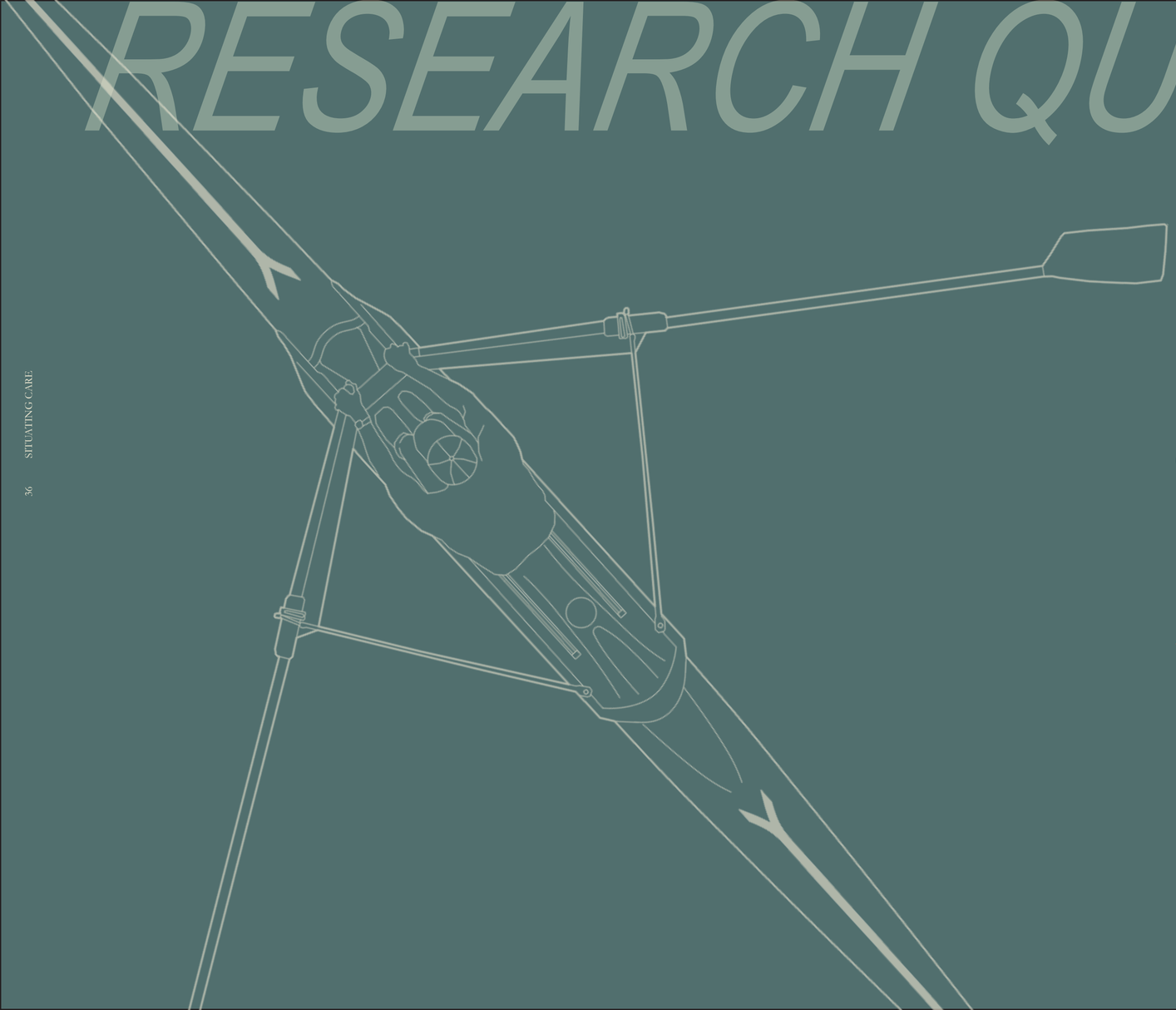
MULTI-SPECIES INFRASTRUCTURE

1ST - HIDDEN CONDITIONS

2ND - CARE AS INFRASTRUCTURE

DE SCHIE

RESEARCH QUESTION



HOW CAN CRITICAL CONDITIONS AND EVERYDAY CARE PRACTICES ALONG THE SCHIE CANAL BE RECOGNIZED, REPRESENTED, AND TRANSLATED INTO ACTIONABLE SPATIAL DESIGN?

RELEVANCE

At first glance, this project appears to be about a canal in Delft. In reality, it is much less about the Schie itself and much more about how we understand, reveal, and support coexistence within shared landscapes.

Many contemporary urban and landscape projects are asked to accommodate an ever-growing list of demands. We want cities to support biodiversity, recreation, mobility, climate adaptation, social interaction, and economic activity, often within the same piece of space. The common response is to separate functions, optimise performance, or assign territories. Yet everyday landscapes rarely function this way. Different actors continuously overlap, negotiate, adapt, and coexist within the same space.

The first contribution of this project is the **Atlas van de Schie**, which reveals that coexistence already exists and functions. Rather than treating the canal as an empty space waiting to be programmed, the atlas exposes the hidden conditions that already support diverse forms of life and activity. What appears as a simple canal is revealed as a dense network of relationships, dependencies, and negotiations.

Building upon these observations, the project proposes **Care as Infrastructure** as a theoretical framework. If infrastructure is understood as the systems that enable and sustain life, then care can be understood as an infrastructural practice. Beyond physical conditions, coexistence depends upon continuous acts of adjustment, maintenance, attention, and accommodation performed by both human and non-human actors.

The third contribution is **Care Capacity**, an operational tool that translates these observations into a design framework. By making care visible, assessable, and spatially representable, care capacity provides a way to evaluate how much effort different actors must expend in order to coexist, and where design interventions can support or reduce these demands.

Finally, the project proposes a repositioning of the designer. Rather than creating activity from scratch or prescribing fixed uses, the designer becomes someone who identifies, strengthens, and protects the conditions that already enable coexistence. Design shifts from producing life to supporting the relationships through which life unfolds.

While the Schie serves as the testing ground, these contributions extend far beyond the canal itself. Similar dynamics can be found in parks, waterfronts, streets, ecological corridors, and countless other shared landscapes. The actors may change, but the underlying challenge remains remarkably similar: how can we create conditions that support coexistence without relying solely on separation, control, or optimisation?

This thesis does not offer a universal solution. Instead, it offers a different perspective. One that looks beyond objects and functions, and toward the relationships, negotiations, and practices of care that make shared landscapes possible in the first place.

The design task that follows is therefore not to solve the Schie by replacing its informal life with a formal programme. It is to identify the conditions that already allow care, negotiation, and coexistence to take place, and to ask how these conditions can be protected, redistributed, or gently strengthened when redevelopment pressures increase.

product 1

ATLAS VAN DE SCHIE

Makes coexistence visible

REVEAL + EXPOSE CRITICAL CONDITIONS (1ST LAYER)

product 2

CARE AS INFRASTRUCTURE

Provides a theoretical lens

THEORETICAL BRIDGE CARE PRACTICES (2ND LAYER)

product 3

CARE CAPACITY

Makes care assessable and actionable

OPERATIONALIZE

product 4

DESIGNER REPOSITION

Support co-existence

RE-POSITION

EURASIAN COOT
PELICANS
EGYPTIAN GEESE
CANADIAN GEESE
CALL DUCK
MUTE SWAN
LITTLE GREBE
GREY HERON
MALLARD DUCK
GREYLAG GEESE
HOOKBILL DUCK
CROW
SEAGULL
GREAT CORMORANT
ROWER
COACH
CYCLIST
SWIMMER
DOG WALKER
COMMUTER
RESIDENTS
TOURIST
RUNNER
RECREATION FISHER
KAYAKER
CANOER
EUROPEAN PERCH
NORTHERN PIKE
ROACH
ZANDER
EUROPEAN EEL
CRAWFISH
WHITE BREAM
SNAILS
DRAGONFLIES
FROG
TURTLE
ALGAE
GRASS
REED
RUSHES
DUCKWEED
WATERLILIES
DANDELION
MOSS
WILLOW
LINDEN
CHERRY
ALDER
POPLAR
MAPLE
INDUSTRY WORKER
DREDGING WORKER
ROAD WORKER
WIND
SUNLIGHT
WAVE
WATER

SPECIES LIST

Different actors represented on equal term.

The atlas is developed through repeated field observation, rowing and coaching experience, photographic documentation, behavioural mapping, and spatial interpretation. Each actor is studied through three questions: what conditions allow it to remain present, what forms of disturbance reduce its capacity to act or adapt, and where does it both receive and provide care within the wider canal system? These observations are translated into care-capacity diagrams, critical-condition maps, and 100% scenarios. The aim is not to produce a complete ecological survey, but to make visible the relational conditions that support coexistence along the Schie.

While some actors can advocate for themselves through policy, institutions, or public participation, others remain largely unrepresented within conventional planning and design processes. As a result, many of the conditions that support ecological and social life remain invisible despite being fundamental to the functioning of the canal landscape.

To address this imbalance, the project approaches different actors on equal terms. Both human and non-human actors are recognized as active participants with their own forms of agency. Recognizing the Schie as a multispecies public realm requires an alternative approach to research and observation. Instead of viewing the canal solely through a designer's perspective, the project investigates the Schie through the perspectives of its users. By examining where actors choose to be, what conditions they seek, and what conditions they avoid, in the following chapters the project aims to reveal the often invisible relationships that shape everyday life along the canal.

To make care visible, the project operates across two scales. At the local scale (1:500), behavioural mapping captures the everyday occupations and interactions of different actors within the canal landscape. This scale allows the spatial choices, preferences, and patterns of use that constitute care to be observed directly.

These behaviors are influenced by a wider network of enabling and disabling conditions that extend beyond the immediate site. Therefore, accompanying reference maps are presented at a territorial scale of 1:20.000, illustrating how these conditions are distributed across the Schie. The study area was selected due to high concentration of overlapping activities, particularly rowing, while also supporting a diverse range of human and non-human actors.





von Trier, L. (Director). (2003). Dogville [Film]. Zentropa Entertainments.

HELL IS IN OUR MINDS - THAT'S WHY WE CANT ESCAPE IT.

地獄は脳の中にある。だから、どこにも逃げ場はない。

Ito, S. (2012). Genocidal organ (E. Saito, Trans.). Haikasoru.

Looking at how the Schie is currently designed, there is a clear division between land and water. They are treated as separate entities, each simply accommodating the existence of the other. Roads need to cross, while water needs to flow. A bridge is built just high enough to allow most boats to pass, positioned where it is most convenient for the road network. Beyond these moments of negotiation, the canal and its surroundings rarely interact in a meaningful way. They exist alongside one another largely because it is practical and economical to build roads next to waterways.

When I began this project, seeing land and water as separate systems felt natural. The Schie was the Schie, and everything surrounding it belonged to another category. Yet these boundaries do not exist in reality. They are constructs that help us organise and manage space, but they can also limit the way we think about it. To develop truly integrated solutions, these artificial separations need to be questioned.

This realisation emerged not only through the design process, but also through the act of mapping. The more I drew, the more I realised that conventional mapping methods were constraining my thinking. By drawing the canal as two parallel lines, I was already dividing the landscape into water and land, treating them as separate territories. This separation is mirrored in management practices, where water, canal edges, and adjacent land are often maintained as independent systems.

At one point, I was essentially treating the Schie as a linear object, adding interventions onto it like ornaments on a necklace. This was not the kind of design I was aiming for.

A useful reference is the film Dogville. In the film, the town is drawn directly onto the ground. Walls are removed, yet relationships remain visible. The absence of physical boundaries reveals that many divisions are social constructs rather than physical realities. Mapping works in a similar way. It is not neutral; it actively structures how we see space and what relationships become visible.

To move beyond these inherited divisions, I shifted perspective. Instead of designing the canal as a single object, I began looking at it through the perspective of its users. Rowers, coaches, fishers, coots, geese, recreational boaters, and passers-by all experience the Schie differently. Their territories overlap, conflict, and cooperate in ways that are invisible within conventional maps. By mapping these relationships rather than the canal itself, the Schie gradually transformed from a waterway into a landscape of interactions.

The project therefore became less about designing a canal and more about designing the relationships that take place around it.

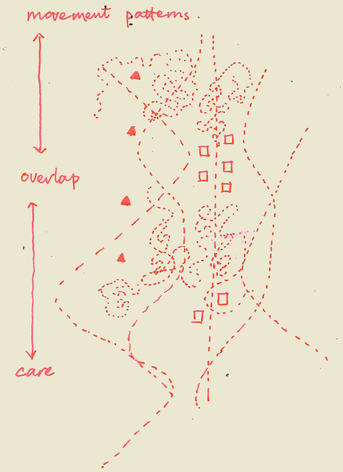
For each actor, freedom is therefore not unlimited movement, but the capacity to avoid danger while continuing a practice.

‘DESIGN’ CARE?

Human freedom is, in a way, the ability to avoid danger. After weighing all possible risks, the capacity to choose the most suitable option—that is what freedom is.

人間の自由とは、危険を回避する能力でもある。
あらゆるリスクを考慮した上で、最適な選択を行えること——それが自由だ。

Itō, S. (2012). Genocidal organ (E. Saitō, Trans.). Haikasoru.



With multiple actors and stakeholders holding conflicting desires, the first solution that often comes to mind is separation. If actors never meet, they cannot disturb one another.

However, complete separation comes at a cost. As paths stop crossing, the amount of space required to satisfy all actors grows rapidly.

Each activity demands its own territory, infrastructure, and resources, resulting in an increasingly fragmented landscape.



This project does not seek to eliminate interaction but it asks when action. Instead, comes problematic and when it can be accommodated. Many actors are capable of adapting, avoiding, negotiating, or tolerating a degree of disturbance.

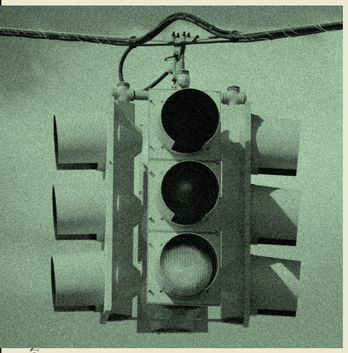
Designing with care is therefore not about separating actors, but about understanding when coexistence is possible and when it is not.

If instead we allow actors to share space, the need to provide every actor with its own dedicated territory decreases. Space can be used more efficiently, and actors gain access to opportunities and resources that would otherwise be locked behind rigid boundaries.

This shared freedom, however, comes with a cost. Actors must now care for one another. Their desires overlap, their routes intersect, and their activities occasionally interfere. An actor may not immediately notice the additional possibilities created by a shared system, but they will certainly notice the moments when they are required to slow down, adapt, or accommodate someone else.



The challenge is therefore not simply creating shared space. The challenge is creating situations where the care capacity of one actor matches the care demands imposed by others. Designing with care becomes a continuous balancing act between freedom and responsibility, between what actors gain from sharing space and what they are asked to give in return.





WHAT IS DESIGN WITH ‘CARE’?

Design with care is a popular topic in contemporary urbanism. There is extensive discussion about what design with care is, when it should be applied, and why it matters. During this research, however, I found surprisingly little guidance on how to actually design with care. This gap led me to develop my own approach.

A useful example can be found in road intersections. According to urban designers such as Jeff Speck, some of the safest intersections are small, narrow, and operate without traffic lights. Rather than relying on infrastructure to regulate behaviour, users are required to slow down, negotiate, communicate, and pay attention to one another.

This raises an interesting question: if these intersections are so safe, why do we not design every intersection this way? And get rid of all the traffic lights all together?

Yes, we’re not getting rid of all the traffic lights. If a space constantly demands negotiation, it becomes exhausting.

Care requires capacity.

CARE IS A LIMITED MENTAL RESOURCE. IT REQUIRES CAPACITY.

HOW CAN ‘CARE’ BE ‘DESIGNED’?

A small intersection demands a high level of attention from all users. Drivers must observe, interpret, negotiate, and continuously adapt. This works because such situations often occur at low speeds, where controlling the vehicle requires relatively little effort. The remaining attention can therefore be directed towards other actors.

However, capacity to care is limited. It can be understood as the amount of attention and energy that remains after an actor has fulfilled the demands of its own activity. As the effort required to perform that activity increases, the remaining capacity to care decreases. Driving on a highway, rowing a boat, coaching a crew, defending a territory, or searching for food all consume part of this available capacity.

Demanding care also comes with consequences. If every journey contained one hundred traffic-light-free intersections, the continuous need for negotiation would quickly become exhausting. Capacity would gradually decline, increasing the likelihood of mistakes and conflict. The challenge is therefore not to maximise care everywhere, but to understand when actors possess the capacity to care and when they do not.

From this perspective, the intention of design is not to mandate or prescribe care. Instead, it is to influence the consumption of an actor’s capacity to care. Certain situations increase this consumption, while others allow actors to recover, recharge, or redirect their attention.

Along the Schie, multiple actors occupy the same landscape. Their paths overlap, their interests conflict, and their activities compete for space. The goal of this project is therefore not to separate actors, but to create conditions where the care demands placed upon them remain proportional to their available capacity to care.

Designing with care becomes an exercise in balancing these two forces: capacity and demand.

To avoid depletion of care capacity, so that actors have excessive capacity to negotiate care actions. This requires a re-position of designers role: to mitigate energy spending. Therefore:

THE INTENTION OF THE DESIGN PRODUCT IS NOT TO MANDATE OR PRESCRIBE ‘CARE’. BUT TO ENHANCE OR REDUCE THE CONSUMPTION OF ACTOR’S CAPACITY TO CARE.

METHOD&

APPROACH

The project adopts an actor-centered approach to understanding the Schie. Rather than beginning with predefined programs or spatial functions, the process starts with observing how different actors already occupy and interact with the canal landscape.

Observation serves as the foundation for the research. Through field visits, rowing journeys, photography, and repeated encounters with the site, patterns of occupation, movement, and interaction are documented.

Particular attention is given to moments where actors actively respond to their surroundings, revealing the conditions that support or constrain their presence.

These observations are translated into behavioural maps. By recording where actors choose to be and how they use space, the project identifies recurring spatial preferences and relationships that may otherwise remain invisible.

The behavioural observations are then synthesized into energy maps. These maps visualize the varying capacities of actors to perform their activities across the landscape, highlighting areas where enabling conditions are present and areas where disabling conditions create friction, disturbance, or exclusion.

100 % DUCKS

100 % ROWER

> > 100 % BOAT > >

100 % BIKE

.....

Finally, the findings are translated into 100% scenarios. Rather than representing design proposals, these scenarios function as analytical tools that reveal the ideal conditions under which an actor can fully express its behaviour.

They make visible the spatial requirements, opportunities, and constraints associated with each actor, providing a basis for understanding how different forms of life might coexist within the Schie.

Together, these methods shift the focus of design from prescribing behaviour to understanding the conditions that allow behaviour to emerge.

An important ideology of this project is that it does not ask how actors should use the landscape, but how the landscape enables actors to exercise agency.

With knowledge gained from the making of 100% scenarios will later translate into the co-existence framework as a design product.

CO-EXISTENCE FRAMEWORK

?% DUCKS

conflict? +

? % ROWER

+ *care?*

> > ? % BOAT > >

+

conflict? ? % BIKE

+

..... *care?*

FRAMEWORK

v

> > **ZOOM - IN**

v

METHOD HARVESTED

VISION

I want to see
seasons unfolding along the Schie:
daffodil rings the bell of the spring
when you see butterbur
blooming along the canal
you know the summer is here
flowers emerging,
fading,
and giving way to others,
one takes over from another
and then recede again.

I want to see
ducklings growing up,
the canal is their playground
and people pausing,
not instructed, but instinctively....
taking photos,
making small sounds of awe,
noticing life around them.

I want to see
people pulling over without planning to,
sitting at the edge,
watching the water,
staying longer than they intended
breath in the moist air
the floral scent

I want to see
coots nesting along the edge of Schie,
among plants,
along edges,
within objects left behind.....
finding space within the everyday landscape.

I want to see
children running alongside boats,
turning movement into play,
and people walking
not just to pass through,
but to observe,
linger
and feel the space as their owns

I want to see
rowers moving rhythmically
through the corridor
at dawn, at sunrise, at midday
navigating changing weather,
crossing wakes, birds, fishermen,
and industrial traffic.....
not isolated from the landscape,
but deeply attentive to it.

I want to see
fishers settling into quiet edges for hours,
for days,
learning where fish gather,
where seaweed dont trap the hook,
where the water slows,
sometime excited,
sometime bored,
sometime hopeful,
sometime calm.....

I want to see
borrel boats slowing down
towards people along the edge,
on the water
interacting with rower
saying hi to passers-by
adjusting to birds.....
building awareness
rather than speed

I want to see
inland shipping continuing to move
through the Schie
as working infrastructure.....
a playground?
a common place
a contested territory
a public realm!

same
but different

seeing the place transform
into a space that
human and non-human
co-exist
thrive
and
live

I want the Schie
to remain open and undefined.....
a place where different forms of life overlap,
where care is not enforced
but emerges naturally,
and where coexistence is visible
in small,
continuous moments.

STATEMENT

ATLAS VAN DE SCHIE



CHAPTER STRUCTURE

The atlas does not map users as isolated categories. It maps the conditions through which each actor can continue to participate in the canal system. For each actor, the drawings identify enabling conditions, disturbance conditions, care capacity, and potential conflicts. The 100% scenarios are deliberately exaggerated: they are not final design proposals, but diagnostic tools that reveal what the Schie would become if one actor's needs were fully prioritised.

① **Eurasian Coot**
Recreational Fisher

② **Canadian Geese**
Egyptian Geese
Resident/Pedestrian

③ **Rower**
Coach
Recreational Boat

Introduction Sequency Based on Capacity System

① **Eurasian Coot**
Recreational Fisher

Observation
Revealance
+ Enabling Conditions
+ Disabling Conditions
Energy Spectrum
+ (Seasonal Pattern)
Situated Design Actions
100% Scenario

"STATIONARY"

energy system 1
(per player catalogue)

② **Canadian Geese**
Egyptian Geese
Resident/Pedestrian

Observation
Revealance
+ Enabling Conditions
Energy Spectrum
Situated Design Actions
100% Scenario

"TERRITORIAL"

energy system 2
(per player catalogue)

③ **Rower**
Coach
Recreational Boat

Observation
Revealance
+ Energy Equation
Energy System
+ (Seasonal Pattern)
Situated Design Actions
100% Scenario

"LINEAR"

energy system 3
(per player catalogue)

ATLAS VAN DE SCHIE



Invisibility is dangerous.

The Schie works because of conditions that are rarely recognized, yet constantly acted upon.

The coot knows.
The rower knows.
The fisher knows.
The resident knows.

But often only through practice.

Not through planning documents.
Not through policy.
Not through design drawings.

The knowledge is embedded in behavior.

When I first started studying the Schie, a reed bed was simply a reed bed. Now I look at it and see:

nesting potential
shelter from wake
visibility
breeding corridors
edge conditions

The landscape became legible.
The conditions were always there.
I simply learned how to read them.

Through Atlas van de Schie, I developed a new literacy. The canal is no longer understood as a collection of objects, but as a network of relationships, opportunities, and constraints. More importantly, this literacy is transferable. Once learned, it can be applied to other canals, waterways, and landscapes.

Once these conditions become visible:

they can be protected
they can be strengthened
they can be expanded
they can be replicated elsewhere

Canal landscapes contain invisible enabling conditions that support both human and non-human agency. Making these conditions legible allows designers to intervene without prescribing behavior.

The project is not concerned with preserving freedom itself. Freedom is the outcome.

Instead, it seeks to preserve the conditions that generate freedom.

The reed edge.
The accessible bank.
The rowing rhythm.
The unprogrammed margin.
The nesting vegetation.
The fishing corner.

These are the mechanisms through which freedom emerges.

CAPACITY TYPE I

CAPACITY SYSTEM 1

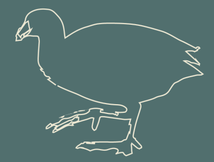
ENABLING OCCUPATION

$$\textit{Care Capacity} = \textit{All Conditions Satisfied - Disturbance}$$

$$= \textit{Enabling Conditions}_1 \times \textit{Weight Factor}_1 \times \textit{Enabling Conditions}_2 \times \textit{Weight Factor}_2 \times \textit{Enabling Conditions}_3 \times \textit{Weight Factor}_3 \times \ldots\ldots -- \sum (\textit{Disturbance} \times \textit{Intensity})$$

Note: if one enabling condition = 0, CC = 0

①



EURASIAN COOT

②



RECREATIONAL FISHER

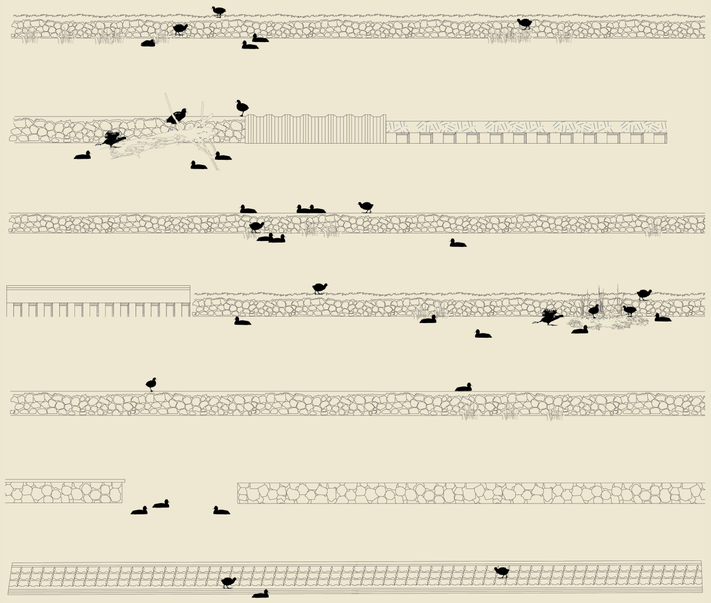
STATIONARY

EURASIAN COOT

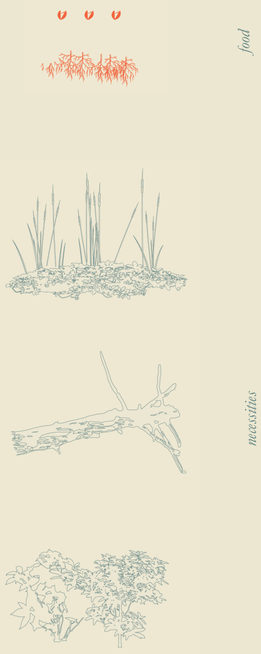
PELICANS
EGYPTIAN GEESE
CANADIAN GEESE
CALL DUCK
MUTE SWAN
LITTLE GREBE
GREY HERON
MALLARD DUCK
GREYLAG GEESE
HOOKBILL DUCK
CROW
SEAGULL
GREAT CORMORANT
ROWER
[illegible]
[illegible]
[illegible]



NW NE



SW SE



OBSERVATION

Observing coots along the canal, I realized their distribution is not accidental.

There is a pattern, a kind of spatial logic. They consistently occupy:
floating vegetation and debris
marsh-like edges
naturalized dockwalls
sheltered waters

These conditions influence where they feed, rest, and nest.

What initially appeared as a random distribution gradually revealed a set of preferences. The coots were not simply occupying available space; they were actively selecting environments that provided food, shelter, protection, and access to nesting material.

From these observations, a series of enabling conditions emerged:
dense vegetation
shallow, food-rich water
floating plants and organic debris
accessible edge

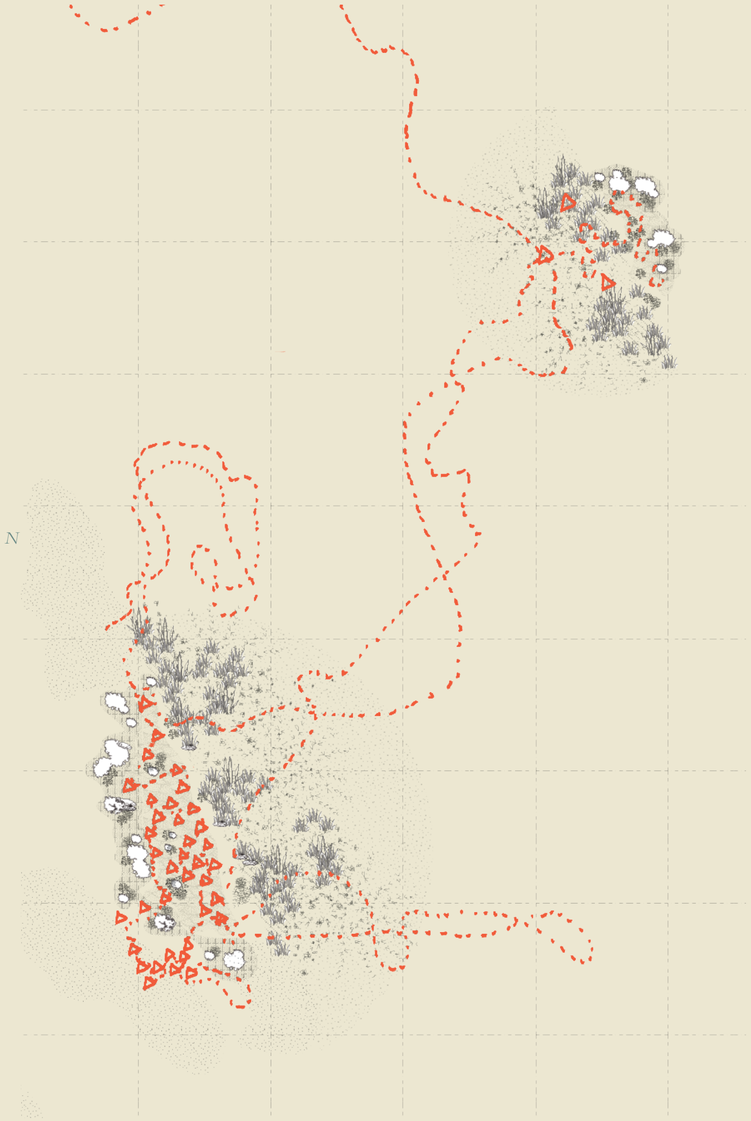
MOVEMENT PATTERN



N

MOVEMENT LOGIC


walk
walk
walk
walk
walk
swim
eat
eat
swim
eat
eat
swim
eat
swim
swim
swim



The observed behavior reveals a simple sequence:

perch

walk

nest

swim

feed

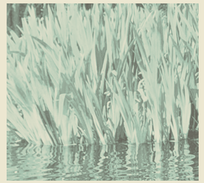
Each activity depends on a different spatial condition, yet all occur within a short distance of one another.

The ideal setting is not defined by a single habitat element, but by the coexistence of multiple enabling conditions. Branches, vegetation, sheltered edges, shallow water, and food sources work together to support the coot's daily life.

BEHAVIOUR LOGIC



ENABLING CONDITIONS [COOT]







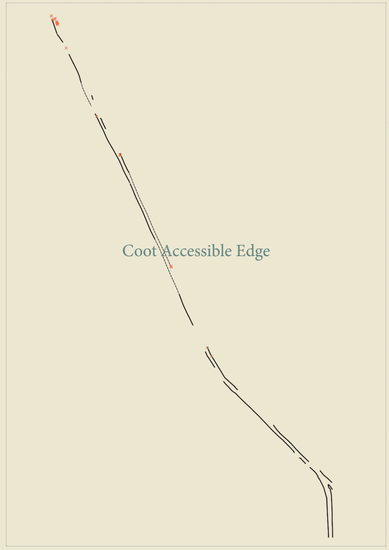

N

Legends

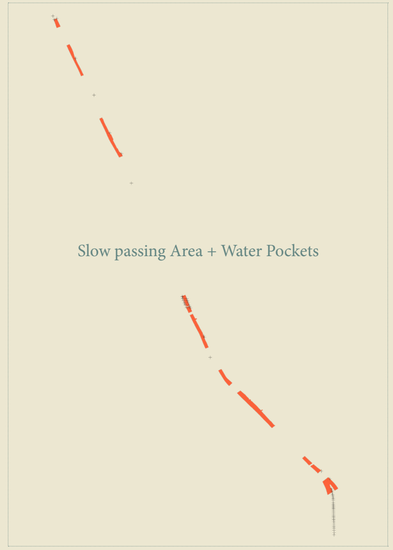
- Confirmed Nesting Locations
- Water Pockets
- Coot Access Point (eg. ramp, steps)
- Vegetated Edge (eg. daffodil)
- Coot Accessible Edge
- Slow Passing Area (eg. bridge, narrow)

HIGHLIGHTS

Aquatic vegetation creates sheltered edge conditions where coots can forage, hide, and access nesting material. These planted margins also support insects and aquatic organisms, increasing food availability while buffering disturbance from waves and passing boats.



A gently sloped and accessible shoreline allows coots to move freely between land and water. This transition zone supports multiple behaviors, including feeding, resting, nesting, and territorial movement, all within a short distance.



Reduced boat speed and sheltered water pockets create calmer conditions along the canal edge. Lower wave disturbance improves nesting success, protects young birds, and allows aquatic vegetation to establish and persist.

DISABLING CONDITIONS [COOT]

Not all edges are equally occupiable.

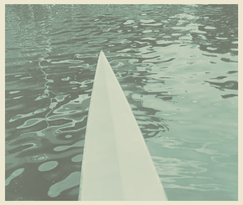
The absence of coots is potentially caused by a single disturbance. More often, it is the accumulation of conditions that gradually reduce the suitability of an area.

Frequent boat traffic increases wave action, making it difficult for aquatic vegetation to establish and for nests to remain protected. Hard canal edges limit access between land and water, reducing opportunities for feeding and shelter. Human activity concentrated along the shoreline can further reduce the availability of undisturbed resting and nesting locations.

These conditions do not necessarily exclude coots entirely, but they influence where coots choose to spend their time. As disturbance increases, occupation becomes less frequent and more fragmented.

The result is not the disappearance of coots, but a gradual reduction in their ability to feed, rest, and nest.

Just as enabling conditions attract occupation, disabling conditions push it away.



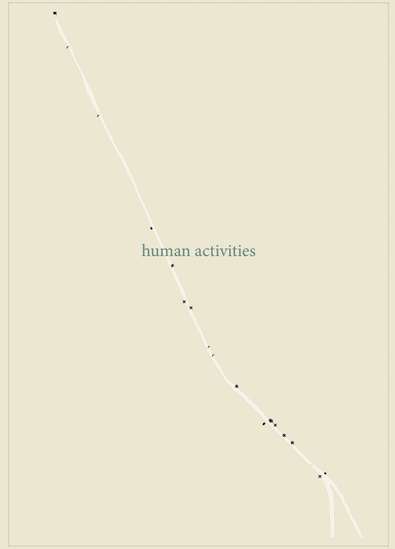




Legends

- Confirmed Nesting Locations
- Human Access Point (eg. platform)
- Reduced Accessibility (eg. steel dockwall)
- Residential Houses
- Boat Speeding Up Area (Reverse of Slow Zone)

HIGHLIGHTS



Frequent human activity introduces disturbance into otherwise sheltered environments. As movement and noise increase, coots spend less time feeding, resting, and nesting in the immediate area.



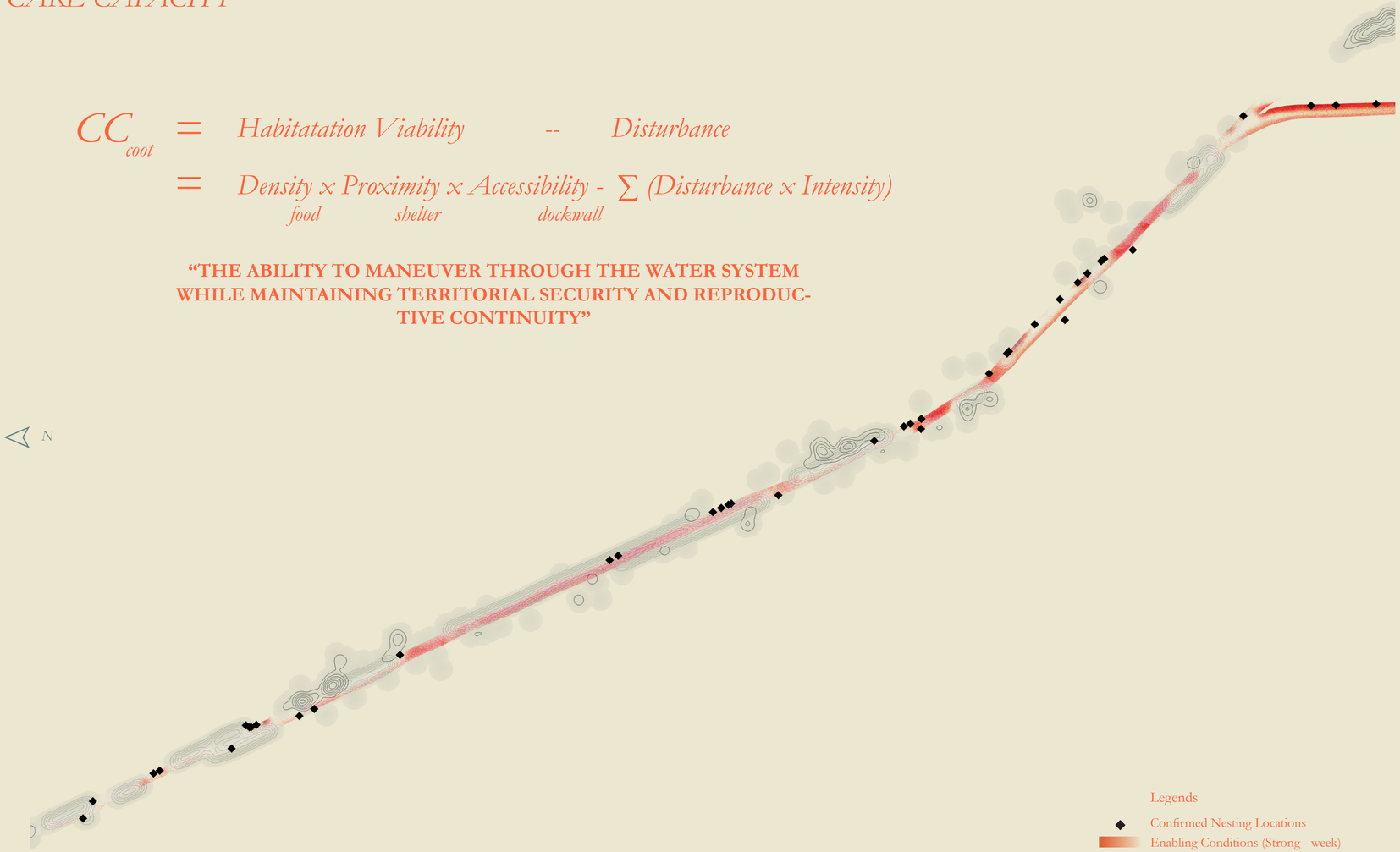
Accessible shorelines invite occupation by many actors. While valuable for human use, these edges often provide fewer opportunities for refuge, leading coots to seek quieter and less accessible sections of the canal.

CARE CAPACITY

$$CC_{coot} = Habitatation\ Viability\ \ --\ \ Disturbance$$

$$= \underset{food}{Density} \times \underset{shelter}{Proximity} \times \underset{dockwall}{Accessibility} - \sum (Disturbance \times Intensity)$$

“THE ABILITY TO MANEUVER THROUGH THE WATER SYSTEM WHILE MAINTAINING TERRITORIAL SECURITY AND REPRODUCTIVE CONTINUITY”



N

Legends

- Confirmed Nesting Locations
- Enabling Conditions (Strong - week)
- Disabling Conditions

CAPACITY SPECTRUM [COOT]

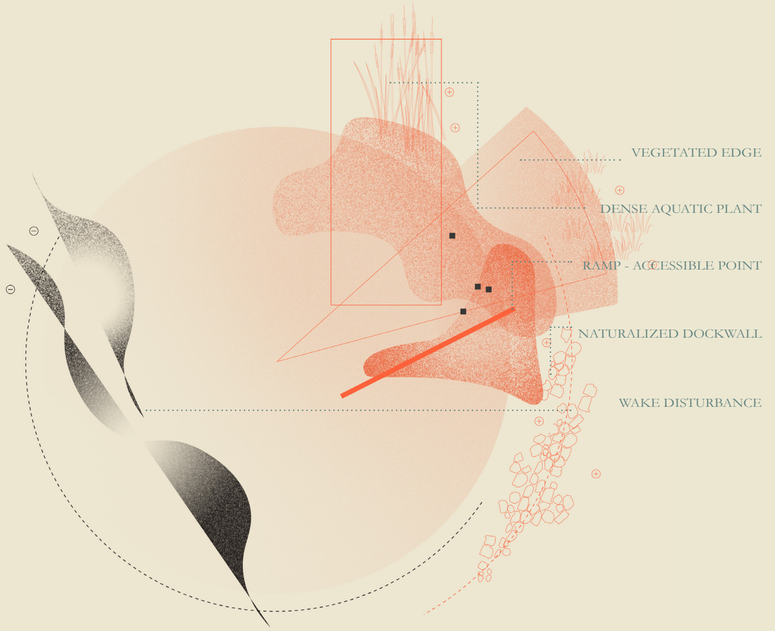
For the coot, capacity is the ability to maintain territory, raise offspring, and continue occupying the landscape over time.

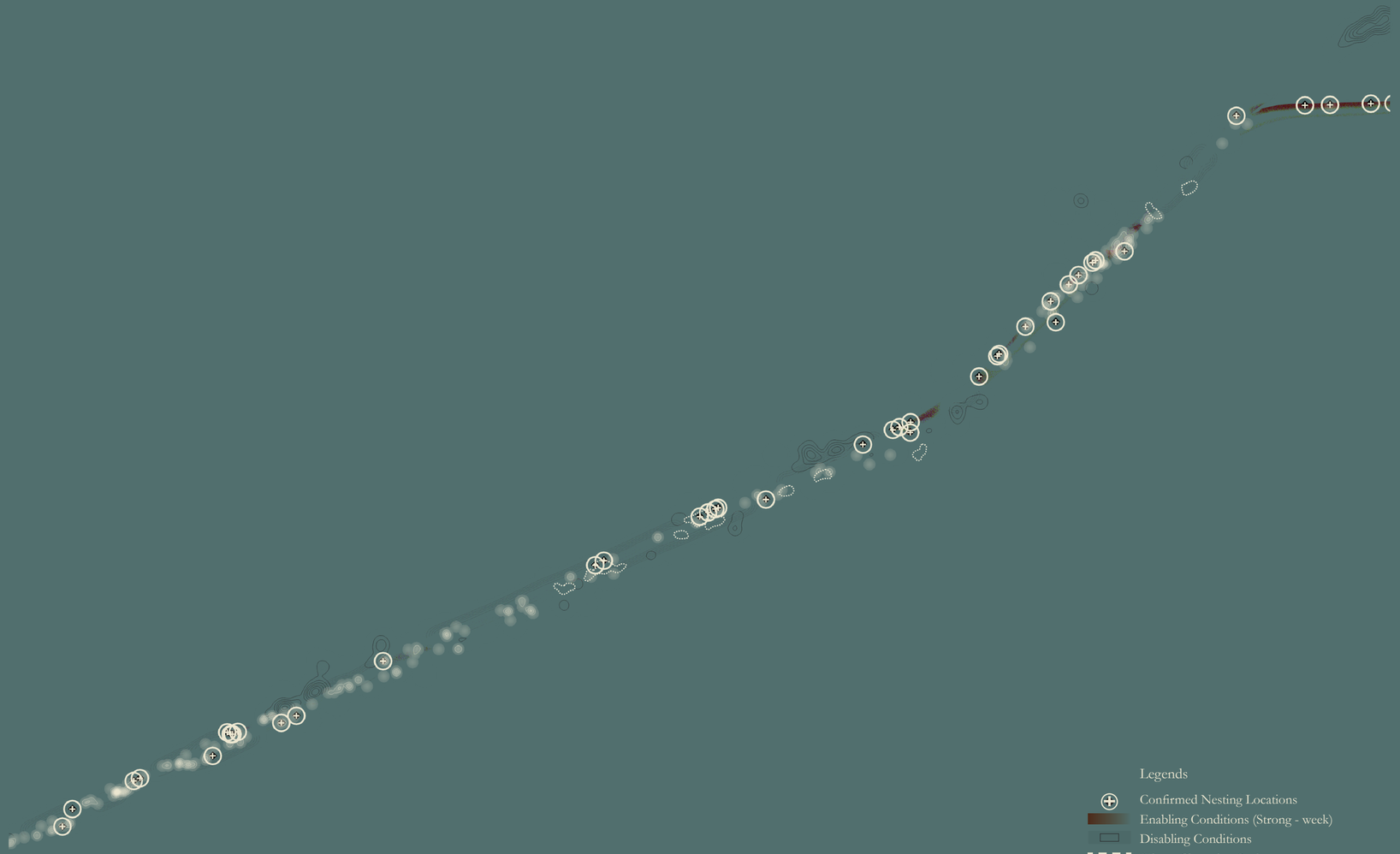
This capacity is produced by a balance of conditions. Vegetated edges, aquatic plants, food availability, and sheltered waters strengthen territorial stability. Disturbance from circulation, exposed edges, and human activity weakens it.

The diagram visualizes this negotiation. Orange conditions support occupation. Black conditions interrupt it. Indicating that capacity emerges not from the absence of disturbance, but from the ability of enabling conditions to withstand it.

The mapped nesting locations provide a means of verification. All confirmed nests are situated within areas of high capacity, where enabling conditions overlap and disturbance remains relatively limited. At the same time, nesting locations consistently avoid the strongest concentrations of disabling conditions whenever possible.

This suggests that nesting behavior is not random. Coots actively negotiate the landscape, selecting territories where the balance between opportunity and disturbance remains favorable.In this sense, the coot’s capacity map is less a habitat map than a map of territorial resilience.





CARE MAP [COOT]

The care map is not a distribution map.

It identifies where care matters most.

Confirmed nesting locations, winter refuge clusters, breeding corridors, and areas of high care capacity are brought together to reveal the locations most critical to the continuity of coot life.

Not every occupied space requires the same level of attention. Some locations function as key territories, seasonal refuges, or movement corridors that support a much larger network of occupation.

Care is therefore directed not by presence alone, but by ecological importance.

The map highlights where protection, reinforcement, and accommodation can have the greatest impact.

Items / Action



CONFIRMED NESTING POINTS

⊕ Protect Strongly



WINTER CLUSTER TERRITORY

Reinforce / Buffer



BREEDING MOVEMENT

Acknowledge. Provide ‘care’



‘CARE’ CAPACITY

Limited



DENSE EDGE VEGETATION

[Dense vegetation provides cover, nesting opportunities, and refuge from disturbance. Maintaining vegetation density increases the capacity of coots to establish and sustain territories.]

[Design Role]: Protect & Amplify

[Potential Actions]:

1. Preserve existing reed beds
2. Reduce mowing frequency
3. Allow seasonal succession
4. Introduce native edge vegetation
5. Widen soft-edge zones
6. Naturalize hard canal edges
7. Promote biking along canal
8. Avoid parking along canal



NESTING REFUGE

[Successful nesting depends on periods of reduced disturbance and spatial stability. Protecting nesting refuge supports breeding and territory formation.]

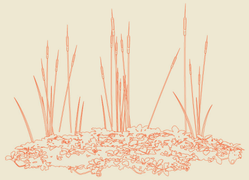
Normalized:

"the nesting area should be considered protection area once identified, and has a time period of 2 month"

[Design Role]: Protect Critical Seasonal Condition

[Potential Actions]:

1. Temporary nesting buffers
2. Seasonal protection zones
3. Nest reporting system (other players as ambassador to help protecting the coot)
4. Delay nearby maintenance
5. Preserve sheltered corners
6. Physical Barriers



FLOATING HABITAT

[Floating organic matter provides nesting material and habitat complexity. Allowing its accumulation supports habitat construction by coots themselves.]

[Design Role]: Enable Habitat Formation

[Potential Actions]:

1. Retain floating branches after trimming
2. Allow organic accumulation
3. Reduce (necessary) debris removal
4. Create sheltered pockets
5. Create attachment anchor point
6. Introduce nesting rafts
7. Encourage residence to provide nesting place for coot



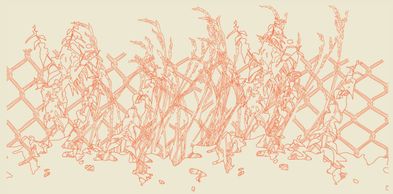
LOW WAKE ENVIRONMENT

[Wave action destabilizes nests and temporary floating habitats and increases energy expenditure. Reducing wake intensity improves habitat stability.]

[Design Role]: Mitigat physical disturbance

[Potential Actions]:

1. Seasonal speed limits
2. Speed limit around nesting hot spot (use of dense vegetation and create shallow water)
3. Low-wake navigation (narrow canal etc.)
4. Sheltered edge conditions (hollow pockets, wave breaker, naturalized dockwall)
5. Wave-dissipating vegetation



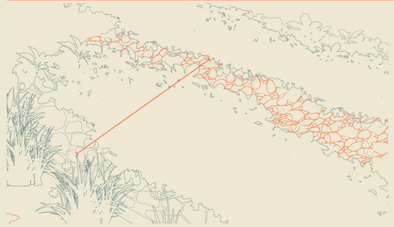
REFUGE FROM ACCESS

[Alternating accessible and inaccessible edges provides spaces where coots can withdraw from human activity.]

[Design Role]: Prevent access in certain area

[Potential Actions]:

1. Alternate access zones
2. Retain dense vegetation/aquatic plant belts
3. Strategically limit continuous water access
4. Preserve inaccessible corners
5. Curate access points around nesting area



DISTANCE FROM DISTURBANCE

[Separation from pedestrians and dogs reduces vigilance demands and increases habitat security. Create a longer buffer from canal edge to walking path]

[Design Role]: Mitigate repeated interruption

[Potential Actions]:

1. Vegetated buffers
2. Path moving / realignment
3. Visual screening / disconnecting
4. Reduced edge access



ANCHORING STRUCTURES

[Coots frequently use posts, roots, and leftover structures as nesting anchors. Preserving these elements expands habitat possibilities.]

[Design Role]: Amplify nesting possibilities

[Potential Actions]:

1. Retain mooring posts
2. Preserve remnant structures
3. Protect sheltered corners
4. Incorporate habitat supports
5. Avoid unnecessary removal



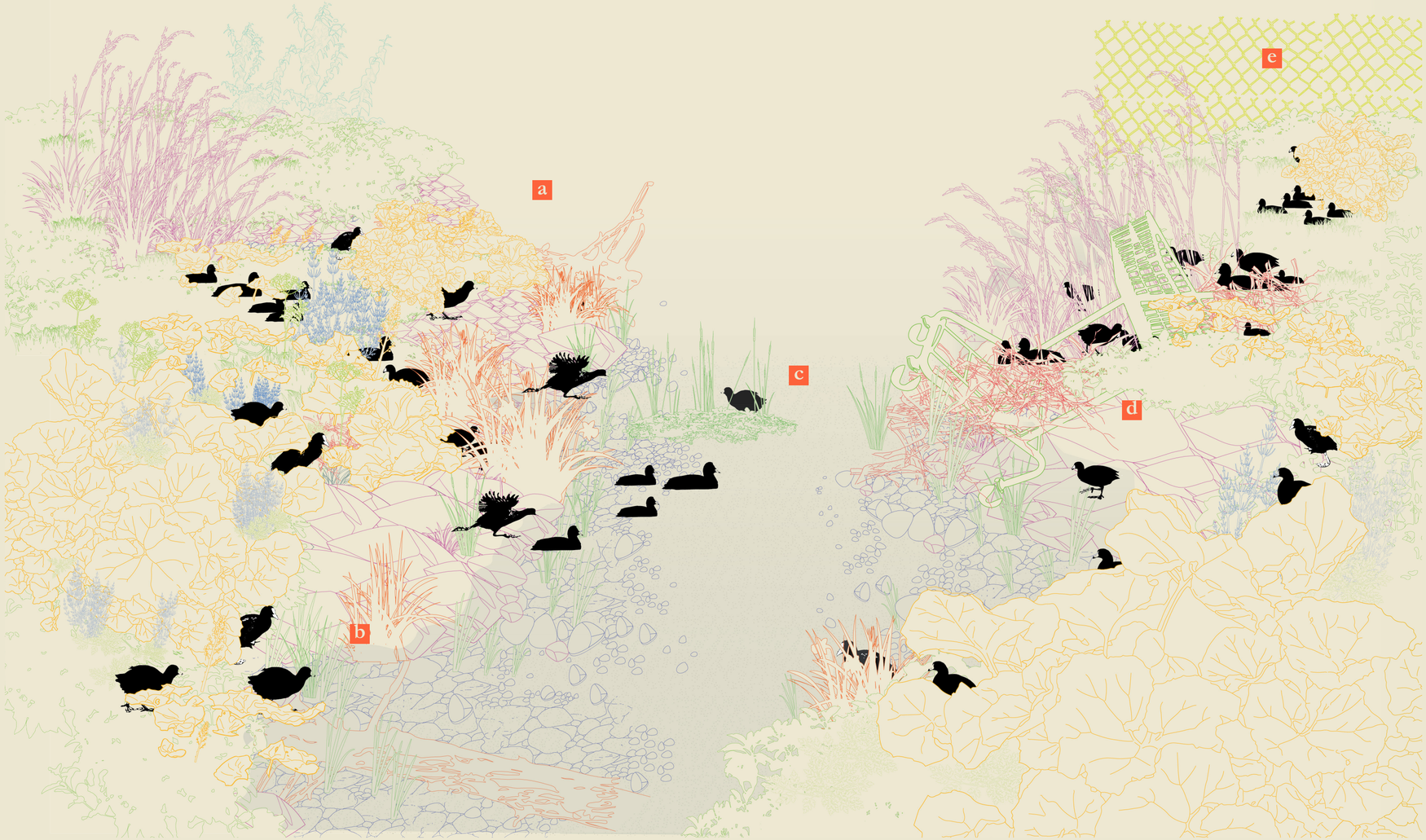
SEASONAL RHYTHM COORDINATION

[Many habitat conditions depend on uninterrupted seasonal cycles. Aligning maintenance with breeding periods preserves these conditions]

[Design Role]: Adapt maintenance rhythms

[Potential Actions]:

1. Delay mowing
2. Seasonal maintenance schedules coordinate with Coot rhythm
3. Reduce intervention frequency
4. Targeted vegetation management
5. Ecological monitoring



100% COOT

The ideal coot corridor would have:

a/ continuous vegetated water edges
b/ shallow transitions between land and water
c/ floating and semi-floating nesting matter
d/ quiet territorial pockets
e/ limited dogs, boats, and pedestrian edge access
f/ low wake zones
g/ irregular leftover structures for opportunistic nesting
h/ seasonal disturbance protection during breeding

In 100% coot condition, the Schie becomes a territorial nesting landscape, not a recreational promenade.

But it also creates exclusions:

less fishing access
barely function as transportation corridor
less hard edge seating
less rowing possibility
reduced visibility to water
slower or no recreational boating
more “mess” and less maintenance control

A 100% COOT SCHIE IS NOT A CLEAN CANAL. IT IS SLOW, MESSY, EDGE-HEAVY, DIFFICULT TO ACCESS.

EURASIAN COOT
PELICANS
EGYPTIAN GEESE
CANADIAN GEESE
CALL DUCK
MUTE SWAN
LITTLE GREBE
GREY HERON
MALLARD DUCK
GREYLAG GEESE
HOOKBILL DUCK
CROW
SEAGULL
GREAT CORMORANT
ROWER
COACH
CYCLIST
SWIMMER
DOG WALKER
COMMUTER
RESIDENTS
TOURIST
RUNNER

KAYAKER
CANOER
EUROPEAN PERCH
NORTHERN PIKE
ROACH
ZANDER
EUROPEAN EEL
CRAWFISH
WHITE BREAM
SNAILS
DRAGONFLIES
FROG
TURTLE
ALGAE
GRASS
REED
RUSHES
DUCKWEED
WATERLILIES
DANDELION
MOSS
WILLOW
LINDEN
CHERRY
ALDER
POPLAR
MAPLE
INDUSTRY WORKER
DREDGING WORKER
ROAD WORKER
WIND
SUNLIGHT
WAVE
WATER

RECREATIONAL FISHER



they are playing a game of patience.

One person.

Several rods.

Different bait.

Hours of waiting.

The sun is relentless. The water appears still. Yet beneath the surface, a continuous negotiation is taking place.

A line suddenly retreats through the water.

Then slows.

Then stops.

The lure is released gently, almost as if surrendering the opportunity.

A moment later it is pulled back again.

The fish is tempted.

The fisherman waits.

Then repeats the process.





Recreational fishing depends on direct access to the water's edge. Fishers frequently move between locations, adjust their position, and interact closely with the water while casting, landing fish, or observing conditions. Accessible edges increase opportunities for participation and allow fishers to respond to changing environmental conditions throughout the day.

A. ACCESSIBLE EDGE

B. VACANT GREEN

Open green spaces adjacent to the canal provide room for temporary occupation and flexible use. These areas are often used for setting down equipment, preparing bait, resting, or gathering with others. The absence of rigid programming allows fishers to adapt the space according to their own needs and practices.





Many recreational fishers carry equipment that can be difficult to transport over long distances. Proximity to parking reduces the effort required to access fishing locations and increases the likelihood of longer visits. Accessible arrival points expand participation among users with different levels of mobility and experience.

C. PARKING SPACE

D. PERCEPTION OF SAFETY

Fishing often involves remaining in one place for extended periods, sometimes during early morning or evening hours. Locations that feel visible, legible, and socially connected are generally more attractive for prolonged occupation. A sense of safety increases the capacity of fishers to focus on observing environmental conditions rather than monitoring potential risks.





While vegetation contributes to habitat quality, dense tree cover and low branches can interfere with casting and line movement, as well as leaves accumulating in water suffocates fishes. Open overhead conditions reduce the likelihood of snagging hooks, lines, and benifit especially lures. These spaces provide greater freedom of movement and accommodate a wider range of fishing techniques.

E. AWAY FROM TREE

F. PROXIMITY BUT NOT CLOSE TO RES HOUSING

Fishers benefit from locations that are accessible from residential areas and everyday routes, as many of the fishers come from nearby neighborhood. At the same time, sufficient distance helps reduce pedestrian activities and noise condition, provide possibility for prolonged occupation, and the storage of equipment.





Industrial environments often introduce noise, restricted access, visual barriers, and perceptions of environmental degradation. These conditions can reduce both the recreational quality of fishing and the ability to remain attentive to ecological changes. Locations with less industrial influence are generally preferred for longer stays and repeated visits.

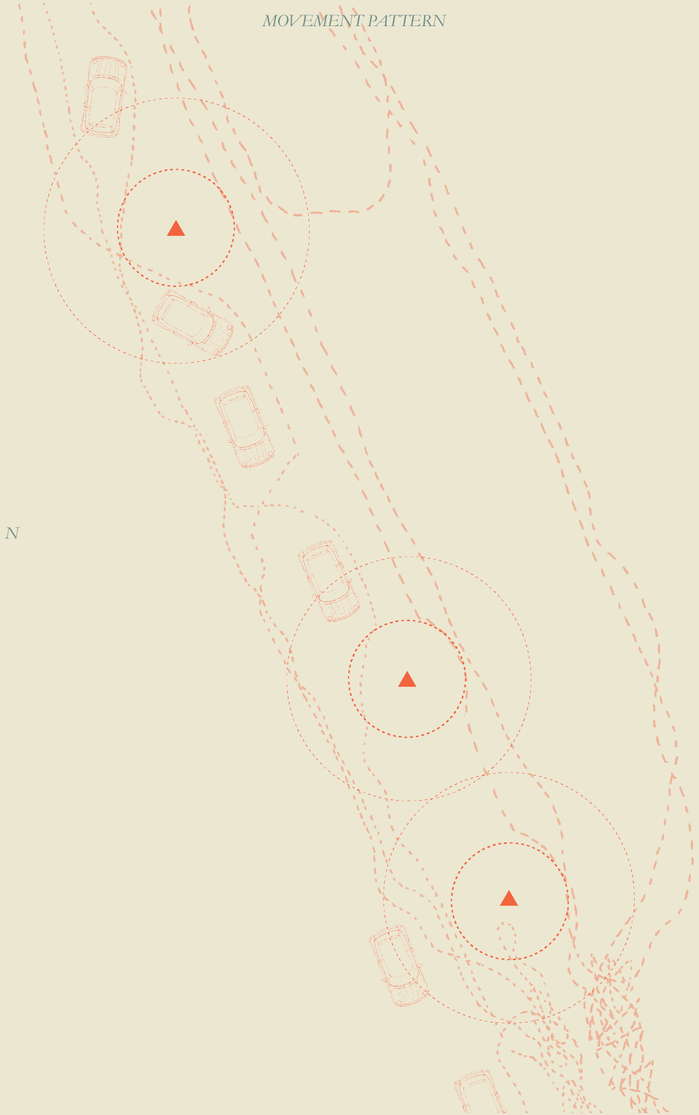
G. AWAY FROM INDUSTRY

H. BRIDGE: TABLE/LURE FISHING

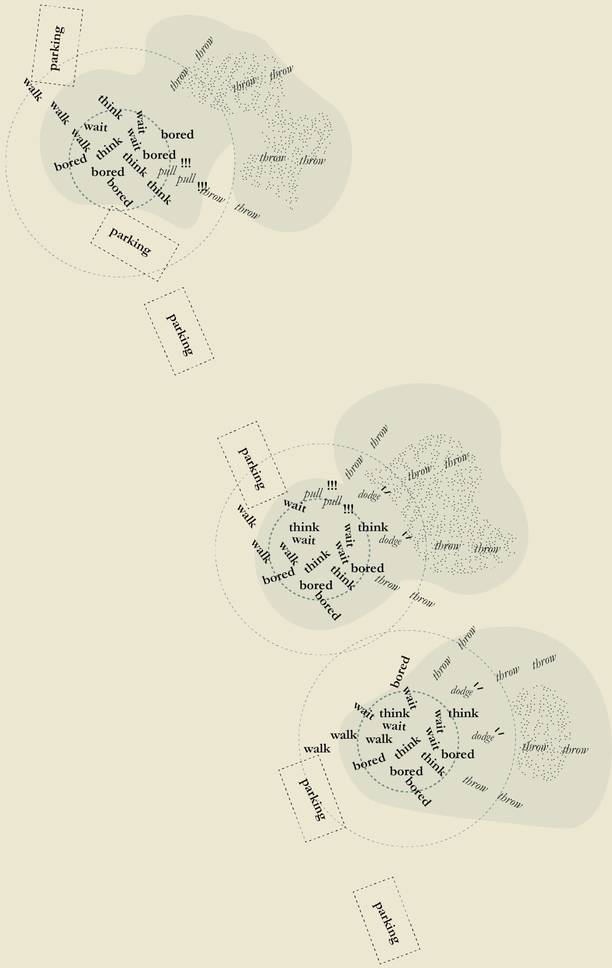
Bridges, platforms, piers, and other edge structures create unique fishing opportunities by providing alternative positions from which to engage with the water. Changes in depth, flow, shade, and underwater structure around these elements often attract fish and support specialized fishing techniques.



MOVEMENT PATTERN



MOVEMENT LOGIC



BEHAVIOUR LOGIC [REC FISHER]

What appears to be inactivity is in fact constant observation. Fishermen read the water, the weather, the movement of fish, and the behavior of other anglers. They commit themselves to a location for hours, sometimes an entire day, because fishing is not simply about catching fish. It is about remaining where the possibility of a catch exists.

The fisherman is not occupying the shoreline.

They are occupying a condition of possibility.

- Recreational Fisher



VACANT GREEN

FLAT SURFACE

POTENTIAL FISH

PARKING SPACES

ENABLING CONDITIONS [REC FISHER]

Can I stay here?

Can I cast here?

Is there a chance of catching something here?

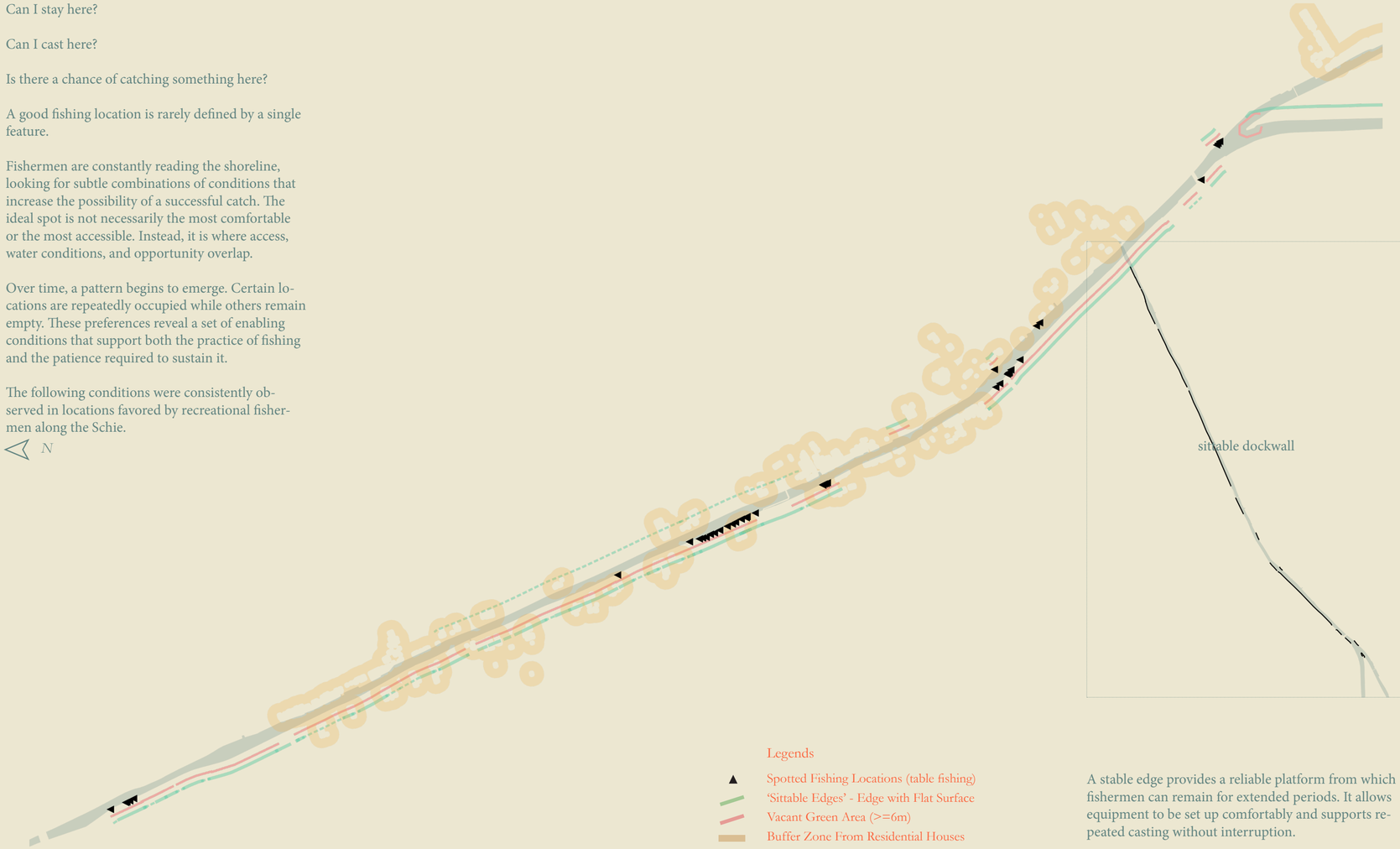
A good fishing location is rarely defined by a single feature.

Fishermen are constantly reading the shoreline, looking for subtle combinations of conditions that increase the possibility of a successful catch. The ideal spot is not necessarily the most comfortable or the most accessible. Instead, it is where access, water conditions, and opportunity overlap.

Over time, a pattern begins to emerge. Certain locations are repeatedly occupied while others remain empty. These preferences reveal a set of enabling conditions that support both the practice of fishing and the patience required to sustain it.

The following conditions were consistently observed in locations favored by recreational fishermen along the Schie.

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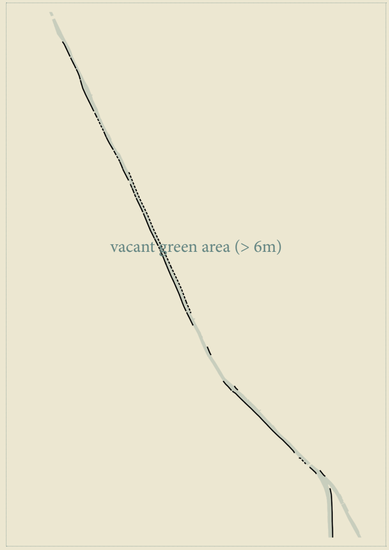


Legends

- Spotted Fishing Locations (table fishing)
- 'Sittable Edges' - Edge with Flat Surface
- Vacant Green Area (>=6m)
- Buffer Zone From Residential Houses

HIGHLIGHTS

A stable edge provides a reliable platform from which fishermen can remain for extended periods. It allows equipment to be set up comfortably and supports repeated casting without interruption.



Open space behind the fishing position is essential. It provides room for casting, movement, equipment storage, and social interaction, particularly during longer fishing sessions that may last several hours.



Fishermen rarely occupy locations directly adjacent to houses, nor do they seek complete isolation. Instead, they often settle in the space in between. Close enough to reach easily, yet distant enough to establish a temporary sense of retreat. This balance allows them to spend long periods by the water without interfering with residential life or feeling constantly observed.

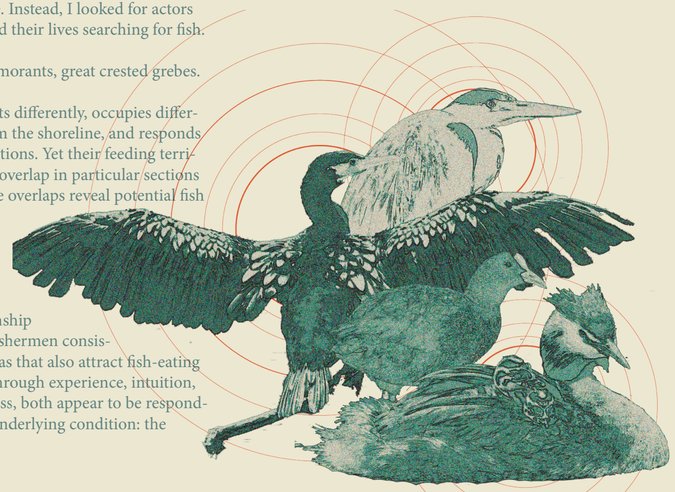
DESIRABLE FISHING AREA [REC FISHER]

I was unable to obtain reliable fish distribution data for the Schie. Instead, I looked for actors that already spend their lives searching for fish.

Grey herons, cormorants, great crested grebes.

Each species hunts differently, occupies different distances from the shoreline, and responds to different conditions. Yet their feeding territories repeatedly overlap in particular sections of the canal.These overlaps reveal potential fish habitats.

When compared with observed fishing locations, a striking relationship emerges. Many fishermen consistently occupy areas that also attract fish-eating birds. Whether through experience, intuition, or repeated success, both appear to be responding to the same underlying condition: the presence of fish.



N

[Grey Heron]
relativity: high
radius: 120-180m

[Cormorant]
relativity: high
radius: 150-200m

[Coot]
relativity: indirect
radius: 20m

[Great Crested Grebe]
relativity: high
radius: 50m

Legends

- Spotted Fishing Locations (table fishing)
- Desirable Fishing Conditions (Strong - week)
- Nearby Residential Houses

HIGHLIGHTS

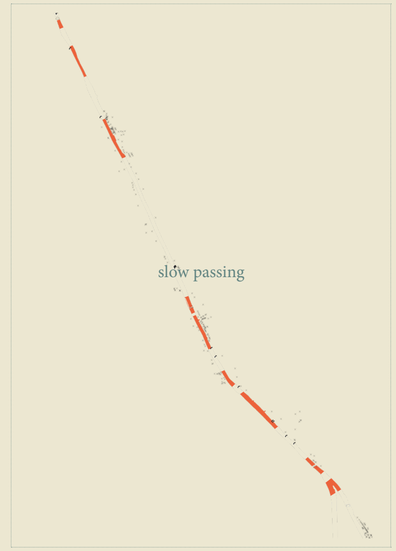
fish habitat (potential)

Fish cannot be easily mapped through direct observation. Instead, their presence is inferred through the actors that depend on them. The overlapping feeding territories of herons, cormorants, and grebes reveal potential fish habitats, many of which correspond with repeatedly occupied fishing locations.



reverse of pedestrian activities

They don't just seek fish, they also seek a certain social condition. Fishing requires prolonged attention. Locations with lower pedestrian activity are consistently preferred, allowing fishermen to remain in place for extended periods without frequent interruption. While complete isolation is not necessary, a degree of separation supports the patience and concentration that the practice demands.



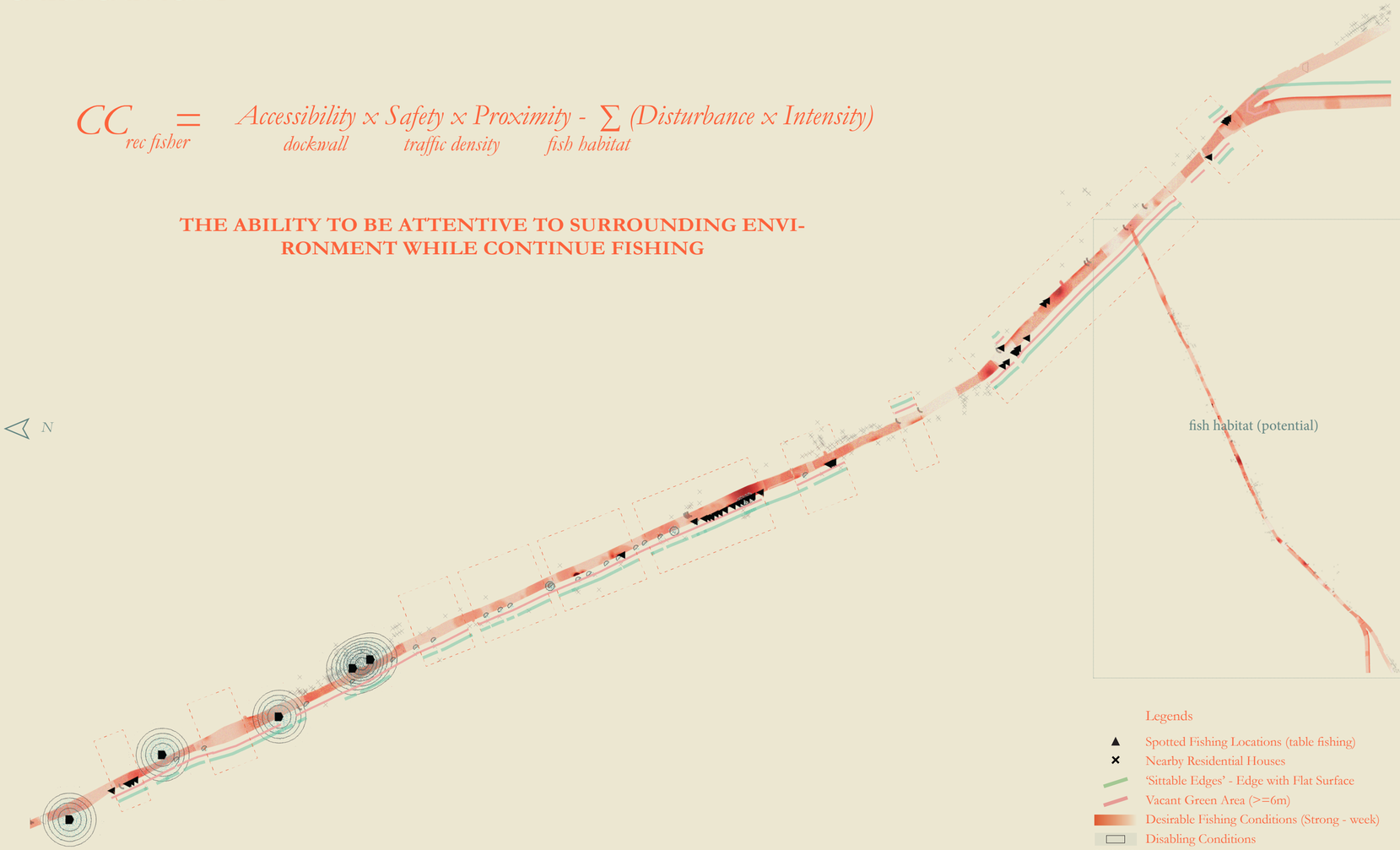
slow passing

Areas where boats naturally reduce speed are often favored by fishermen. Slower movement produces less wake, creates more stable fishing conditions, and allows a temporary coexistence between navigation and fishing activities. These locations become informal zones where different users can occupy the canal without constantly disrupting one another.

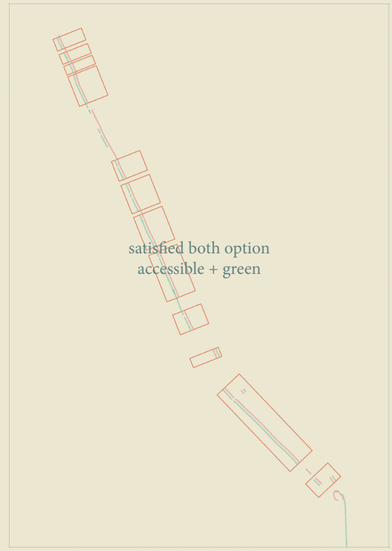
CARE CAPACITY

$$CC_{\text{rec fisher}} = \underset{\text{dockwall}}{Accessibility} \times \underset{\text{traffic density}}{Safety} \times Proximity - \sum \underset{\text{fish habitat}}{(Disturbance \times Intensity)}$$

THE ABILITY TO BE ATTENTIVE TO SURROUNDING ENVIRONMENT WHILE CONTINUE FISHING



CAPACITY SPECTRUM [REC FISHER]





Legends

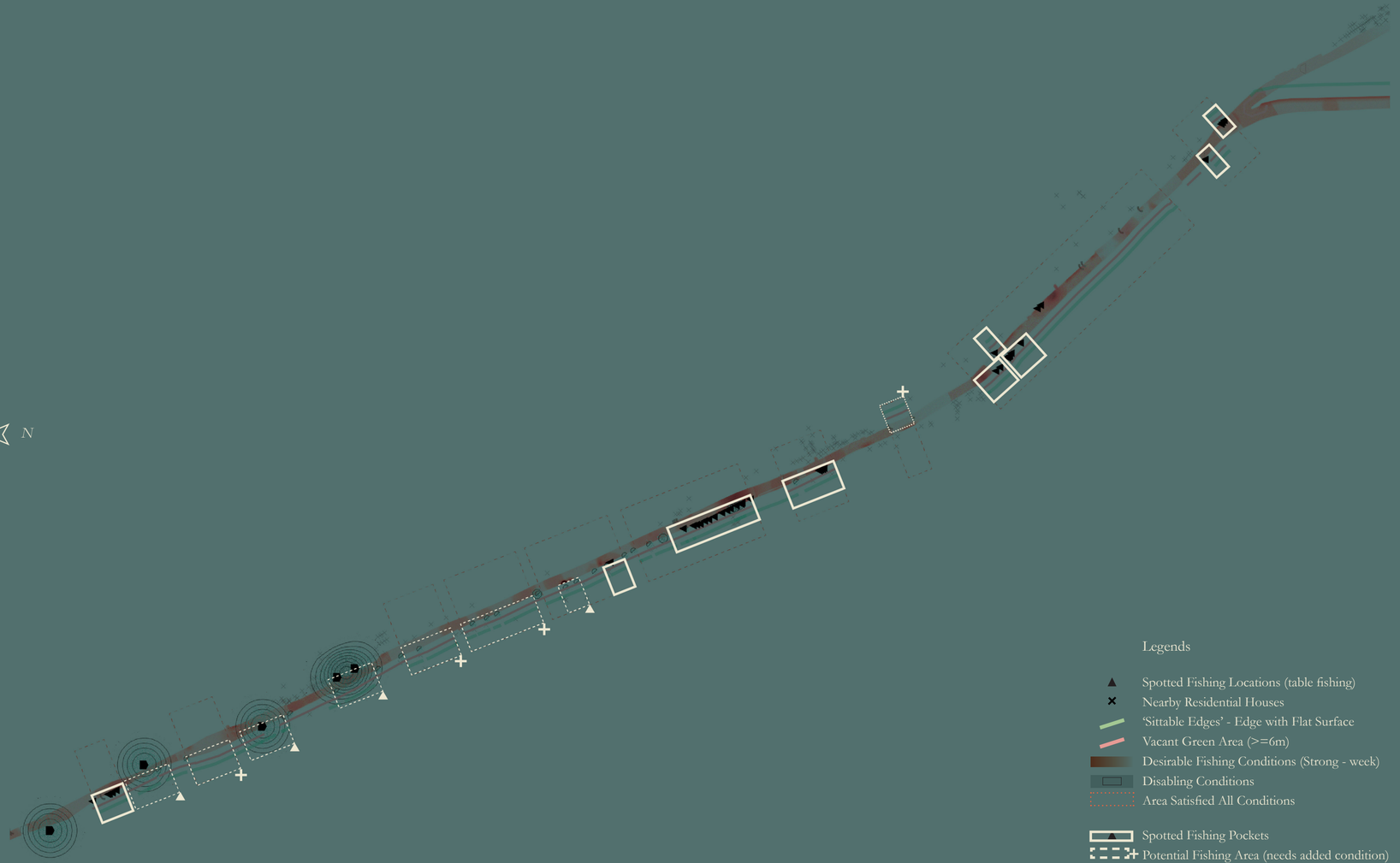
- Spotted Fishing Locations (table fishing)
- Nearby Residential Houses
- 'Sittable Edges' - Edge with Flat Surface
- Vacant Green Area (>=6m)
- Desirable Fishing Conditions (Strong - week)
- Disabling Conditions
- Area Satisfied All Conditions

The fisherman is selecting for ALL of the enabling conditions and disabling conditions simultaneously:

>6m green area; stable flat edge; no steep slope/dockwall; no traffic island; narrow road but safe setback; 10–50m from housing; away from industry; potential fish habitat; calm edge condition

This is extremely sophisticated spatial behavior.

And because these conditions rarely overlap, fishing locations cluster very specifically. What seems random is actually not random.



Legends

- Spotted Fishing Locations (table fishing)
- Nearby Residential Houses
- 'Sittable Edges' - Edge with Flat Surface
- Vacant Green Area (>=6m)
- Desirable Fishing Conditions (Strong - week)
- Disabling Conditions
- Area Satisfied All Conditions

- Spotted Fishing Pockets
- Potential Fishing Area (needs added condition)
- Potential Fishing Area (needs mitigation)

CARE MAP [REC FISHER]

Fisherman sit between different traditional roles:

Their behave like ecological actors
They are part of recreational actors
They are also territorial actor

Their logic is not movement efficiency like rowers or recreational boat.
It is: sustained occupation of productive water conditions. What's more interesting is desirable fishing conditions can be artificially reproduced.

Items / Action



CONFIRMED NESTING POINTS

Protect As See Fit



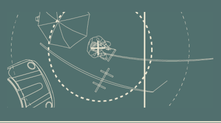
VIABLE SITE + MISSING ELEMENT

Enhance / Amplify



VIABLE SITE + IMPACT

Mitigate Impact



'CARE' CAPACITY

In Attention Radius



EDGE CLEARING

[Design Role]: Enable access to fishable water

[Fishing depends on intermittent openings along the shoreline that allow casting, landing fish, and reading water conditions. Maintaining selective openings increases access without requiring continuous clearing.]

[Potential Actions]:

1. Maintain periodic vegetation openings
2. Selective trimming of shoreline vegetation
3. Preserve existing fishing spots as fitted
4. Create access through clean vegetation
5. Balance vegetation cover with visibility (enabling fisher to access string conditions visually, eg. reduce pertuding aquatic plant)



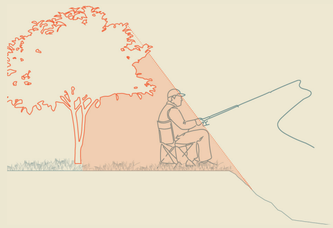
STABLE OCCUPATION EDGE

[Design Role]: Support extended occupation

[Fishing often involves remaining in one location for extended periods. Stable edges allow comfortable and safe occupation while minimizing damage to the shoreline.]

[Potential Actions]:

1. Maintain durable dockwall conditions
2. Stabilize frequently used edges / fixing broken dockwall
3. Provide informal sitting opportunities
4. Reduce bank erosion (wave mitigation)
5. Preserve established fishing locations where fitting



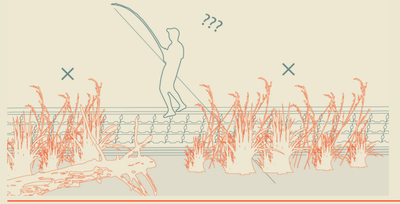
SHADE RETENTION

[Design Role]: Amplify habitat diversity

[Partial shade regulates water temperature and supports aquatic habitat conditions that contribute to fish presence. A varied light environment benefits both fish and fishers, the key is to maintain appropriate distance between tree and the water]

[Potential Actions]:

1. Retain mature trees
2. Maintain partial canopy cover
3. Preserve overhanging vegetation
4. Avoid complete vegetation removal
5. Balance shade and sunlight
6. Regular clearance during fall to remove the falling leaves



WATER READABILITY

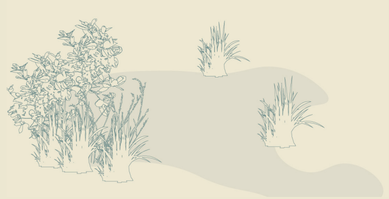
[Design Role]: Enable environmental awareness

[Reading water movement, hook respondance, depth changes, and habitat structures is fundamental to recreational fishing. Maintaining visual access supports this practice.]

[Potential Actions]:

1. Maintain visible water surfaces
2. Selective vegetation management
3. Preserve sightlines to water
4. Reduce visual obstruction
5. Maintain manageable shoreline vegetation
6. Avoid hard sightline blocking structure in the fishing areas

DESIGN STRATEGY



VARIED WATER CONDITIONS

[Design Role]: Enhance habitat complexity

[Irregular shoreline conditions create diverse aquatic environments that support fish activity and increase opportunities for exploratory fishing.]

[Potential Actions]:

1. Create sheltered coves
2. Introduce varied bank geometry
3. Preserve edge irregularities
4. Maintain depth variation
5. Create calm-water pockets
6. Promote vegetation diversity



TEMPORARY OCCUPATION

[Design Role]: Enable long time presence

[Fishing relies on the ability to remain stationary and adapt to changing conditions. Flexible occupation supports a wider range of fishing practices.]

[Potential Actions]:

1. Allow extended stays
2. Reduce unnecessary restrictions
3. Separate traffic and fishing area
4. Preserve informal occupation areas
5. Accommodate varied fishing durations (for night-fishing, area for setting tents)
6. Maintain accessible fishing edges



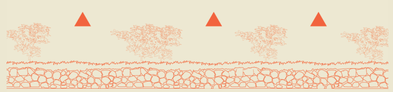
SHARED EDGE NEGOTIATION

[Design Role]: Mitigate potential conflicts

[Fishing often overlaps with rowing, boating, and other recreational activities. Spatial negotiation reduces disturbance while maintaining access for multiple users.]

[Potential Actions]:

1. Separate high-conflict zones
2. Keep fishable spots with manageble interruptions
3. Improve visibility between users
4. Create alternative occupation points
5. Coordinate overlapping uses



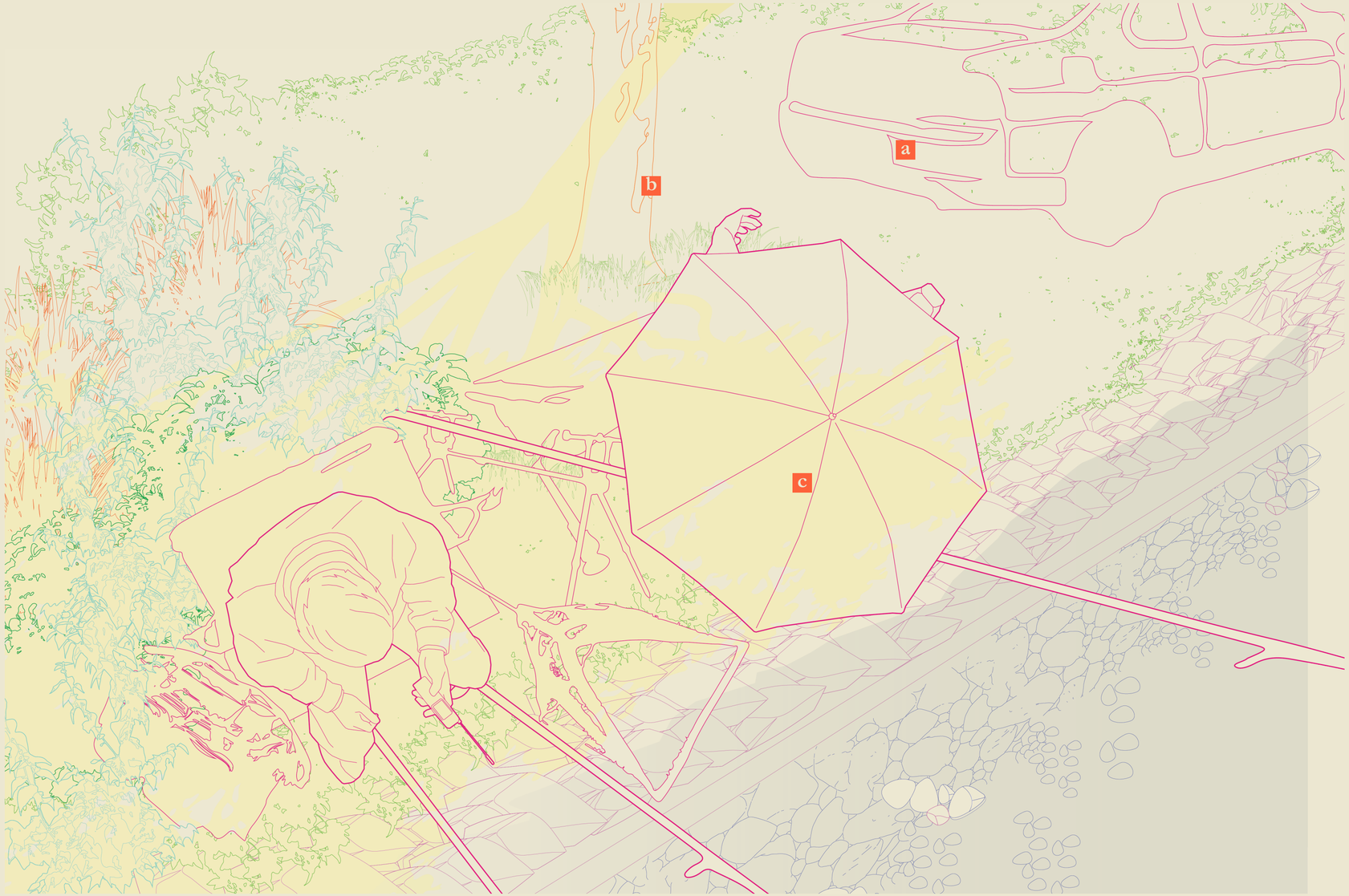
ACCESS CONTINUITY

[Design Role]: Maintain movement

[Fishing often involves moving between locations in response to changing environmental conditions. Especially lure fishing. Continuous access expands opportunities for exploration and continuing fishing culture.]

[Potential Actions]:

1. Connect fishable spots (re-create enabling condition to increase continuity)
2. Maintain shoreline routes
3. Maintain car/bike access (for table fishing)
4. Create public transport potential access
5. Preserve access between clearings
6. Reduce physical barriers
7. Maintain edge continuity



100% REC FISHER

Unlike coot,
the fisherman strategy is not about “rewilding.”

It is about:

SUPPORTING INFORMAL OCCUPATION WITHOUT FORMALIZING IT TOO MUCH.

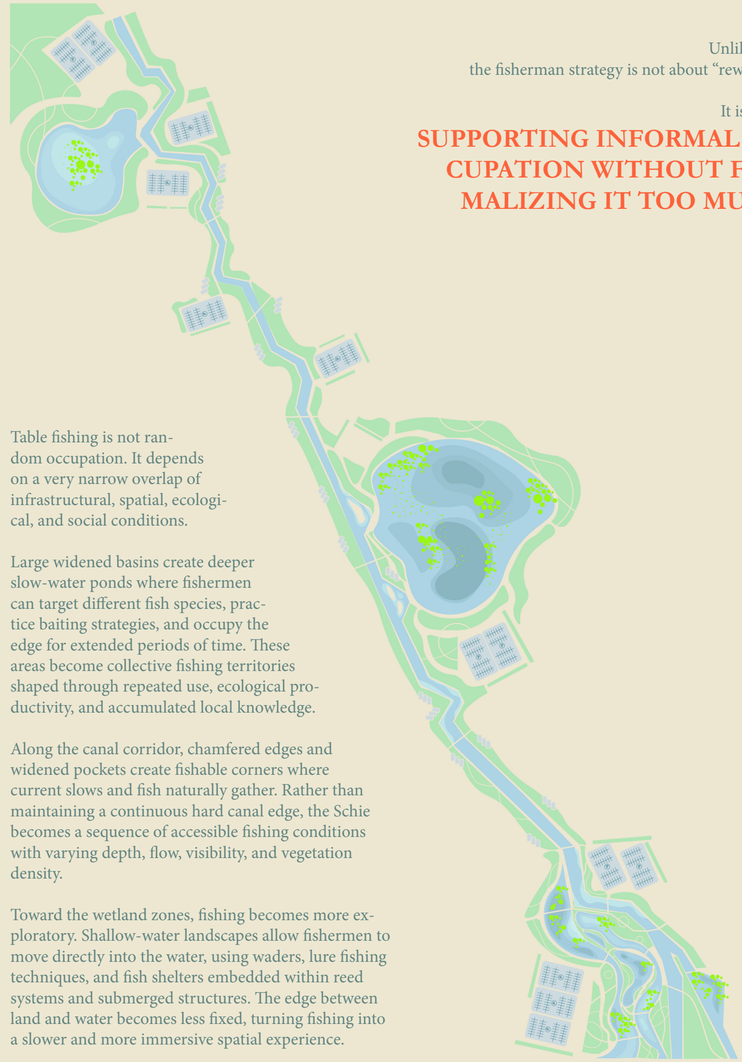


Table fishing is not random occupation. It depends on a very narrow overlap of infrastructural, spatial, ecological, and social conditions.

Large widened basins create deeper slow-water ponds where fishermen can target different fish species, practice baiting strategies, and occupy the edge for extended periods of time. These areas become collective fishing territories shaped through repeated use, ecological productivity, and accumulated local knowledge.

Along the canal corridor, chamfered edges and widened pockets create fishable corners where current slows and fish naturally gather. Rather than maintaining a continuous hard canal edge, the Schie becomes a sequence of accessible fishing conditions with varying depth, flow, visibility, and vegetation density.

Toward the wetland zones, fishing becomes more exploratory. Shallow-water landscapes allow fishermen to move directly into the water, using waders, lure fishing techniques, and fish shelters embedded within reed systems and submerged structures. The edge between land and water becomes less fixed, turning fishing into a slower and more immersive spatial experience.

CAPACITY TYPE II

ENERGY SYSTEM 2

PRESERVE TERRITORY

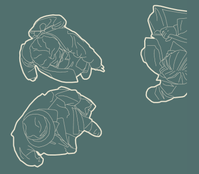
$$\textit{Care Capacity} = \frac{\textit{Habitational Desirability}}{\sum \textit{(Disturbance)} + \sum \textit{(Territory Area)}_{\textit{others}}}$$

① 

CANADIAN GEESE

② 

EGYPTIAN GEESE

③ 

PASSERS BY

TERRITORIAL

EURASIAN COOT
PELICANS

EGYPTIAN GEESE

CANADIAN GEESE
CALL DUCK
MUTE SWAN
LITTLE GREBE
GREY HERON
MALL
GREY
HOOKBILL DUC
CROW
SEAGULL
GREAT CORMORA
RO









ER
NTS
IST
ER
ER
ER
CH
KE
ROACH
ZANDER
EUROPEAN EEL
CRAWFISH
WHITE BREAM
SNAILS
DRAGONFLIES
FROG
TURTLE
ALGAE
GRASS
REED
RUSHES
DUCKWEED
WATERLILIES
DANDELION
MOSS
WILLOW
LINDEN
CHERRY
ALDER
POPLAR
MAPLE
INDUSTRY WORKER
DREDGING WORKER
ROAD WORKER
WIND
SUNLIGHT
WAVE
WATER

They're on land more than in water
walking across grass,
or standing still like
they own the place.

Today, I saw them on top of a tree
a trunk
with all its branches removed,
just a vertical post in the open space.

They climbed it anyway.
Perched above everything,
watching, resting, claiming height.

They don't stay hidden.
They choose exposure.
Open ground, clear views, elevated positions.



OBSERVATION
[EGYPTIAN GEESE]

They are rarely in the water for long.

In fact, did anyone ever seen them in the water long?

More often, they occupy the edge, walking across grass, resting in open fields, standing on piles of trimmed branches, tree stumps, mooring posts, and concrete pillars. Almost any object that offers a little height becomes a lookout. What appears as leftover material or ordinary infrastructure often becomes part of their territory, providing visibility, elevation, and a place from which to observe the surroundings.

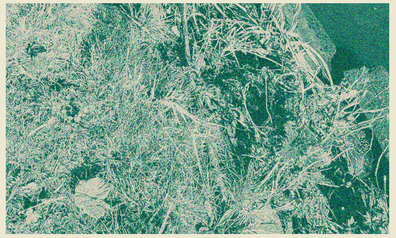


Throughout the Schie, Egyptian geese seem remarkably comfortable inhabiting spaces shaped by human activity. Freshly cut branches left after maintenance become resting places. Open lawns become grazing grounds. Tree trunks stripped of their branches become elevated perches. Even isolated posts emerging from the water are appropriated as temporary watchtowers. Rather than avoiding these remnants, they actively incorporate them into their daily routines, transforming overlooked elements into useful habitat.

When you pause along the canal, you can also see them staring at you at a close distance, once they confirmed that you're not harmful for them, they will go on and do their goose thing.



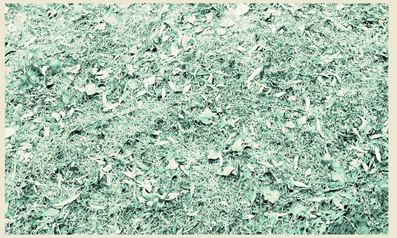


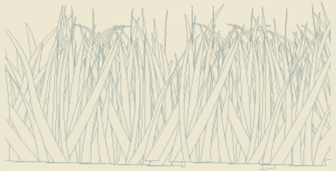




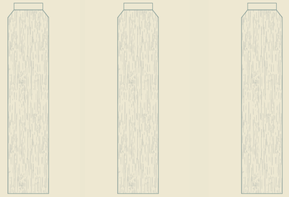










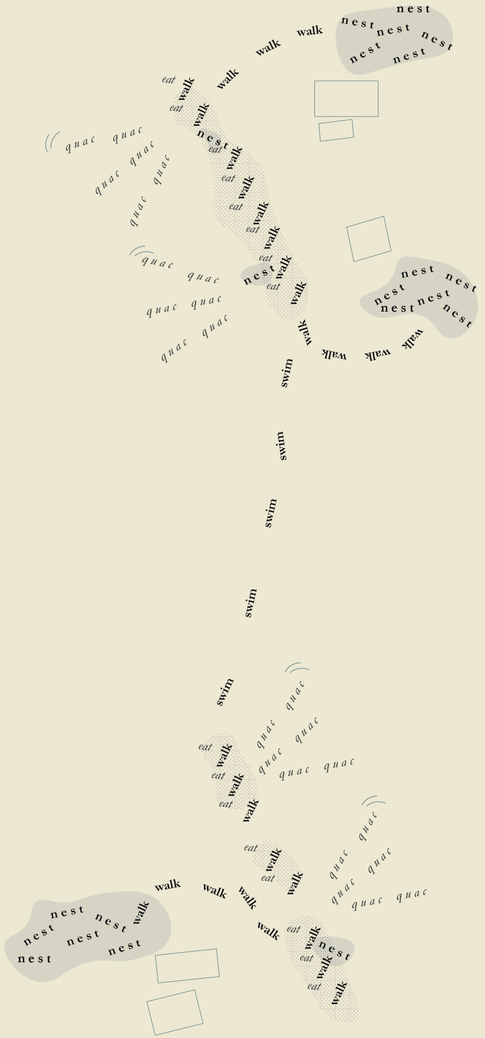


MOVEMENT PATTERN



N

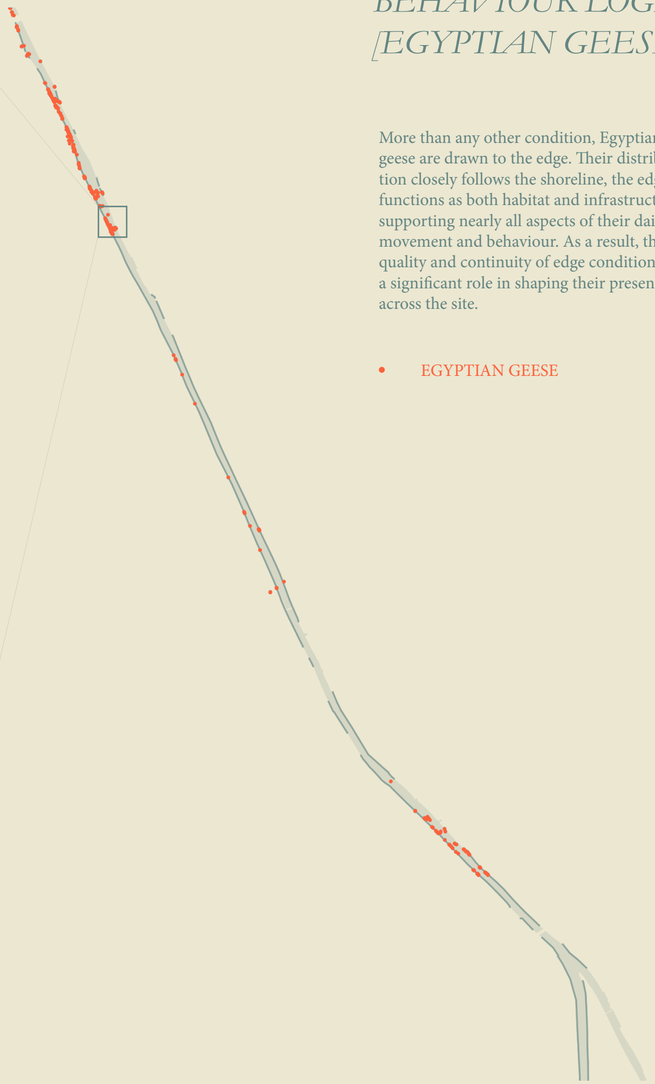
MOVEMENT LOGIC



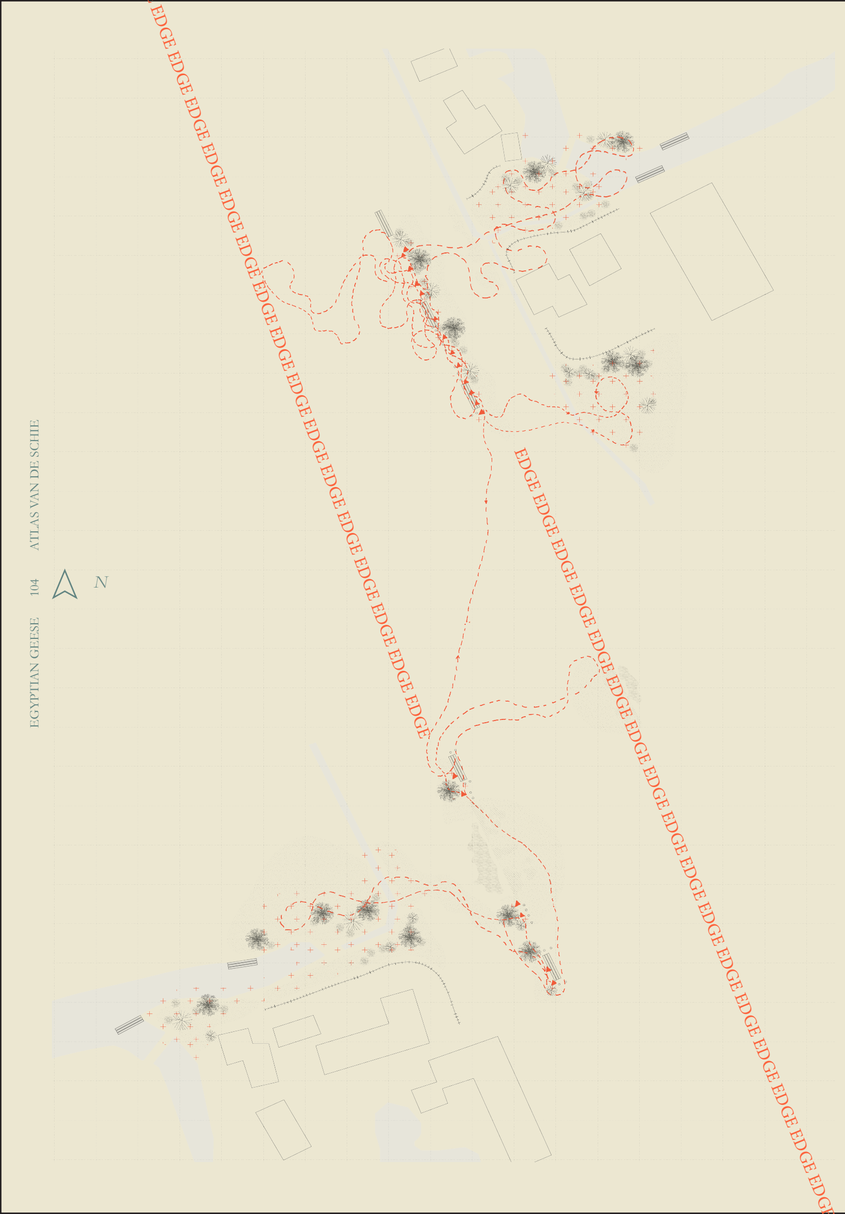
BEHAVIOUR LOGIC [EGYPTIAN GEESE]

More than any other condition, Egyptian geese are drawn to the edge. Their distribution closely follows the shoreline, the edge functions as both habitat and infrastructure, supporting nearly all aspects of their daily movement and behaviour. As a result, the quality and continuity of edge conditions play a significant role in shaping their presence across the site.

- EGYPTIAN GEESE



EDGE
EDGE
EDGE
EDGE



To summarize Egyptian Geese in four words: EDGE, EDGE, EDGE, EDGE.

To tell the difference between Egyptian Geese and Canadian Geese, first, they have 'egyptian eyeliners', second they're red, last, you usually see them at the EDGE.

Their favourite edge condition is vacant and clean edge that provide clear access between land and water. Afterall, if the boundary between land and water are ambiguous, you couldnt' call it edge, right?

Their distribution suggests a strong preference for walking along shorelines rather than occupying open water. Areas with frequent human activity, buildings, and intensive disturbance are generally avoided.

While they prefer open ground, they are often associated with isolated landscape elements such as poles, fallen branches, tree stumps, and elevated perches.

Key character trait of Egyptian Geese is probably - the observer. These features function as resting points, lookouts, and territorial markers within the landscape.

The movement radius of Egyptian Geese is also worth noting, they move through a sequence of open edges punctuated by these strategic objects, like they're not living, but like soldiers, patrolling daily.

IDEAL SETTING

BEHAVIOUR LOGIC [EGYPTIAN GEESE]





EDGE EDGE EDGE

DISABLING CONDITIONS [EGYPTIAN GEESE]



EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE

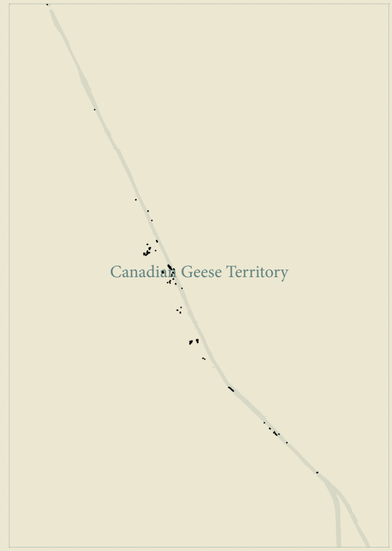
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Legends

- Spotted Egyptian Geese
- Spotted Canadian Geese
- Spotted Fisher
- Residential Houses

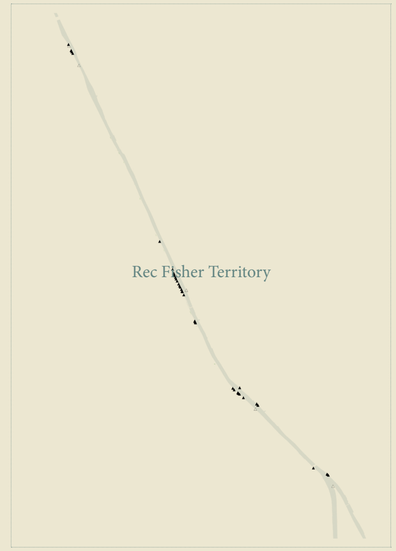
Residential House

High levels of human activity reduce habitat suitability and interrupt movement along the edge.



Canadian Geese Territory

Egyptian Geese have strong territorial behaviour that overlap between goose territories can exclude individuals from suitable habitat.



Rec Fisher Territory

Persistent human presence reduces the likelihood of occupation and long-term use.

EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE

CARE CAPACITY

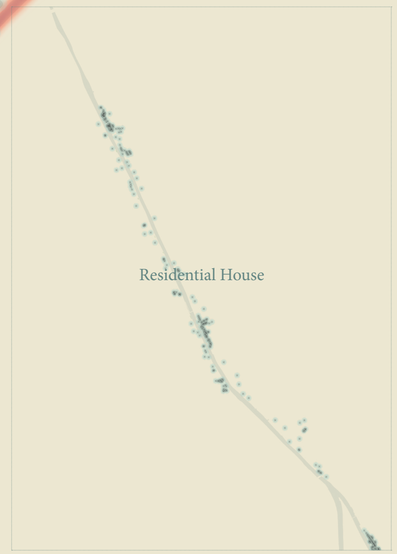
$$CC_{egyptian\ geese} = \frac{Habitational\ Desirability}{\sum (Disturbance) + \sum (Territory\ Area)_{others}}$$

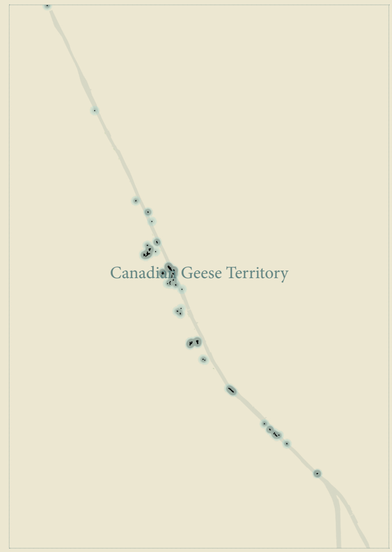
$$= \frac{Edge\ Condition \times Accessibility_{water} \times Green\ Area}{\sum (Residential\ Houses) + \sum (Territory\ Area)_{others}}$$

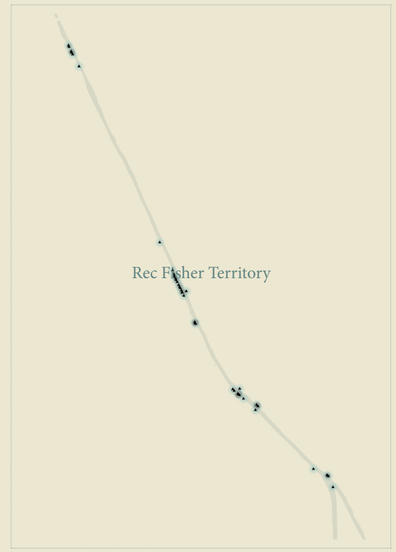
THE ABILITY TO MOVE BETWEEN FEEDING, RESTING, AND TERRITORIAL AREAS WHILE MAINTAINING ACCESS TO THE TERRITORY

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CAPACITY SPECTRUM [EGYPTIAN GEESE]

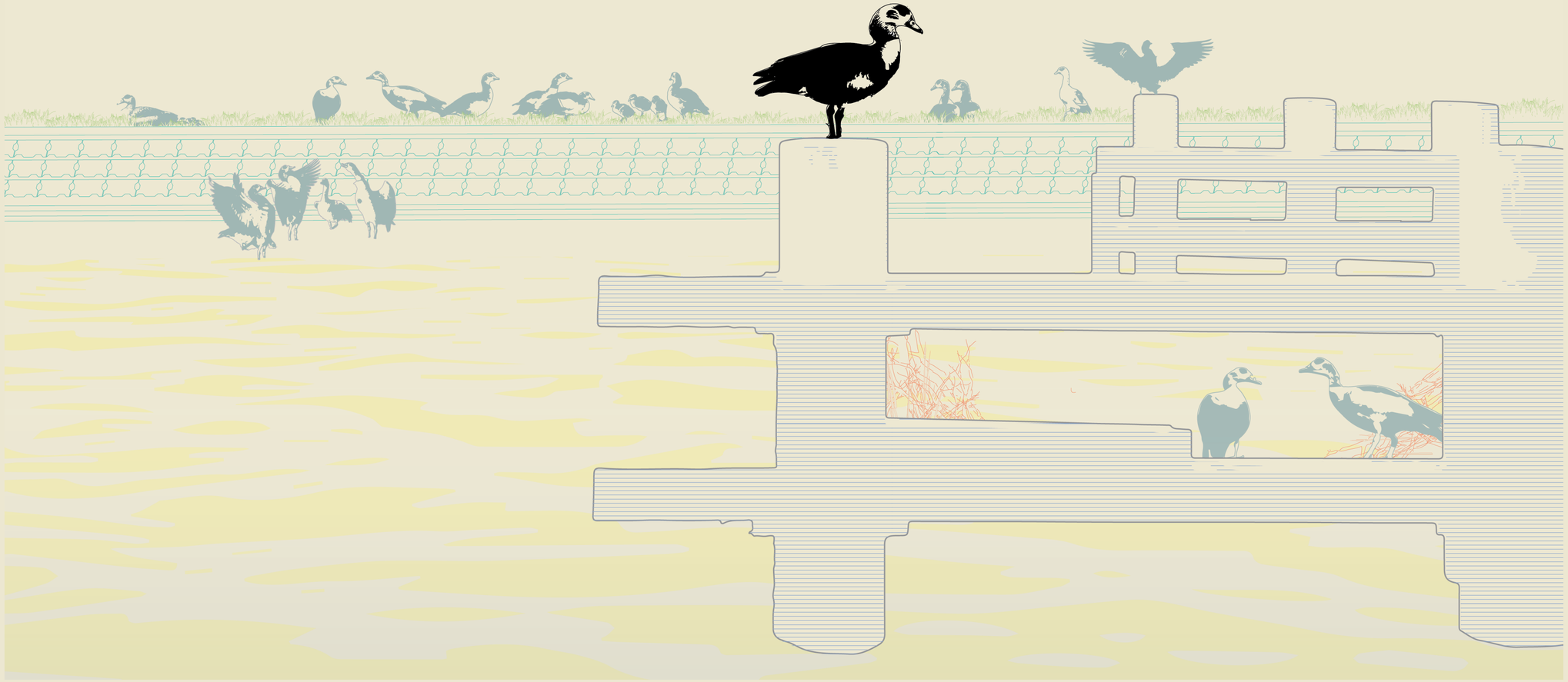






Legends

- Spotted Egyptian Geese
- Enabling Conditions (Strong - week)
- Disabling Conditions



100% EGYPTIAN GEESE

EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE EDGE

A 100% Egyptian geese means a landscape of appropriable objects. the goose's territory is not spatially bounded like the coot's. It is opportunistic and object-based.

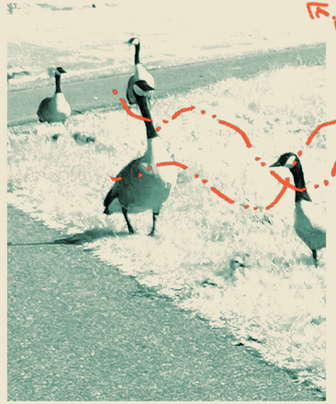
The 100% Egyptian Geese establishes a continuous edge corridor along the canal. Accessible shorelines, vacant green areas, and a network of perching structures support movement, grazing, and territorial occupation. By reducing human disturbance and strengthening edge conditions, the waterfront becomes a connected habitat where Egyptian geese can move freely between territories while maintaining visibility and control of their surroundings.



EURASIAN COOT
PELICANS
EGYPTIAN GEESE

CALL DUCK
MUTE SWAN
LITTLE GREBE
GREY HERON
MALLARD DUCK
GREYLAG GEESE
HOOKBILL DUCK
CROW
SEAGULL
GREAT CORMORANT
ROWER
COACH
CYCLIST
SWIMMER
DOG WALKER
COMMUTER
RESIDENTS
TOURIST
RUNNER
RECREATION FISHER
KAYAKER
CANOER
EUROPEAN PERCH
NORTHERN PIKE
ROACH
ZANDER
EUROPEAN EEL
CRAWFISH
WHITE BREAM
SNAILS
DRAGONFLIES
FROG
TURTLE
ALGAE
GRASS
REED
RUSHES
DUCKWEED
WATERLILIES
DANDELION
MOSS
WILLOW
LINDEN
CHERRY
ALDER
POPLAR
MAPLE
INDUSTRY WORKER
DREDGING WORKER
ROAD WORKER
WIND
SUNLIGHT
WAVE
WATER

CANADIAN GEESE







They are rarely alone.
Always watching in groups,
spread across the grass
like they have agreed on something.

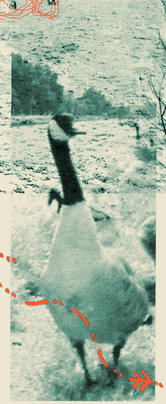
They stand where people walk most.
Open lawns, wide paths, exposed edges.
Not avoiding movement,
but settling directly within it.



But the grass along the Schie
is only part of their territory.

In winter,
they gather in the open farmland beyond the city,
covering entire fields in loose moving formations,
turning agricultural land into temporary habitat.

At night they return to the water.
Sleeping on the Schie,
floating together in dark open stretches
where disturbance feels visible from every direction.

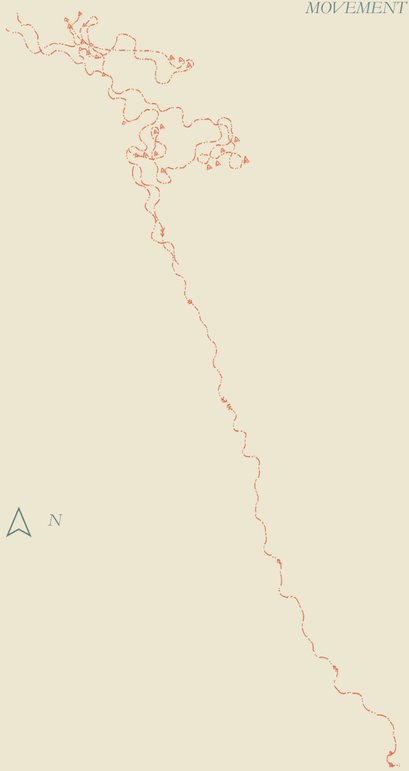






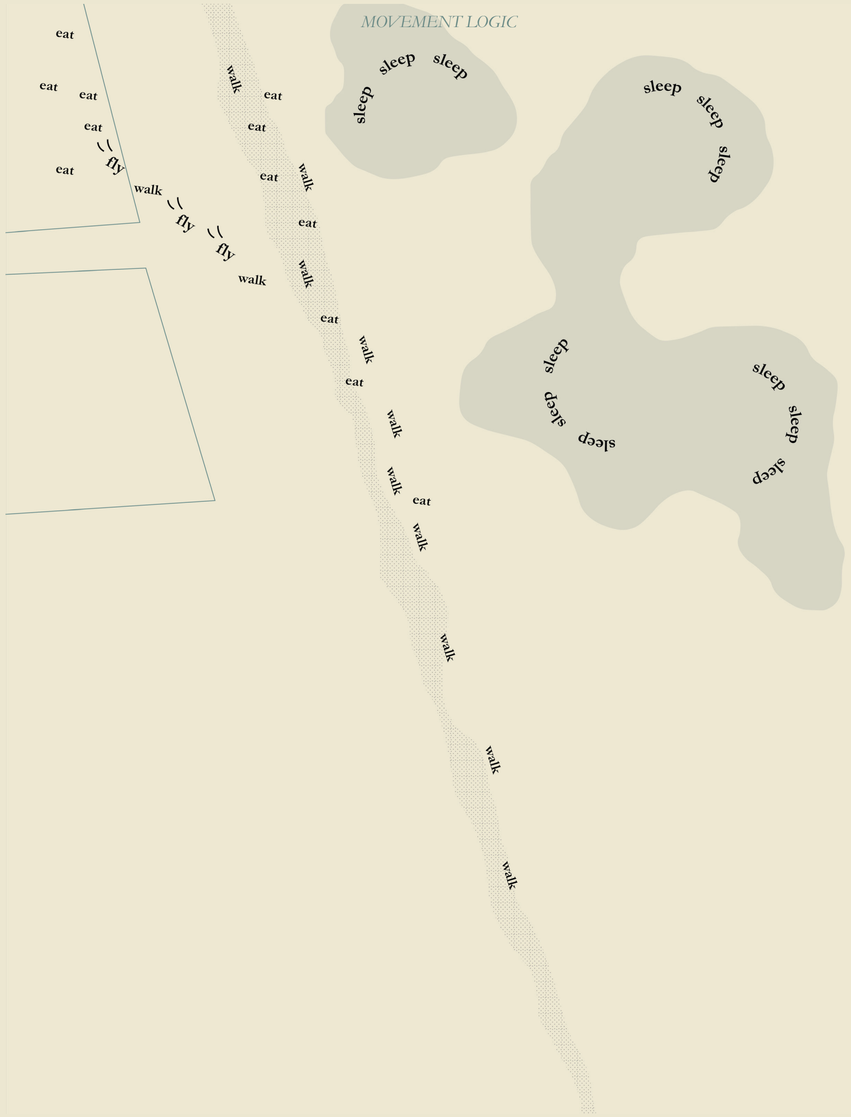
When someone gets too close,
they do not leave immediately.
First the neck rises.
Then the warning.
Then the slow deliberate step forward.

MOVEMENT PATTERN



N

MOVEMENT LOGIC



BEHAVIOUR LOGIC [CANADIAN GEESE]

Canadian geese are closely connected to the nearby farm fields, where they spend most of their time grazing. The canal acts as a resting and sleeping area, creating a daily cycle of movement between water and feeding grounds. Unlike Egyptian geese, which favour shoreline edges, Canadian geese are more often found in open grasslands and agricultural areas.

Their distribution also hints at a tendency to keep some distance from Egyptian goose territories. As a result, green corridors along the canal become important travel routes, linking feeding areas, resting sites, and the water's edge.

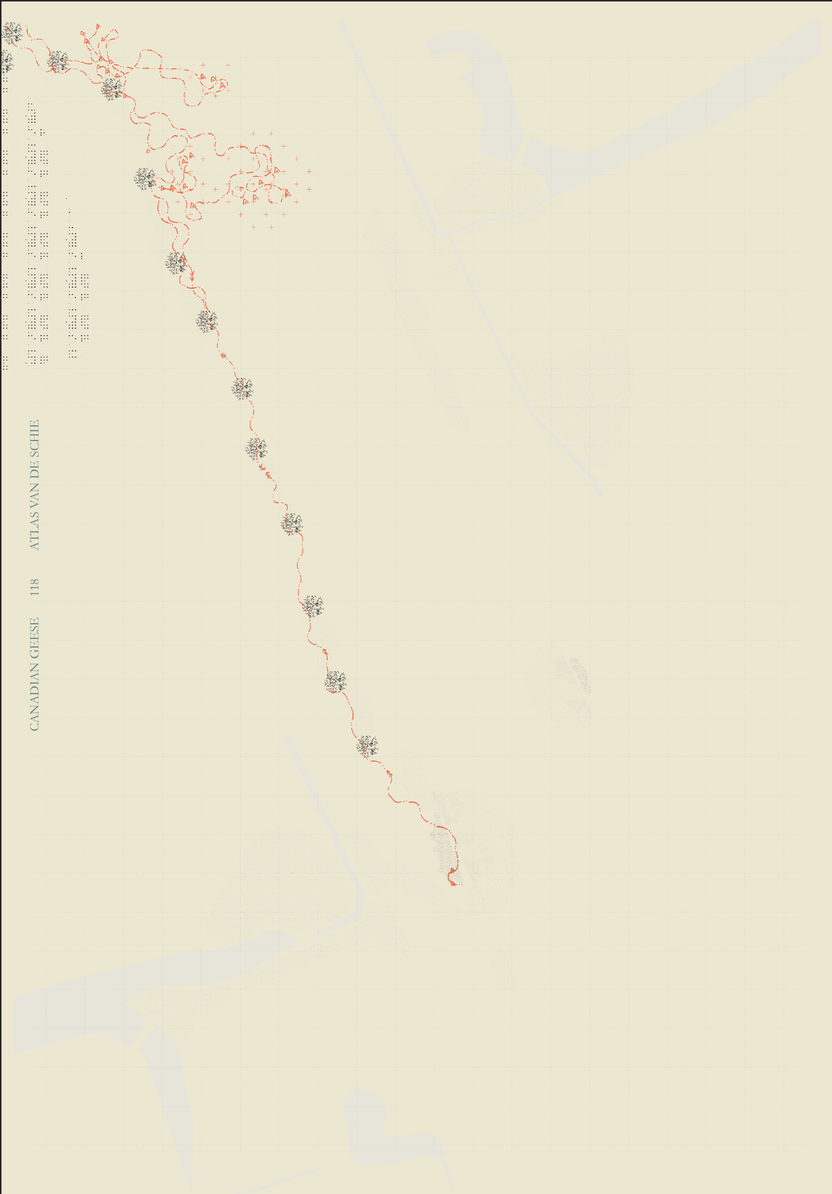
- CANADIAN GEESE

FARMLAND

WATER

GREEN AREAS





DESIRABLE SETTING

Their travel radius is larger than that of the coot and Egyptian goose. They make long journeys between water and agricultural land, often moving considerable distances throughout the day. They especially like to march on grasslands, almost like an army. When you see one Canadian goose, you can be certain the rest are not far away.

Wide green strips are ideal. Even better if the embankment is gentle and easy to climb, allowing them to move effortlessly between water and land. There is a certain sense of composure within them. Whether it is open water, a grassy bank, or an agricultural field, the landscape must share the same quality: open and clear. So clear that, with a single glance, they can see through everything.

Their preference is not only for grass, but for continuity. The waterside should feel like an extension of the field, and the field an extension of the water. Dense shrubs, enclosed corners, and visual obstacles interrupt this condition. Canadian geese thrive in landscapes where movement is effortless and visibility uninterrupted. While many species seek shelter through hiding, Canadian geese seek shelter through awareness. Their safety comes from seeing danger before it arrives, relying on the openness of the landscape itself as their first line of defence.

BEHAVIOUR LOGIC [CANADIAN GEESE]



CARE CAPACITY

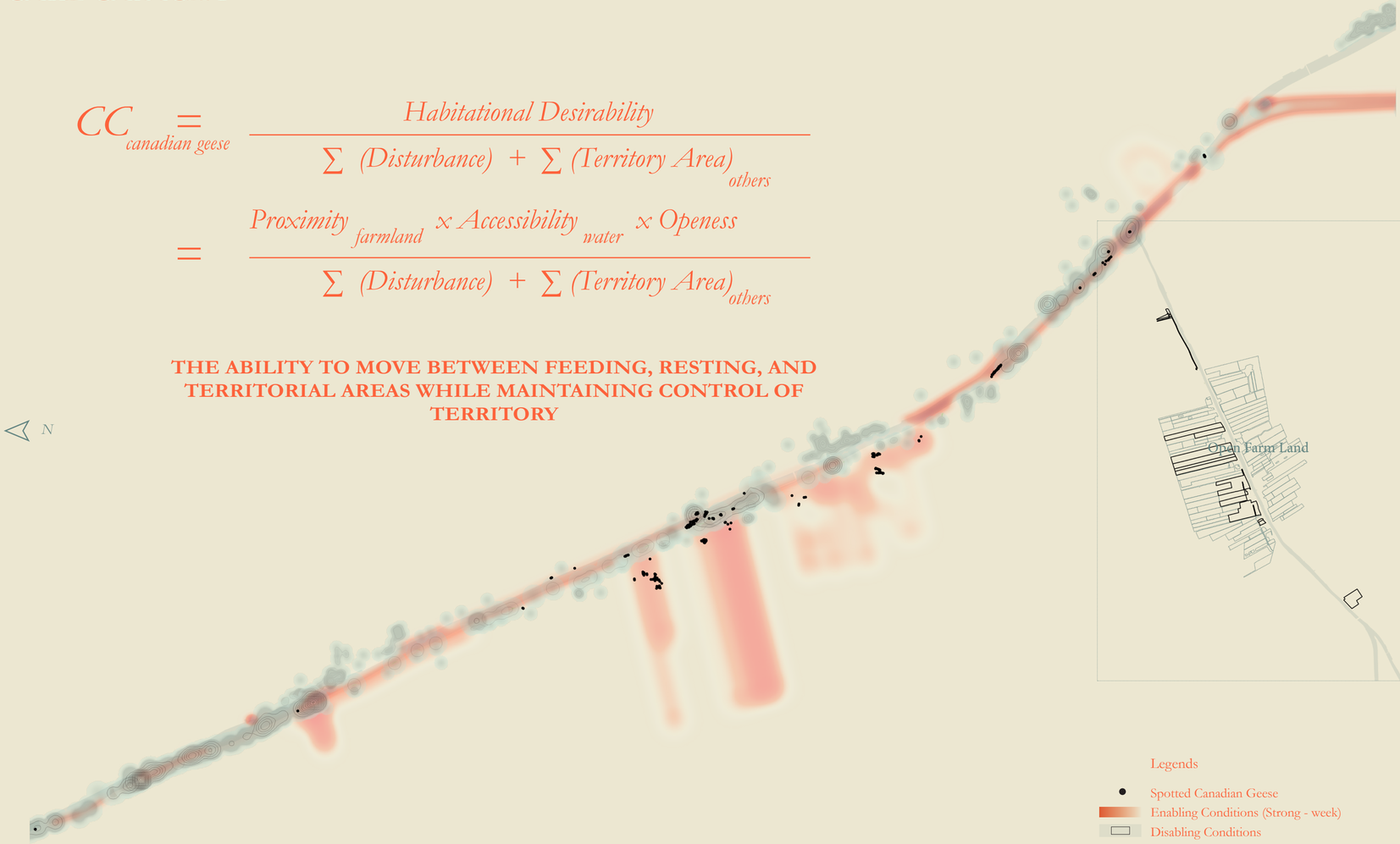
$$CC_{canadian\ geese} = \frac{Habitational\ Desirability}{\sum (Disturbance) + \sum (Territory\ Area)_{others}}$$

$$= \frac{Proximity_{farmland} \times Accessibility_{water} \times Openess}{\sum (Disturbance) + \sum (Territory\ Area)_{others}}$$

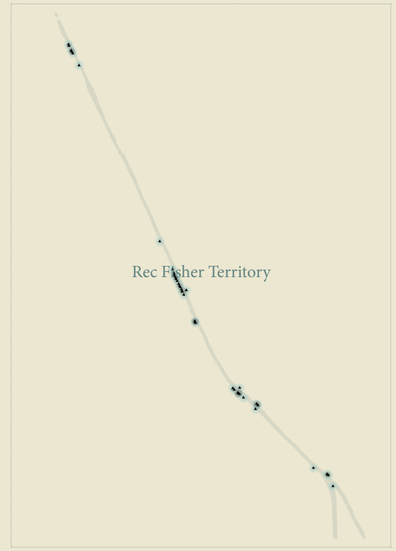
THE ABILITY TO MOVE BETWEEN FEEDING, RESTING, AND TERRITORIAL AREAS WHILE MAINTAINING CONTROL OF TERRITORY

N

CAPACITY MAP [CANADIAN GEESE]







Legends

- Spotted Canadian Geese
- Enabling Conditions (Strong - week)
- Disabling Conditions

100% CANADIAN GEESE



Imagining the area surrounding the Schie to be as empty as possible, as wide as possible. Where you can see everything and anything in one look. That is the ideal Canadian Goose's habitat. An open territorial grazing landscape shaped around visibility, collective occupation, and continuous movement between land and water.

Broad grassy embankments, open agricultural fields, exposed shorelines, and calm water bodies allow geese to graze, gather, rest, and monitor surrounding activity from a distance. Rather than concealed or enclosed ecological refuge, the landscape prioritizes visibility and large uninterrupted open grounds.

They also have a strong ethics of "where - doing - what'. Like you sleep in the bedroom, study in the study room, and connecting in the living room. Canadian Geese is very admin about their routine: during the day, geese occupy lawns, paths, agricultural edges, and waterfront clearings in highly visible groups ('the living room'). At night they retreat toward larger water bodies where collective sleeping formations provide safety through exposure rather than concealment ('the bedroom').



OPEN GRAZING EMBANKMENT

[Design Role]: Enable collective occupation

[Open grass embankments provide space for grazing, resting, social gathering, and territorial display and sense of safety. Large unobstructed surfaces support the daily movement and occupation patterns commonly observed among Canadian Geese]

CANADIAN GEESE

[Potential Actions]:

1. Maintain open grass areas
2. Limit dense shoreline planting
3. Preserve broad embankments
4. Maintain clear sightlines
5. Reduce physical barriers



WATER-LAND CONTINUITY

[Design Role]: Enable movement between habitats

[Canadian Geese frequently move between water, grassland, and canal edges throughout the day. Continuous transitions increase access to feeding, resting, and refuge areas.]

CANADIAN GEESE

[Potential Actions]:

1. Maintain gentle bank transitions
2. Reduce edge fragmentation
3. Preserve accessible shorelines
4. Connect grazing and resting areas
5. Avoid abrupt and unaccessible edge conditions (too steep dockwall)



EXPOSED SHORELINE RETENTION

[Design Role]: Amplify territorial visibility

[Geese often occupy exposed edges where surrounding activity can be observed. Open shorelines provide visibility, awareness, and opportunities for territorial occupation]

EGYPTIAN GEESE

[Potential Actions]:

1. Preserve open edge conditions
2. Maintain visual access
3. Reduce excessive vegetation closure
4. Regular cleaning and trimming
5. Retain exposed water edges
6. Avoid continuous screening



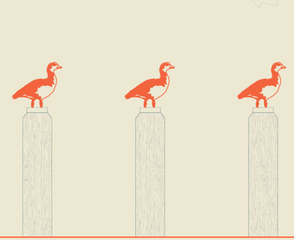
COLLECTIVE OCCUPATION TERRITORY

[Design Role]: Amplify flock behaviour

[Large open spaces allow repeated gathering, seasonal occupation, and social interaction. These areas support occupation by individuals as well as larger groups.]

[Potential Actions]:

1. Maintain open lawns
2. Preserve current gathering areas
3. Allow seasonal occupation priority
4. Avoid excessive subdivision (too diversify vegetation profile)
5. Retain flexible open space



ELEVATED LOOKOUT POSITIONS

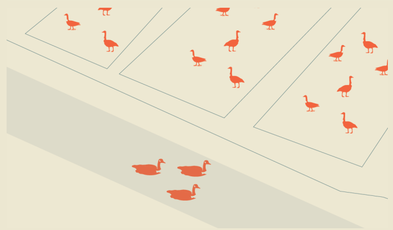
[Design Role]: Adapt existing structures

[Egyptian geese frequently appropriate posts, trunks, railings, and other elevated objects as resting and observation points. Even minor changes in height become valuable lookout opportunities.]

EGYPTIAN GEESE

[Potential Actions]:

1. Retain tree stumps
2. Preserve mooring posts
3. Leave branch piles
4. Maintain exposed structures
5. Avoid unnecessary removal



SEASONAL FIELD CONNECTION

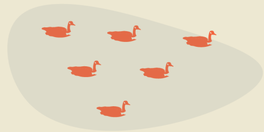
[Design Role]: Enable landscape-scale movement.

[The canal functions as part of a larger grazing network extending into surrounding agricultural land. Maintaining connections between these areas supports seasonal movement and occupation]

CANADIAN GEESE

[Potential Actions]:

1. Preserve field connections
2. Maintain movement corridors
3. Reduce landscape fragmentation
4. Connect canal and farmland
5. Retain open routes



OPEN WATER NIGHT REFUGE

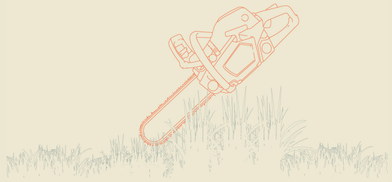
[Design Role]: Enable collective refuge.

[Calm open water provides resting space during periods of low activity and reduced disturbance. These areas support flocking behaviour and seasonal congregation.]

CANADIAN GEESE

[Potential Actions]:

1. Maintain calm water zones
2. Preserve open water surfaces
3. Reduce nighttime disturbance
4. Retain refuge islands
5. Protect resting areas



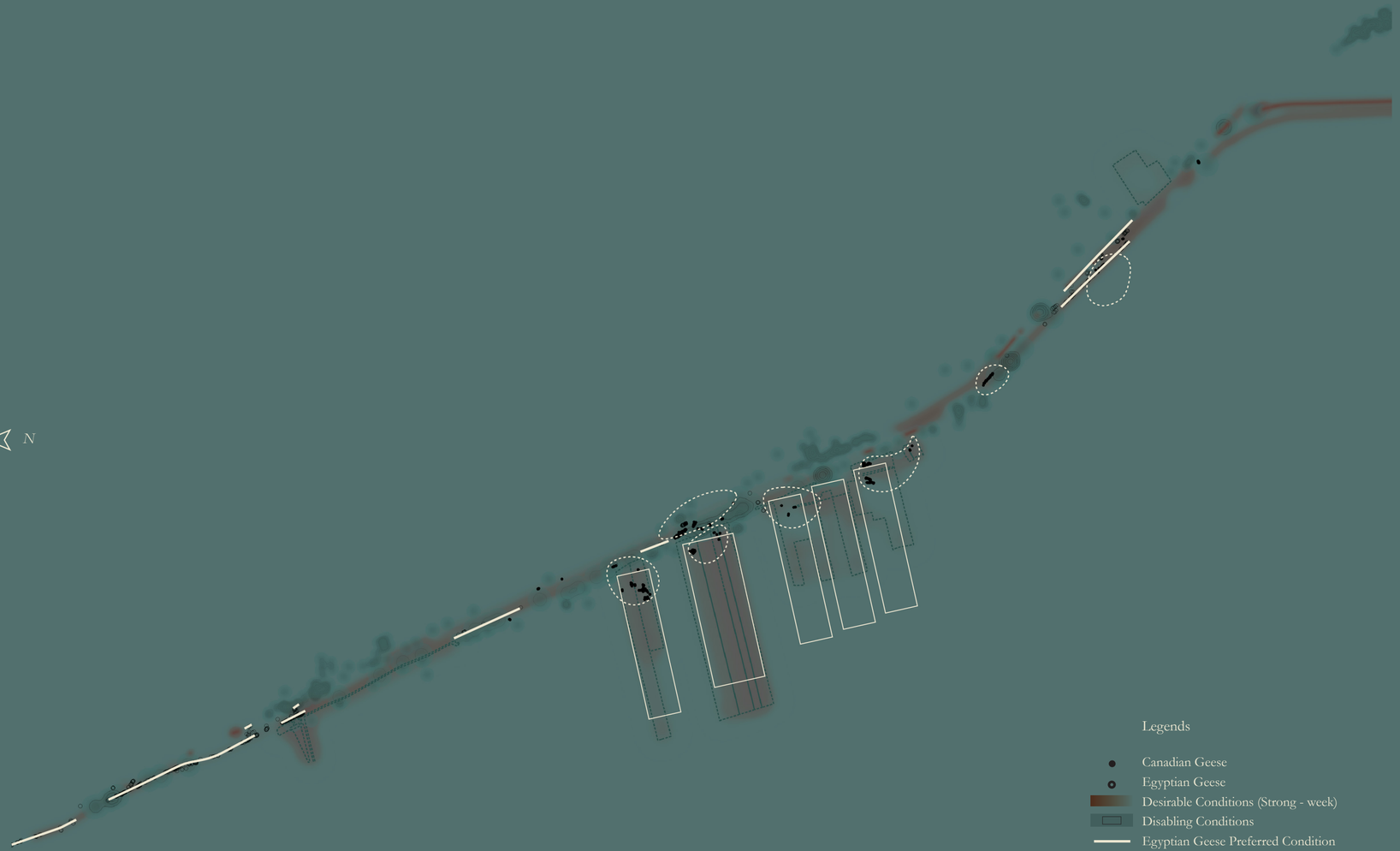
FLEXIBLE MAINTENANCE REGIME

[Design Role]: Adapt management to occupation

[Many goose habitats emerge from routine maintenance rather than formal habitat creation. Allowing variation in mowing, trimming, and vegetation management increases habitat diversity.]

[Potential Actions]:

1. Variable mowing heights
2. Rotational maintenance
3. Retain cut branches
4. Allow seasonal variation
5. Maintain habitat heterogeneity
6. Take consideration of separate territory and needs for egyptian geese and canadian geese.



CARE MAP
[CANADIAN GEESE + EGYPTIAN GEESE]

Geese are more like a opportunistic grazing and resting actors. Their care logic is much less tied to precise habitat structure. They are highly adaptable, mobile, and socially collective

open visibility, grass edge, prefer gentle slope, but could still fly above the steel dockwall, accessible water entry, collective resting space, low surprise disturbance, near-by retreat to water

They often prefer open maintained lawn, semi-human environments, broad visibility, unlike coots, they usually do not want dense enclosure.. so the care map for geese is provide enabling conditions where they already choose to be.

Items / Action



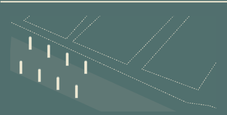
EGYPTIAN GEESE TERRITORY

Provide Enabling Condition



CANADIAN GEESE TERRITORY

Provide Enabling Condition



SUPPORTING INFRASTRUCTURE

Preserve / Amplify



'CARE' CAPACITY

Medium - High

EURASIAN COOT
PELICANS
EGYPTIAN GEESE
CANADIAN GEESE
CALL DUCK
MUTE SWAN
LITTLE GREBE
GREY HERON
MALLARD DUCK
GREYLAG GEESE
HOOKBILL DUCK
CROW
SEAGULL
GREAT CORMORANT
ROWER
COACH

"PASSERS BY"

CYCLIST
SWIMMER
DOG WALKER
COMMUTER
RESIDENT
TOURIST
RUNNER

RECREATION FISHER

KAYAKER
CANOER

EUROPEAN PERCH
NORTHERN PIKE
ROACH
ZANDER
EUROPEAN EEL
CRAWFISH
WHITE BREAM
SNAILS
DRAGONFLIES
FROG
TURTLE
ALGAE
GRASS
REED
RUSHES
DUCKWEED
WATERLILIES
DANDELION
MOSS
WILLOW
LINDEN
CHERRY
ALDER
POPLAR
MAPLE
INDUSTRY WORKER
DREDGING WORKER
ROAD WORKER
WIND
SUNLIGHT
WAVE
WATER



CARE CAPACITY

$$CC_{passers\ by} = \frac{Habitational\ Desirability}{\sum (Disturbance) + \sum (Territory\ Area)_{others}}$$

$$= \frac{Accessibility \times Comfort \times Landscape\ Quality}{\sum (Disturbance) + \sum (Territory\ Area)_{others}}$$

THE ABILITY TO OCCUPY AND ENGAGE WITH THE LAND-SCAPE WHILE REMAINING COMFORTABLE AND ATTENTIVE

N

Legends

- Stations
- Walking/Cycling Route
- Residential Houses
- Street Furniture
- Access Point (Ramp, steps)
- Desirability (Strong - week)

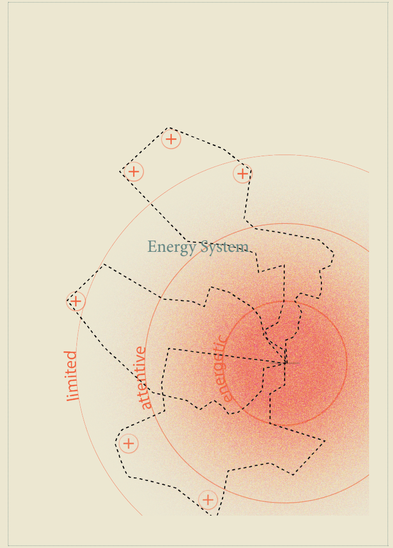
CAPACITY MAP [PASSERS BY]



Stations, residential house decide if the area is accessible by foot / by bike. These nodes increase the likelihood of social interaction and repeated use of the surrounding landscape.



For area like De Schie, as its situated in the middel of two city center, people usually commute through. For people who wants to experience the landscape, they tend to look up routes provided by online platform / travel app.



The willingness to occupy a place is shaped by comfort, accessibility, and the availability of activities. Which generally follow the rule of stable decaying from the point of departure (house/station), and they seek to return when desire to explore < predicted effort to travel back home. This concept fits de Schie exceptionally.

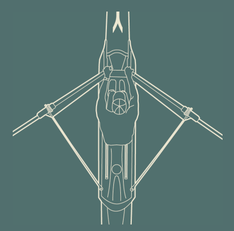
CAPACITY TYPE

ENERGY SYSTEM 3

REDUCING INTERRUPTION

$$\textit{Care Capacity} = \textit{MaxCapacity} - \textit{Decaying Rate} \times \textit{Time} + \textit{Recharge Rate} \times \textit{Time} - \sum (\textit{Disturbance} \times \textit{Intensity})$$

1



ROWER

2



COACH

3



RECREATIONAL BOAT

LINEAR

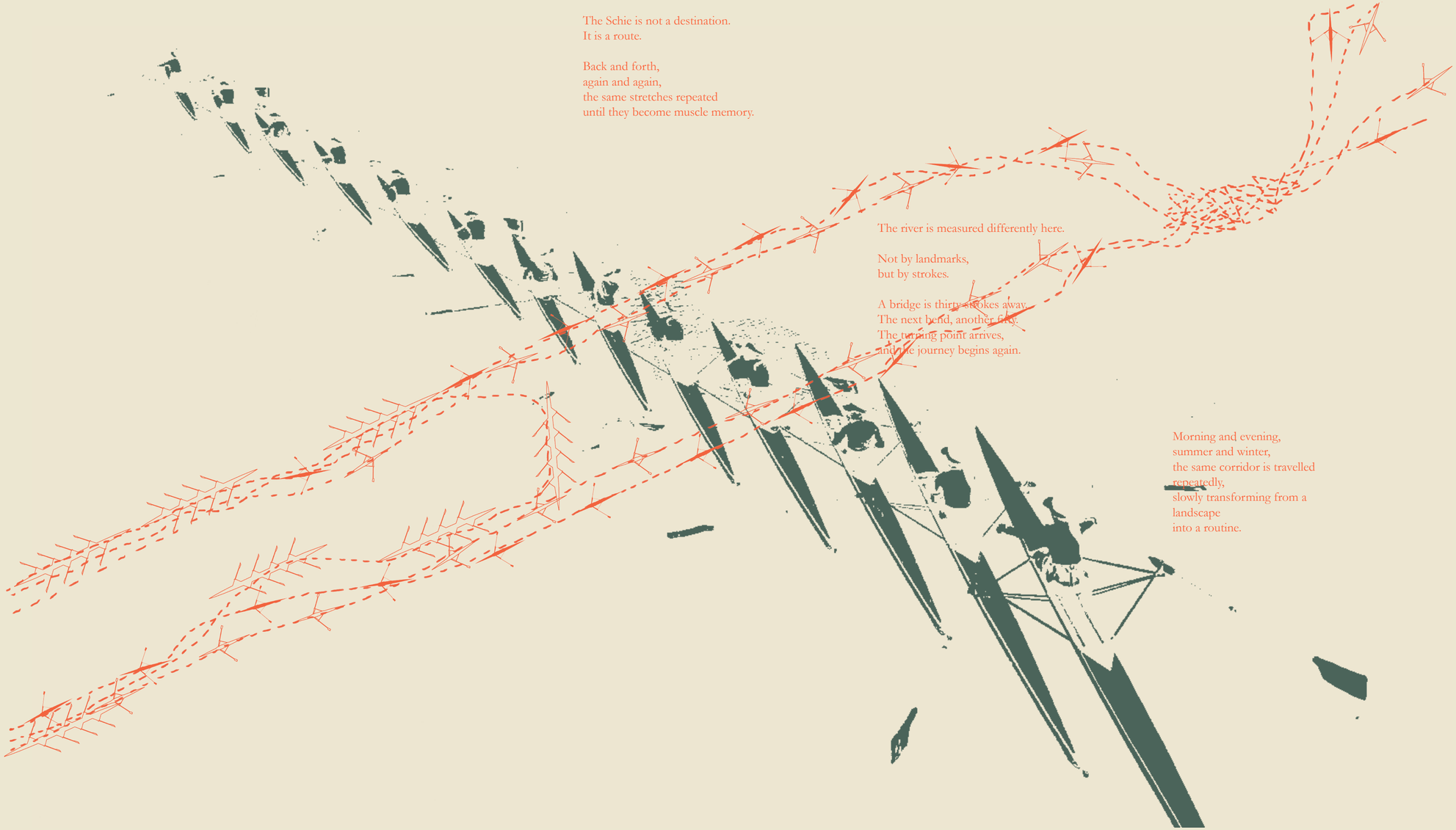
EURASIAN COOT
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ROWER

COACH
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LINDEN
CHERRY
ALDER
POPLAR
MAPLE
INDUSTRY WORKER
DREDGING WORKER
ROAD WORKER
WIND
SUNLIGHT
WAVE
WATER

The Schie is not a destination.
It is a route.

Back and forth,
again and again,
the same stretches repeated
until they become muscle memory.



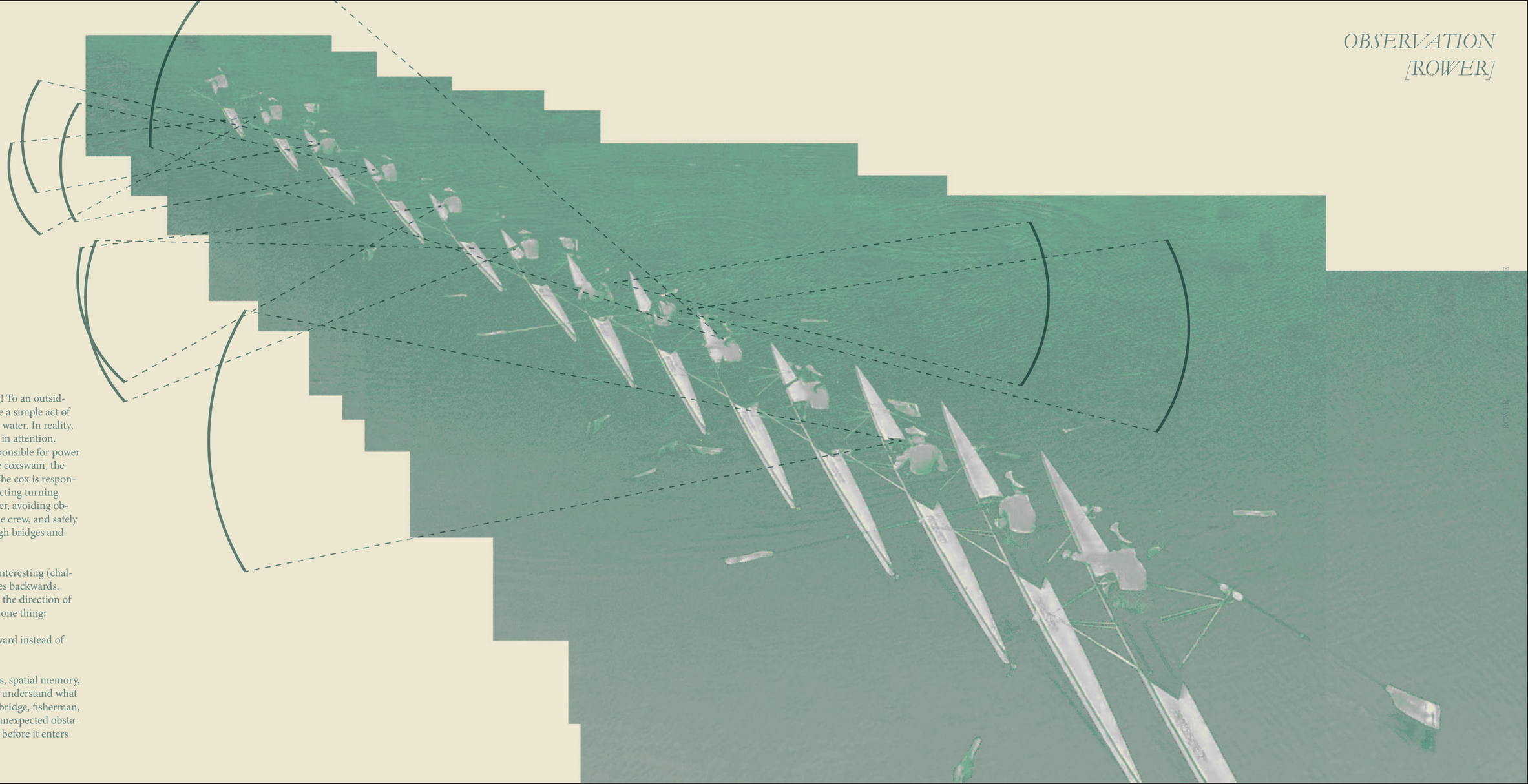
The river is measured differently here.

Not by landmarks,
but by strokes.

A bridge is thirty strokes away.
The next bend, another fifty.
The turning point arrives,
and the journey begins again.

Morning and evening,
summer and winter,
the same corridor is travelled
repeatedly,
slowly transforming from a
landscape
into a routine.

OBSERVATION [ROWER]



Speed,
Precision,
Power,
Timing,
Coordination....

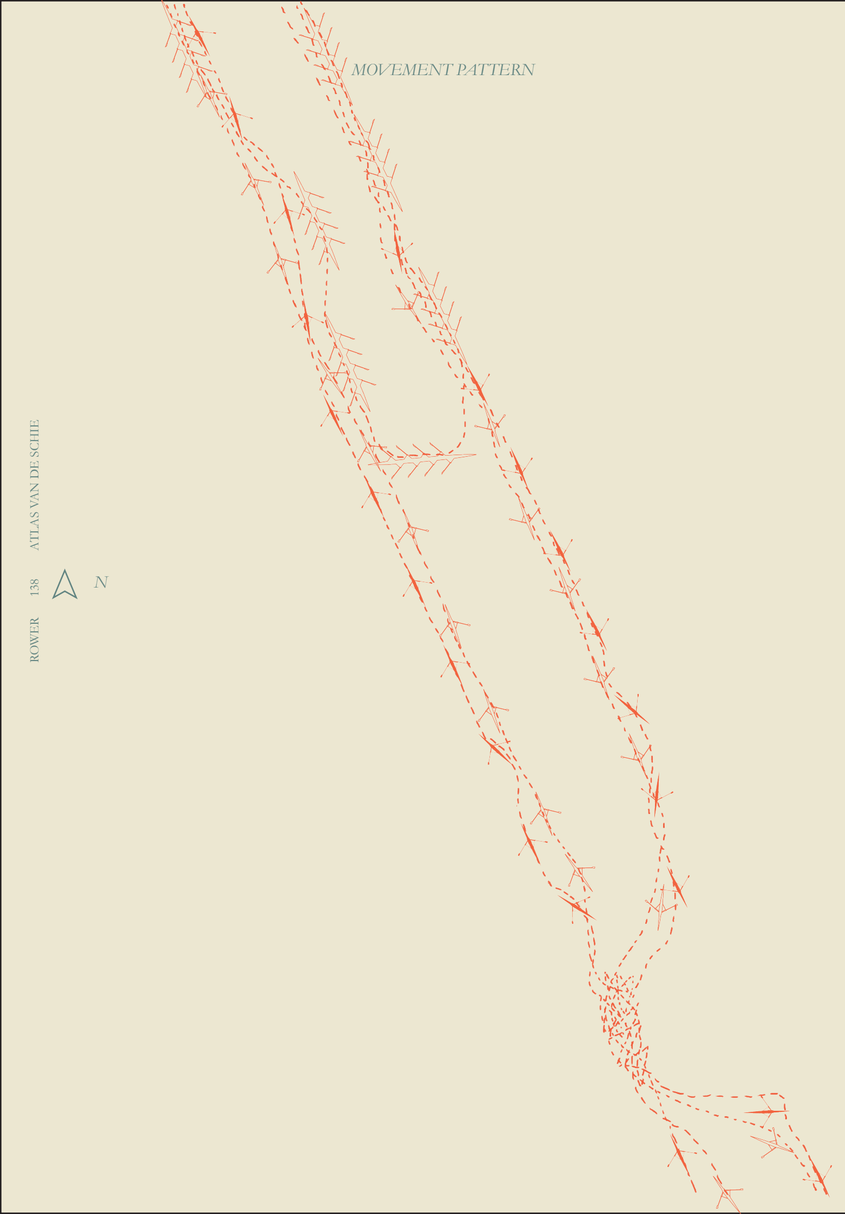
And of course, steering! To an outsider, rowing appears to be a simple act of moving a boat through water. In reality, it is a constant exercise in attention. Beyond the rowers responsible for power output, there is also the coxswain, the navigator of the boat. The cox is responsible for steering, predicting turning angles, reading the water, avoiding obstacles, coordinating the crew, and safely guiding the boat through bridges and narrow passages.

To make it even more interesting (challenging), the boat moves backwards. Rowers face away from the direction of travel, that means only one thing:

you need to look backward instead of forward.

Relying on brief glances, spatial memory, and communication to understand what lies ahead. Every turn, bridge, fisherman, recreational boat, and unexpected obstacle must be anticipated before it enters view.

MOVEMENT PATTERN



N

MOVEMENT LOGIC



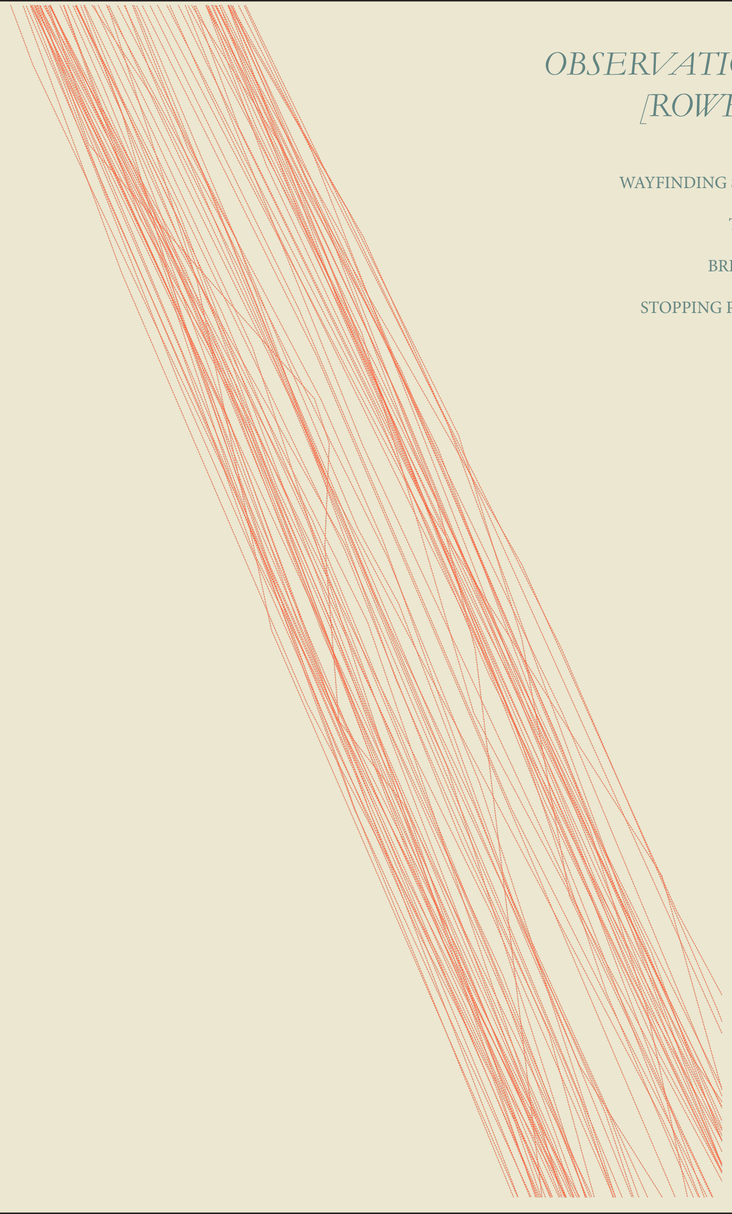
OBSERVATION [ROWER]

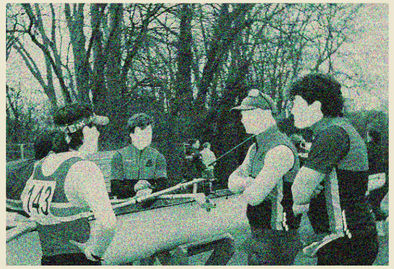
WAYFINDING SIGNS

TREES

BRIDGES

STOPPING POINT













GRAB THE OARS — ADJUST BOAT — BOAT IN WATER — STOPPING POINT — PARK IN — DETACH OARS — LIFT THE BOAT — CLEAN BOAT — RETURN BOAT — RETURN OARS

preparation ····· training start ····· training finish

BEHAVIOUR LOGIC [ROWER]

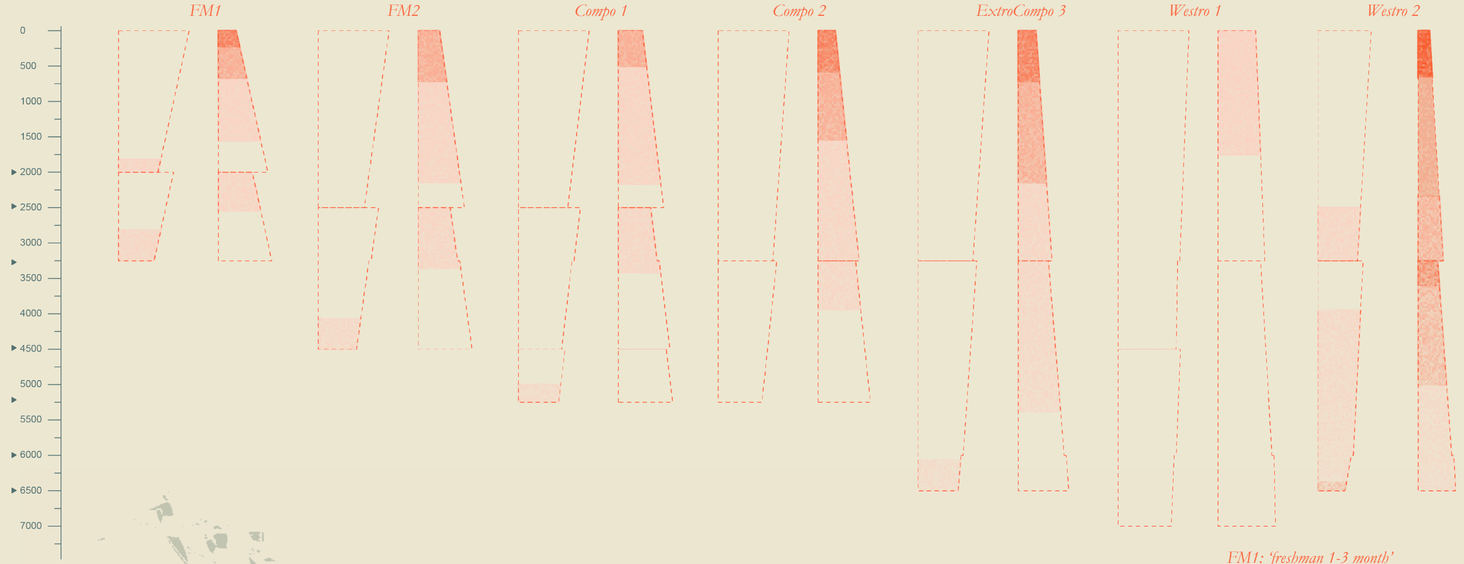
Rower's getting-ready process is surprisingly time consuming. The training session does not begin when the boat enters the water; it begins long before that.

Boats need to be carried out of storage. Oars need to be selected and checked. Equipment is prepared, adjusted, and inspected. Crew members gather, discuss the session plan, and coordinate who will row in which seat. Coaches prepare launches, safety equipment, and training objectives for the day.

Only then does the process move towards the water.

The boat is carefully carried to the dock, lowered into the water, stabilised, and boarded one rower at a time. Oars are attached, foot stretchers are adjusted, and final checks are made. Throughout the process, everyone is already working together. Communication, coordination, and trust begin long before the first stroke.

What follows on the water is only a small part of the overall activity. A two-hour training session may involve thirty to forty minutes of preparation and packing away. After rowing, the entire process happens again in reverse: boats are cleaned, equipment is checked, damage is reported, and everything is returned to storage.





FM1: 'freshman 1-3 month'
Short rowing, long pausing.

FM2: 'freshman March-June / Compo 2nd Year'
Short-Medium rowing, long pausing.

Compo 1: 'Compo 2-3 Years'
Medium rowing, medium pausing

Compo 2: ' Compo 3+ Years'
Medium rowing, med - short pausing

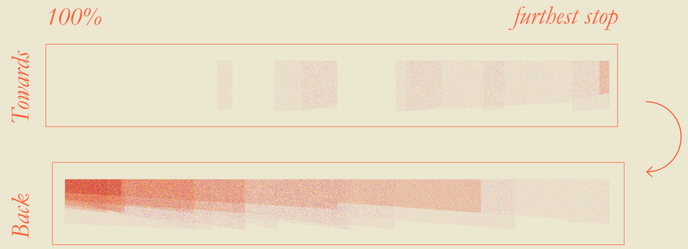
Extro/Compo3: Ex-Wedstro, Compo 4+ Year
Med - long rowing, short pausing

Wedstro 1: Wedstro 2nd Year
long rowing, short pausing

Wedstro 2: Wedstro 4+ Years
very long rowing, very short pausing

CAPACITY SYSTEM [ROWER]

[Combined]



Rower's capacity system is an extremely simple and linear one. Imagine there is a battery in your body. The capacity steadily decays over time, because every second a rower is spending consistent effort maintaining performance. Every stroke requires power, coordination, balance, timing, and attention.

Usually, every 2000 metres, rowers regroup at a stopping point. This is the moment to receive feedback from the coach and establish a new focus for the next segment. As fitness and technical ability improve, these segments become longer and the stops become shorter. Experienced rowers are better at self-diagnosing; they become more in tune with their technique and their body. This growing awareness allows them to coach themselves while rowing.

Reflecting, feeling, recognising, correcting, and experimenting.....every second. Refining every stroke.

This also changes the role of the coach over time. In the beginning, coaches are almost like kindergarten teachers, correcting every movement and every mistake. As technique develops, the relationship gradually shifts. Coaches become more like peers, helping rowers focus on specific aspects they want to improve. Their role moves away from pure instruction towards observation, discussion, and helping rowers understand what they are feeling. Over time, a very specific relationship of trust develops between coach and rower.

Rowers also rely on coaches as a form of energy saving. Coaches help identify obstacles, approaching boats, dangerous situations, or changes in the rowing route before they become immediate concerns. Especially in smaller boats, the coach acts as a second set of eyes, allowing rowers to focus on performance while remaining safe.

Returning to the energy system, as capacity decays, fatigue gradually accumulates. A training session often begins with a fresh and attentive athlete, but over time concentration starts to drift. The ability to process information slows, reactions become less immediate, and it becomes harder to remain attentive to the surrounding environment. At this stage, avoiding obstacles, responding to unexpected situations, and navigating safely all require significantly more effort than they did at the start of the session.

CARE CAPACITY

$$CC_{rower} = MaxCapacity - Decaying\ Rate \times Time_{energy\ consuming} + Recharge\ Rate \times Time_{recharging}$$

THE ABILITY TO BE ATTENTIVE TO SURROUNDING ENVIRONMENT WHILE MAINTAIN PERFORMANCE CAPACITY

N

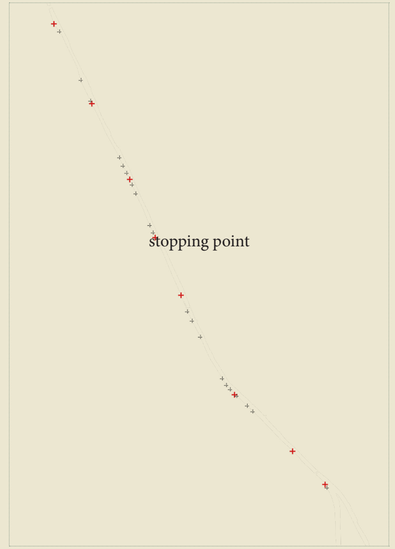
Towards

Back

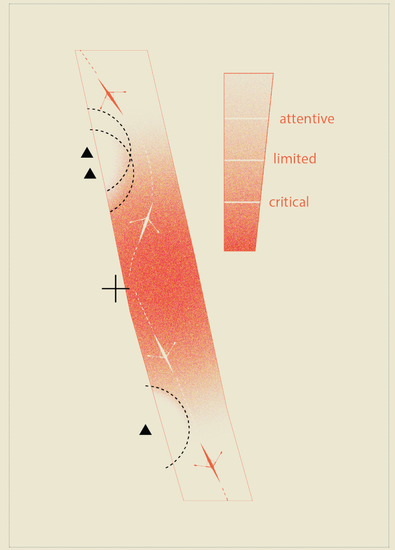
Legends

Capacity (Depleted - Fresh)

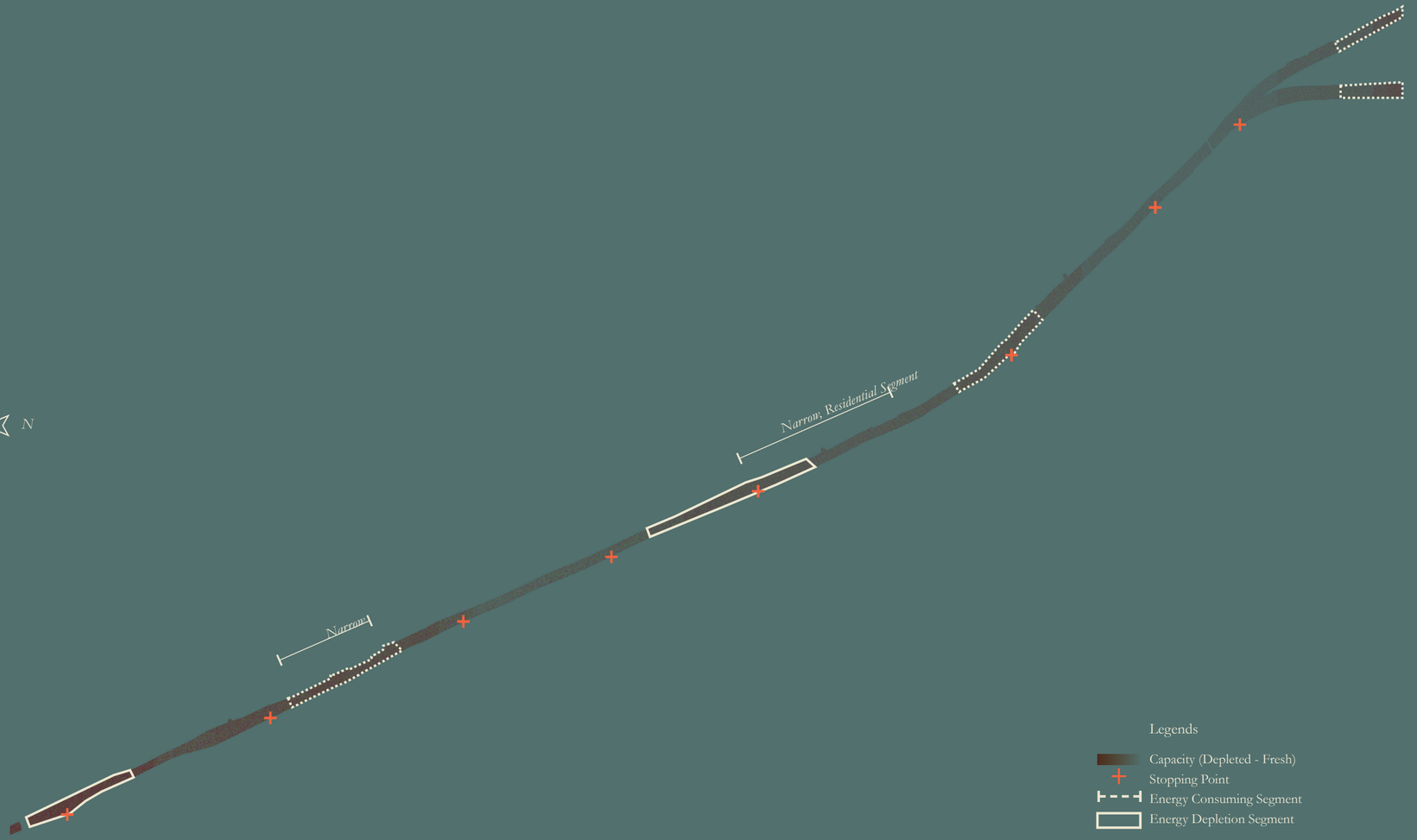
CAPACITY MAP [ROWER]



Temporary regrouping point for recharge, water, food and also moments for coach giving feedback.



Rower has linear and gradually decaying capacity system, just like a body battery.



CARE MAP [ROWER]

At some segments, when rower's capacity come to near depletion, it is very hard for them to be fully attentive to the surrounding environment. In vulnerable moments like this, any sudden moves on water or on land are critically dangerous to them, because their capacity to maneuver is very limited.

For example, fast driving recreational boat, fisherman string (almost invisible, as well as fisherman sits at a distance from canal edge, together with water-land height difference, it is hard to spot fisherman and dodge the fishing radius on time), petruding objects (deck, pole, debris).

Such situations should be mitigated or improved at the capacity depletion area.

Items / Action



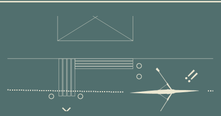
ENERGY DEPLETION ZONE

Protect Strongly



ENERGY VULNERABLE ZONE

Reduce Capacity Consumption



STRESS ZONE

Reduce Capacity Consumption



'CARE' CAPACITY

Moderate

EURASIAN COOT
PELICANS
EGYPTIAN GEESE
CANADIAN GEESE
CALL DUCK
MUTE SWAN
LITTLE GREBE
GREY HERON
MALLARD DUCK
GREYLAG GEESE
HOOKBILL DUCK
CROW
SEAGULL
GREAT CORMORANT
ROWER

COACH

CYCLIST
SWIMMER
DOG WALKER
COMMUTER
RESIDENTS
TOURIST
RUNNER
RECREATION FISHER
KAYAKER
CANOER
EUROPEAN PERCH
NORTHERN PIKE
ROACH
ZANDER
EUROPEAN EEL
CRAWFISH
WHITE BREAM
SNAILS
DRAGONFLIES
FROG
TURTLE
ALGAE
GRASS
REED
RUSHES
DUCKWEED
WATERLILIES
DANDELION
MOSS
WILLOW
LINDEN
CHERRY
ALDER
POPLAR
MAPLE
INDUSTRY WORKER
DREDGING WORKER
ROAD WORKER
WIND
SUNLIGHT
WAVE
WATER



MOVEMENT PATTERN

N

MOVEMENT LOGIC

BEHAVIOUR LOGIC [COACH]

BIKE LANE

BIKABLE AREA

STOPPING POINT

DISABLING CONDITIONS
[COACH]





a



RECREATIONAL BOAT

b



PEDESTRIAN

c



RECREATIONAL FISHER

d



SWIMMER

e



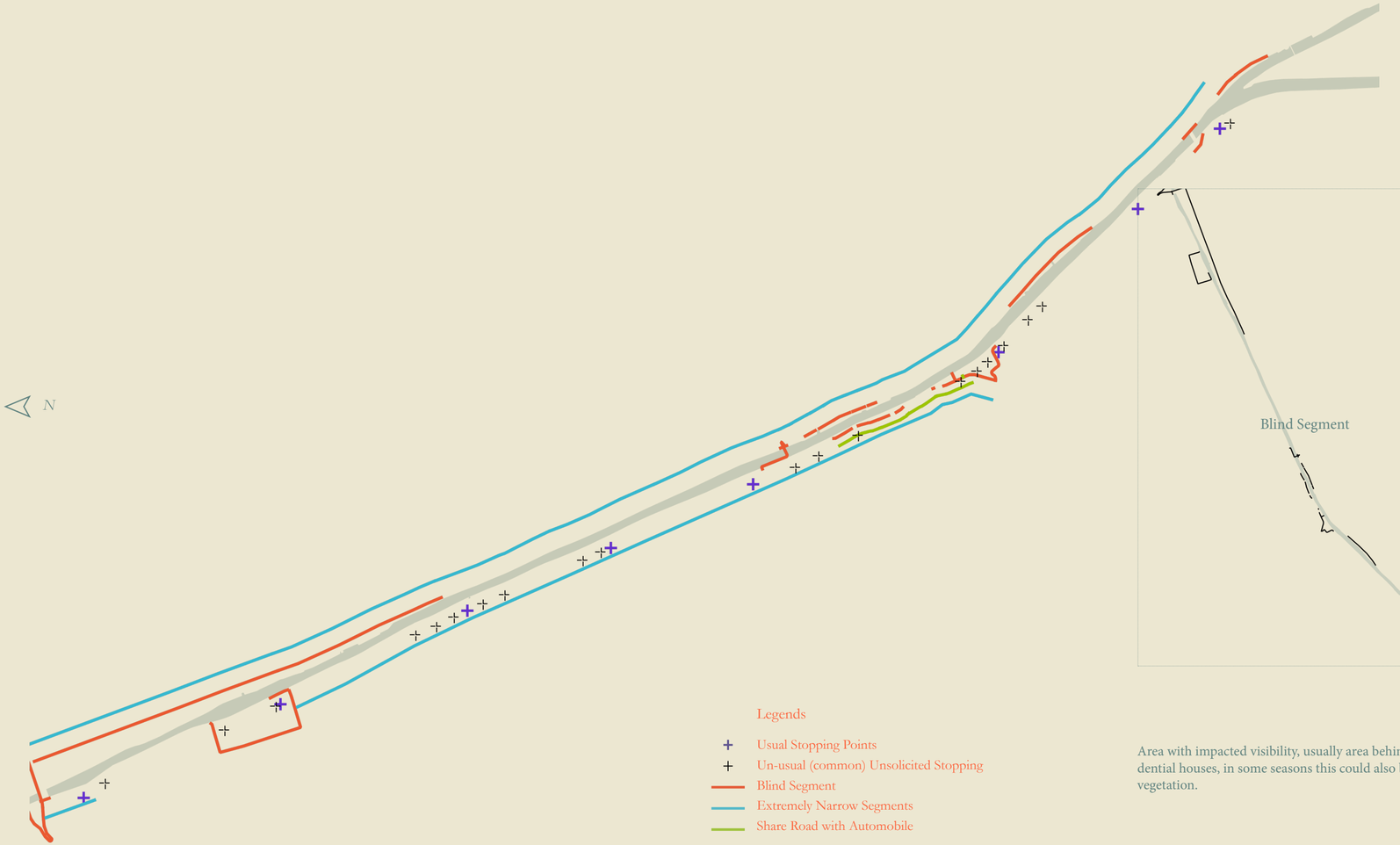
KAYAKER

f



DENSE VEGETATION

DISABLING CONDITIONS [COACH]



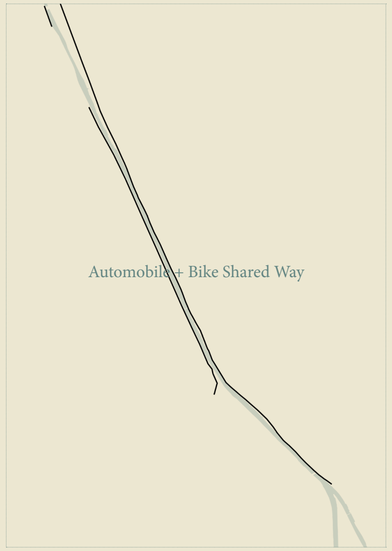
N

Legends

- Usual Stopping Points
- Un-usual (common) Unsolicited Stopping
- Blind Segment
- Extremely Narrow Segments
- Share Road with Automobile

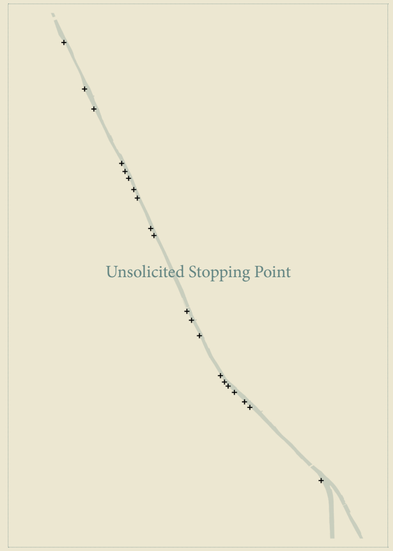
Blind Segment

Area with impacted visibility, usually area behind residential houses, in some seasons this could also be dense vegetation.



Automobile + Bike Shared Way

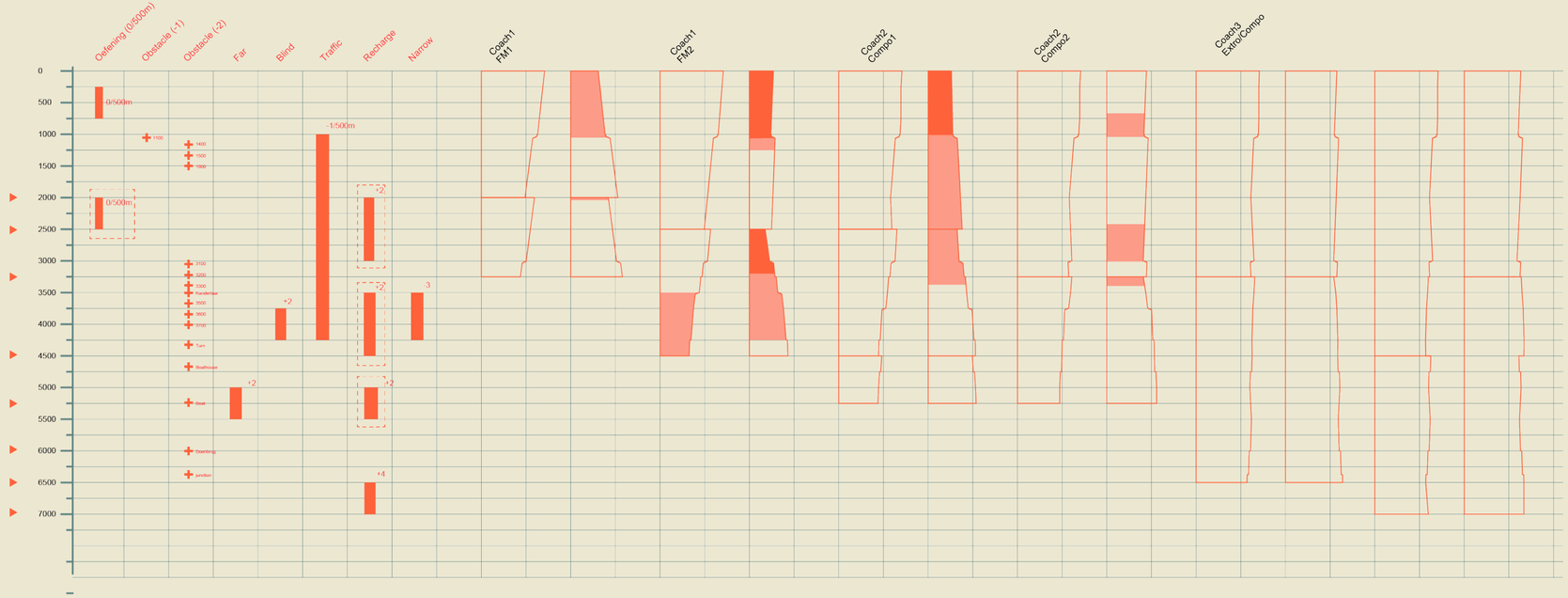
Areas where coach need to share the road with automobile posses challenges to the coaching, as they bike along the rower, they also need to spare attention to the coming traffic. The road condition at the Schie is also not helping, as it's majorly narrow road which requires constant negotiation.



Unsolicited Stopping Point

Commonly speaking, there are few usual rower stopping point, however, for freshmen, crew doing specific exercise, windy condition rower drift away or special conditions (rower capsizes, rower vulnerable and require immediate break), rower could also stop at random places along the Schie. Which add onto mental burden for the coach. They're equally dangerous as random debris in the middle of river.

CAPACITY SYSTEM [COACH]



FM1: 'freshman 1-3 month'
Short rowing, long pausing.

FM2: 'freshman March-June / Compo 2nd Year'
Short-Medium rowing, long pausing.

Compo 1: 'Compo 2-3 Years'
Medium rowing, medium pausing

Compo 2: ' Compo 3+ Years'
Medium rowing, med - short pausing

Extro/ Compo3: Ex-Wedstro, Compo 4+ Year
Med - long rowing, short pausing

Wedstro 1: Wedstro 2nd Year
long rowing, short pausing

Wedstro 2: Wedstro 4+ Years
very long rowing, very short pausing

Coach shares a similar capacity system with the rower: a steady, linear decline over the duration of a training session. However, the way coaches consume energy is far less straightforward. Unlike rowers, who can focus primarily on performance, coaches must constantly divide their attention across multiple tasks.

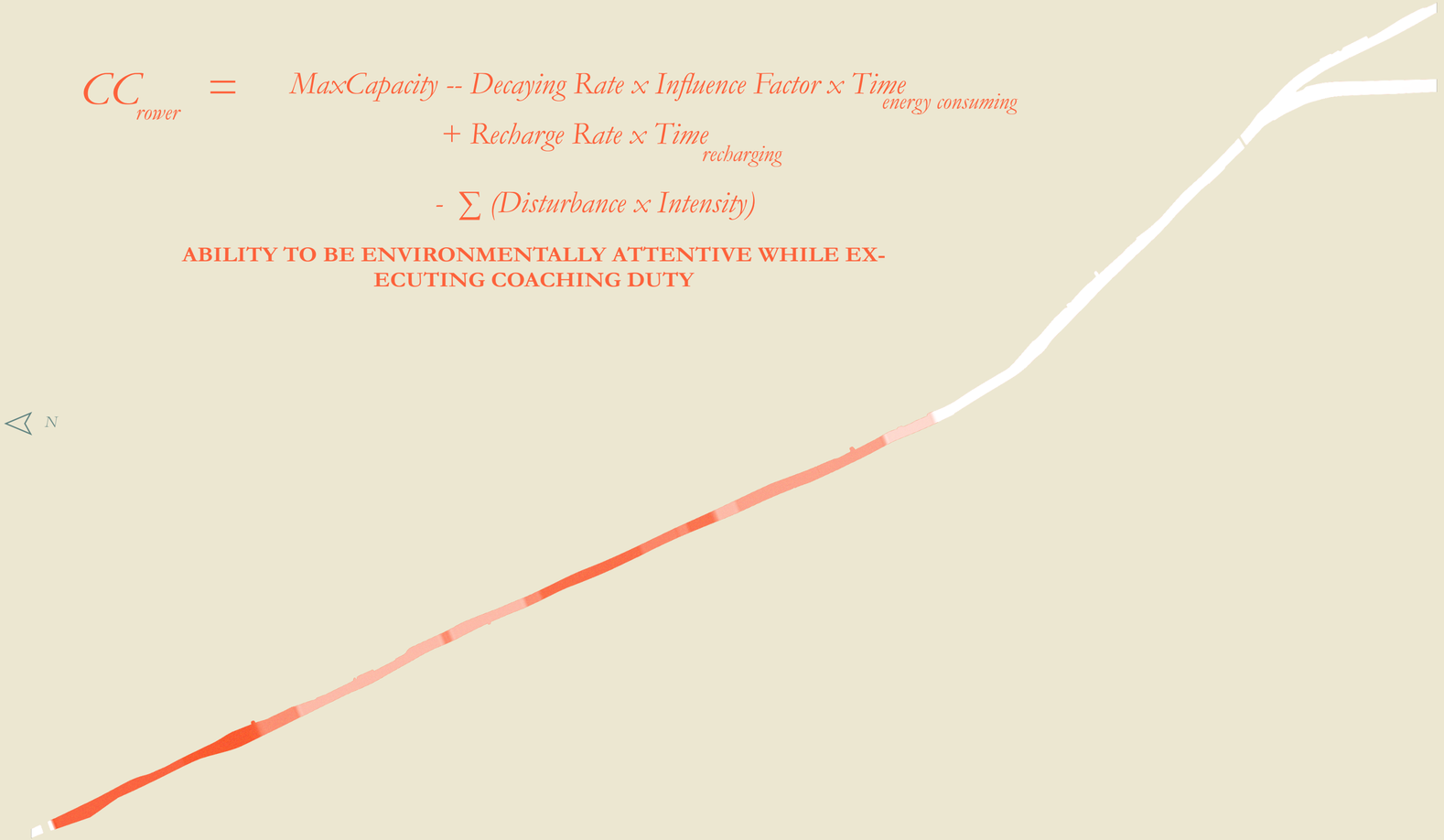
While cycling alongside the crew, they are simultaneously monitoring rowing technique, watching for water traffic, anticipating potential conflicts, and ensuring the safety of the boat. The cycling itself also requires attention, as the route frequently shifts between roads, gravel paths, grass surfaces, and uneven terrain. At the same time, coaches act as the rowers' second pair of eyes, continuously scanning the water ahead and alerting the crew to approaching obstacles, boats, or hazards.

In essence, coaches are constantly switching between cyclist, observer, navigator, safety officer, and teacher. As fatigue accumulates throughout the session, maintaining this level of divided attention becomes increasingly demanding, gradually reducing their ability to process and respond to everything happening around them.

CARE CAPACITY

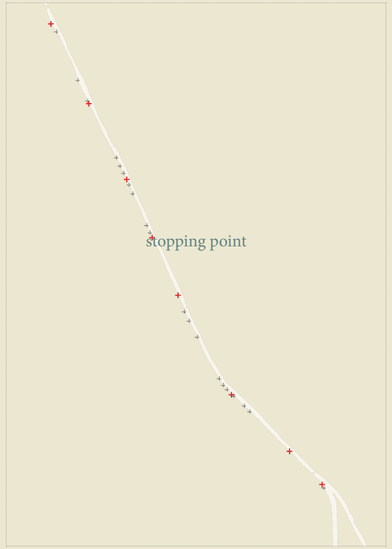
$$CC_{rower} = MaxCapacity - Decaying\ Rate \times Influence\ Factor \times Time_{energy\ consuming} + Recharge\ Rate \times Time_{recharging} - \sum (Disturbance \times Intensity)$$

ABILITY TO BE ENVIRONMENTALLY ATTENTIVE WHILE EXECUTING COACHING DUTY



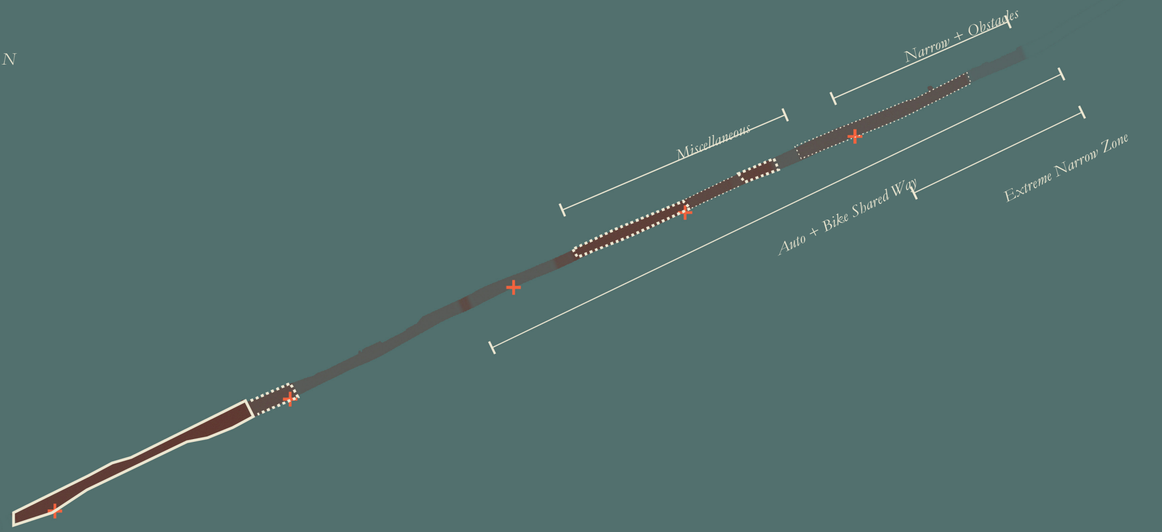
N

CAPACITY MAP [COACH]





CARE MAP
[COACH]



Legends

- Capacity (Depleted - Fresh)
- Stopping Point
- Energy Consuming Segment
- Energy Depletion Segment

Items / Action



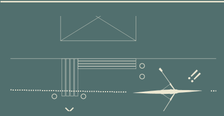
ENERGY DEPLETION ZONE

Protect Strongly



ENERGY VULNERABLE ZONE

Reduce Capacity Consumption



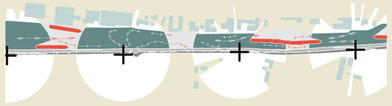
STRESS ZONE

Reduce Capacity Consumption



'CARE' CAPACITY

Moderate



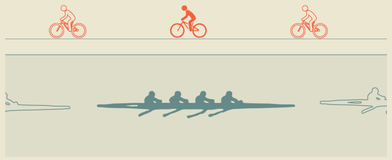
CONTINUOUS COACHING CORRIDOR

[Design Role]: Enable continuous communication

[Rowing depend on constant visual and verbal exchange with their coach throughout a training session. Continuous coach access allows technique correction, pacing guidance, and safety monitoring over long distances.]

[Potential Actions]:

1. Maintain continuous rowing paths and bike path along
2. Reduce path discontinuities
3. Preserve coach visibility
4. Connect separated path segments
5. Minimize unnecessary detours
6. Avoid long residential zone along water



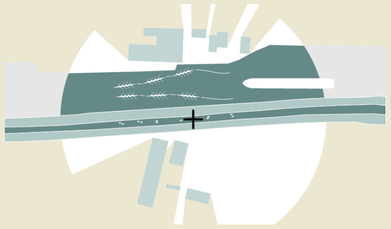
CONITNUOUS RHYTHM

[Design Role]: Amplify rowing continuity

[Consistent rowing rhythm depends on long uninterrupted stretches of water with minimal conflict and course disruption. Maintaining continuity allows crews to focus on technique, pacing, and synchronized movement.]

[Potential Actions]:

1. Minimize crossings
2. Reduce interruptions on land and water
3. Preserve linear rowing stretches
4. Mitigate conflicting activities
5. Maintain predictable routes (less sharp corners/blind zones)



VISIBILITY CORRIDOR

[Design Role]: Mitigate blind conflicts

[Long sightlines allow rowers to anticipate approaching users, negotiate passing movements, and maintain situational awareness. Visibility becomes increasingly important in bends and narrow sections.]

[Potential Actions]:

1. Preserve open views
2. Manage visual obstructions
3. Improve corner visibility
4. Maintain clear approach zones
5. Limit blind crossings



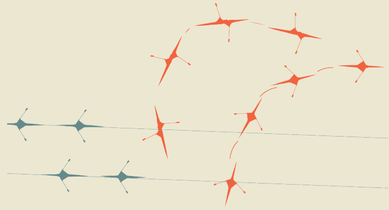
REGROUPING POINTS

[Design Role]: Enable environmental awareness

[Training sessions frequently require stopping, regrouping, overtaking slower crews, or recalibrating exercises. Dedicated bays allow these adjustments without disrupting the primary rowing corridor.]

[Potential Actions]:

1. Widen selected canal sections
2. Create waiting zones and supportng elements like ramp
3. Provide stopping pockets
4. Enable safe overtaking
5. Support crew regrouping



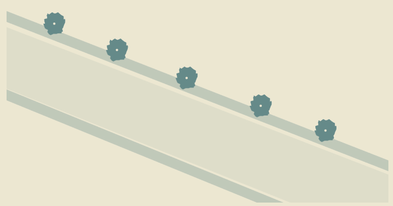
CONTROLLED CROSSING POINTS

[Design Role]: Mitigate movement conflicts

[Unpredictable crossings introduce sudden maneuvering requirements and disrupt rowing rhythm. Concentrating crossings at recognizable locations improves safety and predictability.]

[Potential Actions]:

1. Consolidate crossings possibilities
2. Increase crossing visibility
3. Establish common crossing signaling rules
4. For crossing hotspots improve visibility
5. Separate crossing activities
6. Improve user awareness
7. Create common places that users could get to know each other



SHADE RETENTION / WIND MITIGATION

[Design Role]: Amplify training comfort.

[Long training sessions expose coaches and athletes to prolonged wind, sun, and weather conditions. Moderate environmental protection increases comfort without compromising visibility.]

[Potential Actions]:

1. Retain canopy covers
2. Preserve and add wind buffers
3. Provide shaded/wind sheltered resting points
4. Maintain visual openness (tree behind coaching path, or from usual wind directions)
5. Use vegetation strategically

STABLE WATER CONDITION

[Design Role]: Enable predictable rowing

[Rowers depend on relatively consistent water conditions to maintain technique, pacing, and boat control. Sudden turbulence, excessive wake, or unpredictable edge conditions increase energy expenditure and reduce efficiency.]

[Potential Actions]:

1. Reduce wake disturbance
2. Maintain channel consistency
3. Control edge protrusions
4. Preserve rowing depth (or deepen)
5. Protect calm water zones



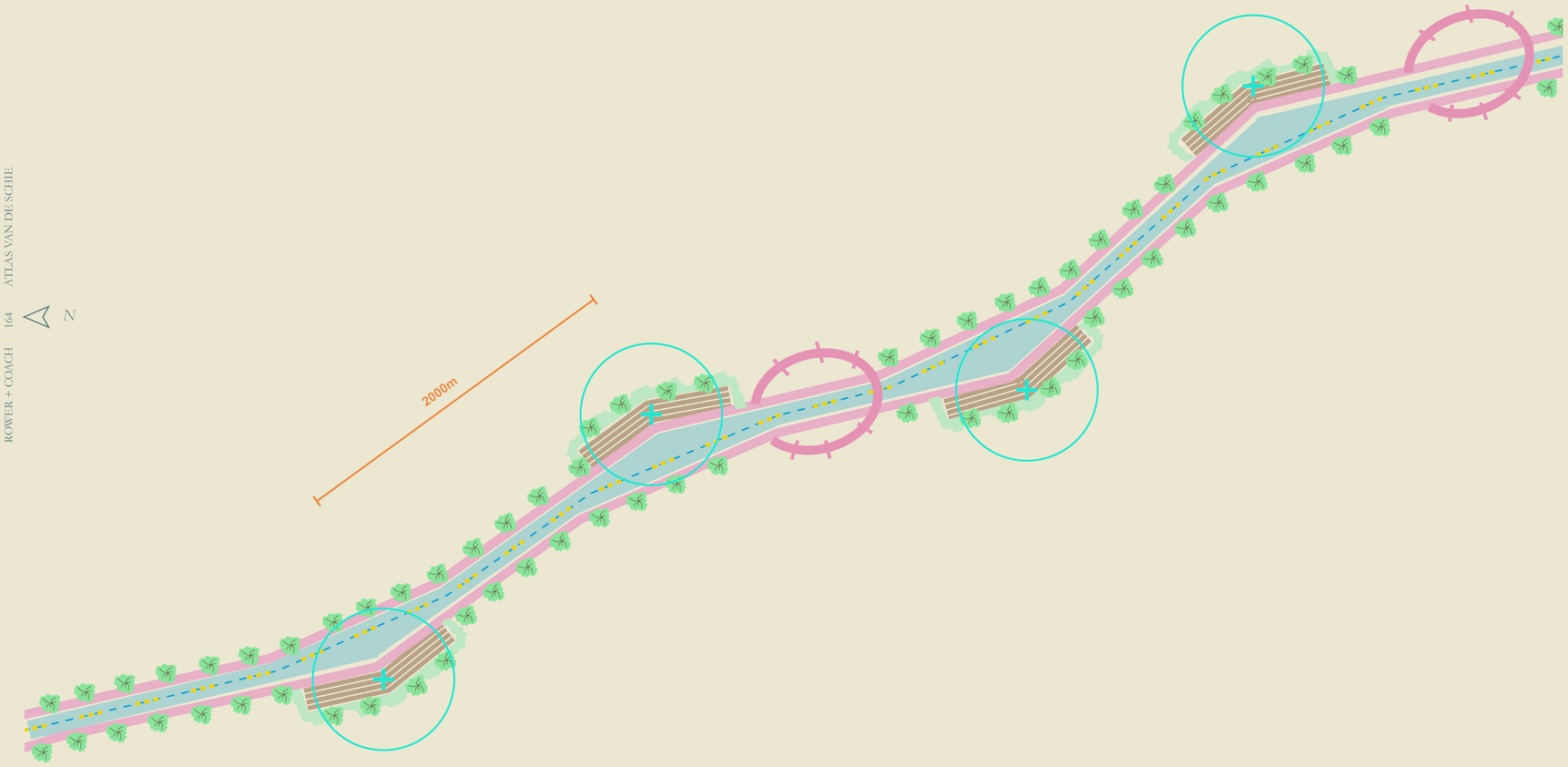
TRAINING INTERVAL MARKERS

[Design Role]: Amplify performance calibration

[Rowing training often relies on repeated intervals, pacing exercises, and distance-based measurements. Recognizable markers help crews orient themselves and evaluate performance over time.]

[Potential Actions]:

1. Introduce way-finding objects or distance markers
2. Maintain recognizable landmarks
3. Preserve visual reference points (tree, bridge)
4. Create interval checkpoints
5. Support route legibility



The 100% rower scenario transforms the Schie into a

HIGHLY OPTIMIZED, LINEAR TRAINING ENVIRONMENT SHAPED AROUND RHYTHM, VISIBILITY, AND UNINTERRUPTED MOVEMENT

The canal becomes a continuous performance corridor where rowing crews can maintain pace, maneuver predictably, and synchronize movement over long distances. Alongside the water, a parallel coach route enables continuous observation, communication, and safety monitoring, turning land and water into a unified training system.

Expanded bays create regrouping and overtaking zones, while rhythmic planting, stable edges, and controlled crossings reinforce the sense of cadence and directional continuity. Expanded bay also pertrude out of the linear canal, stopping/pulling off will not interrupt the linear rowing while provide visual cues for rower to be aware of the distance. the subtle zig-zag shape also provide appropriate amout of mental stimulation that prevent the tireness from repeteation of work.

Activities that interrupt rowing rhythm : such as fishing occupation, irregular edge access, or slow recreational navigation are minimized in favor of speed consistency and spatial clarity.

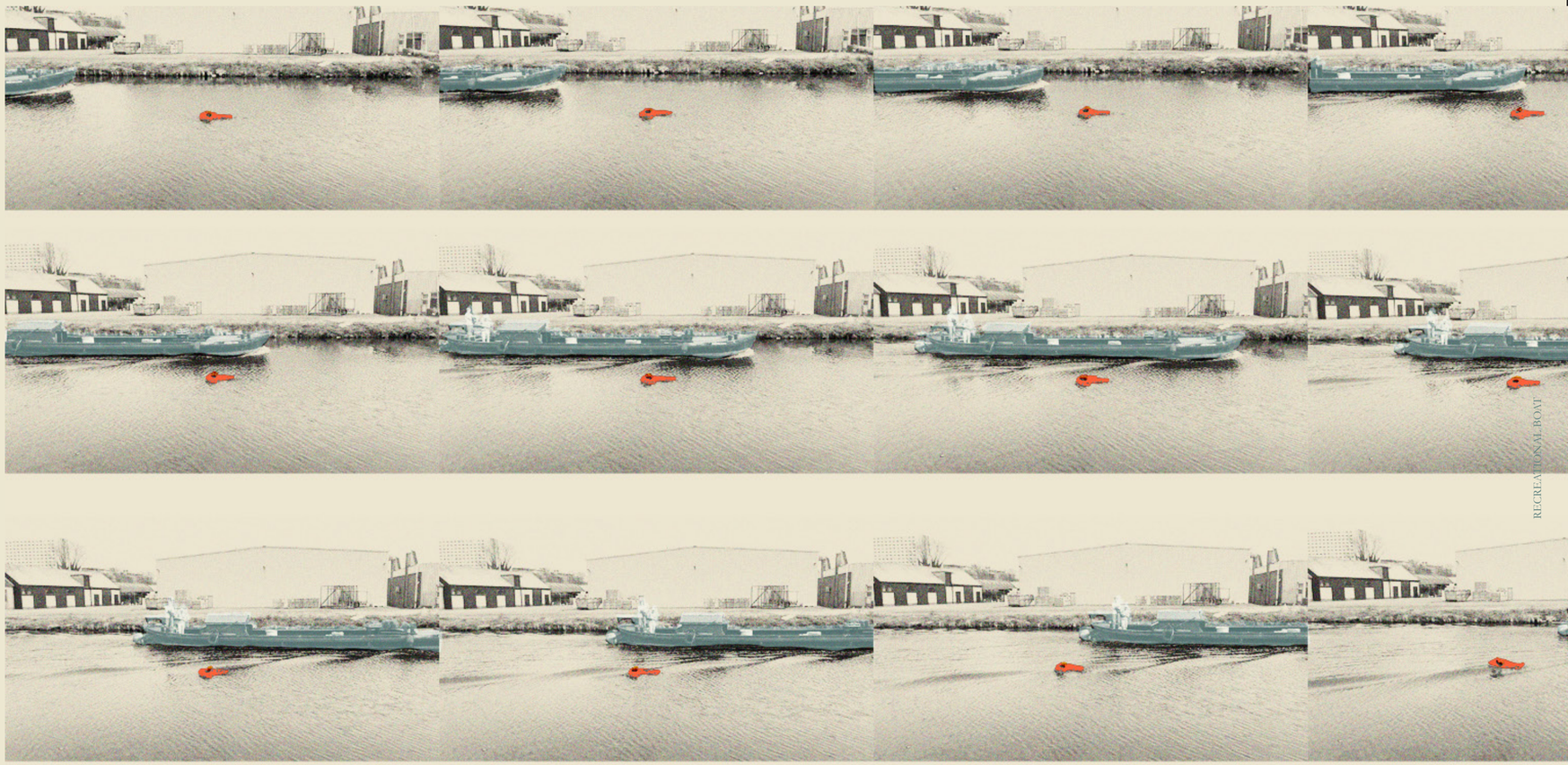
There is seldom any ecological elements present in this 100% scenario.

100% ROWING WORLD IS ALMOST ANTI-ECOLOGICAL SPATIALLY

EURASIAN COOT
PELICANS
EGYPTIAN GEESE
CANADIAN GEESE
CALL DUCK
MUTE SWAN
LITTLE GREBE
GREY HERON
MALLARD DUCK
GREYLAG GEESE
HOOKBILL DUCK
CROW
SEAGULL
GREAT CORMORANT
ROWER
COACH
CYCLIST
SWIMMER
DOG WALKER
COMMUTER
RESIDENTS
TOURIST
RUNNER
RECREATION FISHER
KAYAKER
CANOER

RECREATIONAL BOAT

EUROPEAN PERCH
NORTHERN PIKE
ROACH
ZANDER
EUROPEAN EEL
CRAWFISH
WHITE BREAM
SNAILS
DRAGONFLIES
FROG
TURTLE
ALGAE
GRASS
REED
RUSHES
DUCKWEED
WATERLILIES
DANDELION
MOSS
WILLOW
LINDEN
CHERRY
ALDER
POPLAR
MAPLE
INDUSTRY WORKER
DREDGING WORKER
ROAD WORKER
WIND
SUNLIGHT
WAVE
WATER



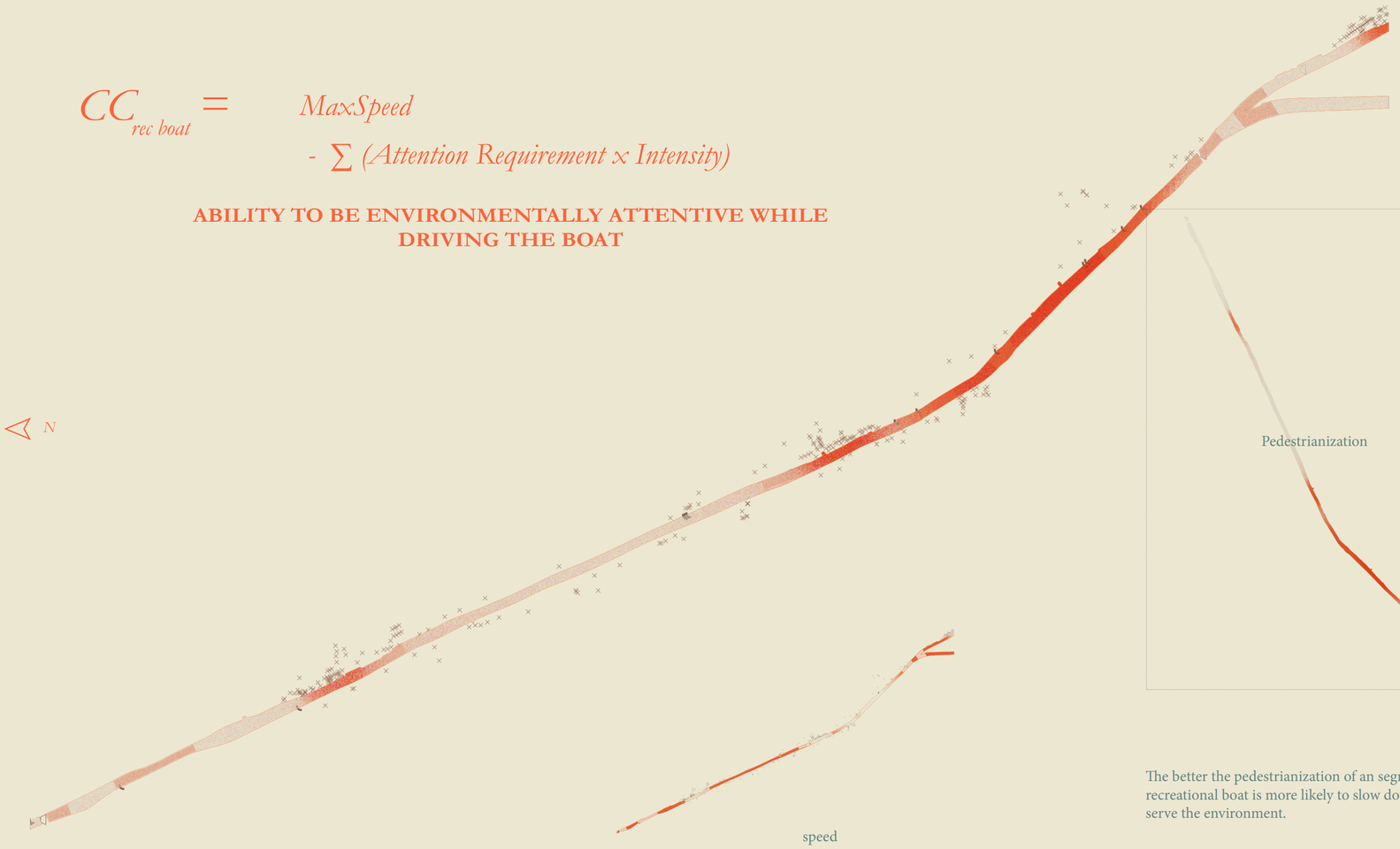
RECREATIONAL BOAT

CARE CAPACITY

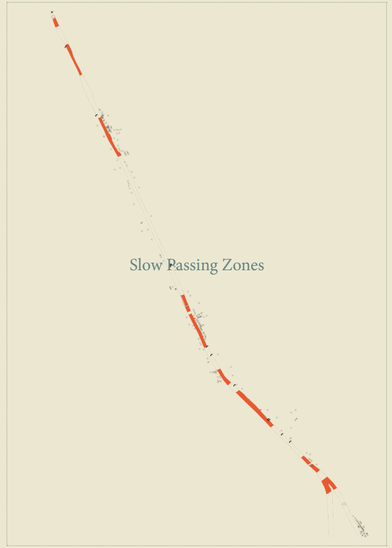
CAPACITY MAP [REC BOAT]

$$CC_{rec\ boat} = MaxSpeed - \sum (Attention\ Requirement \times Intensity)$$

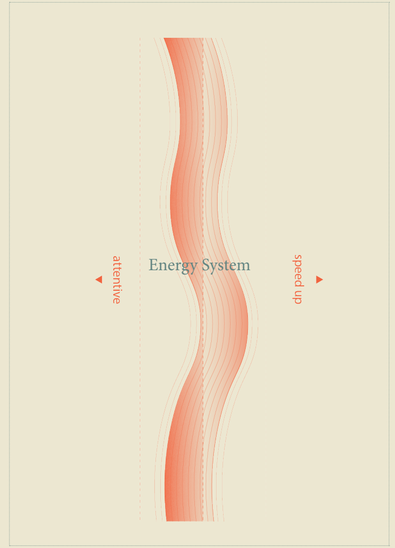
ABILITY TO BE ENVIRONMENTALLY ATTENTIVE WHILE DRIVING THE BOAT



The better the pedestrianization of an segment, the recreational boat is more likely to slow down and observe the environment.



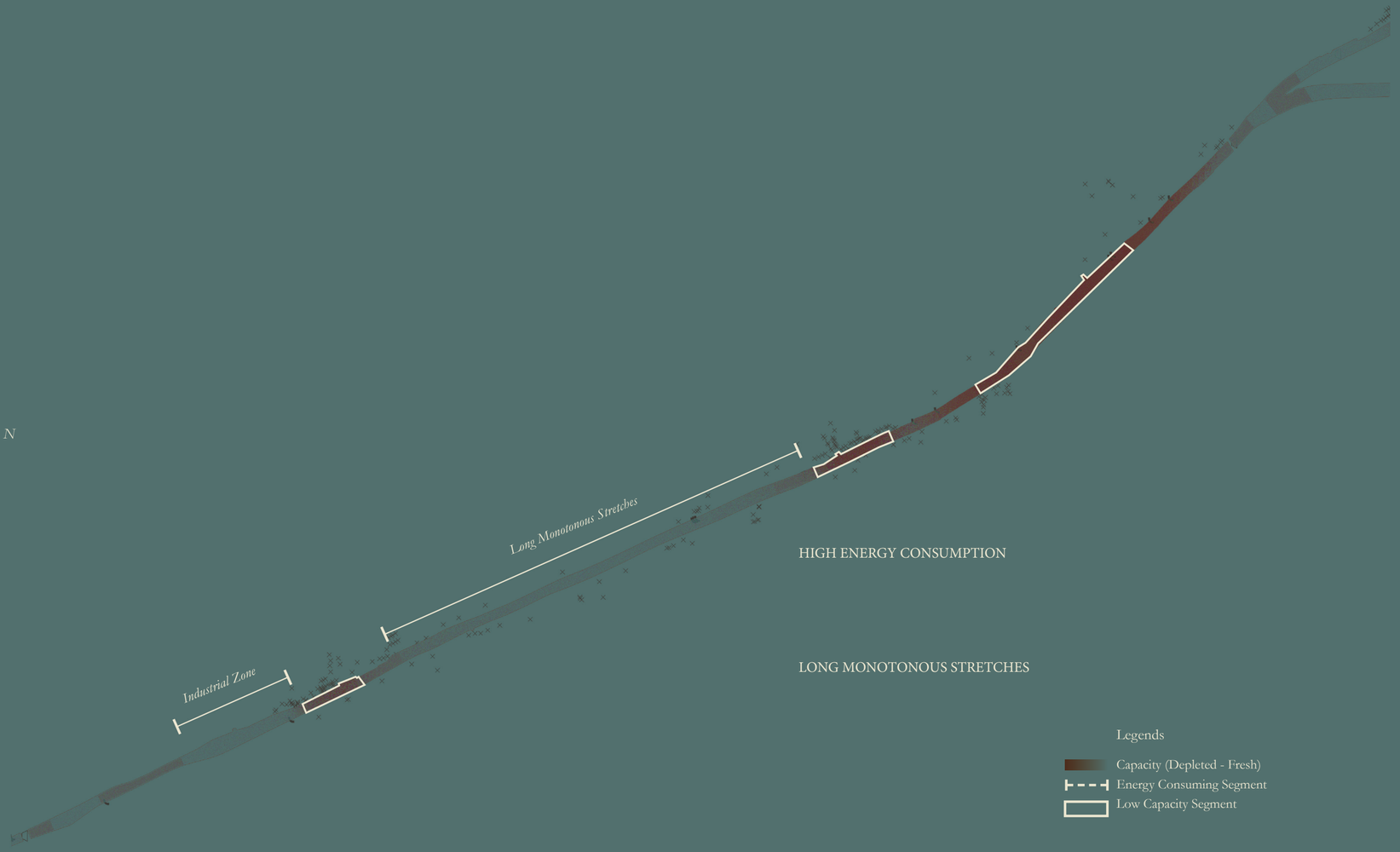
Special segments: bridge, obstacles, intersections, narrowing, requires extra attention for the recreational boat to slow down and assess the situation



Recreational boat has very interesting energy system, assuming a constant energy capacity for them, their energy either contribute to being slow and assessing the environment, or they speed up to pass the segment.

CARE MAP
[REC BOAT]

The ability to navigate, explore, and temporarily occupy the water system while maintaining comfort, orientation, and leisure continuity.
for rec boat - the question is - What conditions make a recreational boating experience meaningful?



HIGH ENERGY CONSUMPTION

LONG MONOTONOUS STRETCHES

Legends

- Capacity (Depleted - Fresh)
- Energy Consuming Segment
- Low Capacity Segment

Items / Action



ENERGY DEPLETION ZONE

Protect Strongly



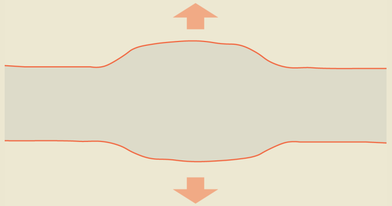
ENERGY VULNERABLE ZONE

Reduce Capacity Consumption



'CARE' CAPACITY

Moderate



CANAL WIDENING BASINS

[Design Role]: Enable gathering and maneuvering

[Expanded water territories provide space for turning, slowing down, re-grouping, and temporarily occupying the water. These wider moments interrupt the linear canal and create opportunities for social and recreational use.]

[Potential Actions]:

1. Widen selected canal sections
2. Create turning basins
3. Provide gathering areas
4. Increase maneuvering space
5. Support temporary occupation



CANOE COVES / LAUNCH ZONES

[Design Role]: Enable water access

[Recreational boating depends on the ability to enter and leave the water with minimal difficulty. Accessible launch zones expand participation and support a wider range of boating activities.]

[Potential Actions]:

1. Gentle water access
2. Informal launch areas
3. Low-edge platforms
4. Sheltered coves
5. Small boat access points



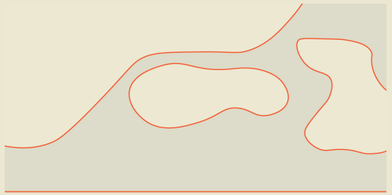
SLOW NAVIGATION ZONES

[Design Role]: Mitigate conflict

[Not all parts of the canal benefit from continuous movement. Slower navigation zones reduce wake disturbance and encourage greater awareness of surrounding ecological and social conditions.]

[Potential Actions]:

1. Low-speed zones
2. Shared water territories
3. Wake reduction measures
4. Ecological transition areas
5. Calm-water corridors



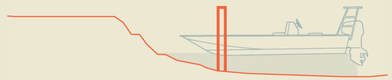
ECOLOGICAL SIDE CHANNELS

[Design Role]: Amplify exploration

[Branching waterways create alternative routes and opportunities for slower, more immersive forms of navigation. These channels support discovery and closer engagement with ecological conditions.]

[Potential Actions]:

1. Side channels
2. Wetland fingers
3. Alternative routes
4. Shallow exploratory waters
5. Ecological navigation corridors



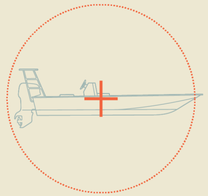
TEMPORARY DOCKING EDGE

[Design Role]: Adapt the canal edge for occupa-

[Recreational boating often involves periods of stopping, resting, observing, and social interaction. Temporary docking edges allow occupation without obstructing navigation.]

[Potential Actions]:

1. Informal docking points
2. Floating platforms
3. Resting edges
4. Short-stay moorings
5. Observation stops



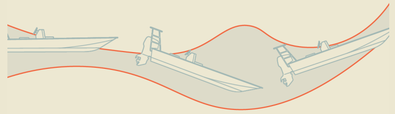
ARRIVAL / PARKING CLEARINGS

[Design Role]: Enable access and preparation

[Many boating activities begin before entering the water. Arrival spaces support unloading, preparation, equipment handling, and longer recreational visits.]

[Potential Actions]:

1. Small parking clearings
2. Equipment staging areas
3. Boat unloading spaces
4. Arrival nodes
5. Gathering points



HYDROLOGICAL VARIATION

[Design Role]: Amplify navigational diversity

[Changes in width, depth, flow, and shoreline geometry create varied boating experiences. Diversity in water conditions encourages exploration and repeated use.]

[Potential Actions]:

1. Variable canal widths
2. Sheltered pockets
3. Narrow passages
4. Expanded basins
5. Branching waterways



LOW-WAKE ECOLOGICAL BUFFER

[Design Role]: Mitigate ecological disturbance.

[Sensitive habitats benefit from gradual transitions between active navigation zones and ecological refuges. Buffer zones reduce wake impact while maintaining recreational access.]

[Potential Actions]:

1. Vegetated transition zones
2. Low-wake corridors
3. Habitat buffers
4. Protected edge conditions
5. Refuge separation

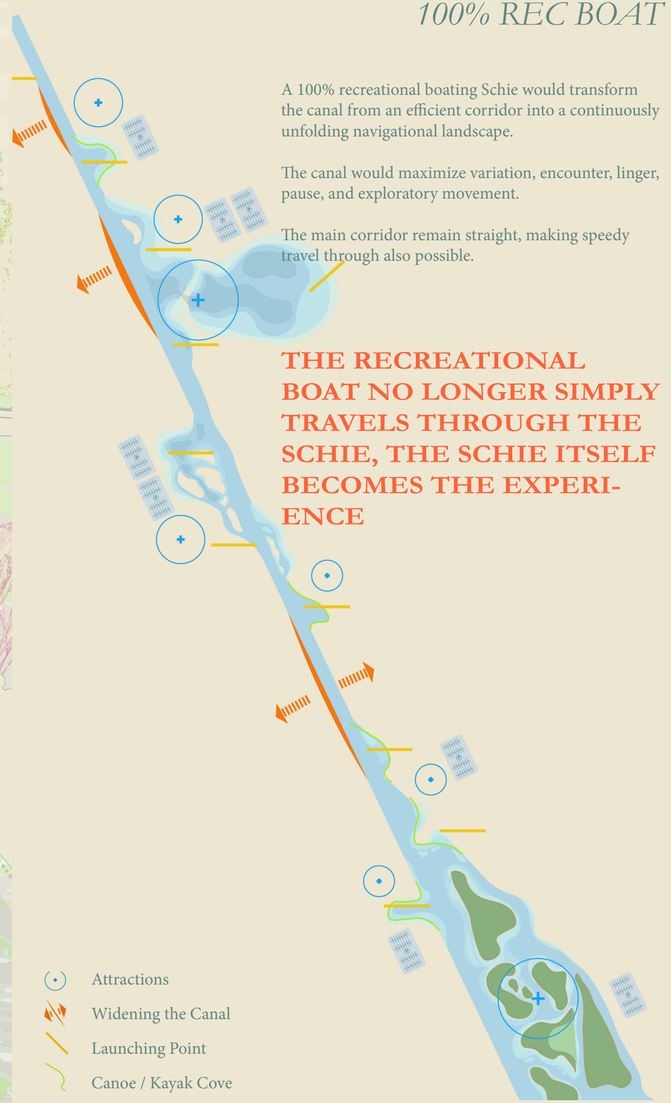
100% REC BOAT

A 100% recreational boating Schie would transform the canal from an efficient corridor into a continuously unfolding navigational landscape.

The canal would maximize variation, encounter, linger, pause, and exploratory movement.

The main corridor remain straight, making speedy travel through also possible.

THE RECREATIONAL BOAT NO LONGER SIMPLY TRAVELS THROUGH THE SCHIE, THE SCHIE ITSELF BECOMES THE EXPERI-ENCE



- Attractions
- Widening the Canal
- Launching Point
- Canoe / Kayak Cove

SCHIE

CHAPTER STRUCTURE

Species Specific Seasonal Pattern

Canal Maintenance Pattern

Pattern Mismatch

Design Strategy

After mapping the spatial conditions of care, the thesis turns to rhythm. The Schie is not only organised by edges, routes, and territories, but also by seasonal cycles, maintenance schedules, breeding periods, training routines, and daily patterns of use.



RHYTHM

SEASONAL BEHAVIOUR [COOT]



WINTER	SPRING	SUMMER	AUTUMN

When you isolate the coot from the earlier mapping, seasonal patterns begin to emerge. Their distribution is not static but shifts throughout the year in response to changing priorities, energy demands, and stages of the breeding cycle.

During winter, coots tend to cluster together in sheltered locations. At this time, survival becomes the primary concern. Energy is conserved, movement is reduced, and the birds seek locations that provide protection from wind, disturbance, and predation.

As temperatures rise in spring, the focus shifts towards nesting and breeding. Territories are established, pairs become more defensive, and suitable nesting locations gain importance. Dense vegetation, secluded edges, and protected waters become critical resources during this period.

Summer is characterised by raising chicks. Adult coots remain closely tied to nesting territories while guiding and protecting their young. Access to food, shelter, and refuge becomes particularly important, as chicks are vulnerable to both predators and disturbance.

By autumn, many of the territorial behaviours begin to relax. Young birds become more independent, movement increases, and coots gradually transition away from breeding territories. The landscape becomes a network of routes and temporary refuges as birds prepare for winter, completing the annual cycle before clustering once again.

LOCAL SPECIES

GROUND IVY

CREEPING BUTTERCUP

SMOOTH HAWK'S-BEARD

DAISY

POPPY

CUCKOOFLOWER

RED CLOVER

MEADOW FOXTAIL

FIELD HORSETAIL

CYPRESS SPURGE

COMFREY

RAPESEED

JAPANESE KNOTWEED

COW PARSLEY

FALSE OAT-GRASS

LOTUS

REED

BUTTERBUR

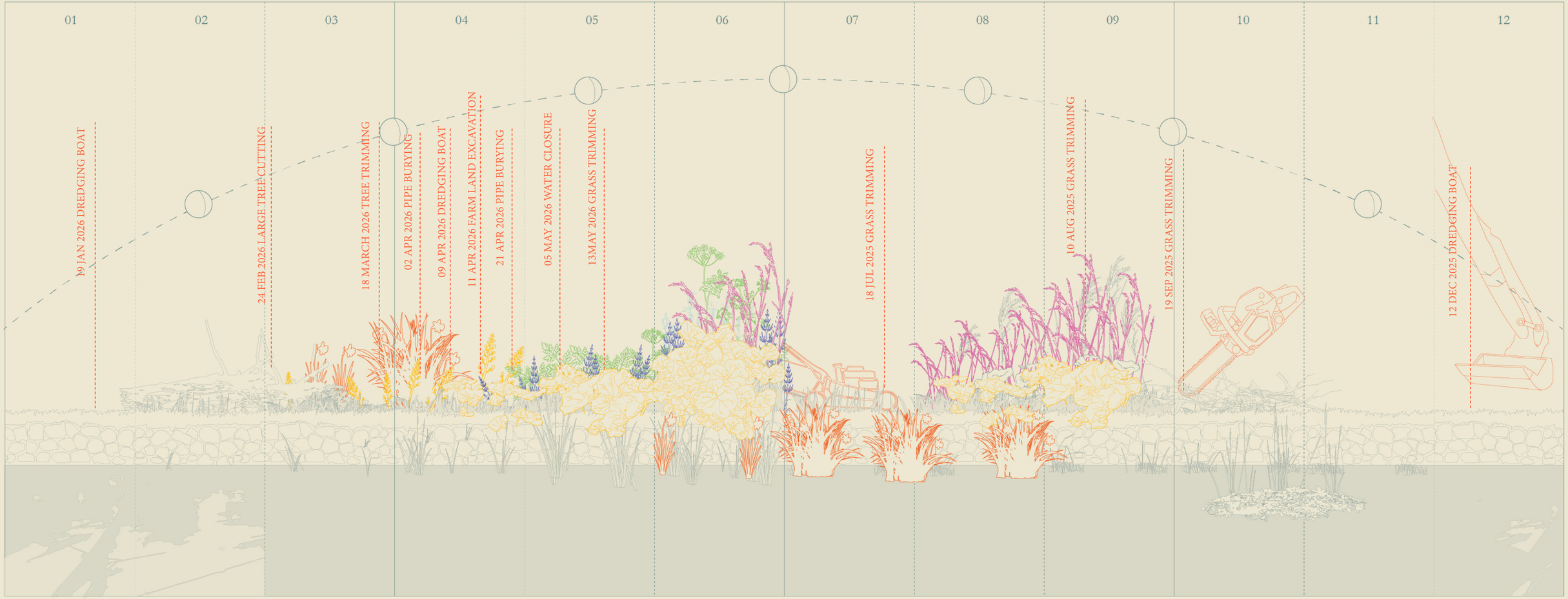
DAFFODIL

RED SORREL

During fieldwork, I kept encountering the same species again and again. Some became actors in the research, many did not. But together they revealed something important: the Schie is never the same landscape twice. Flowers bloom, birds nest, chicks hatch, vegetation gets cut back, and migration begins. This page follows that yearly rhythm, showing how both nature and maintenance are constantly reshaping the canal throughout the seasons.



‘CIRCADIAN’ RHYTHM OF PLANTS



MISMATCHED 'CIRCADIAN' RHYTHM



Their presence is not only seasonal, but also closely tied to vegetation conditions. As plants grow, flower, die back, or spread, the landscape changes with them.

At the same time, the canal follows its own maintenance calendar: tree trimming, grass mowing, and dredging. These events can completely change a habitat overnight.

What took an entire season to establish can disappear in a single day.

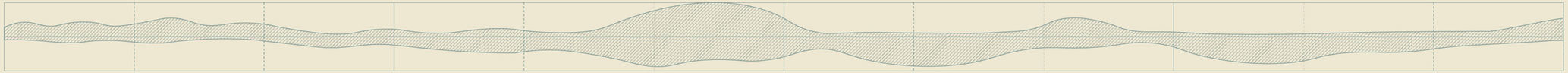
I call these *terminal moments*- moments where habitat conditions abruptly change and species suddenly need to adapt to a new reality.

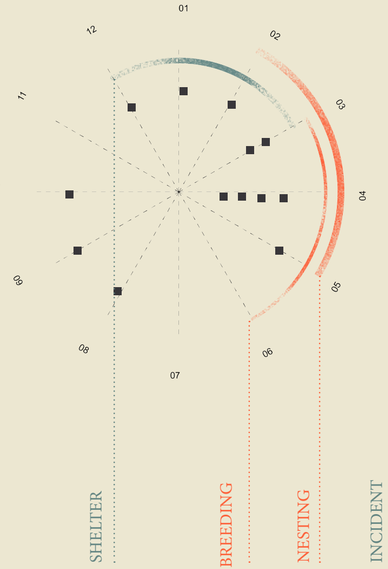




CIRCADIAN RHYTHM



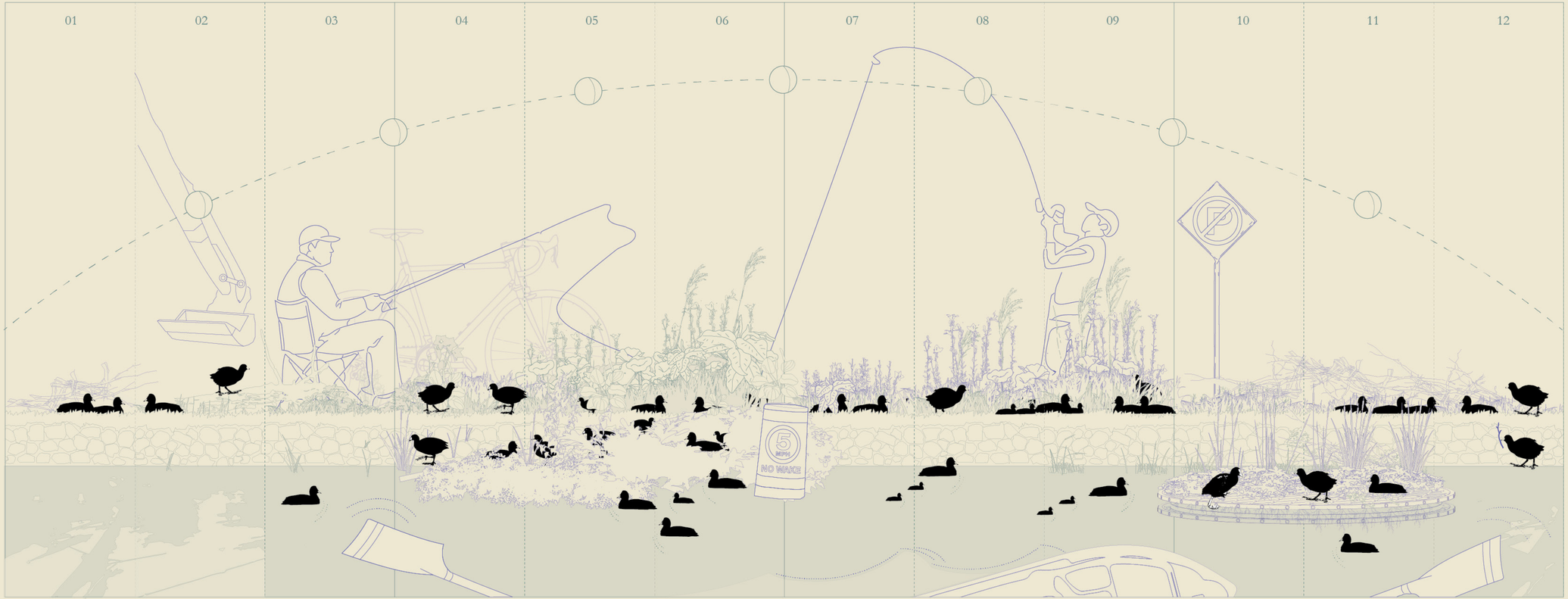


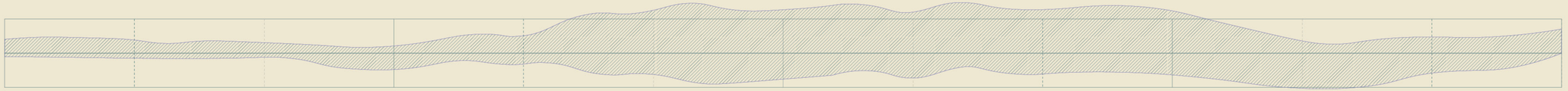


The issue is not the presence of maintenance,
but its timing.
There is a mismatch between:
ecological cycles
and maintenance cycles

during nesting season, vegetation is removed
during breeding, shelter is reduced
during winter, dredging disrupts feeding grounds

We often think ecological design requires large interventions.
But here, small adjustments could have significant impact.





What if we:

reduce disturbance along key edges
shift trimming schedules
apply partial, rotational maintenance
introduce small floating vegetation zones
leave branches as temporary habitat

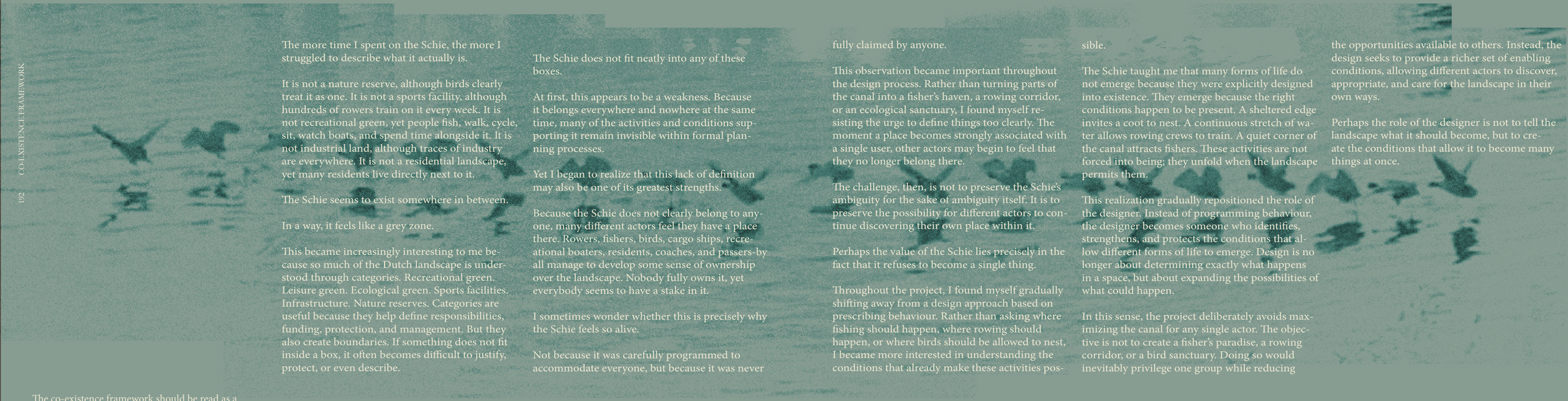
What if care is not only expressed through new interventions, but also through the way existing landscapes are maintained?

Reducing disturbance along key habitat edges, adjusting trimming schedules to avoid breeding periods, applying rotational maintenance instead of clearing entire stretches at once, introducing small floating vegetation zones, or leaving fallen branches in place for a limited period can all have a significant impact on ecological conditions.

None of these actions require large-scale redesigns. They do not fundamentally alter the structure of the canal, nor do they demand major investments. Instead, they represent small adjustments in how care is distributed across the landscape. By working with the existing rhythms of species rather than against them, maintenance itself becomes a design tool capable of supporting habitat continuity, reducing ecological disruption, and increasing the overall capacity of the landscape to care for its inhabitants.

In this sense, caring for the Schie is not only about designing new spaces, but also about reconsidering how everyday acts of maintenance shape the lives of the many species that depend on the canal.

SCHIE



The more time I spent on the Schie, the more I struggled to describe what it actually is.

It is not a nature reserve, although birds clearly treat it as one. It is not a sports facility, although hundreds of rowers train on it every week. It is not recreational green, yet people fish, walk, cycle, sit, watch boats, and spend time alongside it. It is not industrial land, although traces of industry are everywhere. It is not a residential landscape, yet many residents live directly next to it.

The Schie seems to exist somewhere in between.

In a way, it feels like a grey zone.

This became increasingly interesting to me because so much of the Dutch landscape is understood through categories. Recreational green. Leisure green. Ecological green. Sports facilities. Infrastructure. Nature reserves. Categories are useful because they help define responsibilities, funding, protection, and management. But they also create boundaries. If something does not fit inside a box, it often becomes difficult to justify, protect, or even describe.

The Schie does not fit neatly into any of these boxes.

At first, this appears to be a weakness. Because it belongs everywhere and nowhere at the same time, many of the activities and conditions supporting it remain invisible within formal planning processes.

Yet I began to realize that this lack of definition may also be one of its greatest strengths.

Because the Schie does not clearly belong to anyone, many different actors feel they have a place there. Rowers, fishers, birds, cargo ships, recreational boaters, residents, coaches, and passers-by all manage to develop some sense of ownership over the landscape. Nobody fully owns it, yet everybody seems to have a stake in it.

I sometimes wonder whether this is precisely why the Schie feels so alive.

Not because it was carefully programmed to accommodate everyone, but because it was never fully claimed by anyone.

This observation became important throughout the design process. Rather than turning parts of the canal into a fisher's haven, a rowing corridor, or an ecological sanctuary, I found myself resisting the urge to define things too clearly. The moment a place becomes strongly associated with a single user, other actors may begin to feel that they no longer belong there.

The challenge, then, is not to preserve the Schie's ambiguity for the sake of ambiguity itself. It is to preserve the possibility for different actors to continue discovering their own place within it.

Perhaps the value of the Schie lies precisely in the fact that it refuses to become a single thing.

Throughout the project, I found myself gradually shifting away from a design approach based on prescribing behaviour. Rather than asking where fishing should happen, where rowing should happen, or where birds should be allowed to nest, I became more interested in understanding the conditions that already make these activities possible.

The Schie taught me that many forms of life do not emerge because they were explicitly designed into existence. They emerge because the right conditions happen to be present. A sheltered edge invites a coot to nest. A continuous stretch of water allows rowing crews to train. A quiet corner of the canal attracts fishers. These activities are not forced into being; they unfold when the landscape permits them.

This realization gradually repositioned the role of the designer. Instead of programming behaviour, the designer becomes someone who identifies, strengthens, and protects the conditions that allow different forms of life to emerge. Design is no longer about determining exactly what happens in a space, but about expanding the possibilities of what could happen.

In this sense, the project deliberately avoids maximizing the canal for any single actor. The objective is not to create a fisher's paradise, a rowing corridor, or a bird sanctuary. Doing so would inevitably privilege one group while reducing the opportunities available to others. Instead, the design seeks to provide a richer set of enabling conditions, allowing different actors to discover, appropriate, and care for the landscape in their own ways.

Perhaps the role of the designer is not to tell the landscape what it should become, but to create the conditions that allow it to become many things at once.

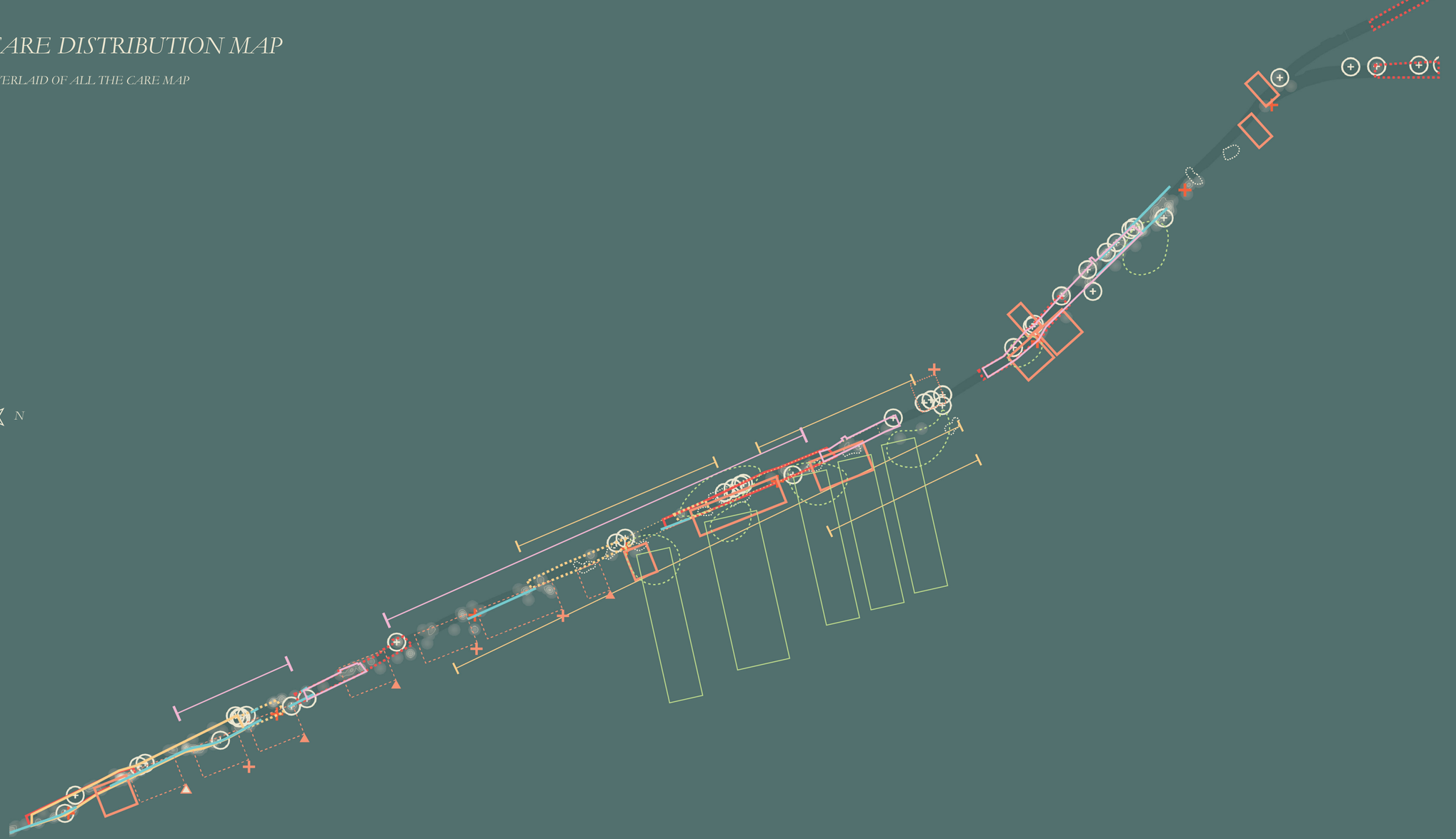
The co-existence framework should be read as a care-distribution strategy rather than a conventional masterplan. It identifies where design should protect, where it should amplify, where it should redirect pressure, and where doing less may be more supportive than adding new programme.

STRATEGY

CARE DISTRIBUTION MAP

OVERLAID OF ALL THE CARE MAP

N



Legends

- Coot_Nest
- Coot_Winter Cluster
- Coot_Breeding Footprint
- Egyptian Geese_Territory (Edge)
- Canadian Geese_Territory (Area)
- Fisher_Spotted Location
- Fisher_Potential Location (Need Added Condition)
- Fisher_Potential Location (Need Mitigation)
- Rec Boat_High Consumption Segment
- Coach_Energy Depletion Zone
- Coach_Stress Zone
- Rower_Energy Depletion Zone
- Rower_Stopping Point

CARE-BASED DESIGN CRITERIA



[EURASIAN COOT]

RECEIVING 'CARE'

1. Are nesting locations protected from disturbance?
2. What enabling conditions are available for nesting and shelter?
3. Can coots move safely between nesting, feeding, and refuge areas?
4. Are predators and disturbances buffered by habitat structure?
5. Does the landscape support the complete breeding cycle?
6. Does the maintenance rhythm support the complete breeding cycle?

PROVIDING 'CARE'

1. Can coot tolerate the current disturbance level?
2. Can coot safely dodging the disturbance?
3. Are hotspot of disturbance within coot's emergency escape radius?
4. Can coot show care in other possible measure within its care capacity?



[RECREATIONAL FISHER]

RECEIVING 'CARE'

1. Are fishing locations comfortable for long-term occupation?
2. Do fishing spots provide access to suitable water conditions?
3. Can fishers occupy the edge without conflicting with other users?
4. If so, is this area within stress zone?
5. Are fishing activities visible and predictable to others?
6. Does the landscape support multiple fishing techniques and preferences?

PROVIDING 'CARE'

1. Are productive fishing locations available while dodging other user's hotspot?
2. Can fishing occur without interfering with navigation routes?
3. Is there care capacity available when fishing at a high interested zone?



[EGYPTIAN GEESE]

RECEIVING 'CARE'

1. Is there a continuous edge corridor for movement?
2. Are open green areas available for grazing and occupation?
3. Are suitable perching and lookout points provided?
4. Can geese move while avoiding intensive human disturbance?
5. Does the landscape support territorial occupation?
6. Does the current landscape allow Egyptian Geese to claim territory?

PROVIDING 'CARE'

1. Can they maintain territory without escalating conflict (quac quac)?
2. Can they avoid intensive human activity by shifting along the edge?
3. Can they use vacant edges and lookout points to monitor surroundings?
4. Can they retreat from disturbance temporarily without abandoning the territory?
5. Can they adjust their movement route when other territories overlap?



[CANADIAN GEESE]

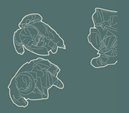
RECEIVING 'CARE'

1. Are feeding grounds connected to resting waters?
2. Can geese move safely between fields and the canal?
3. Are green corridors continuous and accessible?
4. Is sufficient grazing area available throughout the territory?
5. Is there adequate separation from competing territories?
6. Can geese access the water as a refuge when disturbed?

PROVIDING 'CARE'

1. Can they shift between field, green edge, and water when disturbed?
2. Can they use water as an emergency refuge?
3. Can they avoid Egyptian Geese territory without losing access to grazing grounds?
4. Can they maintain group movement while adapting to disturbance?
5. Can they tolerate temporary interruption and return to feeding/resting cycles?

CARE-BASED DESIGN CRITERIA



[PASSERS BY]

RECEIVING 'CARE'

1. Are there reasons to stop, observe, and linger?
2. Are destinations and attractions clearly connected?
3. Is the landscape comfortable to occupy?
4. Are ecological processes visible and understandable?
5. Does the environment encourage engagement rather than simply passage?

PROVIDING 'CARE'

1. Can passers-by alter their route when encountering conflicts?
2. Can passers-by tolerate temporary congestion?
3. Can passers-by recognise and respect ecological sensitivities?
4. Can passers-by adjust behaviour (care for) near nesting or fishing areas?
5. Can passers-by contribute to passive surveillance and stewardship?



[ROWER]

RECEIVING 'CARE'

1. Can the canal be navigated without sudden manoeuvres?
2. Are potential conflicts visible before action is required?
3. Is there sufficient space to correct course safely?
4. Are stopping points located before capacity becomes depleted?
5. Does the route reduce unnecessary attention demands?
6. Can rowers maintain awareness of their surroundings while continuing performance?

PROVIDING 'CARE'

1. Can rowers anticipate obstacles before reaching them?
2. Can rowers safely adjust their course?
3. Can rowers maintain awareness in current setting despite fatigue?
4. Can rowers temporarily reduce performance to avoid conflict?
5. Can rowers recover attention after a demanding segment?
6. Can rowers adjust behaviour and care for the human and more than human actors?



[COACH]

RECEIVING 'CARE'

1. Can coaches maintain visual contact with rowers?
2. Does the cycling route provide a safe and continuous path?
3. Are potential hazards visible in advance?
4. Is attention spent on coaching rather than navigation?
5. Can coaches effectively act as the rowers' second set of eyes?

PROVIDING 'CARE'

1. Can coaches identify hazards before rowers encounter them?
2. Can coaches compensate for rowers' reduced awareness?
3. Can coaches maintain observation while cycling?
4. Can coaches communicate corrections effectively?
5. Can coaches adapt training to changing conditions?
6. Can coaches make clear where they're heading to the surrounding traffic?
7. Can coaches obey established rules like quiet zone?
8. Can coaches care for encountered passers by and fishers?



[RECREATIONAL BOAT]

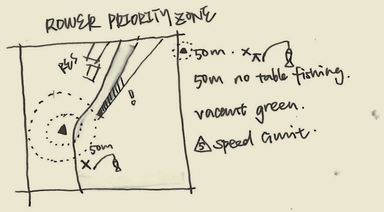
RECEIVING 'CARE'

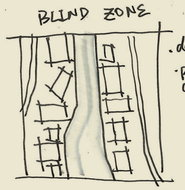
1. Can the canal be navigated safely at low skill levels?
2. Are destinations and stopping points accessible?
3. Is there sufficient space for maneuvering?
4. Can conflicts with other water users be anticipated?
5. Does the canal provide opportunities for exploration and leisure?
6. Are routes legible and easy to understand?

PROVIDING 'CARE'

1. Can boaters slow down when approaching conflicts?
2. Can boaters adjust their route to avoid sensitive areas?
3. Can boaters tolerate temporary congestion?
4. Can boaters safely yield to other users?
5. Can boaters alter their destination when access is restricted?

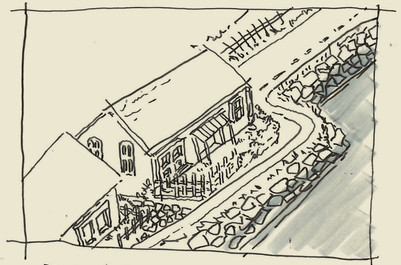
DRAFT: CO-EXISTENCE METHOD

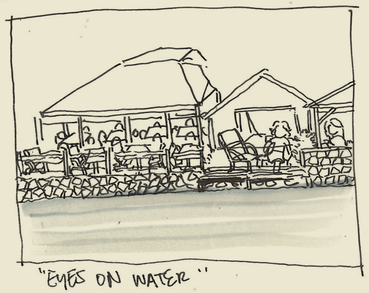




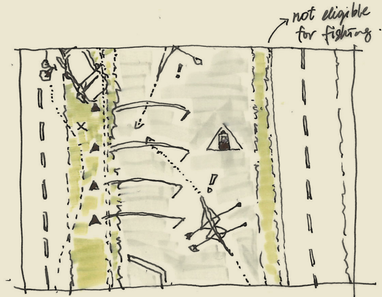




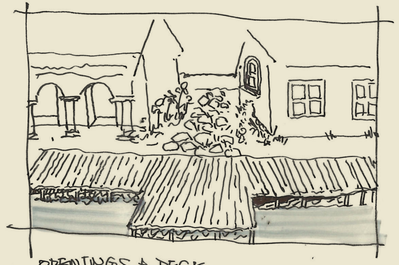

BIKE LANE IN FRONT OF HOUSE.

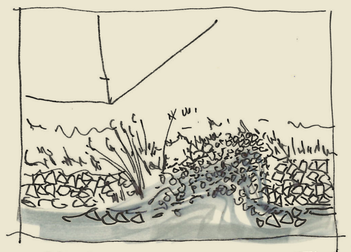

"EYES ON WATER"

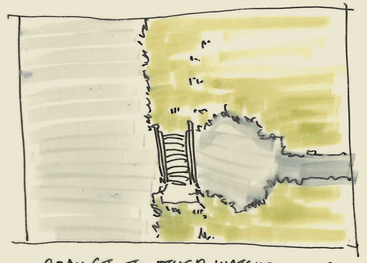

WAVE DECKWALL (PEDESTRIANIZE).



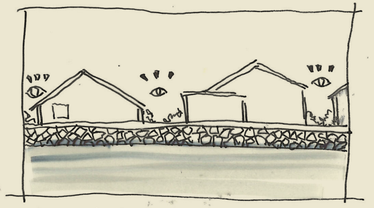
BEFORE: CONFLICT. FISHING ZONE + ROWER

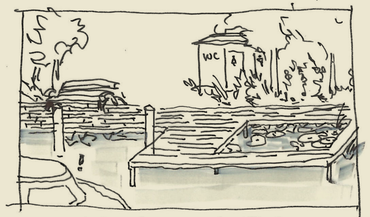

OPENINGS & DECK.


CANOE COVE., ENTRY POINT, JOIN.

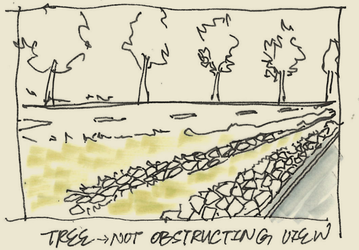

CONNECT TO OTHER WATERBODIES.

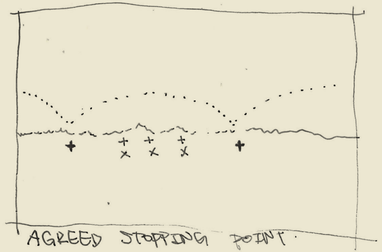

AFTER: NEGOTIATED → CO-EXISTENCE.


CONTINUOUS VISUAL OPENINGS.



PEDESTRIANIZE → REC BOAT STOPPING PT
(WAVE SENSITIVE AREA)


TREE → NOT OBSTRUCTING VIEW


AGREED STOPPING POINT.

CO-EXISTENCE FRAMEWORK PLAN

N

1ST SEGMENT

2ND SEGMENT

3RD SEGMENT

3RD SEGMENT

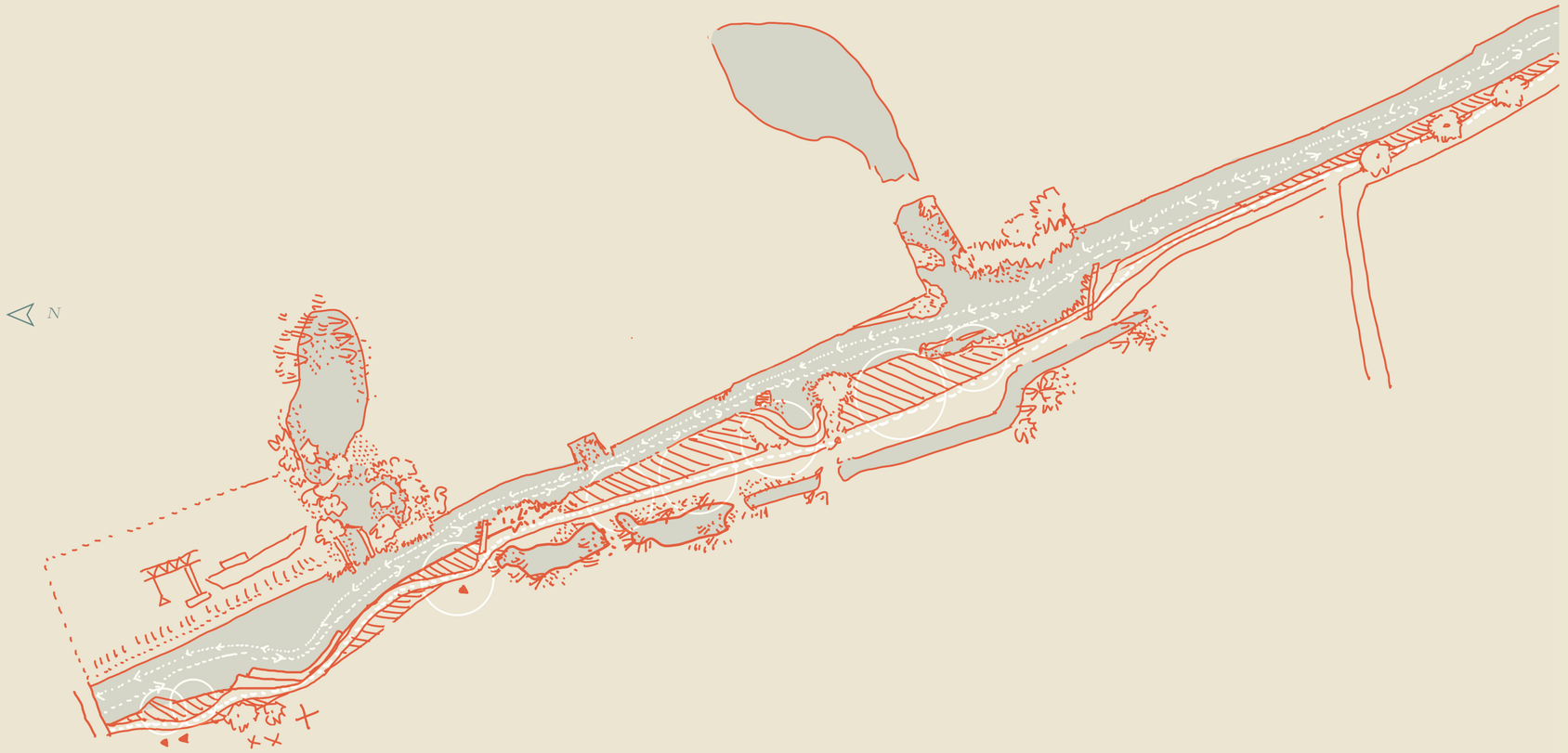
5TH SEGMENT

- Launching Cove/Point
- Sittable Area
- Fishable Area
- Rower Stopping
- Rower Routes
- Deck
- Street Furniture
- Ramp / Steps
- Breakwater
- Docking Station
- Canoe Kayak Cove

- Dense Vegetation
- Marsh
- Bushes
- Tree
- Vacant Grass Area
- Flat Open Grass
- Farmland
- Bridge
- Visual Corridor
- Mitigation Method
- Industry

CO-EXISTENCE FRAMEWORK PLAN

1ST SEGMENT



- Launching Cove/Point
- Sittable Area
- Fishable Area
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coach



canadian geese preferred territory



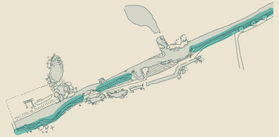
fishing potential areas



coot preferred territory



rower routes



egyptian geese preferred territory

CO-EXISTENCE FRAMEWORK PLAN

2ND SEGMENT



N

- Launching Cove/Point
- Sittable Area
- Fishable Area
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- Rower Routes
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coach



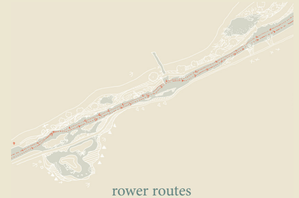
canadian geese preferred territory



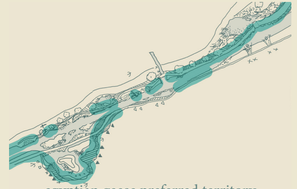
fishing potential areas



coot preferred territory



rower routes

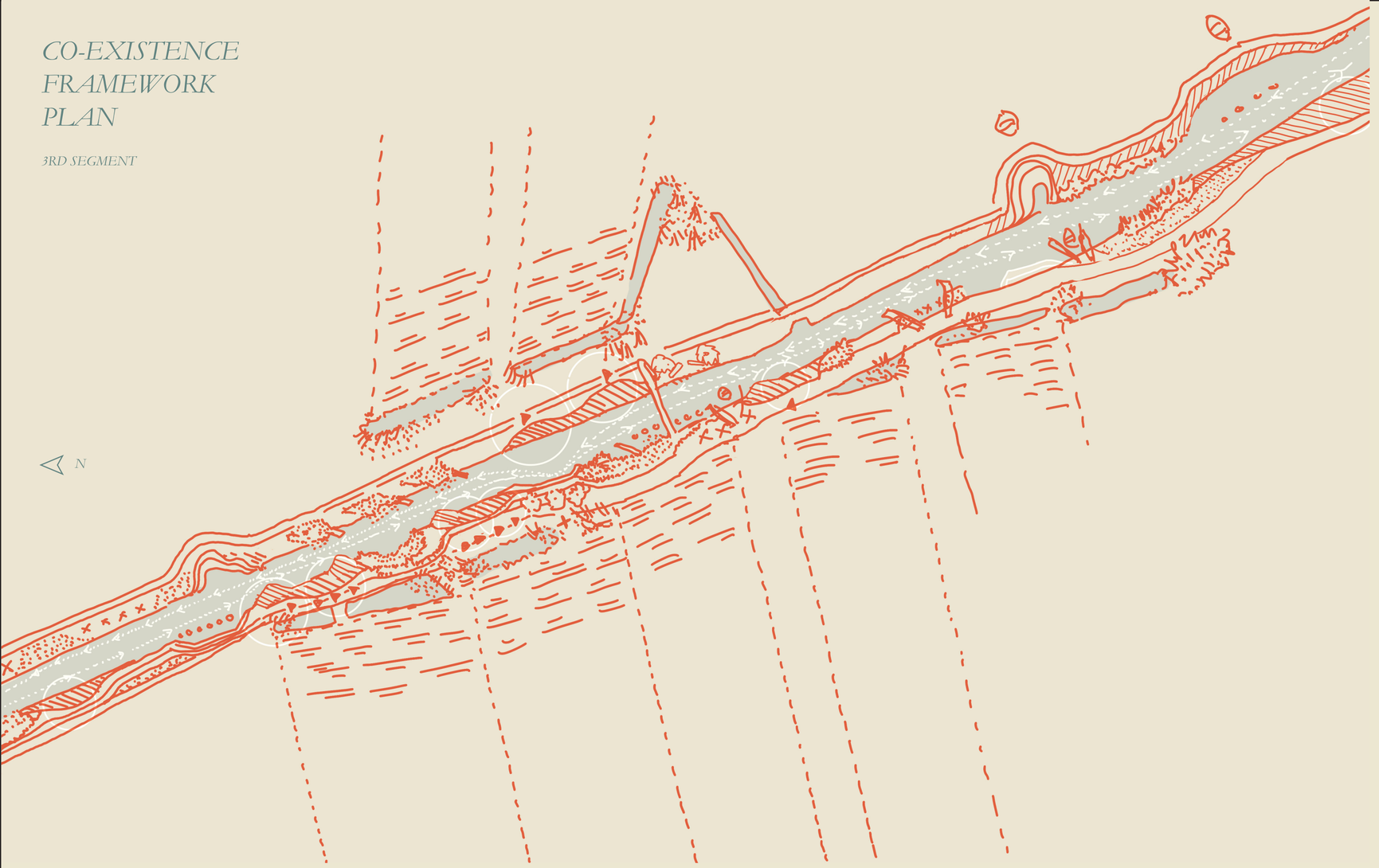


egyptian geese preferred territory

CO-EXISTENCE FRAMEWORK PLAN

3RD SEGMENT

N



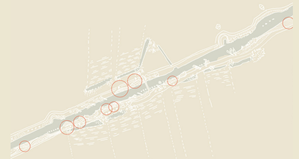
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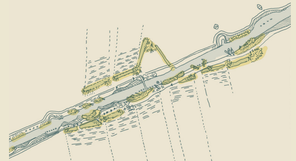
coach



canadian geese preferred territory



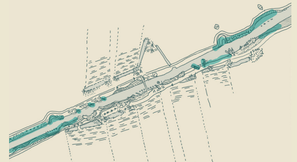
fishing potential areas



coot preferred territory



rower routes



egyptian geese preferred territory

CO-EXISTENCE FRAMEWORK PLAN

3RD SEGMENT

Fishable Area

Coot Preferred Area

Rower Routes

N

A

B

C

rower energy depleted

coach energy depleted

coot nest

rowing stopping point

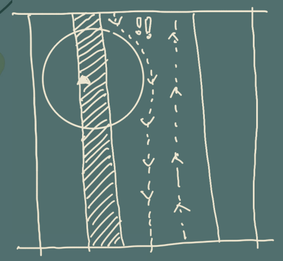
coach stress zone

fisher spotted

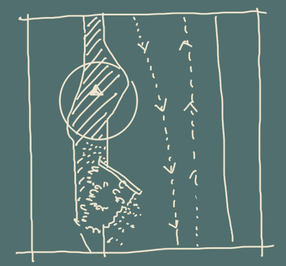
DESIGN HIGHLIGHT

A

BEFORE



AFTER

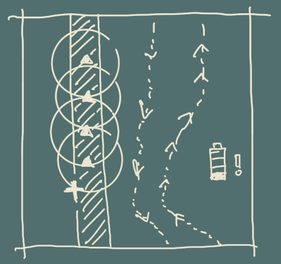


Fishing lines are often difficult for rowers to see, as are the fishers themselves. Combined with the height difference between the water and the canal edge, both the fishing lines and their users can remain unnoticed until rowers are already quite close.

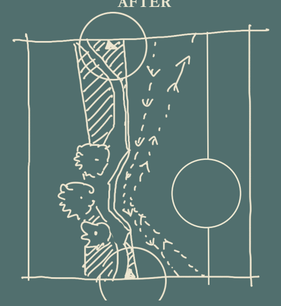
By introducing a protruding edge before a fisher's preferred location, a physical cue is created that encourages rowers to adjust their course before they even spot the fisher. At the same time, the intervention creates a zig-zag canal edge that supports coots' preferred habitat conditions, providing sheltered pockets for dense vegetation and nesting opportunities.

B

BEFORE



AFTER

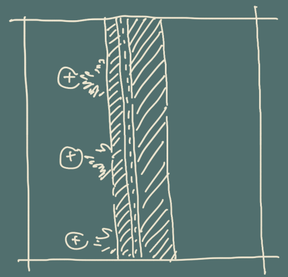


The segment next to the Kandelaar Bridge is a collision point between multiple interests. It is a popular fishing location, while rowers are often arriving at the end of a long training leg and in need of recovery. The bridge itself is narrow and difficult to manoeuvre, demanding additional attention at a moment when rowers' capacity is already heavily depleted.

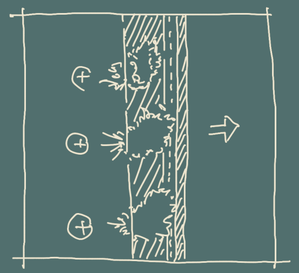
By strategically enhancing alternative fishing locations nearby, fishers can be encouraged to relocate away from this bottleneck. This redistribution reduces the likelihood of conflict, allowing both activities to operate with greater safety and less demand on their remaining attention and energy.

C

BEFORE



AFTER



The existing coot nesting locations are situated within a landscape shared by multiple users. This is particularly evident in Area C, where limited canopy cover forces many coots to nest amongst aquatic vegetation at the base of the dock wall. At the same time, the adjacent cycling route places coaches in close proximity to the nesting sites, introducing regular noise, movement, and disturbance.

Relocating the bike path slightly further from the canal edge creates a stronger buffer between nesting habitat and human activity. This reduces disturbance while improving the overall habitat conditions, allowing the nesting area to function with greater security and continuity.

CO-EXISTENCE FRAMEWORK PLAN

4TH SEGMENT

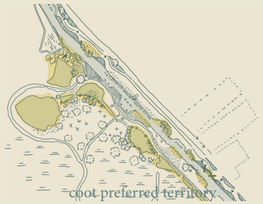


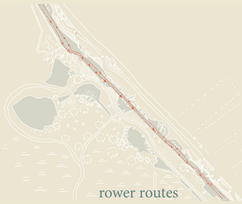
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- Mitigation Method
- Industry


coach


canadian-geese preferred territory


fishing potential areas

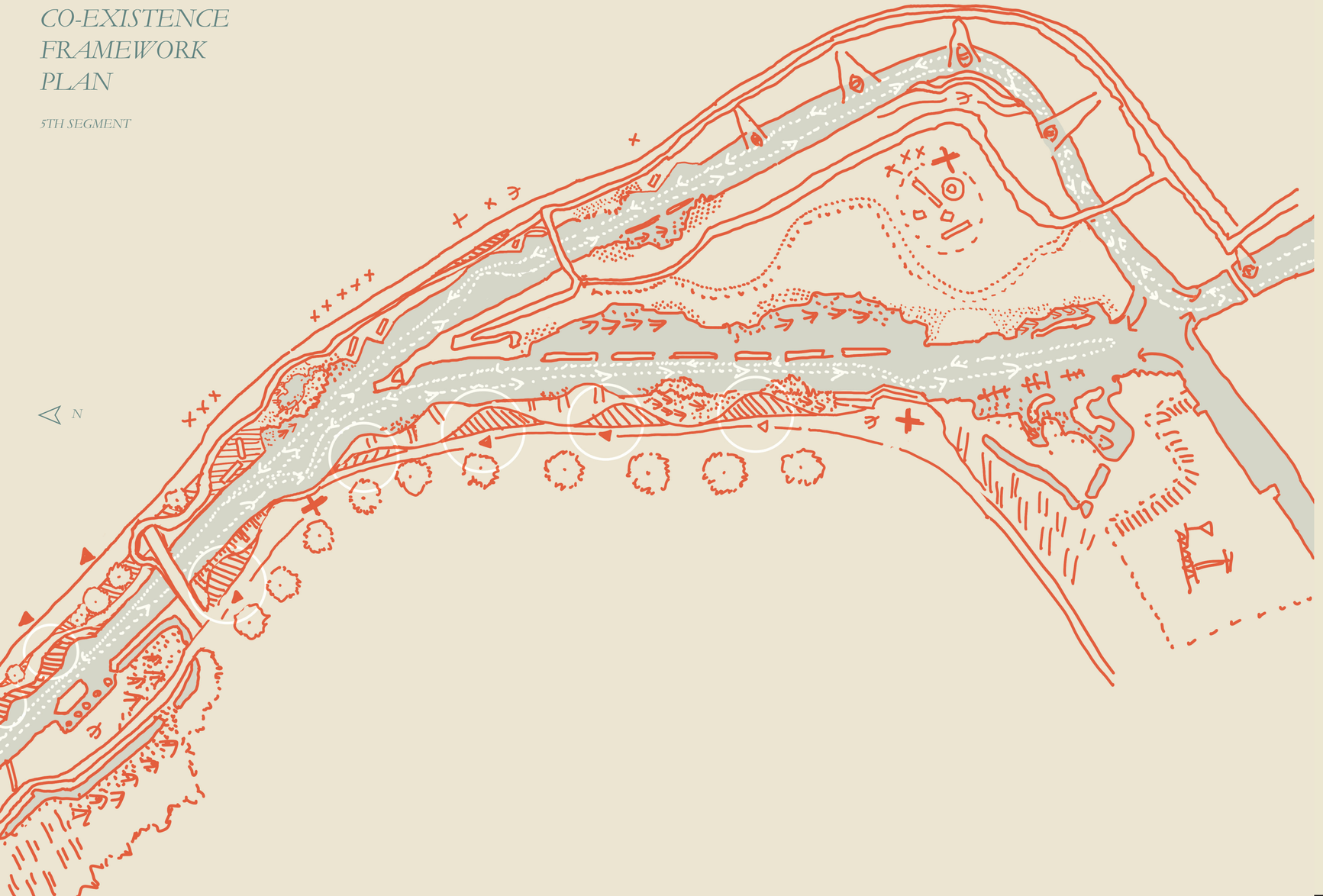

coot preferred territory


rower routes


egyptian-geese preferred territory

CO-EXISTENCE FRAMEWORK PLAN

5TH SEGMENT



- Launching Cove/Point
- Sittable Area
- Fishable Area
- Rower Stopping
- Rower Routes
- Deck
- Street Furniture
- Ramp / Steps
- Breakwater
- Docking Station
- Canoe Kayak Cove
- Dense Vegetation
- Marsh
- Bushes
- Tree
- Vacant Grass Area
- Flat Open Grass
- Farmland
- Bridge
- Visual Corridor
- Mitigation Method
- Industry



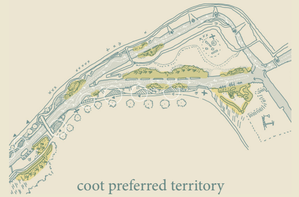
coach



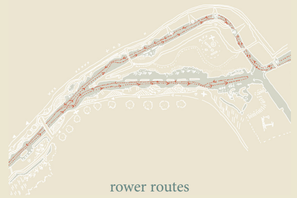
canadian geese preferred territory



fishing potential areas



coot preferred territory



rower routes

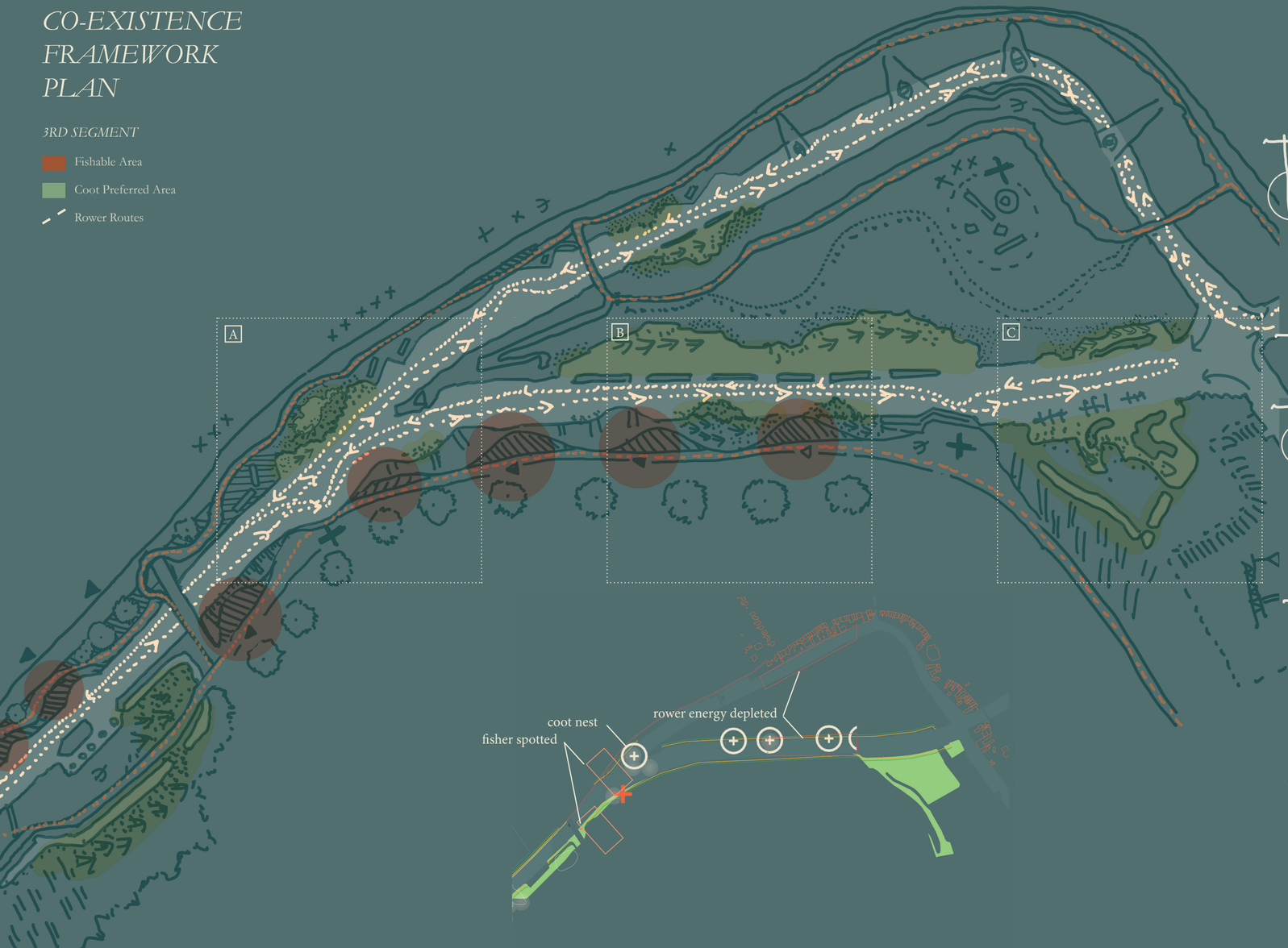


egyptian geese preferred territory

CO-EXISTENCE FRAMEWORK PLAN

3RD SEGMENT

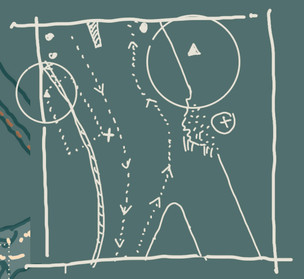
- Fishable Area
- Coot Preferred Area
- Rower Routes



DESIGN HIGHLIGHT

A

BEFORE



AFTER

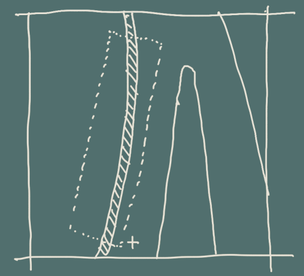


After the sharp turn, rowers must quickly negotiate fishing lines, shallow vegetated water, and the upcoming bridge crossing. The accumulation of these obstacles creates a localised capacity overload, demanding constant attention and rapid adjustment.

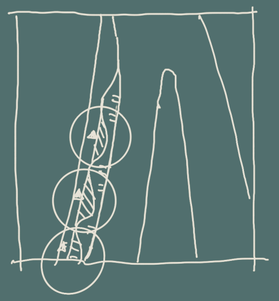
By strategically placing rowing stopping points and concentrating viable fishing conditions at specific locations, the spatial relationship between rowers and fishers is recalibrated. Rowers naturally avoid fishing radii while fishers are drawn to more productive areas, reducing conflict and lowering energy expenditure for both actors.

B

BEFORE



AFTER



This segment already offers favourable conditions for fishing, yet the steep dock walls limit comfortable access and long-term occupation. By introducing a stable seating edge, the existing fishing potential can be strengthened and made more accessible.

The intervention creates a more inviting place for fishers to spend time, encouraging activity to concentrate in a location that is already well suited to support it. In doing so, pressure on more contested parts of the corridor can be reduced while improving the overall fishing experience.

C

BEFORE



AFTER



This segment contains several scattered coot nesting locations but lacks the dense vegetation cover that provides shelter and protection. The area also serves as a rowing stopping point, creating disturbance near nesting sites. Notably, the in-water pillar is frequently used by seagulls, a key predator of coot chicks, making vegetative cover particularly important in this location.

By introducing a rowing deck slightly further north, rowers are encouraged to stop before reaching the nesting area. Soft dock-wall edges, marsh-like habitats, and denser vegetation further strengthen nesting conditions, reducing disturbance while improving habitat quality and protection for coots.


MERCURY

ARRIVAL

Why does public life along the Schie emerge spontaneously, while in many other places it must be actively programmed? Everytime I describe the Schie, I'm not describing a successful park. I'm describing something else. Here, actors invited themselves. Not people attended an event, not people visited an attraction, not people used a facility.

People found their own reasons to be there and that is fundamentally different.

I didn't invent these actors, they were already there, nobody coordinated them, nobody masterplanned them, nobody said, this is the official rowing zone, this is the official fishing district, this is the official bird habitat. Yet somehow they coexist, my entire thesis started because I noticed this. What if the Schie's success comes from the fact that it is not highly optimized for a single purpose?

Many parks often feel like they are designed for people. Which sound good, but often means: controlled, programmed, expensive, curated, consumption-oriented. The action of going to a part comes with purposes. You go there to do something, the schie feels different, you don't necessarily go there to do anything, you can fish, watch birds, row, walk, cycle, sit, read, leave. The threshold is almost zero.

Coming to the question: what is this care that I'm designing for? Maybe I'm not designing care itself.

Maybe I'm designing the conditions under which care can emerge. I cannot design somebody to care about coots. But I can design conditions where: coot become visible, and easy to care for, rowing naturally slows near nesting areas, fishers encounter ecological systems, residents witness seasonal changes, then care is not enforced, it emerges through repeated encounters.

And this is where the 100% scenarios suddenly become useful. They are not future proposals, they reveal: what conditions allow each actor to fully express itself? The 100% coot says: this is what a complete coot life requires. The 100% rower says: this is what attentive rowing requires. The 100% fisher says: this is what fishing culture requires. Then the design question becomes: How much of these conditions can coexist in the same landscape? Instead of which actor wins?

Throughout the process of composing Atlas van de Schie, I realized that I enjoy the most when uncovering hidden conditions behind each actors, when Chris asked, how are you gonna design for fisherman, they're just there randomly, and I pull out my study and said, haha, no no, you are wrong, there are not there coincidental. They need the following conditions all satisfied, and that is not random.

I think my strongest moments are the parts that I discovered: why coots choose one reed bed and not another, and rower has an energy system that requireds recovery points, why geese occupy certain territories. When I was uncovering the logic behind occupation. Almost like: how does a landscape invite different forms of life?

I think the Schie Strategy is not a biodiversity thesis, or not even primarily a public space thesis, but a critique of prescriptive design. In the final design, I'm not designing coot zone. not forcing rowers to stop here, not assigning fishing to this location. But to provide conditions, to enable, I observe first, and actor take ownership.

The reason the Schie fascinated me is that it exposed a contradiction. In school and practice, designers are often taught to think: Desired behavior > Design intervention.
Want people to sit?>Place benches.
Want biodiversity?>Create habitat zone, don't let anyone in.
Want social interaction? >Want social interaction?
The underlying assumption is: design causes behavior.

But the Schie seems to be teaching me something else: behavior already exists, design should understand and support it.

In this final design chapter I want to challenge designer, not an organizer, not a programming, not a controller, the design I don't want to make is, where designer decides, where people sit, where they play, where nature exists, where activity happens, Everything is categorized, everything has a designated place, everything has a function.

I accept the fact that you can't design everything, once i accept that, another question appears: If I cannot determine behavior, what is my role as a designer? I think the essence of my thesis is in answering this question.

Not I designed a marsh for coots.

But:

I observed where coots already thrive.
Then: I identified enabling conditions.
Then: I reduced disabling conditions.
Then: I expanded opportunities for occupation.
That is much closer to: cultivation

Perhaps the care is:
Care for the conditions that allow actors to exercise agency.

At the start of my thesis, I thought of the Schie as a blank canvas, so every actors come and paint this canvas in the way they desire.
What's interesting is that the Schie is not actually blank. It only appears blank.

Underneath, there are:
currents
vegetation structures
access points
rowing rhythms
fishing habits
nesting territories
visibility conditions

A huge amount of structure already exists, and the space is not empty, it is under-prescribed. And that's why people can appropriate it. The ideal design product that I wish to achieve is that I will be happy even if the coot doesn't use the specific marshland I designed. If the marsh creates suitable conditions, and the coot chooses another location, the actor still retained agency.

The goal was never to command behavior, but to increase possibilities. That is a radically different success metric.

The design plan is not the perfect future Schie. But a method of design that shifts the role of the designer from prescribing use to cultivating conditions for many forms of life to emerge and negotiate space together.

The actors already has interest, The designer's role is not to assign those interests. The designer's role is to understand them. And then create conditions under which those interests can continue to exist.

Design should not assume complete authority over behavior. should support agency rather than prescribe outcomes.
The thesis is against the idea that: every actor should have a predefined box. The Schie seems valuable precisely because it remains partially unresolved. Care is not the provision of a predetermined outcome.

Care is the continuous maintenance of conditions that allow different actors to exercise agency.

I started the project trying to design the Schie. I ended it questioning whether the Schie was ever the thing that needed designing in the first place.

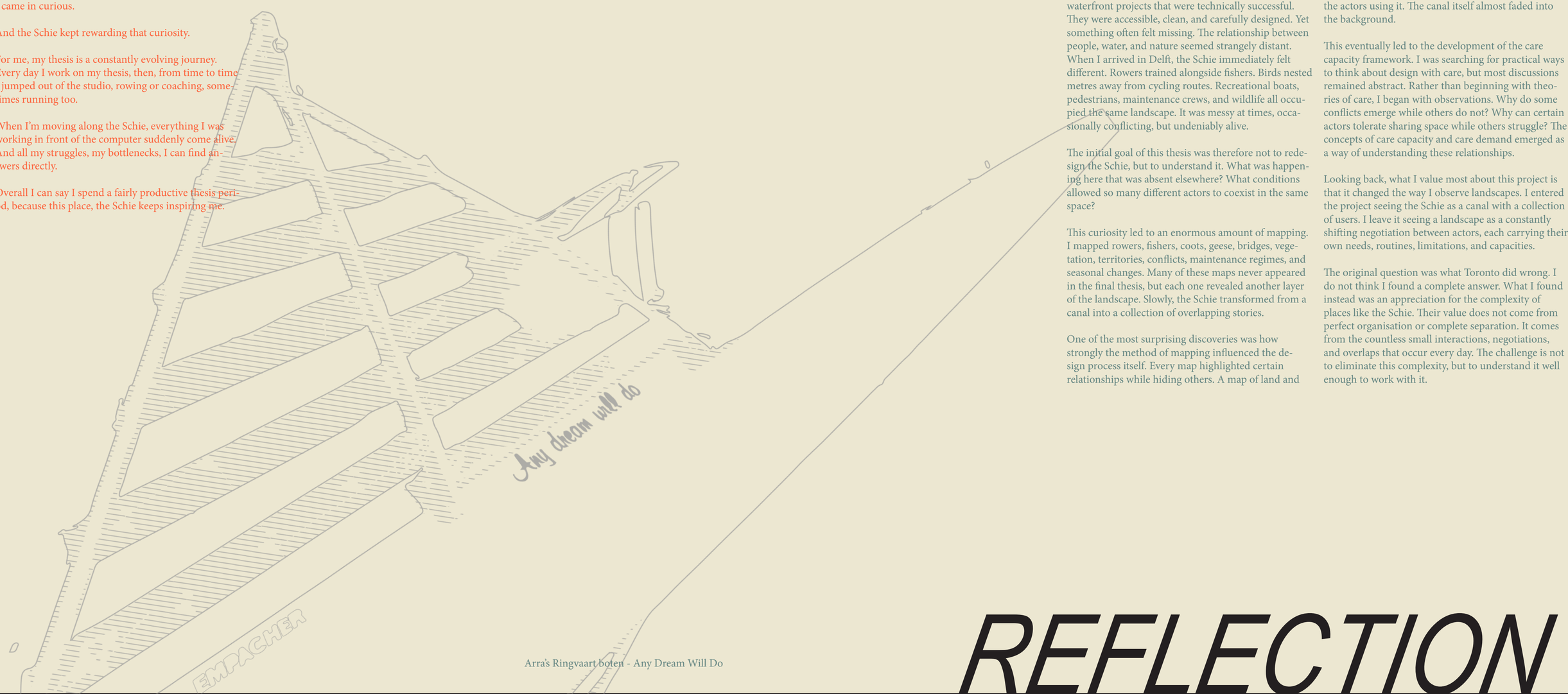
I came in curious.

And the Schie kept rewarding that curiosity.

For me, my thesis is a constantly evolving journey. Every day I work on my thesis, then, from time to time I jumped out of the studio, rowing or coaching, sometimes running too.

When I'm moving along the Schie, everything I was working in front of the computer suddenly come alive. And all my struggles, my bottlenecks, I can find answers directly.

Overall I can say I spend a fairly productive thesis period, because this place, the Schie keeps inspiring me.



Arra's Ringvaart boten - Any Dream Will Do

REFLECTION

I started this project with a simple curiosity: why does the Schie feel so alive?

Coming from Toronto, I had spent years around waterfront projects that were technically successful. They were accessible, clean, and carefully designed. Yet something often felt missing. The relationship between people, water, and nature seemed strangely distant. When I arrived in Delft, the Schie immediately felt different. Rowers trained alongside fishers. Birds nested metres away from cycling routes. Recreational boats, pedestrians, maintenance crews, and wildlife all occupied the same landscape. It was messy at times, occasionally conflicting, but undeniably alive.

The initial goal of this thesis was therefore not to redesign the Schie, but to understand it. What was happening here that was absent elsewhere? What conditions allowed so many different actors to coexist in the same space?

This curiosity led to an enormous amount of mapping. I mapped rowers, fishers, coots, geese, bridges, vegetation, territories, conflicts, maintenance regimes, and seasonal changes. Many of these maps never appeared in the final thesis, but each one revealed another layer of the landscape. Slowly, the Schie transformed from a canal into a collection of overlapping stories.

One of the most surprising discoveries was how strongly the method of mapping influenced the design process itself. Every map highlighted certain relationships while hiding others. A map of land and water suggested a fundamentally different landscape than a map of territories, energy systems, or seasonal rhythms. As the project progressed, I became less interested in the physical canal and more interested in the actors using it. The canal itself almost faded into the background.

This eventually led to the development of the care capacity framework. I was searching for practical ways to think about design with care, but most discussions remained abstract. Rather than beginning with theories of care, I began with observations. Why do some conflicts emerge while others do not? Why can certain actors tolerate sharing space while others struggle? The concepts of care capacity and care demand emerged as a way of understanding these relationships.

Looking back, what I value most about this project is that it changed the way I observe landscapes. I entered the project seeing the Schie as a canal with a collection of users. I leave it seeing a landscape as a constantly shifting negotiation between actors, each carrying their own needs, routines, limitations, and capacities.

The original question was what Toronto did wrong. I do not think I found a complete answer. What I found instead was an appreciation for the complexity of places like the Schie. Their value does not come from perfect organisation or complete separation. It comes from the countless small interactions, negotiations, and overlaps that occur every day. The challenge is not to eliminate this complexity, but to understand it well enough to work with it.

APPENDIX

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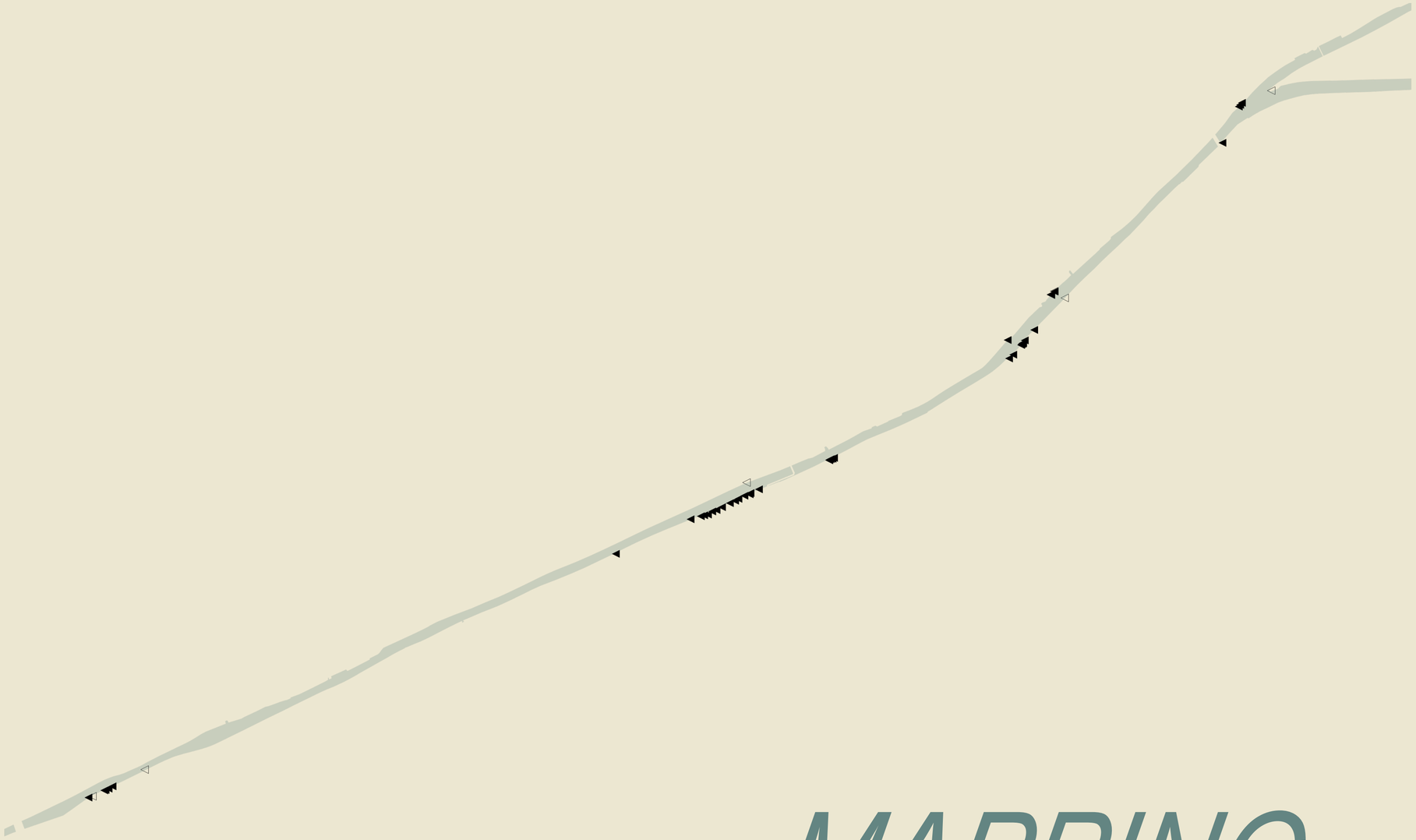
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METHODOLOGY



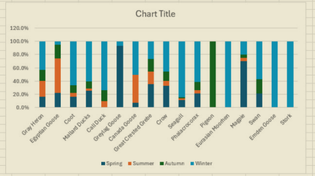
MAPPING

NON-HUMAN ACTORS (BY SPECIES)

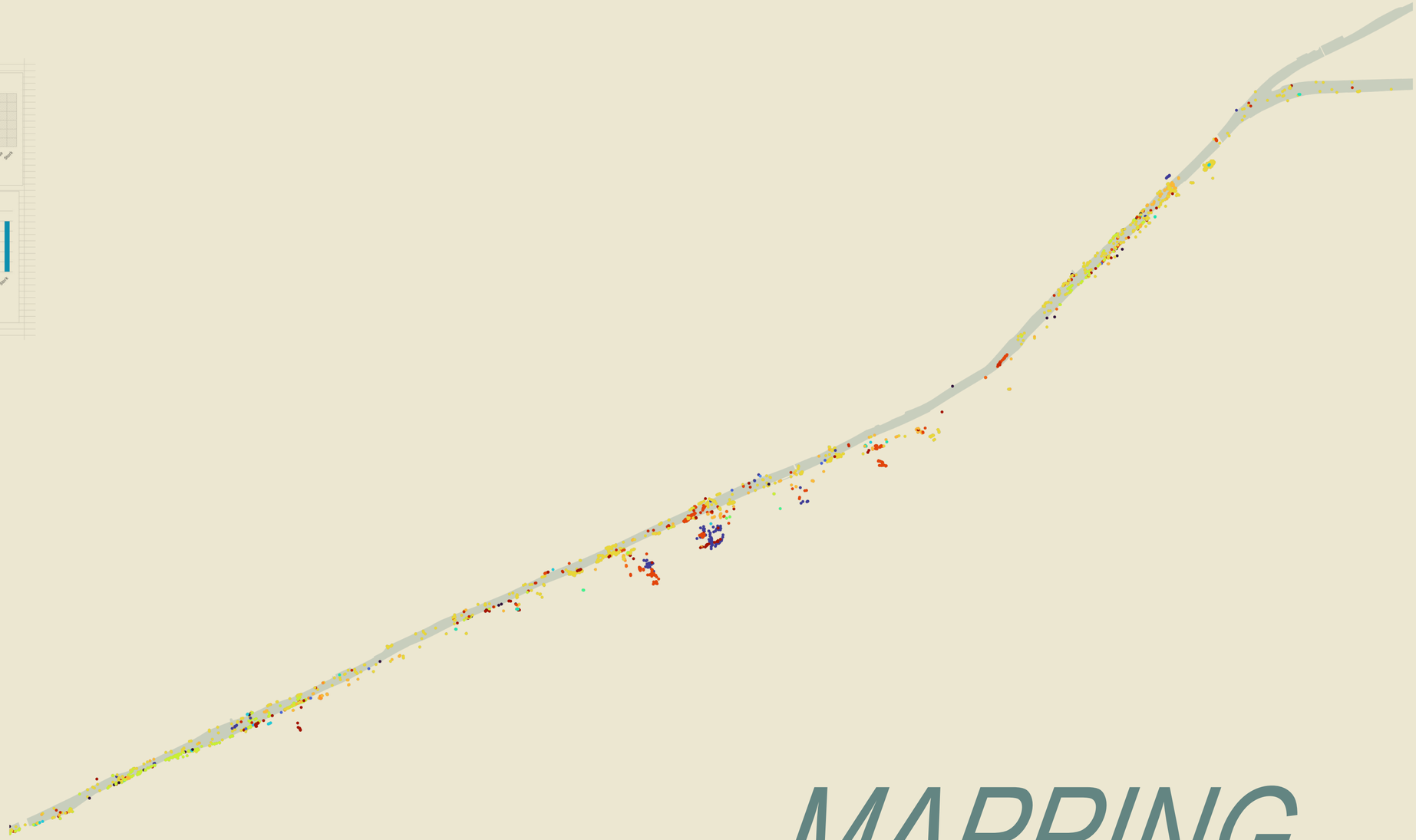
		Spring		Summer		Autumn		Winter	
1	Gray Heron	30	5	16.7%	7	23.3%	5	16.7%	13	43.3%
2	Egyptian Goo	**551**	**121**	22.0%	**288**	52.3%	**114**	20.7%	28	5.1%
3	Coot	**1126**	**181**	16.1%	74	6.6%	**130**	11.5%	**741**	65.8%
4	Mallard Duck	**225**	57	25.3%	7	3.1%	25	11.1%	**136**	60.4%
5	Call Duck	30	0	0.0%	3	10.0%	5	16.7%	22	73.3%
6	Greylag Goos	30	28	93.3%	0	0.0%	0	0.0%	2	6.7%
7	Canada Goos	**252**	19	7.5%	**106**	42.1%	0	0.0%	**127**	50.4%
8	Great Crested	68	24	35.3%	13	19.1%	13	19.1%	18	26.5%
9	Crow	116	38	32.8%	9	7.8%	16	13.8%	53	45.7%
10	Seagull	116	13	11.2%	3	2.6%	2	1.7%	98	84.5%
11	Phalacrocora	23	5	21.7%	1	4.3%	3	13.0%	14	60.9%
12	Pigeon	1	0	0.0%	0	0.0%	1	100.0%	0	0.0%
13	Eurasian Moc	2	0	0.0%	0	0.0%	0	0.0%	2	100.0%
14	Magpie	20	14	70.0%	1	5.0%	1	5.0%	4	20.0%
15	Swan	14	3	21.4%	0	0.0%	3	21.4%	8	57.1%
16	Emden Goos	3	0	0.0%	0	0.0%	0	0.0%	3	100.0%
17	Stork	2	0	0.0%	0	0.0%	0	0.0%	2	100.0%



	Spring	Summer	Autumn	Winter
1 Gray Heron	16.7%	23.3%	16.7%	43.3%
2 Egyptian Goo	22.0%	52.3%	20.7%	5.1%
3 Coot	16.1%	6.6%	11.5%	65.8%
4 Mallard Duck	25.3%	3.1%	11.1%	60.4%
5 Call Duck	0.0%	10.0%	16.7%	73.3%
6 Greylag Goos	93.3%	0.0%	0.0%	6.7%
7 Canada Goos	7.5%	42.1%	0.0%	50.4%
8 Great Crested	35.3%	19.1%	19.1%	26.5%
9 Crow	32.8%	7.8%	13.8%	45.7%
10 Seagull	11.2%	2.6%	1.7%	84.5%
11 Phalacrocora	21.7%	4.3%	13.0%	60.9%
12 Pigeon	0.0%	0.0%	100.0%	0.0%
13 Eurasian Moc	0.0%	0.0%	0.0%	100.0%
14 Magpie	70.0%	5.0%	5.0%	20.0%
15 Swan	21.4%	0.0%	21.4%	57.1%
16 Emden Goos	0.0%	0.0%	0.0%	100.0%
17 Stork	0.0%	0.0%	0.0%	100.0%



- THE GRAY HERON
- SEAGULL
- PHALACROCORAX
- HOOKBILLDUCKS
- SEAGULL
- MAGPIE
- SWAN
- EMDEN GEESE
- STORK
- PIGEON
- EGYPTIAN GEESE
- COOT
- MALLARD DUCK
- CALL DUCKS
- GREYLAG GEESE
- CANADIAN GEESE
- GREAT CRESTED GREBE
- CROW



MAPPING

EURASIAN COOT (BY SEASONS)

START END

WINTER

SPRING

SUMMER

AUTUMN



MAPPING

CANADIAN GEESE (BY SEASONS)

START END

WINTER

SPRING

SUMMER

AUTUMN



MAPPING

EGYPTIAN GEESE (BY SEASONS)

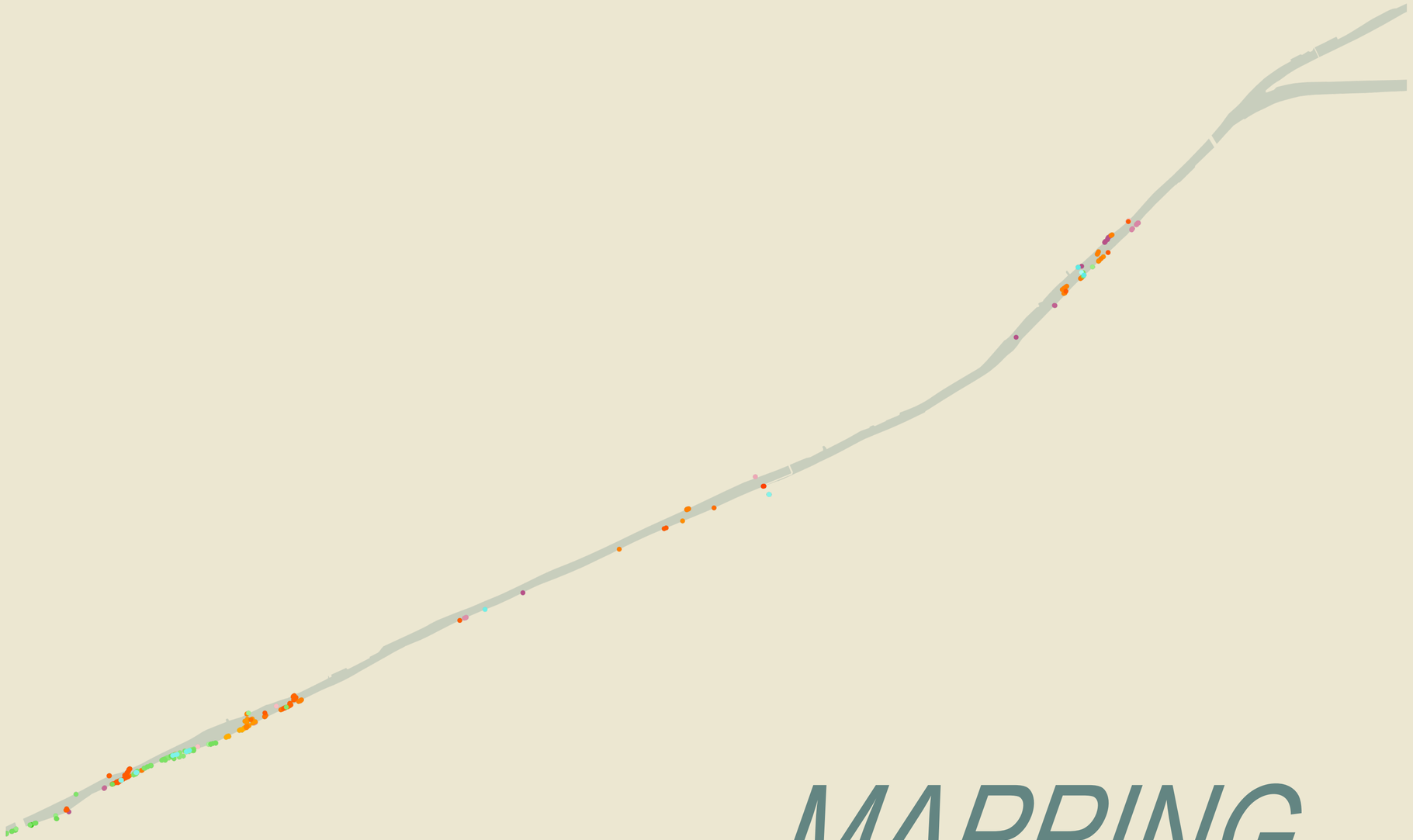
START END

WINTER

SPRING

SUMMER

AUTUMN



MAPPING

The mapping of coot nests was developed through a combination of dedicated surveys and several years of everyday observation along the Schie. To establish a baseline dataset, I wrote off a boat for three hours and rowed slowly along the entire canal, documenting every nest I could find. Thanks to my incredibly supportive boyfriend, who cycled alongside me for the whole journey, nest locations could be recorded through photographs and videos from both land and water. These observations were later translated into a spatial database and mapped to identify nesting patterns throughout the canal corridor.

The dataset was further enriched through everyday rowing and coaching. Whenever a nest was spotted during a training session, I would ask coaches or fellow rowers to take a photo, or photograph it myself while coaching. After each outing, observations were quickly noted down in a notebook before being added to the growing database. Over time, these small records accumulated into a much richer understanding of where coots choose to nest and how those locations change throughout the seasons.

Throughout this process, I realized that many nesting locations were situated in places largely invisible from land. Coots consistently occupied sheltered canal edges, small pockets of water, industrial waterfronts, spaces between boathouses, and dense vegetation along the banks. Many of these locations could only be properly observed from the water itself. This revealed an important limitation of conventional site observation: some landscapes remain hidden when viewed exclusively from streets, paths, and public spaces. Rowing provided access to a different perspective of the Schie, allowing these otherwise overlooked habitats to become visible.



ROWING ROUTE

NEST LOCATION

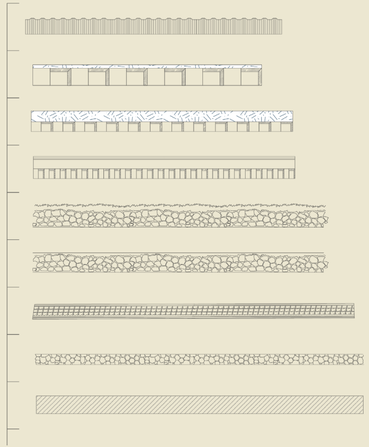
DATE: 26 APR
DISTANCE: 20KM
LOCATION: DE SCHIE
WEATHER: SUNNY, WIND 2
BOAT: 1x, RENS SANDERSE



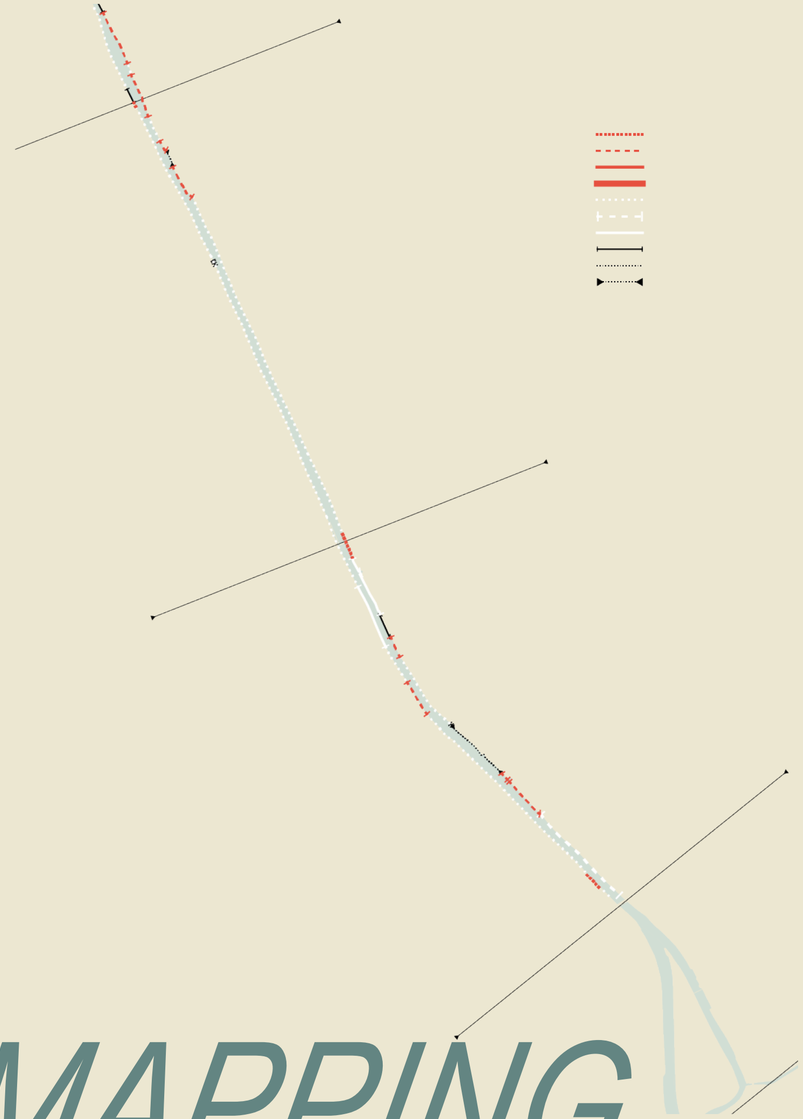
FIELD WORK

DOCKWALL MAP





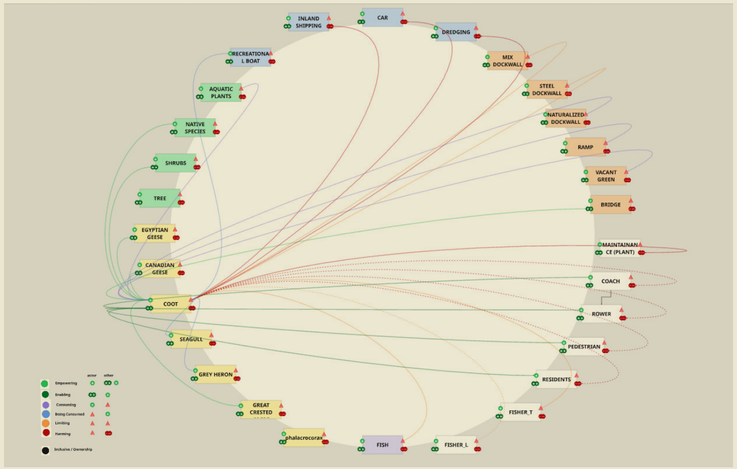
DOCKWALL ACCESSIBILITY



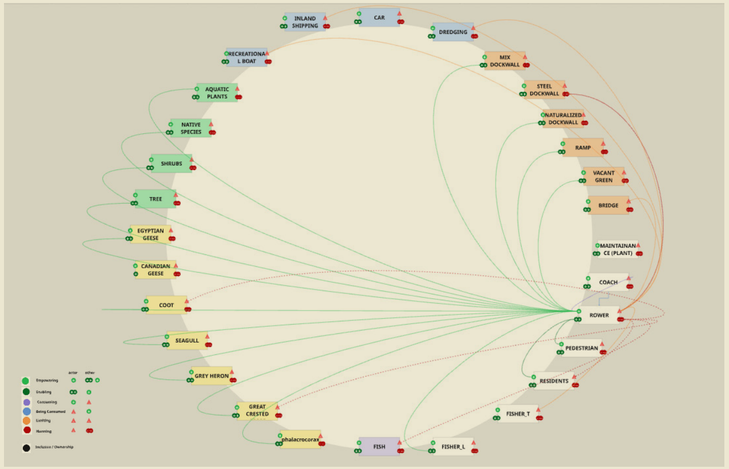
MAPPING

CHARACTER WHEEL

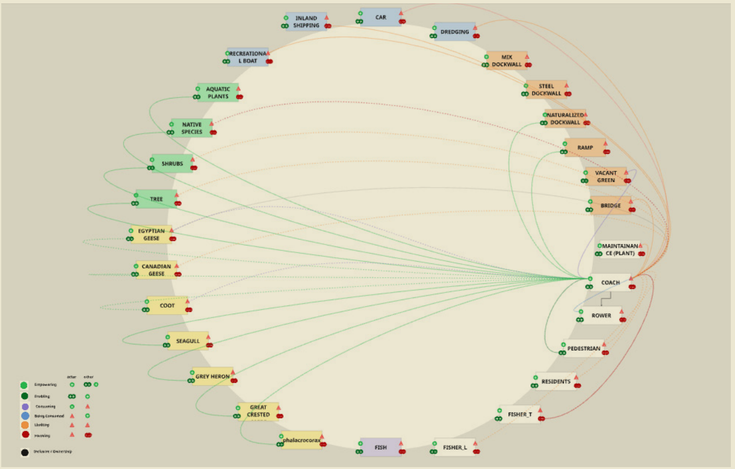
COOT



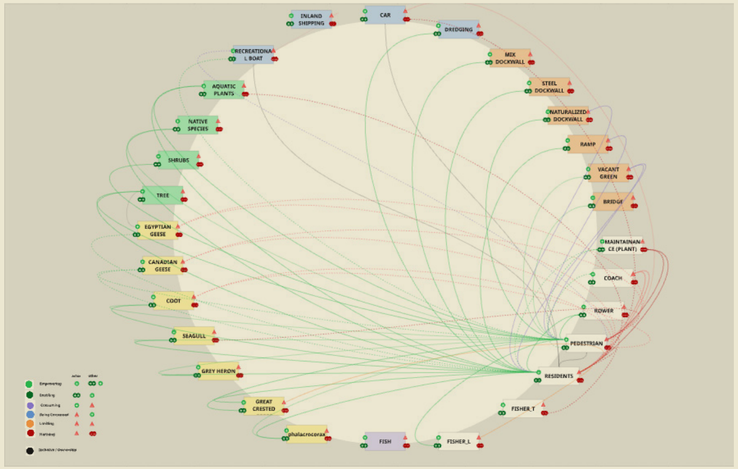
ROWER



COACH

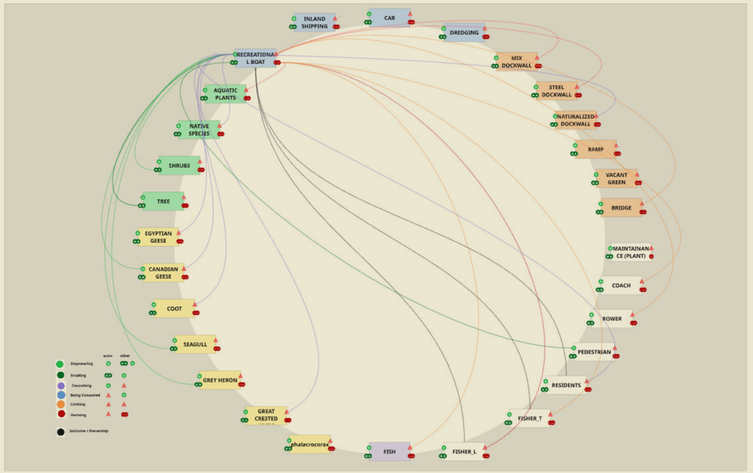


PASS-ERS-BY

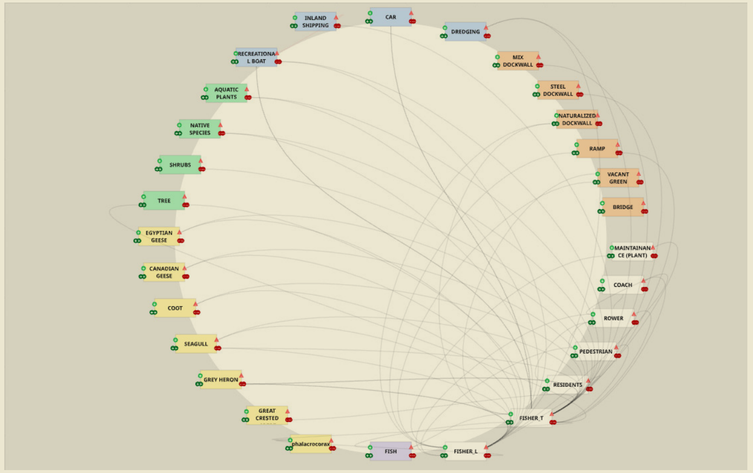


CHARACTER WHEEL

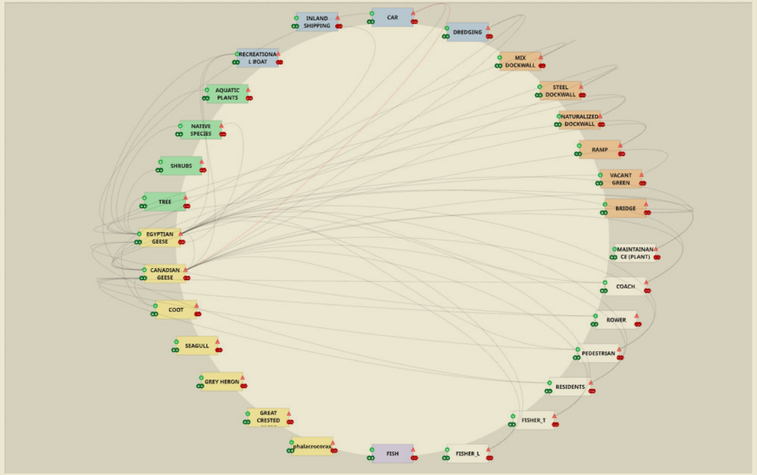
REC BOAT



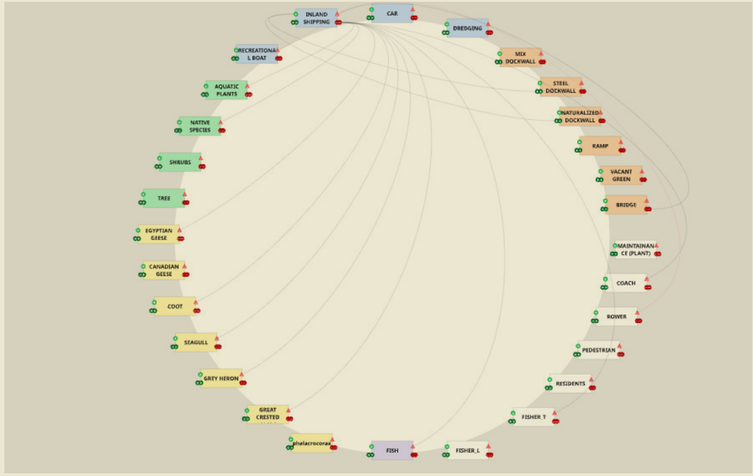
FISHER



EGYPTIAN GEESE



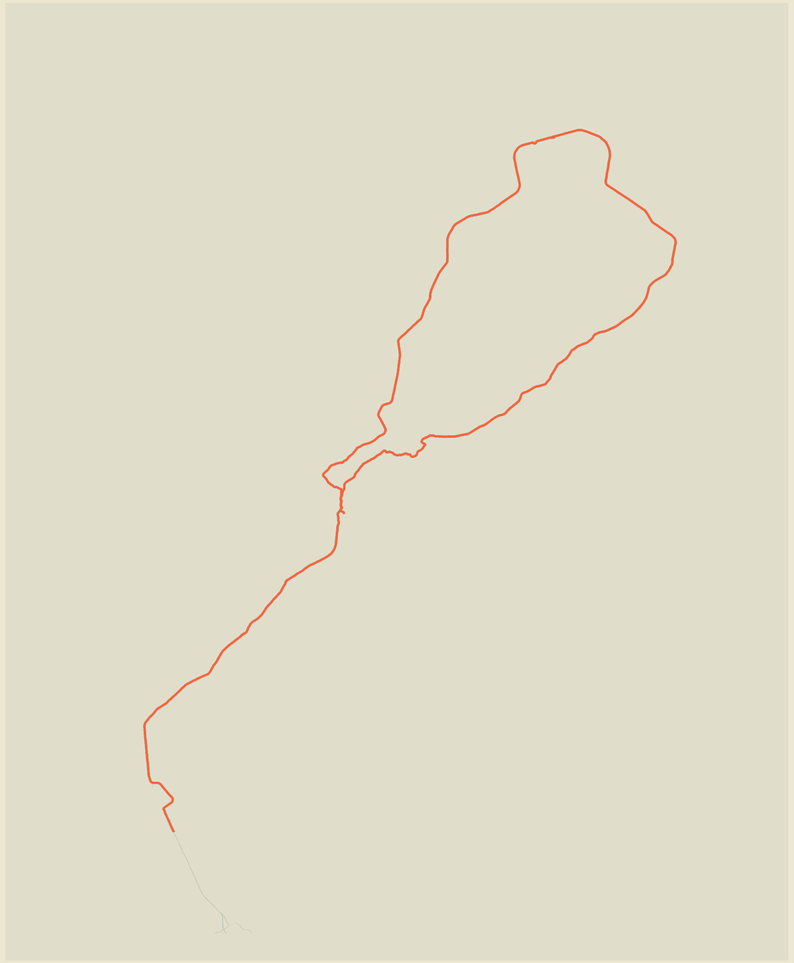
CANADIAN GEESE











DATE: 27 MAY
DISTANCE: 100 KM
LOCATION: LEIDEN - AMS - DELFT
DURATION: 12HR 43MIN
WEATHER: CLOUDY, WIND 3-4, 5BFT
BOAT: 1X, ANY DREAM WILL DO

100 kilometres is too long, honestly.

It does, however, provide a lot of time to think.

By the time I rowed the Ringvaart, most of this report had already been written. I thought I would spend the day simply enduring the distance. Instead, I found myself constantly looking at the landscape through the lens of the project. The observations that had emerged from the Schie began appearing everywhere.

Coots still preferred sheltered edges, pockets of calm water, and spaces inaccessible from land. Egyptian geese continued to gather along canal banks, lingering at the boundary between land and water. Anglers occupied accessible edges. Rowers searched for long uninterrupted stretches of water. Again and again, the patterns observed on the Schie reappeared throughout the journey. It was surprisingly rewarding to encounter these repeated confirmations. What had initially felt like site-specific observations gradually began to feel like broader spatial tendencies.

At the same time, the Ringvaart helped me understand what makes the Schie unique. Along the 100-kilometre route, individual stretches of canal often belonged to a single landscape type. Some sections were predominantly agricultural. Others were industrial, residential, or ecological. Each segment supported its own set of activities and relationships.

The Schie, by contrast, compresses many of these landscapes into a relatively short distance. Within the 13 kilometres investigated in this project, industrial waterfronts sit beside rowing clubs, residential neighbourhoods, ecological habitats, recreational routes, fishing spots, and shipping corridors. Different conditions overlap, intersect, and compete within the same space. Rather than representing a single canal typology, the Schie functions as a concentrated collection of many.

The more I rowed elsewhere, the more the Schie revealed itself as an interesting case study. Not because it is exceptional, but because it amplifies many of the dynamics found across Dutch canal landscapes. It is a place where different worlds meet, overlap, and negotiate with one another, making visible the hidden conditions and practices of care that sustain coexistence.

Of course, none of this would have been possible without the people who cycled alongside me during the Ringvaart.

To Dexter Braunius, who somehow cycled more than I rowed. Starting from Delft, riding all the way to Asopos, accompanying the entire Ringvaart, and then still making it home, total 130km (or so). This man has a well-earned reputation for enjoying unnecessarily long training sessions. I can only hope this expedition served as useful preparation for whatever 'ballon ballon' 180-kilometre ride somewhere in France 2 weeks after the Ringvaart.

To Pascal Christiaanse, thank you for bringing endless energy to the journey. One hundred kilometres is a long time to be alone with your thoughts. It turns out it is much more enjoyable when there is someone willing to listen and yap.

To Herbert Attema, 'vo for the herb master, and unwavering support throughout the process.

And to Sophie van de Kerkhof, whose words stayed with me long after the finish line. It was only when I watched the videos afterwards that I could clearly hear you shouting from the bank: "Put your oars through the water and push those water away all your power should be leaving your body if they haven't left you you've done something wrong and you never do things wrong I know you."

I remember being too tired at the time to properly respond. Listening back afterwards, however, left me unexpectedly emotional. My heart felt very warm. Thank you.

The Ringvaart is often described as an individual challenge. In reality, it is anything but. Every kilometre rowed was made possible by the people riding alongside, handing over food, shouting encouragement, taking photos, and reminding me to keep moving when stopping seemed much more appealing.

For that, I am deeply grateful.

RINGVAART

ROWER ENERGY CALCULATION

	distance	2000		3250		4500		6500						
	tussen pt	Coachbrug	stop 1	Kanderlaar	stop E	Coachbrug	stop 3	Proteus						
FM 1	100	56	78	50.5	75.5	48	70	26						
	distance	2500		3250	4500		5750	6500		9000				
	tussen pt	Boomptje	stop 1	Kanderlaar	Bocht	stop E	Kanderlaar	Boomptje	stop 3	Proteus				
FM 2	100	65	85	74.5-3	54	76	58.5-3	45	65	30				
	distance	2500		3250	4500		5250		6000		7250	8000		10500
	tussen pt	Boomptje	stop 1	Kanderlaar	Bocht	dstop	WW Boom	stop E	Bocht	dstop	Kanderlaar	Boomptje	stop 1	Proteus
Compo 1	100	70	88	79-3	61	66	57	77	68	73	58-3	46	64	34
	distance	3250		5250		7250		11000						
	tussen pt	Kanderlaar	stop 1	WW Boom	stop E	Kanderlaar	dstop	Proteus						
Compo 2	100	70.75	82.75	61.75	73.75	52.75	57.75	24						
	distance	3250		6000	6500		7000	9750		13000				
	tussen pt	Kanderlaar	stop 1	Doenbrug	Einde	stop E	Doenbrug	Kanderlaar	dstop	Proteus				
Extro/Compo	100	77.25	85.25	77.25-3	56.5	71.5	56.5-3	42.75	47.75	25				
	distance	3250	4500		6000	7000		7500	10750		14000			
	tussen pt	Kanderlaar	Bocht	stop 1	Doenbrug	Corner	stop 1	Doenbrug	Kanderlaar	stop 1	Proteus			
Wedstro 1	100	87-3	82	88	82-3	75	81	79-3	60	66	53			
	distance	3250		6000	6500		7000	9750		13000				
	tussen pt	Kanderlaar	stop 1	Doenbrug	Einde	stop E	Doenbrug	Kanderlaar	stop 1	Proteus				
Wedstro 2	75	55.5	63.5	49.75-3	38	53	50.5-3	27.5	35.5	16				

[BATTERY LEVEL]

80-100	Fresh
60-80	Stable
40-60	Fatigue
30-40	Vulnerable
20-30	fragile
<20	Unsafe/Breakdown
<10	critical

[DECAY RATE]

TYPE	/500m	m-s	f-s	d-s
FM 1	11	22	25	5
FM 2	7	20	22	
Compo 1	6	18	20	
Compo 2	4.5	12	20	
Extro/Compo3	3.5	8	15	
Wedstro 1	2	6	15	
Wedstro 2	2.5	8	15	

FM1: 'freshman 1-3 month'
Short rowing, long pausing.

FM2: 'freshman March-June / Compo 2nd Year'
Short-Medium rowing, long pausing.

Compo 1: 'Compo 2-3 Years'
Medium rowing, medium pausing

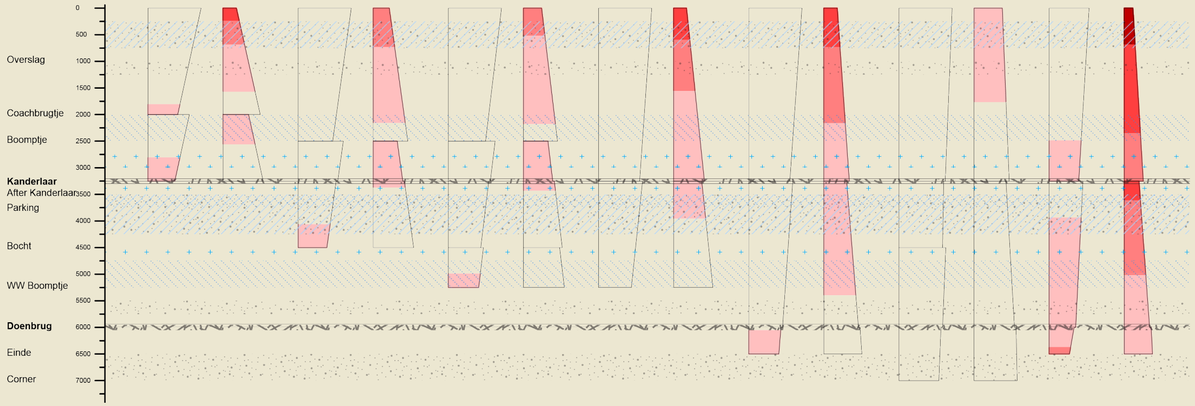
Compo 2: ' Compo 3+ Years'
Medium rowing, med - short pausing

Extro/Compo3: Ex-Wedstro, Compo 4+ Year
Med - long rowing, short pausing

Wedstro 1: Wedstro 2nd Year
long rowing, short pausing

Wedstro 2: Wedstro 4+ Years
very long rowing, very short pausing

m-s: middle stops
f-s: furthest stops
d-s: drink stops



ENERGY CALCULATION

COACH ENERGY CALCULATION

				-6					-6							
				1600		coach2/3			3300				-6			
	0		-1	1500		0	2		3200				3700			
	250-750		1100	1400		2000-2500	2000-3000		3100		-2		3600			
	oefening		overslag	obstacles		oefening	recharge		obstacles		bridge		3500			
		1000			2000			2500		3250		3500				
		Overslag			Coachbrug			Boomptje		Kanderlaar		After Kanderlaar		blind zone		
-3	-3		-2	-6.5												
3500-4250	3500-4200		turn	1000-4200						2						
narrow	traffic		obstacles	auto		-2		-2	-2	5000-5500		-2		4		
		3750			4500	boathouse	5250	boat	bridge	far	6000	junction	6500	eind	7000	
		Parking			Bocht		WW Boom				Doenbrug		Einde		Corner	
			distance	2000		3250		4500		6500						
			tussen pt	Coachbrug	stop 1	Kanderlaar	stop E	Coachbrug	stop 3	Proteus						
	coach 1	FM 1	100	71	84	61.75	81.75	59.5	74.5	43.5						
			distance	2500		3250	4500		5750	6500		3000				
			tussen pt	Boomptje	stop 1	Kanderlaar	Bocht	stop E	Kanderlaar	Boomptje	stop 3	Proteus				
	coach 1	FM 2	100	81	91	79-2	54.5	69.5	47-2	33	43	26				
			distance	2500		3250	4500		5250		6000		7250	8000		10500
			tussen pt	Boomptje	stop 1	Kanderlaar	Bocht	dstop	WW Boom	stop E	Bocht	dstop	Kanderlaar	Boomptje	stop 1	Proteus
	coach 2	Compo 1	100	81	89	73	54.5	59.5	47.5	55.5	43	48	42.5	34.5	42.5	26.5
			distance	3250		5250		7250		11000						
			tussen pt	Kanderlaar	stop 1	WW Boom	stop E	Kanderlaar	dstop	Proteus						
	coach 2	Compo 2	100	81	89	71	79	61	66	50						
			distance	3250		6000	6500		7000	9750		13000				
			tussen pt	Kanderlaar	stop 1	Doenbrug	Einde	stop E	Doenbrug	Kanderlaar	dstop	Proteus				
	coach 3	Extro/Compo	100	84	92	81.5	67	77	68	61	66	52				
			distance	3250	4500		6000	7000		7500	10750		14000			
			tussen pt	Kanderlaar	Bocht	stop 1	Doenbrug	Corner	stop 1	Doenbrug	Kanderlaar	stop 1	Proteus			
	coach 3	Wedstro 1	100	86	78	86	76.5	72	80	70.5	64	72	58			
			distance	3250		6000	6500		7000	9750		13000				
			tussen pt	Kanderlaar	stop 1	Doenbrug	Einde	stop E	Doenbrug	Kanderlaar	stop 1	Proteus				
	coach 3	Wedstro 2	100	84	92	81.5	67	77	68	61	69	55				

[BATTERY LEVEL]

80-100	Fresh
60-80	Stable
40-60	Fatigue
30-40	Vulnerable
20-30	fragile
<20	Unsafe/Breakdown
<10	critical

[DECAY RATE]

		decay	/500m	m-s	f-s	d-s
coach1	FM 1	5.5		15	20	5
	FM 2	4		10	15	
coach2	Compo 1			3	8	12
	Compo 2			2	8	12
coach3	E/Co	3		1.5	8	10
	Wedstro 1			1		
	Wedstro 2			1.5		

[STRESS MOMENT (-)]

traffic 1/500m
narrow road 2/500m
traffic junction 1
look out point 2/point
boathouse 2/500m
misc zone 1/500
canal junction 2
blind 2/500m

FM1: 'freshman 1-3 month'
Short rowing, long pausing.

FM2: 'freshman March-June / Compo 2nd Year'
Short-Medium rowing, long pausing.

Compo 1: 'Compo 2-3 Years'
Medium rowing, medium pausing

Compo 2: ' Compo 3+ Years'
Medium rowing, med - short pausing

Extro/Compo3: Ex-Wedstro, Compo 4+ Year
Med - long rowing, short pausing

Wedstro 1: Wedstro 2nd Year
long rowing, short pausing

Wedstro 2: Wedstro 4+ Years
very long rowing, very short pausing

m-s: middle stops
f-s: furthest stops
d-s: drink stops

ENERGY CALCULATION

GRADIENT OF CARE : 100% ——— 0% (T) TANGIBLE (IT) IN-TANGIBLE

PLAYERS
- DUCKS
- GEESE
- ROWER
- SWIMMER
- FISHMAN
- CARGO SHIP
- RESIDENTS
- TOURISTS
- PARTY-GOERS
- ....

⇓

WHAT IF...

DESIGN SCENARIOS FOR. (EXTREME SCENARIOS)

1/ A CANAL ~~FOR~~ 100% FOR DUCKS.

2/ A CANAL 100% FOR ROWERS.

3/ A CANAL 100% FOR FISHERMAN + SWIMMERS.

4/ A CANAL 100% FOR RESIDENTS.

5/ A CANAL 100% FOR CARGO SHIPS + INDUSTRY. CAR/CYCLIST ?

⇓ THEN.

IDENTIFY ACTIONS, GRADIENT OF CARE/INTENSITY OF CARE, CONFLICTS IN VISIONS, (CONFLICT / OVERLAP ZONES OF CARE).

⇓ FINALLY.

MERGE / AGGREGATED VISION OF CARE.

Q: HOW IS THE DESIGN PROPOSAL DIFFERENT ?
WHICH PART ECHOS → RIGHT OF NATURE ?
WHICH PART MAKE SURE → PROPOSAL BASED ON CARE ?

MERGE VISION. → NEGOTIATION ⇓ COMPROMISES.

SOME - UN-DEFINED ZONES → ROOM FOR CARE.

POINTS OF CONFLICT → POINTS OF CARE (A)

DESIGN STRATEGIES. → ENHANCE, PROVIDE(?)

CAPACITY TO CARE

CAPACITY TO CARE ⇓ "BATTERY"
- → REDUCE CONSUMPTION. ⊖ (MINDSPACE)
- → INCREASE CAPACITY. ⊕ (CONNECTIONS)

* → NON-NEGOTIATABLE

" CANAL 100% FOR ROWERS / COACHES.

V FLAT WATER. → WAVE BREAKER, NATURALIZED DOCKWALL, CANOPY...

2/ COACHING AVAILABILITY. → VISIBILITY. BIKE PATH, STOPPING POINT.

3/ EMERGENCY SITUATION. → DOCKWALL, WATER DEPTH. STAIRS.

4/ CHANGING VIEWS → AVOID TIREDNESS. PERCEPTION OF DISTANCE → (BRAIN CAPA ACTIVE)

5/ OTHERS : NIGHT TRAINING. / CLUB HOUSE...

6/ EXTERNAL CONNECTION ?

1/ FLAT WATER. (HEALTHY. CALM WATER).

REDUCE WAVES → WAVE BREAKERS. NATURALIZED (DOCKWALL) SHORELINES. (A)
- → CONNECTION TO OTHER WATER BODIES → CANAL NOT A BLACKBOX !.
- → CANOPY COVERAGE → USUAL WIND DIRECTION "EDGE OF CANAL" (SPECIFIC AREA) (A)

WATER-ECO-SYSTEM. → MICROS, ALGAE. → UNDER SURFACE LIFES / HABITAT.

CLEAR WATER → SEE IF THERES OBSTRUCTIONS IN THE WATER. (A) → FISH.

2/ COACHING AVAILABILITY

VISIBILITY → PROGRAMMING ALONG CANAL → LESS VISUAL OBSTRUCTION (A) → DUCKS
- → NO TREES. HIGH VEGETATIONS, ~~ALSO~~ HIGH DOCKWALL (STEAL RIDE). (A)
- → LESS DIFFERENCE BETWEE [WATER LEVEL] AND [LAND ELEVATION] (A) WATER SAFETY.
- → SAFETY ALONG BIKE PATH → LESS MINDSPACE REQUIRED TO MANEUVER. (A) CAR.

BIKE PATH. → → DESIGNATED BIKE LANE ↓ CLOSE TO WATER.
- → GOOD FOR BIKING (CANAL EDGE BIKE PATH → DIRT ROAD ASPHALT) NEED TO WASH BIKE AFTER COACHING → (A) DUCKS
- → SAFETY → NOT TOO NARROW → DANGEROUS FOR BIKE + CAR. (A) FARMERS
  - → PROTECTION → FENCE / CLEARANCE.
  - → ALTERNATIVE ROAD MARKS / INFRA

DANGEROUS.

STOPPING POINT → SAFE & HAVE CLEAR VIEW
- → WILL BE BETTER → DECK → STAIR GO TO WATER LEVEL (A) WATER SAFETY.
- → WIDTH OF CANAL → VIABLE FOR STOPPING. (UNDULATING EDGE ?)

3/ EMERGENCY SITUATION.

DOCKWALL → NATURALIZED → "CLIMBABLE" → CHAMFER EDGE PREFERED

CANAL BOTTOM → SHALLOWER ? (NOT 100% NECESSARY.)
- → IF SHALLOW BOTTOM. → FLAT, SMOOTH → NO SHARP EDGES (A) → FISH, DUCKS.

WIDTH OF CANAL → WIDE ENOUGH FOR BOATS TO MANEUVER / DODGE.

SIGNALS FOR BOAT (CARGO SHIP) → BRIDGES OPEN → MONITOR STATION BEFORE BRIDGES (LIGHT/SIGNAL ON BRIDGE)
- → DESIGNATED LANE ? / CARGO → ALWAYS STAY CENTER.

SPEED LIMIT.

4/ CHANGING VIEWS. → "WALKABLE CITY THEORY"
- → EXTEND WINDOWS OF ATTENTIONS. → DECREASE PERCEPTION OF DISTANCE.
  (ENCOURAGE VARIOUS PROGRAMMINGS / BOAT HOUSES / ACTIVITIES.
- → SOME ACTIVITIES → VIVIDNESS → CANOE, RESTAURANT, DUCKS. → NOT TOO MUCH.
- → UNDULATING CANAL → SOME CURVATURES → NEED FOR STEERING → ACTIVATE B (NOT TOO MUCH. (A) → WATER SAFETY. OR → STEERING → DISTRACTION.
- → BRIDGES, TREES. WAYFINDING OBJECTS REQUIRED.
- → EVERY 100m. → 1 ROAD MARKS → LEAVE IT AS IT IS.

5/ OTHERS.

(1) NIGHT TRAININGS → GOOD LIGHTING AT NIGHT. (A) → RESIDENTS.
LIGHT NEAR WATER LEVEL, NO REFLECTION

(2) FLORENCENT ALGAE. / AQUATIC PLANT. (A) → DUCKS, FISH.
CLUB HOUSE → RESIDUAL INDUSTRIAL LAND.
→ FUNDING. FROM TU / CITY.

6/ EXTERNAL CONNECTIONS.
- → MEETING PLACES WITH OTHER PLAYERS / REGULAR MEETINGS (FORMAL / INFORMAL)
- → COLLABORATION WITH OTHER PLAYERS.
  - → INDUSTRIAL PARTNERS. → LARGE BOATHOUSE / ATTIC.
  - → RESIDENTS → FLEXIBLE NOISE ZONES.
    → ALLOW FOR CLUB ACTIVITIES.
  - → LESS BOAT ACTIVITIES (CARGO SHIP, RECREATION BOAT).
    (DESIGNATED ZONES / ROUTES.

A CANAL 100% FOR DUCKS / GEESE / ~~SHIP~~.

1/ GOOD WATER QUALITY. → LIVE WATER, FLOWING. MONITOR
2/ SOURCE FOR FOODS. → ALGAE, SHELLS, FISH, CROP.
3/ SAFETY TO GET TO FOODS / HABITATS → CROSSING / TREES, GREENS.
4/ HABITATS. → CORNER, GREENS.
5/ CONNECTION?

1/ WATER QUALITY:
WETLAND SYSTEM / ECOLOGICAL SYSTEM, (+) IN A NON-HARMFUL WAY.
SEDIMENT BASIN. → REGULAR DREDGING. → (POINT DREDGING) (+)
ALGAE, → AQUATIC PLANT.
LIVE WATER → CONNECTION TO OTHER WATER BODY. → FLOWING → "WW. MOTOR BOAT" (WATER SAFETY) (NOT FROZEN.)
WATER QUALITY MONITORING. (+) (TEMP? °C)

2/ SOURCE FOR FOODS.
AGRICULTURE FIELD / POLDERS. → DESIGNATED FIELD FOR DUCKS.
ALGAE, SHELLS, FISH. → GOOD ECOLOGICAL SYSTEM. → CO → (1).
→ BOTTOM OF CANAL. → STONE / GROUND / SEAWEED.
SHELL FISH / FISH /
CORAL REEF, SHELL COULD LATCH ONTO. (ROWER)

3/ SAFETY TO GET TO FOODS.
WIDTH → CROSSING.
MANAGEABLE DEPTH OF WATER. (DUCKS DIVE) → ~~SAFE~~ SHALLOW WATER.
CONTINUOUS TREE → STOPPING POINT → TO SOURCE OF FOOD. (ROWER.)
SAFE CROSSING. → "LOOK OUT AREA" → ROAD MARKING.
→ "LOWER LEVEL CROSSING → CANAL CONNECTION. (WATER SAFETY.)
VEGETATIONS ALONG THE CANAL → LESS CROPPING. (→ ROWER (FISHMAN?)
LESS TRAFFIC → ON WATER on ON LAND. (CARGO → MAINTAINANCE → RESIDENCE.)
NATURALIZED SHORELINE (DOCKWALL) → CLIMB UP.

4/ HABITATS.
CORNERS. HIDDEN SPACES. → NESTING.
→ NOT SMOOTH EDGES TO LATCH ONTO. (ROWER.)
→ VEGETATION DENSITY NEARBY FOR PROTECTION.
TREES, BUSHES → LESS CROPPING. (~~COACH~~ COACHES.)
LINGERING GREEN → KEEP AS IT IS. (+)

5/ CONNECTIONS?
"BEAVER DAM"
DUCKS → WATER QUALITY INDICATOR.

MULTI

A CANAL 100% FOR INDUSTRY / INLAND SHIPPING.

1/ EFFICIENCY: STRAIGHT CANAL, SPEED LIMIT N O.
2/ INDUSTRIAL ENVIRONMENT: FACTORIES ALONG.
3/ CANAL ENVIRONMENT: = DOCKWALLS.
4/ EXTERNAL CONNECTIONS.

1/ EFFICIENCY.
→ STRAIGHT CANAL → NO NEED TO TURN, MOST EFFICIENT ROUTE.
→ NO SPEED LIMIT → MAXIMUM SPEED TO THE DESTINATION. (→ cyclist)
→ BRIDGES → IMPACTING EFFICIENCY.
→ BIG, HUGE BRIDGES. → NO NEED TO WAIT TO OPEN.
→ MONITORING STATION → OPEN BRIDGE BEFORE ARRIVE. (NO NEED TO WAIT AT BRIDGE).
→ SUPER WIDE CANAL → INDUSTRIAL VOLUME ++. (→ DUCK, ROWER.)
→ LONGER EDGE ~~AREA~~ → MAXIMISE SHIPPING CAPACITY. (WIDE)
+ CRANES (MULTIPLE)

2/ INDUSTRIAL ENVIRONMENT.
→ CLUSTER OF INDUSTRIAL USE (→ RESIDENCE :()
→ ALL UPSTREAM / DOWNSTREAM INDUSTRY ALONG DE SCHIE.
→ WORKERS VILLAGE NEARBY.
→ CANAL CONNECT TO MORE CITIES.
→ ENERGY AND PROVIDER NEARBY → CHEAPER ENERGY (→ DUCKS)

3/ CANAL ENVIRONMENT.
→ WIDE AND DEEP CANAL. (→ ROWERS, DUCKS.)
→ NO RESIDENTIAL / OTHER USES DIRECTLY NEARBY.
(QUIET ZONES. LIMIT ON OPERATION HOUR / DAY)
(NO NEED TO MANEUVER) (→ RESIDENCE)
→ DREDGING NEEDED?

4/ EXTERNAL CONNECTIONS.
→ NO EXTERNAL CONNECTIONS.

A CANAL 100% FOR FISHMEN / SWIMMERS (LEISURE USERS)

1/ WATER QUALITY → SWIMMING → FISH (ECO SYSTEM)
2/ CANAL ENVIRONMENT → LINGERING, ~~GR~~ GREEN. STAIRS.
3/ REGULATIONS → NO BAN, DESIGNATED ZONE.
4/ CONNECTIONS.

1/ WATER QUALITY
- GOOD FOR SWIMMING, PREFER NO INDUSTRIAL BOATS. (→ INDUSTRY)
- FISHING: FOR FISH TO SURVIVE, LIVE HAPPILY, → DUCK
- ~~NO~~ LESS ALGAE.

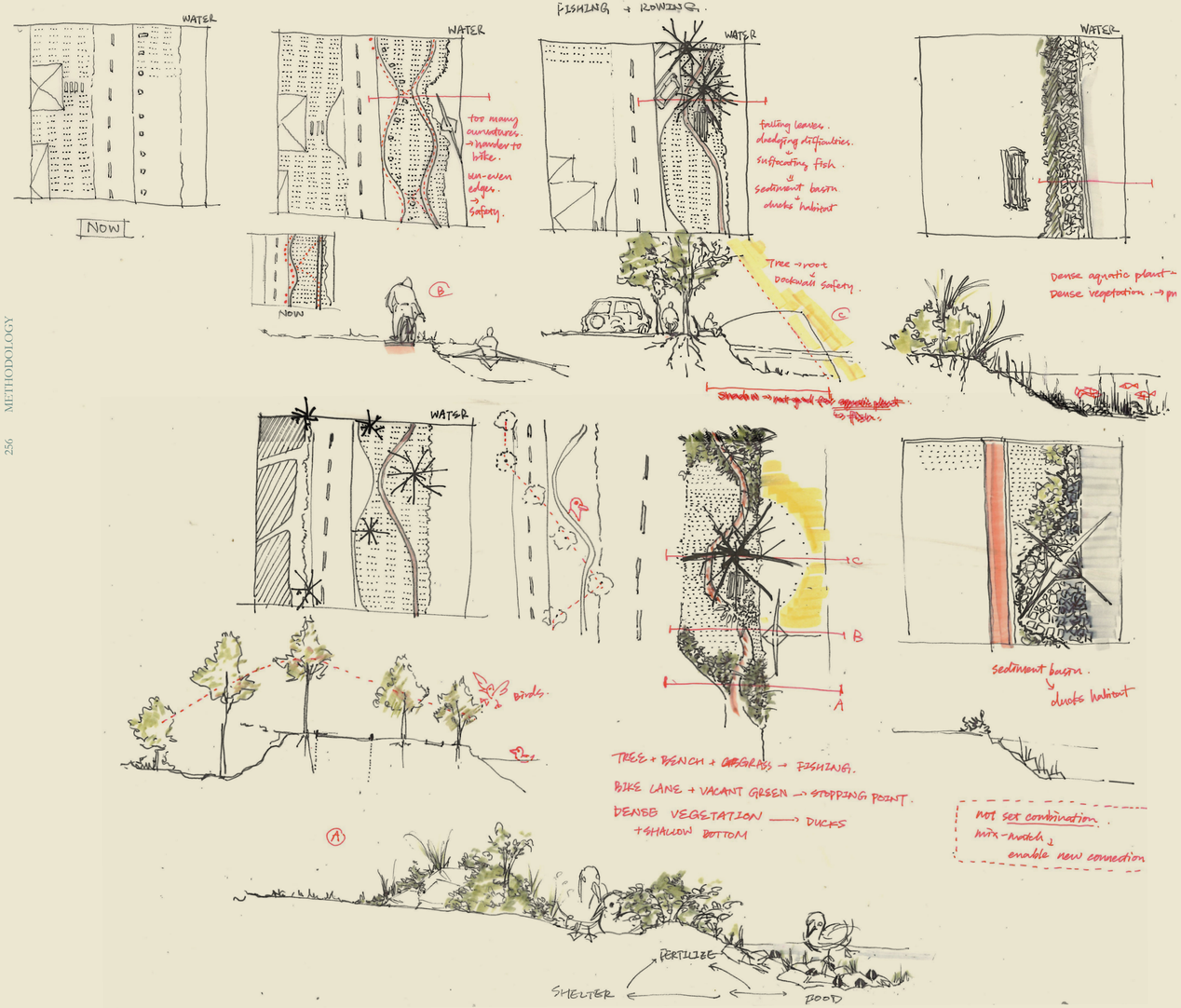
2/ CANAL ENVIRONMENT
- STAIRS / NATURALIZED DOCKWALL TO SAFELY GET UP. (→ INDUSTRY)
- NOT TOO DEEP / NOT TO SHALLOW: DEEP ENOUGH TO JUMP IN (→ DU
- POINT FOR MONITORING: = LIFE GUARD, ⚽, EMERGENCY KIT.
- RESIDENTIAL NEARBY = EYES ON WATER.
  ↳ OR ACTIVE PARTICIPANTS = ROWERS, FISHING, CYCLISTS.
- GREENS RIGHT AGAINST CANAL: LEISURE AREA.
- POINTS FOR PUBLIC SHOWER (RINSE)
- PLACES TO SIT = PUBLIC BENCHES / VACANT GREEN.

3/ REGULATIONS.
- PARKING SPOTS: GREEN ALLOW FOR PARKING. (→ ROWER, RESIDENTS)
- LESS BOAT ACTIVITIES: DESIGNATED ZONES. (→ IND. ROWERS, SWIM)
  (FISHING / SWIMMING)
- FISH HABITATS = DENSE AQUATIC HABITAT → SEAWEED (→ DUCKS.)
  (FOR FISH TO HIDE FOR PREDATORS.)
  MARSHES → FOR FISH TO HIDE.
- LESS NOISE FROM ACTIVITIES.
- TREES ALONG CANAL → SHELTER FOR SUN / RAIN. (→ ROWING.) (→ ROWING)

3/ REGULATIONS.
- NO BANS.
- DESIGNATED ZONES.

4/ CONNECTIONS?
HOURS OF ACTIVITIES.

DRAFT: CO-EXISTENCE METHOD





TOWARDS CONCEPTUAL FRAMEWORK

In approaching the conceptual framework, I choose to adopt a situated and practice-based approach to understanding the Schie Canal. Using the rowing club as a reading device

Coming from Toronto, where public life is often fragile, curated, and expensive to sustain, I am extremely aware of how easily everyday urban culture can be erased and how difficult it is to reinstate once lost.

In many North American cities, public life requires continuous investment, programming, and maintenance, turning public life into an economic activity rather than a shared public realm.

Upon arriving in Delft and joining a rowing club, the canal revealed a contrasting reality. Without explicit curation, the Schie supports a dense overlap of activities :rowing, swimming, fishing, walking, and ecological life, all embedded in daily routines rather than 'carefully curated' events.

People jumps in the canal in summer; picnic along the water, fishing....

Upon further reading in policy document and provincial and municipal vision, raised my initial question: if the canal is already functioning as a vibrant cultural and ecological space, why is this dimension largely absent from planning and governance frameworks that prioritize water safety, transport, and development?

As the research expanded, the scale and complexity of the canal's governance became increasingly un-attainable. Regional water systems, municipal planning, provincial policy, and development pressures intersect in ways that are difficult to grasp through abstract analysis alone. To navigate this complexity, I employ autoethnography as a methodological lens: using my own repeated participation in the rowing club as a reading device to observe, map, and interpret everyday interactions with the canal.

The rowing club functions here not as an isolated case study, but as a micro-institution through which broader urban dynamics become legible. Surprisingly rowing club shares many similarity with the problem that De Schie is facing now.

Through rowing, coaching, and daily presence along the canal, patterns of care, negotiation, and mutual adjustment becomew visible: patterns that are otherwise invisible in formal representations. This situated perspective allows me to simplified and dissect a large and complex system through a smaller, lived framework, revealing how fragile cultural and ecological practices depend on specific spatial and relational conditions.

By grounding the analysis in lived experience, this approach does not reduce the canal to a personal narrative, but instead exposes the gap between institutional perspectives and everyday realities.

Autoethnography here serves as a tool to make invisible systems of care visible, forming the basis for the mapping, governance analysis, and design framework that follow.

GLOSSARIES

"WEDSTRIJDROEIEN"

[Competitive Rowing]

Organized around performance, training intensity, and measurable outcomes such as speed, ranking, and results. Training structures, coaching attention, and institutional recognition are largely oriented toward this group.

Within rowing clubs, wedstrijdroeien often functions as the formal and representative face of the sport, aligning closely with external metrics of success.

starts from competitive selection
dependence on institution
pressure with limited care
team > individual

"COMPOROEIEN"

[Compo Rowing]

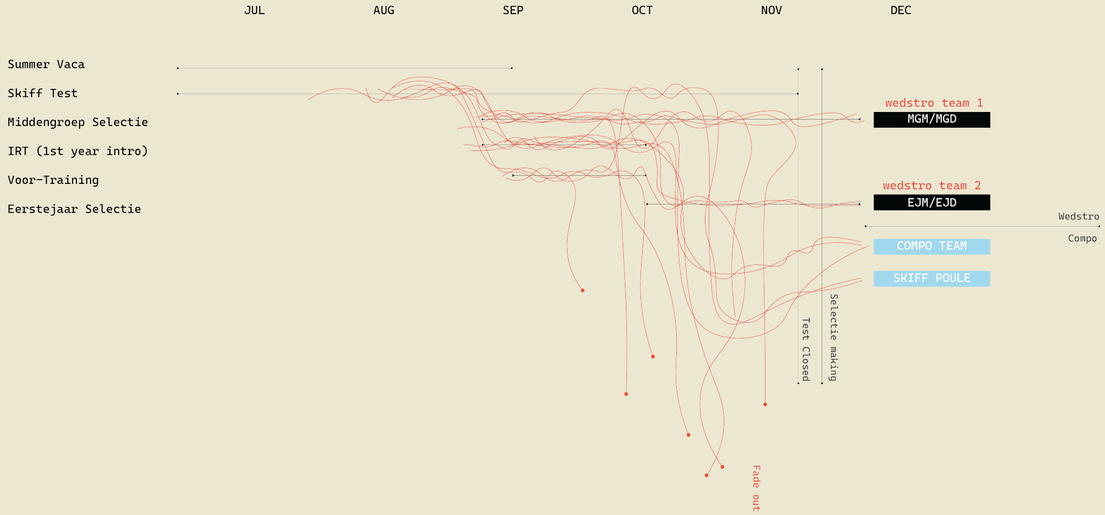
Comporoeien encompasses non-competitive rowing practices that prioritize participation, continuity, and everyday engagement with the water. These rowers form the social and cultural backbone of the club, sustaining routines, informal coaching, maintenance, and shared knowledge of the canal.

While comporoeien is less visible and rarely measured in performance terms, it plays a crucial role in maintaining accessibility, affordability, and the broader rowing culture that enables competitive rowing to exist at all.

starts from care & desire
moves via reciprocity
rewards those who show up
produces:
shared responsibility
proliferation of skill
emotional safety under pressure

CONCEPTUAL MAGNIFIER

[ROWING CLUB]



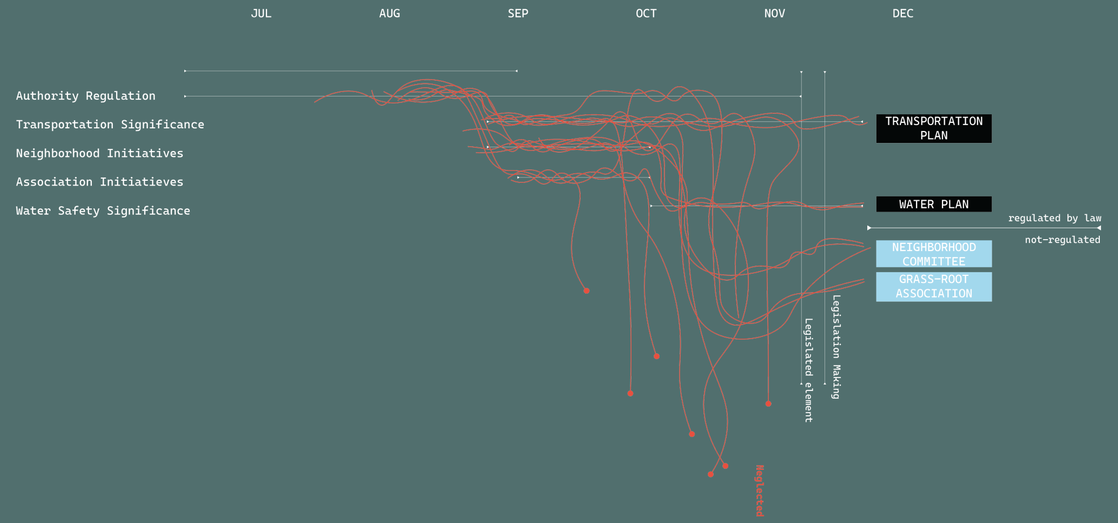
If you dont fit in any boxes, you're not protected.

People fall out of the club not because they fail, but because they don't fit any framework at the right moment.

Therefore they could not join any organized trainings.

What emerged was a structure of negligence: a gap between formal systems where no one is responsible for care, coordination, or continuity.

[DE SCHIE]

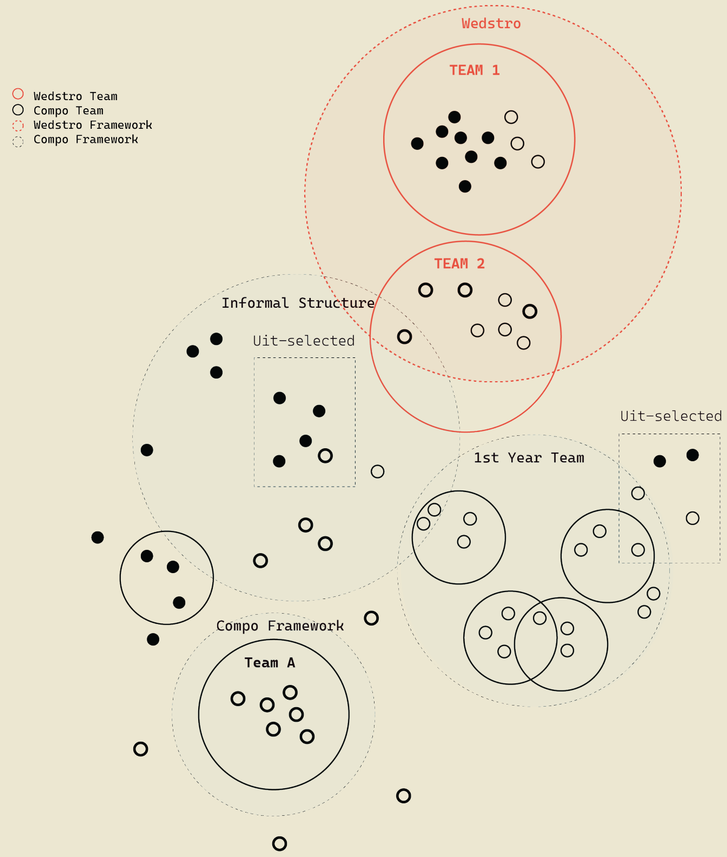


Structural negligence occurs when systems are designed to support stable categories (e.g. beginner / elite, regulated / unregulated)

but fail to provide continuity for actors who move between them over time.

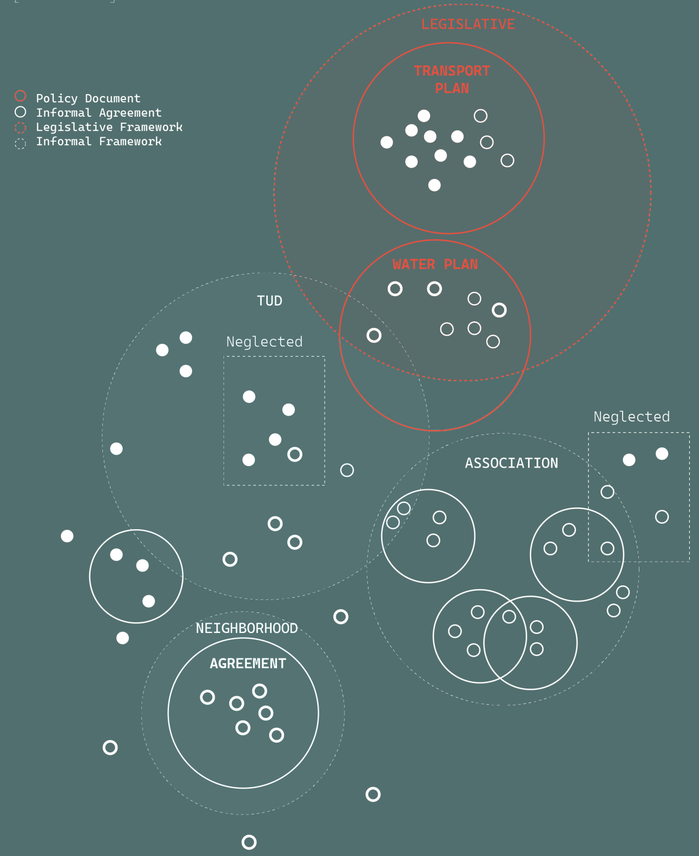
CONCEPTUAL FRAMEWORK

[ROWING CLUB]



[BASIC STRUCTURE SIMILARITY]

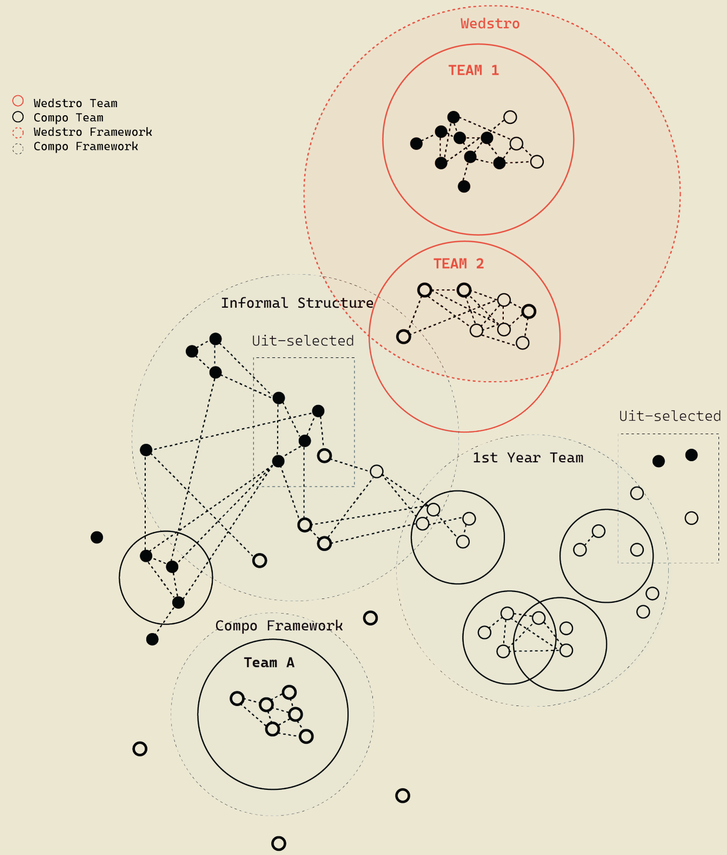
[DE SCHIE]



[BASIC STRUCTURE SIMILARITY]

CONCEPTUAL FRAMEWORK

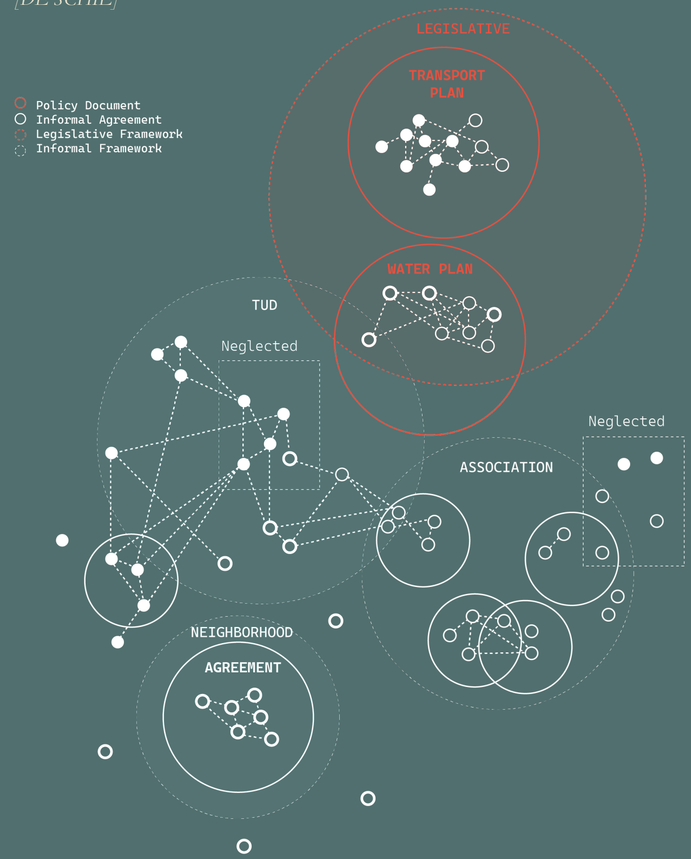
[ROWING CLUB]



Connections (people to people)

Connections to other members allow member to organize trainings, maintain daily activities, and form informal frameworks (teams).
Framework cultivate connections, people in the same team grow to know each other and create bonds.

[DE SCHIE]

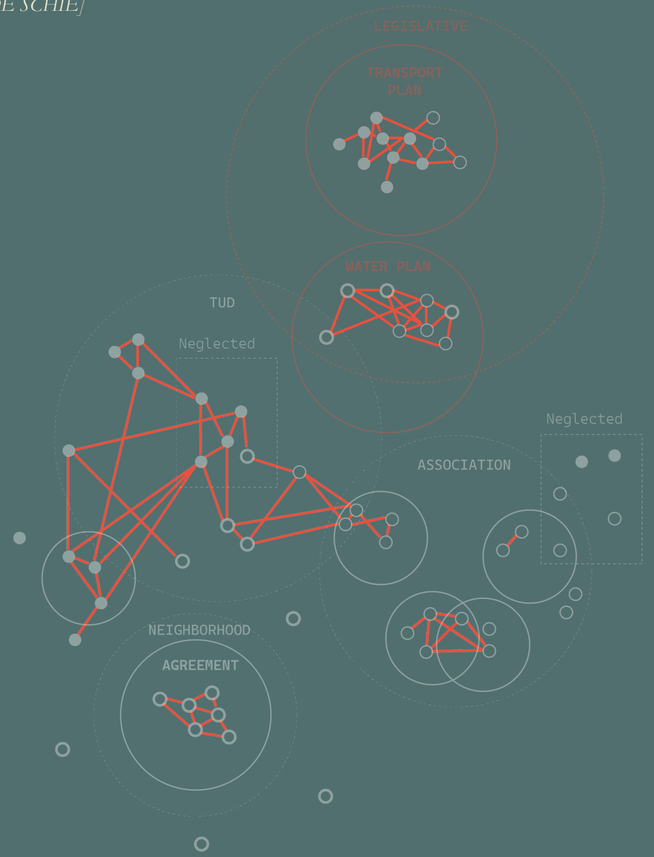


Care Practices (Player to Player)

Care practices between different players support each other in fulfilling daily routines and remain active.
Elements in the legislative framework are protected in a relational well.

CONCEPTUAL FRAMEWORK

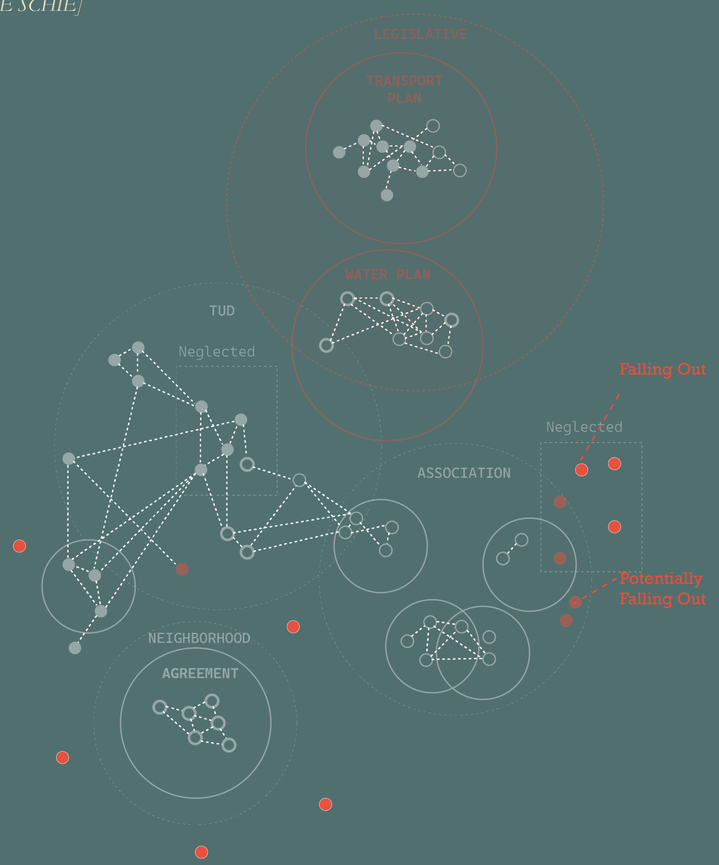
[DE SCHIE]



Although formal system looks 'complete', functional system only emerges through informal ties. Care as a bridging mechanism. actively bridges gaps in the current frameworks.

care is the mechanism that allows actors to move between frameworks without disappearing

[DE SCHIE]



The 'forgotten' are not outside - they are in between.

If you cant fit in boxes, you're not protected.

Arra Lin