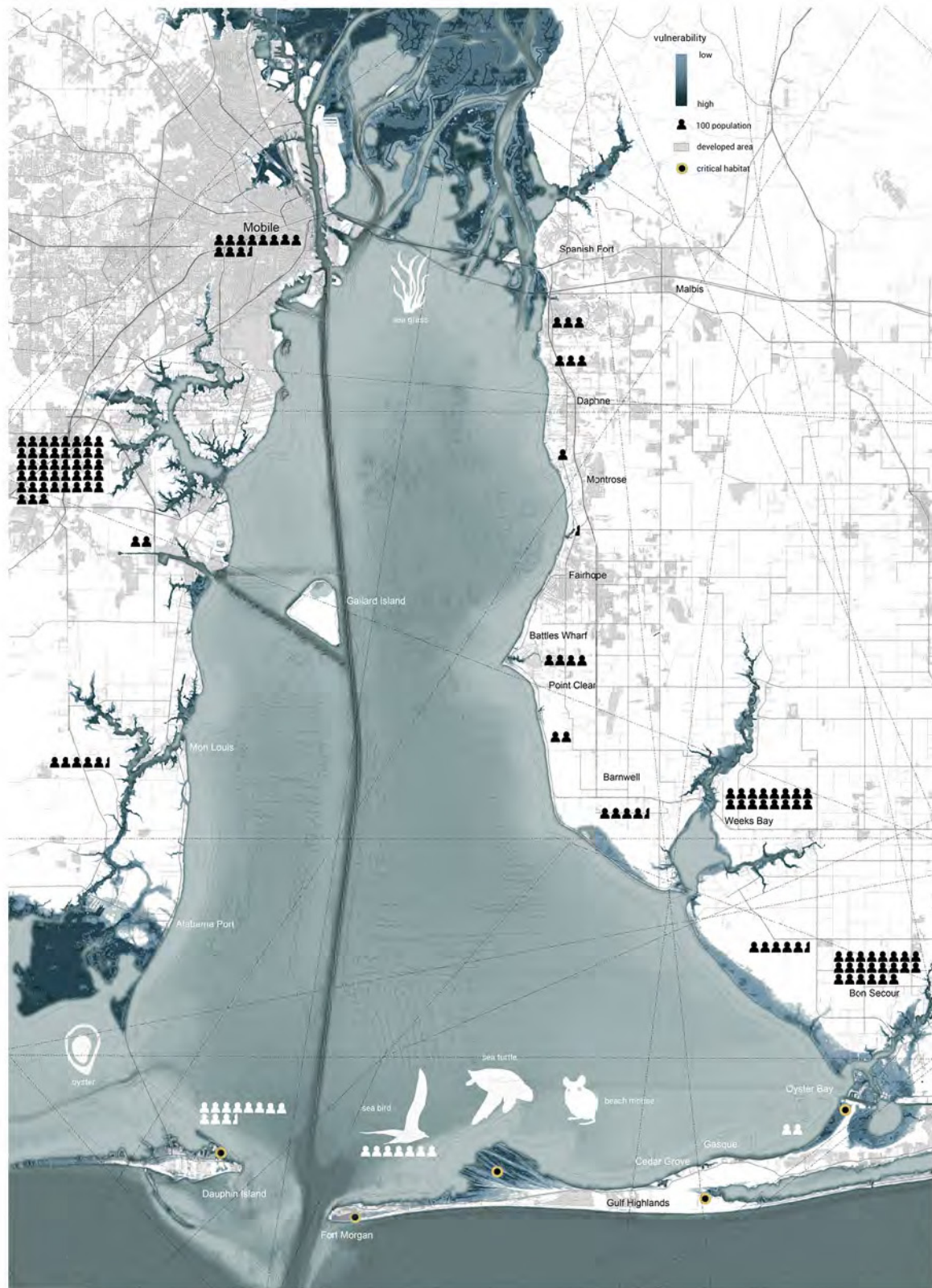


FORT MORGAN PENINSULA

Rui Wang
Yuanyuan Gao

The design focuses on coastal resilience issues that the state of Alabama is facing. This project takes Fort Morgan Peninsula as an example, uses design as a methodology, and engages complex and messy situations to help build better futures for coastal areas. Although the design is grounded in Alabama, the work does not stop at the state line, we believe that coastal resilient issues resonate with communities across the southeast, and beyond.

This design adapts to the sea level rise problem from the perspective of human and natural migration. The designing of human dwelling places help animals' migration and achieve coastal resilience.

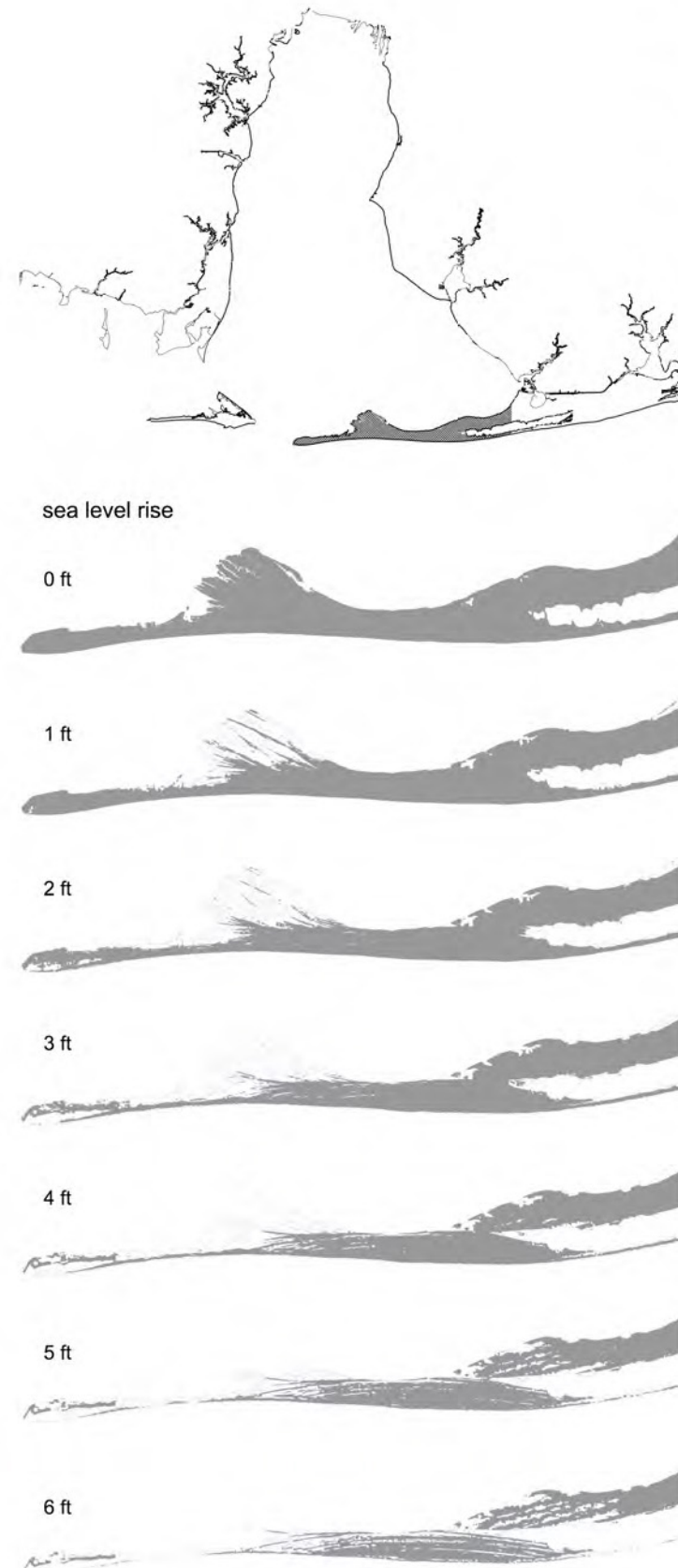


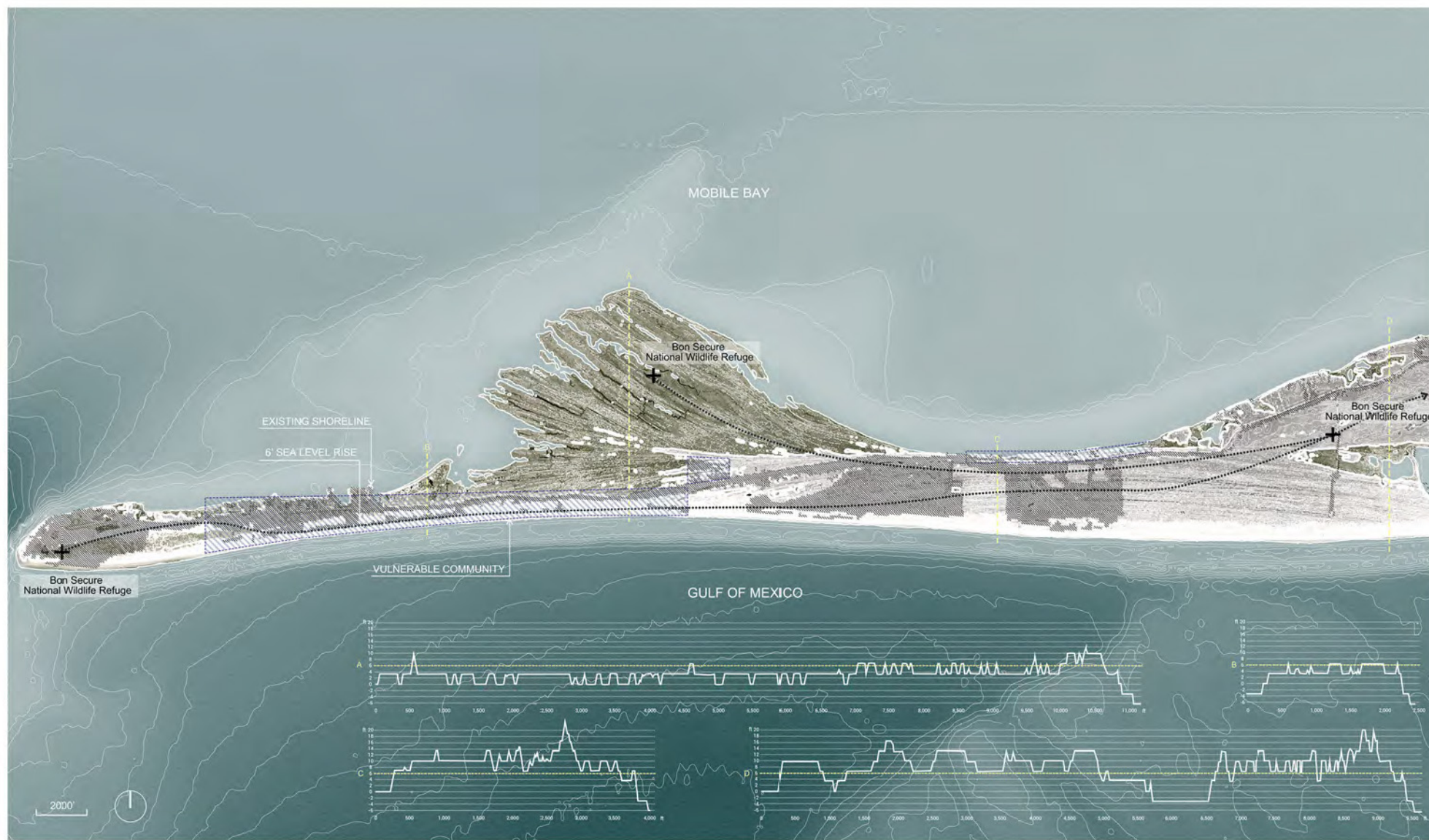
SEA LEVEL RISE

The impacts of climate change are dramatic and everywhere, but nowhere are they more visible than in our dynamic relationship with the coastline. One of the most affected areas are the peninsulas.

It is projected that sea levels will rise two feet by mid-century and six feet by 2100. The rising sea level will transform the landscape of coastal areas and decrease the land of the peninsula. We are talking about the time scale of hundreds of years, but we have to work on a shorter scale of several years to decades. The proposal frames the project work in a timeline that can happen within a reasonable period but also impacts the next hundreds of years.

LEFT
Vulnerable developed areas and wildlife in Mobile Bay.





FORT MORGAN PENINSULA

Bon Secour National Wildlife Refuge is home to a variety of wildlife. Many of these animals are threatened by losing habitat because of sea level rise. The refuge encompasses some of Alabama's last remaining undisturbed coastal barrier habitat, including beach dunes and rolling pine-oak woodlands.

There are endangered species in this region. The Alabama beach mouse that can be found in coastal dune ecosystems is one example. Thriving beach mouse populations are an indicator of healthy dune ecosystems which help protect coastal habitats, especially during hurricanes.

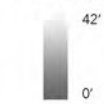
Habitats on the peninsula have been cut into fragments because of human development (communities, recreational facilities, roads, etc.). When sea levels rise, wildlife lose their habitats and have to migrate inland. These developed areas can be constraints on their migration routes.

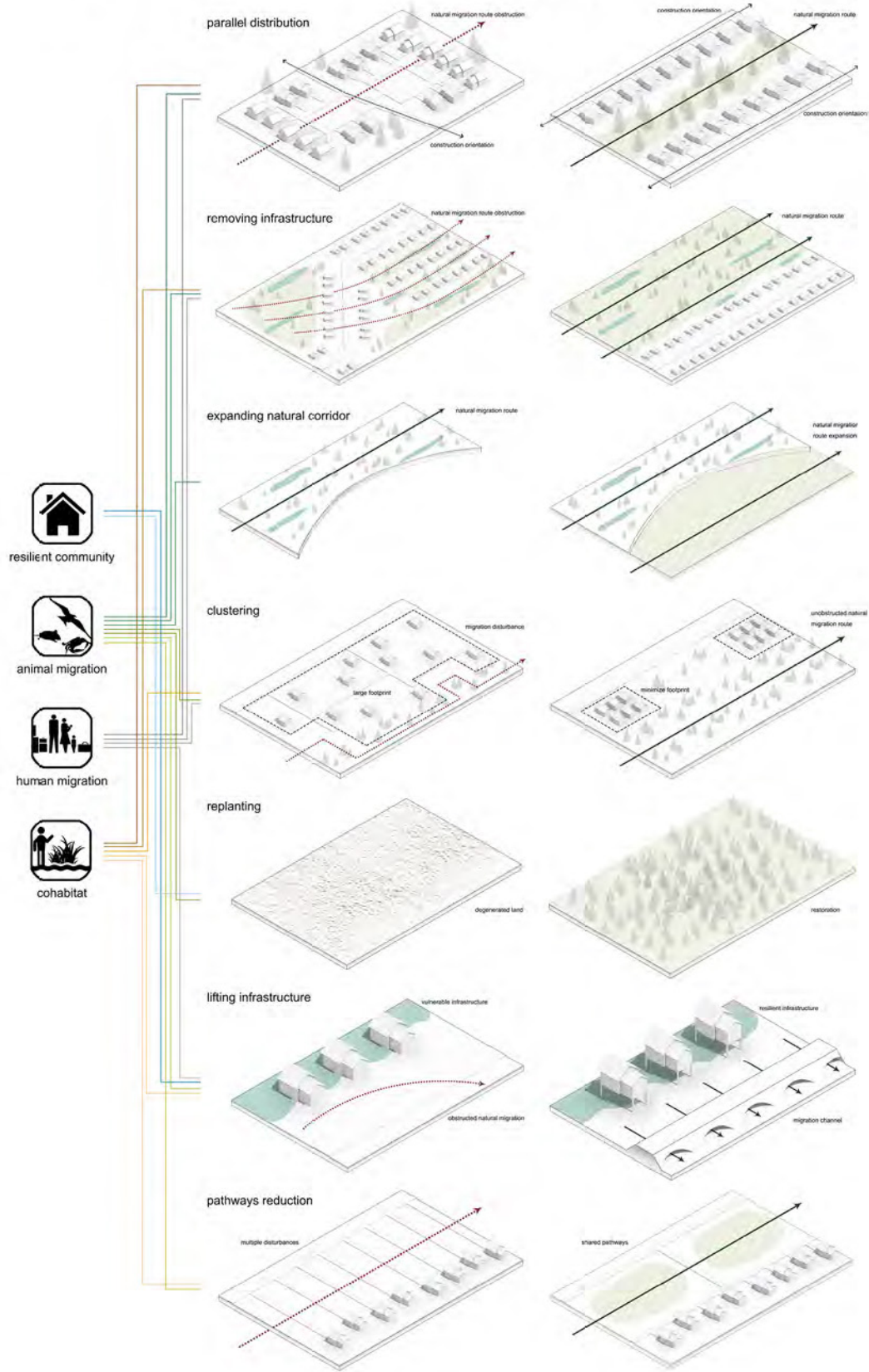
LANDUSE

- Developed area
- Forest
- Shrub
- Wetland
- Beach



ELEVATION

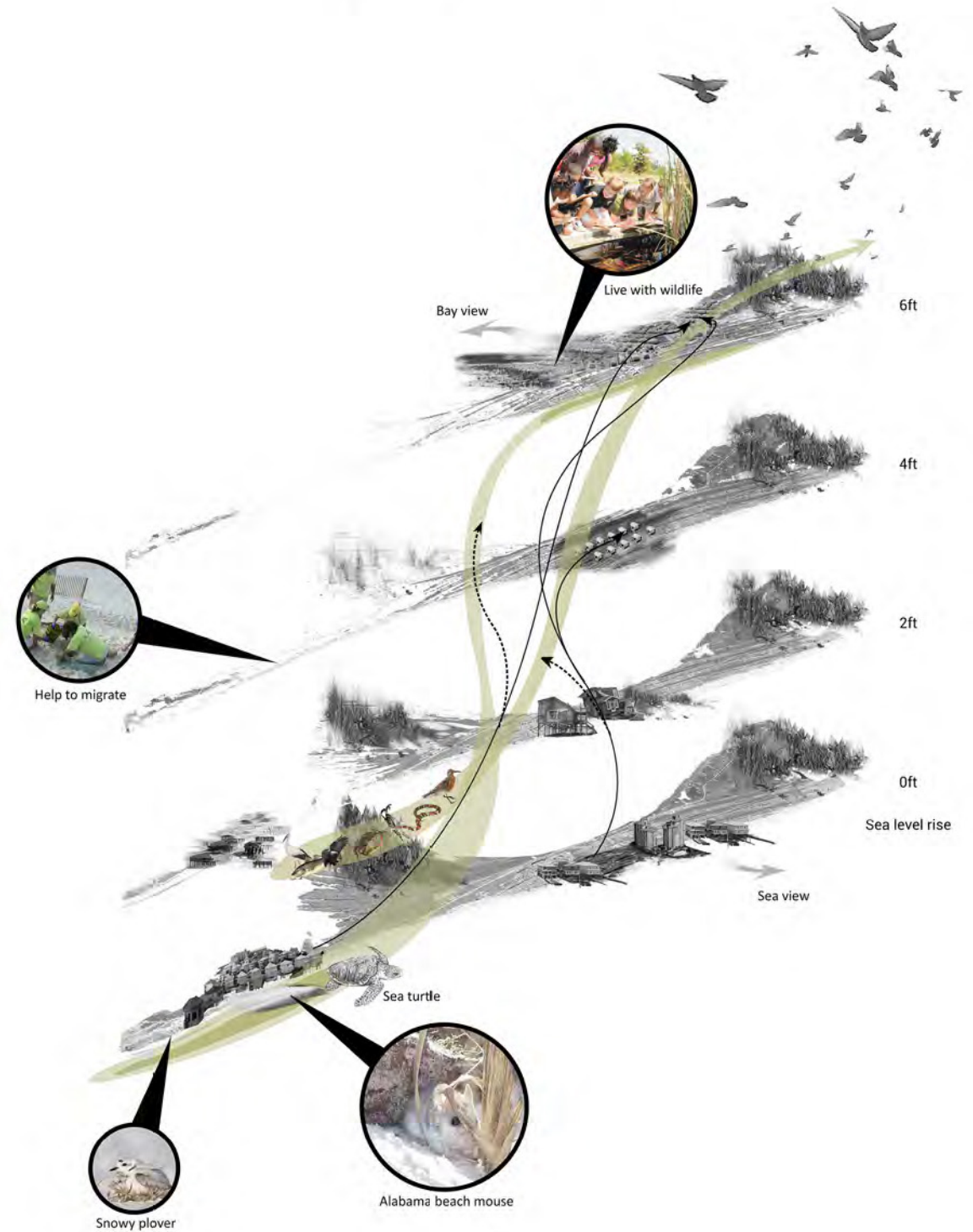




MIGRATION CONCEPT

The typical community can adapt to become more helpful to migration, improving both peoples' experiences at a site scale and natural migration at a regional scale.

LEFT
 Goals corresponding strategies in different situations.
 RIGHT
 People and wildlife migration.



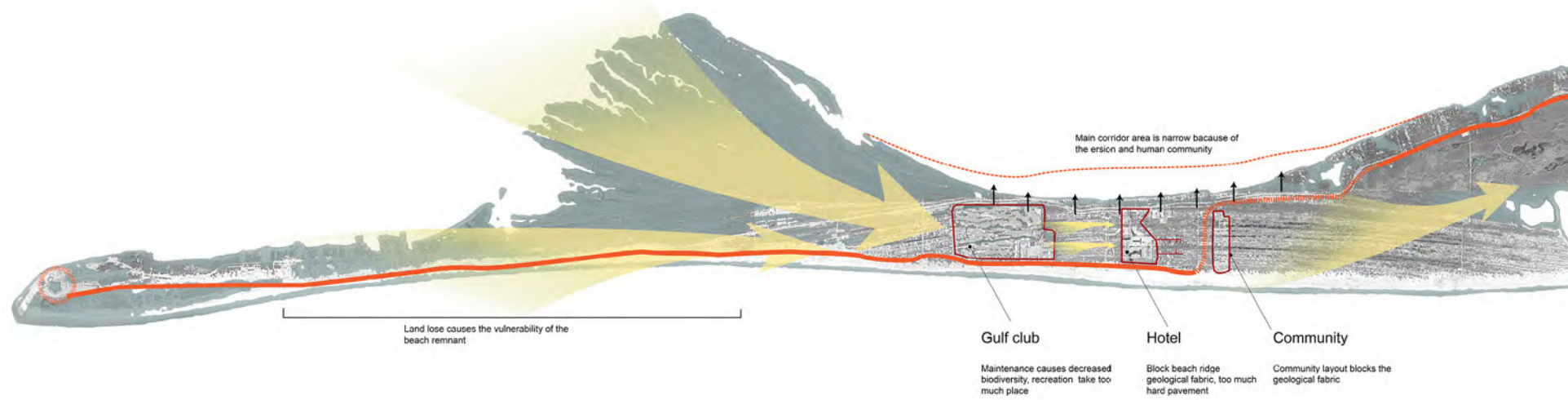
CONSTRAINTS AND PHASES

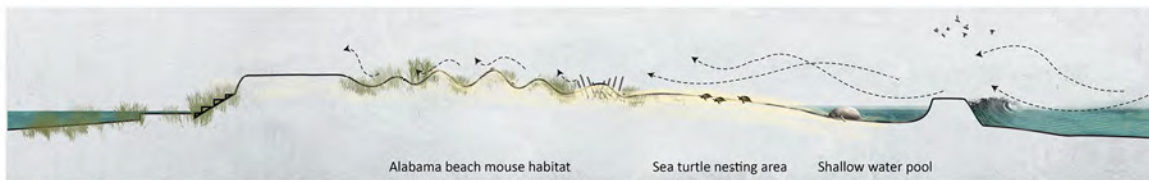
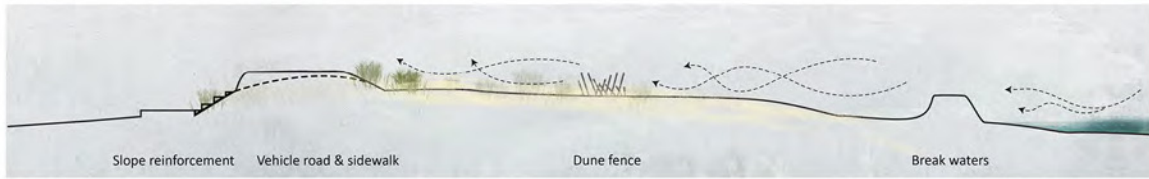
New experiences will emerge on the island. Static development patterns transform into a dynamic migratory system, offering new experiences for residents, students, and visitors.

The design has three core components. The first is link, which helps to reserve the critical beach habitat. The second is cohabit, makes people capable of living with wildlife. The third is grow, which strengthens the migratory corridor. These three phases are based on the time frame of sea level rise and vulnerability of land, from what people can achieve now to future development on the peninsula.

ABOVE
Main constraints for the migration

BELOW
Three phases and new experiences





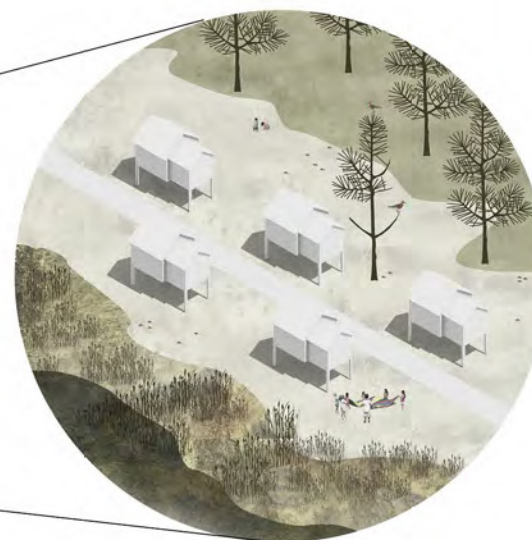
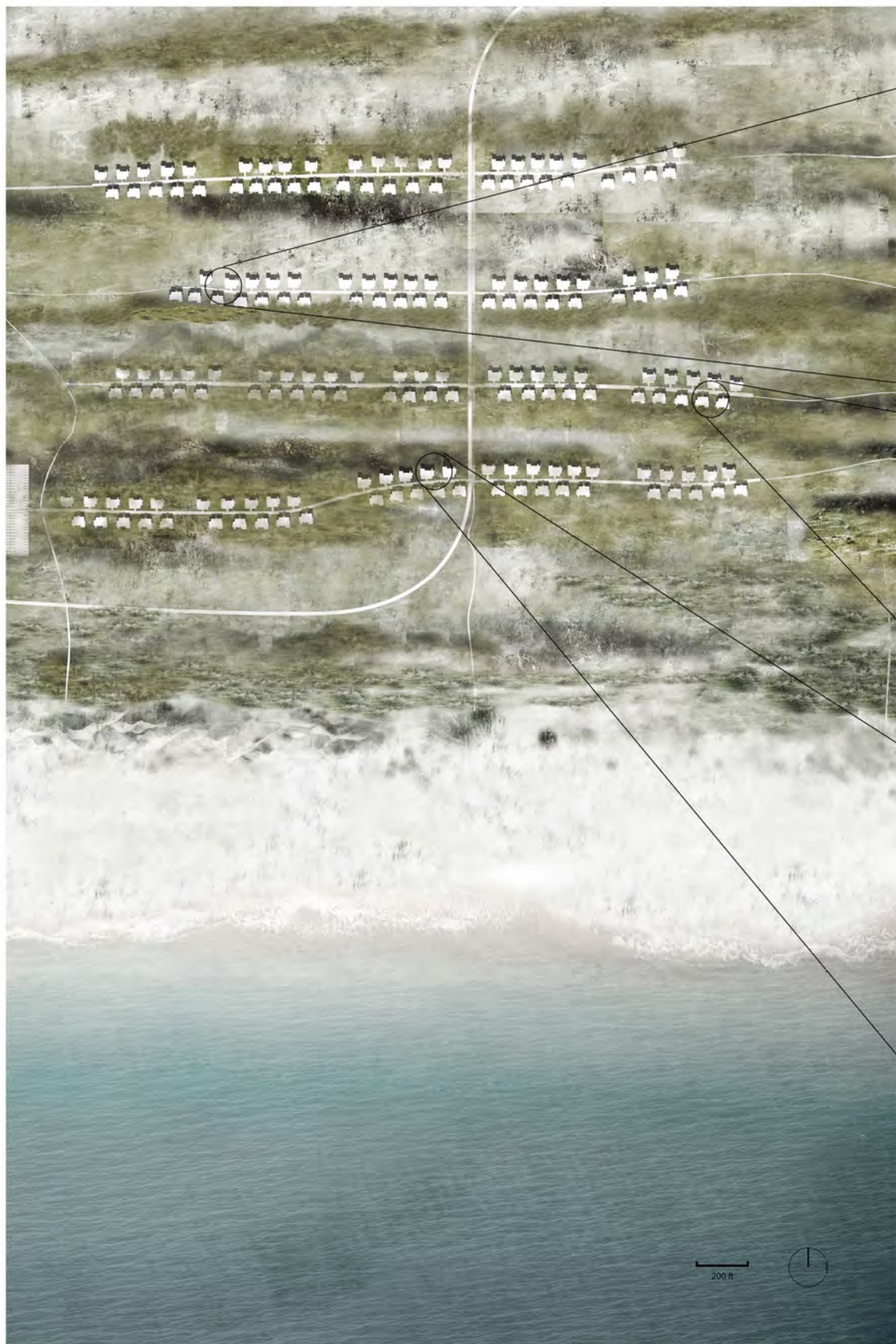
LINK

Education is important. People need to know about migration. The link proposes to host tours and wildlife watching along the beach in collaboration with students, volunteers, and educators. The aim is to build on the idea that engagement and persuasion plays a role in the design process.



CREATING BEACH RIDGES

Corridor and habitat for wildlife and provide volunteer and education opportunities along the beach



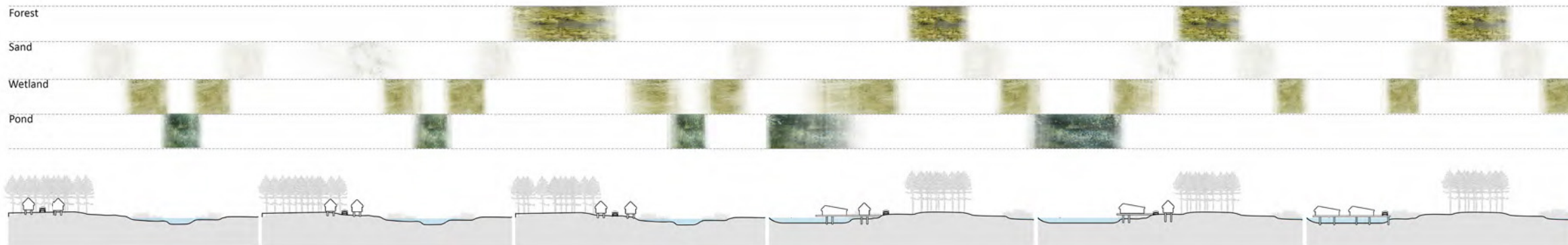
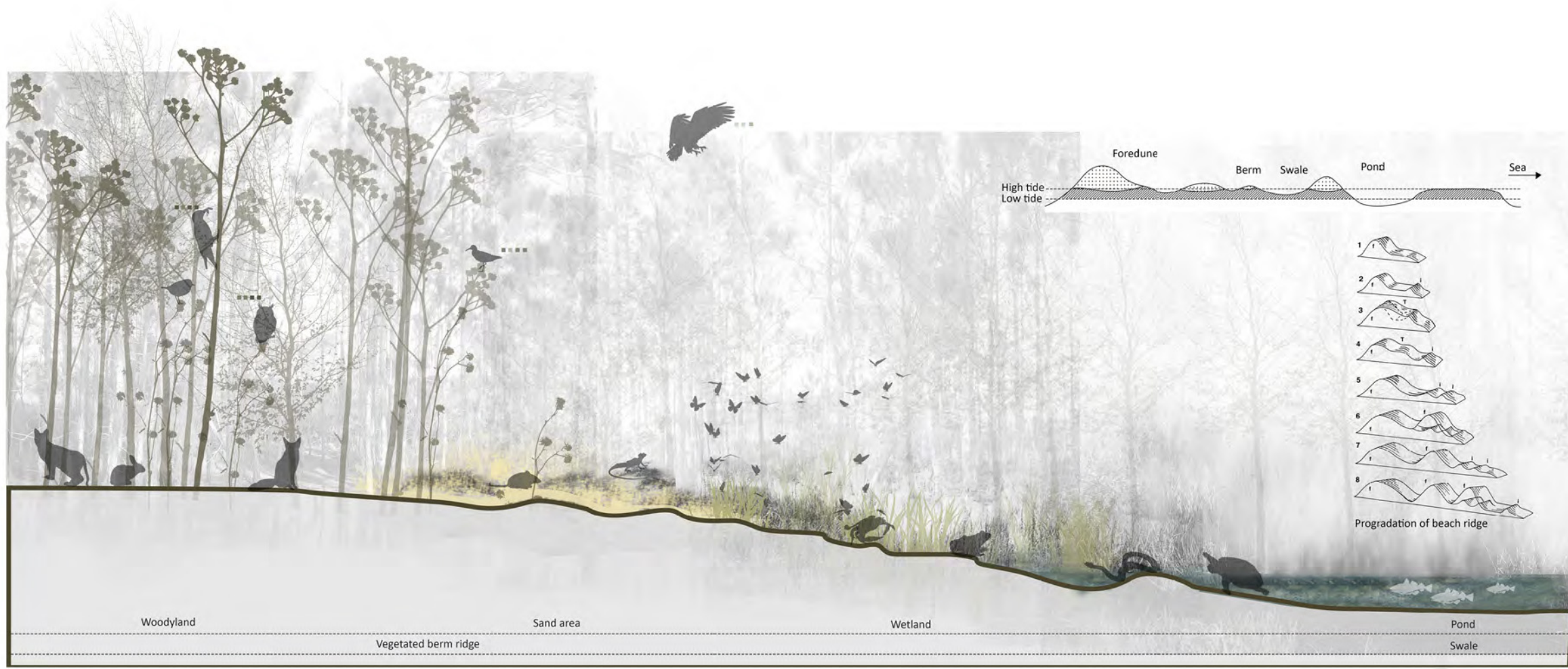
SHARE

Beach ridges are a major geomorphic feature of the peninsula. A beach ridge is a wave-swept or wave-deposited ridge running parallel to a shoreline. A decline in water level (or an uplift of land) can isolate a beach ridge from the body of water that created it. Three major habitats are distributed as linear shape along the beach ridges - beach, marsh, and forest.

The typical communities are organized cut through the beach ridges, which blocks the natural migration routes. The design proposes to reorganize these communities, make the construction orientation respond to the shape of beach ridges, and encourage natural migration routes. Under these circumstances, animals will less be disturbed by human dwellings, which can achieve the goal of cohabitation.

FOLLOWING SPREAD

Community arrangement with different beach ridges features.





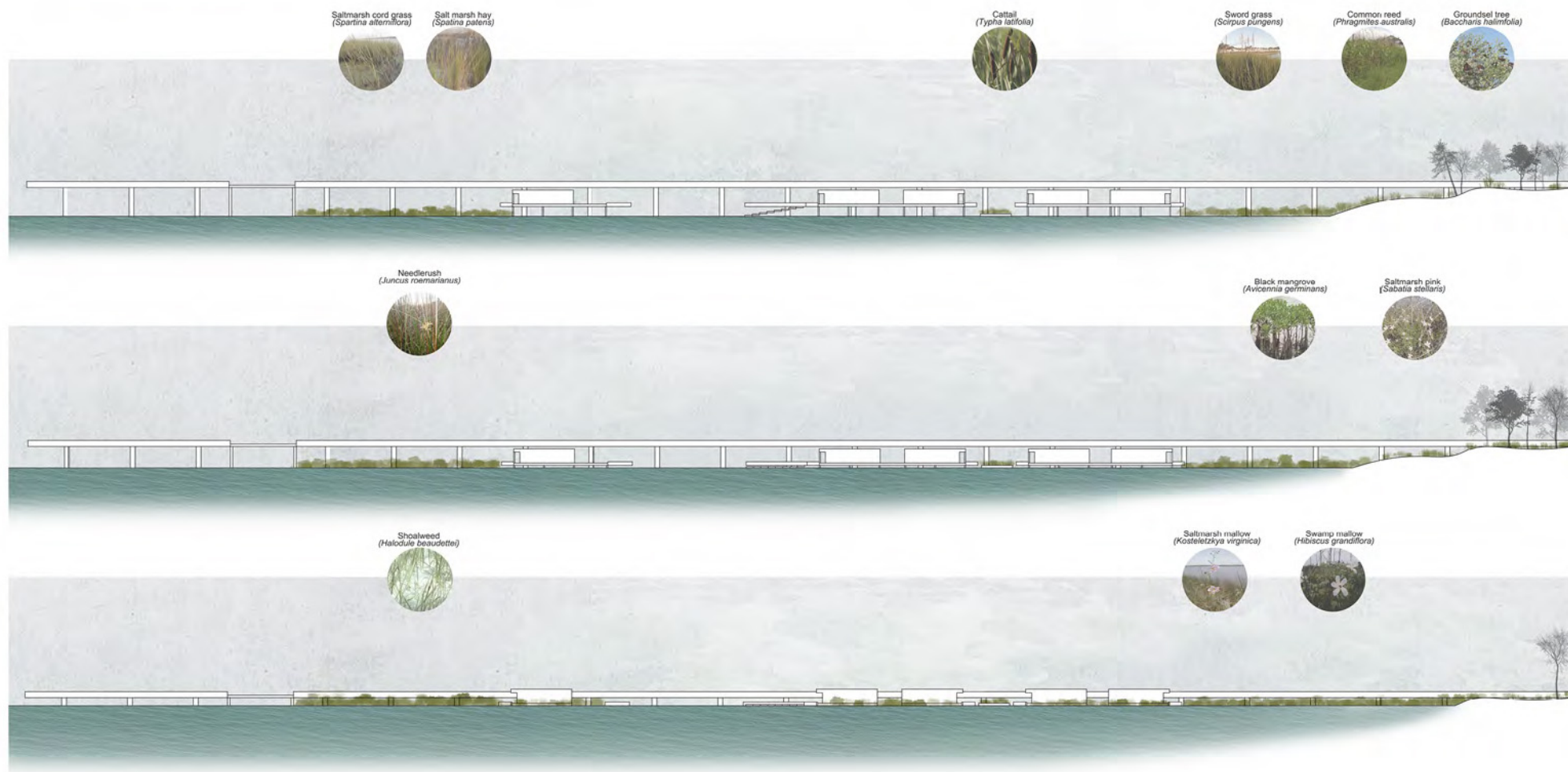
COMMUNITY ON THE BEACH RIDGE
This community is parallel to the linear beach



COMMUNITY NEAR THE MARSH
This community is parallel to the linear marsh



COMMUNITY IN THE FOREST
This community is parallel to the linear forest

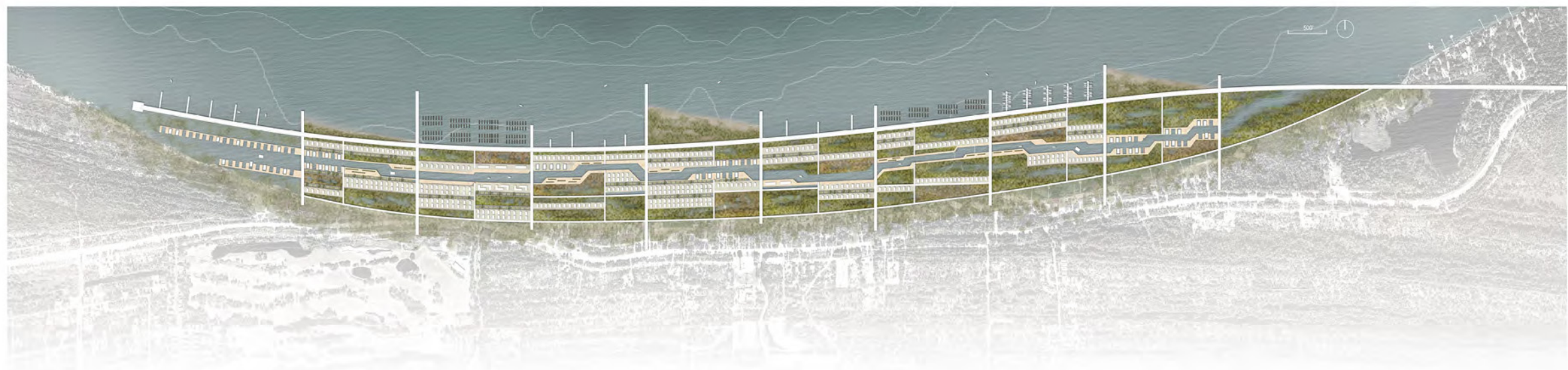


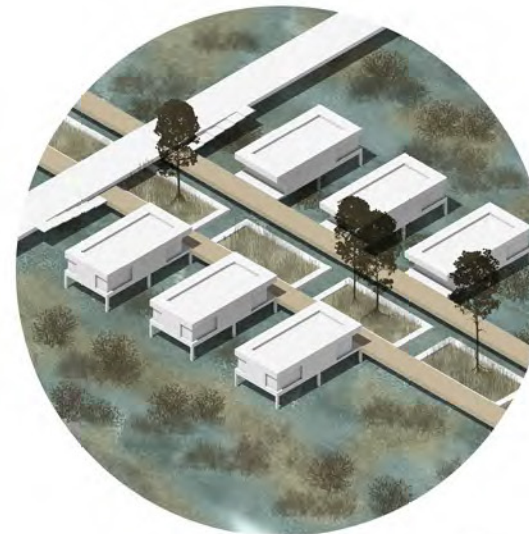
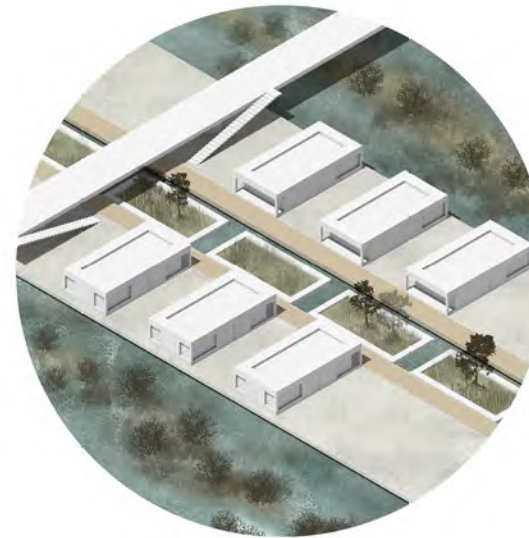
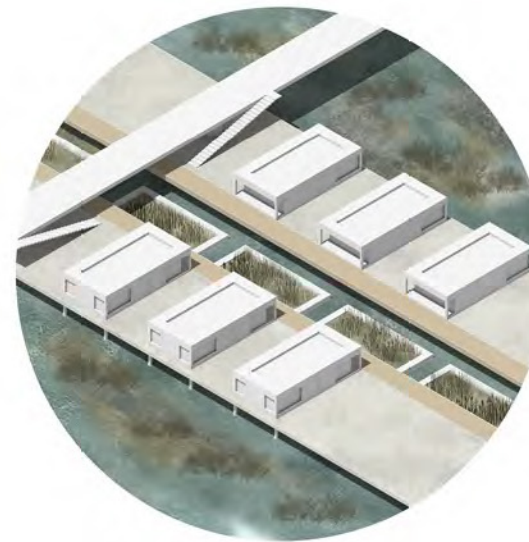
GROW

To deal with future potential threats from climate change, it is necessary to change the way that people are dwelling. The future community will float on the sea, which can deal with sea level rise and expand the natural corridor. It will supplement the land people and wildlife lost. People who lost their home can have a choice to move to the new community. The community provides a new and safer way people living near the shore.

LEFT
Community responds to sea level rise.

BELOW
Plan of floating community.





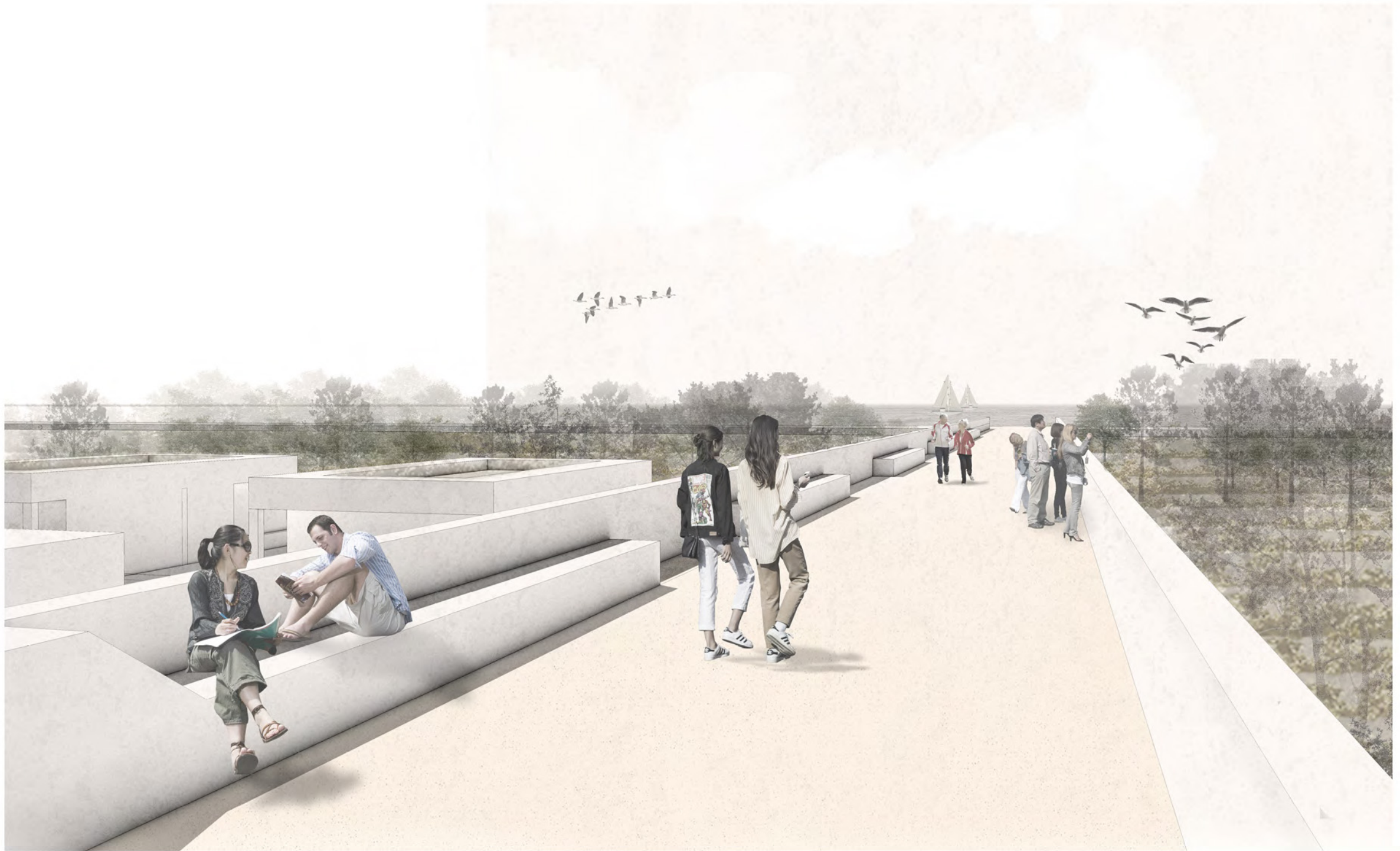
ADAPTABLE COMMUNITY

Functionally speaking, the floating community provide dwelling space and natural habitat. Constructionally speaking, the floating house and green board can be adaptable to sea level rise. Instead of giving up homes before being submerged by sea water, the active structure of the community can rise and fall with the sea level, and thus preserve peoples' homes.

TOP ROW
0' sea level rise

MIDDLE ROW
6' sea level rise

BOTTOM ROW
6'+ sea level rise



COMMUNITY
Bridge leads people to the sea



OYSTER FARM
Oyster production and education



MARSH
Provide habitat and prevent shoreline erosion

