More than River

Attuning to the rhythm of the Meuse landscapes



Tobias Macchione

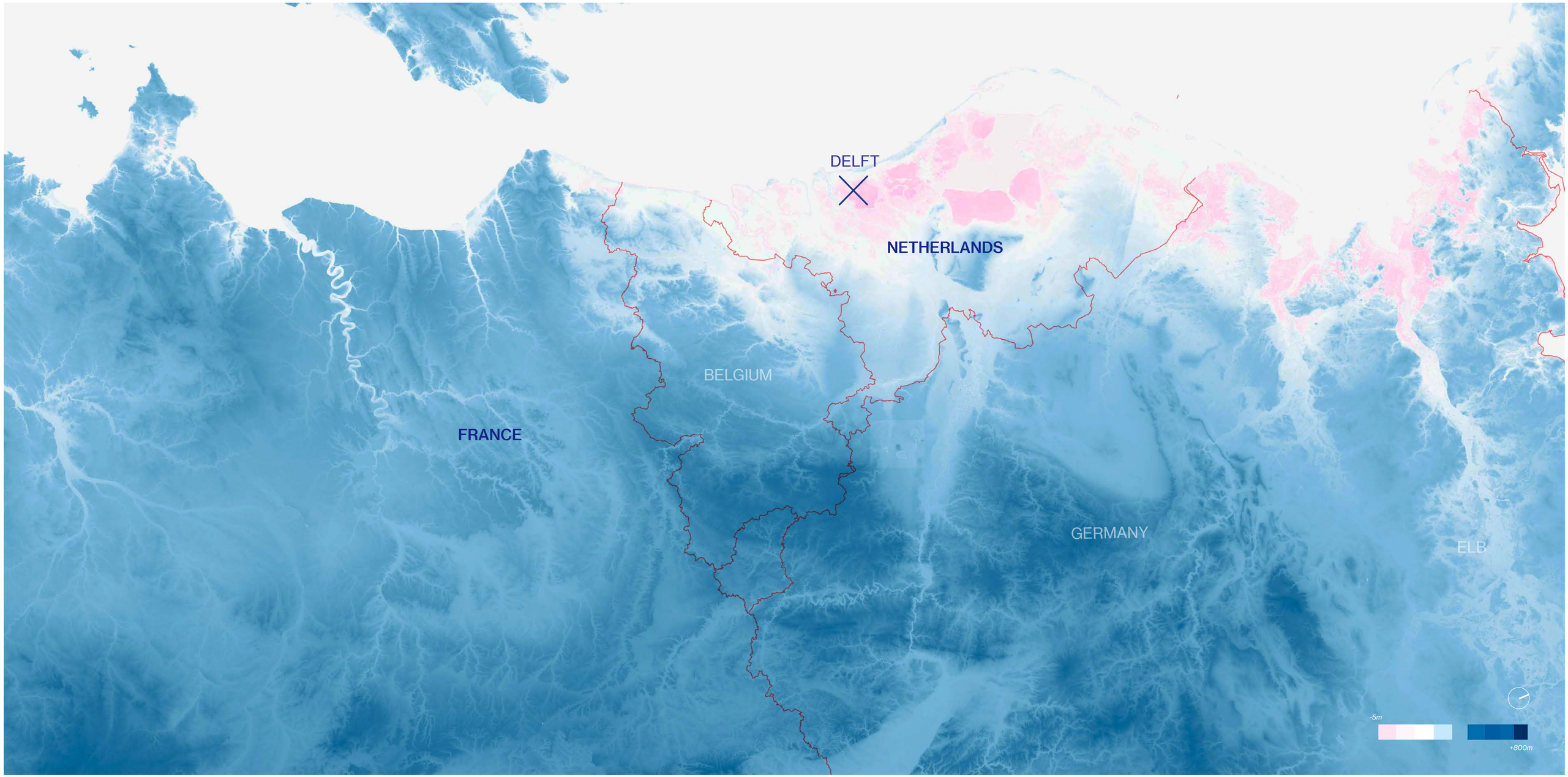
P5 Presentation 20-06-2025

First Mentor: Dr. Ir. Inge Bobbink

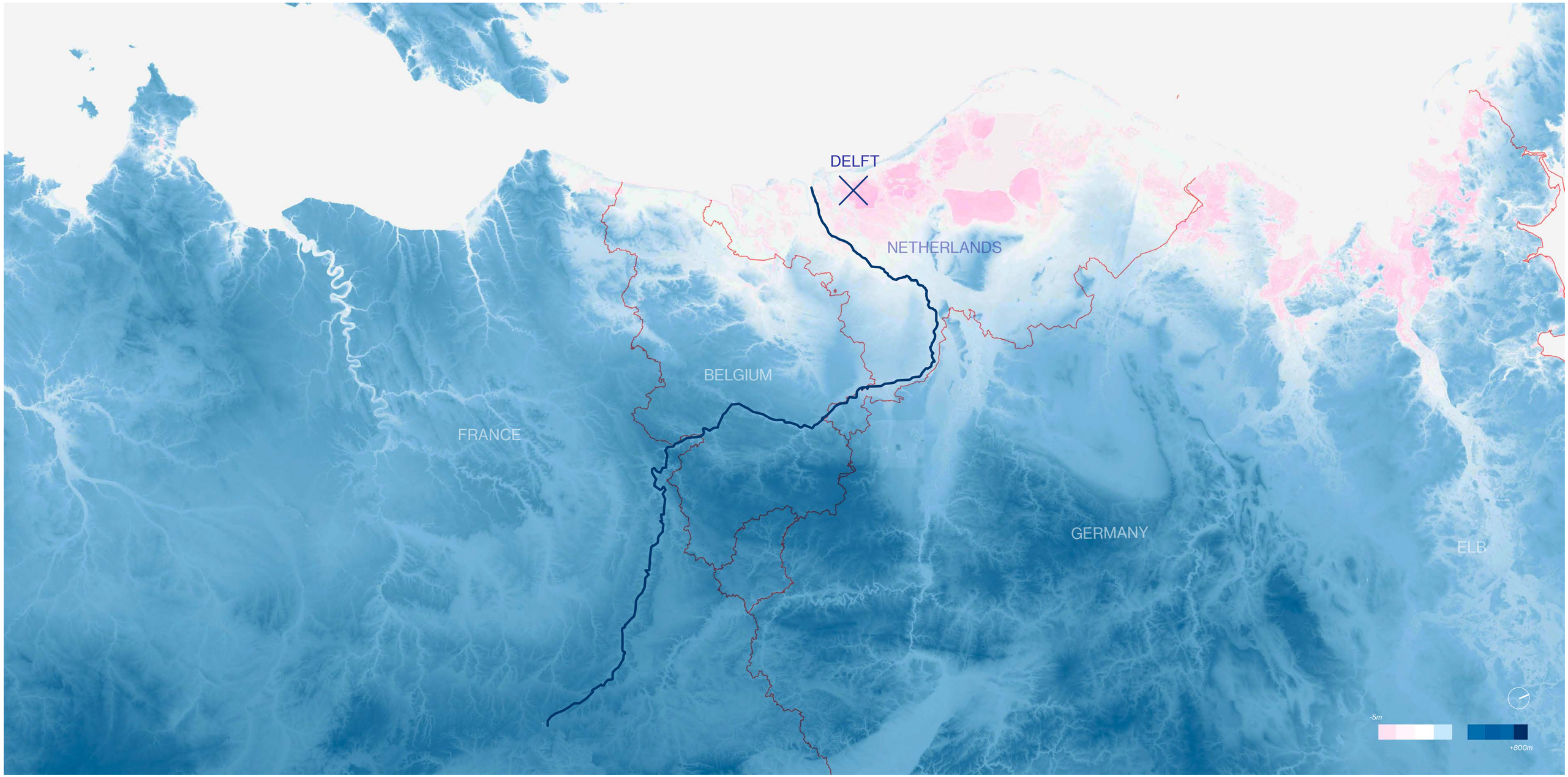
Second Mentor: Dr. Elena Longhin

Exam committee: Dr. Ir. Jorge Mejia Hernandez

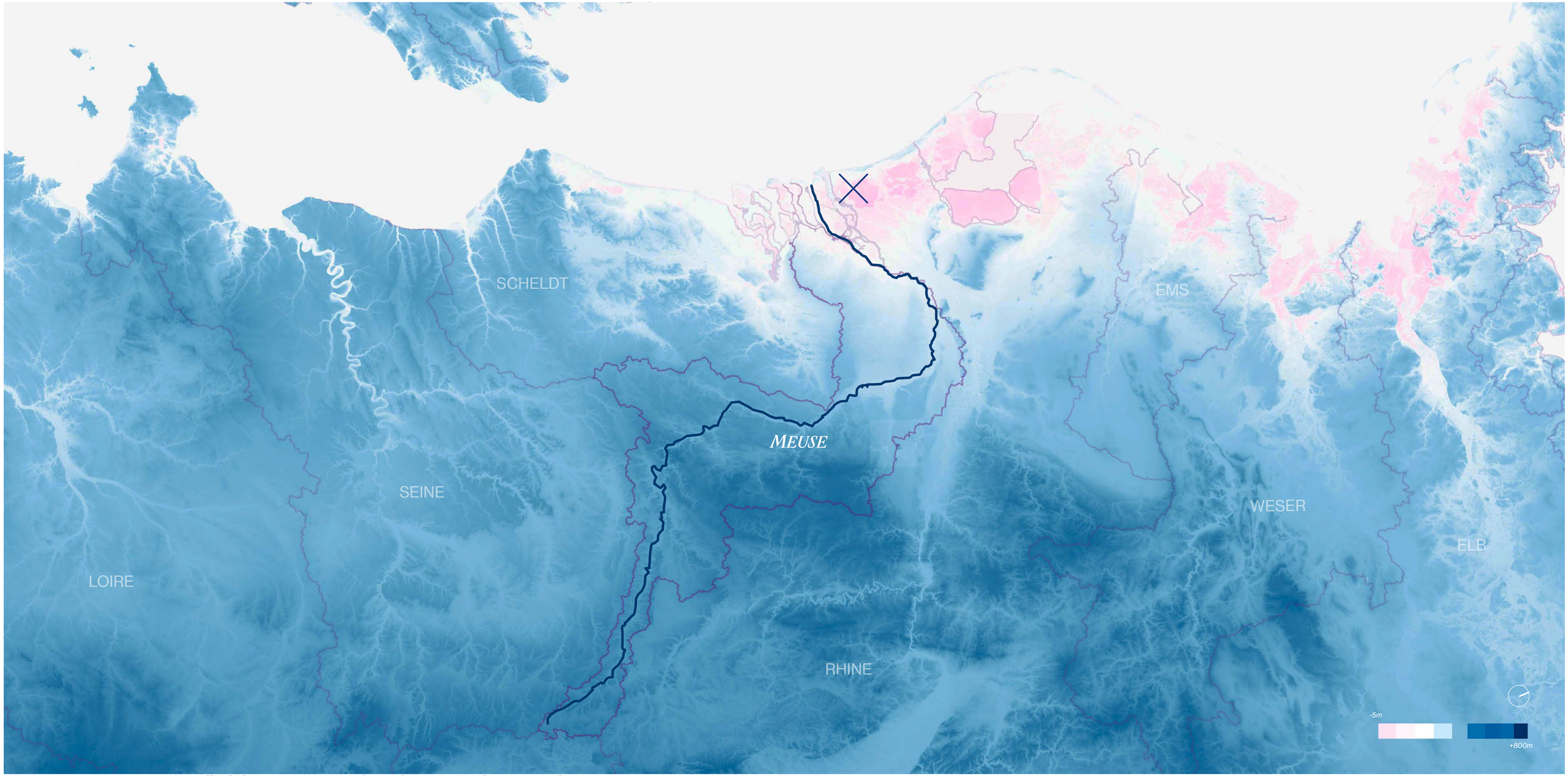
TU Delft
BK Bouwkunde



Between the Netherlands and France



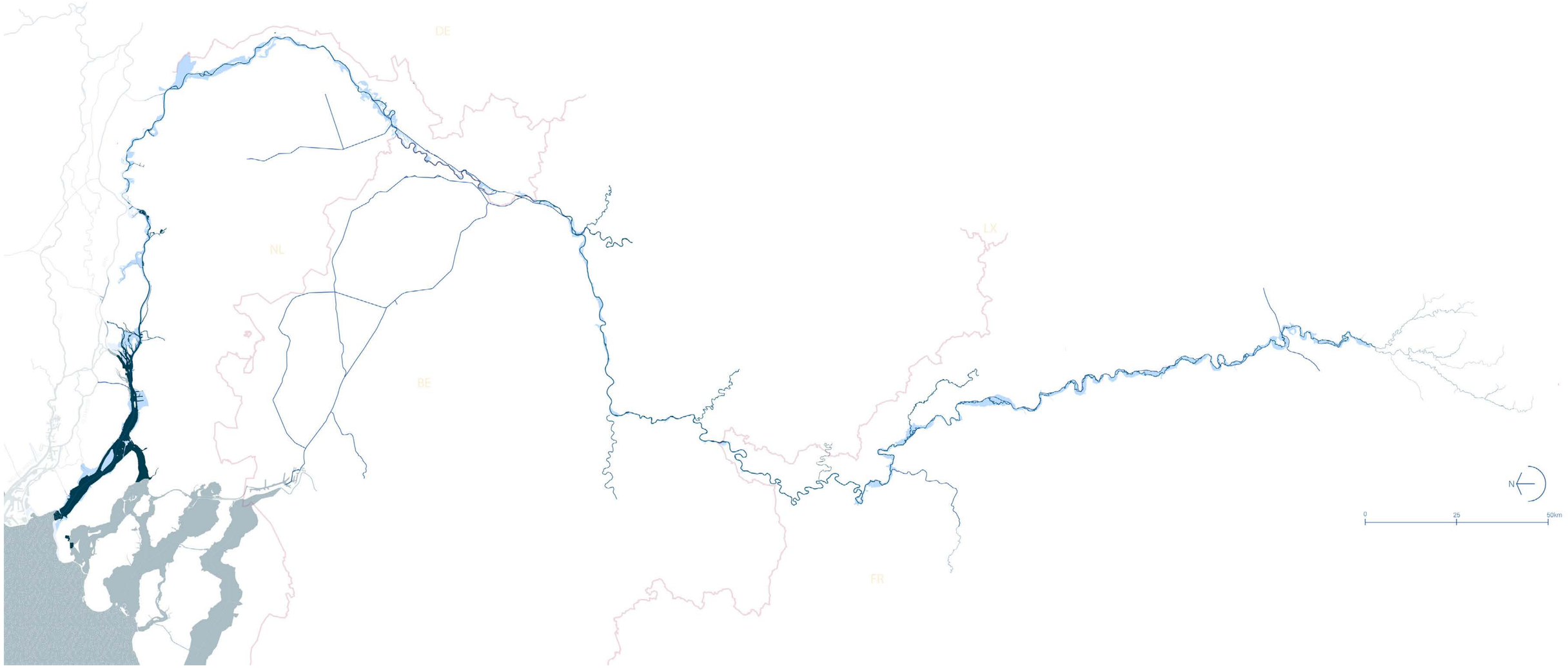
A shared river, the Meuse



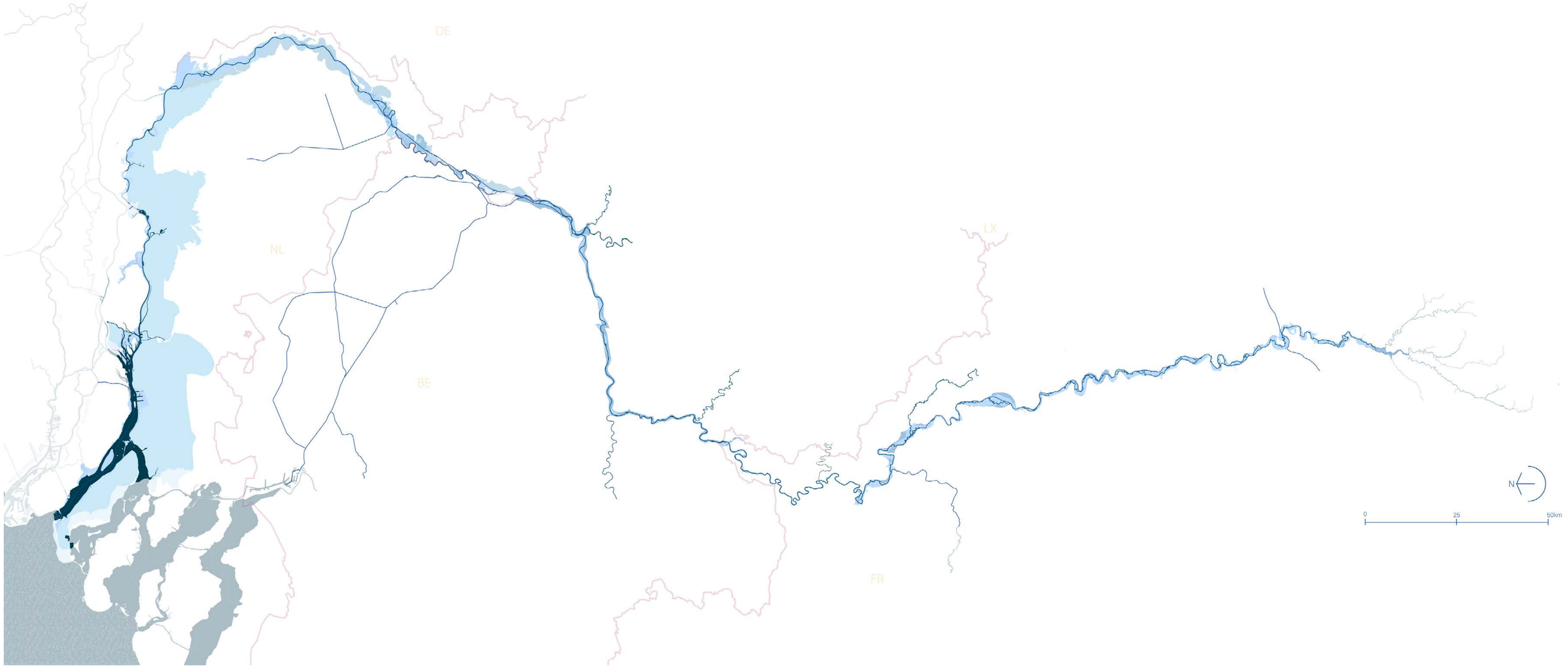
My “new country” this past academic year: its catchment area



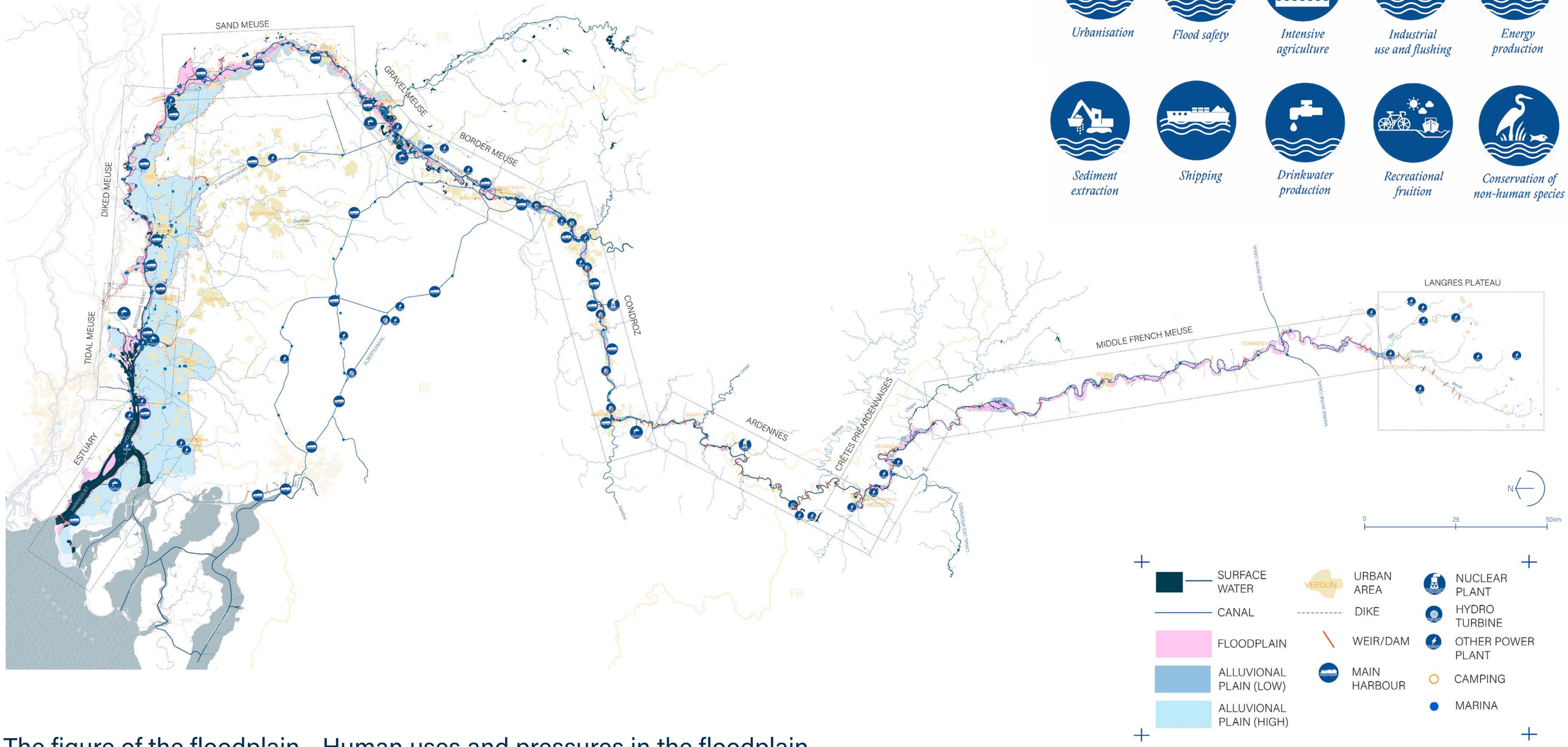
The Meuse floodplain: the area still under the influence of the river dynamics (water level fluctuations, sediment deposit...)



The figure of the floodplain - the “active” Meuse floodplain in 2025: embanked, diked, fragmented by dams and weirs



The figure of the floodplain - 13th century Meuse floodplain, just after the first primary dikes were built in the Netherlands

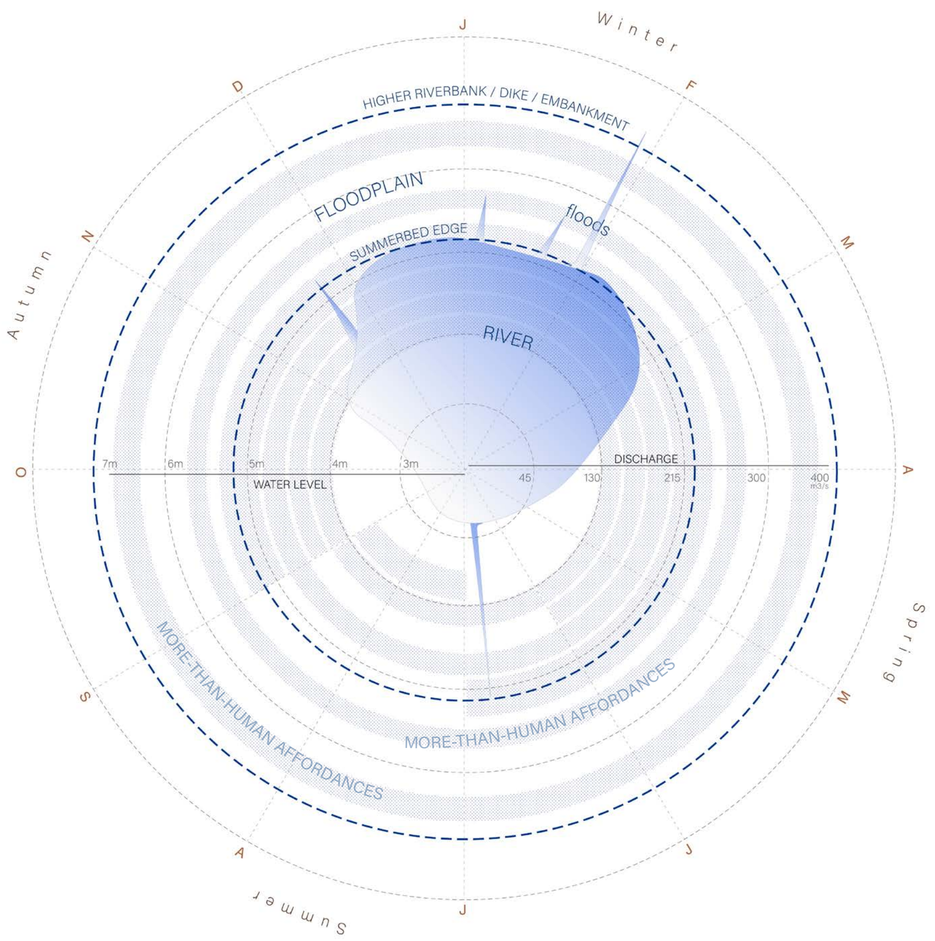


The figure of the floodplain - Human uses and pressures in the floodplain



A theoretical framework based on the time of river landscapes as its intrinsic quality

The Spatial River Calendar



River Rhythmicity *(Jackson et. al., 2022 ; Krause, 2022)*

The periodic, recurrent phenomena of riverscapes shaped by the rise and fall of water levels, forming regimes of river time.

In this cycle lie relational values, including not only human practices with the flowing water, but also relationships that cross interspecies boundaries.

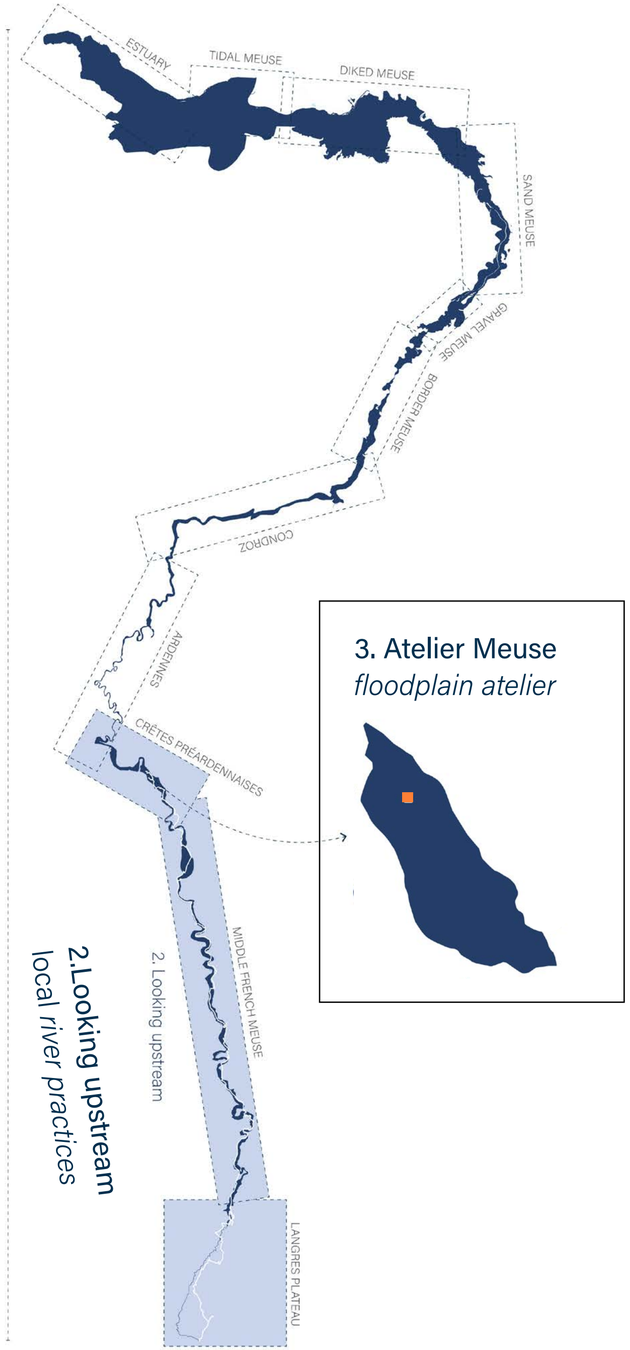
Attunement *(Manning, Heidegger)*

A relational disposition, how beings orient themselves towards the surrounding world - *tune in on something*

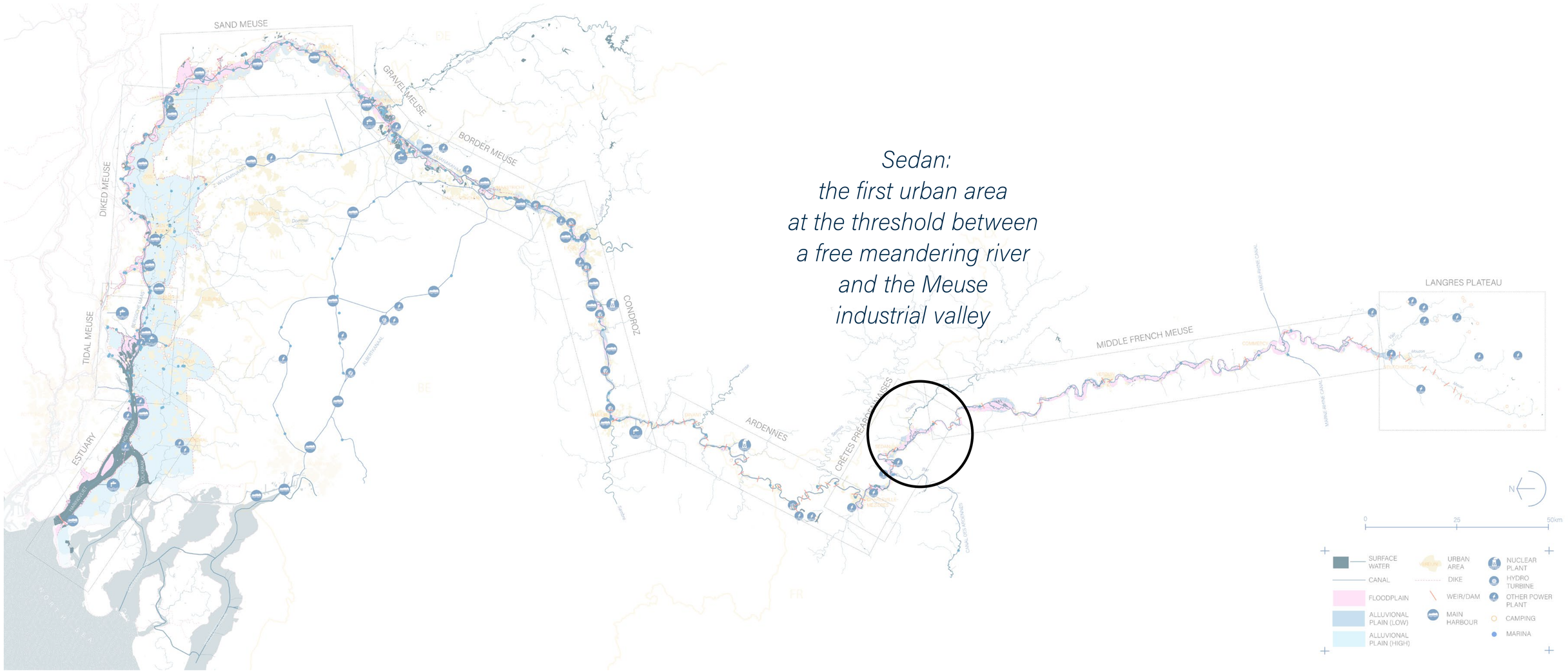
The central aspect of rhythmicity

1. Inhabiting an international floodplain
global territorial inquiry of human uses of the river

- How can the floodplain landscapes of the Meuse be revealed and transformed towards an attunement to the river's intrinsic rhythm?



My thesis project in three chapter



Sedan:
the first urban area
at the threshold between
a free meandering river
and the Meuse
industrial valley

The site of an experimental design process towards an attunement to the rhythm of the Meuse

A presentation in 4 acts

Prologue

Delft,
June, 2025

Act 1
Positioning

Sedan,
February, 1995

Act 2
Revealing

Sedan,
July, 2025

Act 3
Planning

Sedan,
February, 2026

Act 4
Activating

Sedan,
June, 2027

epilogue

Delft,
June 2045

Act 1
Positioning

Sedan, France
February, 1995

Act 2
Revealing

Sedan, France
July, 2025









Sedan, February 2025.

Sedan, 2025



Decayed factories, a last textiles shop in the city center. February 2025







Signs of vacant properties across the city. February 2025

Sedan, 2025



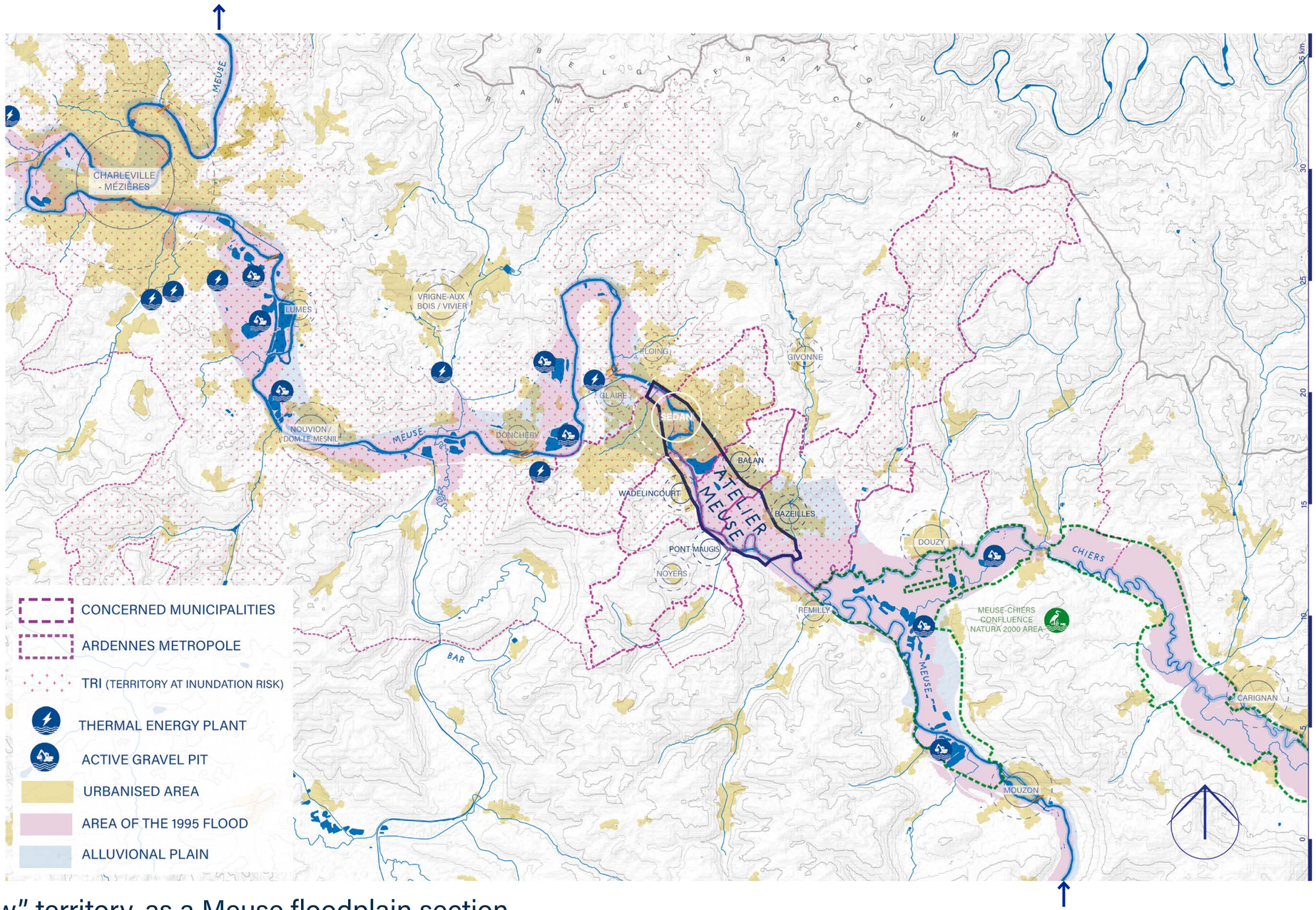






The agricultural plain upstream of Sedan. February 2025

Sedan, 2025



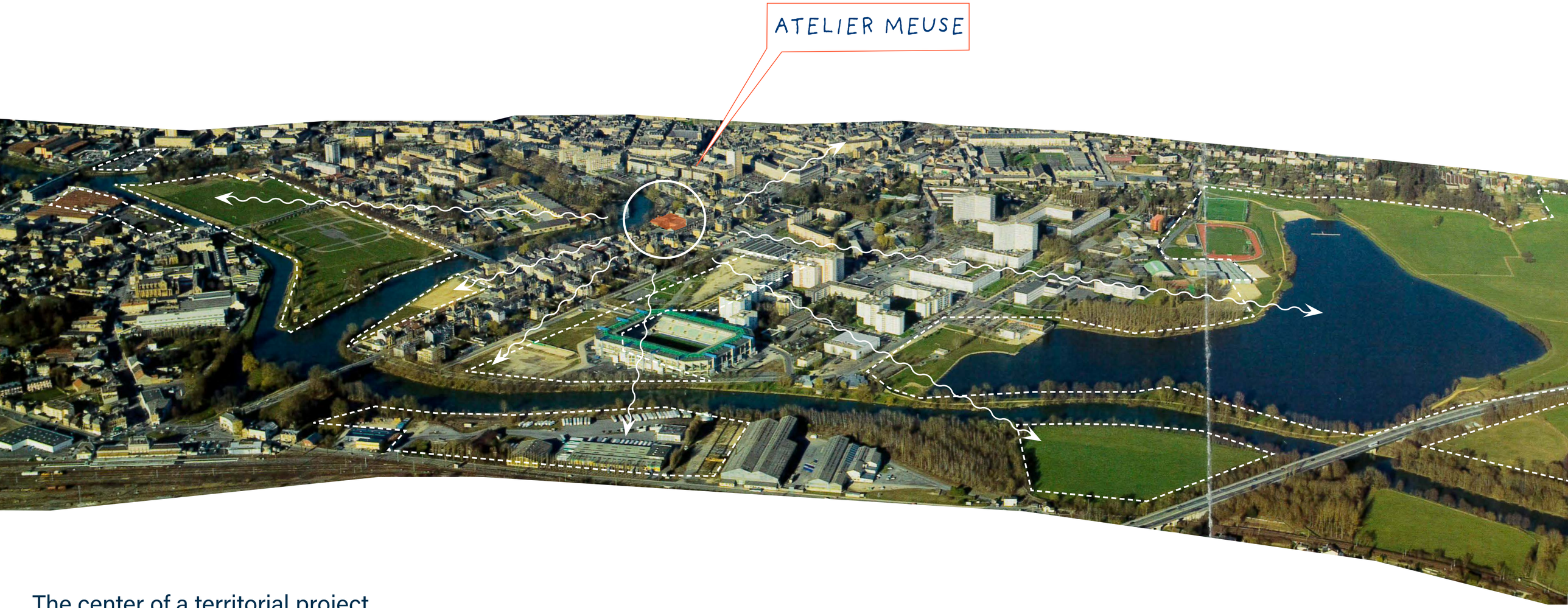
600 ha

-Confluence area
-5.000 human inhabitants
-Neighbouring Natura 2000 area for conservation of breeding birds

Governance
-Basin Authority EPAMA
-European funding for flood resilience
-Ardenne Metropole agglomeration
-5 Municipalities

A “new” territory, as a Meuse floodplain section

- How can a *floodplain atelier* in Sedan, France, serve as a landscape laboratory for attuned riverine practices and relations with the time of the Meuse river?



The center of a territorial project



Atelier: "Working group constituted for the purpose of a collective activity".

The Atelier Meuse headquarter



A place for debate and participation. Starting from the formulation of a territorial problematique



landscaper

A contracted, exterior spatial- and process designer (collective)



sociologist

A contracted, exterior participation process designer



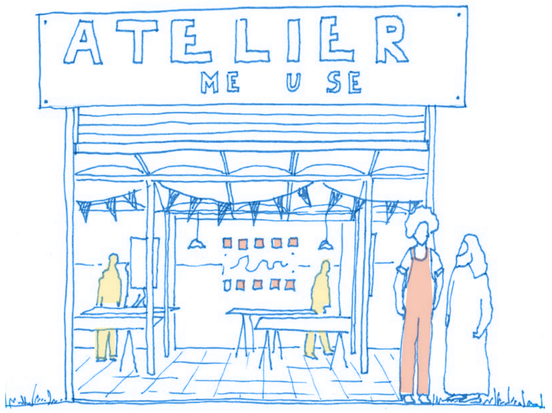
ecologist

A contracted, exterior scientific



urban planner

An internal project leader from the municipality of Sedan, delegated by the Ardennes Metropole agglomeration





Atelier Meuse stewards

New part-time positions as organisers and coordinators of the Atelier Meuse programming

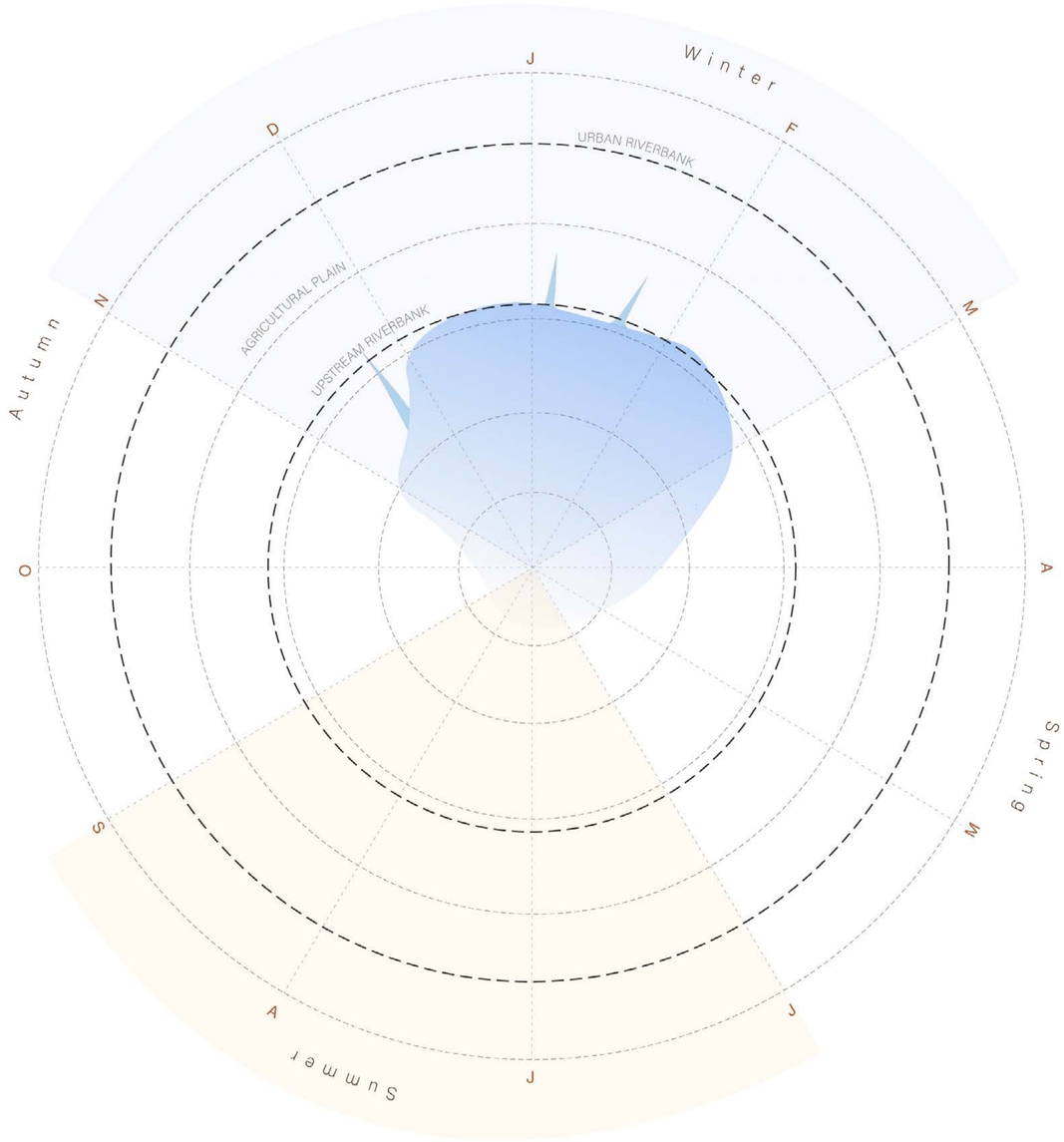


hydrologist/civil engineer

River basin authority (EPAMA) representatives

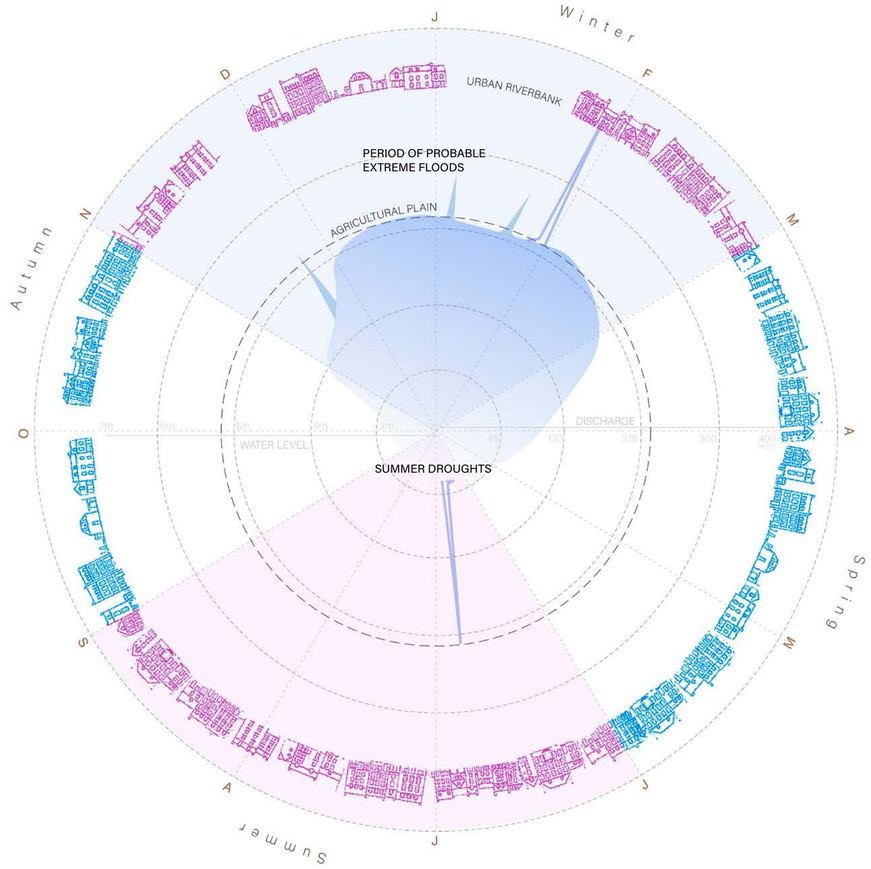
The “staff” of the Atelier Meuse

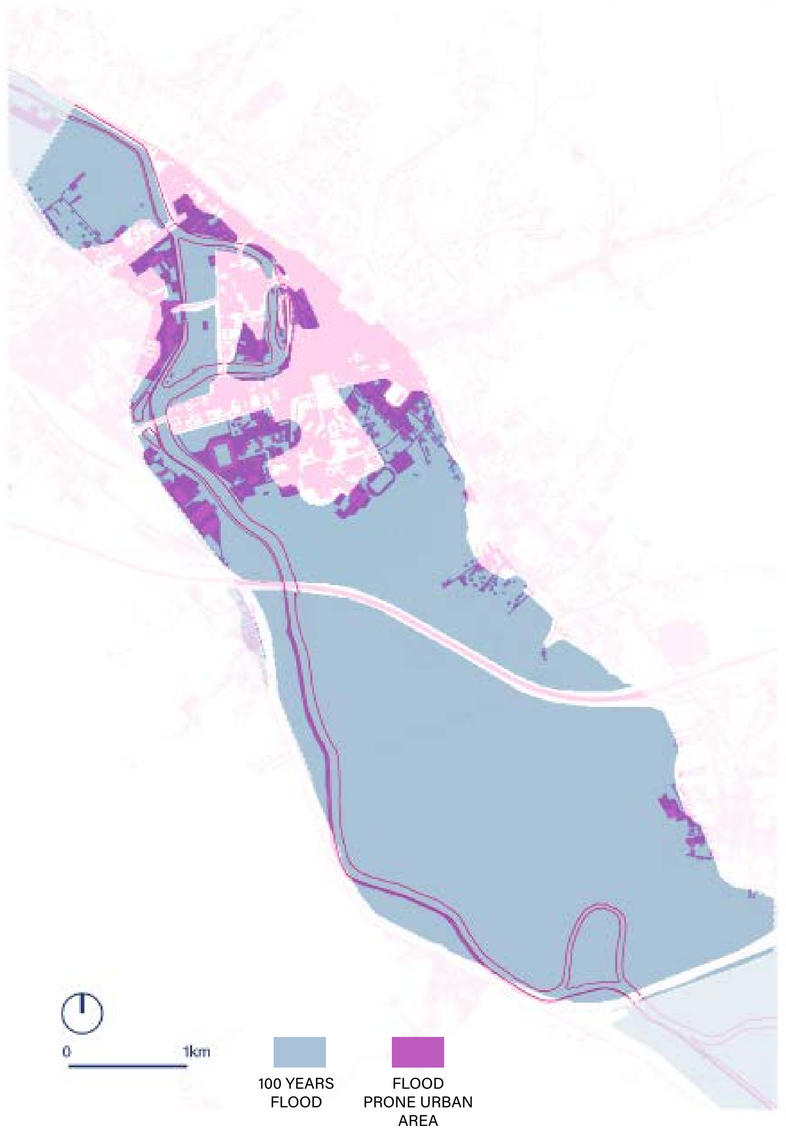
HIGH DISCHARGE



LOW DISCHARGE

The spatial water calendar of the Meuse in Sedan





A vulnerable territory to the consequences of flood and drought

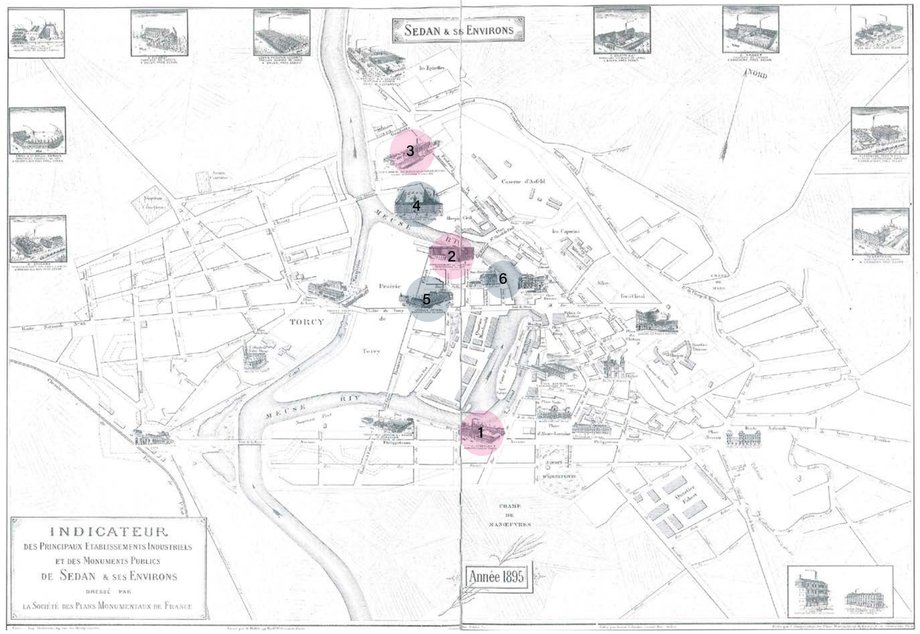


Embankment of the river in the city center, creating a faster flow to which bottle necks in the urban layout are vulnerable.



Most of the urban area of Sedan in the floodplain of the Meuse, is covered by impermeable paving, like tarmac, on which runoff is directed to the river, without infiltrating the ground.

A vulnerable territory to the consequences of flood and drought



Vacant industrial heritage



1. Dyeing and spinning facility Stackler, active 1878-1973. Photo: SHS.



2 Woolen cloth manufactory Oudart, active 1894-1972. Photo: SHS.



3. Tapis Point de Sedan (Carpet manufactory), active 1890-2007

Transformed industrial heritage



4. Royal cloth manufactory Dijonval, active 1670-1958, now residential use. Photo: SHS.

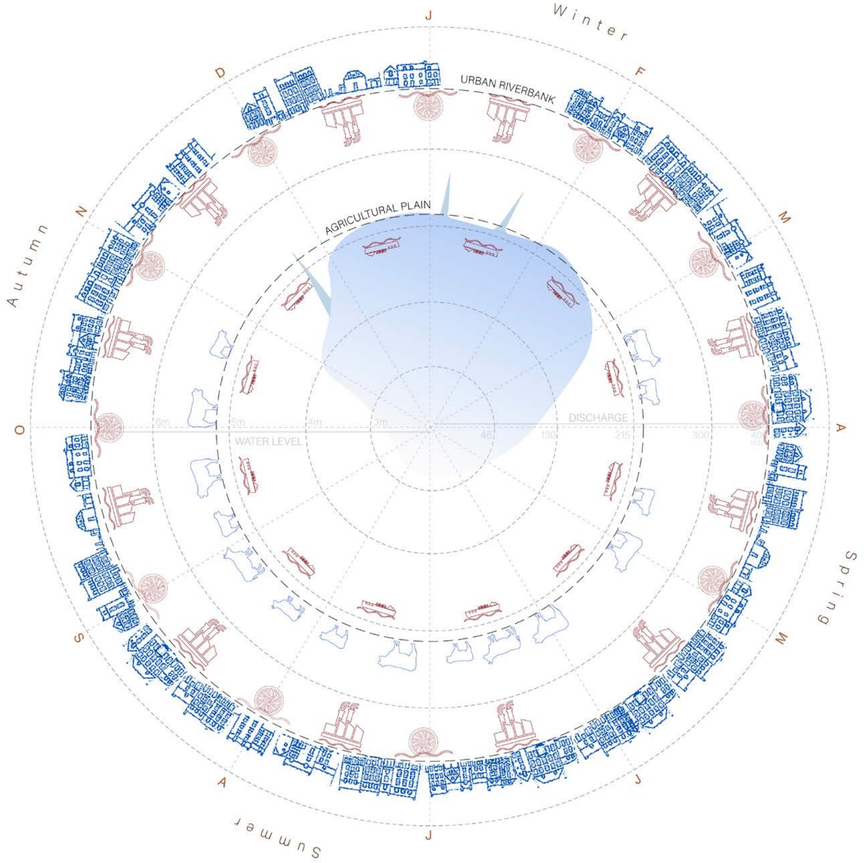


5. Spinning facility Charles Antoine, active 1879-1943, now commercial use. Photo: SHS.



6. Dyeing facilities, active 1820-1980, now healthcare use. Photo: SHS.

A fragile territory, as a previously industrial city suffering socio/economic/demographic decline



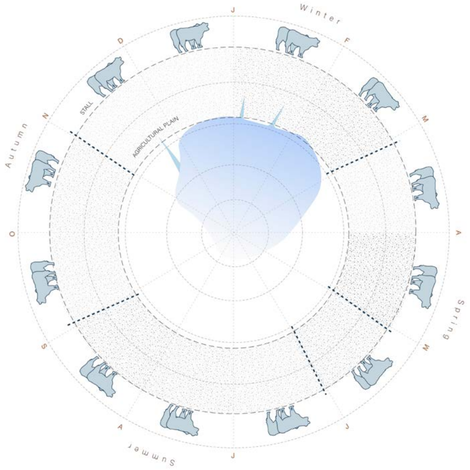
VACANT INDUSTRIAL BUILDINGS

DISUSED SHIPPING ROUTE AND INFRASTRUCTURES

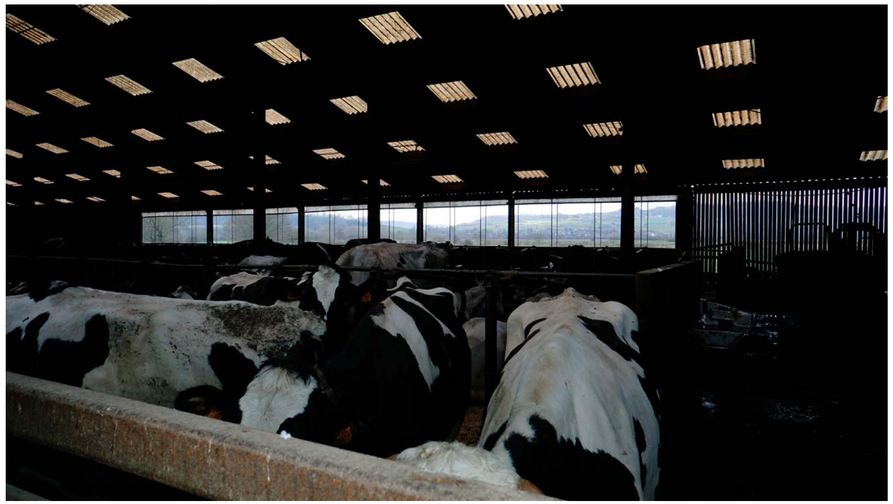
CATTLE FARMING

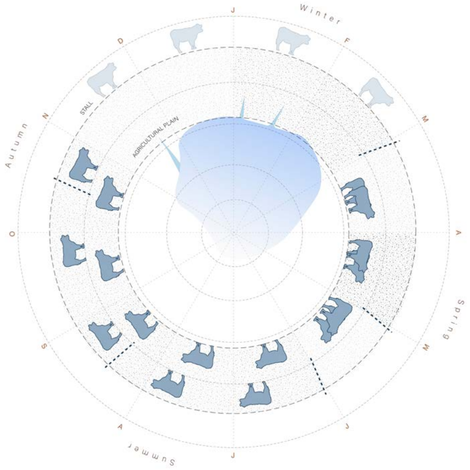


A fragile territory - The disappearing practice of pastures in the seasonally flooded plain



Forage land - indoor breeding

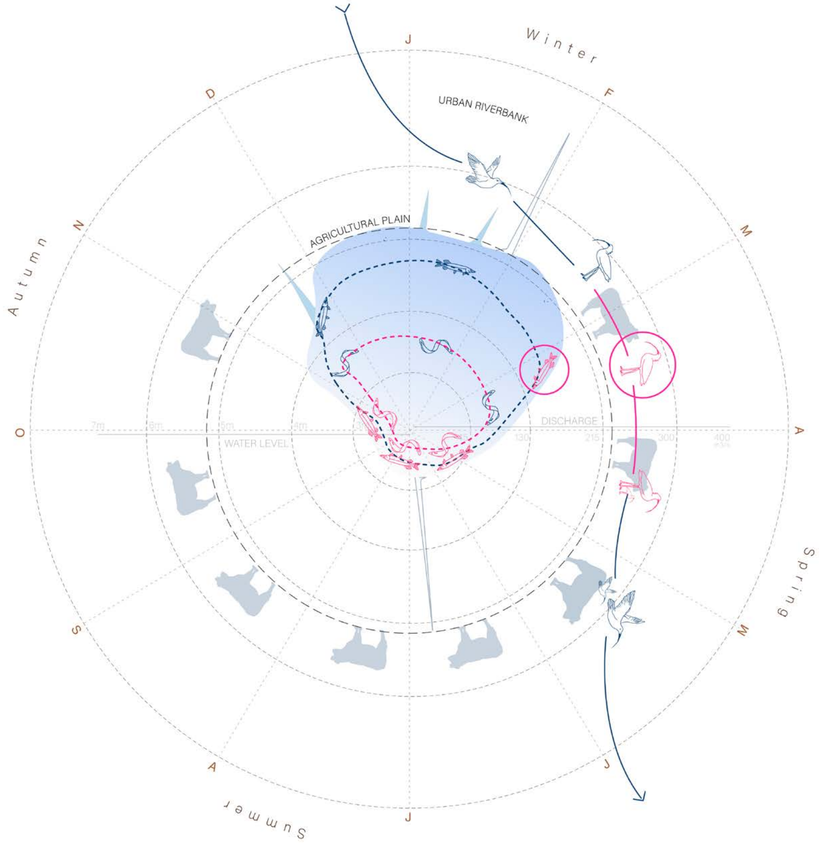




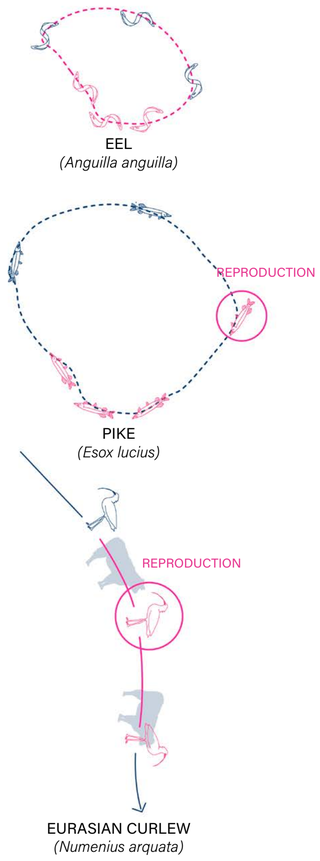
Pasture land with periodic mowing



A fragile floodplain - The disappearing practice of pastures in the seasonally flooded plain



CYCLE OF AMBASSADOR SPECIES





A <u>fragmented</u> territory, missing habitat diversity and ecological continuities



A fragmented territory, three representative species

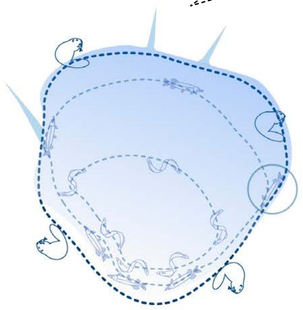
Act 3
Planning

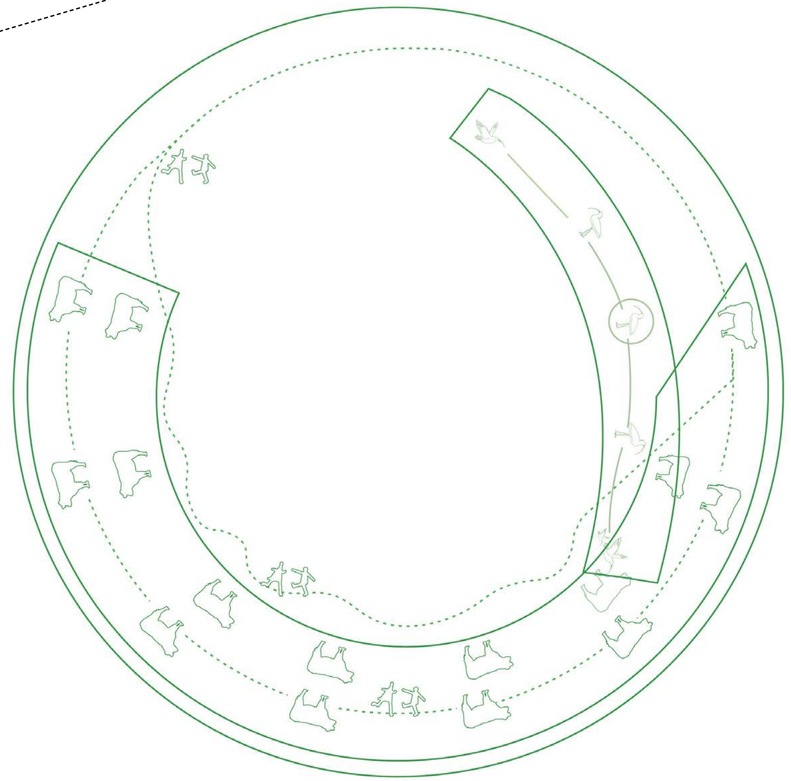
Sedan, France
February, 2026

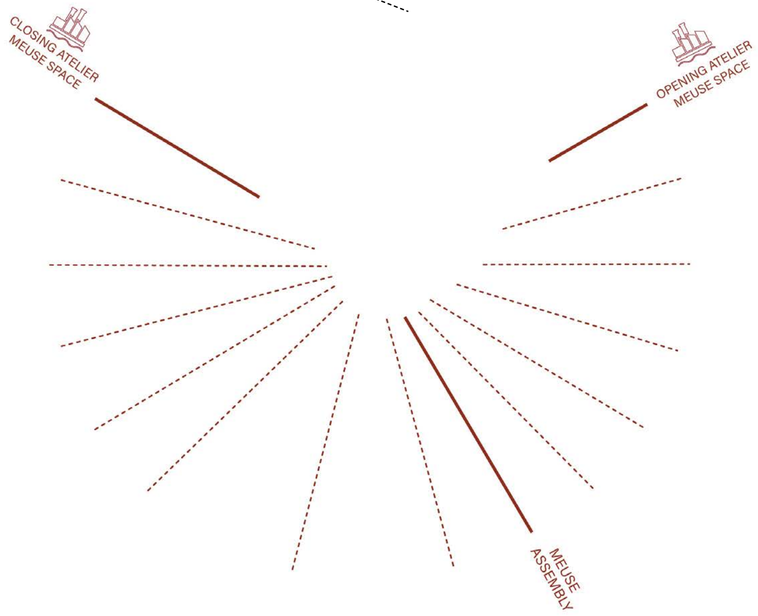
Vulnerable

Fragile

Fragmented





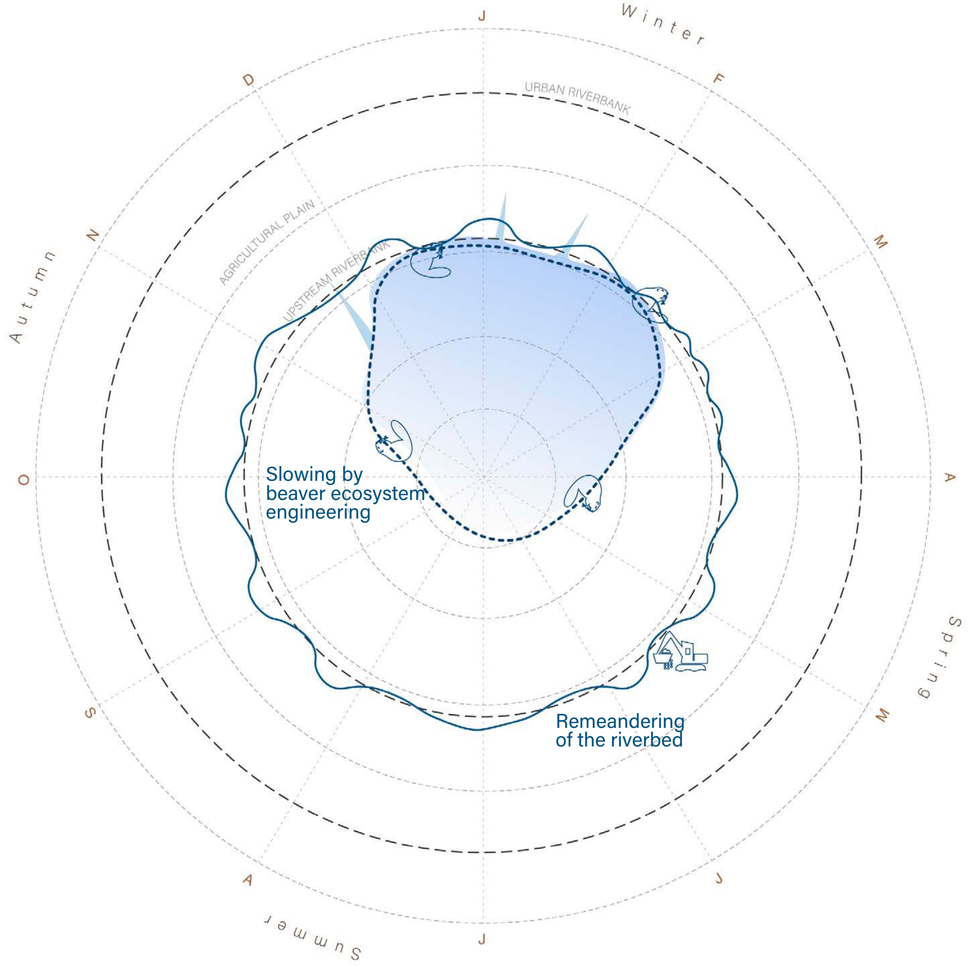


Slowing

Gardening

Belonging

Three design values for a territorial project in the floodplain

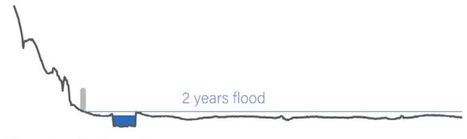


How?
-Remeandering the Meuse in the agricultural plain, making it an attractive habitat for beavers that pursue this task further. The river becomes rich in diverse habitats for species like the pike and the eel (supression of weir in the city center).

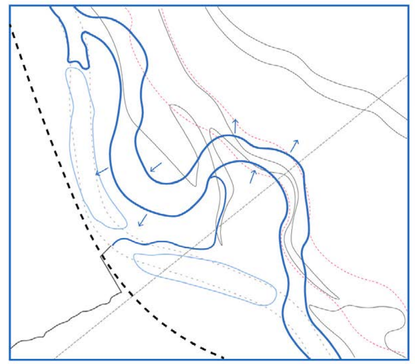
-Widening the summerbed before and at key bottlenecks in the urban area.

Slowing the Meuse: restoring a slower river flow towards the center of the floodplain

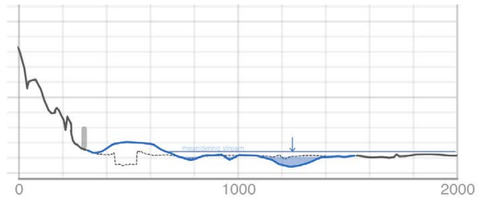




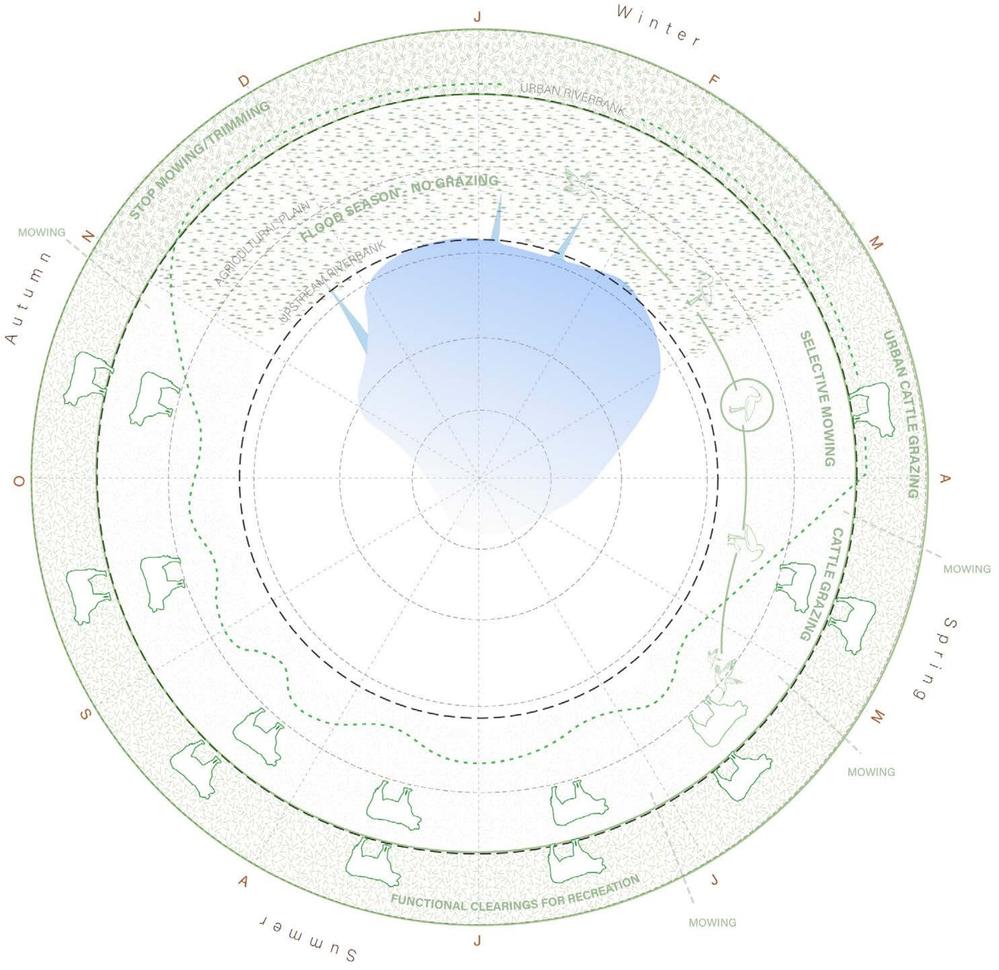
Current main channel



New channel, cut and extra fill on the old channel



Slowing the Meuse: restoring a slower river flow towards the center of the floodplain



How?
-Enhancing the tree structure creating a flexible landscape framework

-Climatic adaptation of key plots in the city, to improve the sponge capacity of their soils and enhance their social and biodiversity value (community gardening, orchards, nursery)

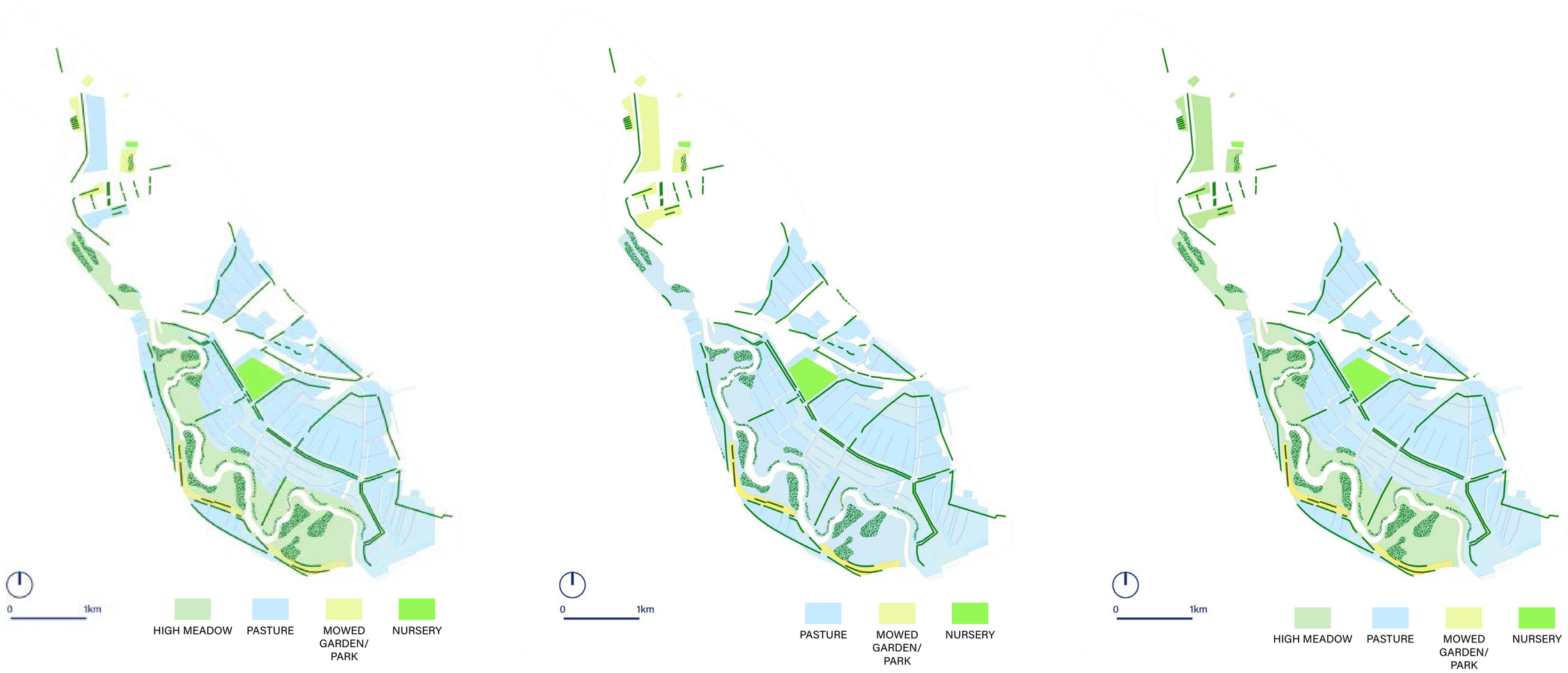
-Value and expand biodiverse pasture land in the plain, designate urban grazing areas, retard the start of the grazing season to create habitats for breeding birds.

Gardening the Meuse: managing the meadow landscape to combine productive and recreational human habitats, with non-human ones



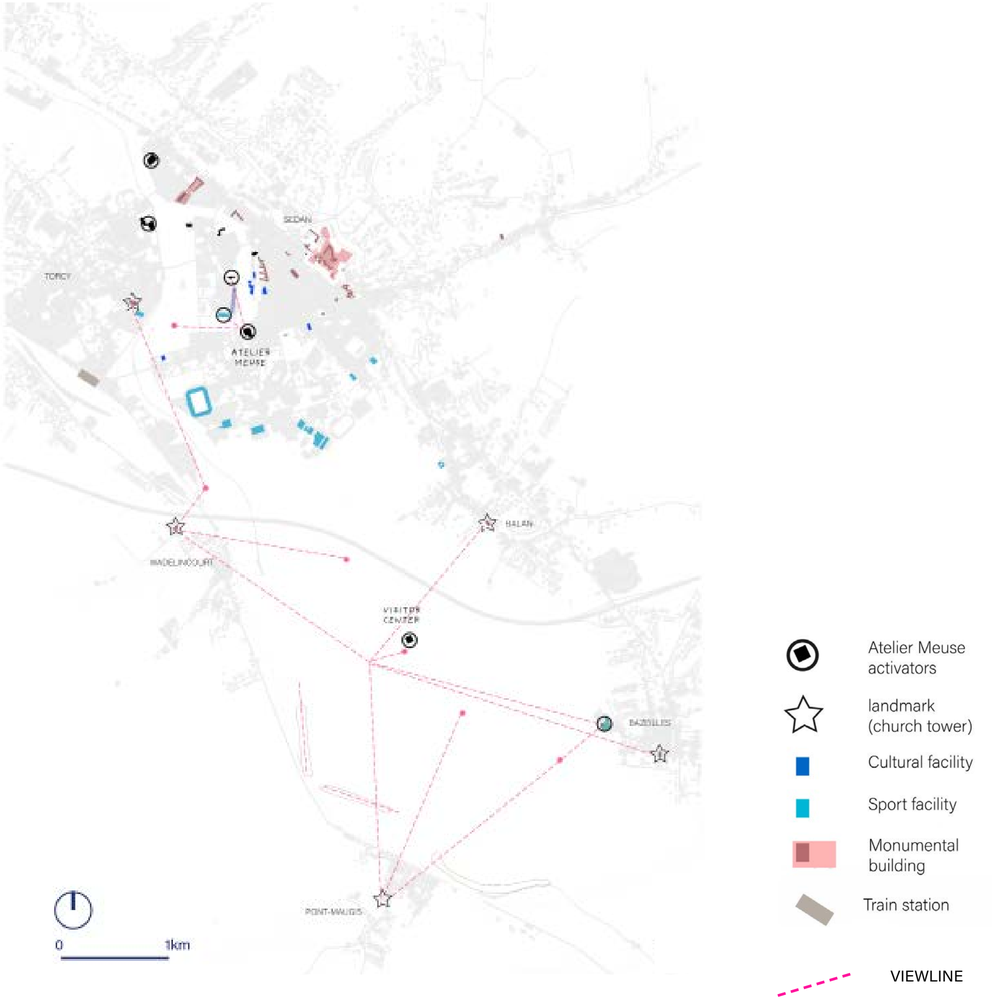


Gardening the Meuse: an enhanced tree structure

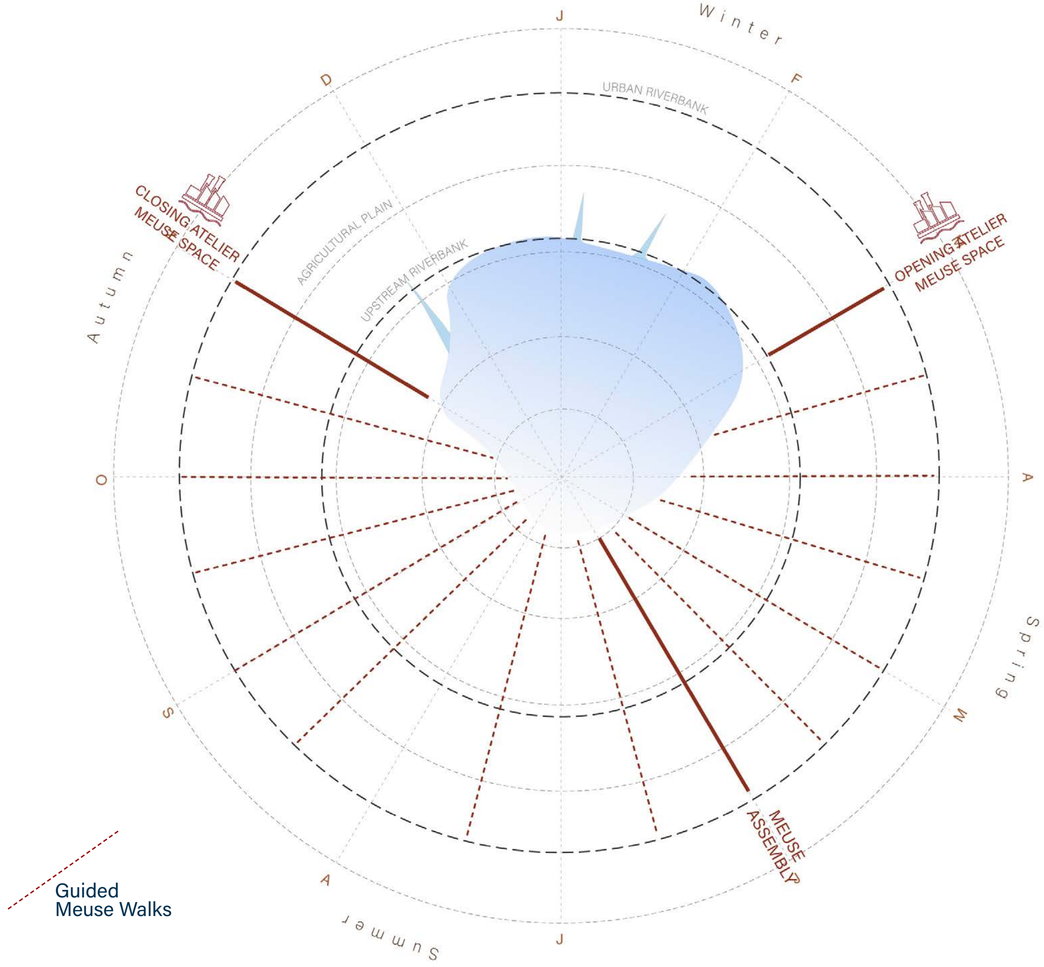


Gardening the Meuse: managing the meadow landscape to combine productive and recreational human habitats, with non-human ones





Belonging to the Atelier Meuse territory: programming and accessibility

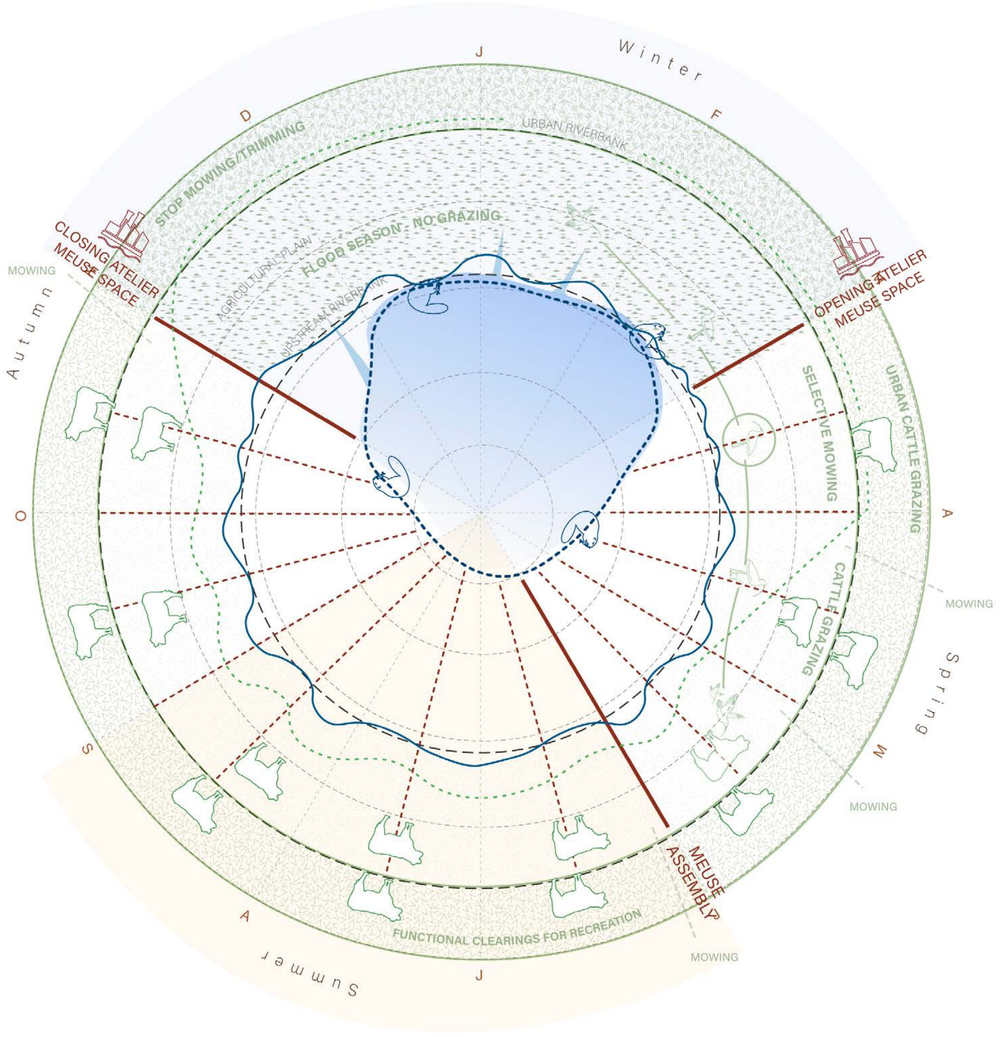


How?
-Reactivation of disused industrial manufactories (including permanent activation of the Atelier Meuse headquarter),

-New slow mobility path system with transversal and longitudinal connections in the floodplain.

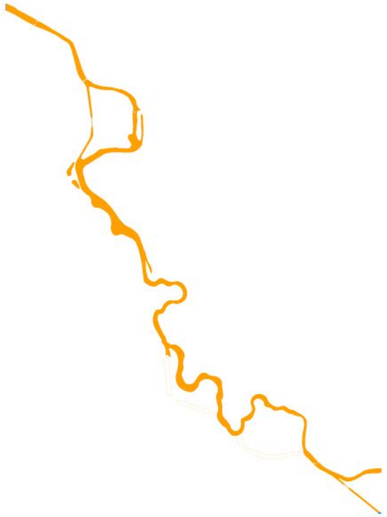
-Programming of the events of the Atelier: yearly assembly, Meuse walks etc.

Belonging to the Atelier Meuse territory: programming and accessibility



A territorial calendar focused on climate adaptation, accessibility/recreation, production and care for non-human habitats





Remeandering



Tree structure



Paths

The territorial plan is a framework, to be realised gradually

Atelier Meuse Stewards



New employments

-Steering of public participation

- Organisation and programming of the project

-Hands-on role in pilot projects during the Activation phase

RIVER KEEPERS

Fishing federation



Esox lucius

Connecting to the larger Meuse

Anguilla anguilla

Slow water habitats

Glyceria maxima

Riverbank vegetation

Alnus glutinosa



Atelier Meuse Stewards

A water management collaboration

Castor fiber

Beavers

Municipal workers

Atelier Meuse Stewards



MEADOW KEEPERS

Permanent meadow

Helping with grazing the meadows of Sedan



Cattle farmers union



Bos taurus - Charolaise

Wet shrubland / forest



Salix cinerea



Numenius arquata

Permanent meadow



Oenanthus fistulosa

Riparian pasture



Rumex crispus

Landscape transformation and maintenance

Project start, Design of the territorial framework plan, Design and supervision of the activation phase

LANDSCAPER

Weaving interspecies alliances with the territorial plan

BEAVERS

CATTLE FARMERS

MUNICIPAL WORKERS

PUBLIC

ATELIER MEUSE STEWARDS

Design values

Possible new riverine practices

SLOWING



Damming — BUILDING A BEAVER DAM**

Storing — DIGGING A RAINWATER BUFFER***

Playing — PLAYING IN THE RIVER SEDIMENTS***

GARDENING



Planting — PLANTING A NEW TREE IN THE FLOODPLAIN*

Diversifying — CARING FOR RIPARIAN VEGETATION*

Maintaining — PLANTING AND MAINTAINING* A FLOODABLE ORCHARD

Grazing — GRAZING THE FLOODPLAIN MEADOW*

BELONGING

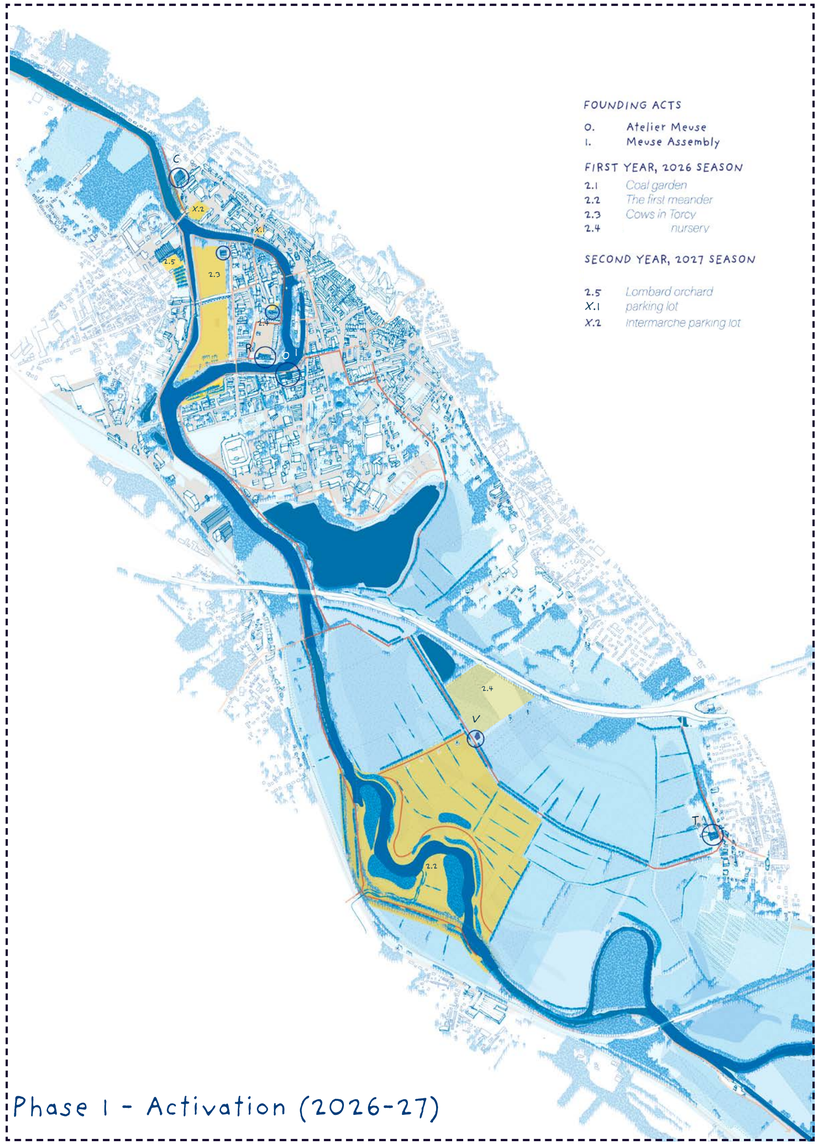


Gathering — GATHERING WITH THE RIVER***

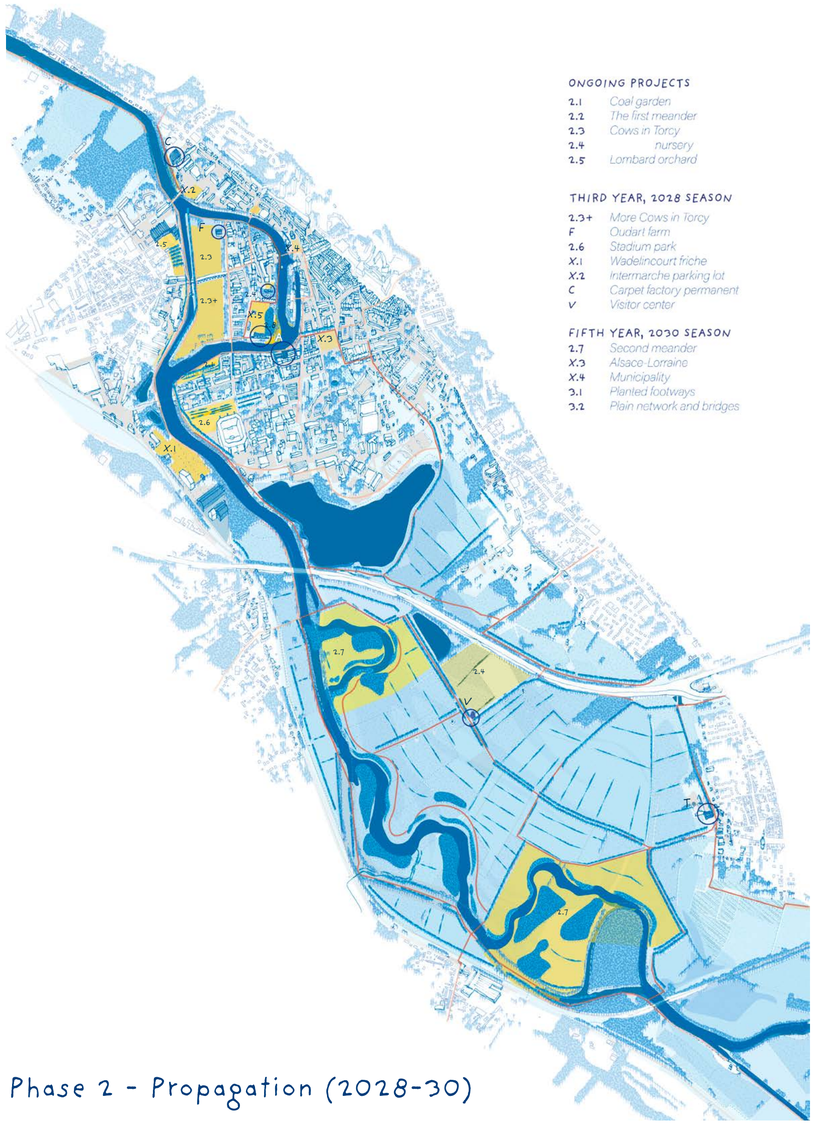
Exploring — WALKING, BIKING ALONG THE RIVER FLOW*

Making — BUILDING FURNITURE* FOR THE FLOODPLAIN

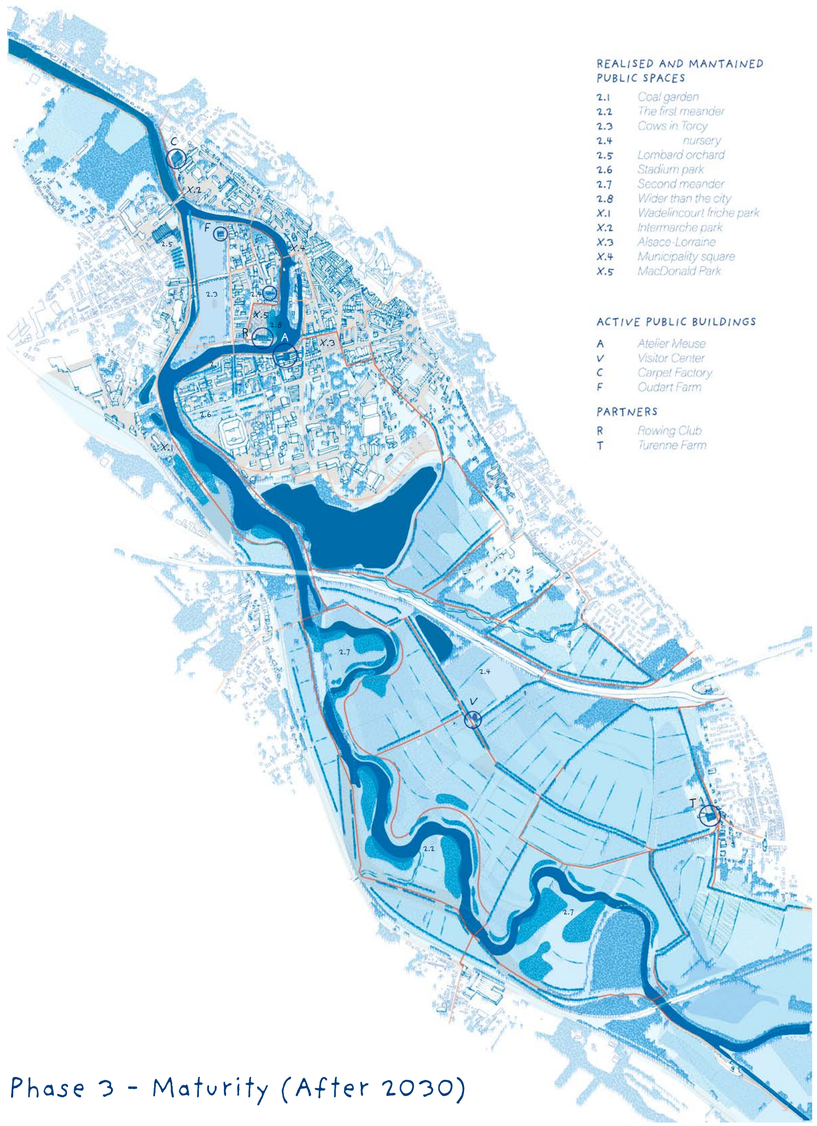
Making new riverine practices possible



Phase 1 - Activation (2026-27)

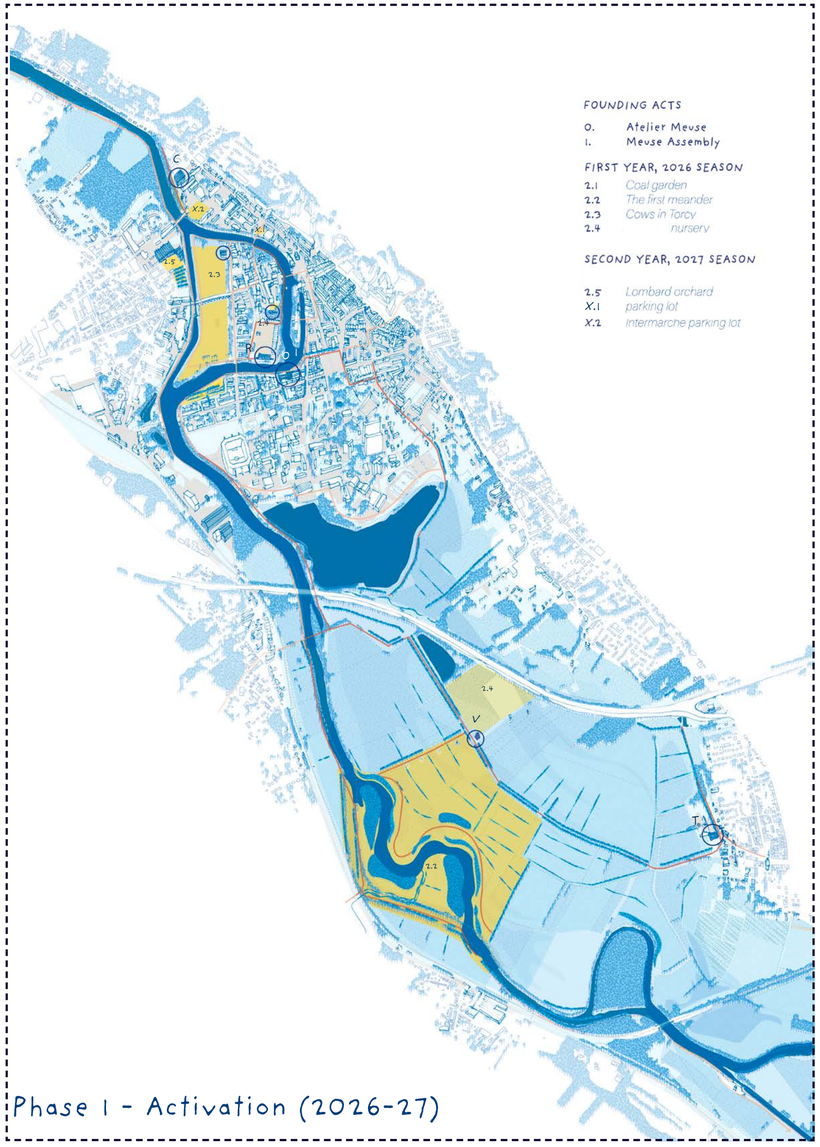


Phase 2 - Propagation (2028-30)



Phase 3 - Maturity (After 2030)

A phased territorial plan



Phase 1 - Activation (2026-27)

Phase 2 - Propagation (2028-30)

Phase 3 - Maturity (After 2030)

Act 4
Activating

Sedan, France
June 2027

First weekend of June - MEUSE ASSEMBLY

Gathering

Playing



Before the start of the yearly Meuse assemby, beginning of summer.

Ongoing, open from March till November - ATELIER MEUSE HEADQUARTER

Making



Building materials, public furniture for the territory.

Depaving an planting test parking lots - DECEMBER

Planting

Storing



Depaving a parking lot and planting trees, to infiltrate more water in the city.

Building edges in the test plots - JANUARY

Diversifying

Planting



Selecting perennials on the riverbank- SPRING

Diversifying



Selecting spontaneous riparian vegetation with flexible split stake fences.

The activation phase: Sedan city center

landscape framework

Meuse walks

June 2026

FOUNDING ACTS

0. Atelier Meuse
1. Meuse Assembly

FIRST YEAR, 2026 SEASON

2.1 Coal garden
2.2 The first meander
2.3 Cows in Torcy
2.4 nursery

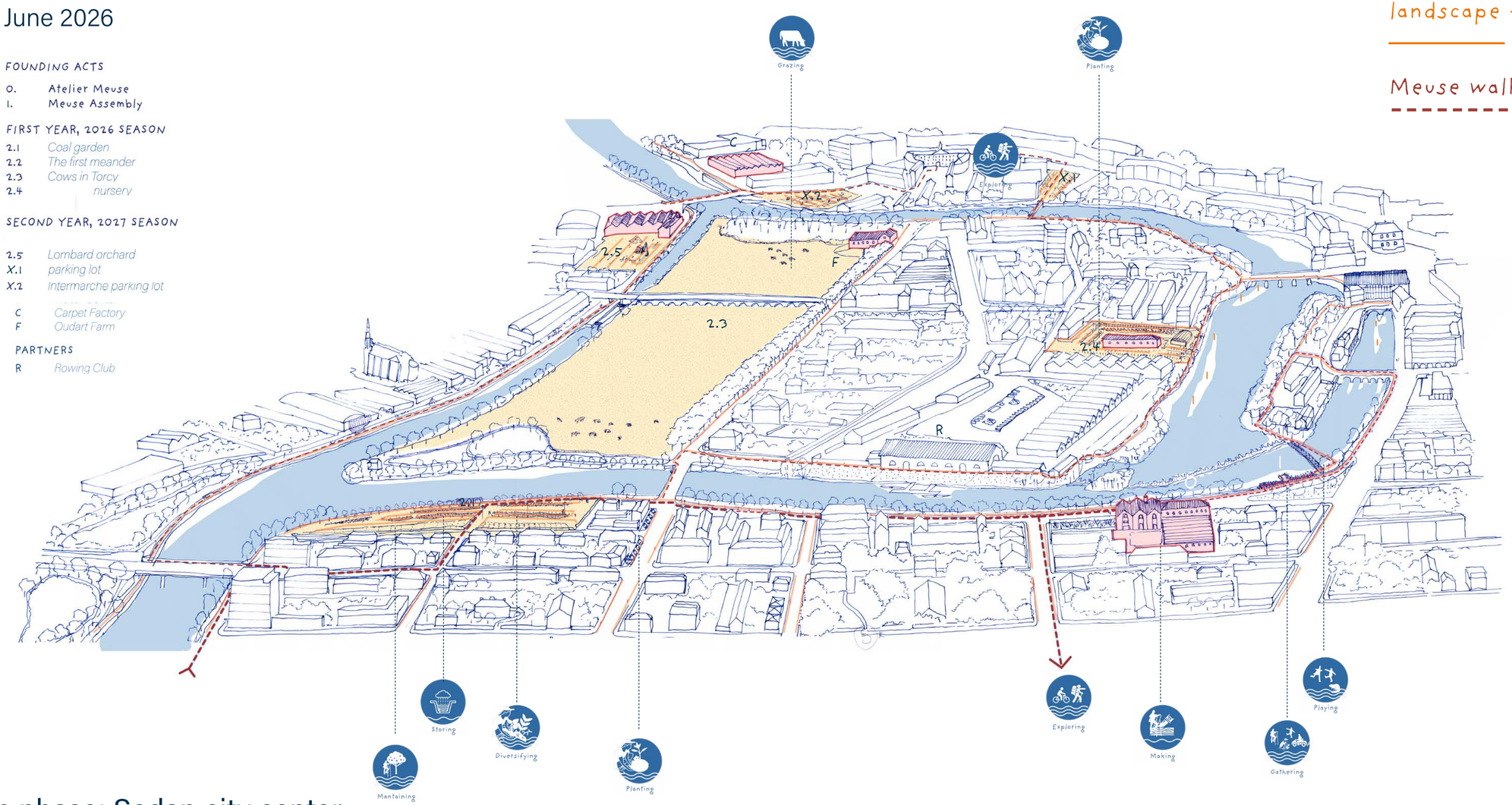
SECOND YEAR, 2027 SEASON

2.5 Lombard orchard
X.1 parking lot
X.2 Intermarche parking lot

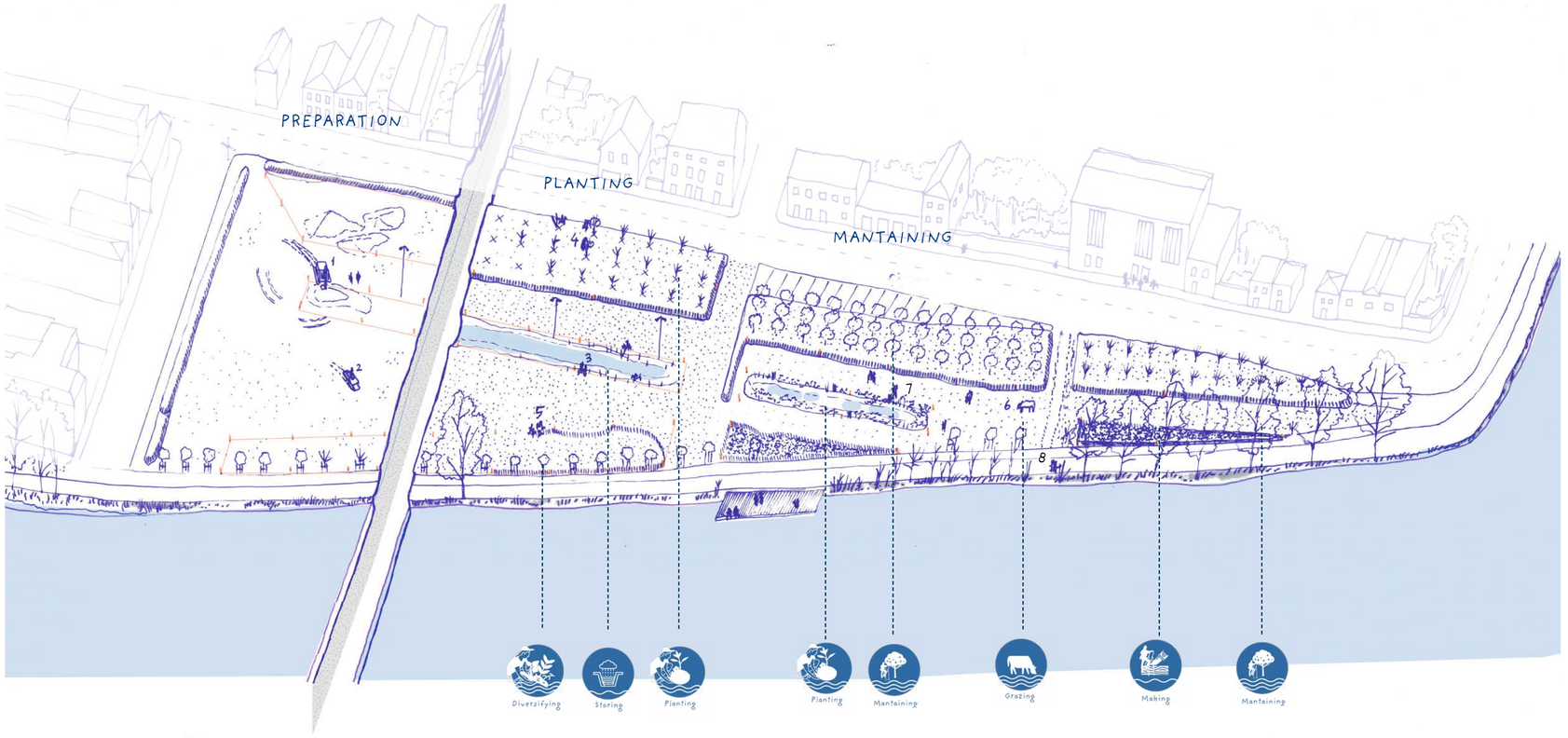
C Carpet Factory
F Oudart Farm

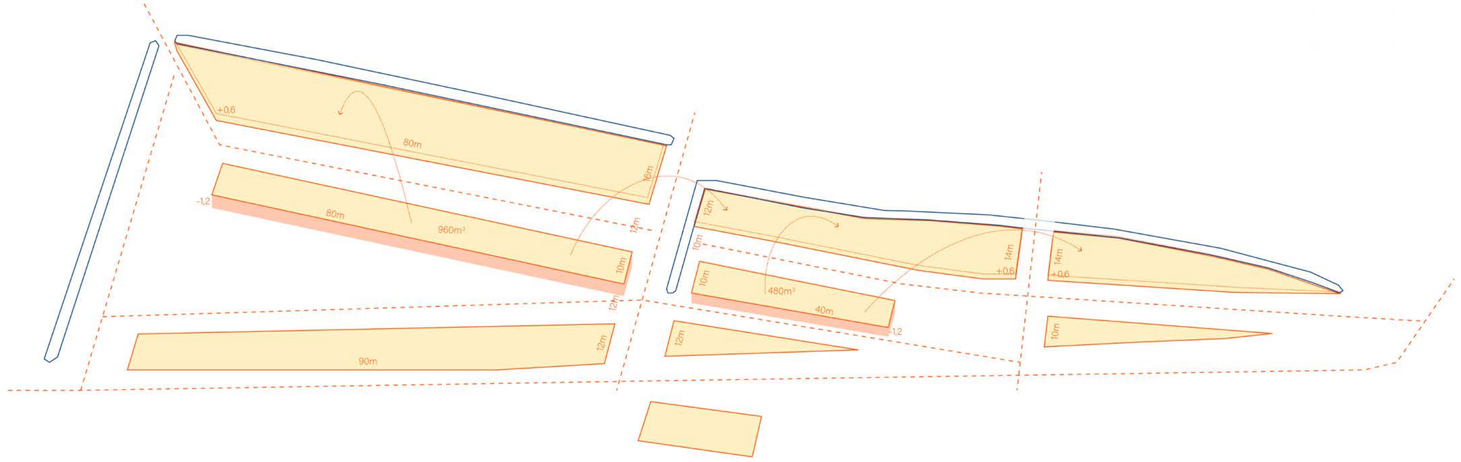
PARTNERS

R Rowing Club



The activation phase: Sedan city center





PREPARATION

FIRST SEMESTER 2026

1. Earthwork - February 2026

2. Mowing of existing ryegrass - April 2026

PLANTING

SECOND SEMESTER 2026

3. Planting of willow branches - November 2026

4. Planting of orchard trees - December 2026

5. Fencing of garden edge - December 2026

MANTAINING

2027 SEASON

6. Heifer grazing the meadow - March-November 2027

7. Protecting alder sprouts - Spring 2027

8. Clearing of riparian vegetation for views - November 2027

2028

9. Weaving of willow fences - December-January 2028

Filled in by the association mantaining the plot landscape framework

The Activation Phase - Coal Garden - Construction and maintenance within a designed framework



Current situation



Activation phase, Summer 2027



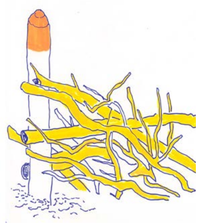
The Activation Phase - Coal Garden - Construction and maintenance within a designed framework

SLOWING

GARDENING

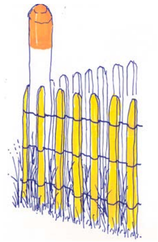
BELONGING

Temporary

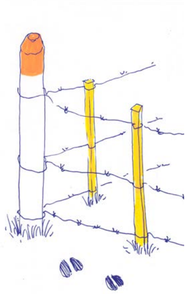


'Framework marker'

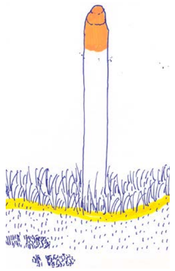
beaver-like dam



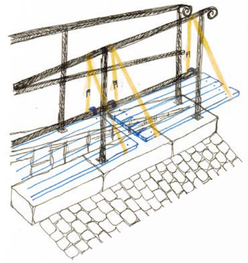
split-stake fence



barbed wire

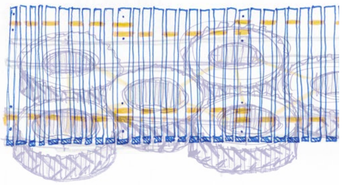


mowed path



'Meuse assembly'

adaptable bench

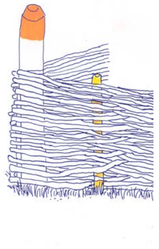


'Pneumatic'

temporary pontoon

Permanent

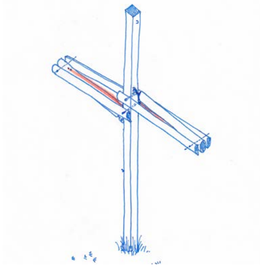


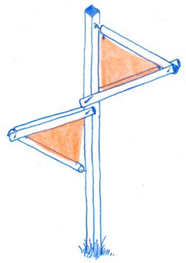


woven willow fence



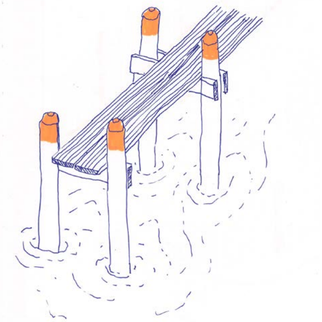
gravel bikepath



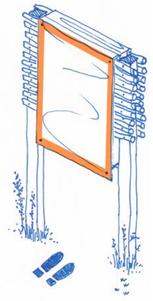


'High Meuse'

Adjustable water height signage on paths



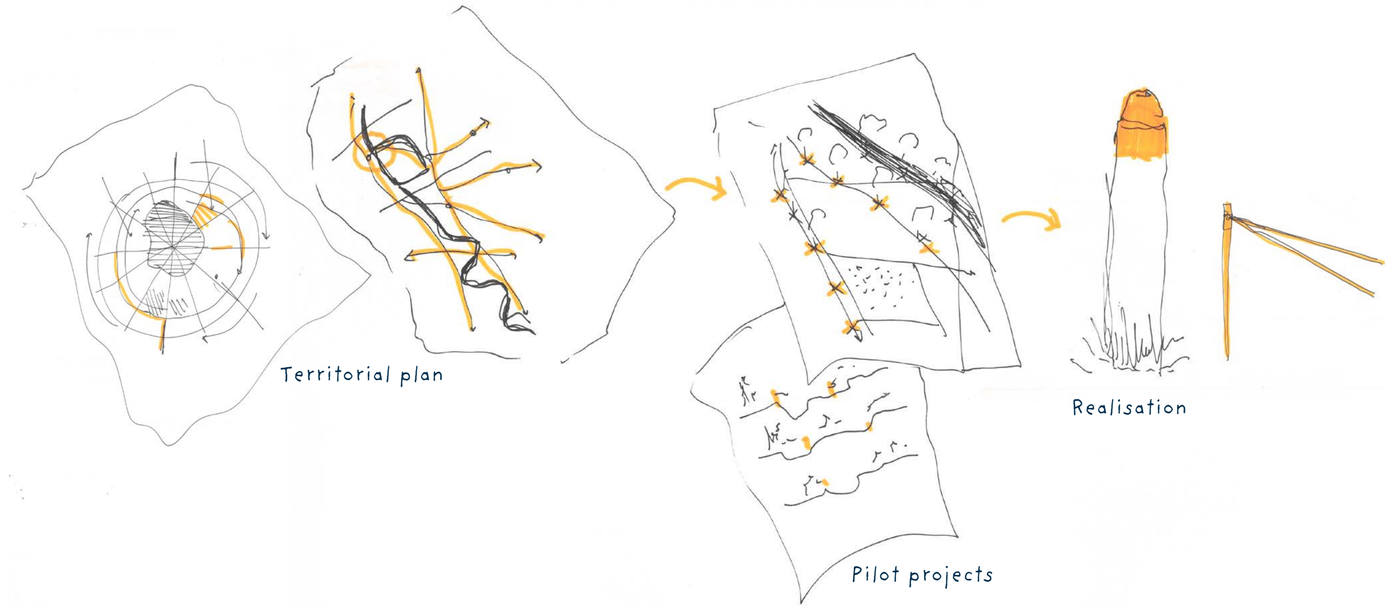
permanent pontoon



'Panel'



The Activation Phase - territorial “markers” and furniture

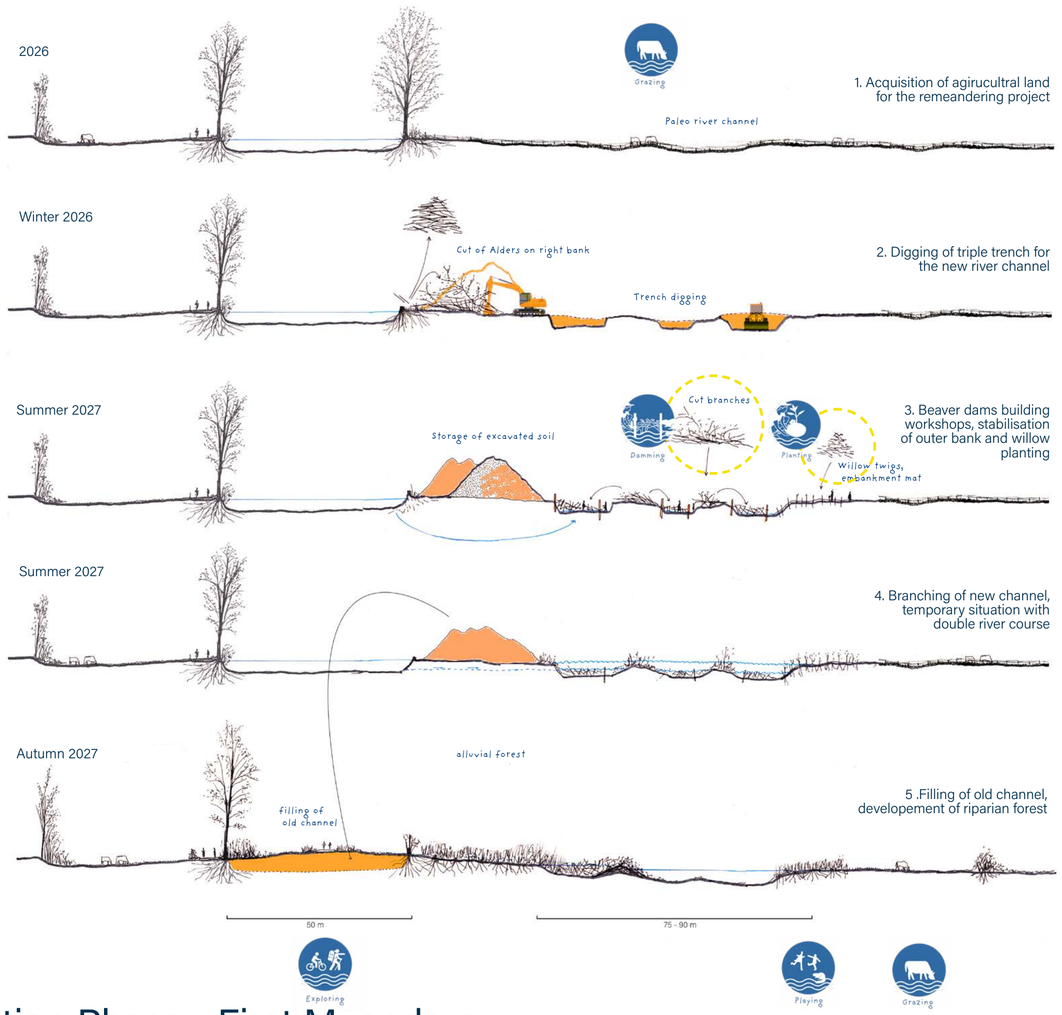


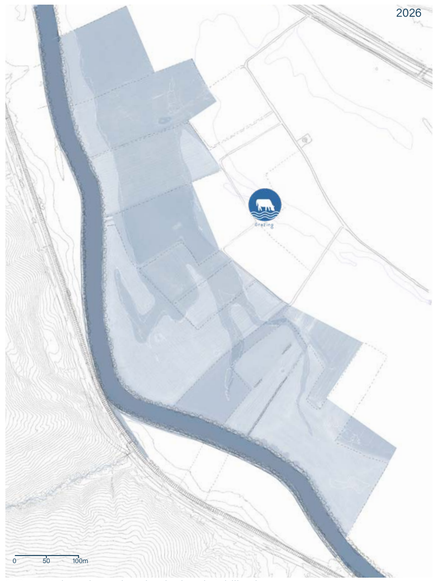


The Activation Phase - The spatialisation of the framework at different stages of the project

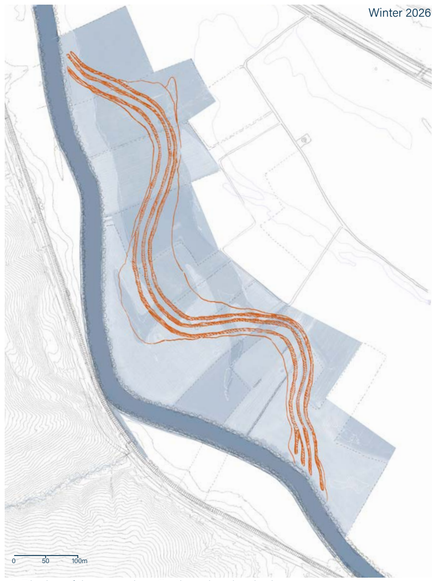
-Collaboration with the basin authority

-Public participation in the remeandering of the current river channel

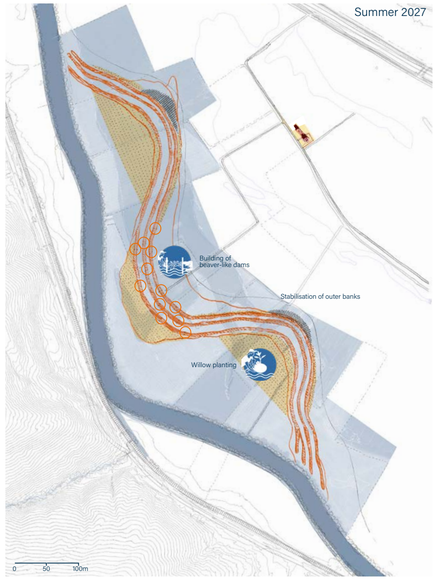




1. Current river channel, embanked and stabilised by alder rows.



2. Digging of three trenches. On the paleo-river bed.



3. Collective planting and building of beaver-like dams .



3. Branching of new channel, temporary situation with double river course.

The Activation Phase - First Meanders

WINTER 2026



Digging the new river channel(s).

SUMMER 2027

Damming



Building a beaver-like dam to slow the river flow.

SUMMER 2027

Damming



Sawing alder wood from cut trees to harvest material for the dams.

SUMMER 2027

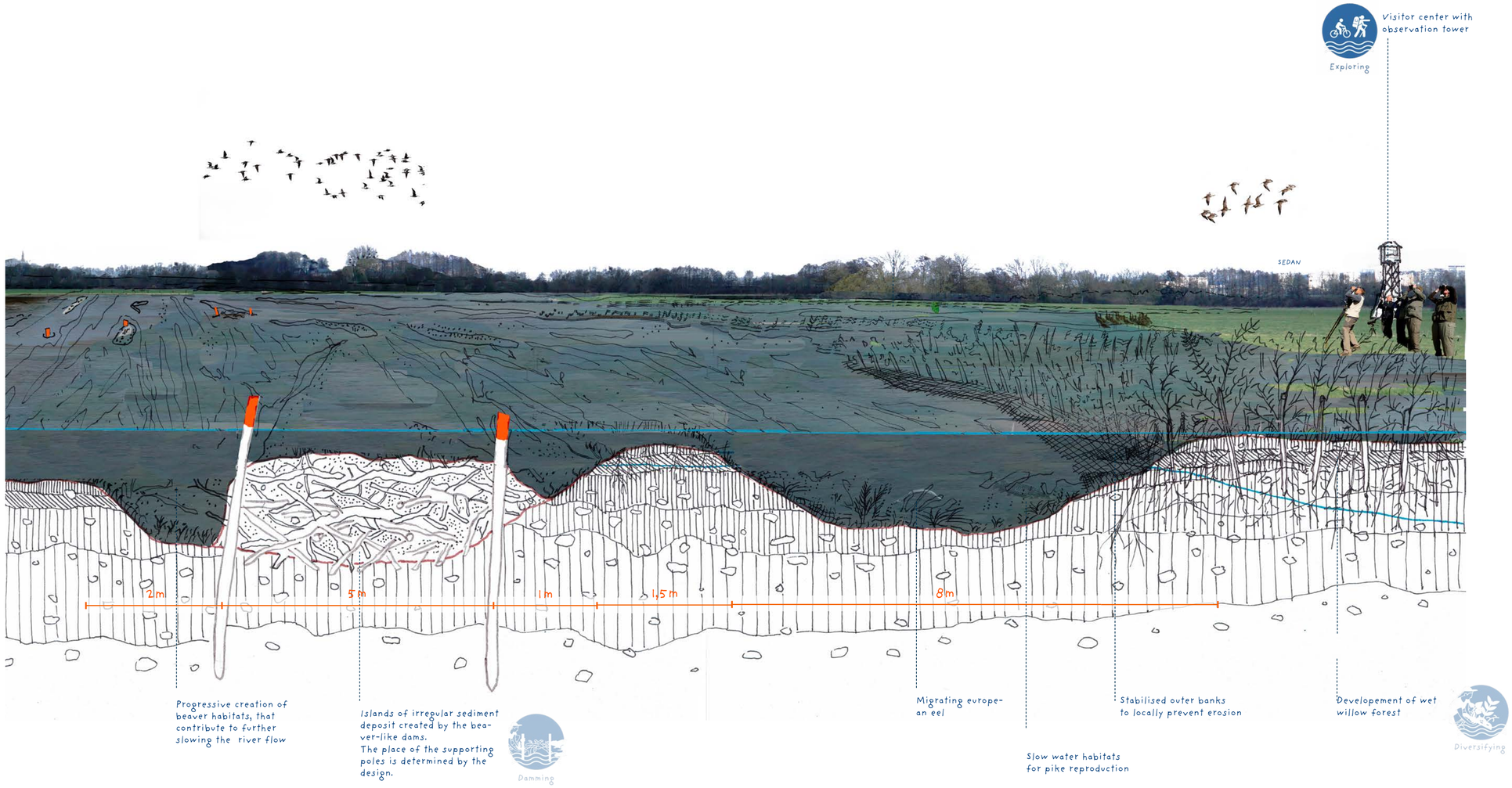
Planting



Stabilising the new outer riverbank and planting willow branches for a future riparian forest.

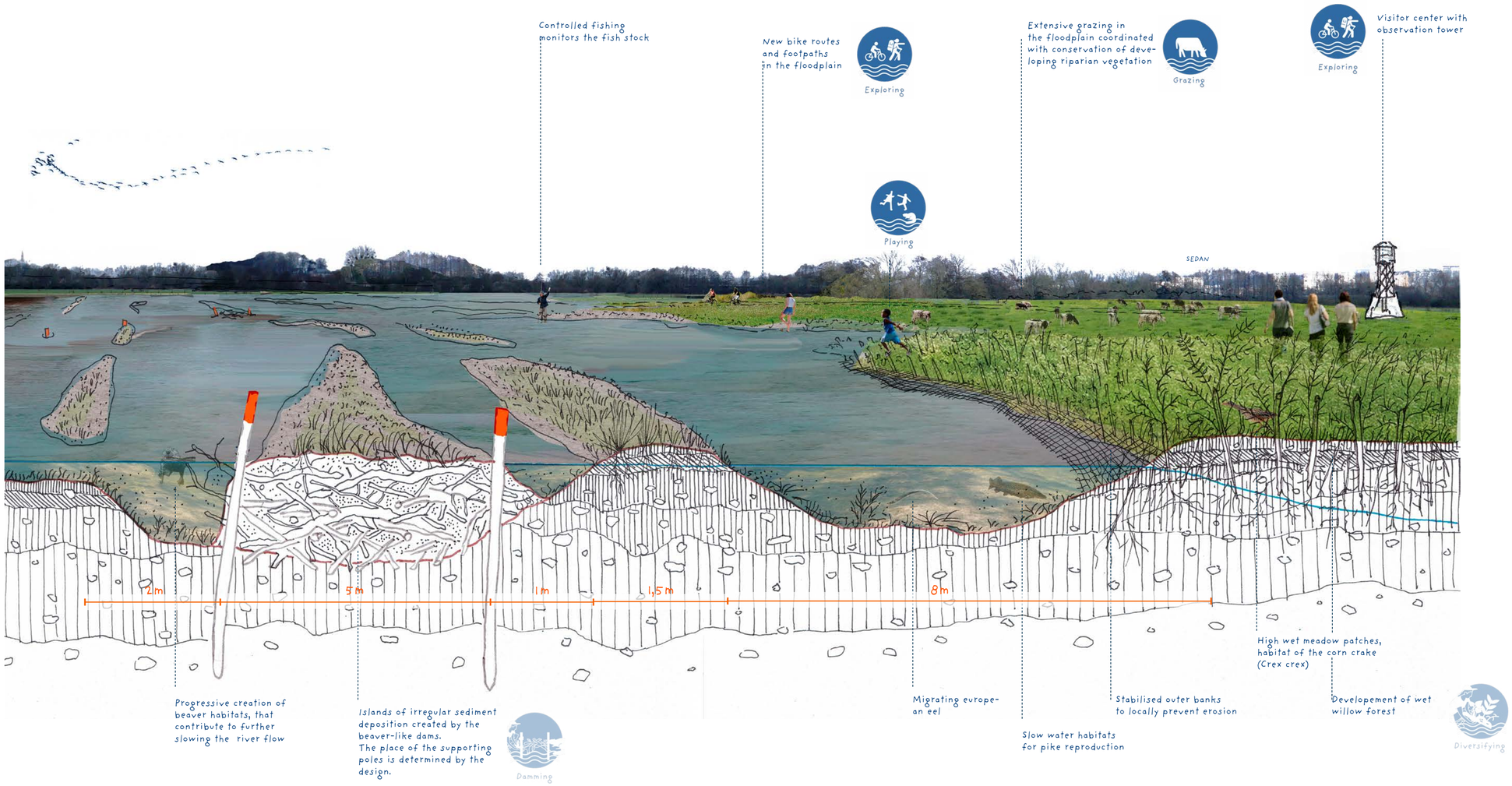
The Activation Phase - FIrst Meanders

February 2028



Second year of the activation Phase, during a winter flood

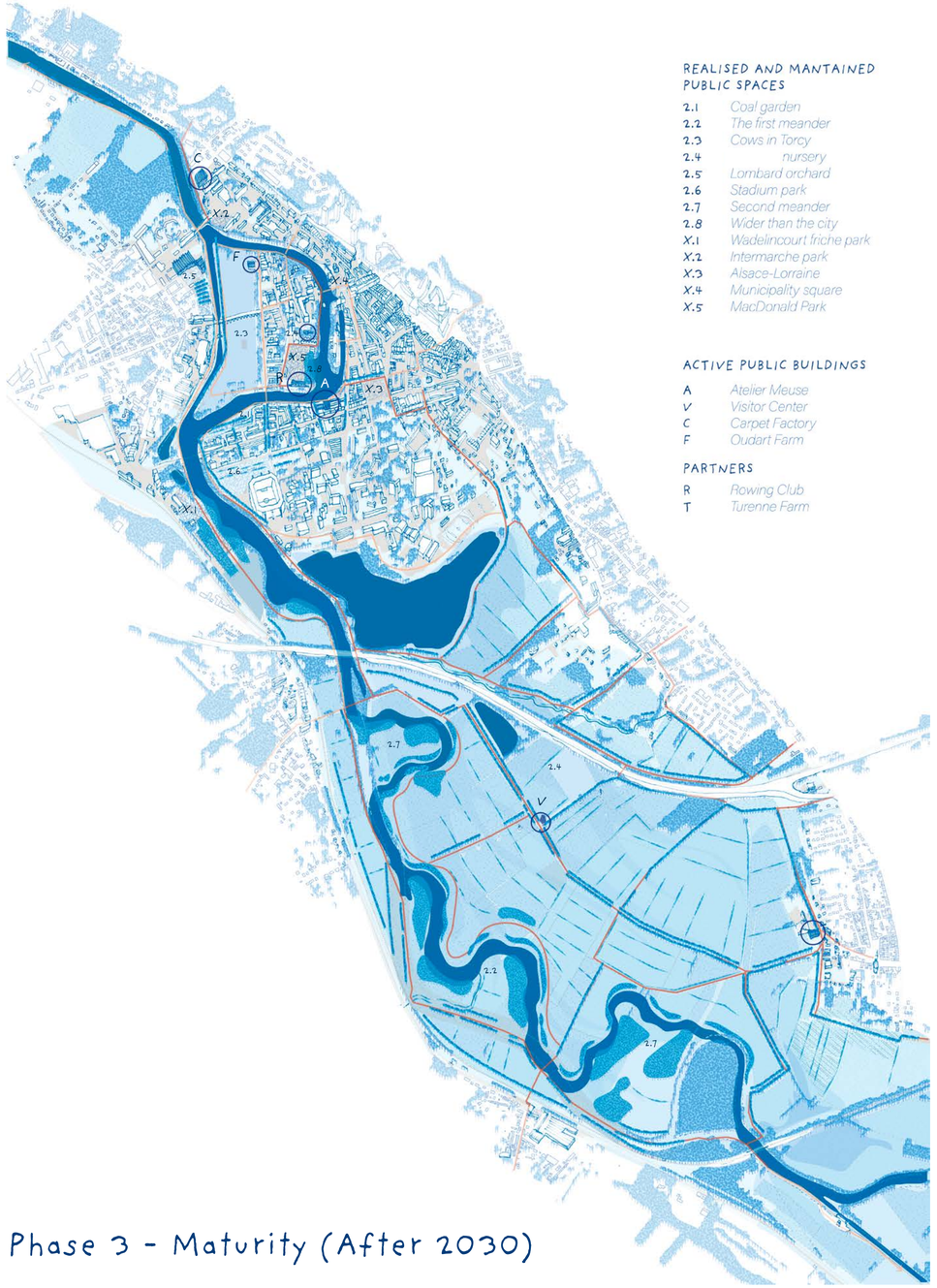
April 2028



Second year of the activation Phase, after the first flood season

epilogue

Delft,
June 2045



REALISED AND MANTAINED PUBLIC SPACES

- 2.1 Coal garden
- 2.2 The first meander
- 2.3 Cows in Torcy
- 2.4 nursery
- 2.5 Lombard orchard
- 2.6 Stadium park
- 2.7 Second meander
- 2.8 Wider than the city
- X.1 Wadelincourt friche park
- X.2 Intermarche park
- X.3 Alsace-Lorraine
- X.4 Municipality square
- X.5 MacDonald Park

ACTIVE PUBLIC BUILDINGS

- A Atelier Meuse
- V Visitor Center
- C Carpet Factory
- F Oudart Farm

PARTNERS

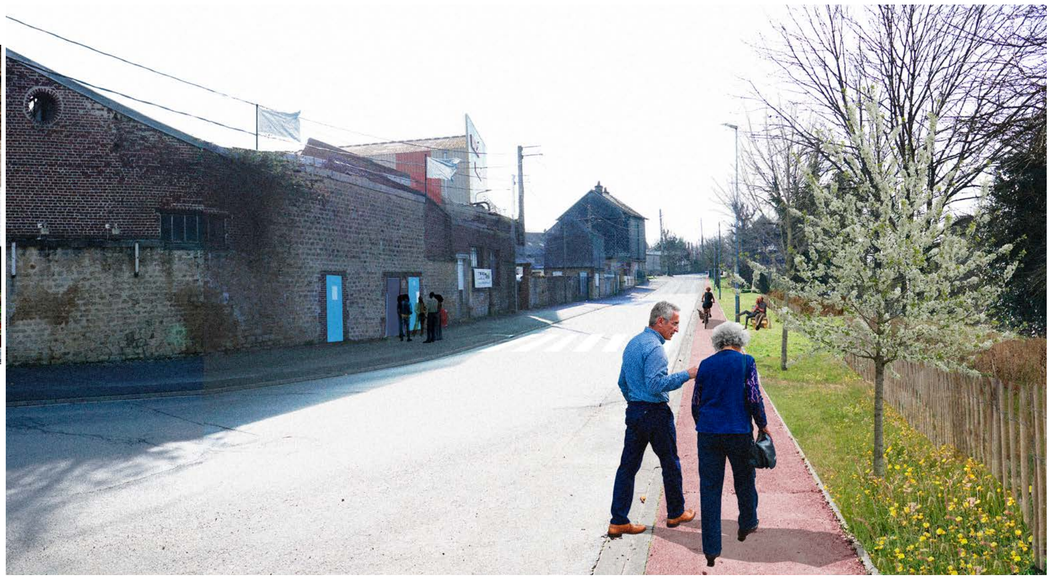
- R Rowing Club
- T Turenne Farm

Phase 3 - Maturity (After 2030)

MARCH 20TH, 2045



In the carpet factory, the Tapis Point de Sedan, various associations use the large spaces to organise events, such as a (swap)market of local seedling in the beginning of the gardening season.



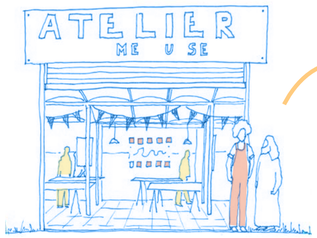
Outside of the renovated factory, the “entrance” of Sedan is now a thriving public space.



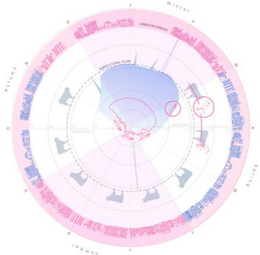
The riverbanks are almost all connected by a path that allows the people of Sedan to benefit from the sights of the Meuse throughout the seasons.

The evolution of the project

Summer 2025



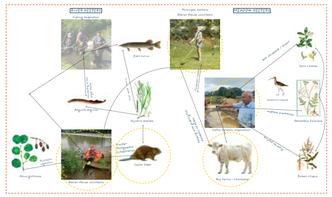
0. Atelier activation



1. Territorial problematique



2. Design calendar

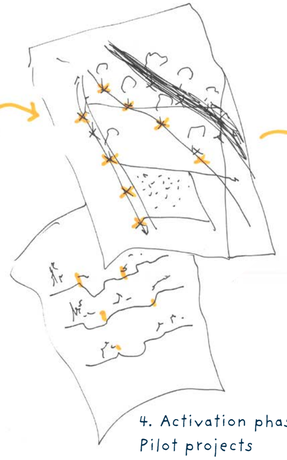


2. Interspecies alliances

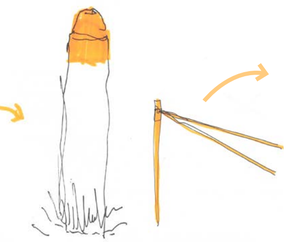


3. 4. Territorial plan

Summer 2026 - Summer 2028



4. Activation phase
Pilot projects

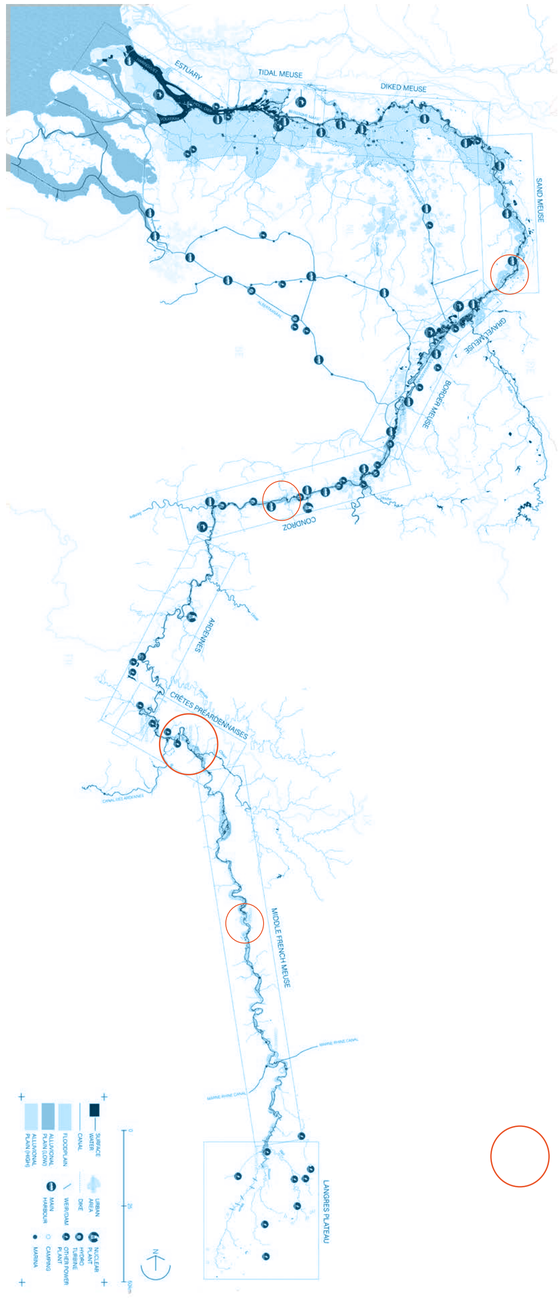


Collective realisation

Propagation of the projects

A transferable design process

- How can the floodplain landscapes of the Meuse be revealed and transformed towards an attunement to the river's intrinsic rhythm?



Possible other floodplain atelier locations?

end