

COASTAL MOSAIC PROCESSES

Delta's are some of the largest coastal landforms that are generated through a complex interplay of various forces and processes. The Po River transports water and sand across its watershed and discharges out through its prograding delta.



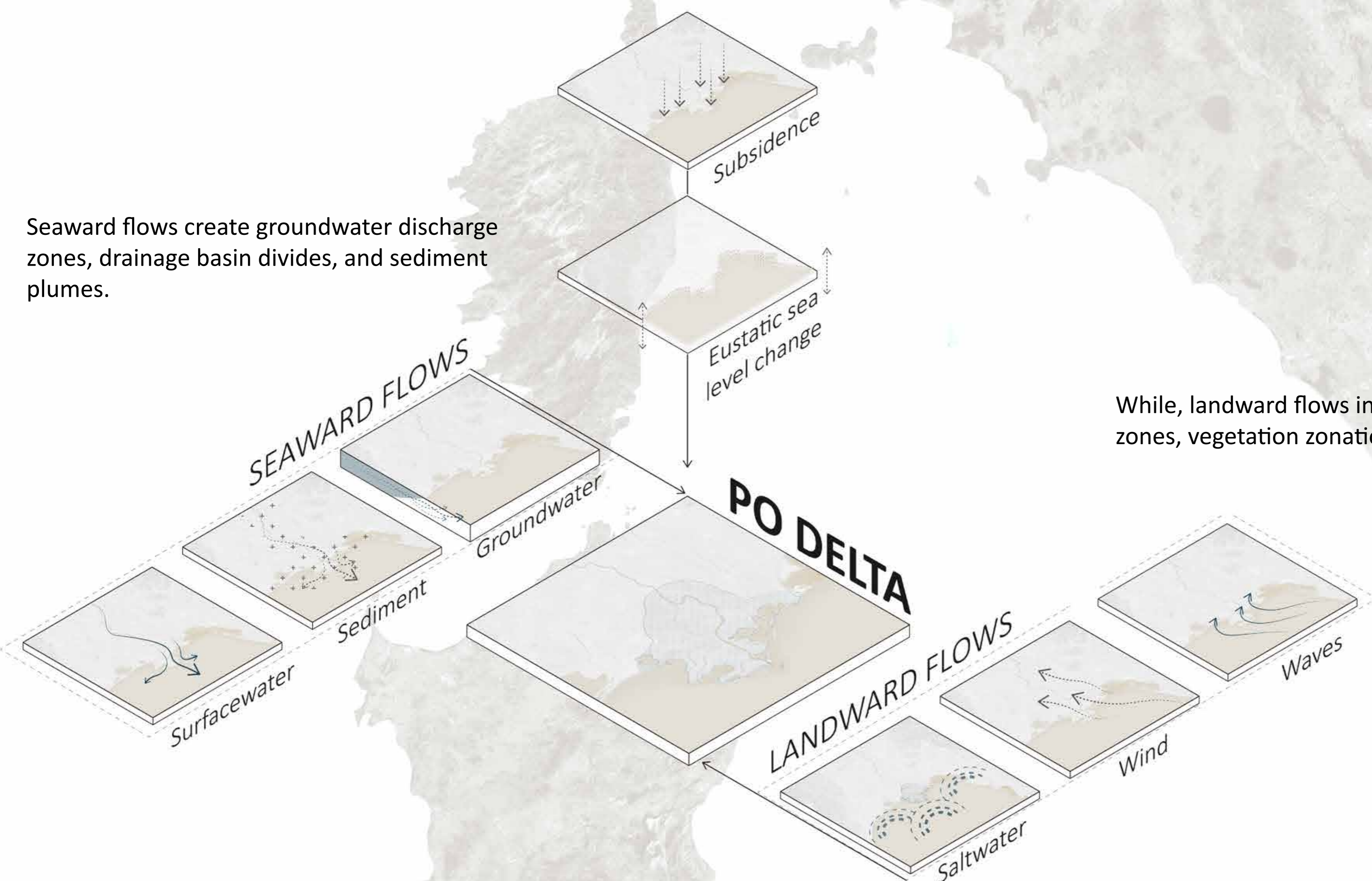
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MECHANISMS AND FLOWS

Processes have a strong influence on spatial characteristics of deltaic systems along coastlines. The following processes and flows are some of the main actors and landscape drivers on the Po River Delta.

Seaward flows create groundwater discharge zones, drainage basin divides, and sediment plumes.



While, landward flows influence coastal microclimate zones, vegetation zonation, and saltwater intrusion.

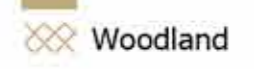
MOSAIC SHAPED BY WATER

The aforementioned processes initiate the structure function feedback loop exhibited throughout many landscape, including deltas and coastal zones. This panel demonstrates the structure of the delta over time.

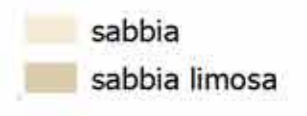
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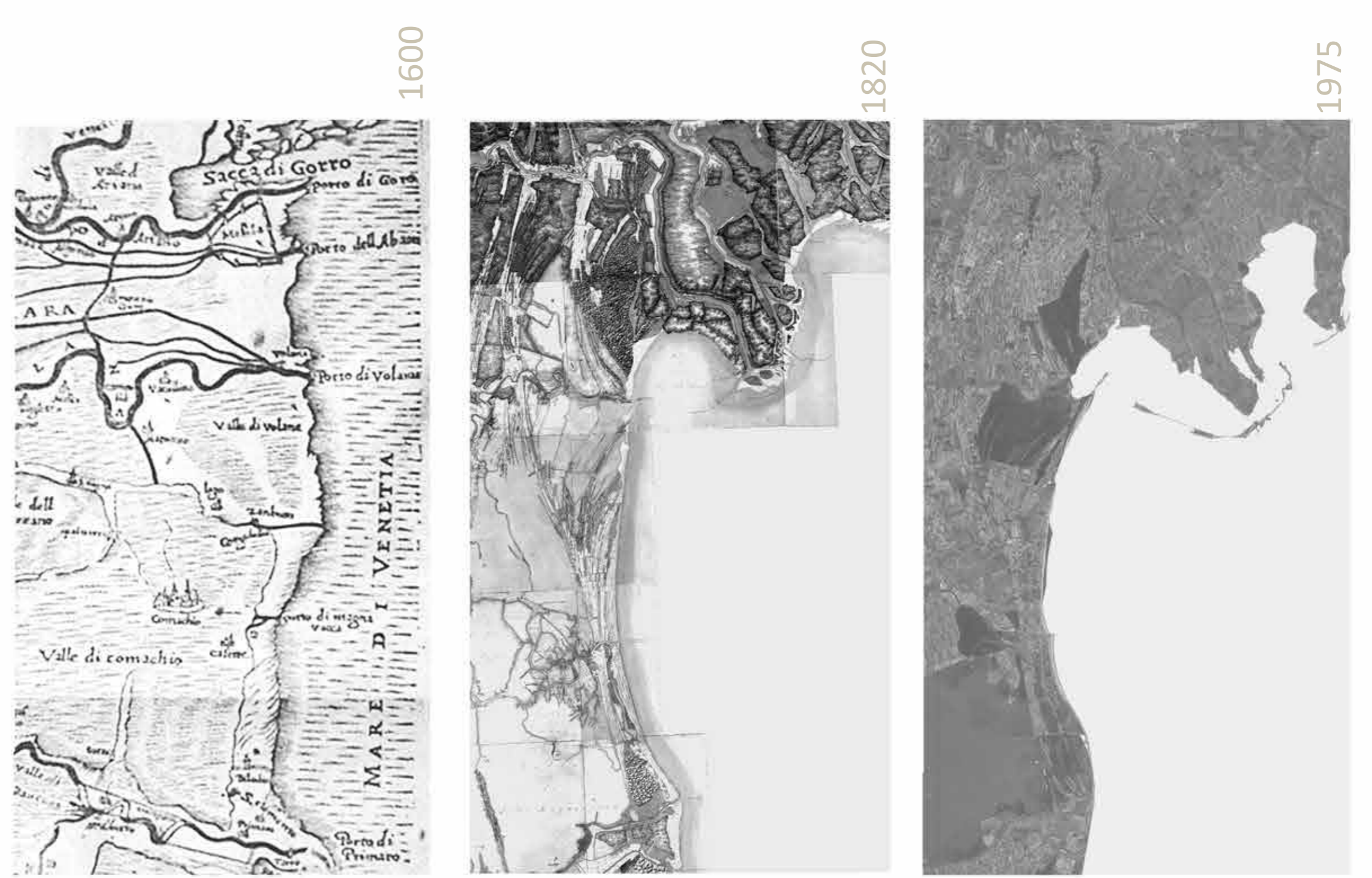
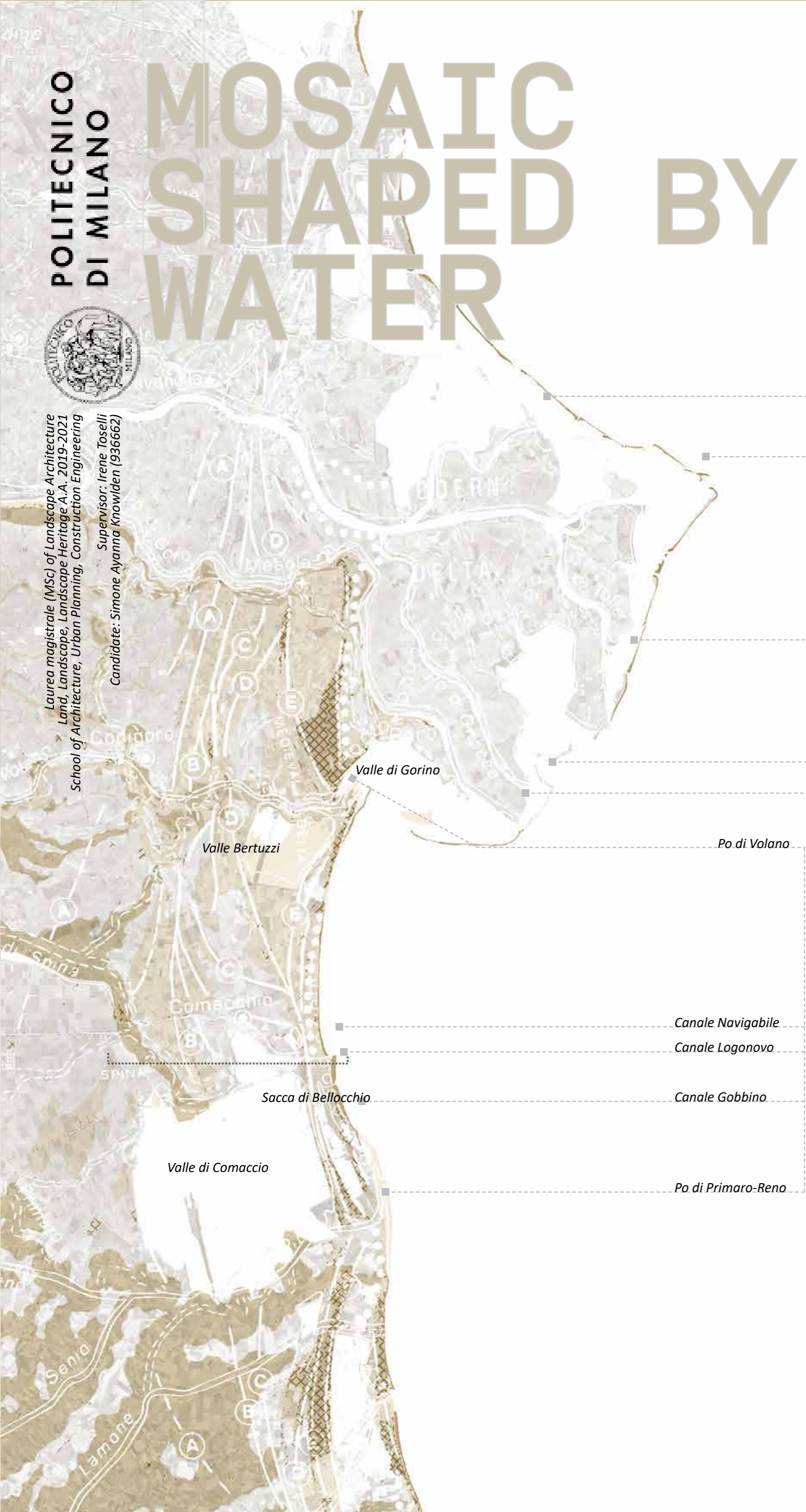
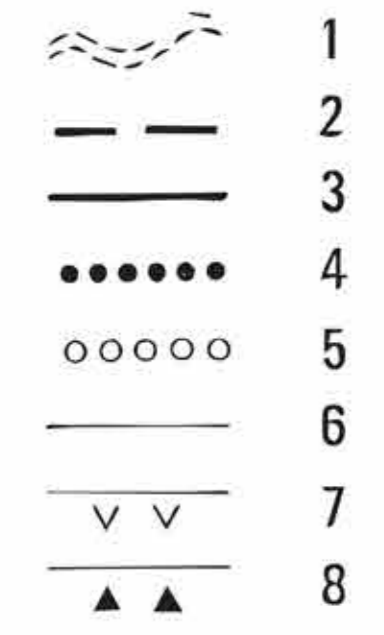
LAND USE



SOIL



- 1) main paleo-riverbeds
- 2) buried beach ridges
- 3) outcropping beach ridges, with ages:
 - A - earlier than 6th cent. B.C.
 - B - 6th - 4th cent. B.C.
 - C - 1st - 2nd cent. A.D.
 - D - about 9th cent. A.D.
 - E - about 10th cent. A.D.
 - F - 13th - 15th cent. A.D.
- 4) coastline at end of 16th cent.
- 5) coastline in 1730-1740
- 6) present-day coastline
- 7) currently advancing beaches
- 8) currently eroding beaches.



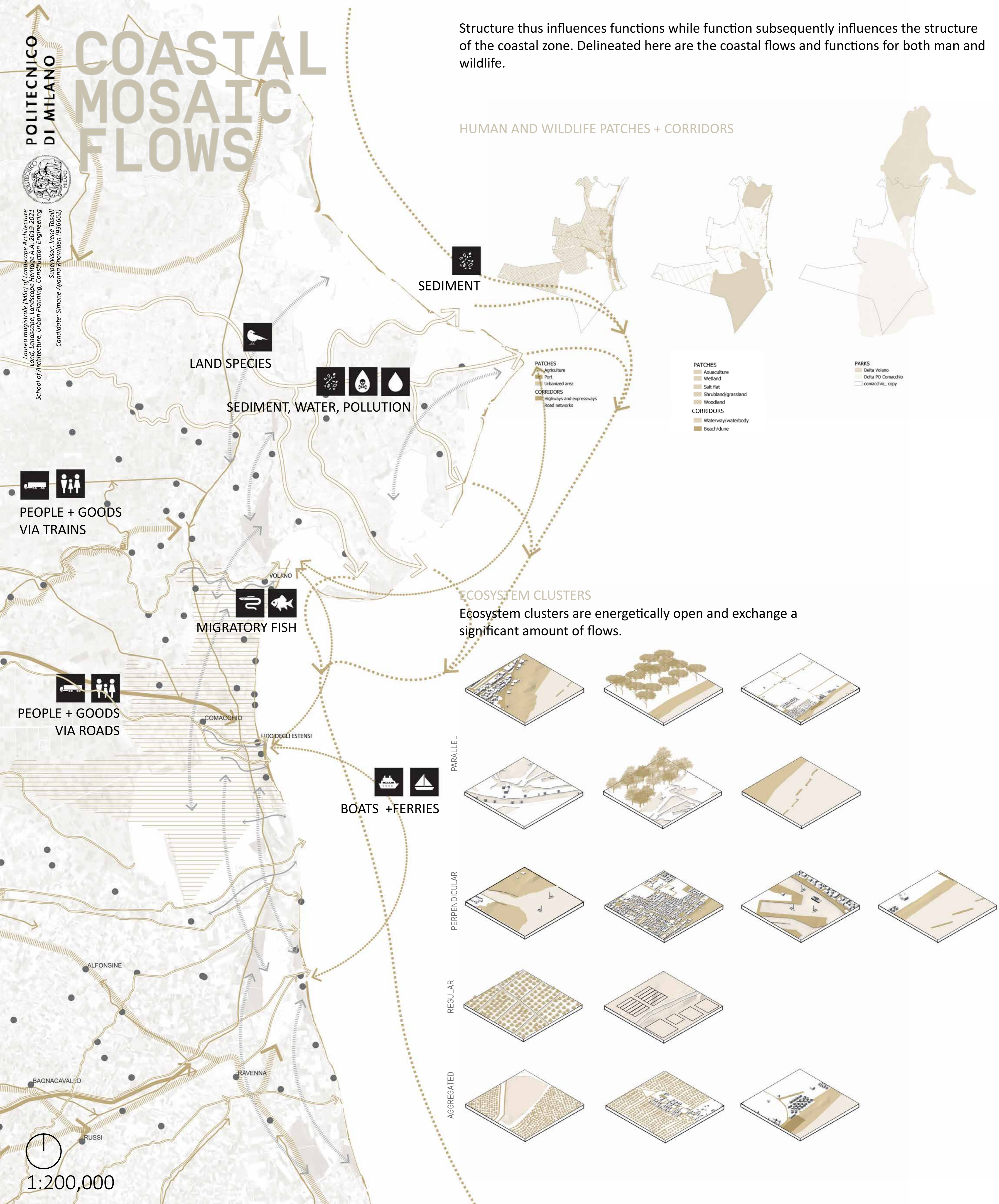
Reclaimed agricultural land Valle di Comacchio (lagoon) Canal salt marsh navigable canal Lido Degli Estensi beach Adriatic

COASTAL MOSAIC FLOWS

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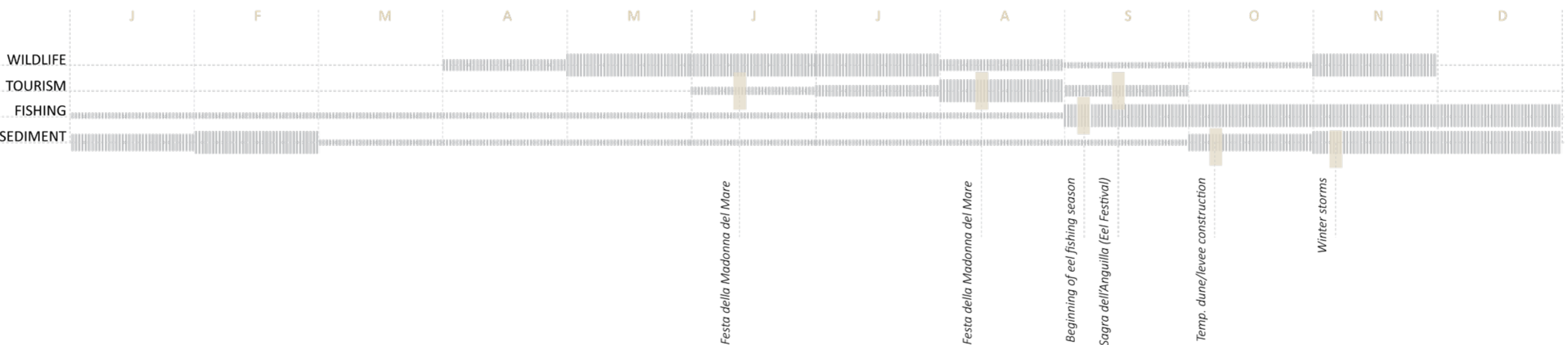
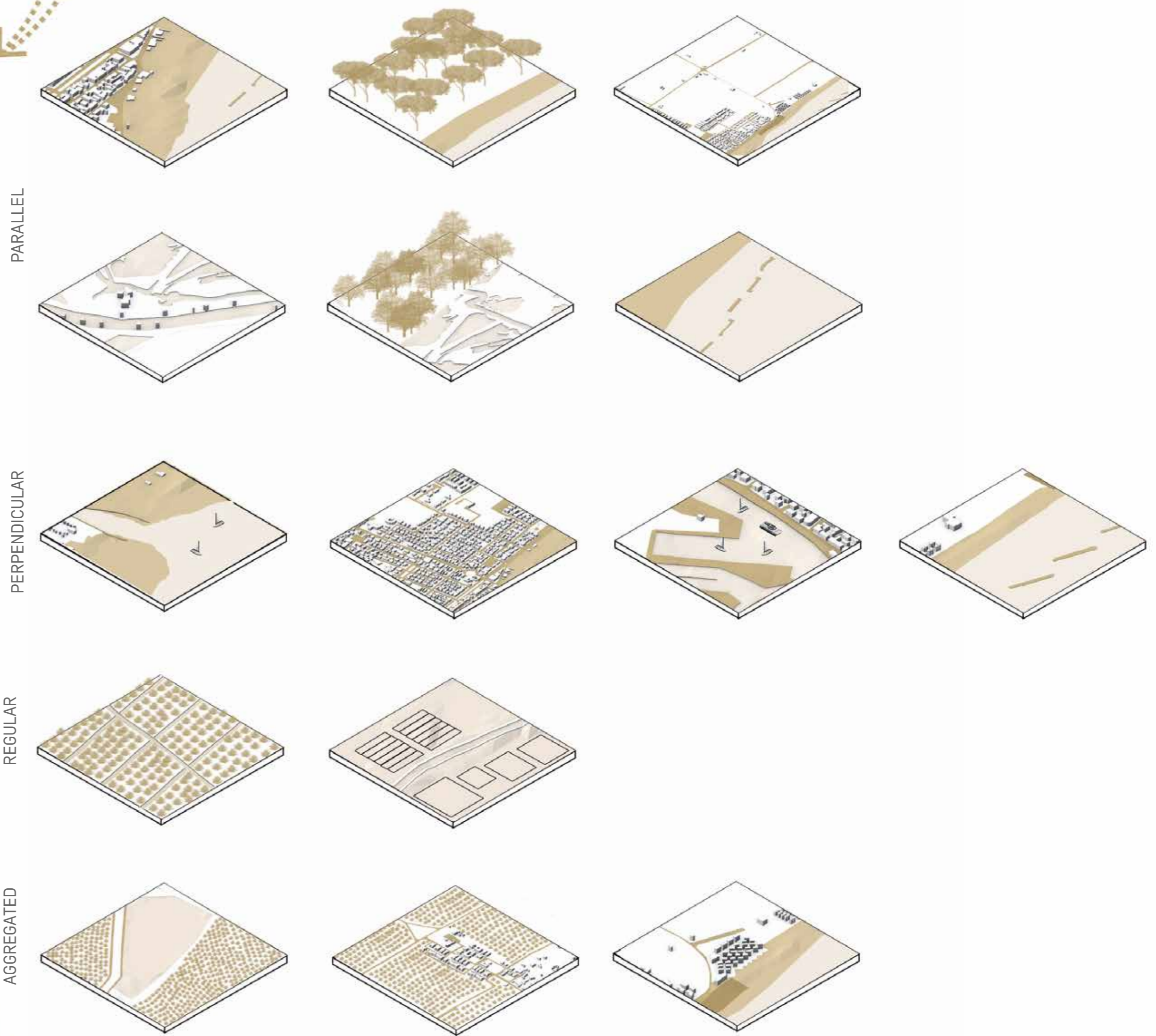
Structure thus influences functions while function subsequently influences the structure of the coastal zone. Delineated here are the coastal flows and functions for both man and wildlife.

HUMAN AND WILDLIFE PATCHES + CORRIDORS



ECOSYSTEM CLUSTERS

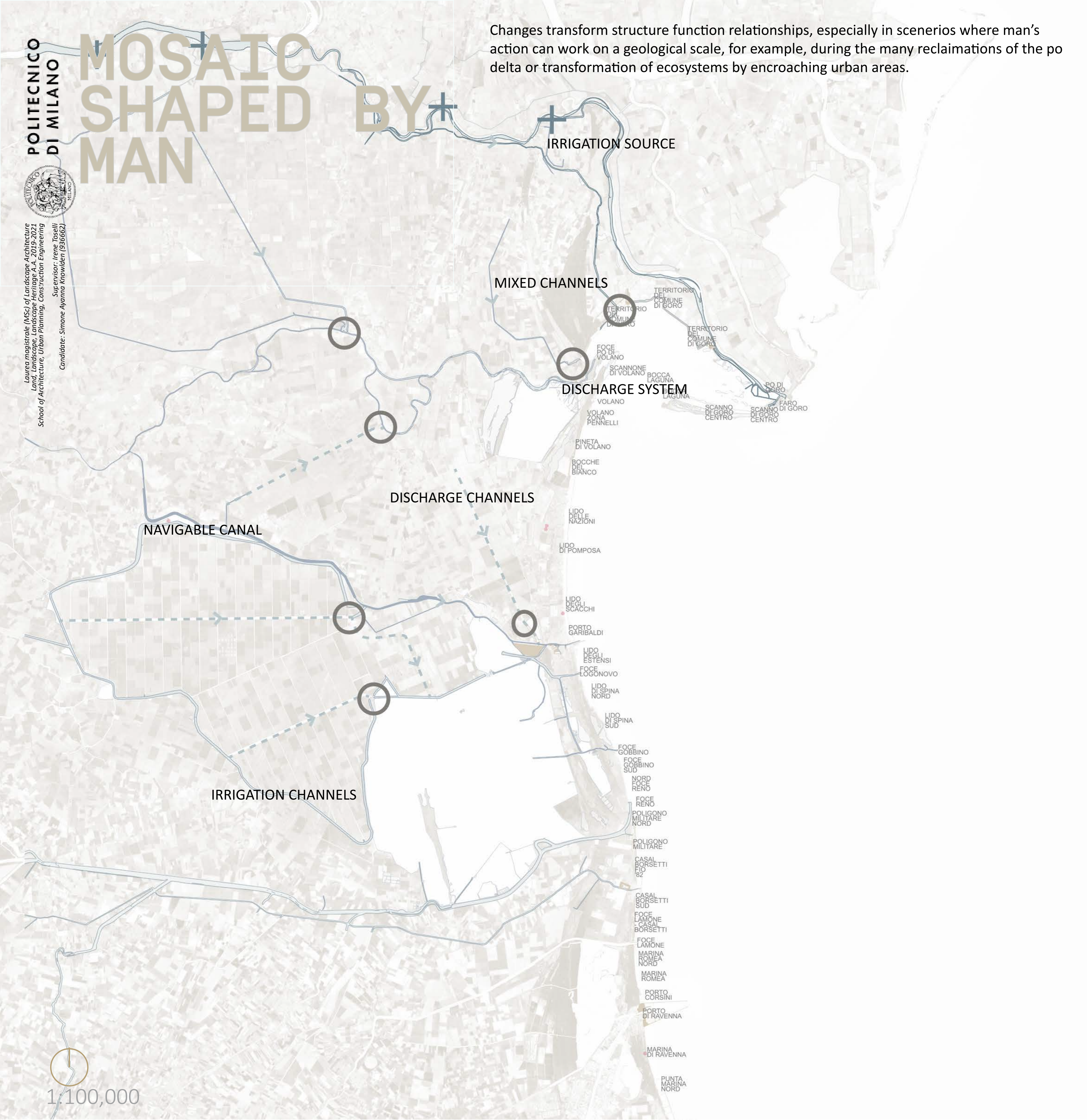
Ecosystem clusters are energetically open and exchange a significant amount of flows.





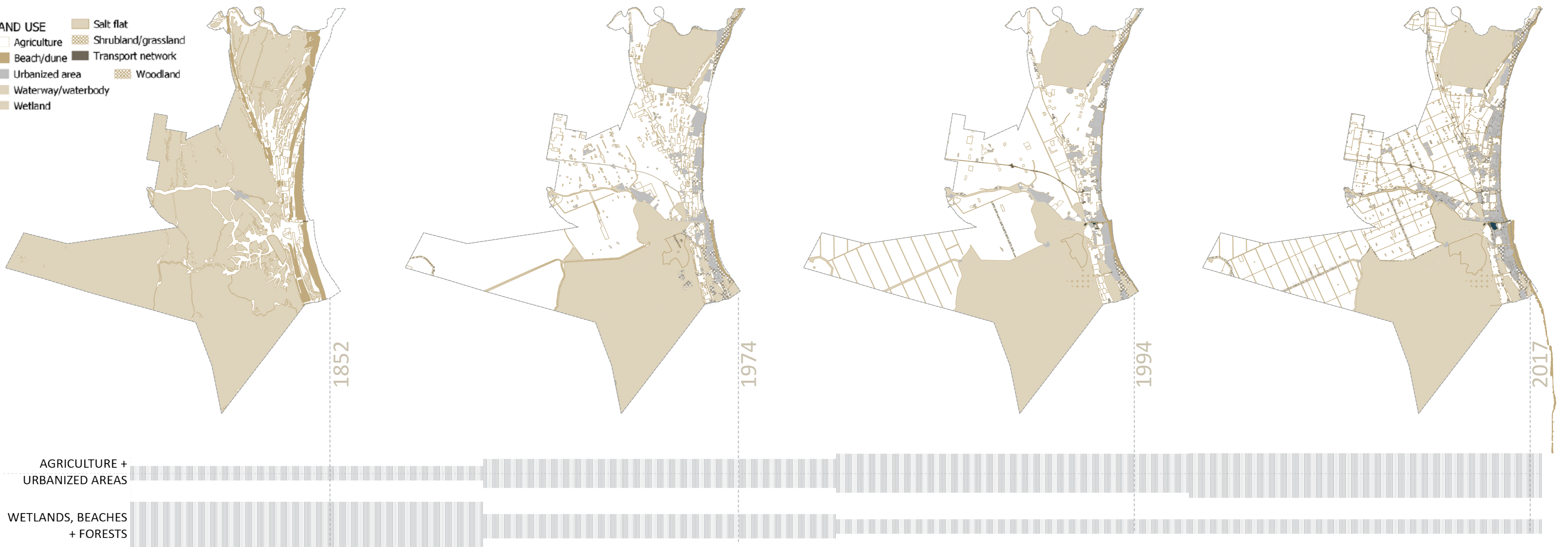
MOSAIC SHAPED BY MAN

Changes transform structure function relationships, especially in scenerios where man's action can work on a geological scale, for example, during the many reclamations of the po delta or transformation of ecosystems by encroaching urban areas.



MODERN RECLAMATION AND DEVELOPMENT

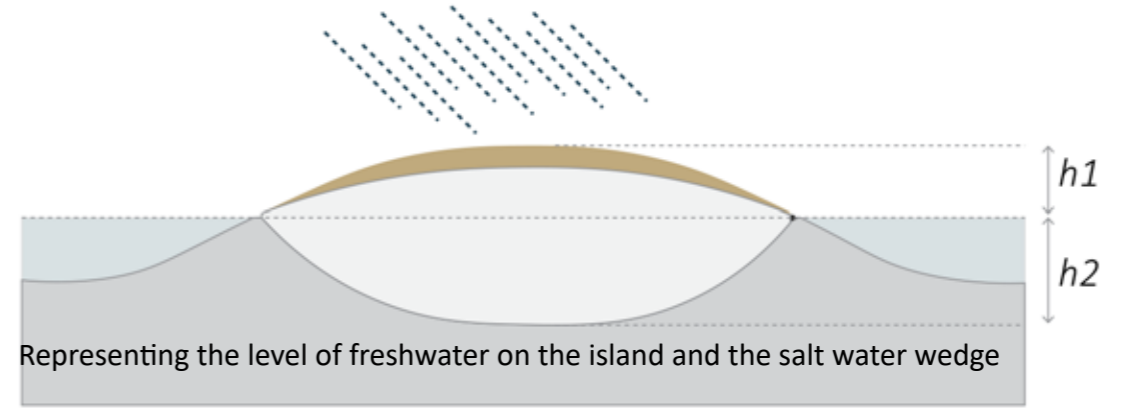
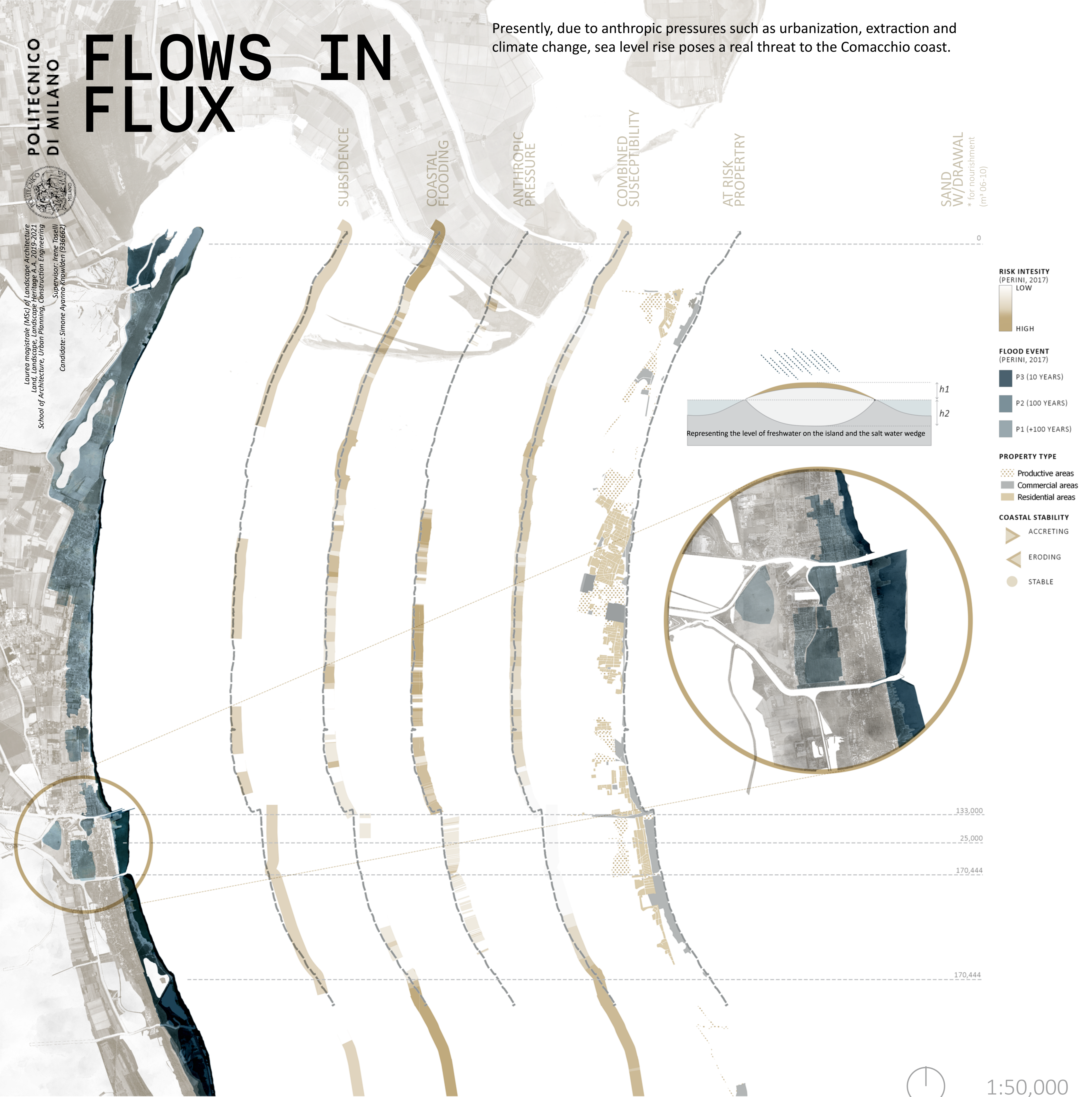
- LAND USE
- Salt flat
 - Agriculture
 - Beach/dune
 - Shrubland/grassland
 - Urbanized area
 - Transport network
 - Waterway/waterbody
 - Woodland
 - Wetland



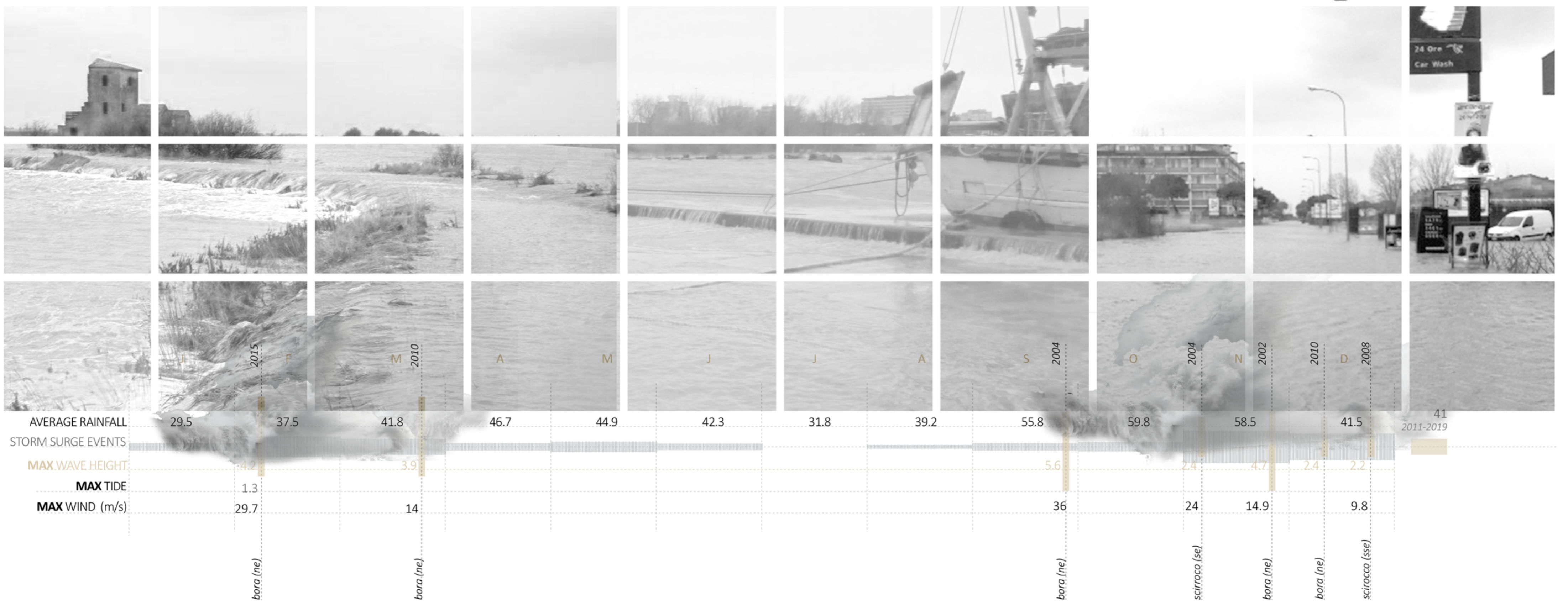
FLOWS IN FLUX

Presently, due to anthropic pressures such as urbanization, extraction and climate change, sea level rise poses a real threat to the Comacchio coast.

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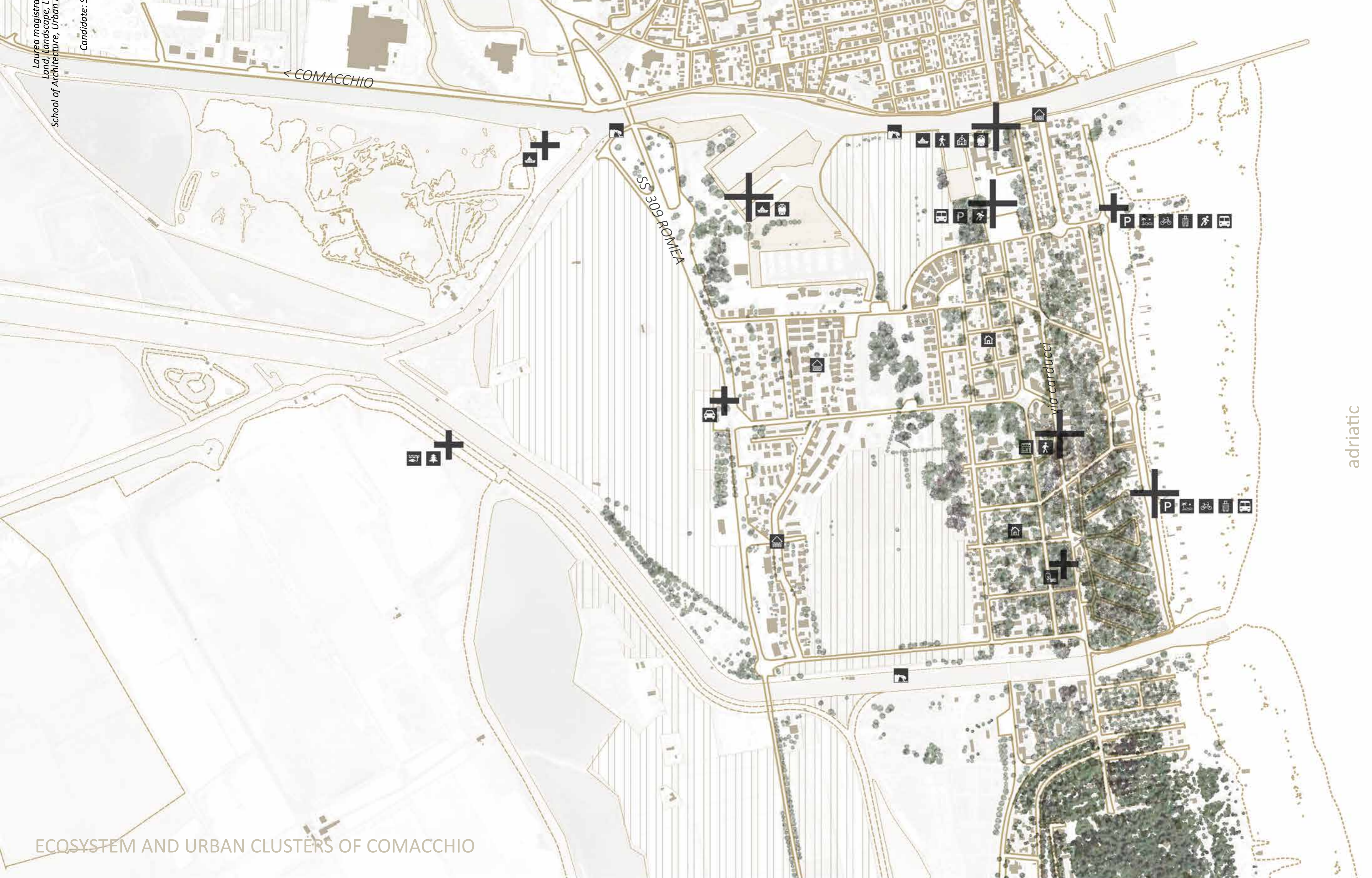
LIDO DEGLI ESTENSI

Lido Degli Estensi has proven to be an economic hotspot in the past for the Commune of Comacchio for several reasons. It could also be an example for other Lidi along the coast for coastal adaptation.

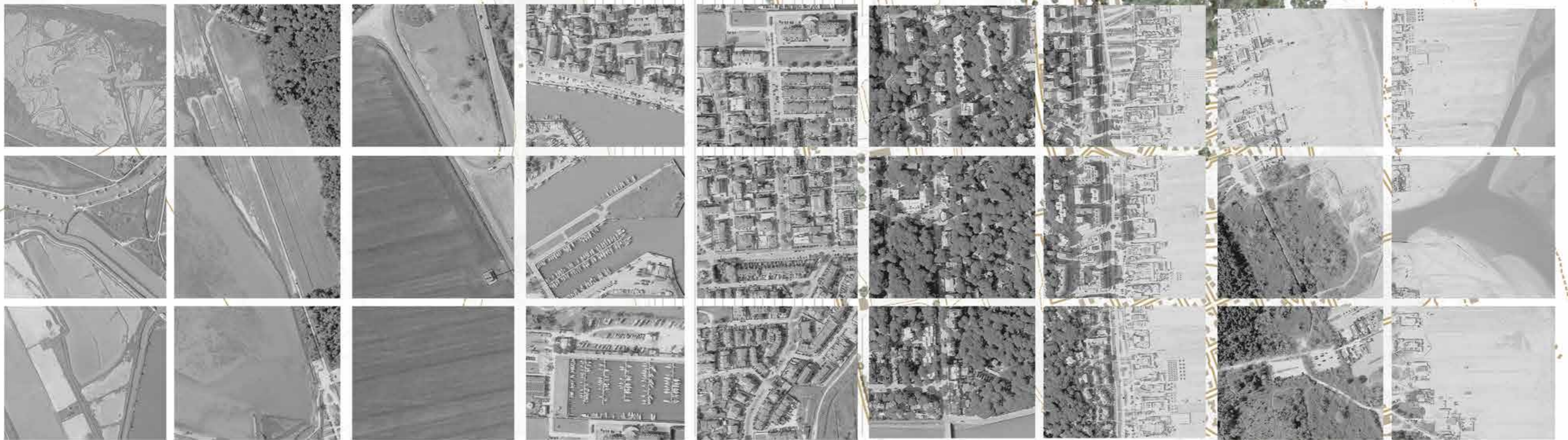
HISTORIC DEVELOPMENT OF LIDO DELGI ESTENSI



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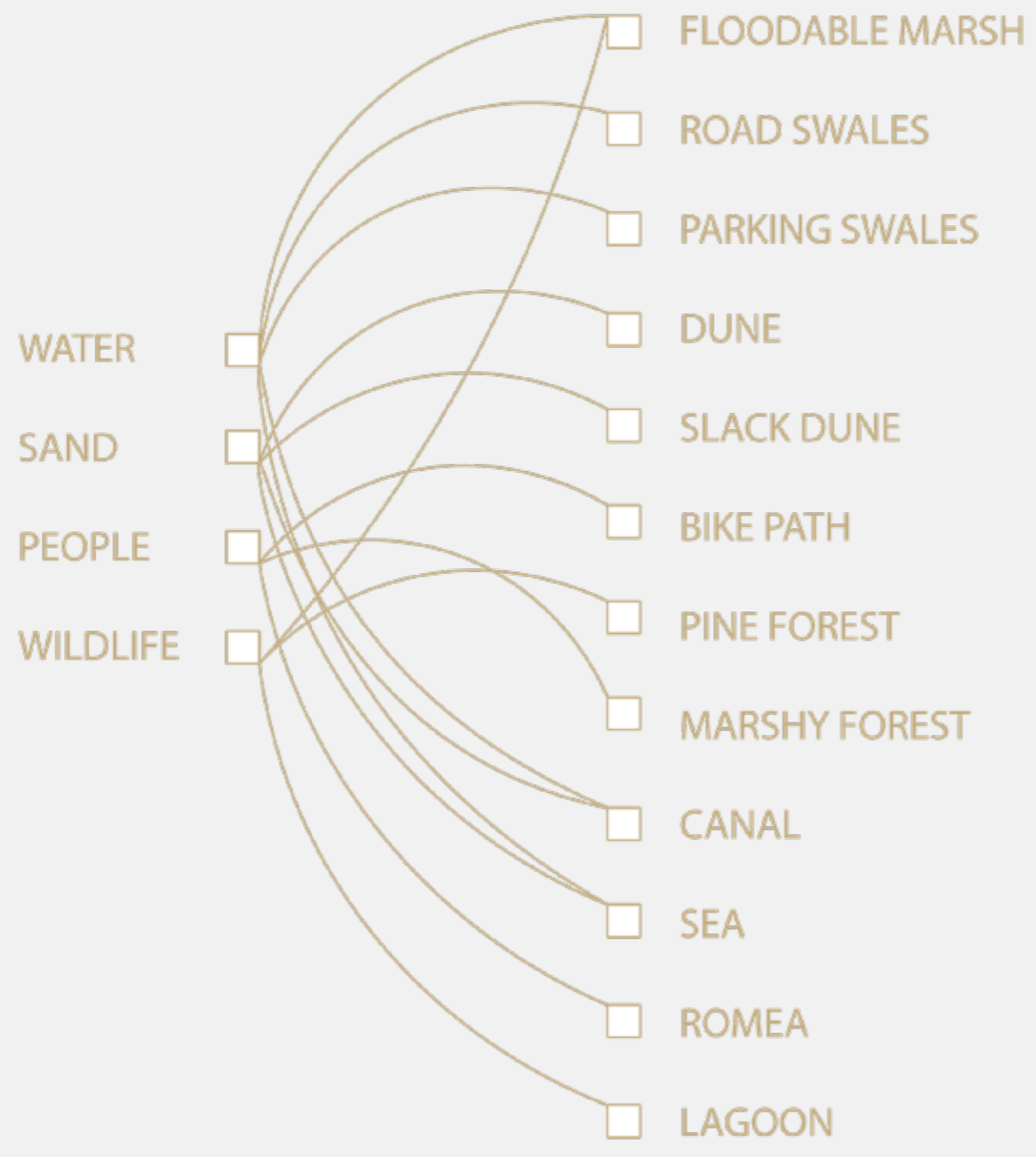
ECOSYSTEM AND URBAN CLUSTERS OF COMACCHIO



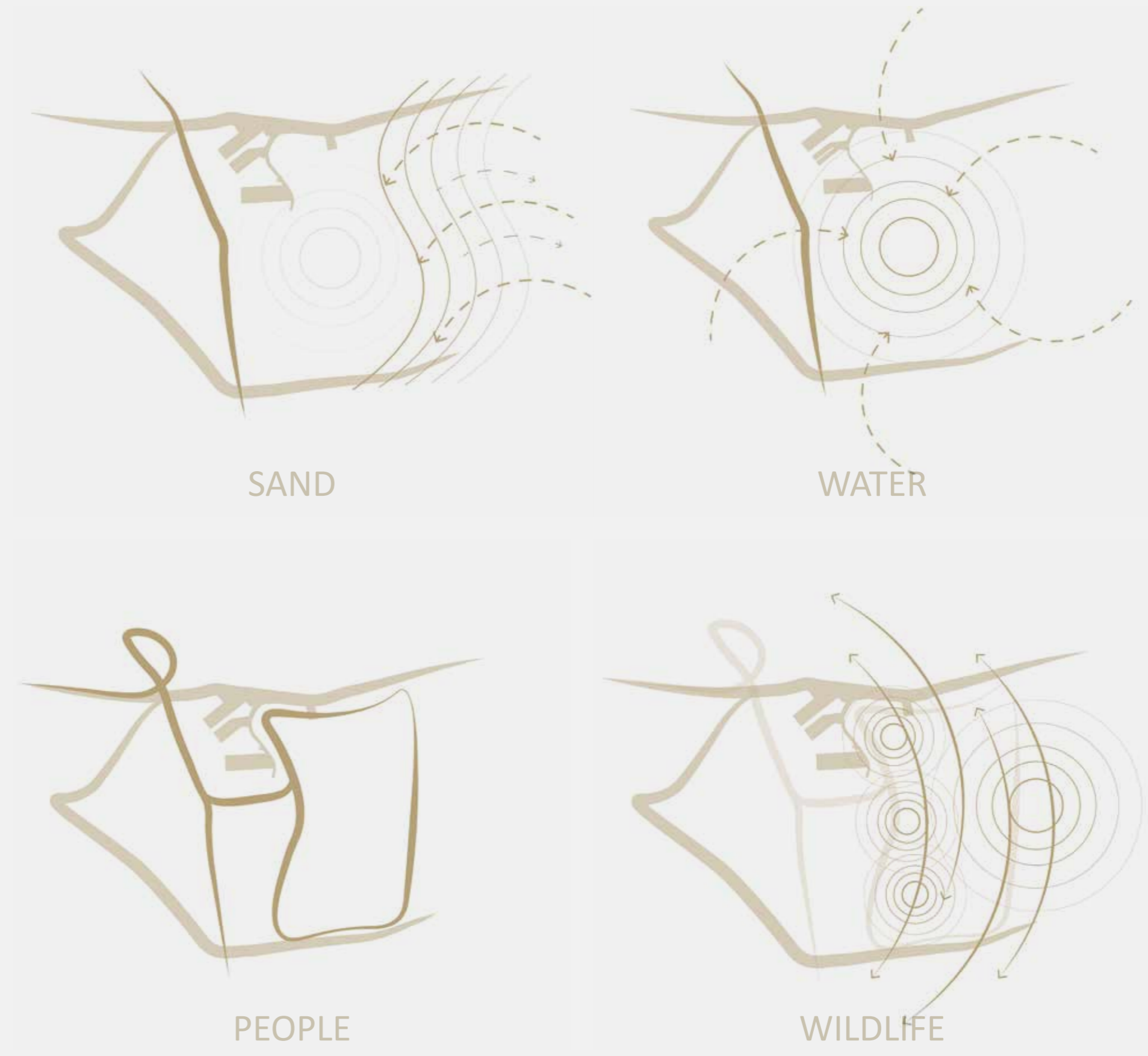
ANTHROPIC	[Horizontal bar with vertical segments]								
CONFIGURATION	LAGOON CANAL BILANCIONI	LAGOON CANAL AGRICULTURE FOREST	AGRI HIGHWAY	PORT CANAL MOUTH	RESIDENTIAL HOUSING ROADS	RESIDENTIAL HOUSING PINE FOREST	ROAD AXIS BEACHFRONT	DUNE FOREST SEA	BEACH CANAL MOUTH SEA
WILDLIFE	[Horizontal bar with vertical segments]								
GRID GRAIN SIZE	[Horizontal bar with vertical segments]								



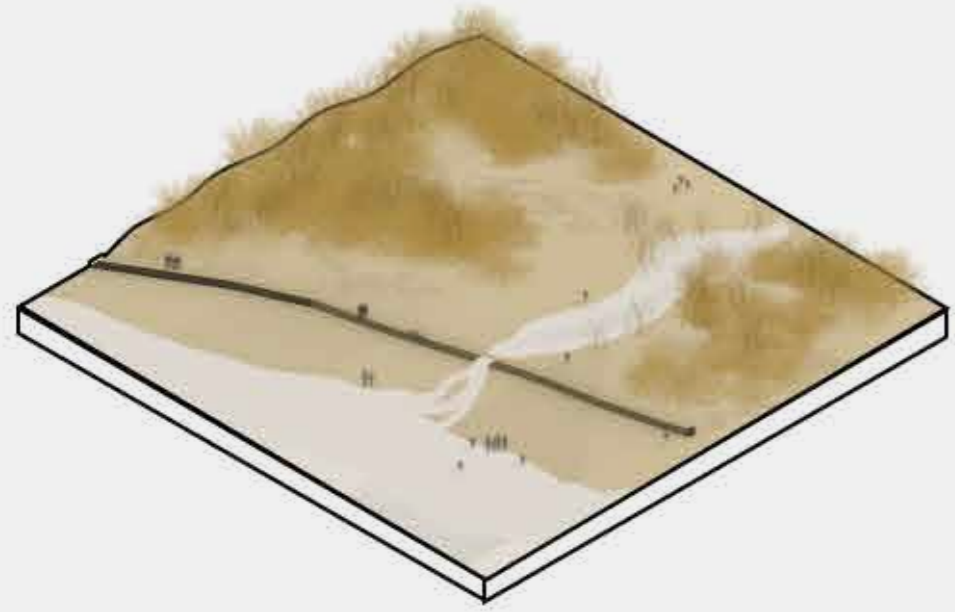
INTRODUCED CLUSTERS AND THEIR RESPECTIVE FLOWS



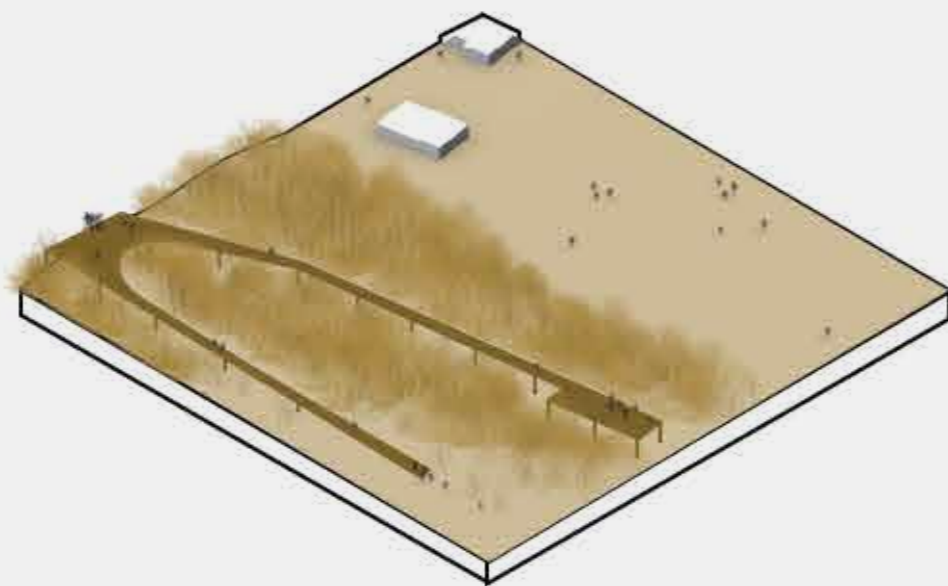
MAIN FLOWS RECALIBRATED



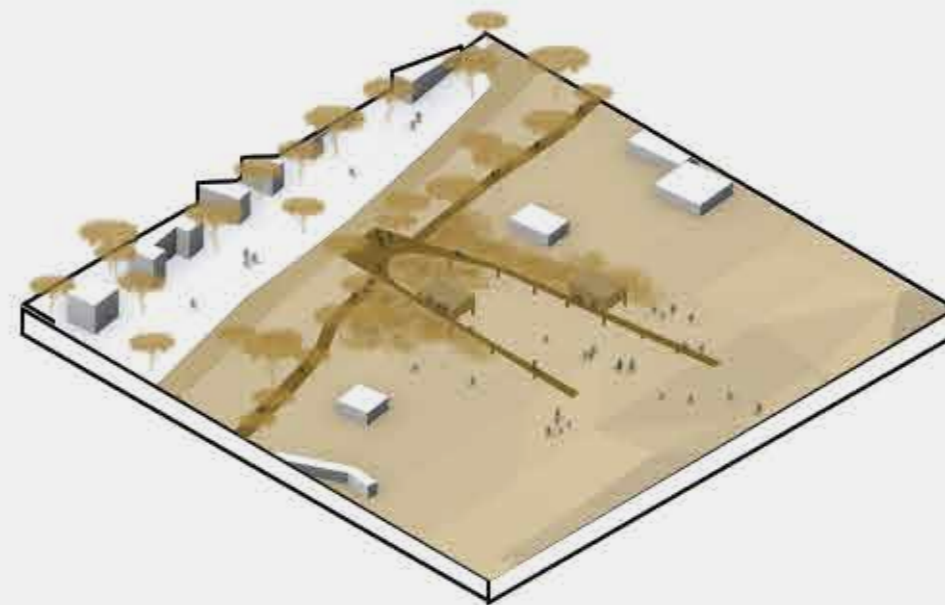
INTRODUCED CLUSTERS AND RECALIBRATED FLOWS



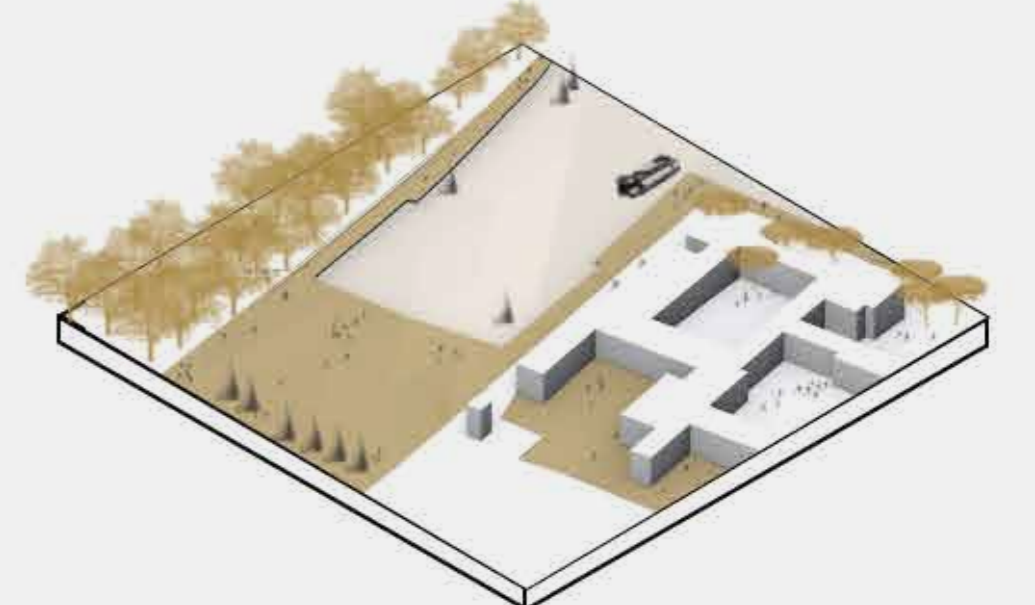
CANAL MOUTH > SLACK DUNE > JETTY



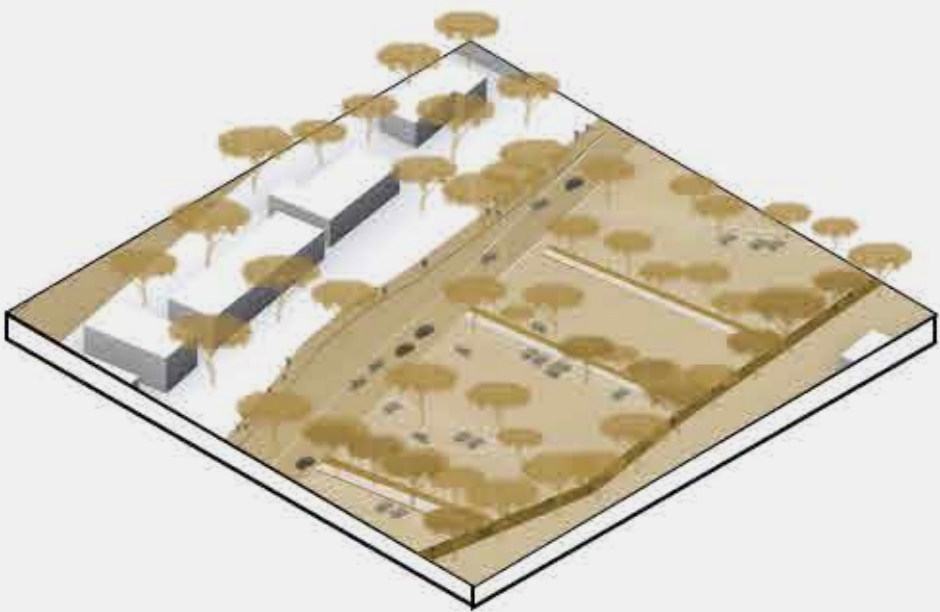
DUNE > BOARDWALK > BEACH



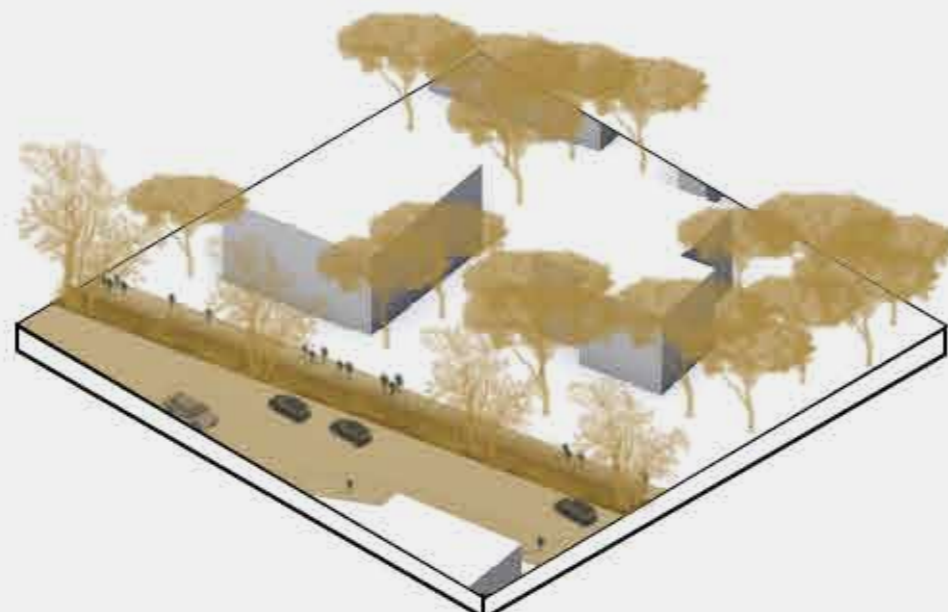
DUNE > BOARDWALK > RAISED BAGNI > BEACH



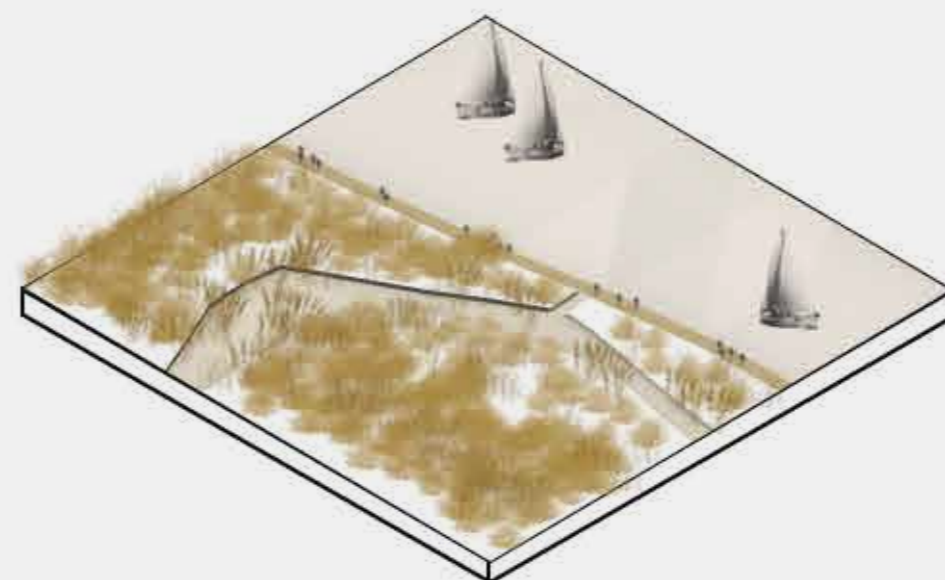
CANAL > LICEO AL MARE > MARSH



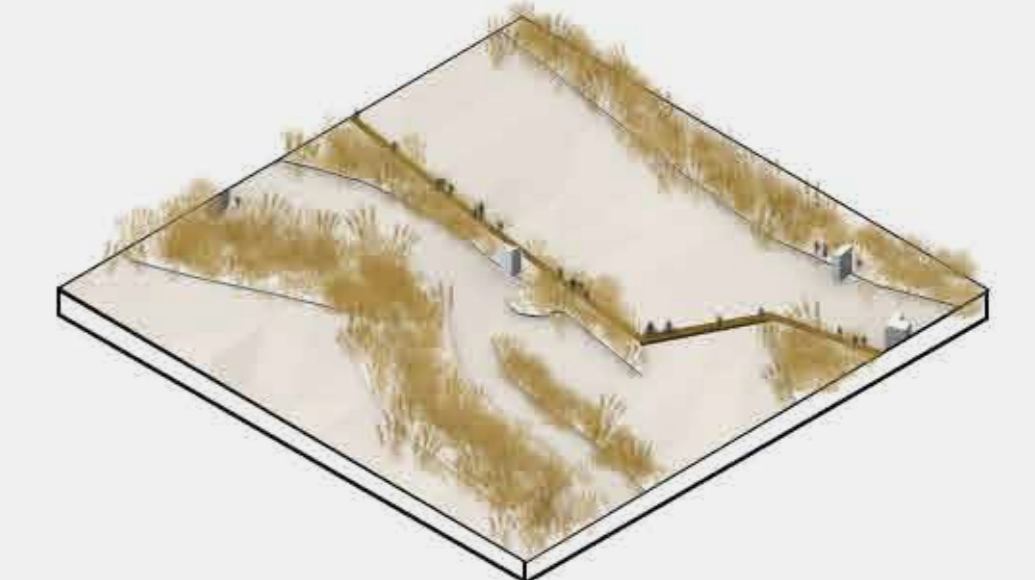
PINE FOREST > BIOSWALE > PARKING > SEA



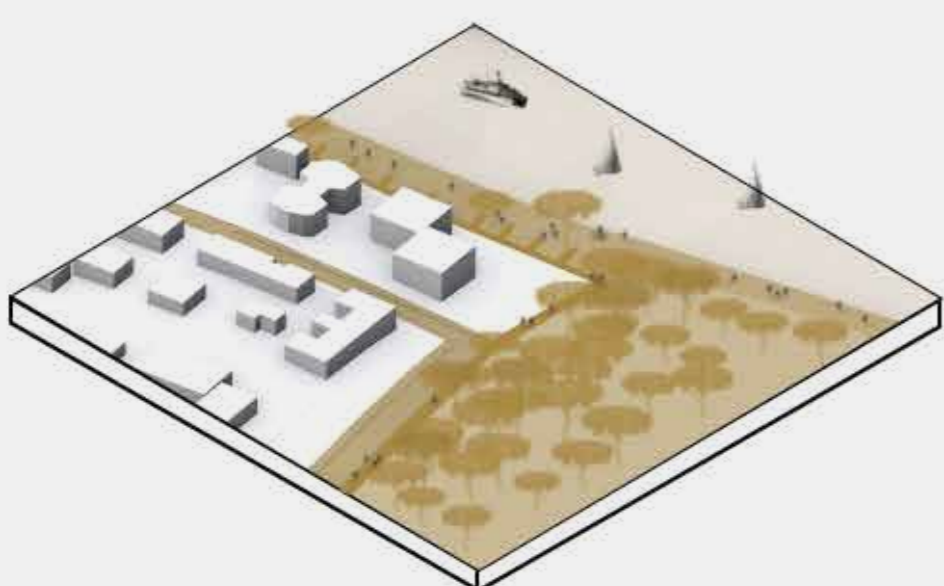
STREET > BIOSWALE > MARSH PARKLAND



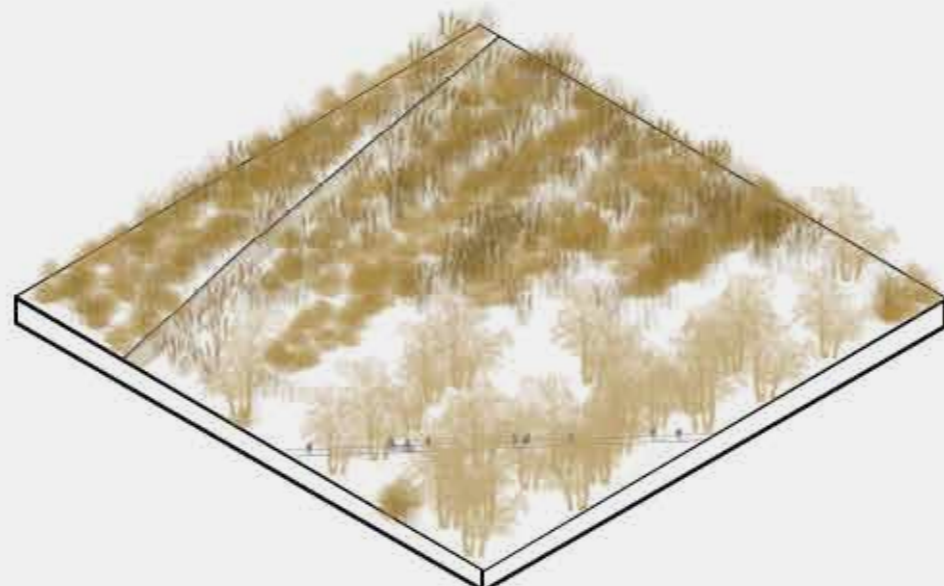
MARSH > CANAL > PEDESTRIAN PATH



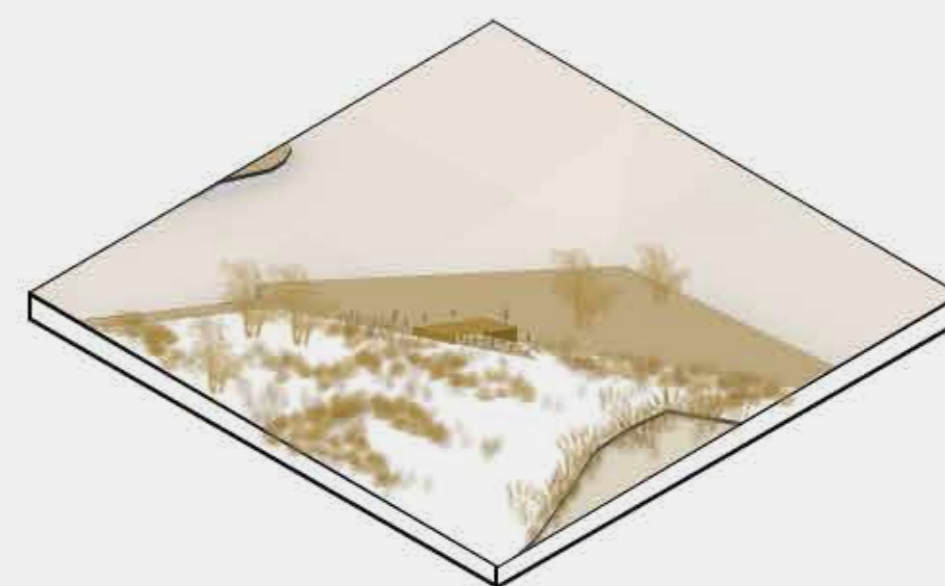
LAGOON > SLOW MOBILITY PATHWAYS



CANAL > BIOSWALES > DUNES > LUNGO MARE



MARSH > MARSHY FOREST > SLOW MOBILITY



MARSH > CANAL > OUTDOOR CLASSROOM



MASTERPLAN

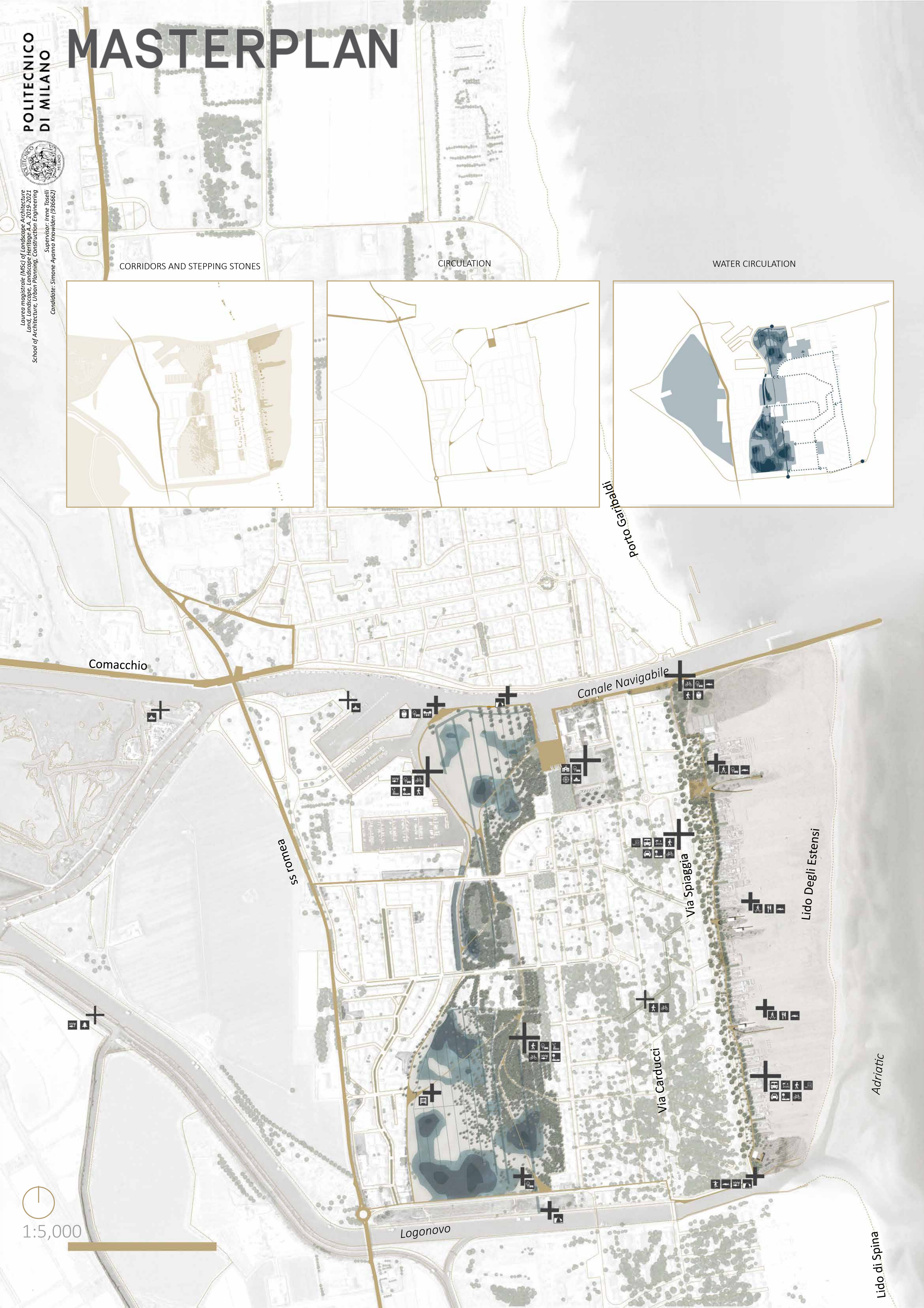
CORRIDORS AND STEPPING STONES



CIRCULATION



WATER CIRCULATION



Comacchio

S.romea

Canale Navigabile

Via Spiaggia

Lido Degli Estensi

Via Carducci

Adriatic

Logonovo

Lido di Spina

Porto Garibaldi



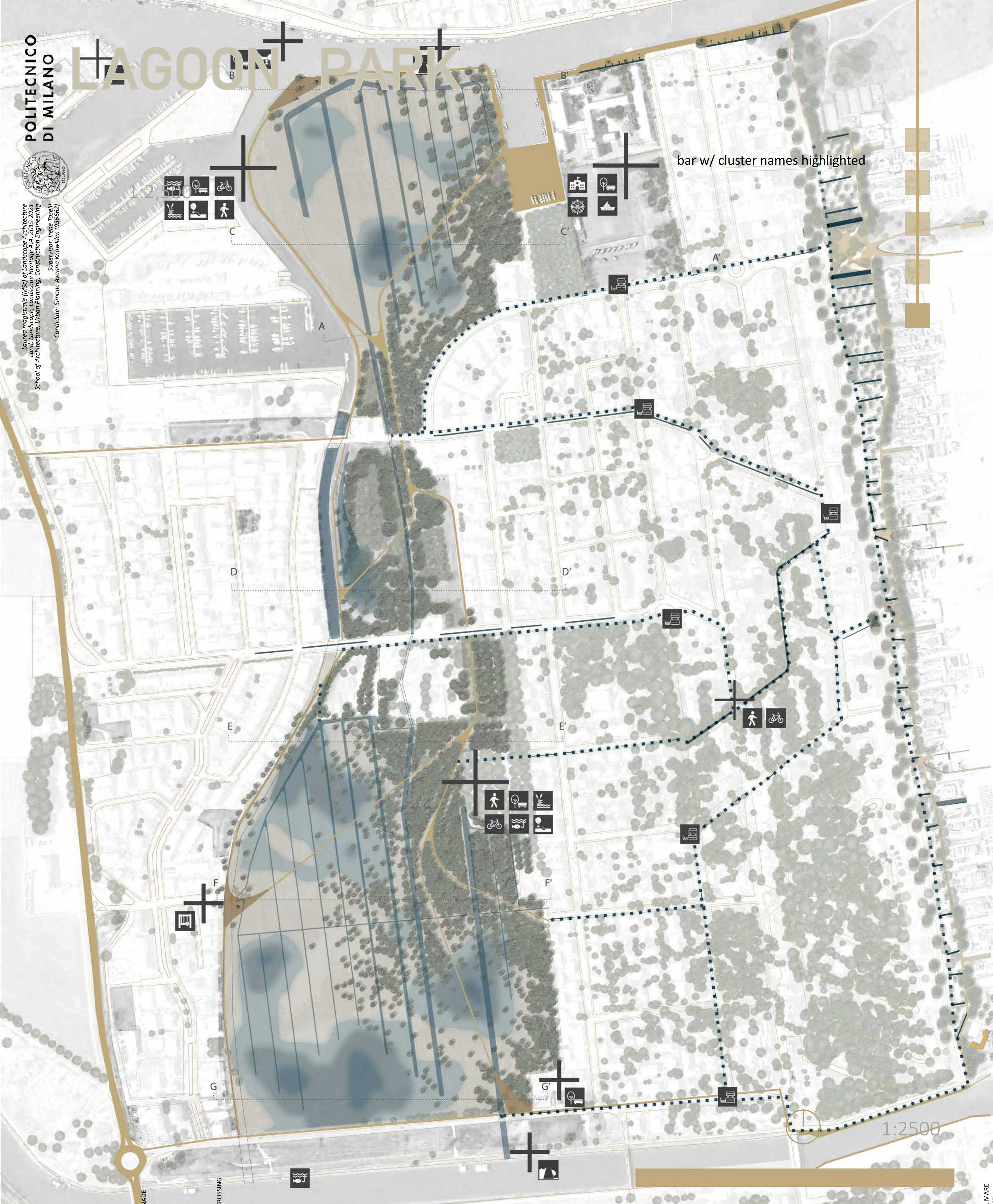
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LAGOON PARK

bar w/ cluster names highlighted



SECTION A-A'
1:500
CLUSTERS

MARSH
PROMENADE

CANAL CROSSING
NODE

CANAL > MARSH > MARSHY FOREST

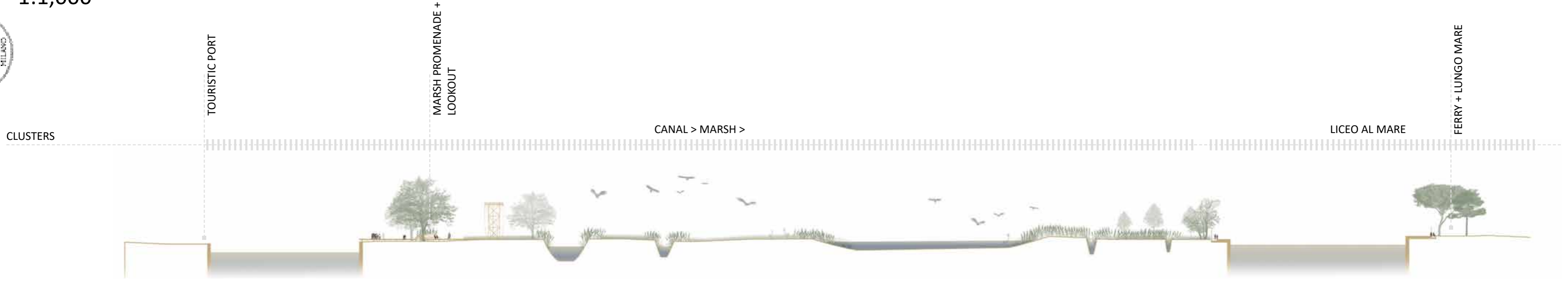
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LECO AL MARE

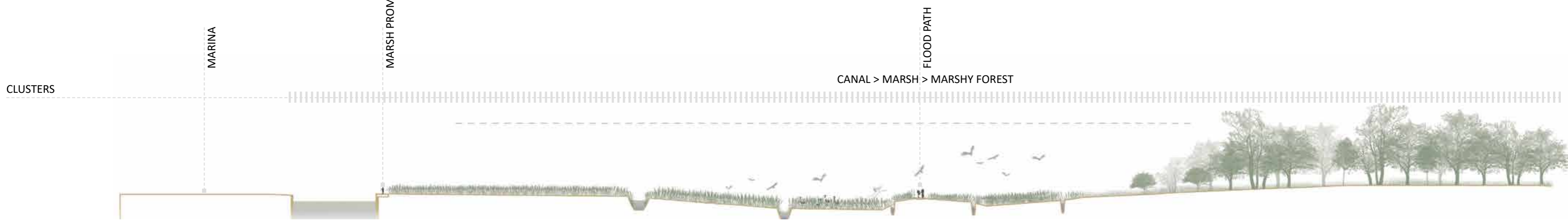




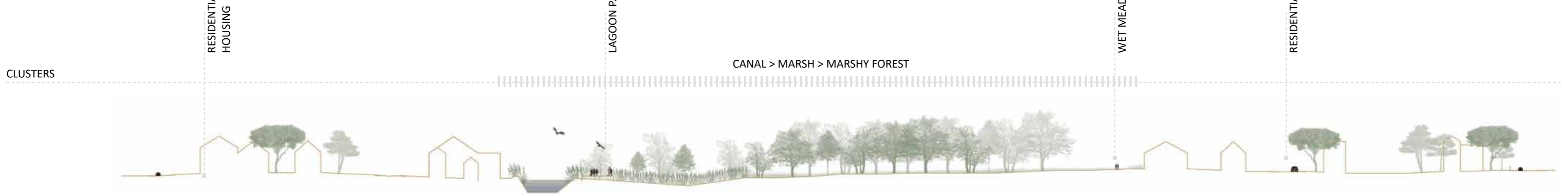
SECTION B-B'
1:1,000



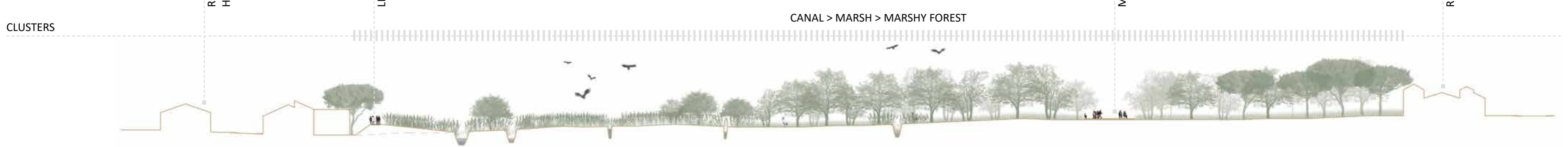
SECTION C-C'
1:1,000



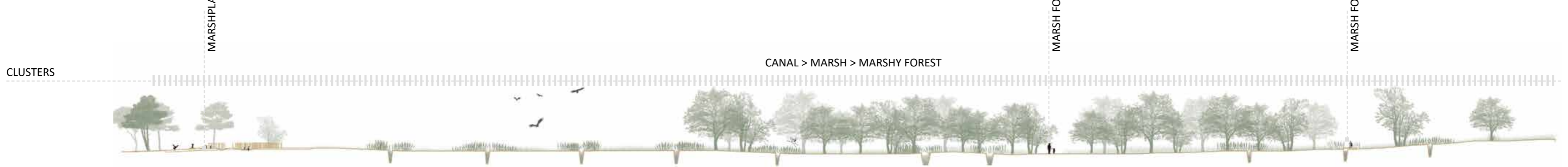
SECTION D-D'
1:1,000



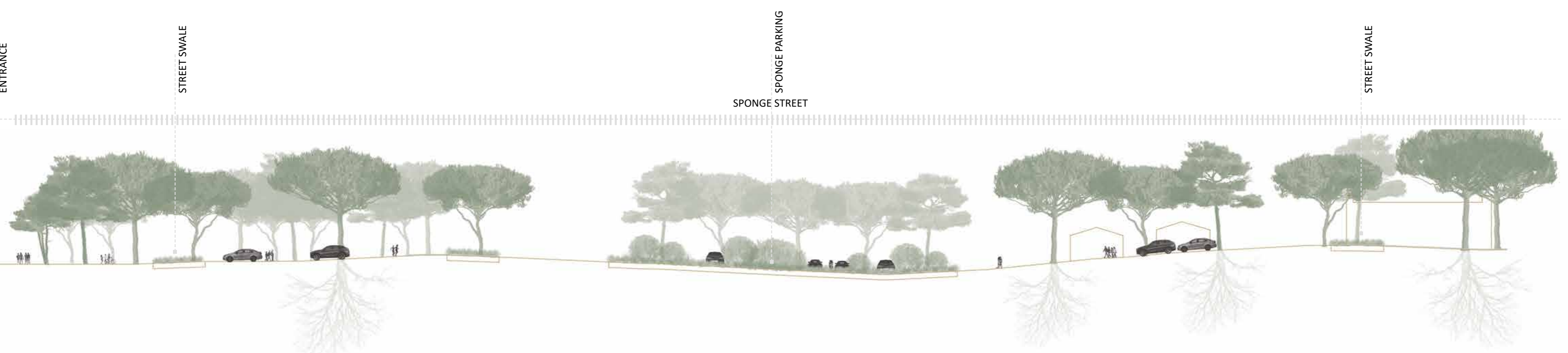
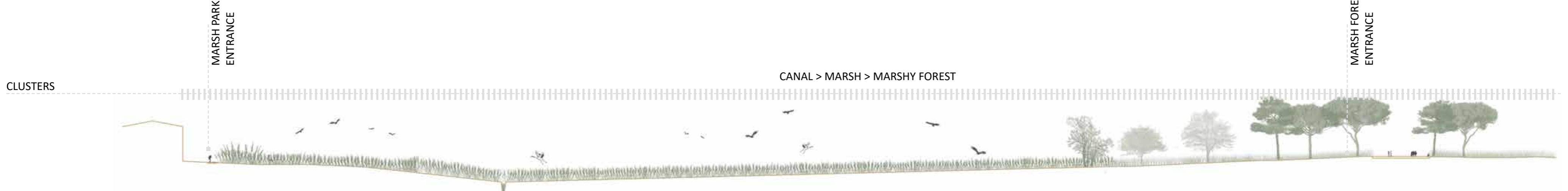
SECTION E-E'
1:1,000



SECTION F-F'
1:1,000



SECTION G-G'
1:1,000



LUNGO MARE



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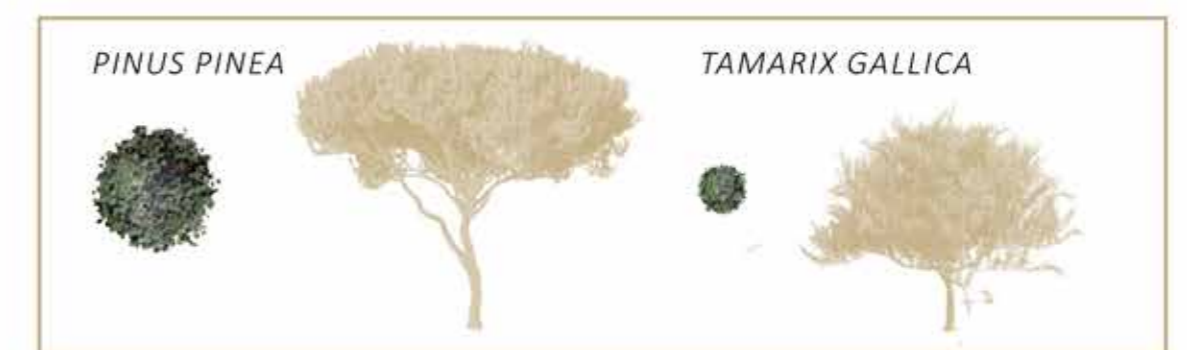
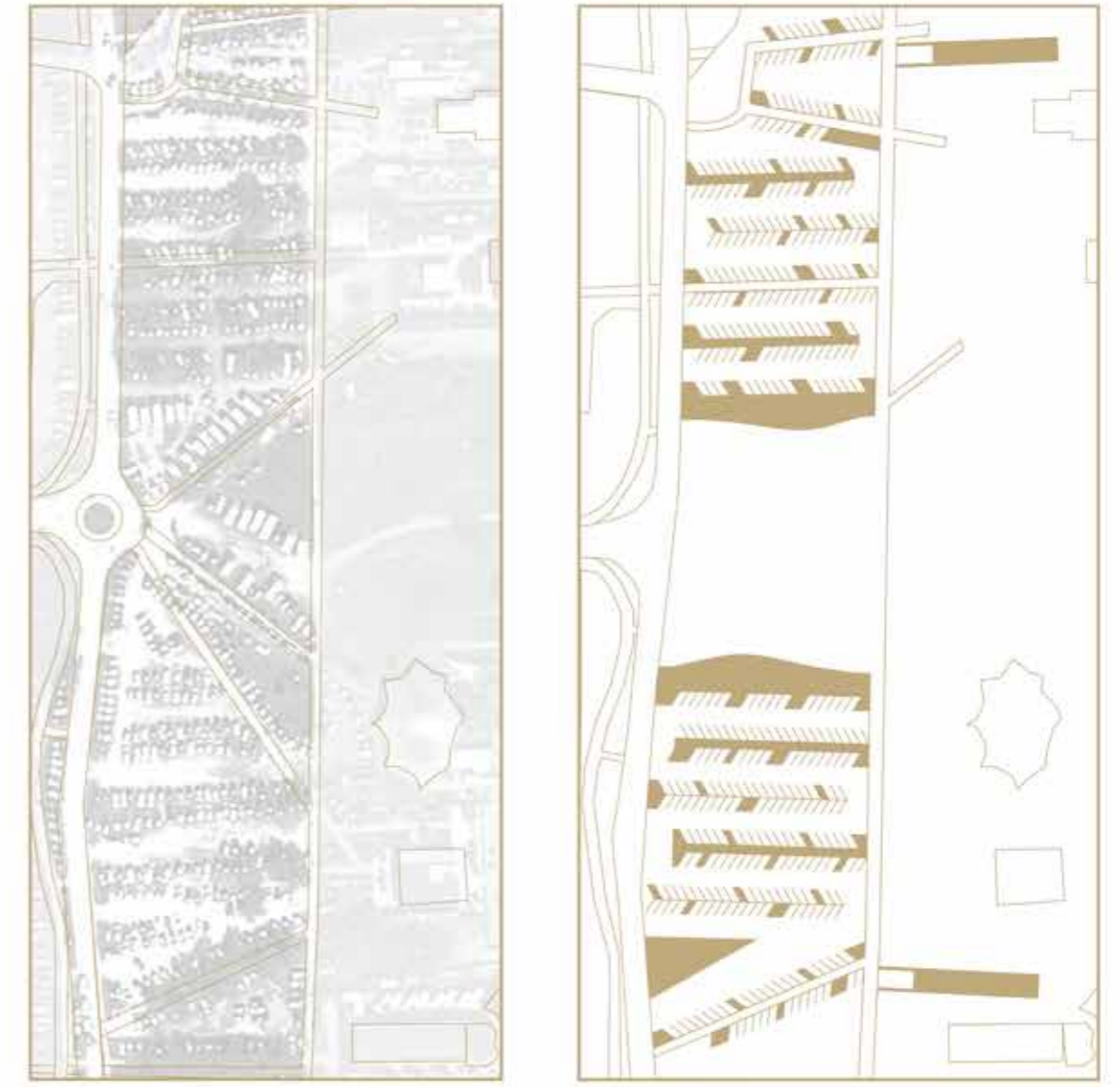
SECTION A-A'
1:500



DUNE BEACHFRONT + BOARDWALK



SECTION B-B'
1:1,000

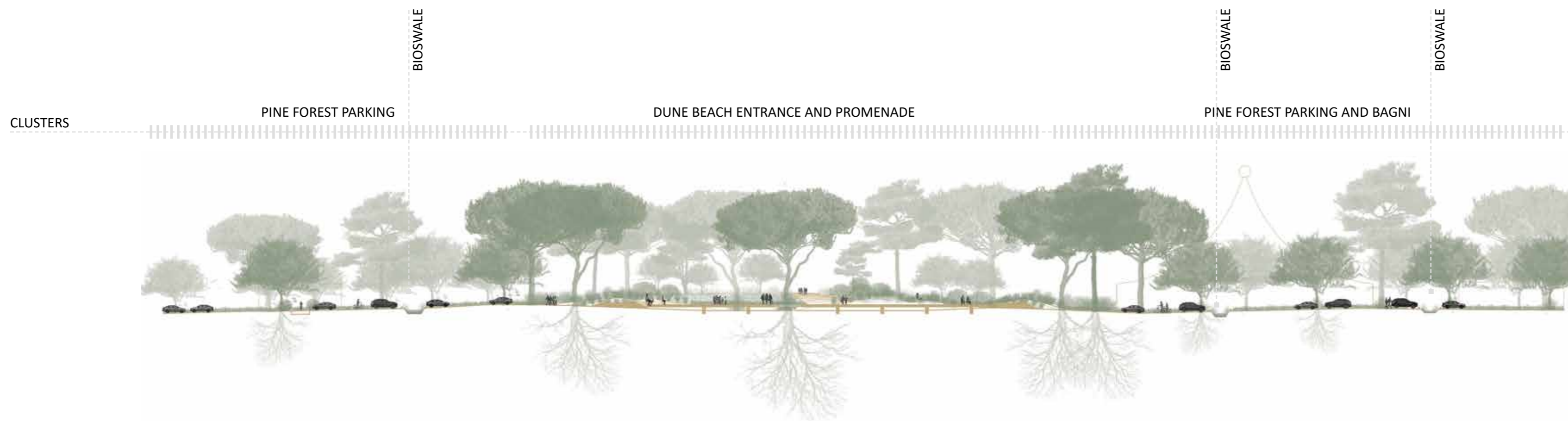


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SECTION B-B'
1:50



SECTION C-C'
1:500



SECTION D-D'
1:250



SECTION E-E'
1:1000

