

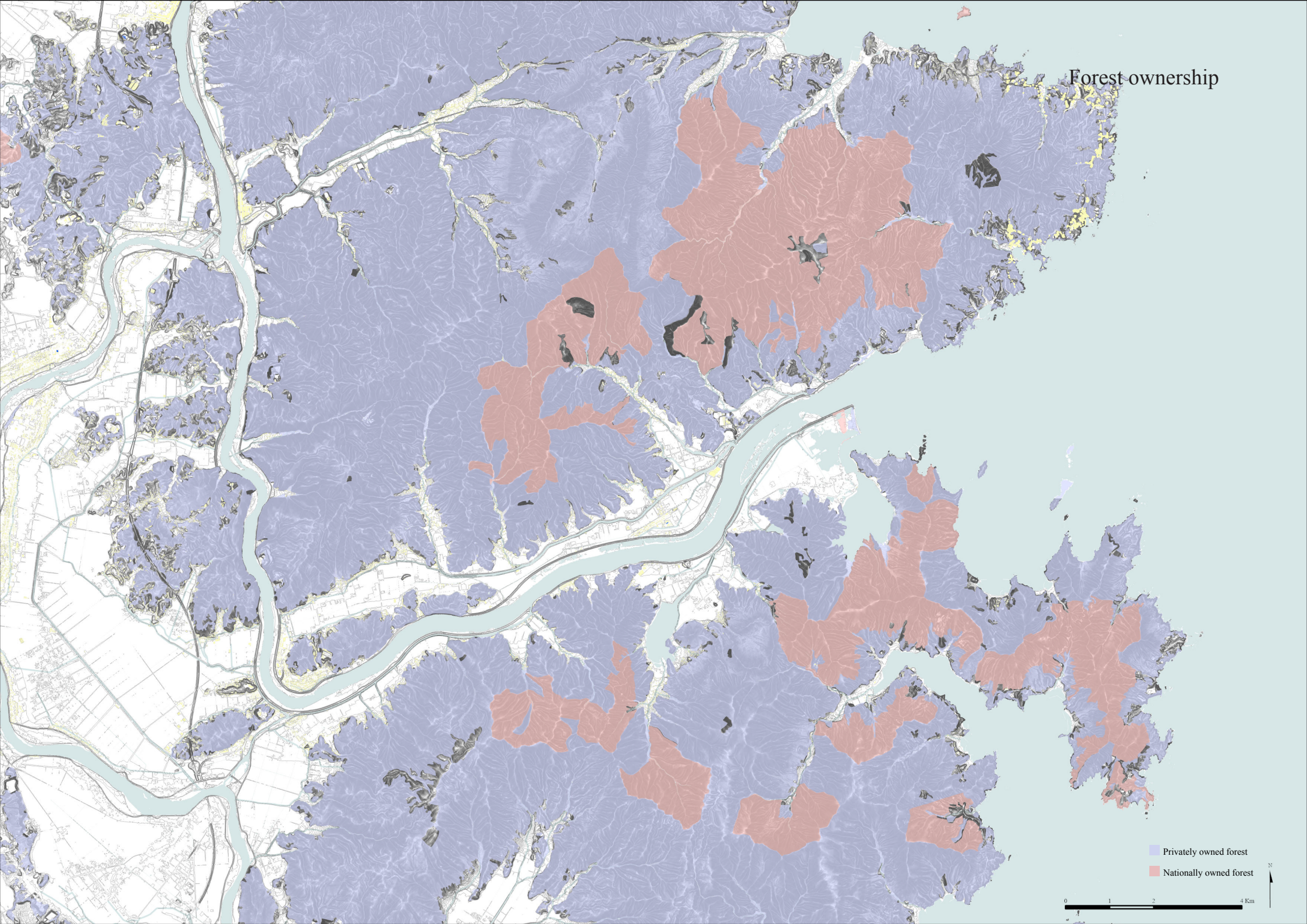
The fluid garden of Kitakami

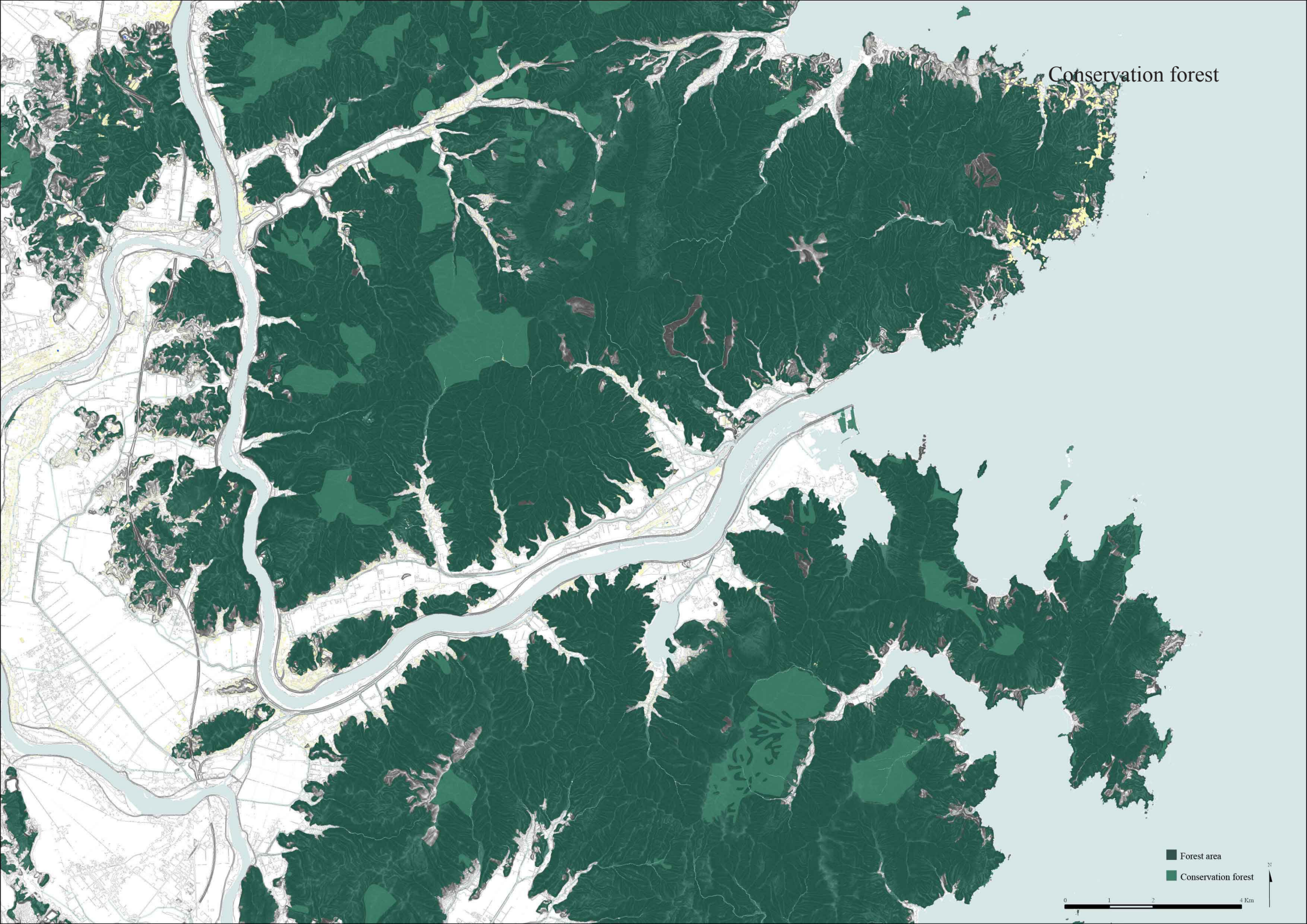
Process booklet

Shizuka Miura

Analysis

Forest ownership





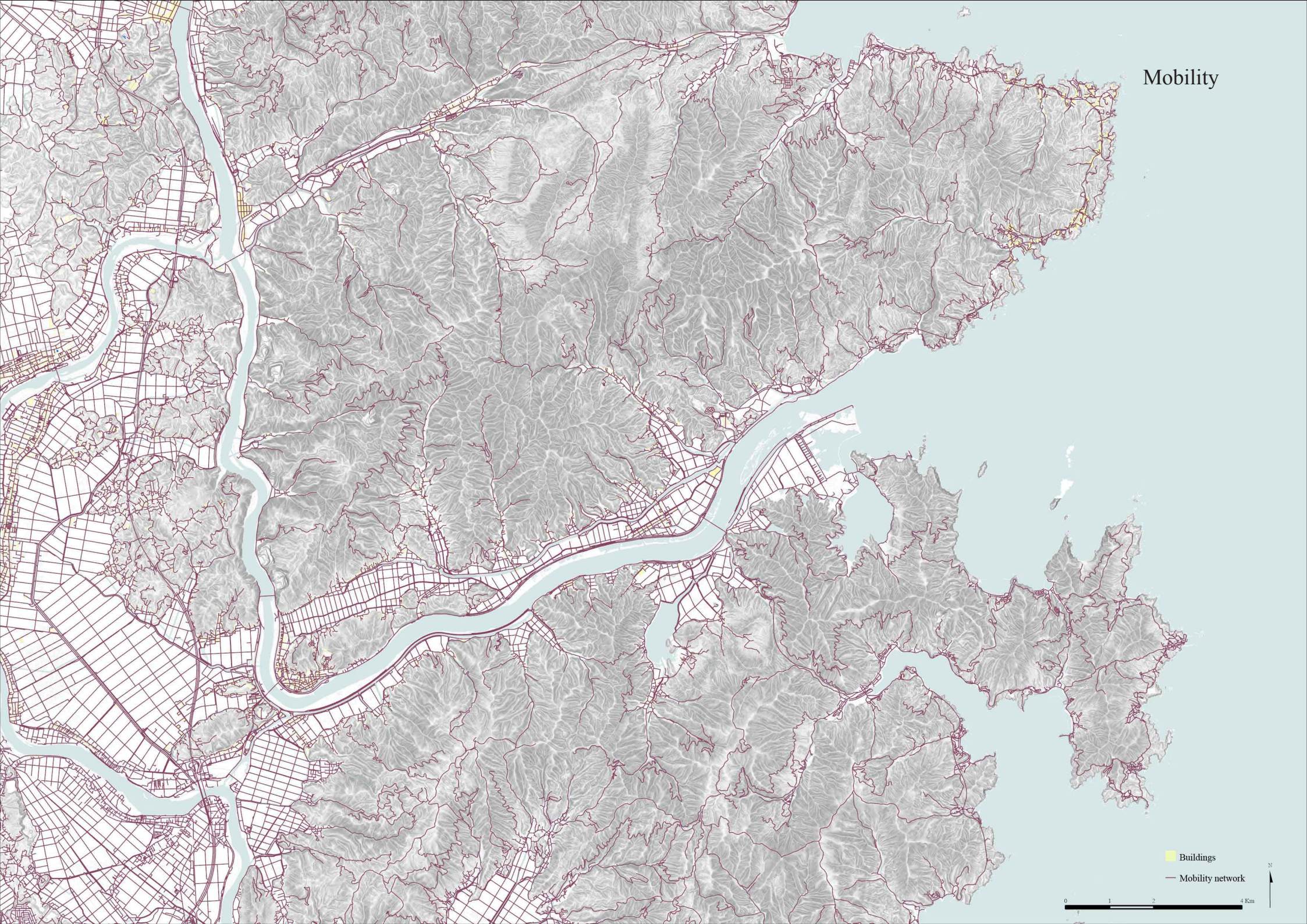
Conservation forest

- Forest area
- Conservation forest

0 1 2 4 Km



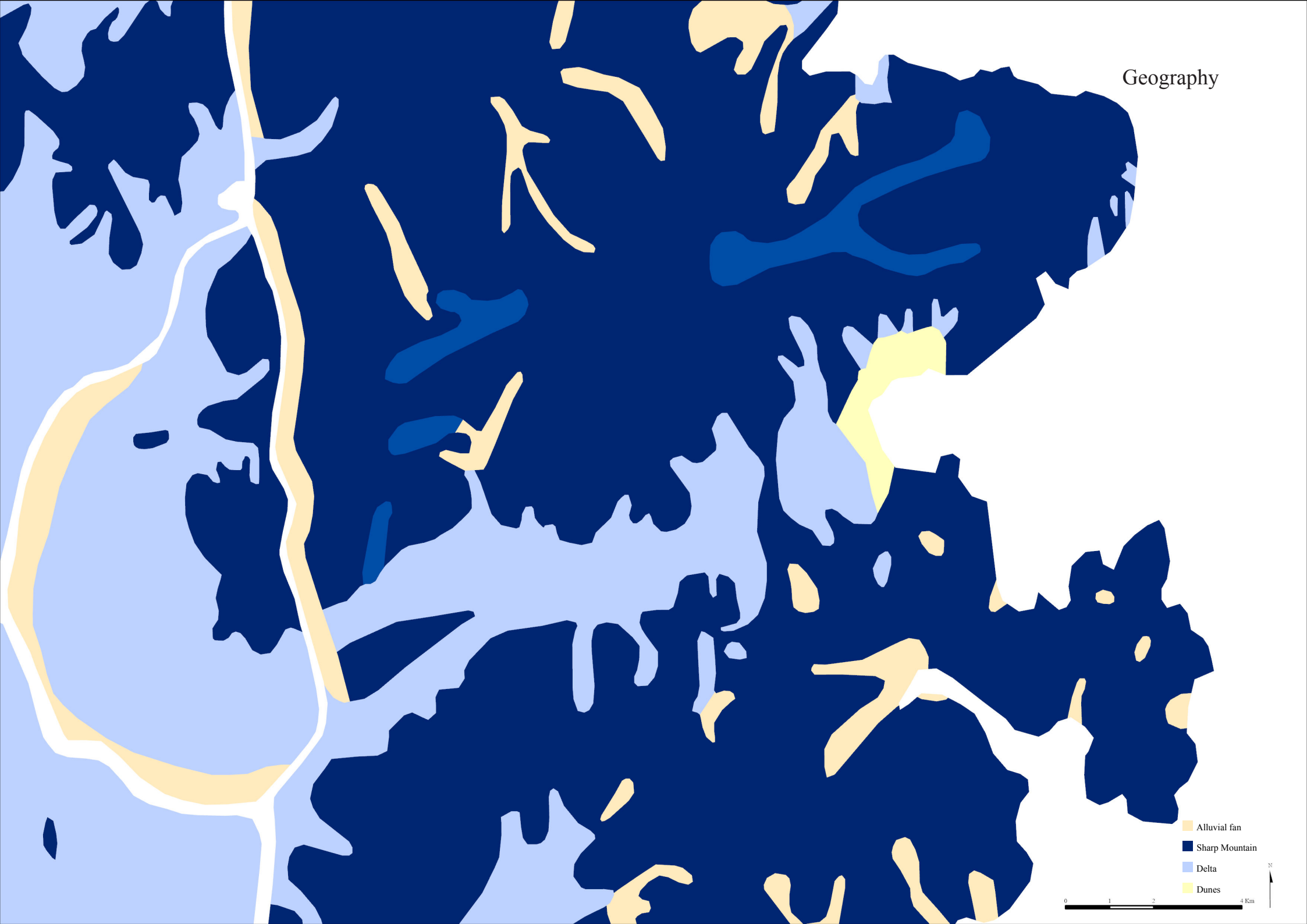
Mobility



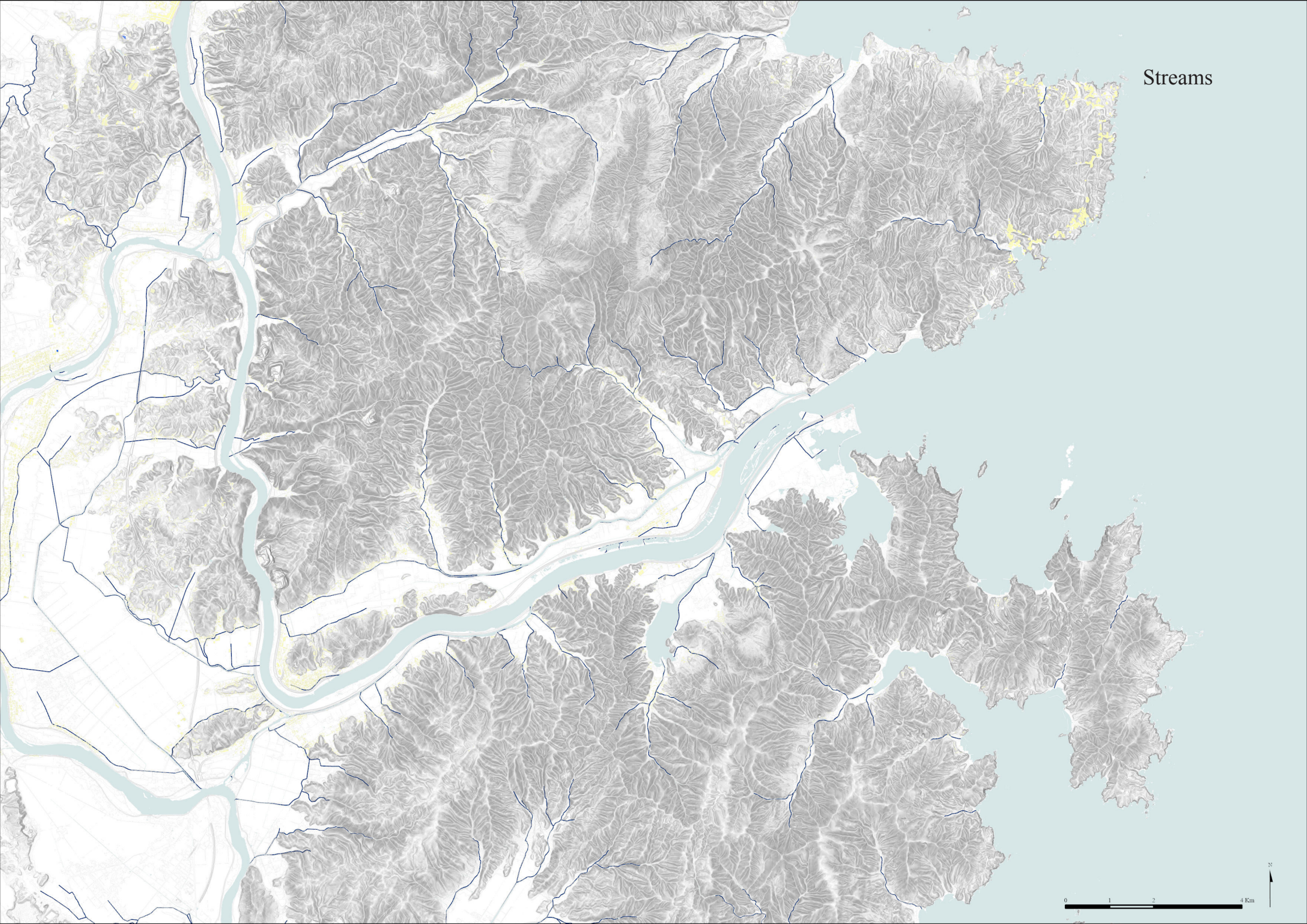
Buildings
Mobility network

0 1 2 Km

Geography

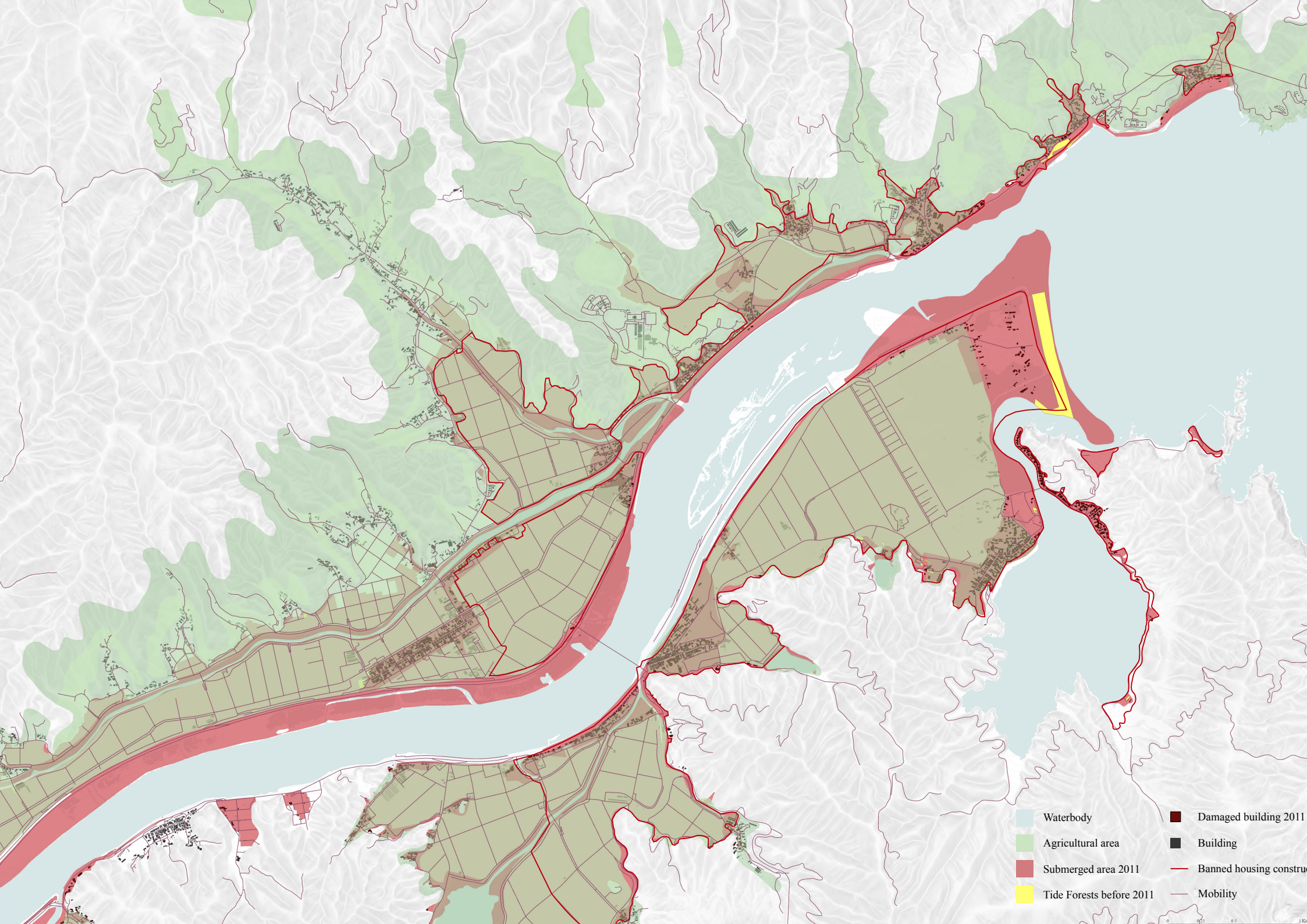










- Alluvial fan
- Sharp Mountain
- Delta
- Dunes



Streams

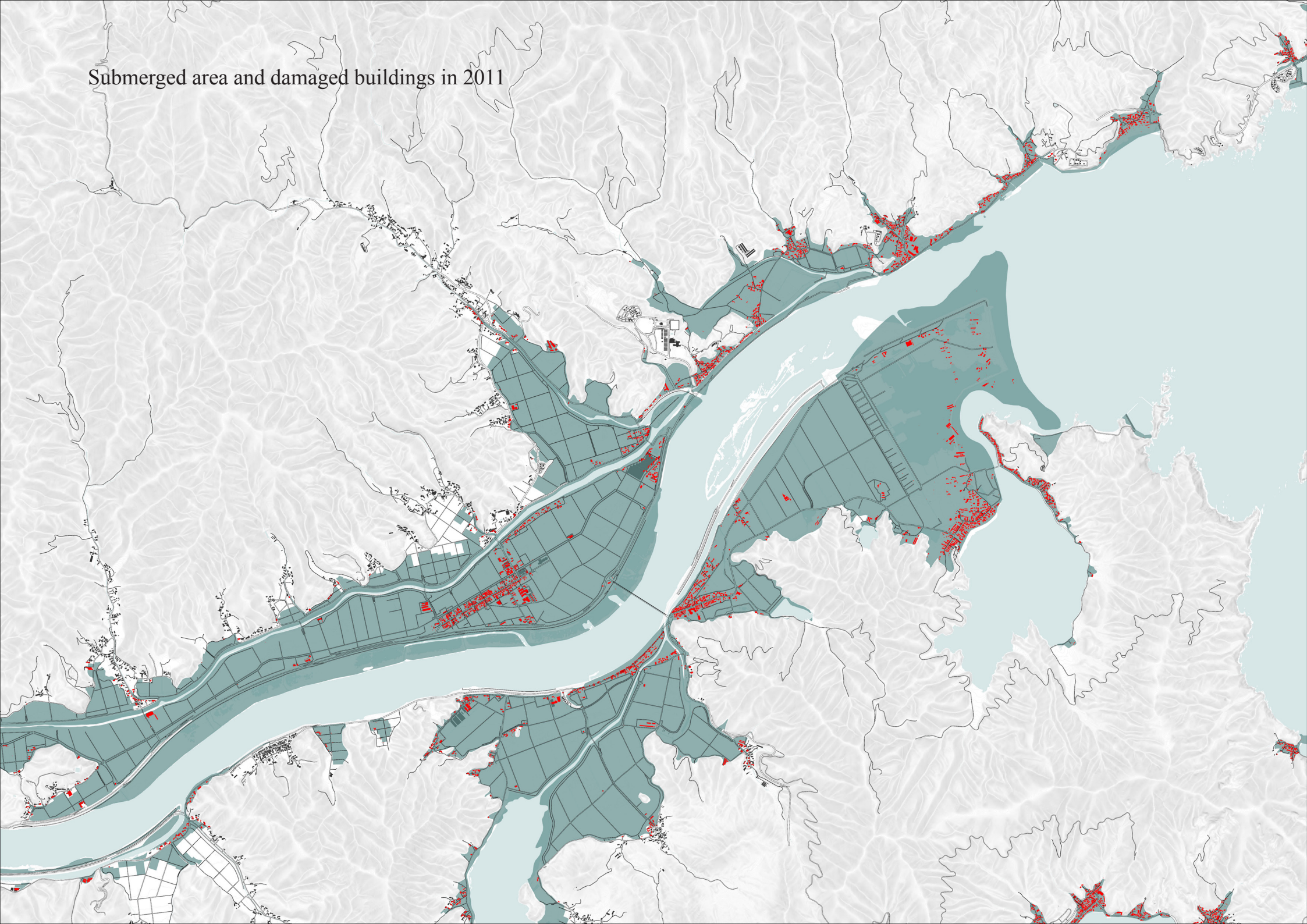




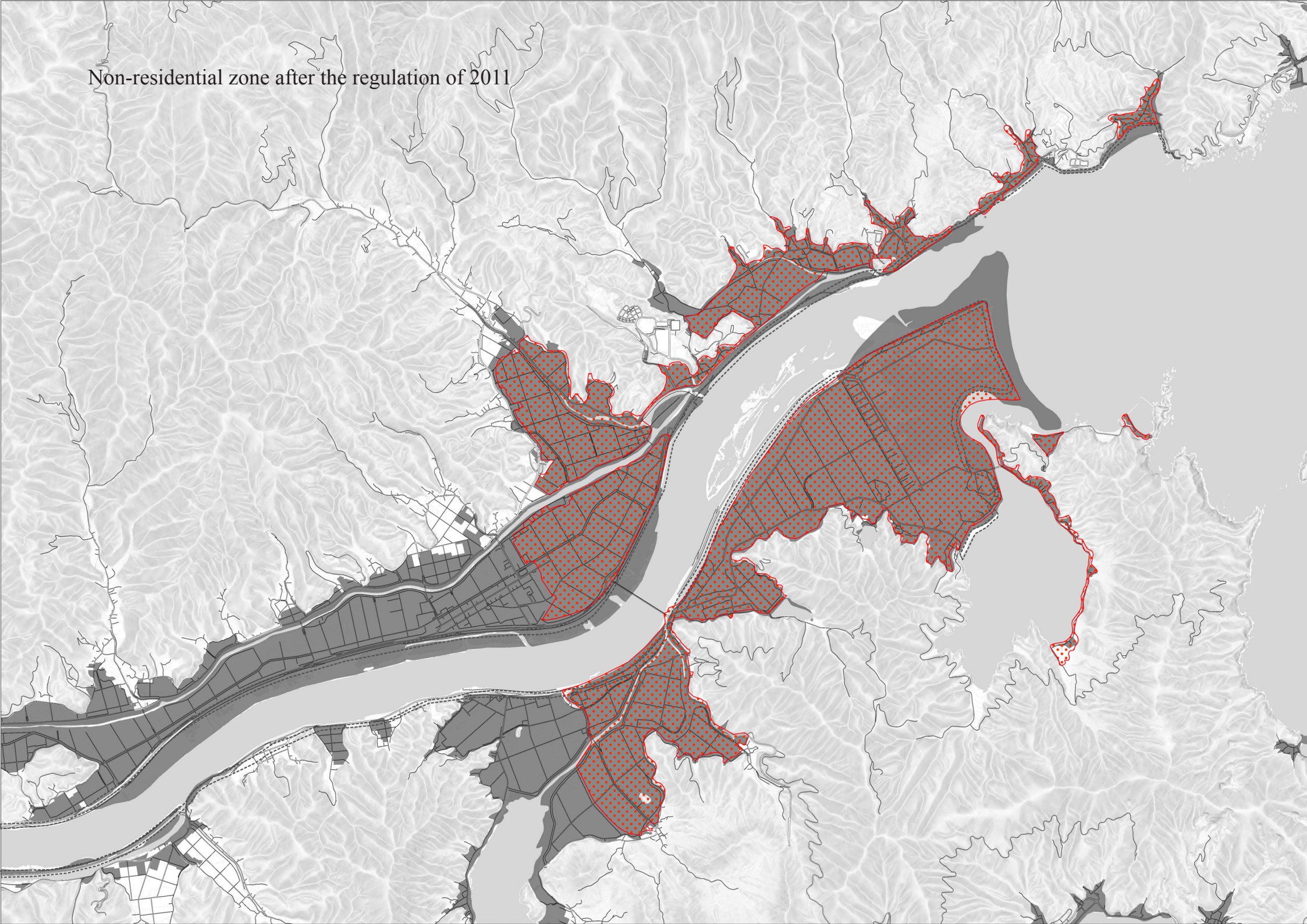
- | | | | |
|---|--------------------------|---|-----------------------------|
|  | Waterbody |  | Damaged building 2011 |
|  | Agricultural area |  | Building |
|  | Submerged area 2011 |  | Banned housing construction |
|  | Tide Forests before 2011 |  | Mobility |

0 0.25 0.5

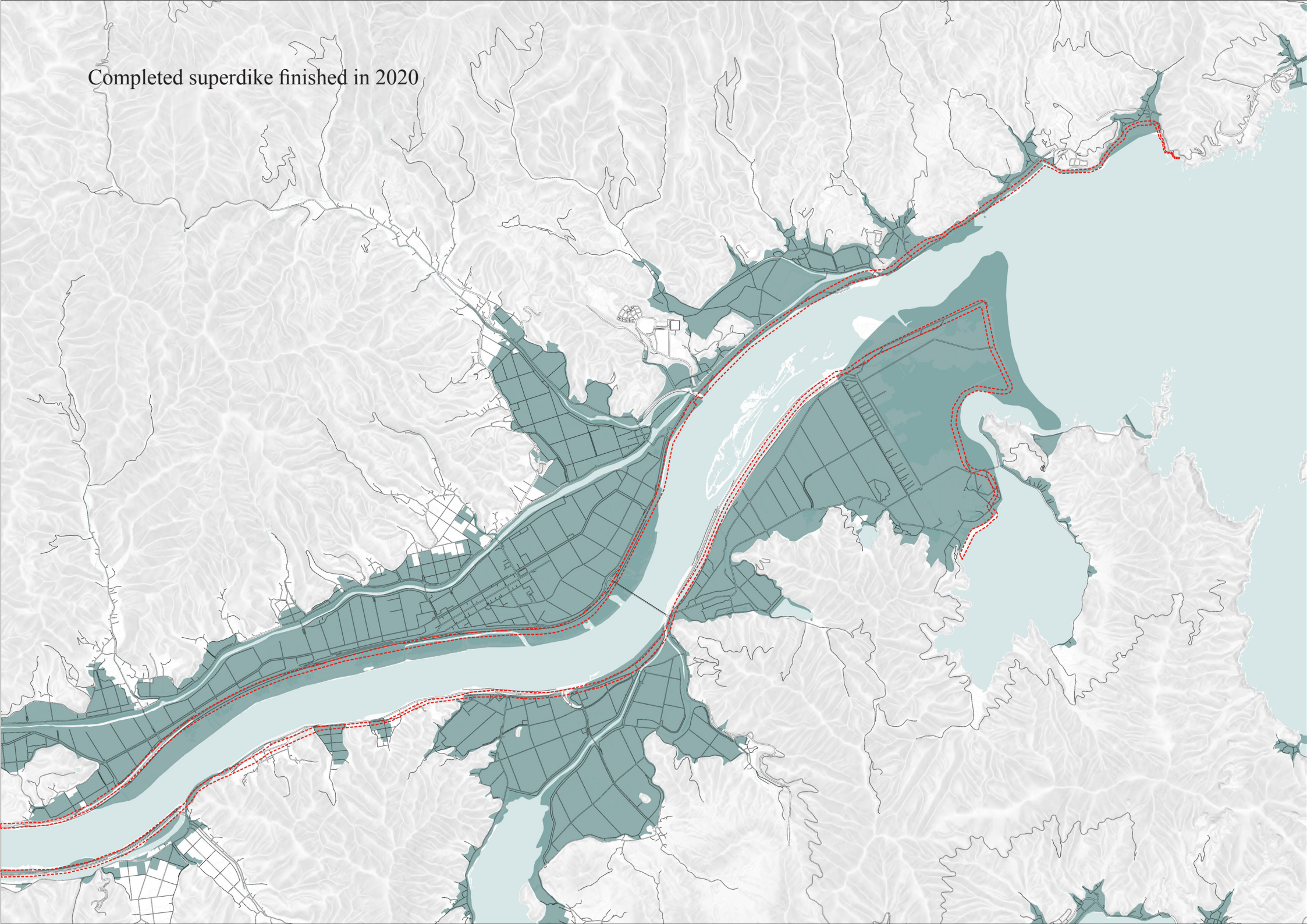
Submerged area and damaged buildings in 2011



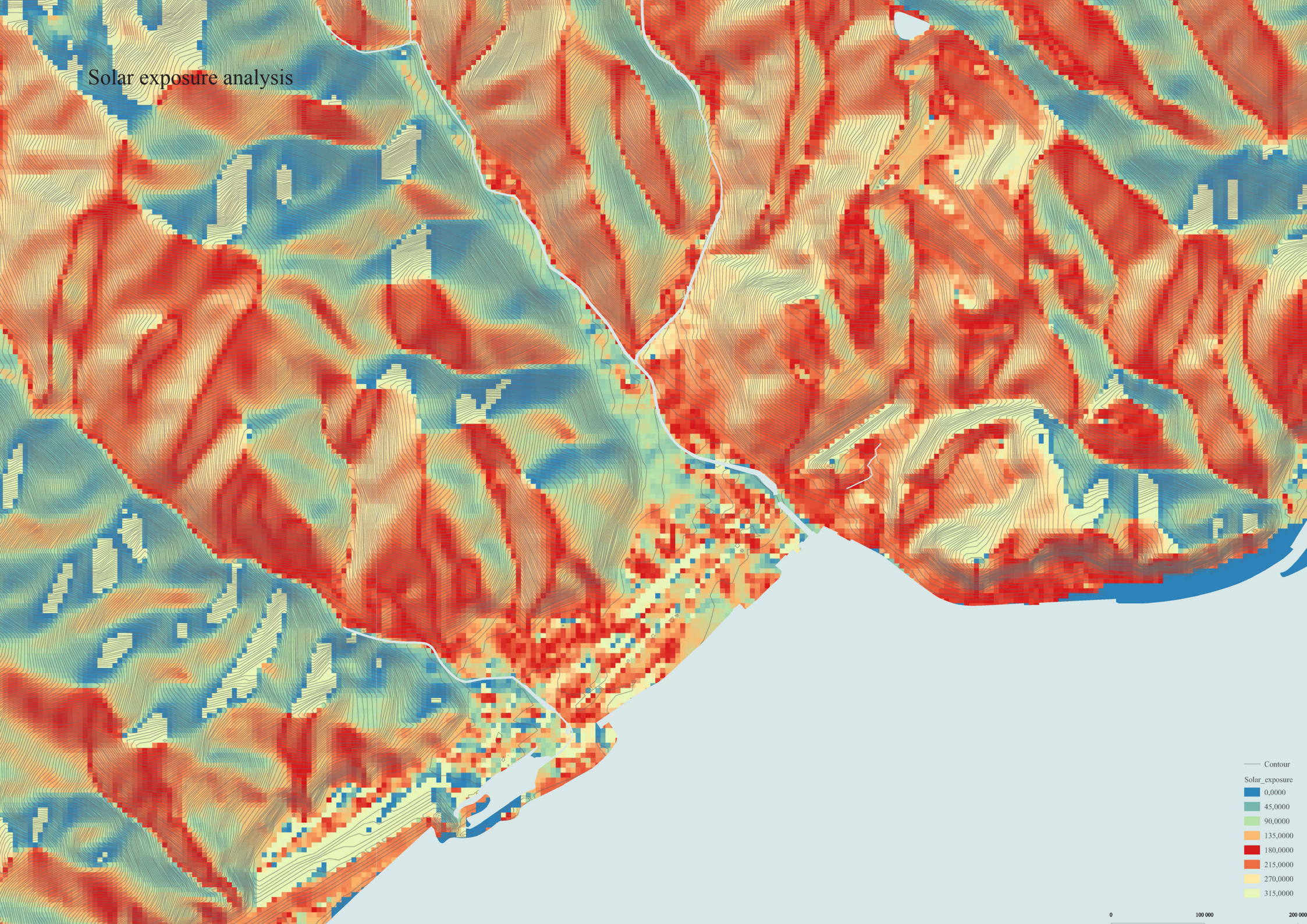
Non-residential zone after the regulation of 2011



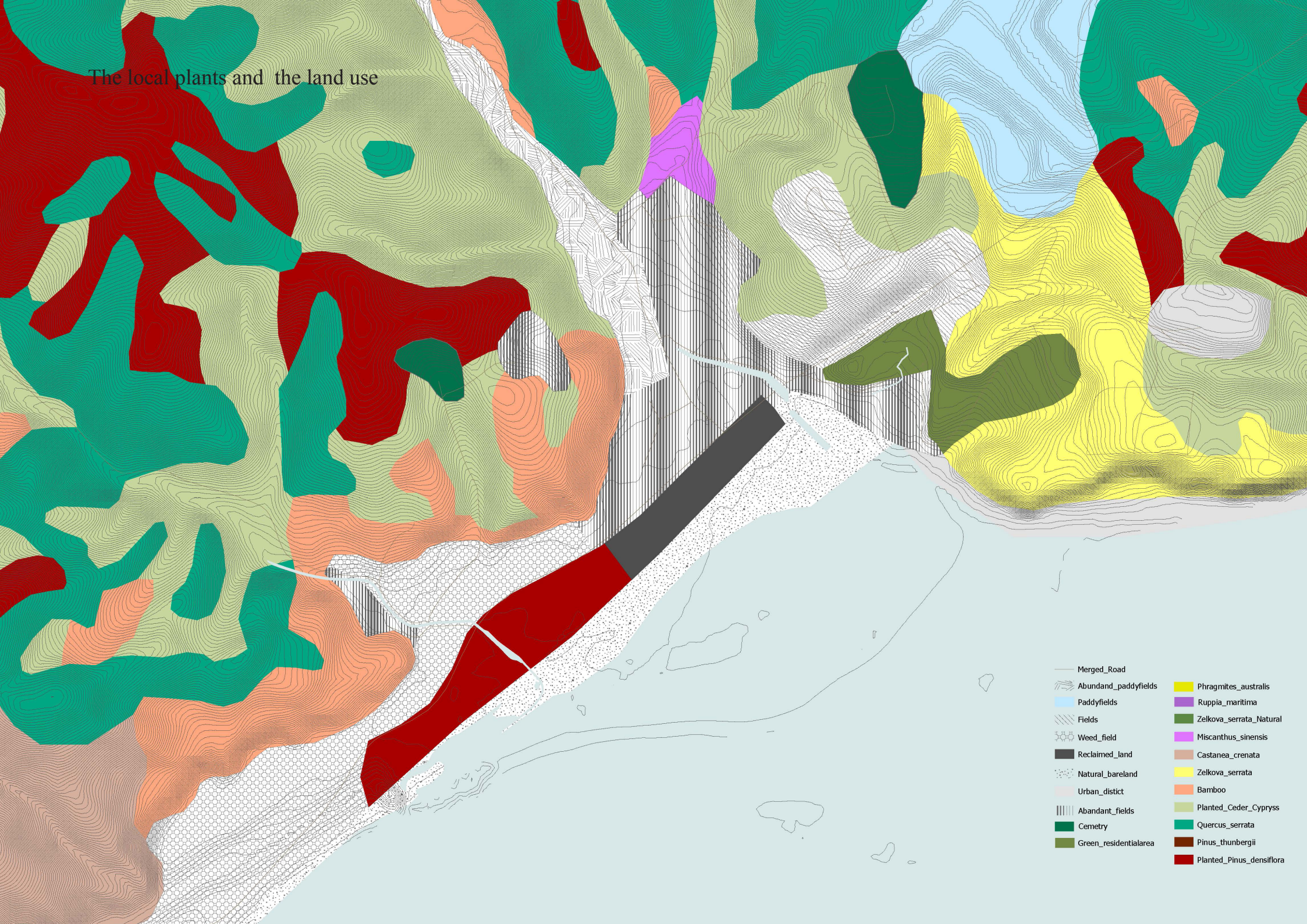
Completed superdike finished in 2020



Solar exposure analysis



The local plants and the land use



Autophoto

2010



The forests in the area were cut down as resources after the postwar period. People replanted the trees that grow today after the war in a limited number of species, and not much of their original appearance remains. This single tree species, mainly cedar and cypress, has caused the mountains to lose their ability to retain water and has changed the water quality flowing from the mountains and the river ecosystem.

2012



If the hills are used for monocultural agroforestry, the valleys are used for agriculture of rice. The rice fields are destroyed by salt water, which means that when the tsunami hit Kitakami, the crops were damaged for several seasons as it took years to clean the soil. In this image you can see the saltwater covering the fields of Kitakami right after the tsunami.

2019



The government regulation prohibited living people around the area; however, since there is a non-residential zone, its land use is still undecided.

Gestalt psychology

Stage1 -Normal level-



Figure
For-ground

Stage 2 -Flood risk zone-



Figure



For-ground

Stage 3 -Tsunami over 8m height-



Figure



For-ground

Plants study

Phragmites australis - The common reed habitat





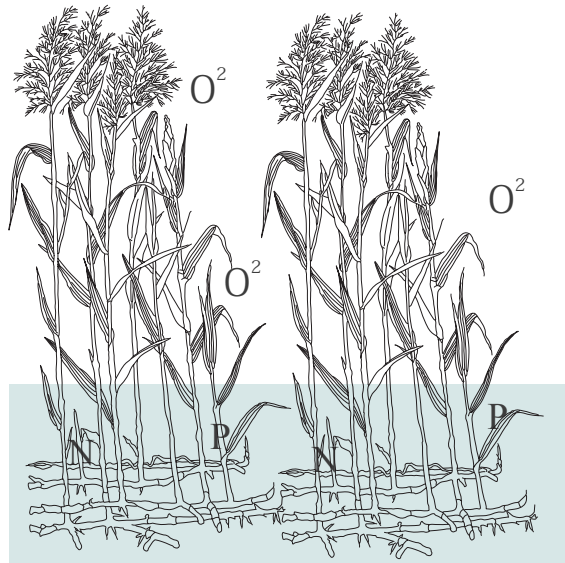
A characteristic feature of this area is the reed habitat that extends into the river.

These common reeds, especially those grown in brackish water, are favored as a durable roofing material for traditional Japanese buildings in the local industry, which especially be an revenue producer during winter when the rice farmer's slacks seasons.

The plant itself, works to purify the water quality to exclude nitrogen or phosphorous in the water. In summer, the grass grows up to 3 m tall, and in winter, it is cut down. Remained stems were burnt for the next season to promote the growings of next season. However, in order to expand the plant's habitat, people's annual maintainance is essential. The locals have already established beautiful reciprocity between those natural features of their surroundings. The reeds are highly valued in the region for their economic and scenic reasons.

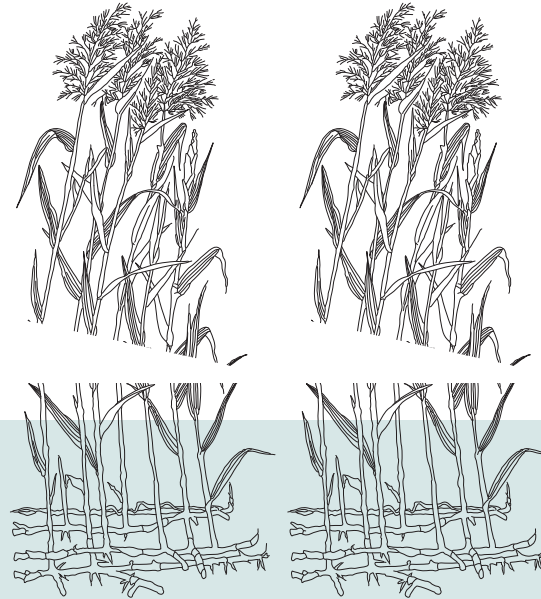
Phragmites australis - The common reed cycle in season

Summer to autumn

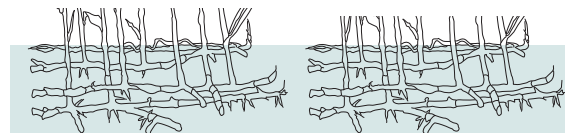


N = Nitrogen
P = Phosphorous

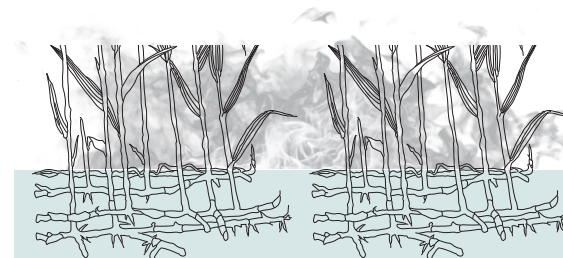
Winter



Cut down



Growing again



The remained stems burnt

Sweet water plants



Castanea creta

Quercus serrata



Zelkova serrata



Sambucus racemosa



Salix babylonica L

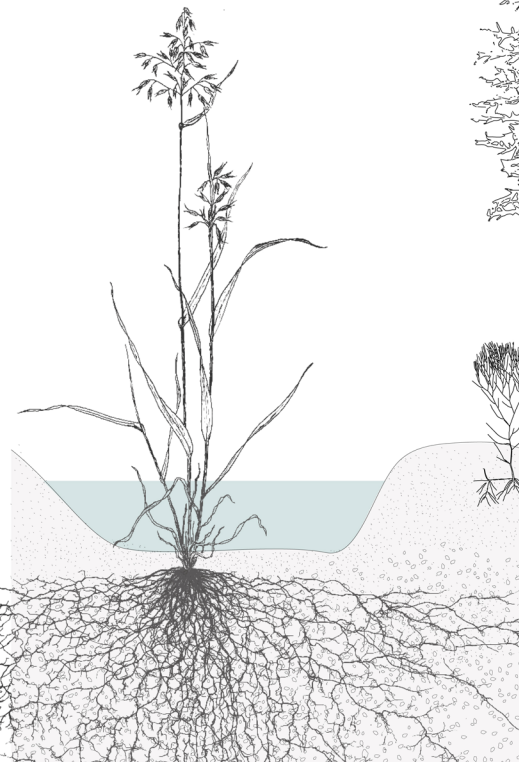


Robinia pseudoacacia



Sweet to Brackish water plants

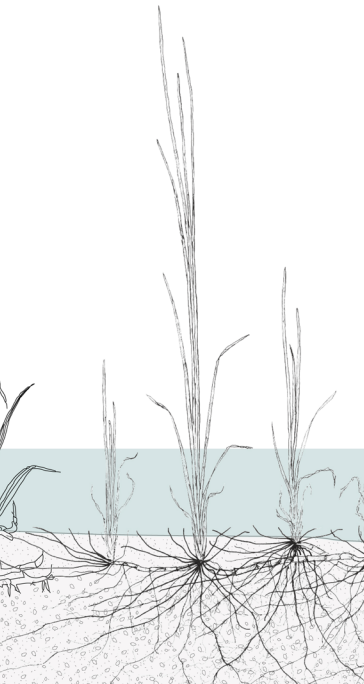
Oryza sativa



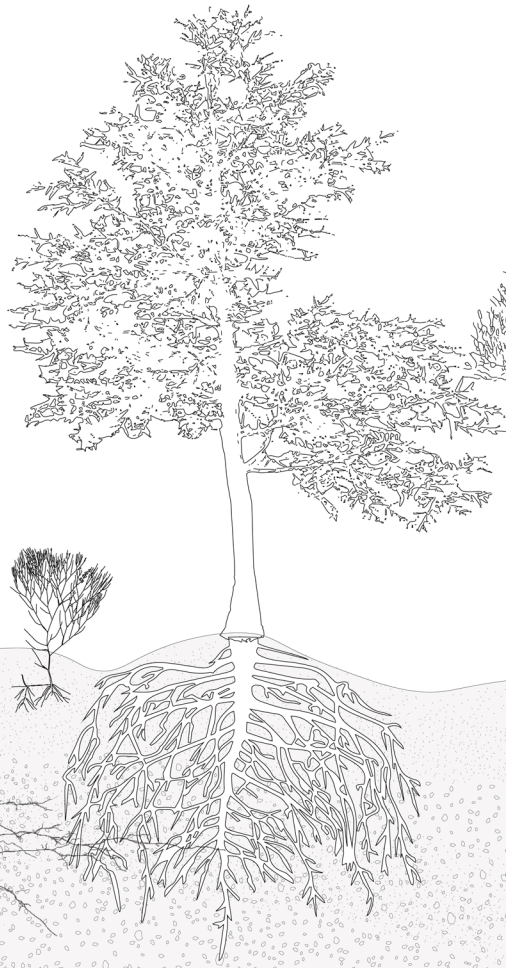
Pinus thunbergii



Typha domingensis



Pinus densiflora



Phragmites australis



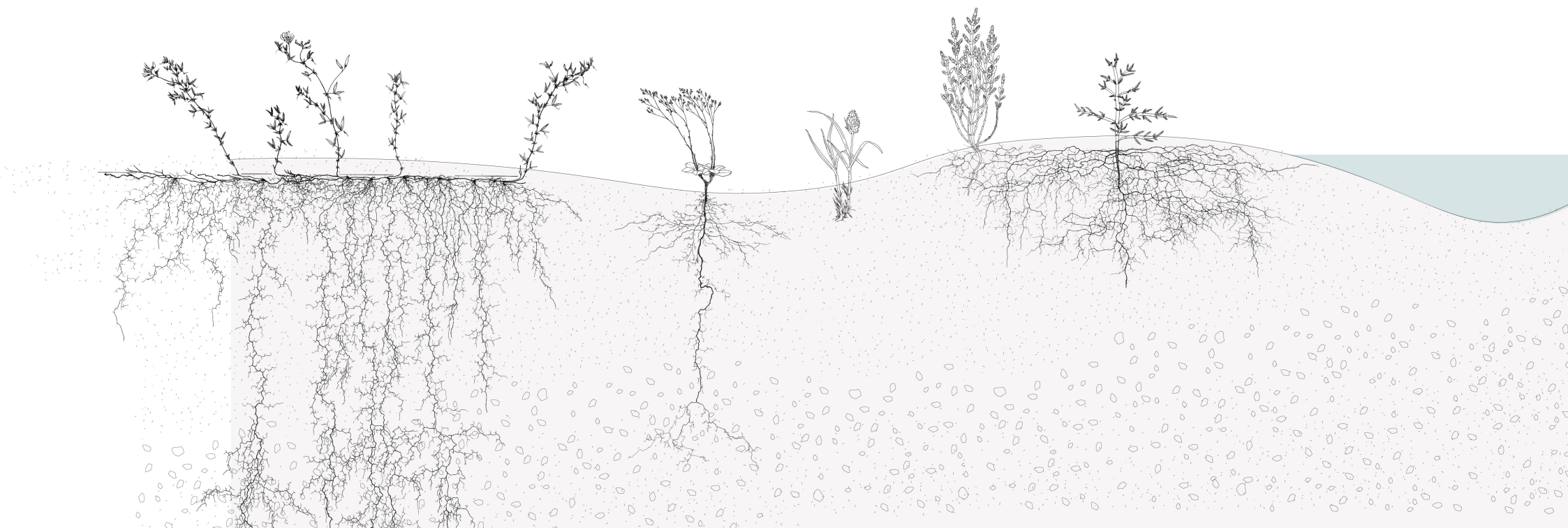
Salty water plants

Limonium tetragonum

Salicornia europaea

Lathyrus japonicus

Carex kobomugi



Highland



Chamaecyparis obtusa (Japanese cypress)



Cryptomeria japonica (Japanese Cedar)



Pinus densiflora (Japanese Red Pine)



Pinus thunbergii (Black Pine)



Phyllostachys edulis (Bamboo)



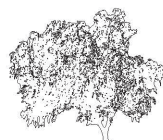
Zelkova serrata (Japanese elm)



Populus sieboldii



Quercus serrata (golcham oak)



Salix L. (Willow tree)



Robinia pseudoacacia (Black locust)



Carex kobomugi (Japanese sedge)

Zizania latifolia (Manchurian wild rice)

Scirpus mitsukurianus

Typha domingensis (southern cattail)

Echinochloa crus-galli (water grass)

Rhododendron kaempferi (Kaempferi Azaleas)

Zanthoxylum piperitum (Japanese prickly-ash)

Trapa japonica

Sagittaria trifolia (threelaf arrowhead)

Limonium tetragomum



Stuckenia pectinata (sago pondweed)



Phragmites australis

Sambucus racemosa subsp. sieboldiana (Japanese red elder)



Salicornia europaea (Common glasswort)

Aralia elata (Japanese angelica tree)

Leymus mollis (American dune grass)

Lowland

Sweet

Brackish 0.5-5g/L salt

Saline 40g/L salt

Animism

The shintoism - japanese animismistic religion



Takimatsuri-no-kami, a subsidiary shrine of the Naiku

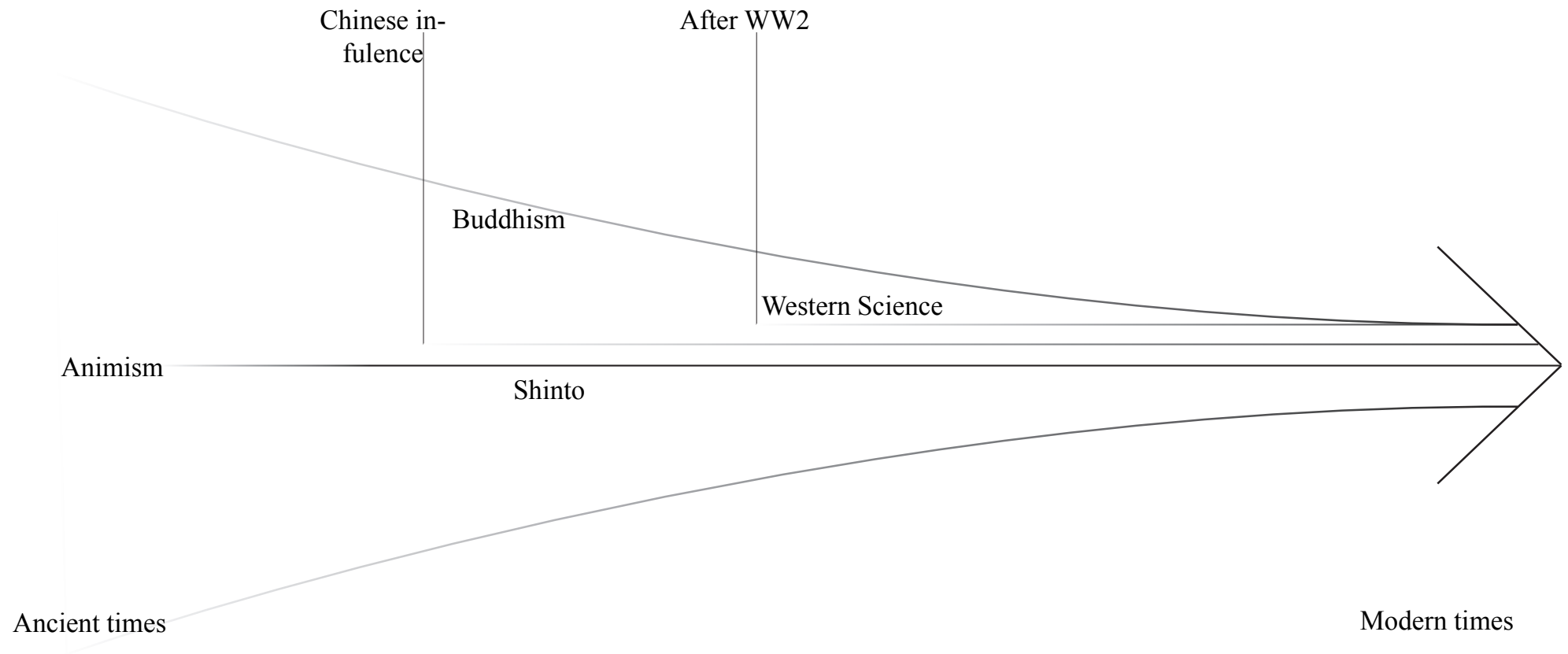
Behind the radiant sun lurked the fear-inspiring darkness of the night.

In the cries of the forest,
in the bowels of the earth,
beyond the storm-swept seas,
unknowable spirits were at large.

Man trembled before the incomprehensible forces (Ke 気)
that filled primeval nature and space.

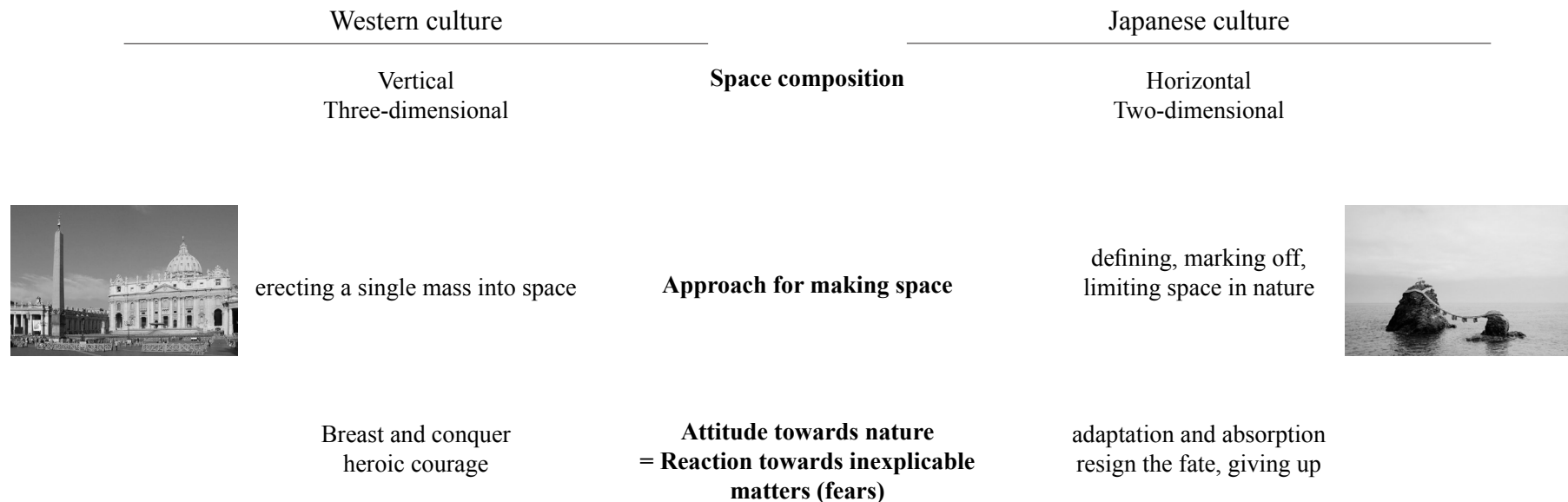
By Kenzo Tange, Book from ISE

The transition of Japanese views of religion



Today, many foreign religions have influenced Japanese religious beliefs. However, today's essence of the Japanese spiritual structure is still animism.

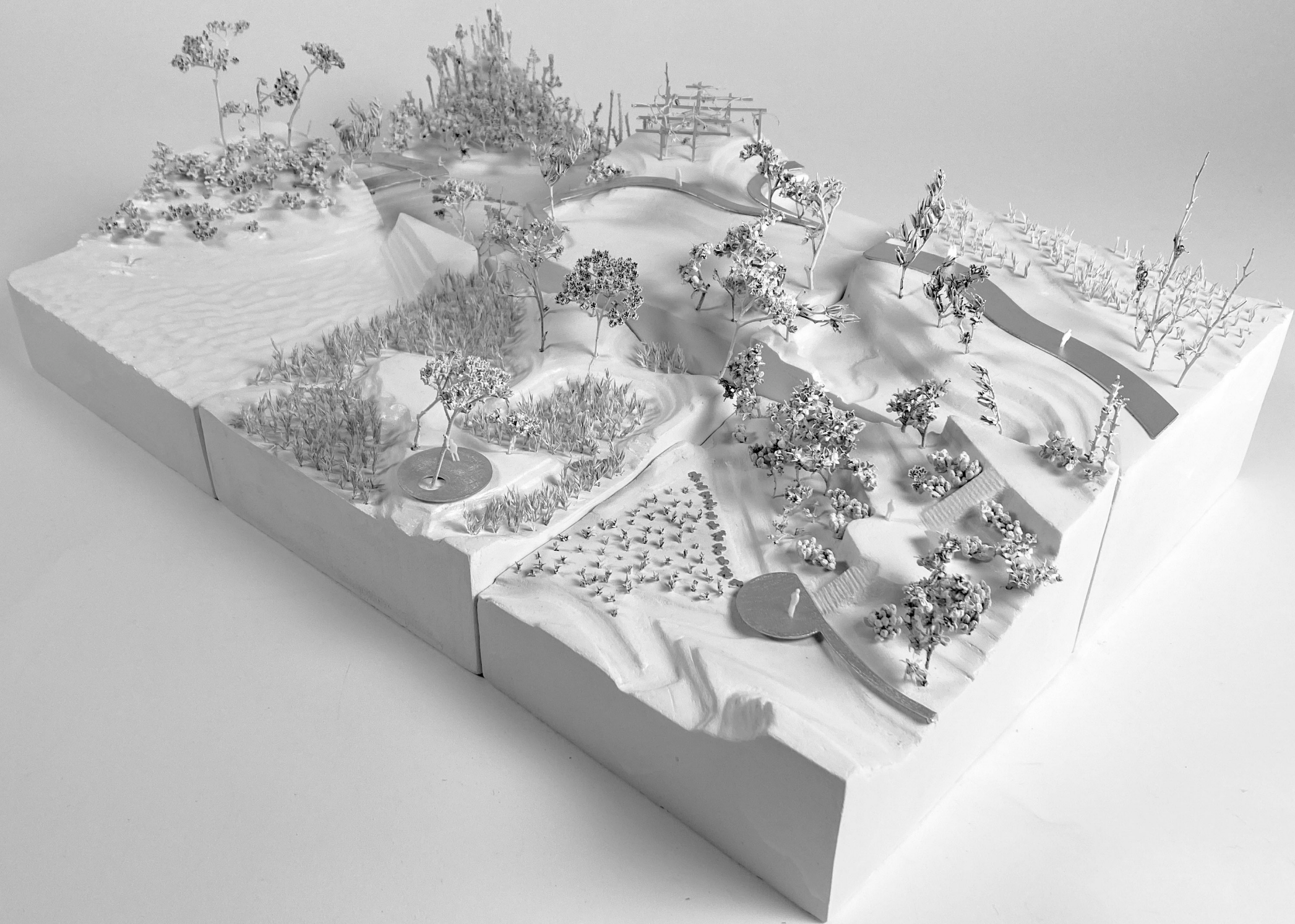
Spatial perceptions in the West and the East



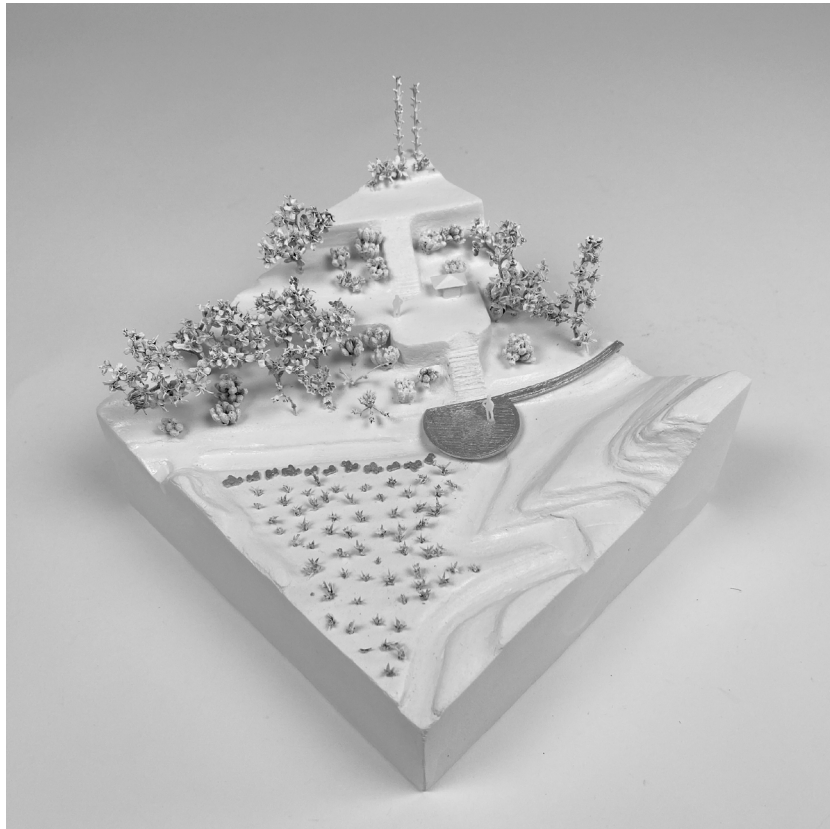
Japanese traditional spacial composition is primarily vague.

The Japanese prioritize indoor space based on the horizontal floor. As a result, the building has flexibility with connecting or unconnected on different occasions. Unlike Western spacial priority, which is based on verticality as walls, and the space composition is always decided and unchanged.

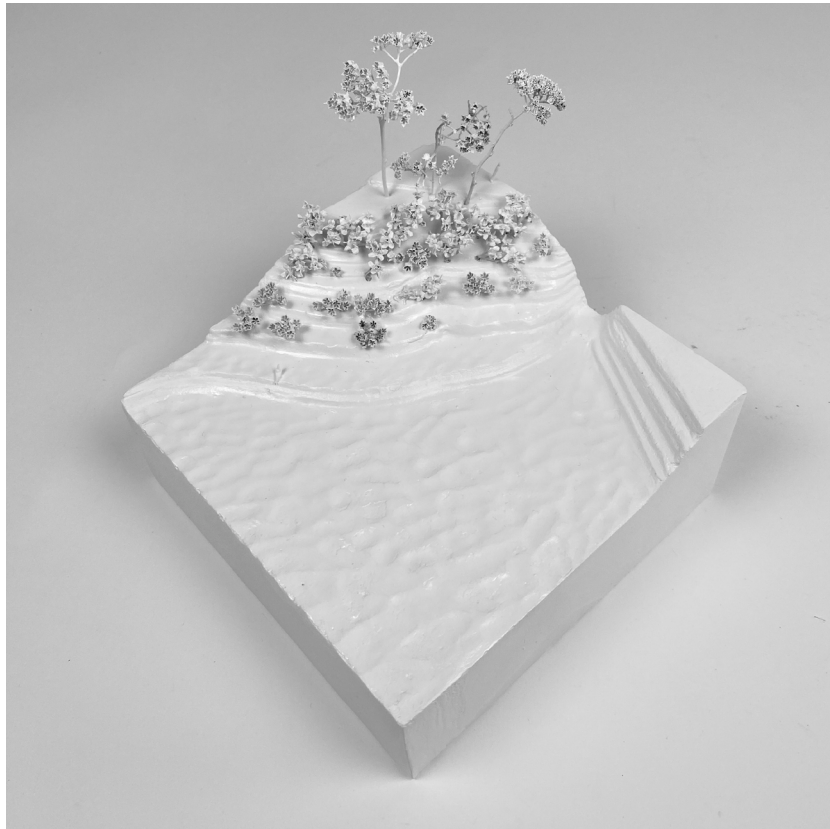
Model photo



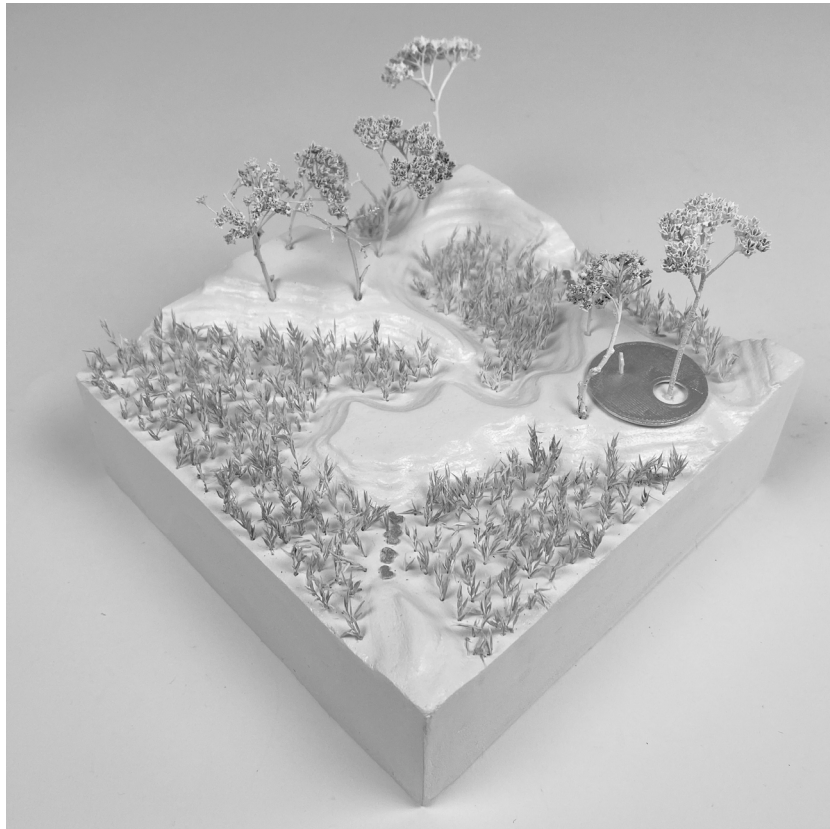
The glasswort garden



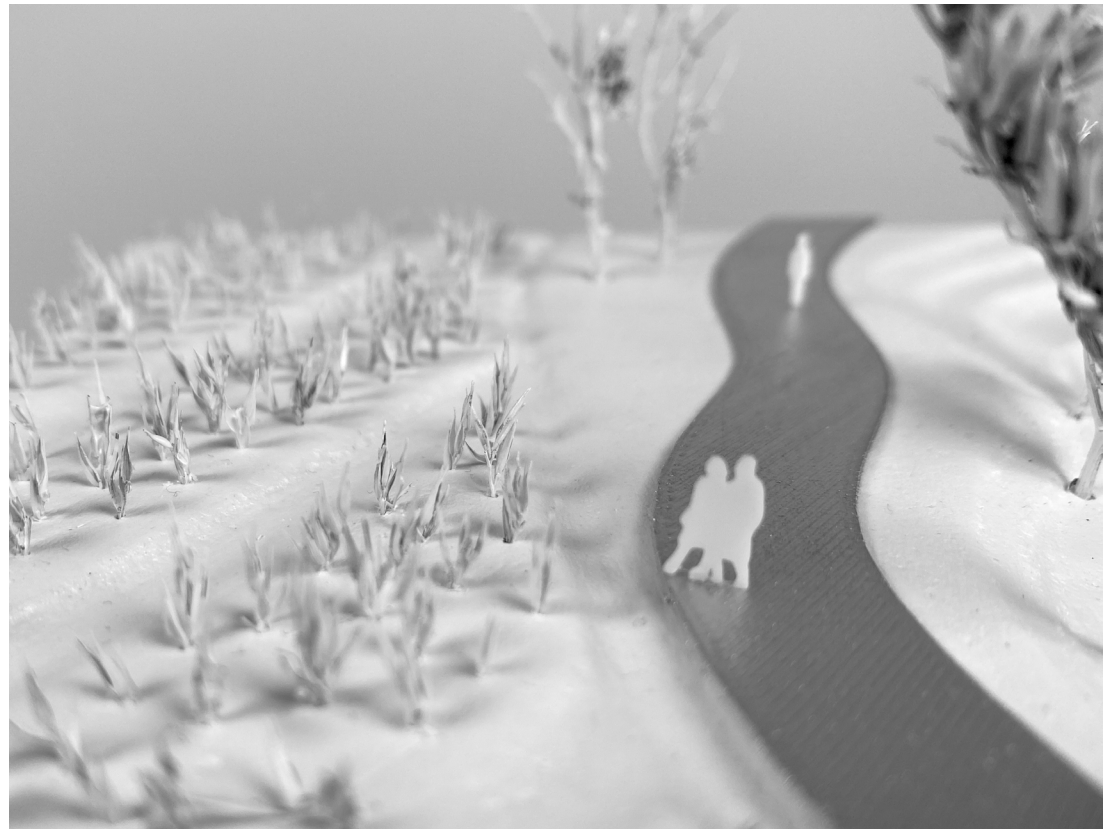
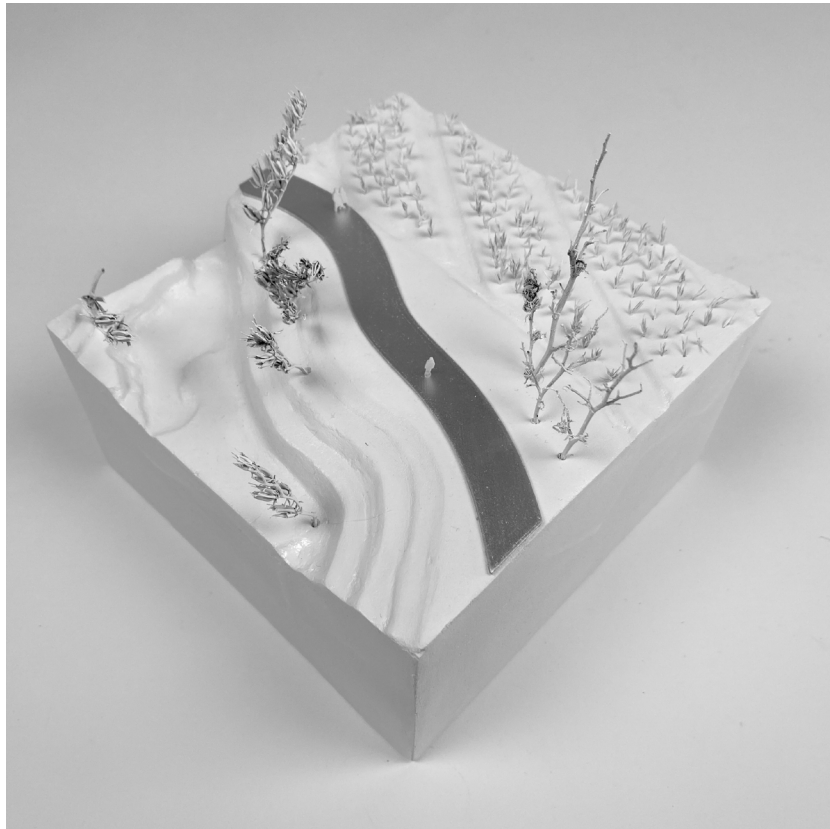
The dune forest



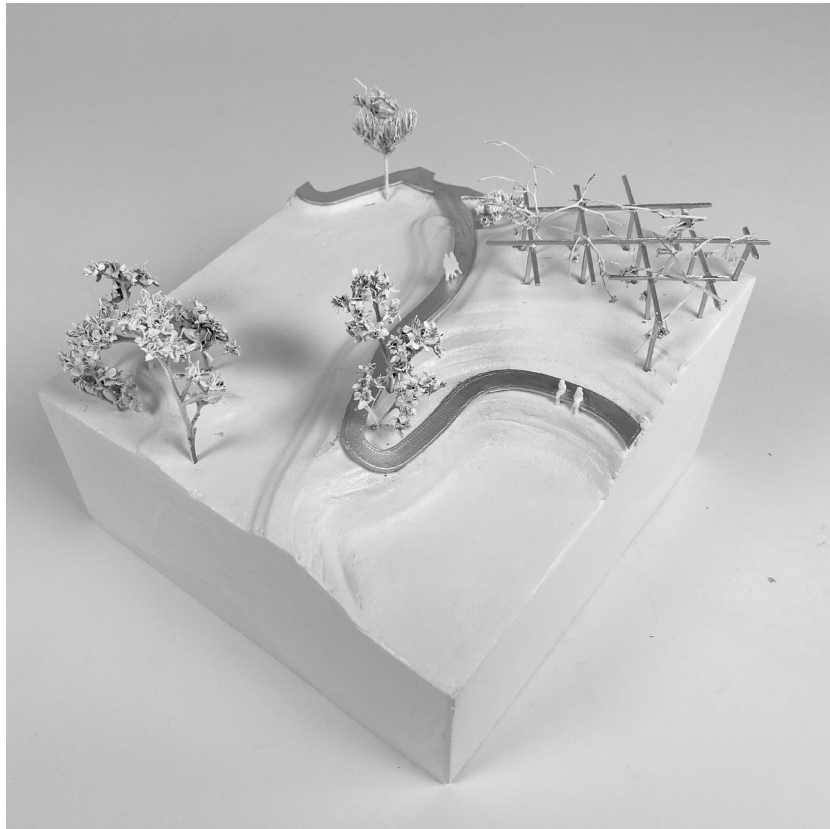
The reeds garden



The rice paddies and orchard



The spring garden



Belvedere

