A dialog between people and landscape:
the Aliki Wetland Ecosystem as a starting point to explore Naxos Island, Greece

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27/06/2024
CWS
P5 Presentation



Naxos island

- Located in Cyclades, South Aegean

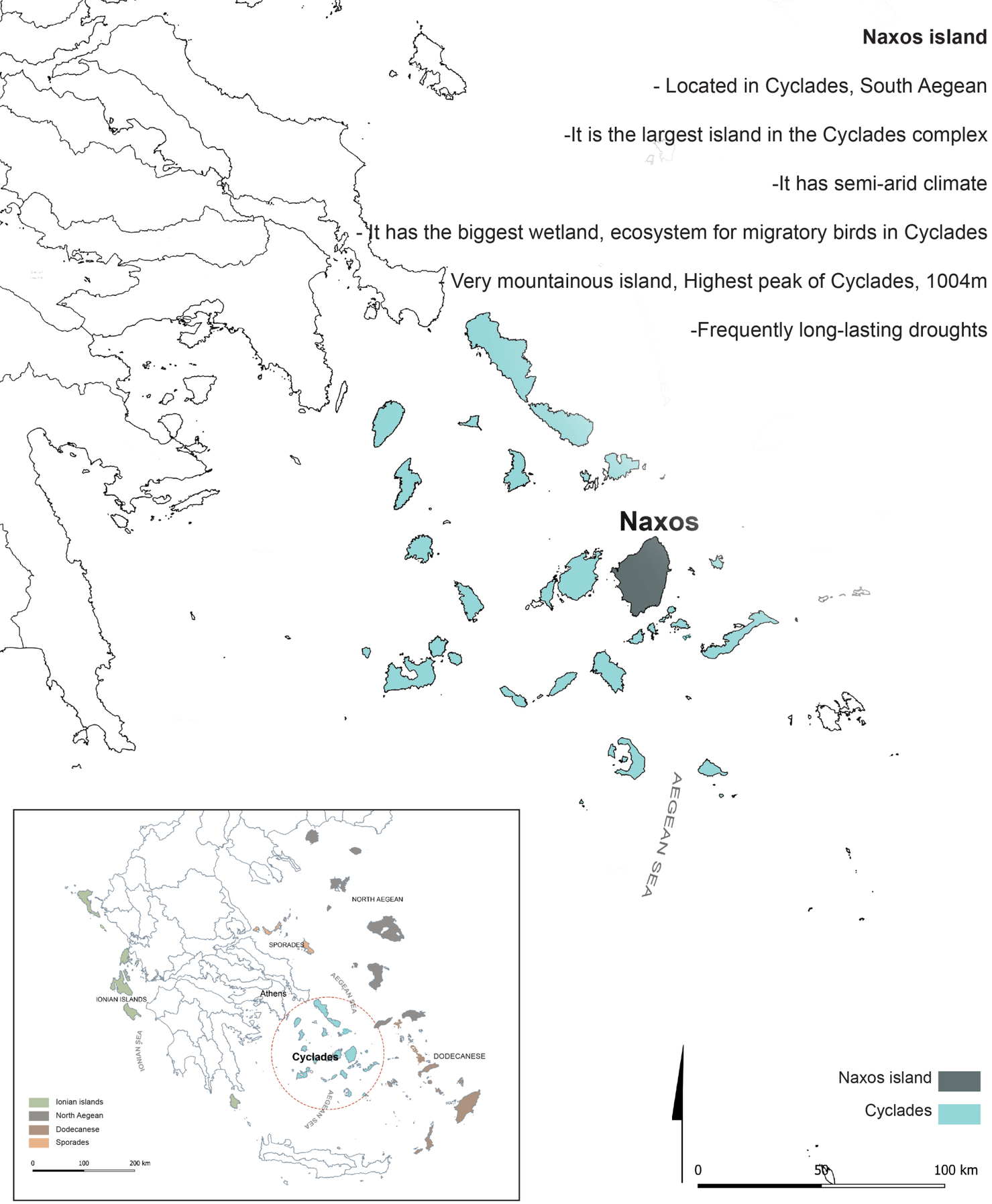
-It is the largest island in the Cyclades complex

-It has semi-arid climate

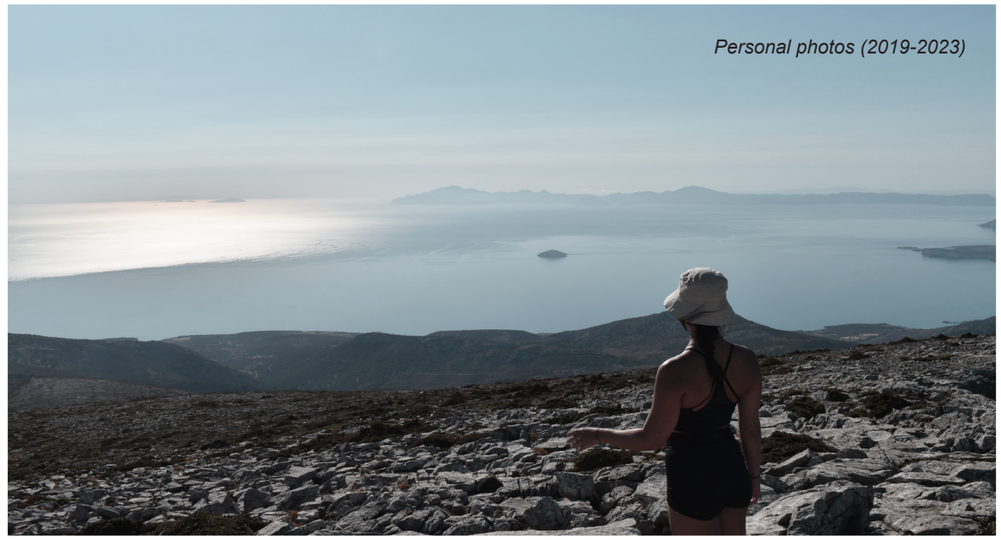
- It has the biggest wetland, ecosystem for migratory birds in Cyclades

Very mountainous island, Highest peak of Cyclades, 1004m

-Frequently long-lasting droughts



Personal photos (2019-2023)





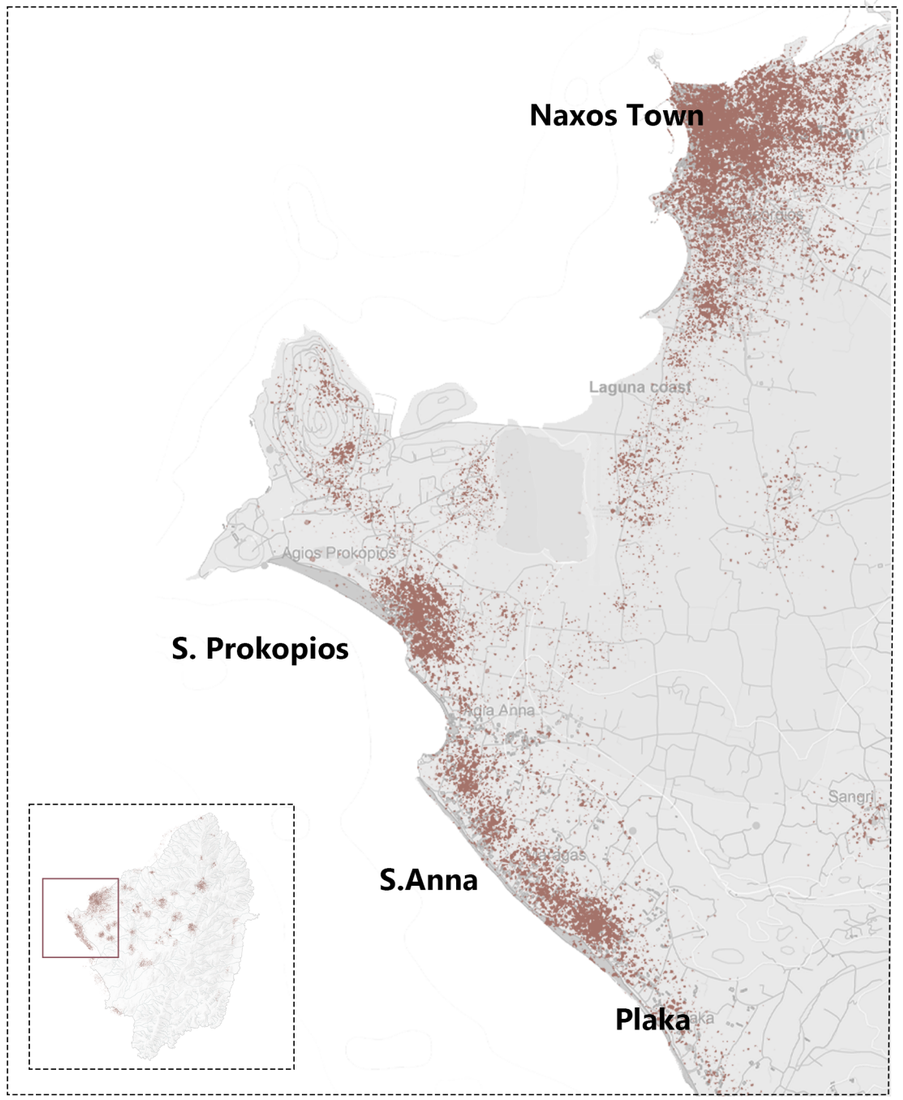


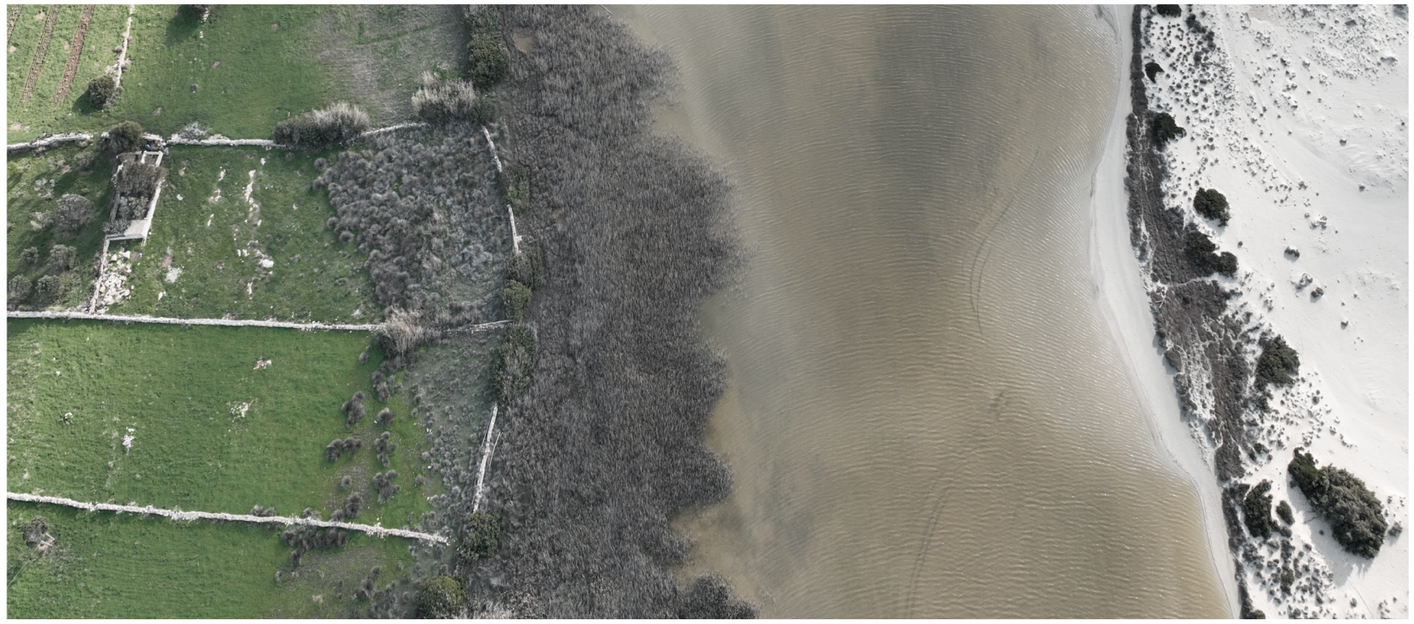






CURRENT SITUATION OF THE ISLAND









Naxos town and S. Prokopios, S. Anna and Plaka

73 % of island's population

Villages in the central island

20 % of island's population

Rest (East Naxos, South and North Naxos)

7 % of island's population

THE ALIKI WETLAND AS A STARTING POINT

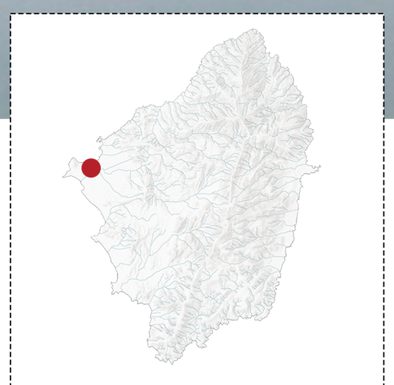








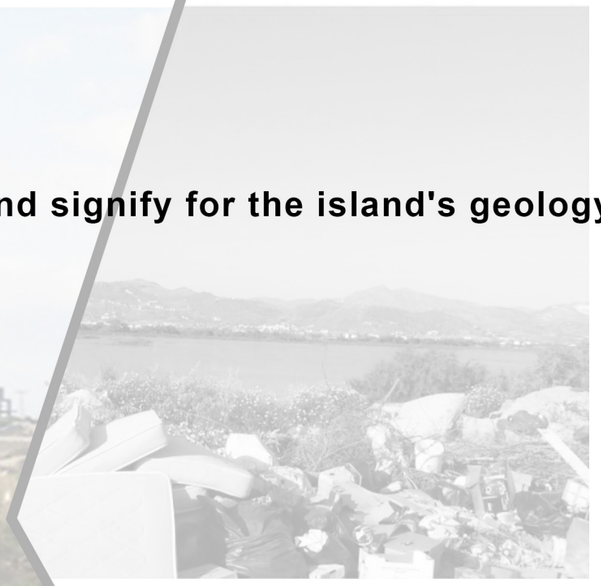




Naxos Wildlife Protection
https://naxoswildlifeprotection.com/lagoon-the-wildlife-refuge/

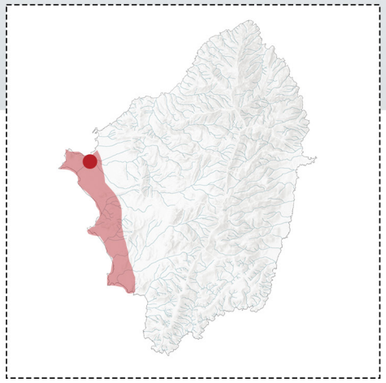
What does the location of the wetland signify for the island's geology?





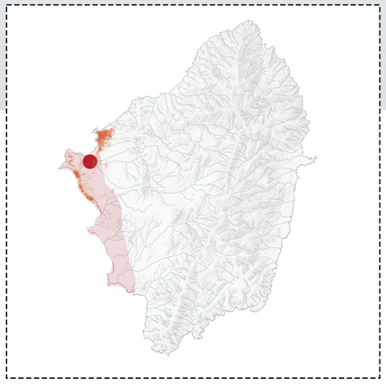


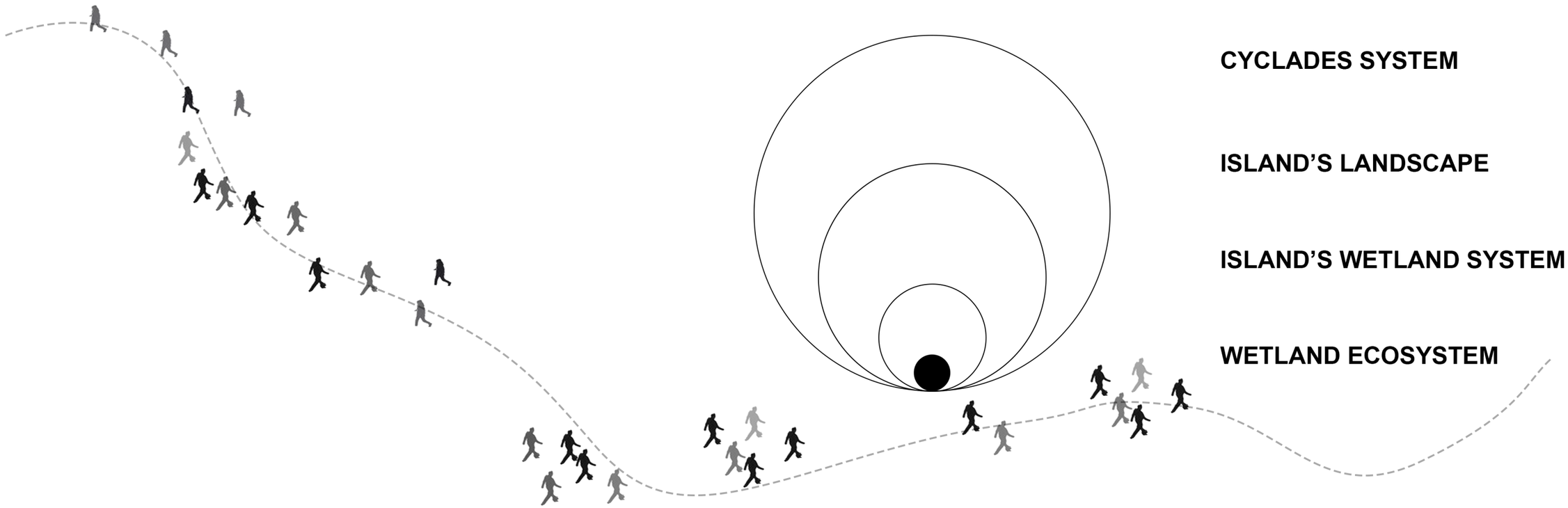




What does the location of the wetland signify for the island's geology?

Why are all these infrastructures and tourism developments evolving in the same area?







ANALYSIS AND
STRATEGY



ANALYSIS AND
STRATEGY

FRAMEWORK



ANALYSIS,
STRATEGY AND
PRINCIPLES

REGIONAL MASTERPLAN

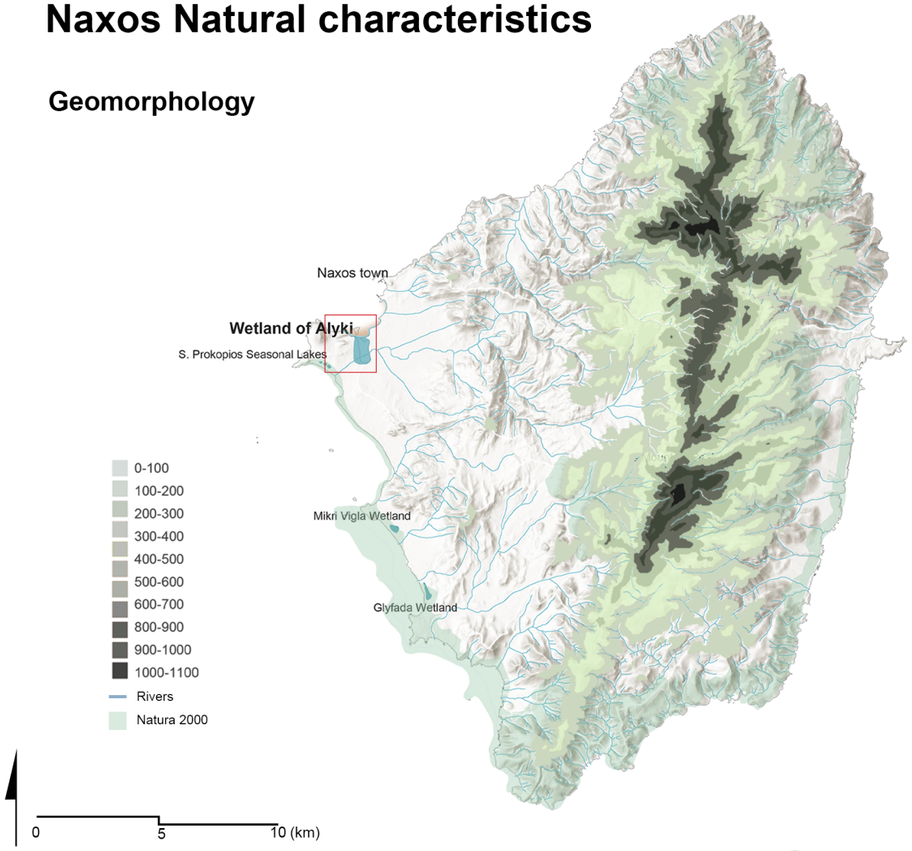


ANALYSIS,
STRATEGY,AND
PRINCIPLES

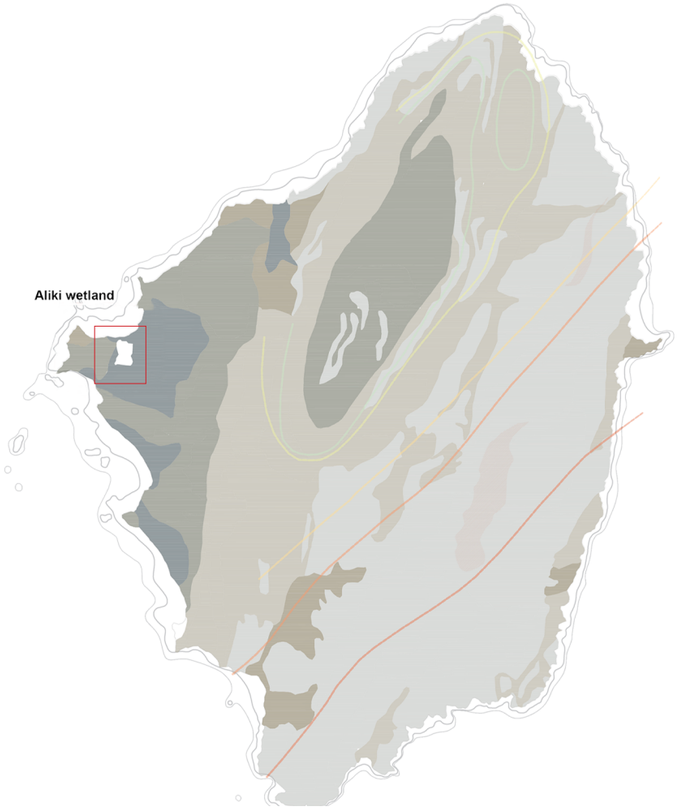
DESIGN

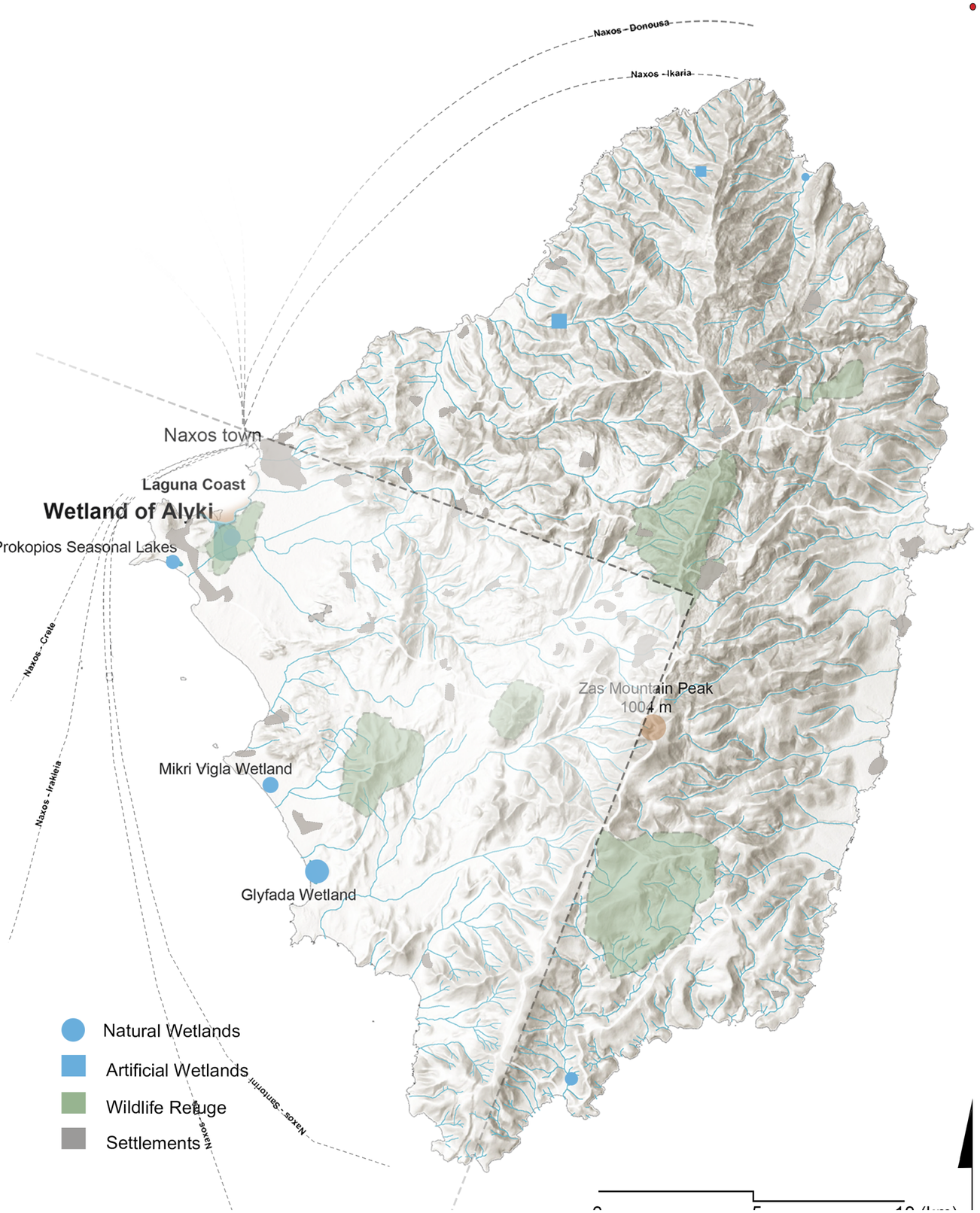
Naxos Natural characteristics

Geomorphology



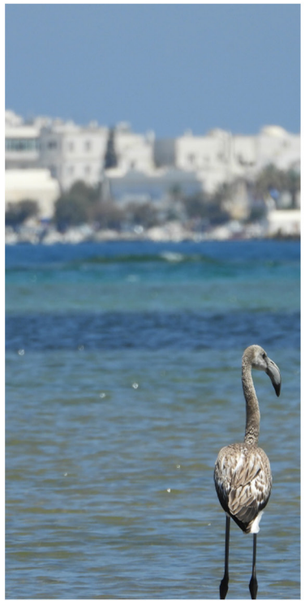
Geology





The importance of Cyclades wildlife refuges for migratory birds

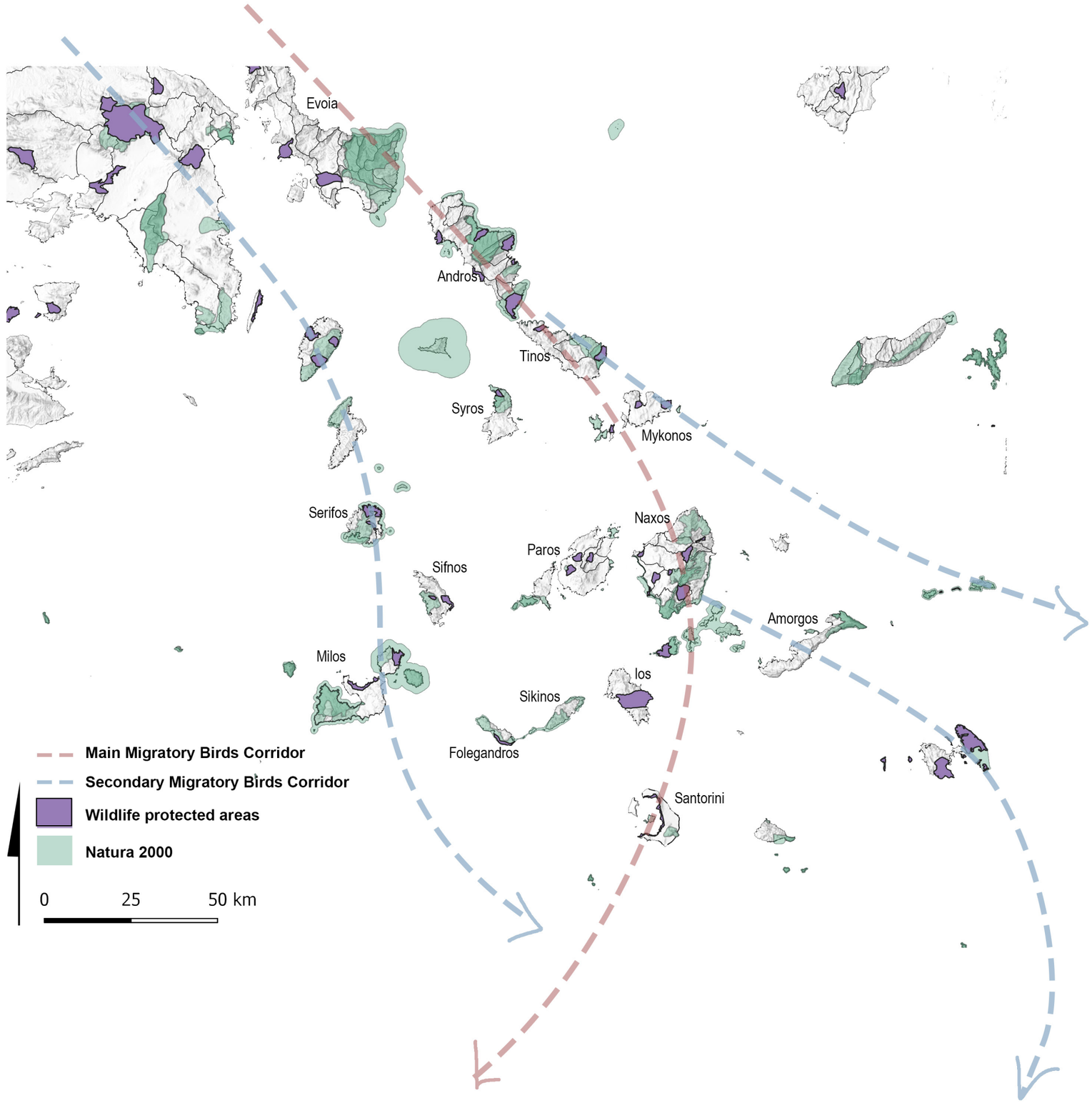




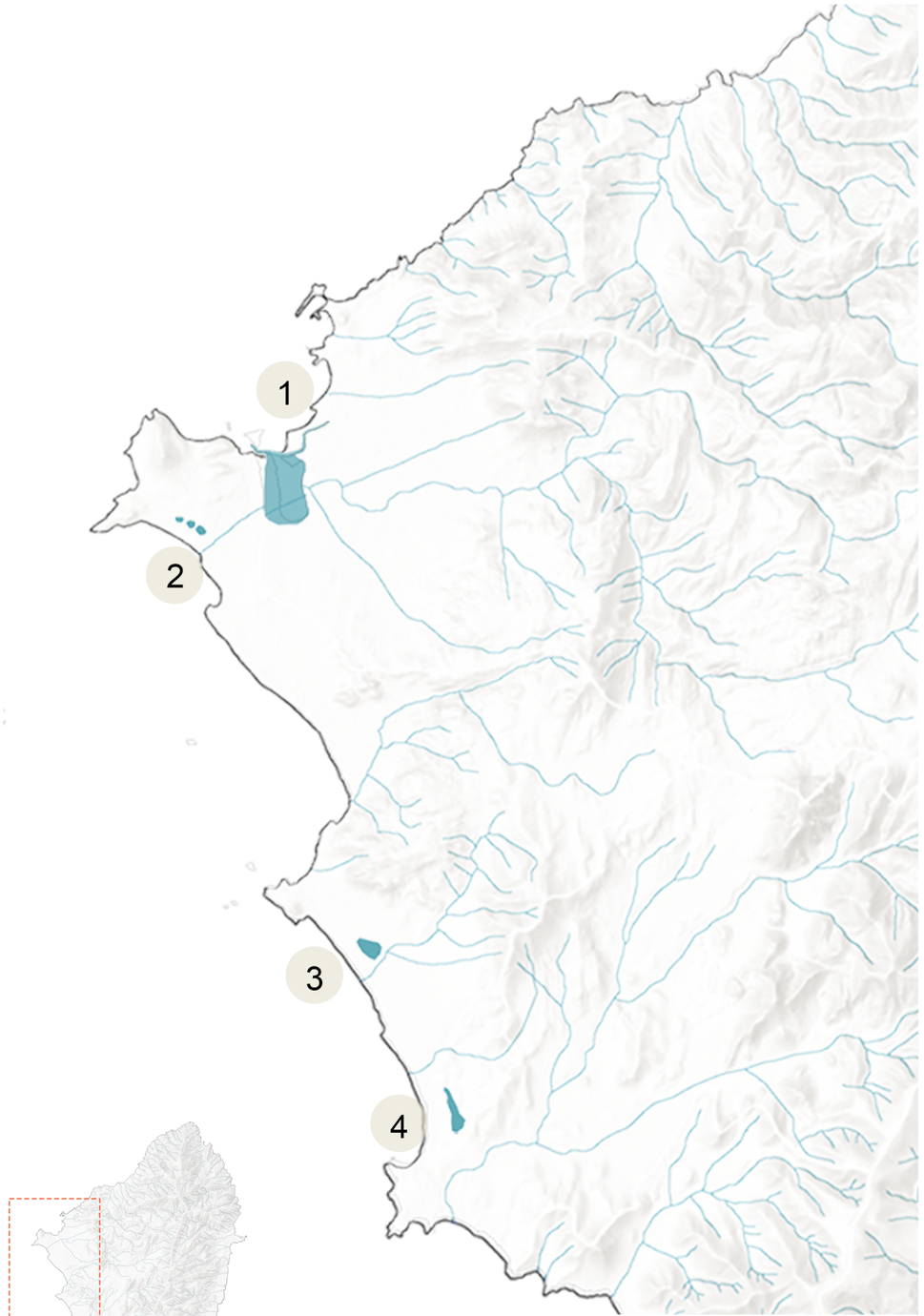




Lagoon, the wildlife “Refuge.” (2022)



The wetlands system: Seasonal Differences



1

ALIKI WETLAND 170 ha

2

S. PROKOPIOS WETLAND 8 ha

3

MIKRI VIGLA WETLAND 6,5 ha

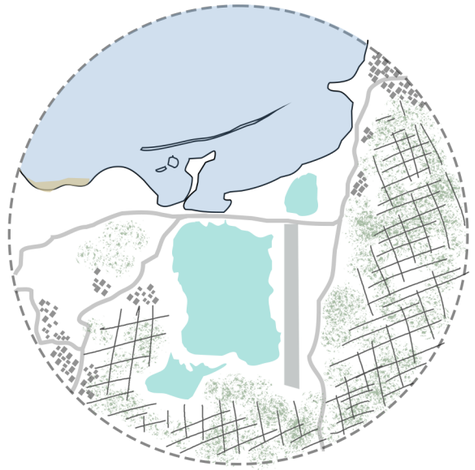
4

GLYFADA WETLAND 8,3 ha

WINTER	SUMMER
	
	
	
	
(Lagoon, the Wildlife "Refuge," 2022f)	*Vasilis Tsakoniatis (2023)*
Niki Evelpidou (2017)	*Vasilis Tsakoniatis (2023)*
Niki Evelpidou (2017)	*The lagoon of Mikri Vigla (2018, May 17)*
Michalis Fragoulopoulos (2024)	*Naxossmallcyclades and Naxossmallcyclades (2018)*

The surrounding environment of the wetlands

What do the specific characteristics of the wetlands reveal for their potential use?



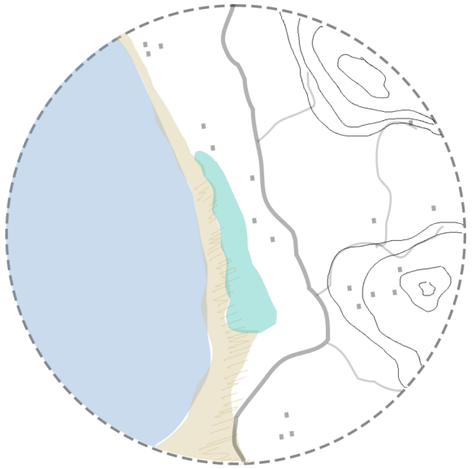
Alyki Wetland



S. Prokopios Wetland

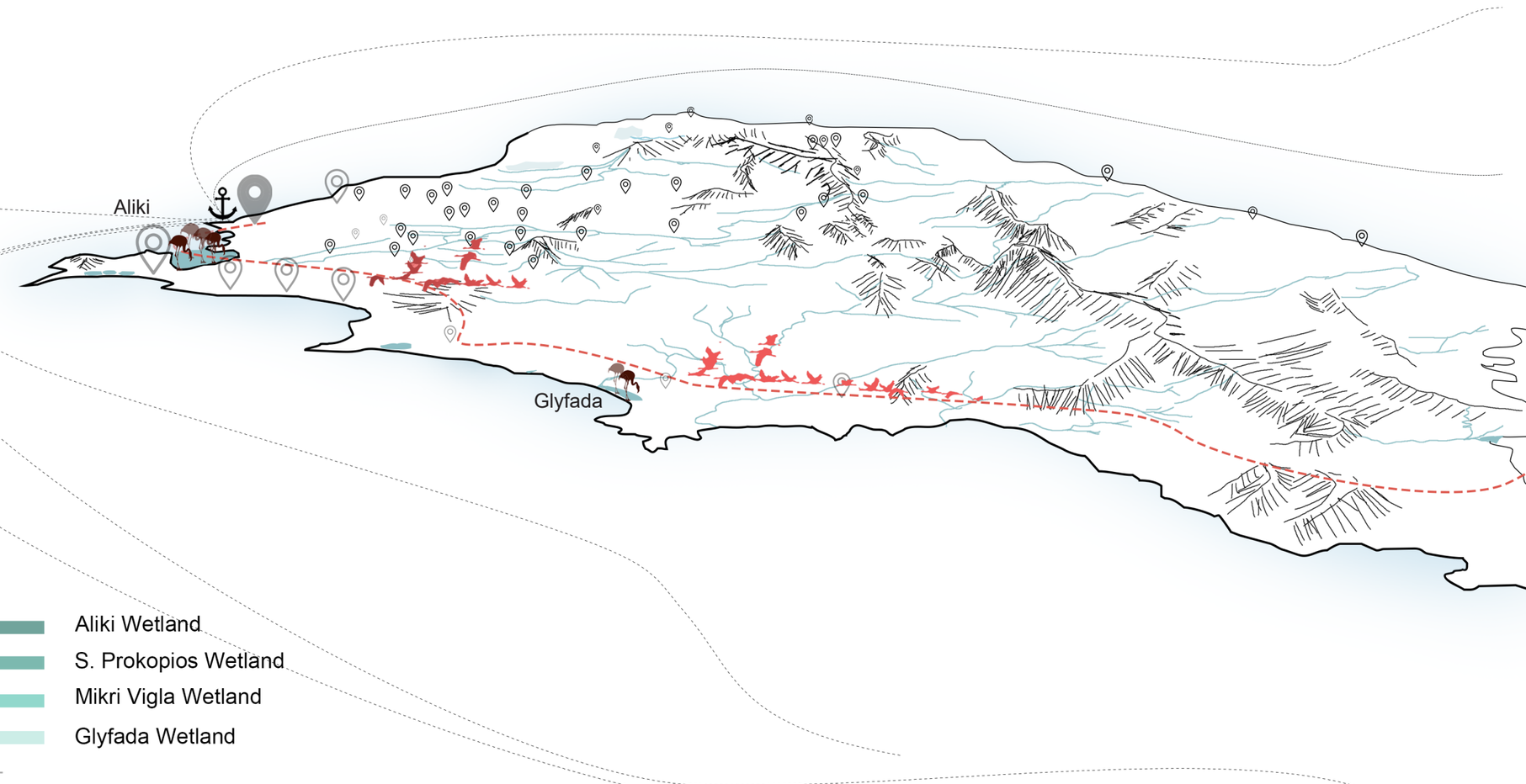


Mikri Vigla Wetland



Glyfada Wetland

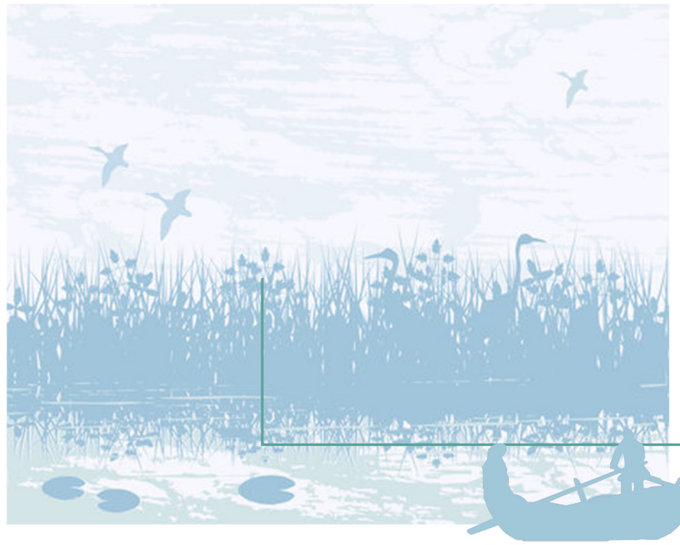




Aliki Wetland
S. Prokopios Wetland
Mikri Vigla Wetland
Glyfada Wetland

Mikri Vigla Wetland

S. Prokopios salt pits

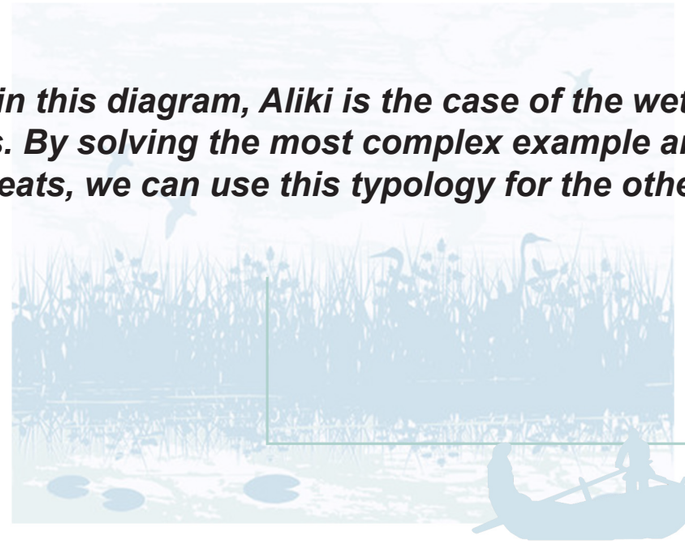


Glyfada Wetland

Aliki Wetland

Mikri Vigla Wetland

As it is represented in this diagram, Aliki is the case of the wetland that challenges the most parameters. By solving the most complex example and being aware of its threats, we can use this typology for the others.



St Prokopios salt pits

Glyfada Wetland

Aliki Wetland

Naxos Wildlife Protection

The Aliki Wetland

What do the specific characteristics of the wetlands reveal for their potential use?

01

The biggest and most significant wetland in Cyclades

- **Huge size (120 ha)**
- **Many different habitats for flora and fauna**
- **Ornithological significance**



The Aliki Wetland

Naxos Wildlife Protection

The biggest and most significant wetland in Cyclades

- **Huge size (120 ha)**
- **Many different habitats for flora and fauna**
- **Ornithological significance**

73 species are directly dependent on the Aliki wetland, they are completely specialized in wetland habitats, and would not respond regularly in the area without the precence of the wetland

60 species have been observed by members of EU to use the wetland for resources nd foliage

34 species are depended on the wetland but can also been observed in other terrestrial or marine habitats

AUTUMN
52 Bird species



SUMMER
36 Bird species



WINTER
60 Bird species



SPRING
114 Bird species



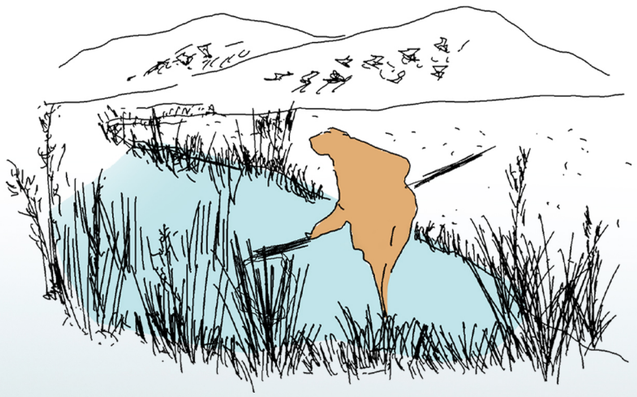


Naxos Wildlife Protection

02

Cultural Significance

- Salt production
- Fishfarm
- Ancient port





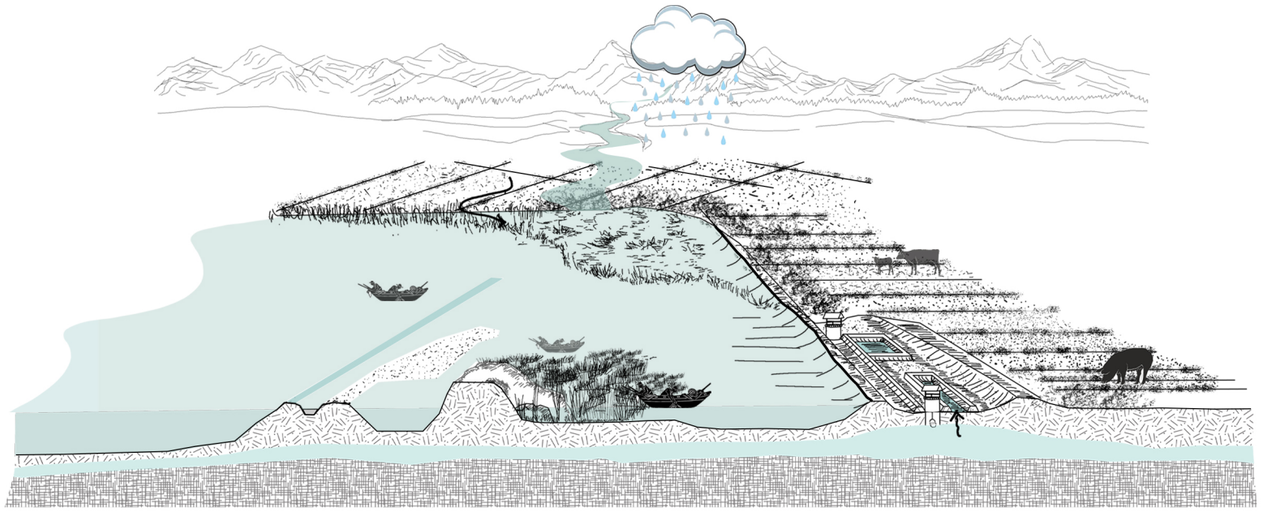




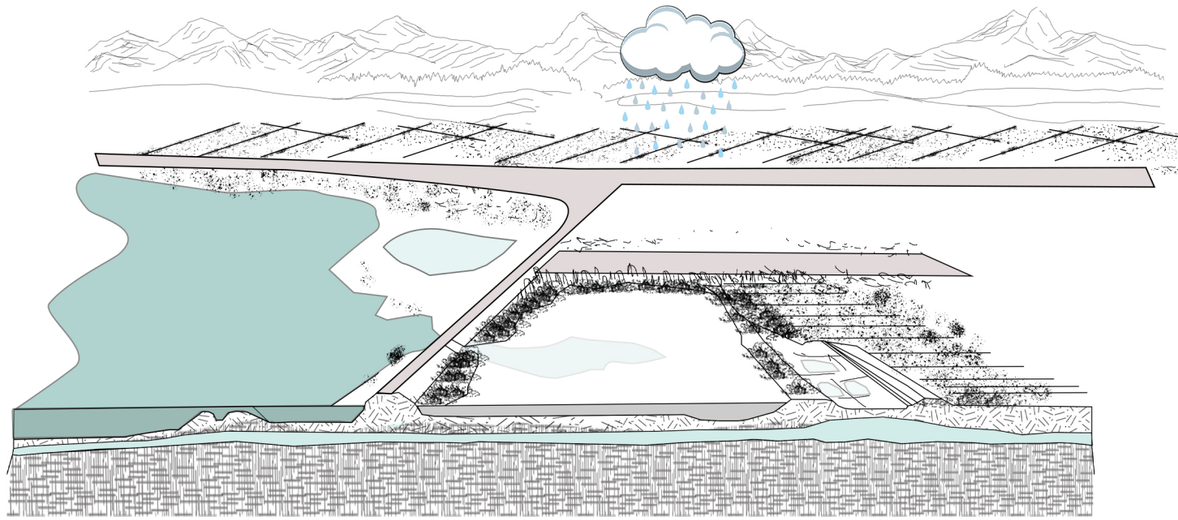
The Aliki Wetland

Naxos Wildlife Protection

1940

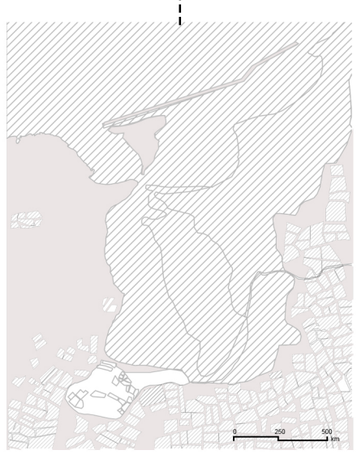


1996



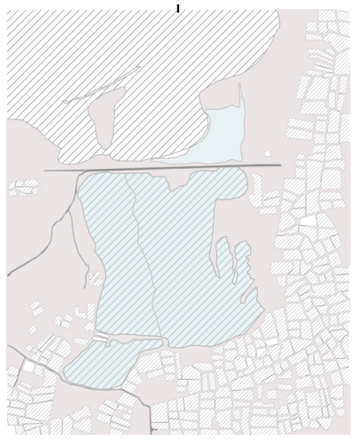
1638
13th-16th century
Alyki was a station of the Venetian salt trade (Petanidou, 1987)

1940
The lagoon was an important natural fish farm



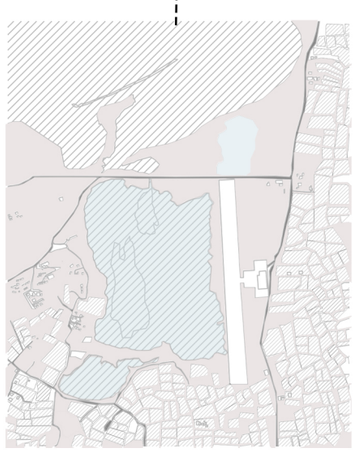
1950s
They stopped operating salt the 1950s, as economically unprofitable (Petanidou, 1987)

1960s
A high embankment was created that blocked the free entry of the sea into the lagoon



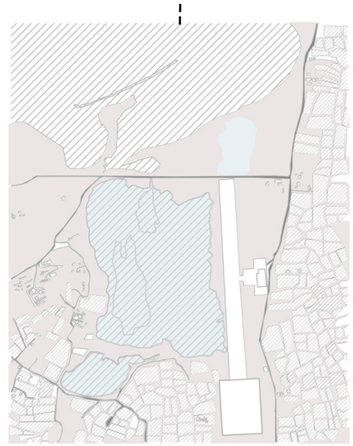
1984
The eastern side of the lagoon marshes was reclaimed, to start the construction of the airport

1996
The only connection with the sea are the "doors", the embankment blocks it invasion of the sea



2000-2023
The tourism is growing really fast, The area around the Alyki is becoming very urbanised

2022
The proposal for the airport extension is being approved



Current situation
The Lagoon is seasonally wet, meaning it goes through a period covered with water and a period when it is completely dry.

03

The nowadays values and strategic position

- **Located in the most urban area of the island**
- **Interesting relation with the existing airport**
- **Still a unique wildlife habitat for significant flora and fauna species**



The Airport

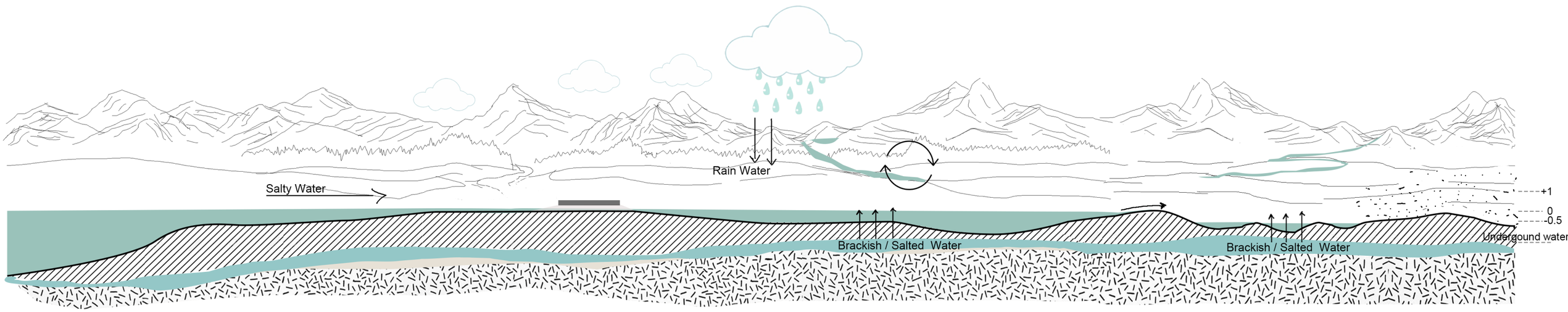
Domestic Airport - Flights from Athens and Thessaloniki
-Small airplanes from 2 Airlines
-19 ha
-Average of 5 flights per day





Existing Situation - The seasonality of the lake

- Seasonal lake - Extended periods of droughts
- Alluvial deposits and a high water table





Lagoon, the wildlife “Refuge.” (2022, September 15).



Lagoon, the wildlife “Refuge.” (2022, September 15).



Personal photo, 2023



Personal photo, 2023

WET SEASON
November to March

DRY SEASON
June to September



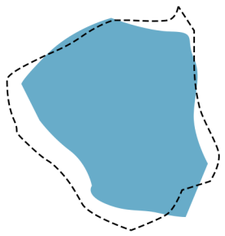




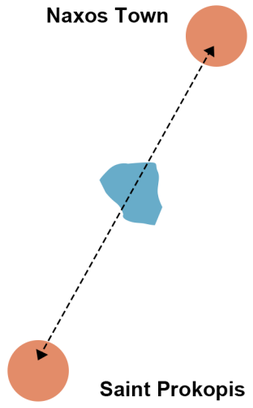


How can landscape architectonic principles be employed to create a more resilient synergy and spatial integration between modern developments and nature preservation in the Aliki Wetland and its broader network in Naxos?

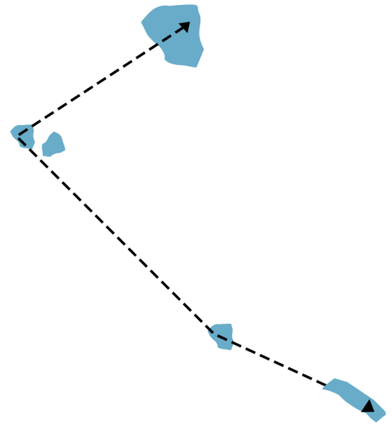
Landcape Transformaitons in and around the Aliki Lagoon



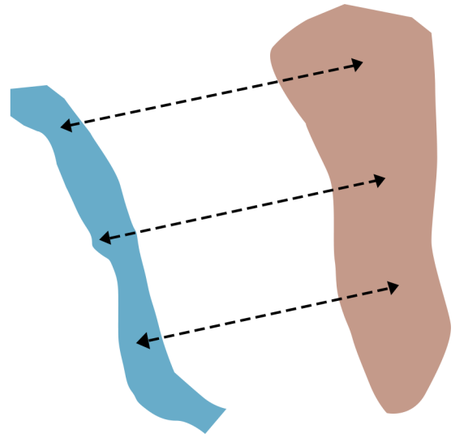
All year Connections between Urban Areas



Recreational Seasonal Connections Wetland Networks



Recreational Seasonal Connections Eco-touristic Approach



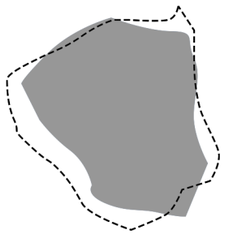
Integrate the wetland to its environment → Integrate the wetland to the broader wetland system → Follow the wetland's paradigm to protect and revitalize the others → Create a network and promote the idea of eco-tourism → Organically the idea will expand to the broader scale

Single Wetland Protection and Revitalization (The most difficult example)

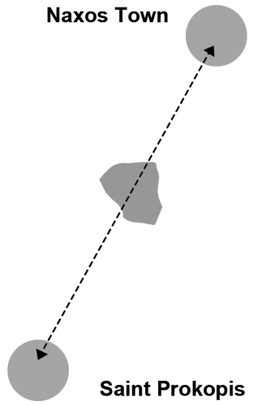
SUSTAINABLE DEVELOPMENT OF THE ISLAND IN NATURAL AND CULTURAL LEVEL

Design Concept

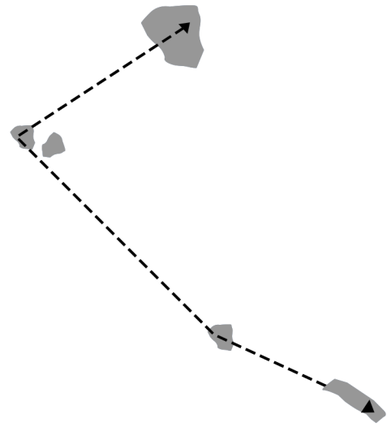
Landcape Transformaitons in and around the Aliki Lagoon



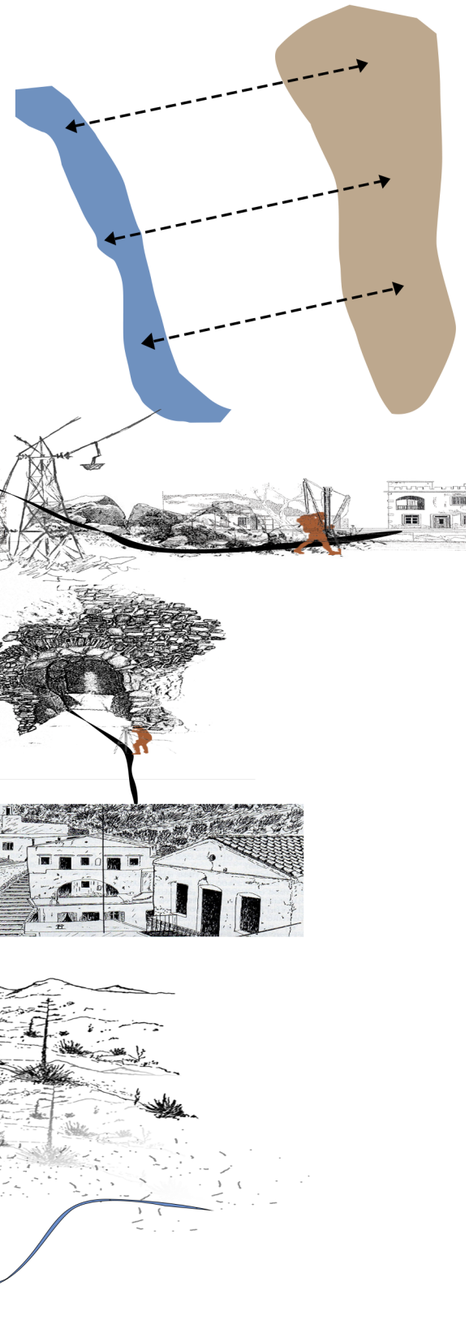
All year Connections between Urban Areas



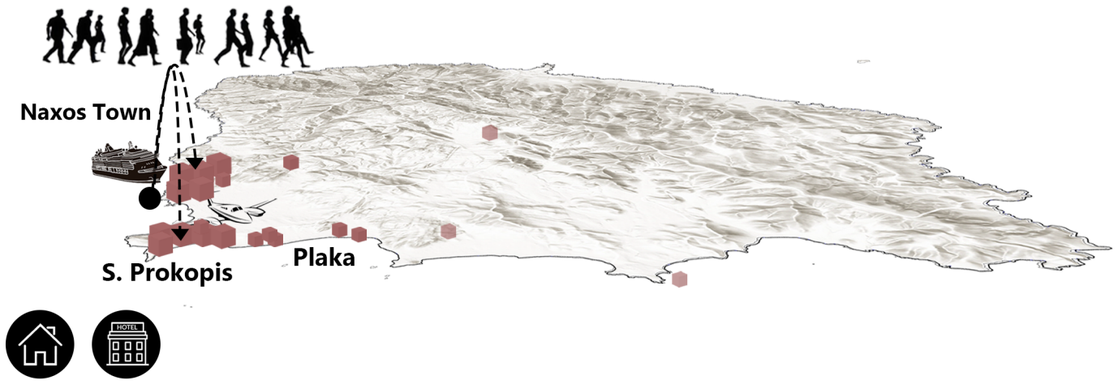
Recreational Seasonal Connections Wetland Networks

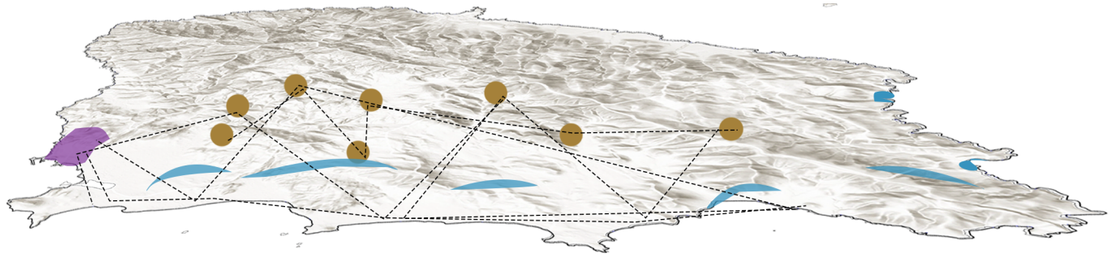


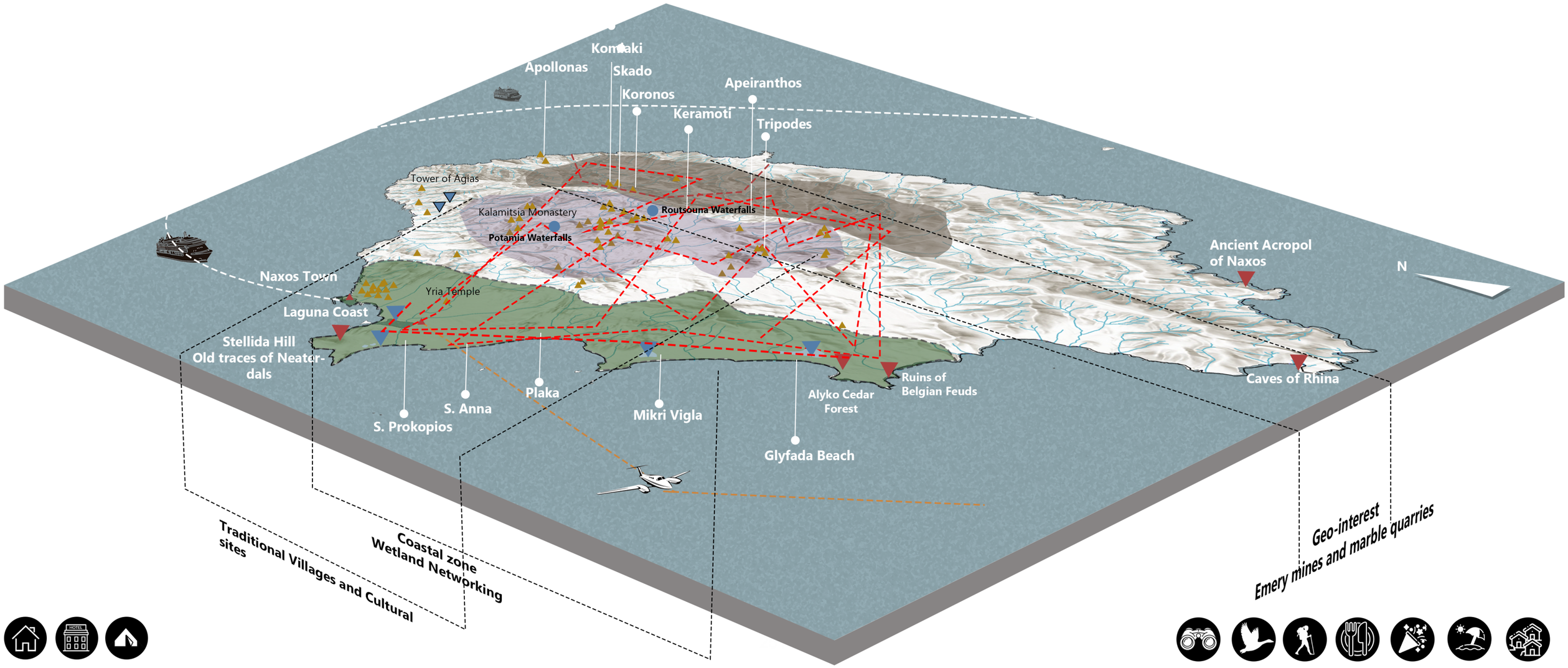
Recreational Seasonal Connections Eco-touristic Approach

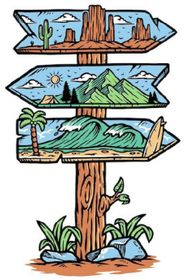


Resilient touristic model promoting eco tourism
Framework for Naxos island

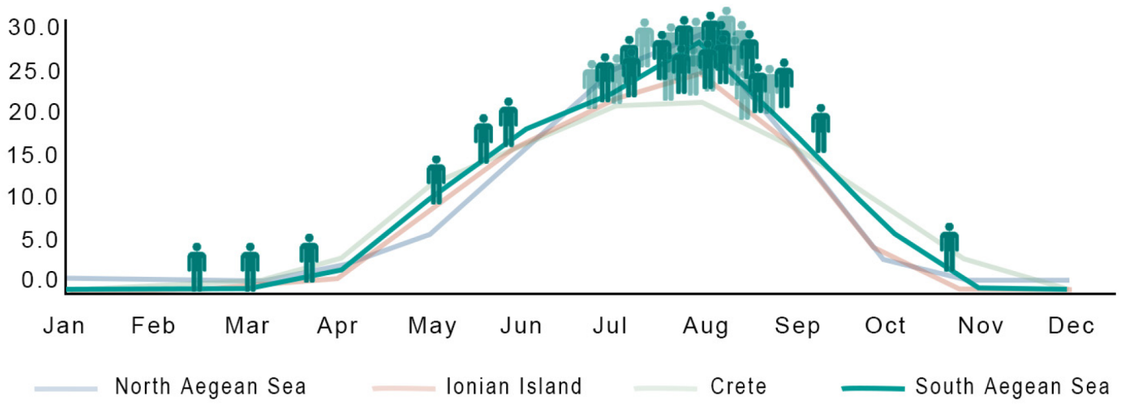




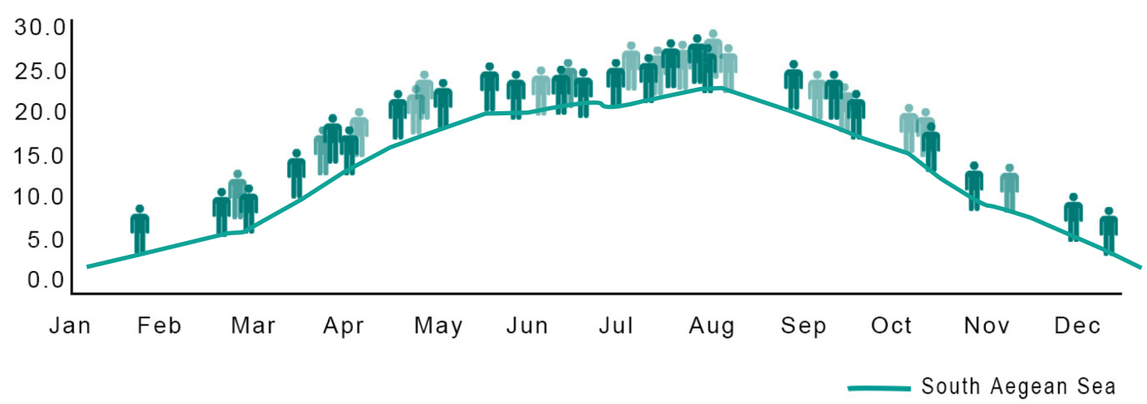




Eco-tourism Development
Landscape Contribution



Monthly concentration of overnights in island sample (2008–2018),
Ruggieri, G.; Platania, M. Islands' Tourism Seasonality: A Data Analysis of Mediterranean Islands' Tourism Comparing Seasonality Indicators (2008–2018). Sustainability 2024, 16, 3674.



Proposed monthly concentration of overnights in Naxos

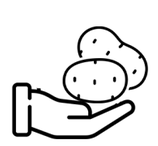
Important income for the island to support eco touristic developments throughout the year



No need for more infrastructures



Protect thetraditional character and the local products of the island since it can support the amount of tourism even in the high touristic period



Positive Natural and Cultural effects of the ecotouristic plan



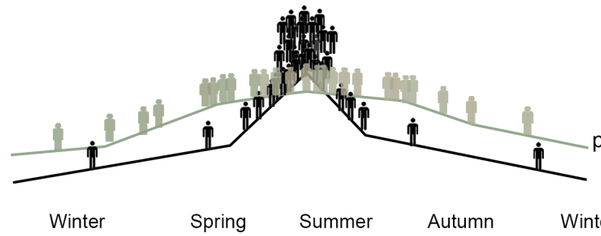
Community Engagement

More locals and young people will find new job opportunities throughout the whole year



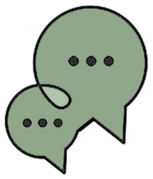
Conservation of Natural Resources

Degraded natural sites due to abandonment or misuse will be restored and enhanced



Low Environmental Impact

Smaller environmental impact compared to mass tourism.
No need for more infrastructures- to deal with mass tourism since it is spred over the year



Environmental Education

Educates visitors on conservation and sustainability, fostering awareness through guided tours and workshops



Research and Monitoring

Scientific research, with a growing number of specialists expected to devel- op new proposals in the future.

Positive Natural and Cultural effects of the ecotouristic plan



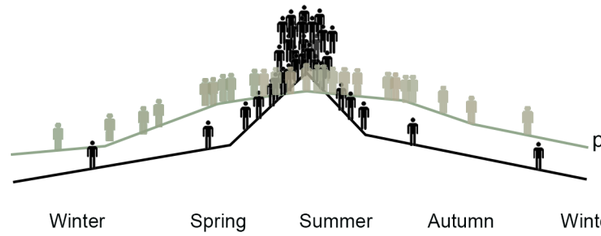
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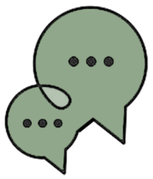
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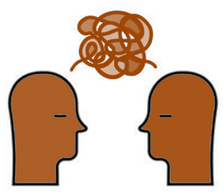
Negative Natural and Cultural effects of the ecotouristic plan



Uncontrolled amount of tourists



Hidden natural sites get polluted by misuse

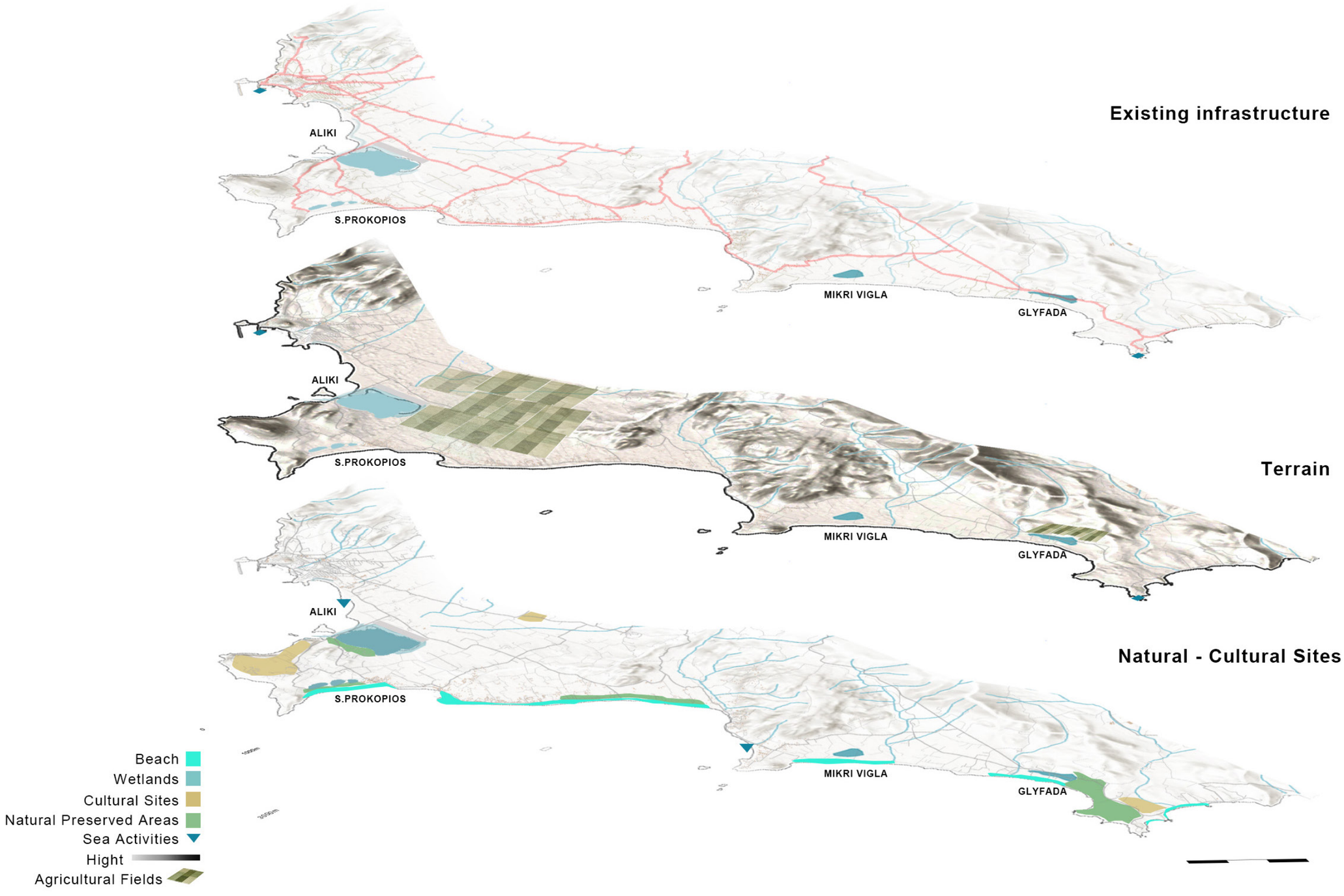


Conflicts between local communities and mis-communication



Specific individuals benefit from this plan, not the local community

The approach of the design at the South-West Naxos
The Wetlands seasonal networking



Different experiences of the cultural and natural environment



1 *Vasilis Tsakoniatis (2023)*





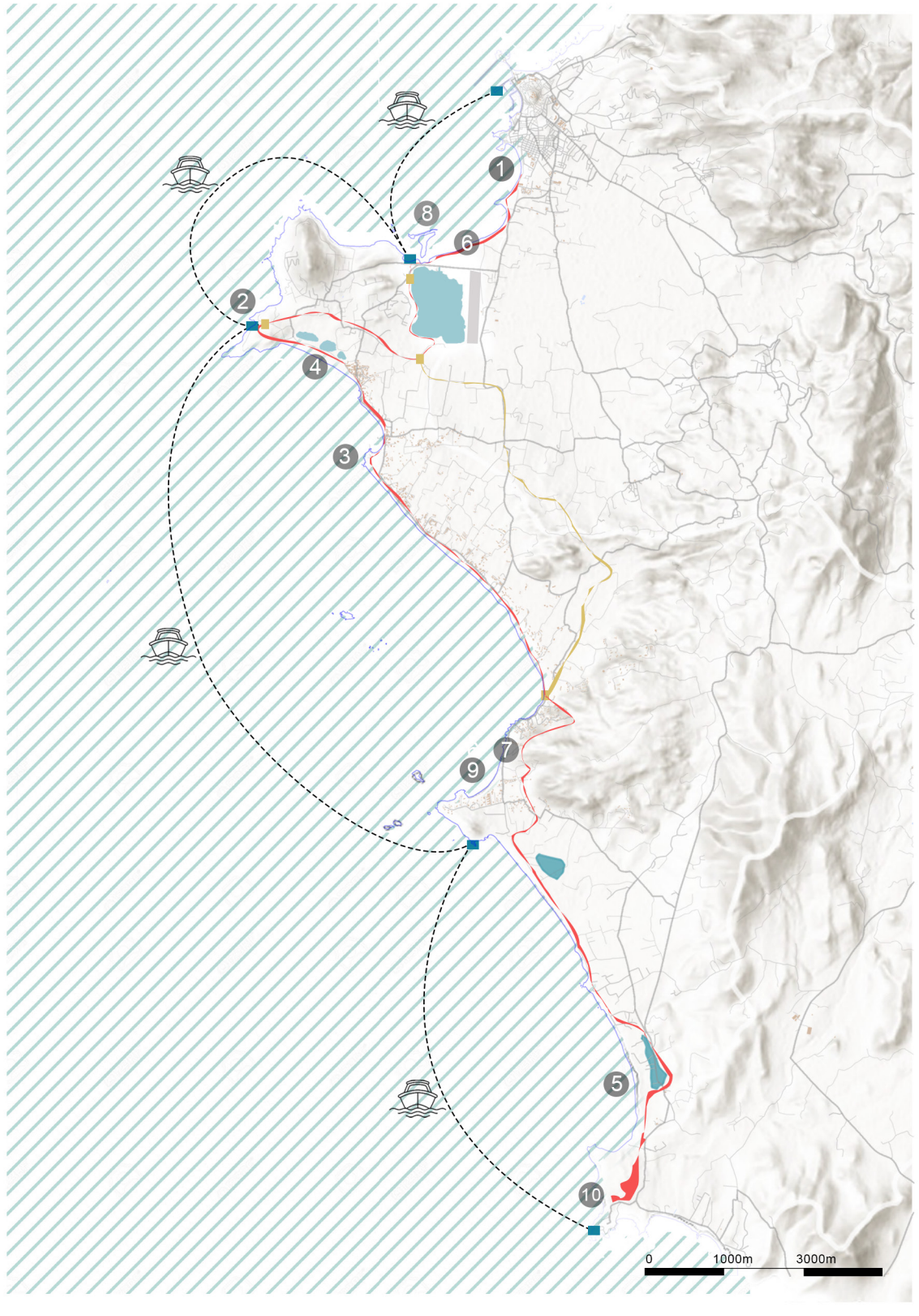
2 3 *Personal Photos(2022)*



4 *LagosMare (n.d.)*



5 *Michalis Fragoulopoulos (2023)*





6 7 *Personal Photos(2023)*



8 *Personal Photos(2023*

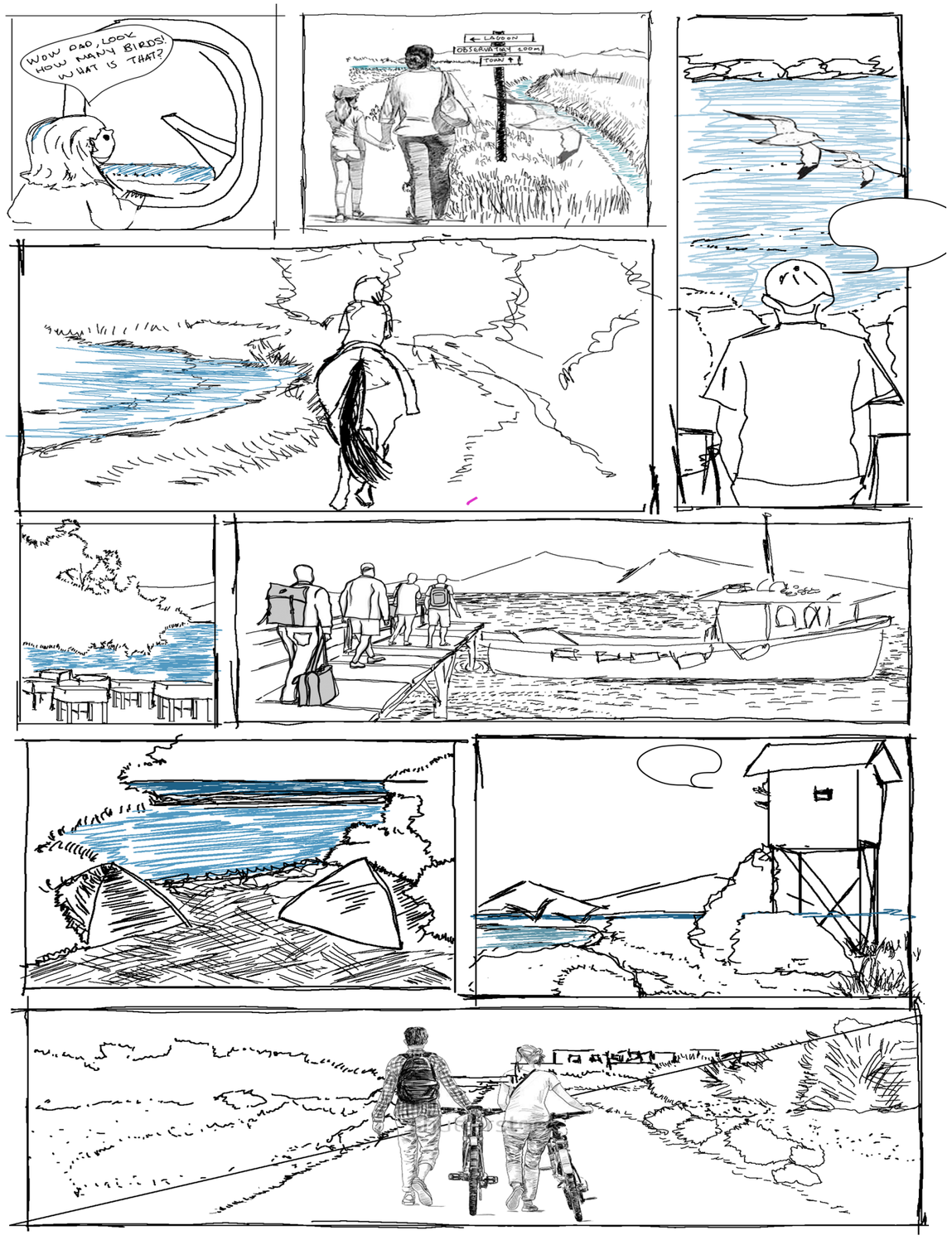


9 *Personal Photos(2023*



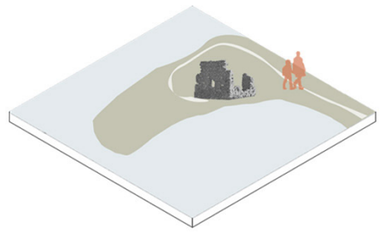
10 *(Iosif Papadopoulos, 2023)*

The narrative

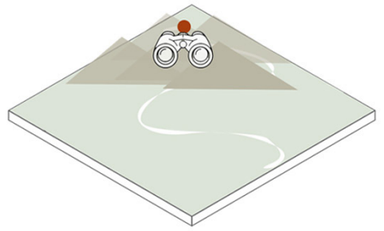


Toolbox

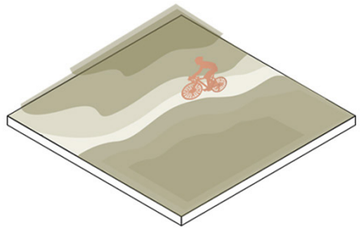
Visits to Cultural sites



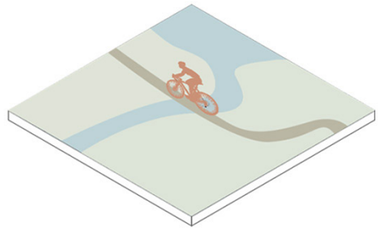
View Points



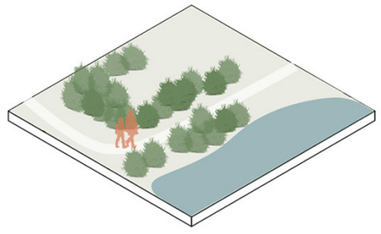
Mountainouus biking routes



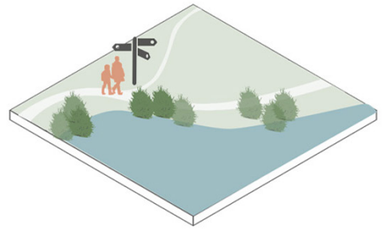
Biking Routes



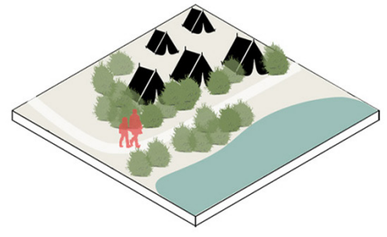
Hiking paths
Wooden Decks in the dunes



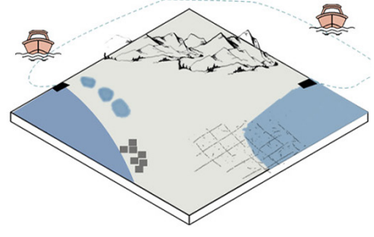
Info Points



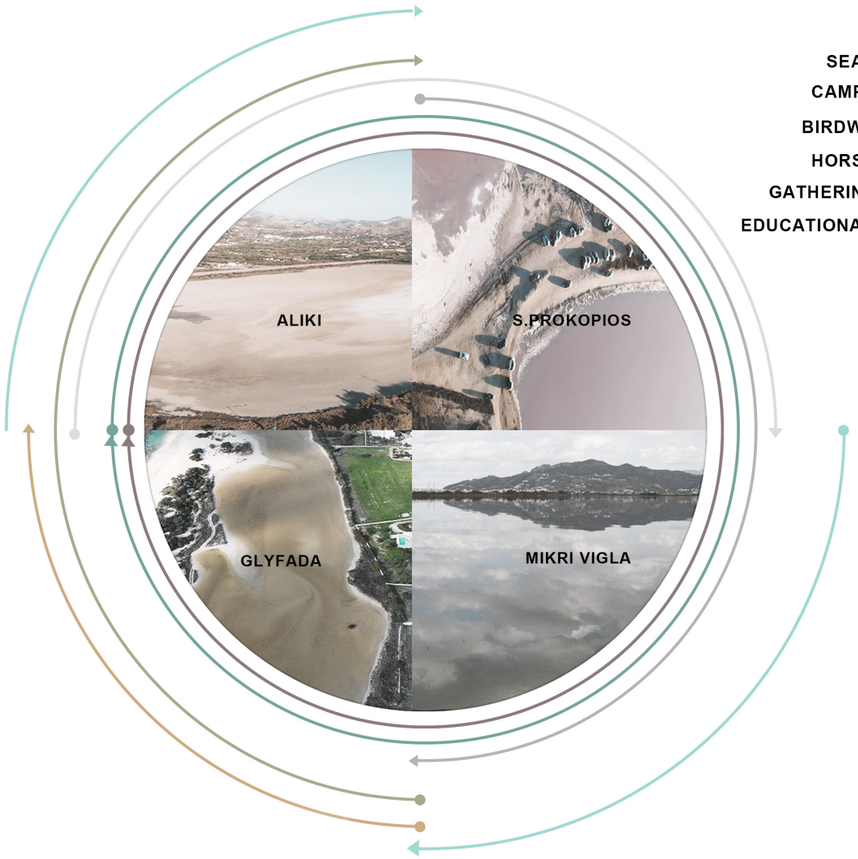
Camping Sites



Connections by Boats

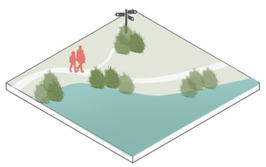


The masterplan and the different activities along the wetlands



SEA SPORTS
CAMPING SITE
BIRDWATCHING
HORSE RIDING
GATHERING AREAS
EDUCATIONAL POINTS
HIKING

Walking Paths



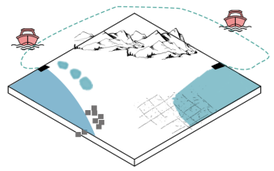
Starting from S. Georgios bay
(400m from Naxos Town)

20 km trekking path
5 stops for changing mobility
4 km in total in hilly terrain

Season: All seasons
Better during Spring + Automn

~ 4 h

Connections by Boats



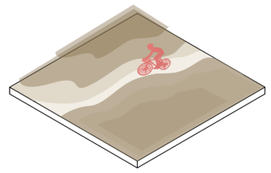
Starting from Naxos Port
(0 km from Naxos Town)

5 stops for changing mobility

Season: Spring Summer Automn

~30 min

Cycling Paths



Starting from Aliki Wetland, Airport
(2.5 km from Naxos Town)

16 km cycling path
4 stops for changing mobility
8 km in total in hilly terrain

Season: All seasons
Better during Spring + Automn

~1h

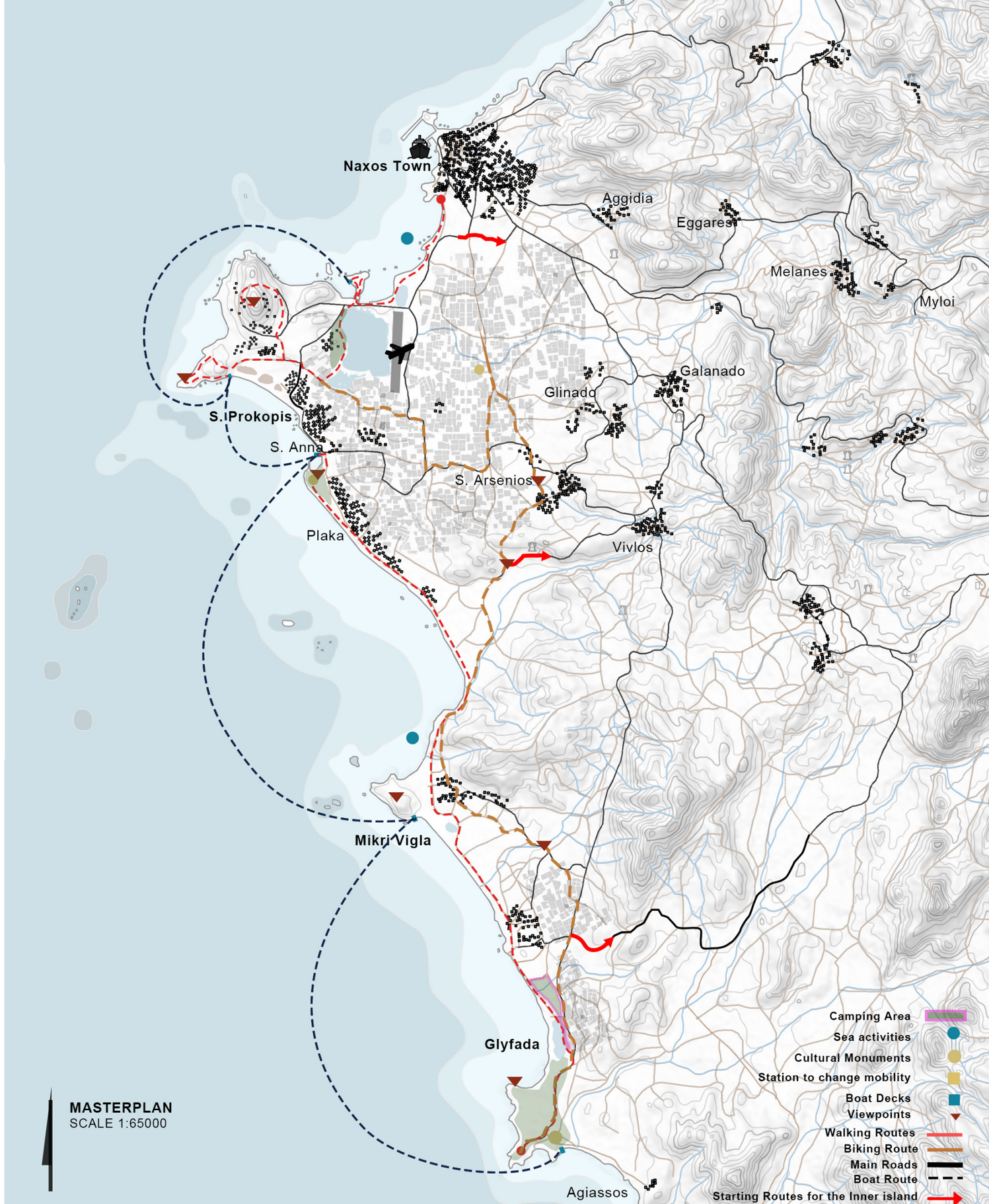


Diagram for the route Naxos Town - S. Prokopis

THE ENVIRONMENT AROUND ALIKI AND S. PROKOPIS WETLANDS



01



02



03



04



05



06



07



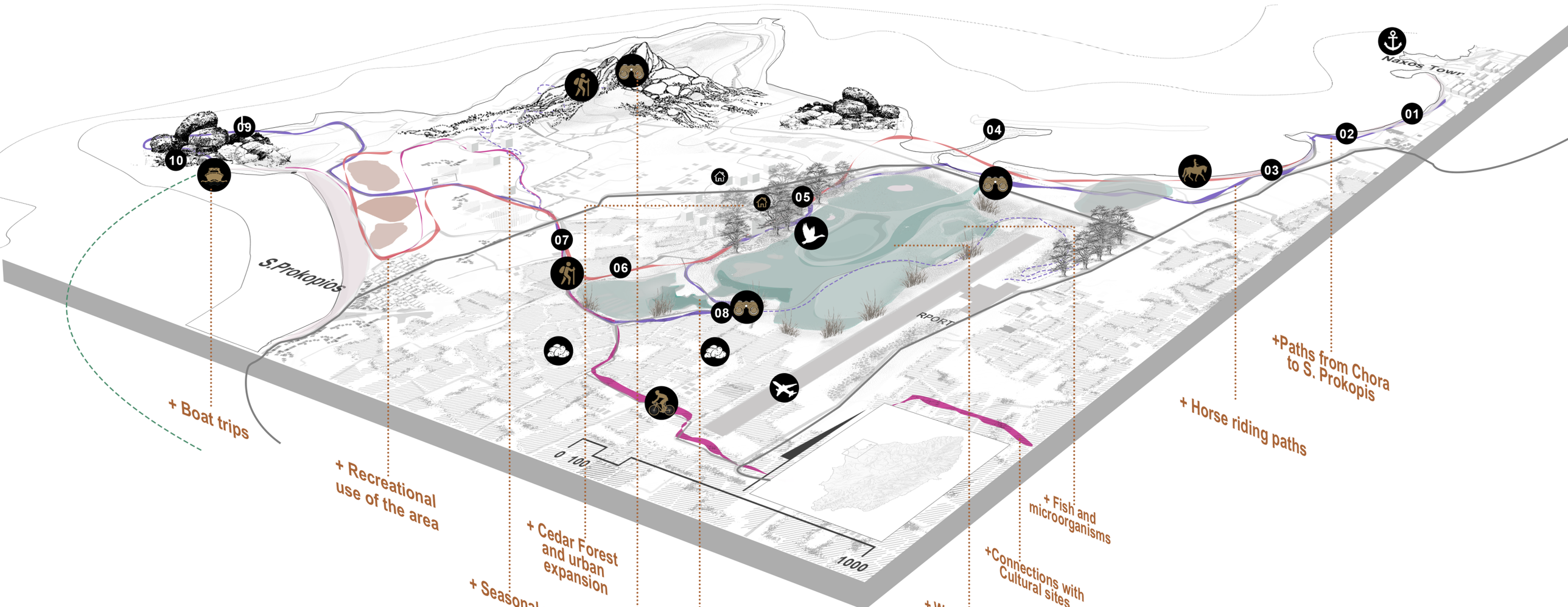
08



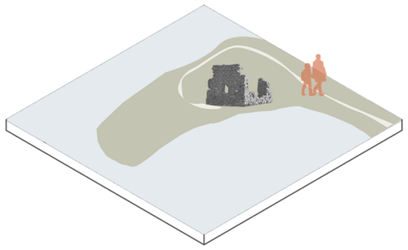
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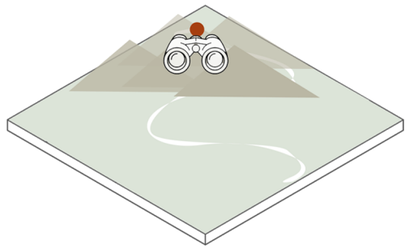
10



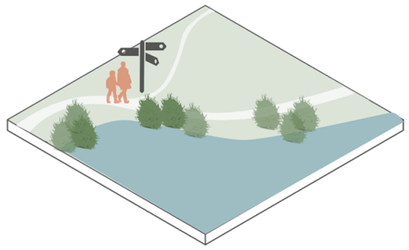
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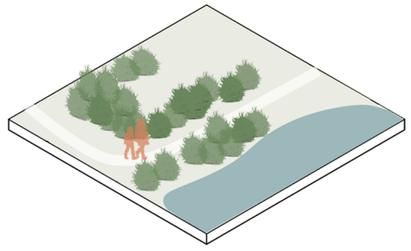
View Points



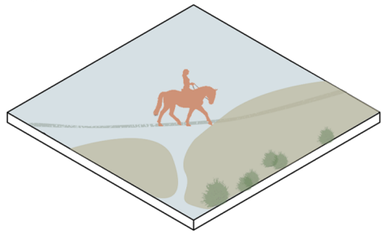
Info Points



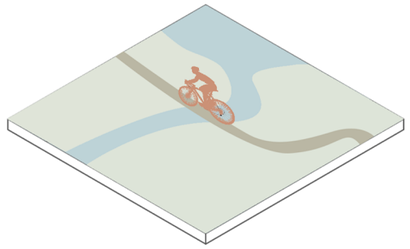
Hiking paths
Wooden Decks in the dunes



Recreational paths
Horse Riding paths form the S. Georgios to S. prokopios beach



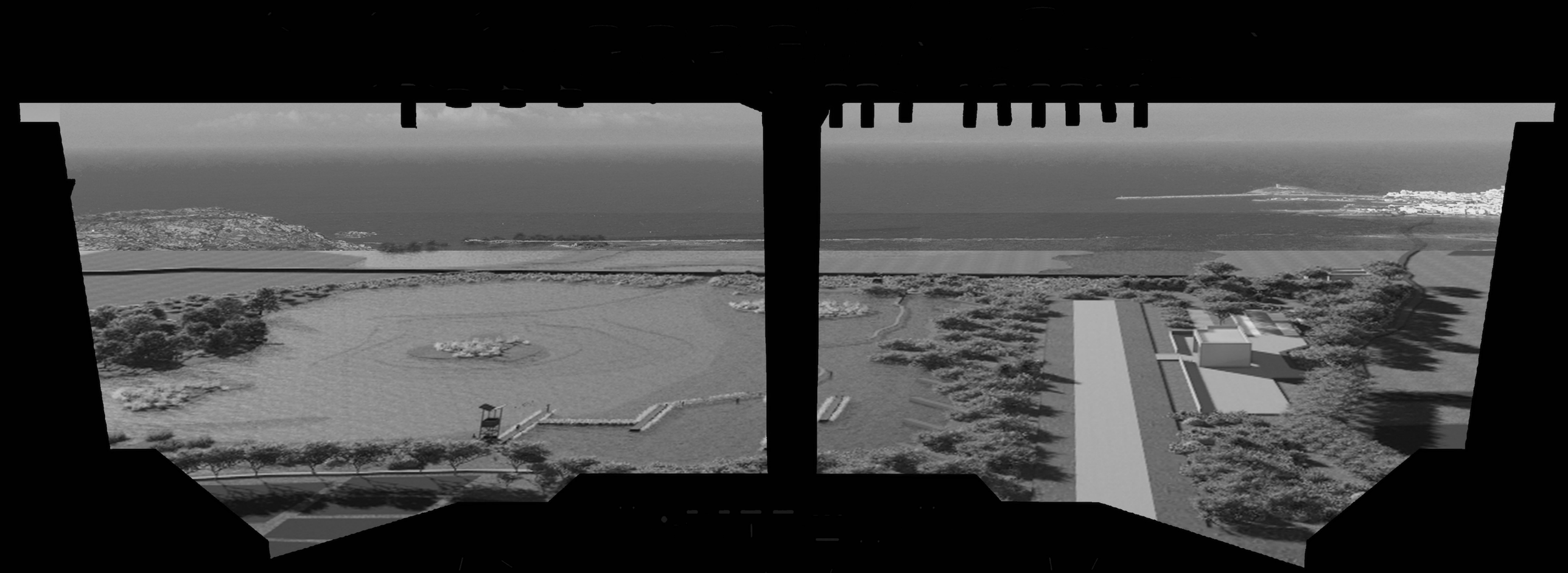
Biking Routes



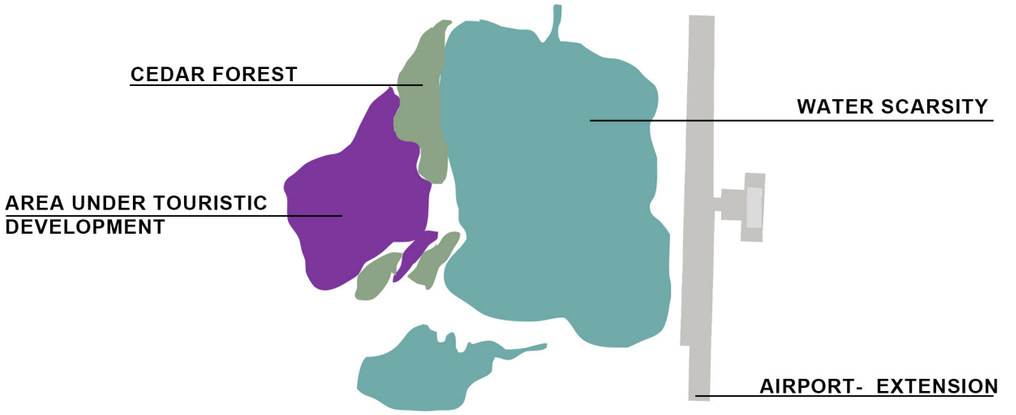


Flying to Naxos Airport

View of the Aliki Wetland



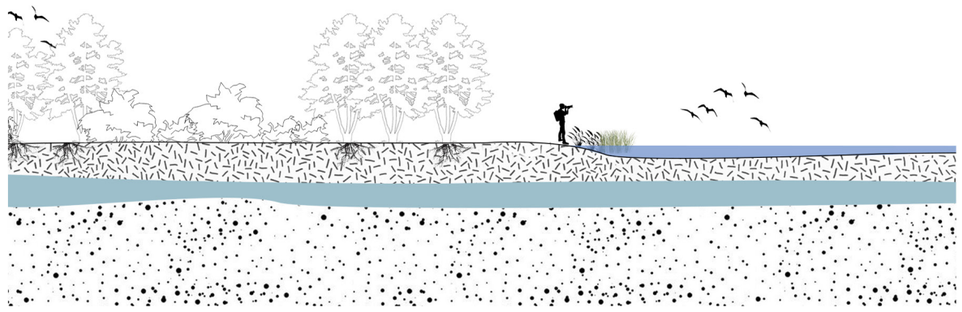
MASTERPLAN
Aliki wetland - Existing situation



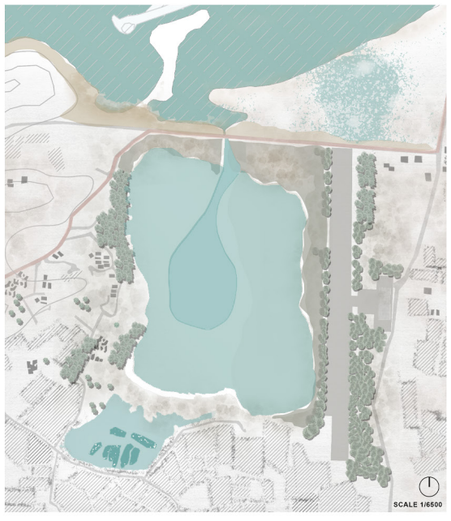
Cedar Forest - Wildlife Refuge

Accessible areas to the lake - Occassionaly people and cars are getting inside

Lake Depth varies to 0.5 - 1.5 m



WINTER

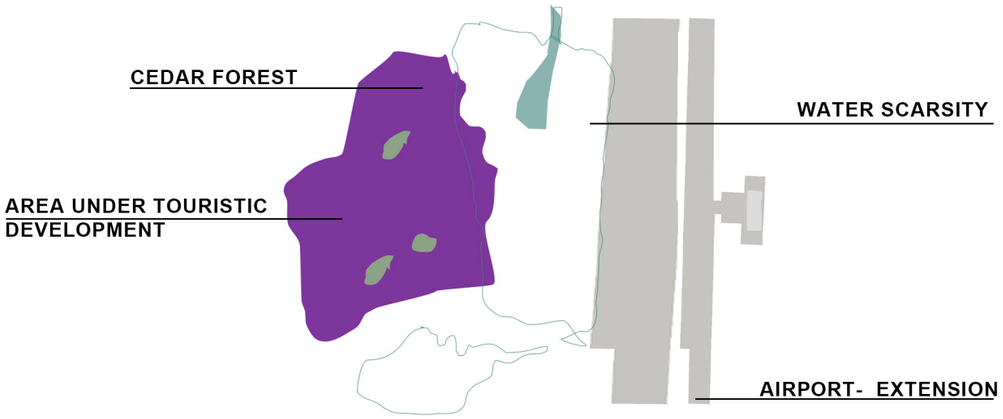


SUMMER





MASTERPLAN
Aliki wetland - With no interventions in 10 years

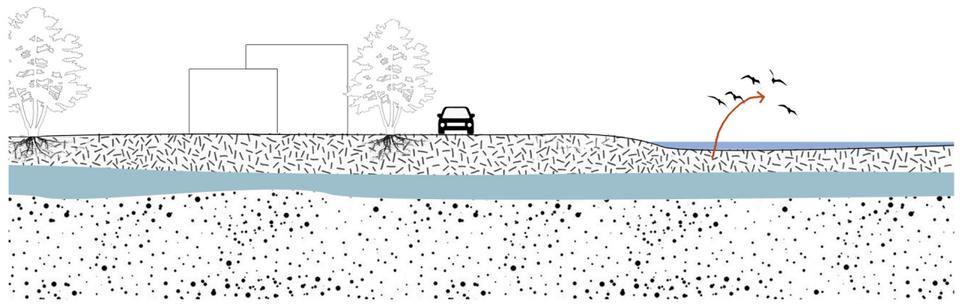


Urban Development with Hotels and Villas will replace the Cedar forest

Dirt Road used occasionally by cars right next to the lake

Accessible area - Used as waste areas for the hotels

Longer periods of droughts - less water hroughout the year



WINTER



SUMMER





GOALS OF THE DESIGN

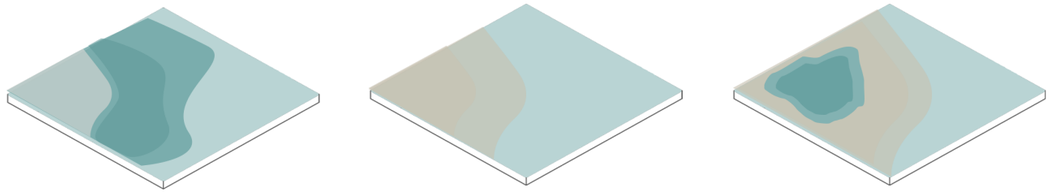
Restoration of Hydrology

Protection of Nature

Integration with surround environment

PHASES OF THE DESIGN

01

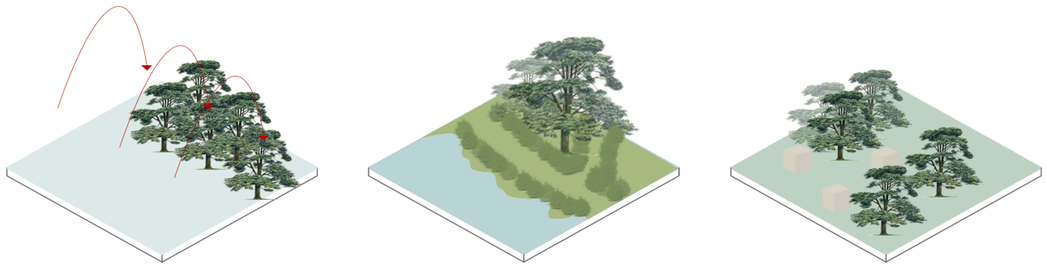


Deeper parts

Islands

Collection of rain water

02

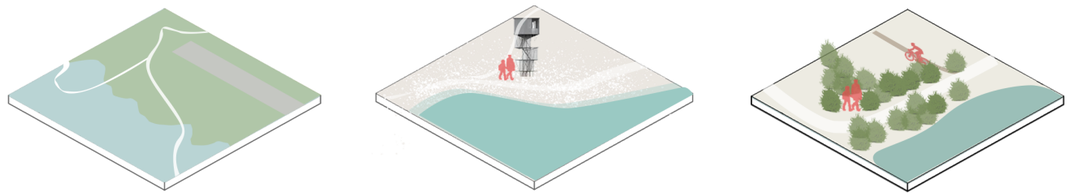


Define areas for trees scattering

Define areas of planting trees

Set boundaries to Urban expansion

03



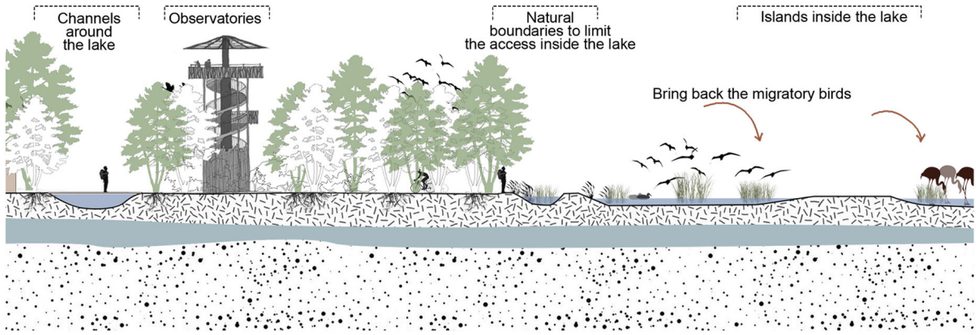
Design with the airport

Bring activities into the wetland’s area

Involve alternative mobility in and around the wetland

MASTERPLAN
Aliki wetland - Proposal





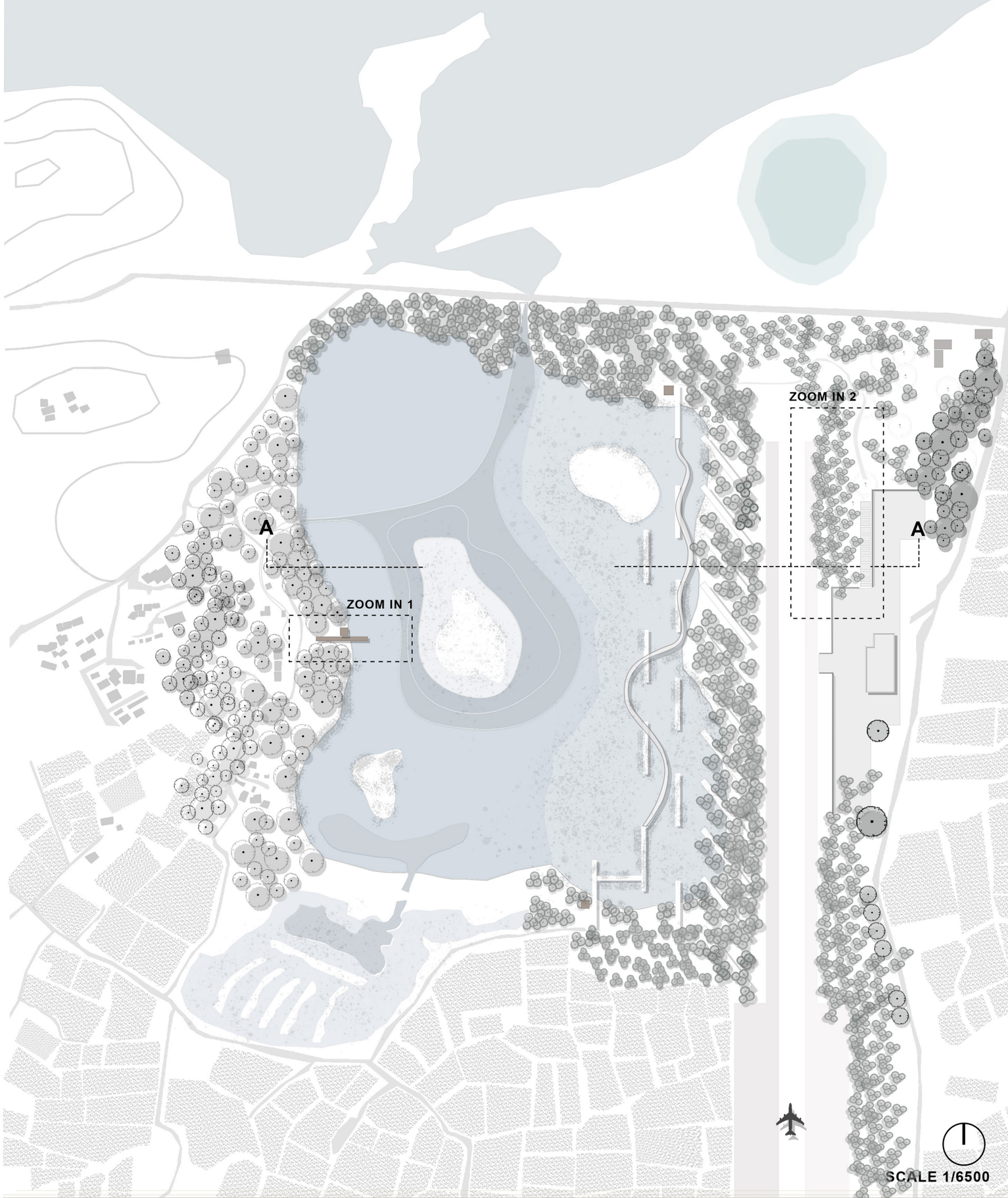
SECTION A-A

WINTER



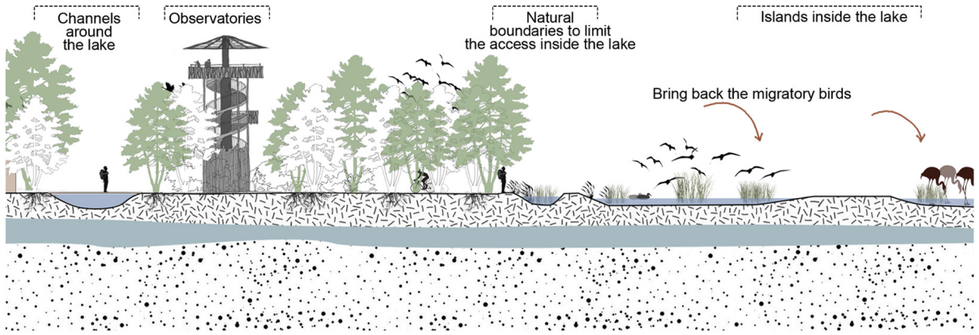
SUMMER





MASTERPLAN
Aliki wetland - Mobility around Aliki and Accesses





SECTION A-A

WINTER



SUMMER





-01 RESTORATION OF THE HYDROLOGY



Restoration of the hydrology



Existing Situation



Digging the soil for making deeper areas



Taking the removed soil and use it for creating islands

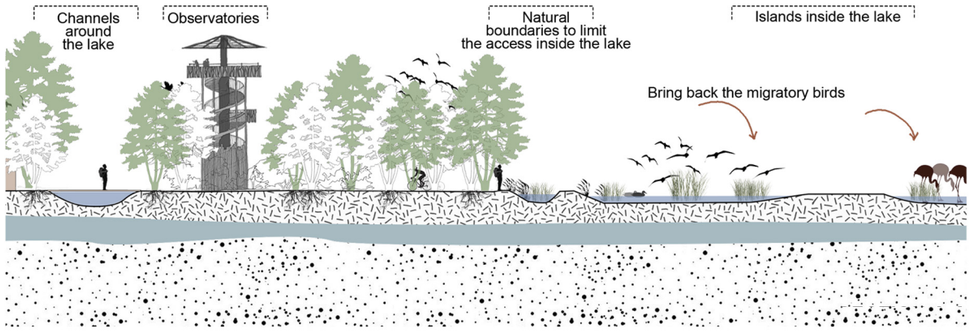
Seasonal changes

Deeper areas with water



02 PROTECTION OF THE NATURAL PRESERVED AREAS
The cedar forest enhancment





Protection of the Cedar Forest

- Define the boundaries of the plots that the contstructions are allowd (yellow)
- Set boundaries on the nothr and the south part of the existing area for scattering trees -> free form of the forest
- Set boundaries to the area where cedar trees are gonna grow

Urban Area

Protected Zones with scattering trees

Protected Zones with planting trees

SCALE 1/6500

The cedar forest and Aliki Wetland with and without intervention in the next 15 years

Existing

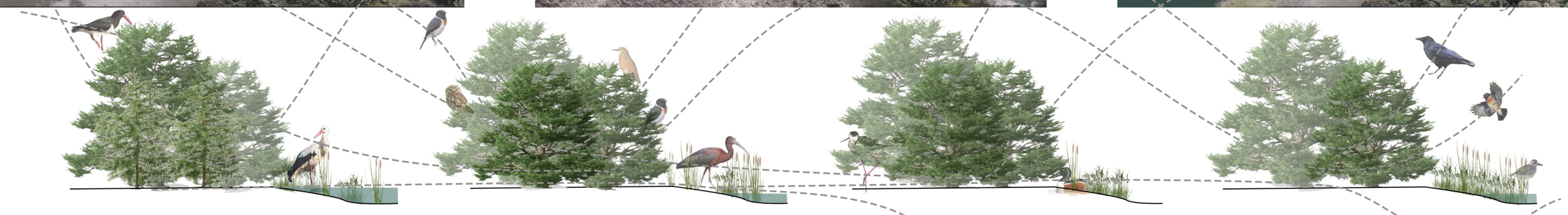
10 years - No intervention

10 years - With intervention









03 Integration with the surroundings

Design with - and not against - the airport

Design it as the new gateaway of Naxos

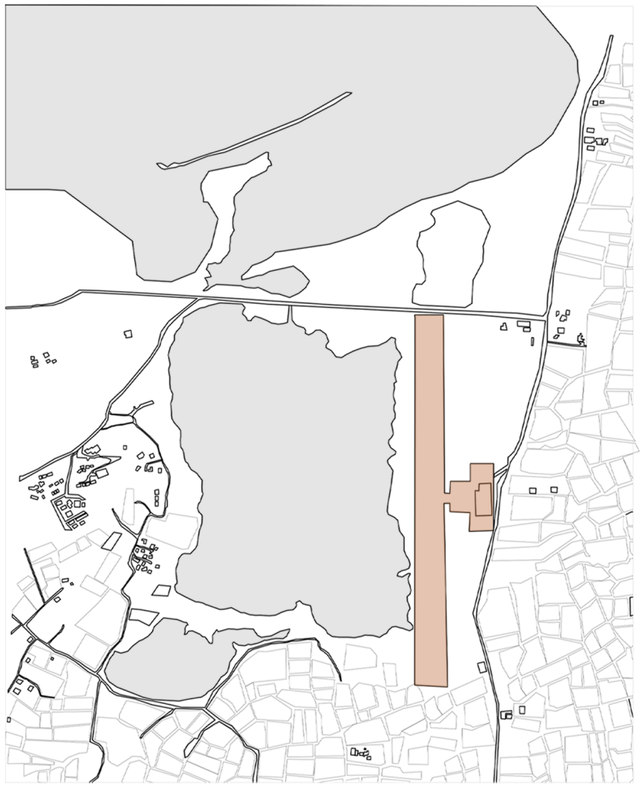
- Provide views and activities from the airport to the wetland

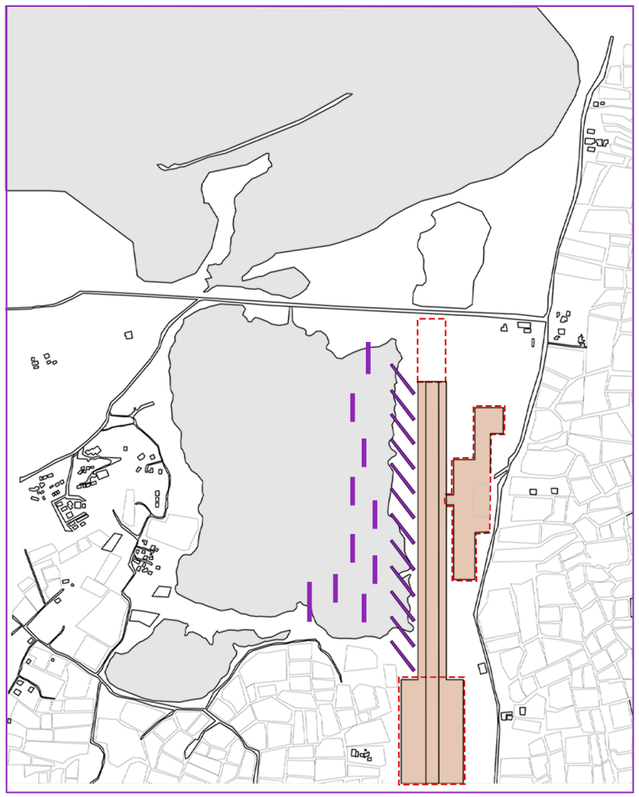
Implement technical methods for noise reduction

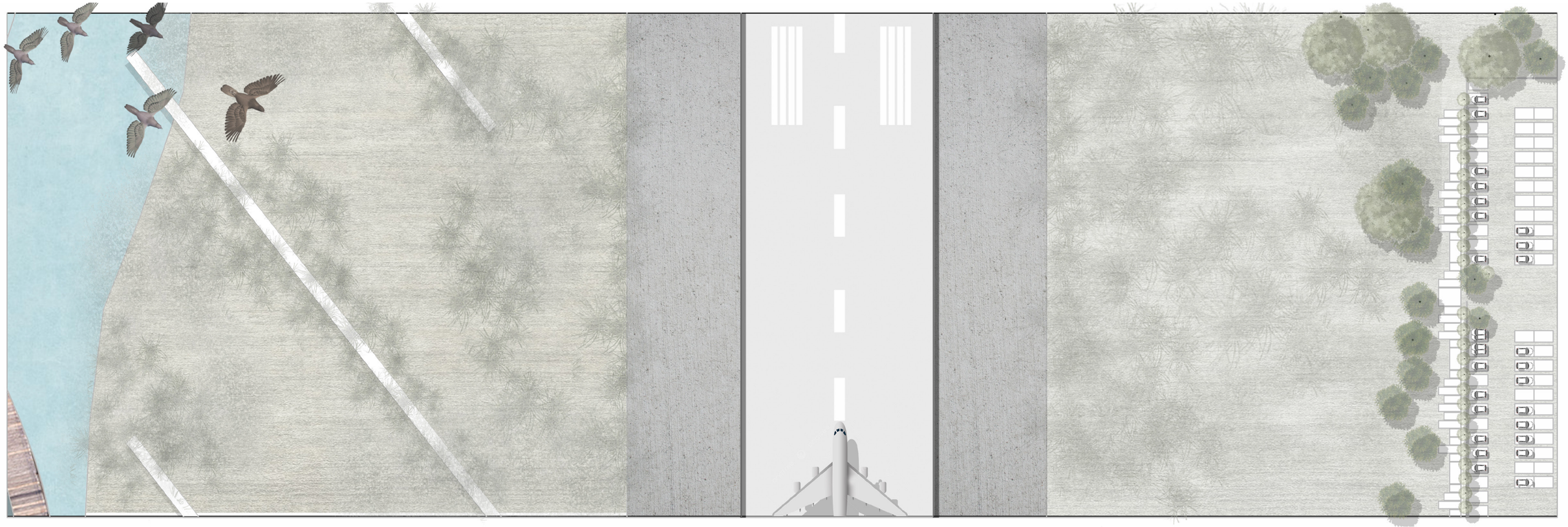
- Integrate them as a part of the landscape design proposal

Airstrip re-design

-Provide connections from the airport area to the wetland





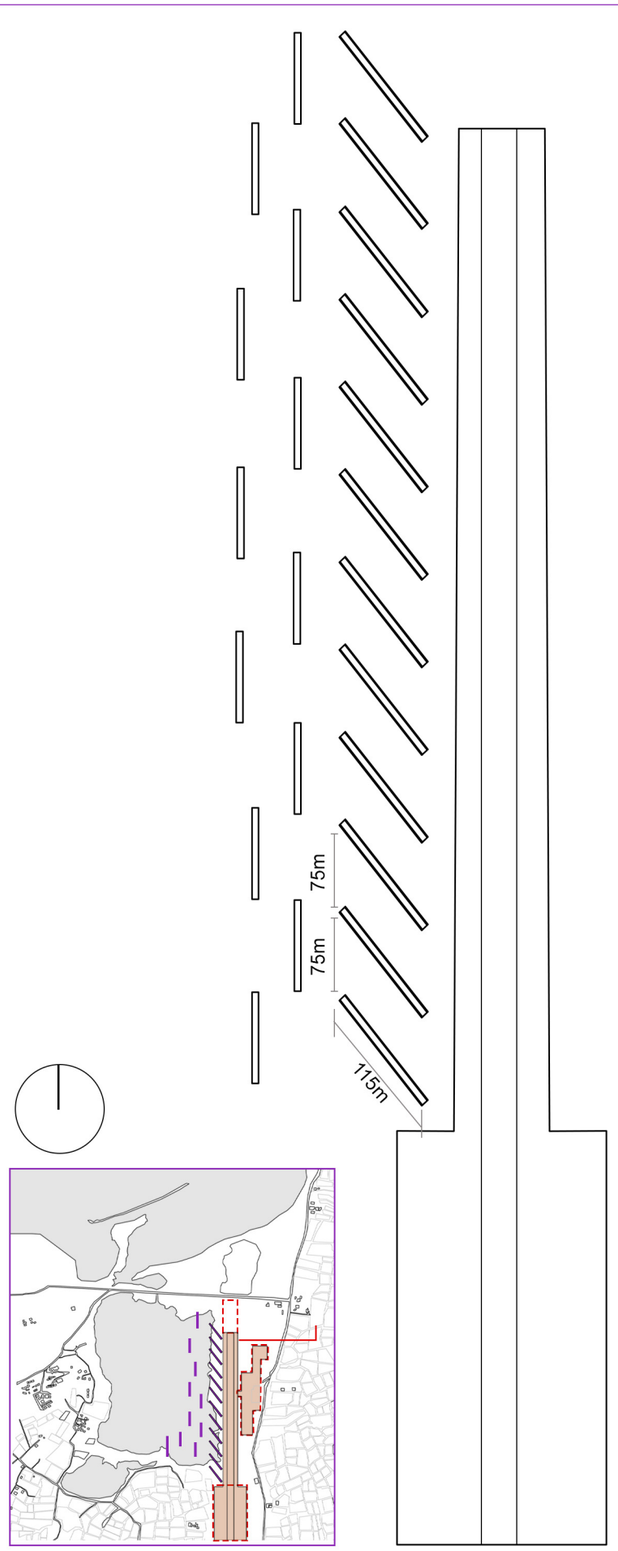




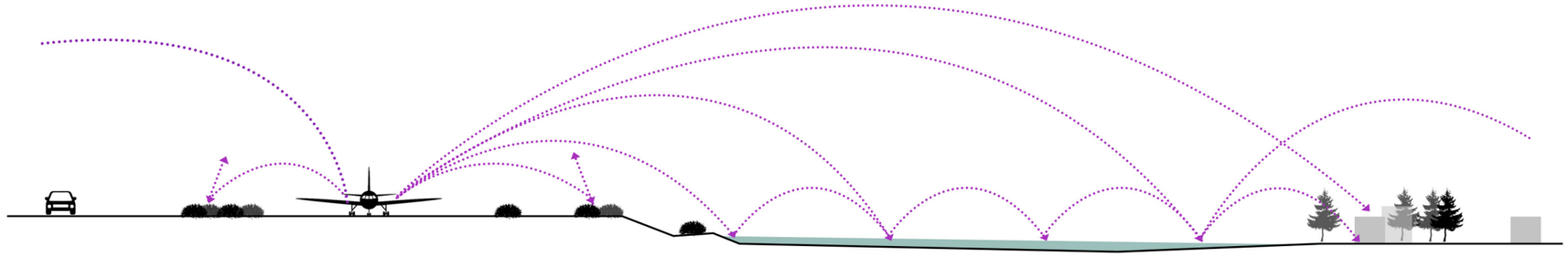
NAXOS INTERNATIONAL
AIRPORT

ALYKI

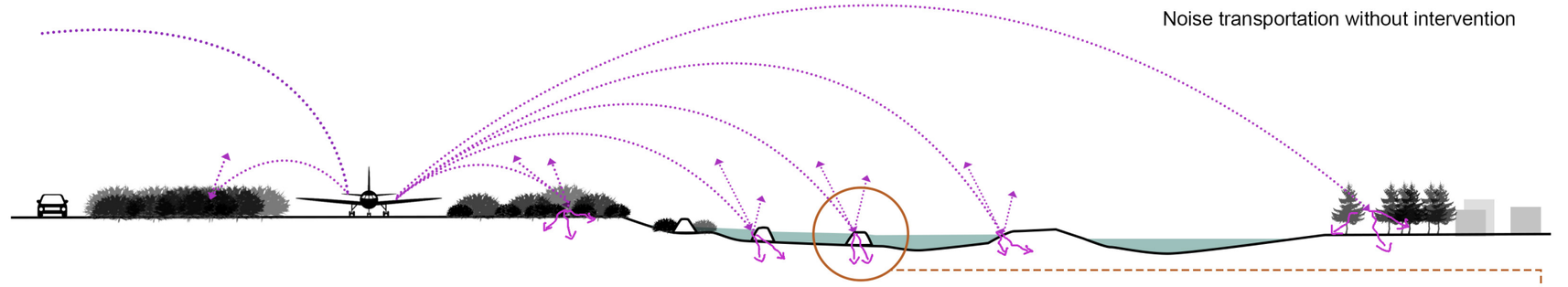
Noise Reduction around the airport



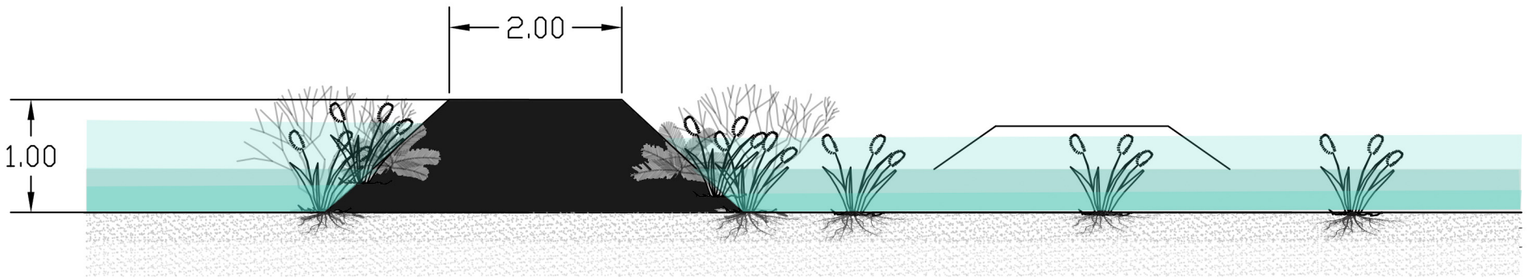
Airport plan with the dikes



Noise transportation without intervention



Noise transportation with intervention

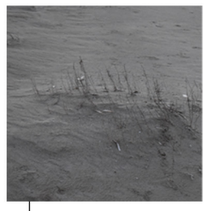


Earth Dikes and Water Fluctuation

Hard rocks for Stability in the core
Emery Mining from the mountains



Soft soil for noise absorbtion







Hydrophilic Vegetation
Density for noise absorption

Vegetation and soil of earth dikes

Halophytic plants



Olearia lanuginosa





Cedar Forest



Salicornia species



Mediterranean beard grass and reeds



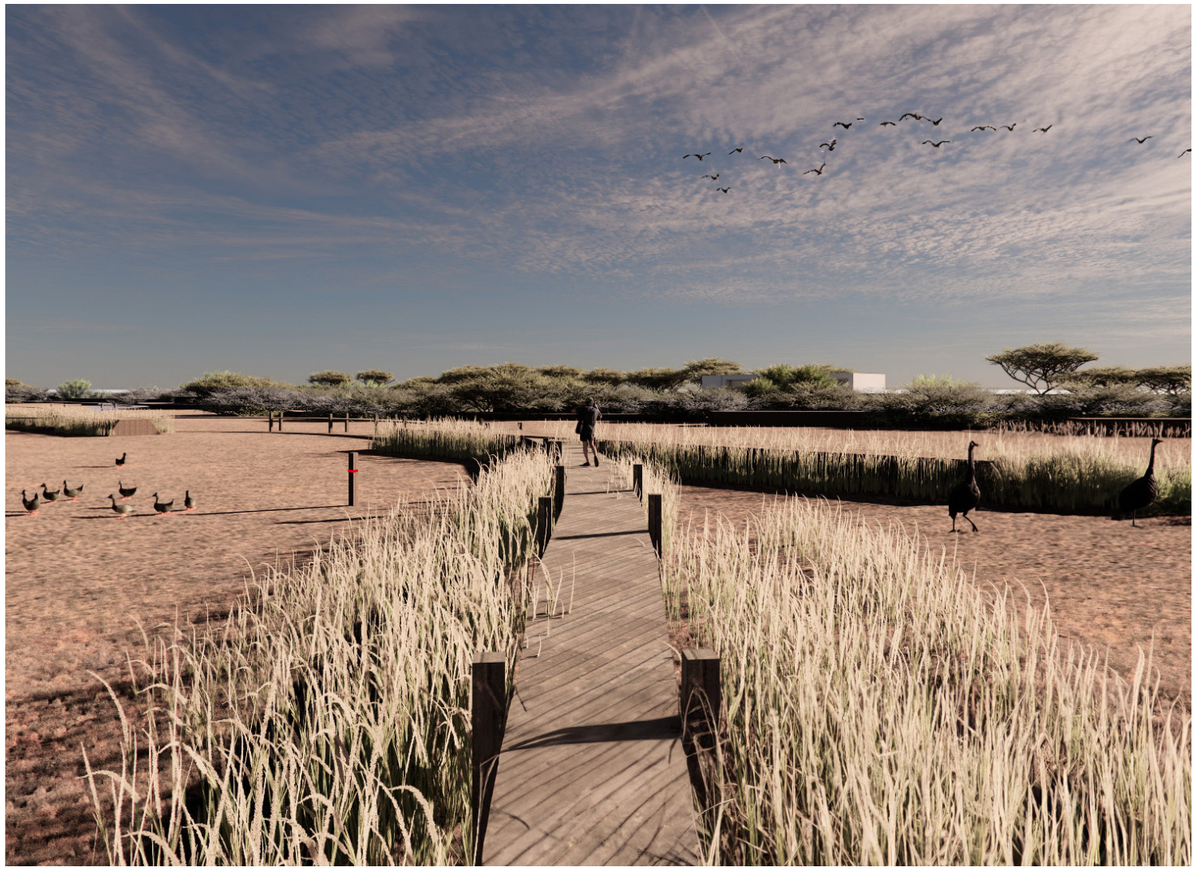
Seagrass meadow



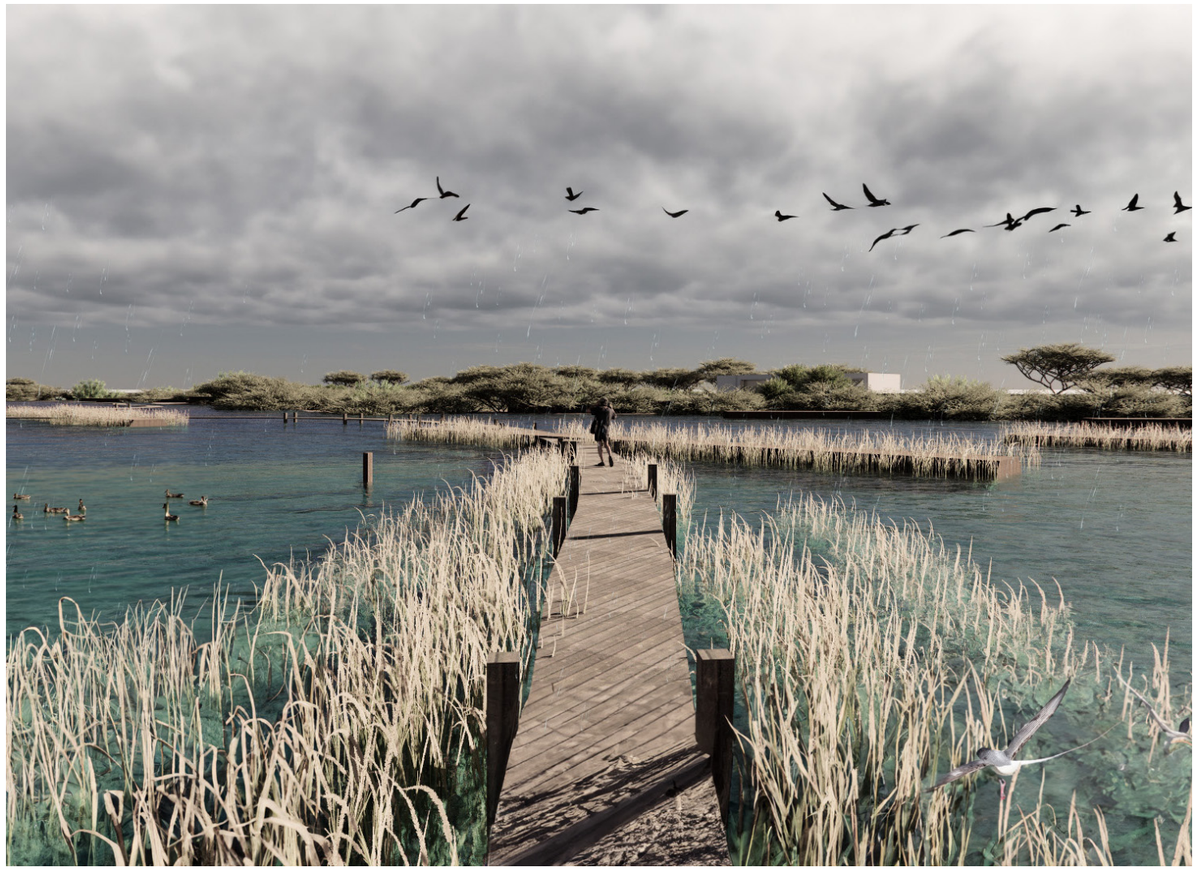
Caroxylon cyclophyllum



Seasonal Differences



Summer



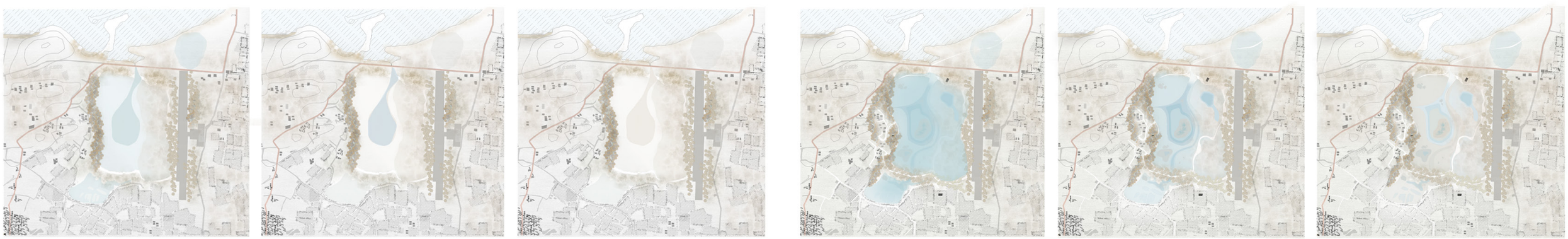
Winter

2024

winter — spring - autumn — summer

2034

winter — spring - autumn — summer

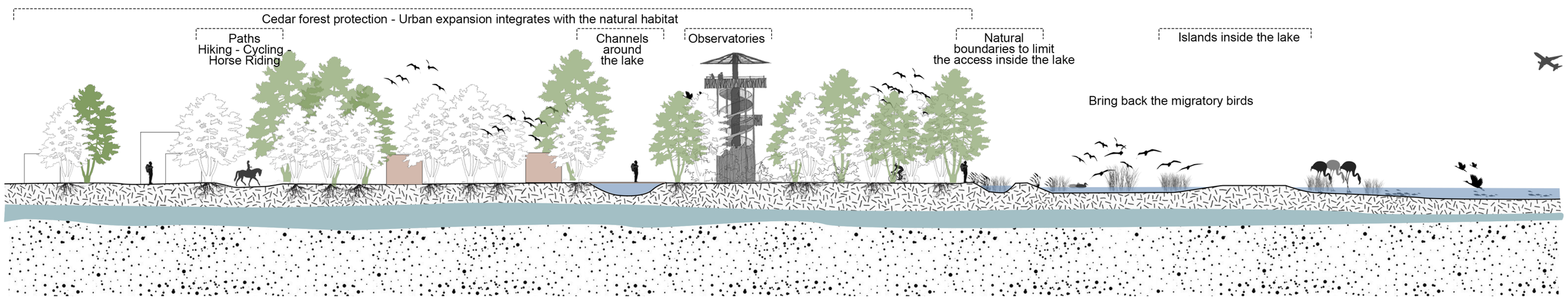


ZOOM IN AREA 1

PLAN AND SECTION | SCALE 1/500



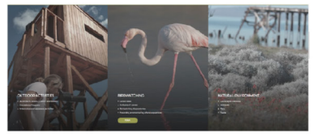
SCALE 1:500





Kalloni Environmental Information Center

Lesvos Island, Aegean Sea

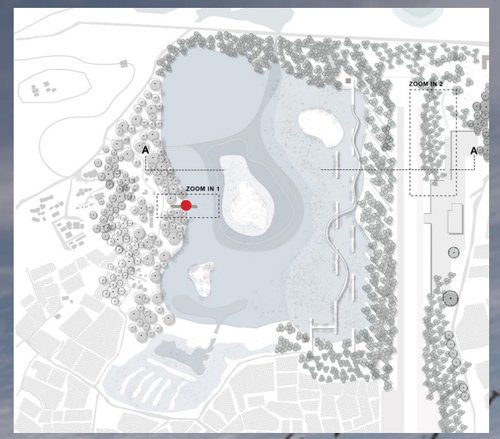


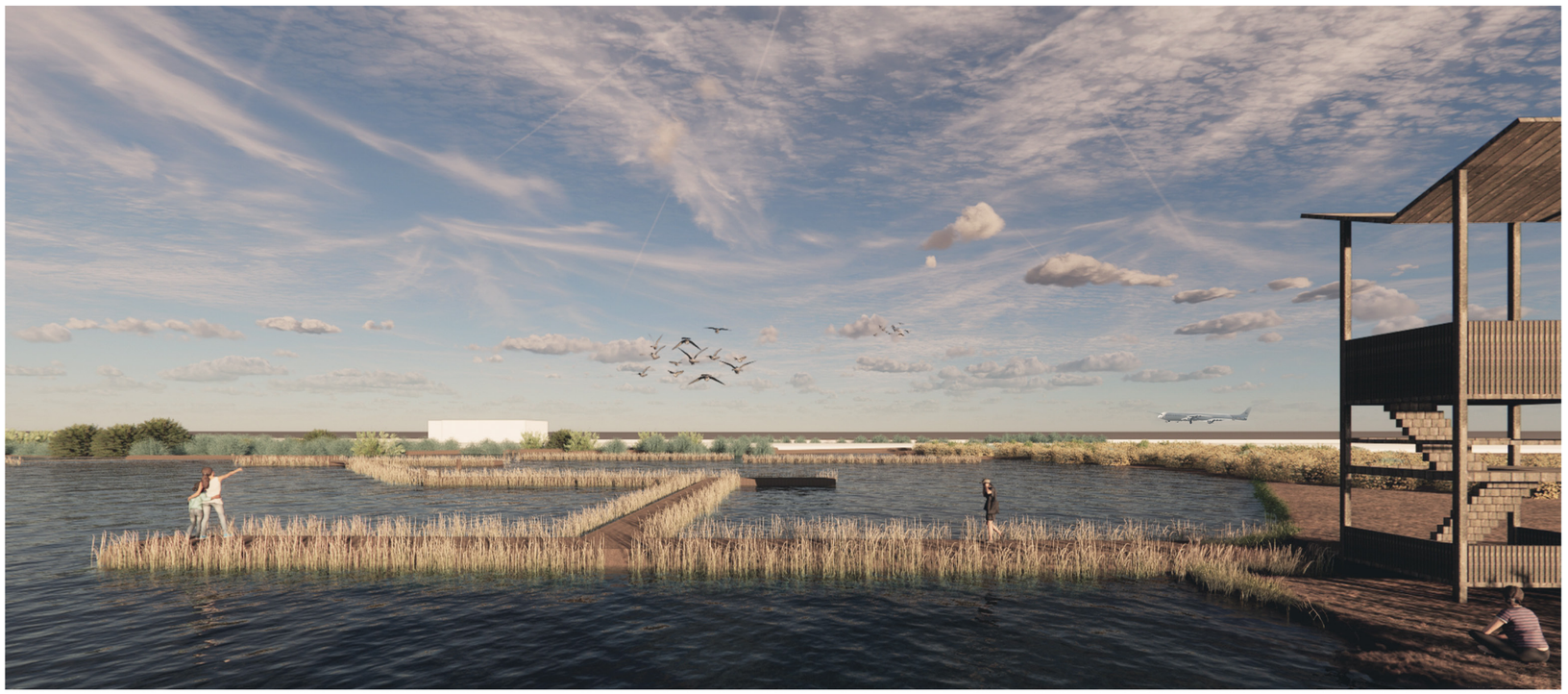


Kalloni Environmental Information Center

Lesvos Island, Aegean Sea

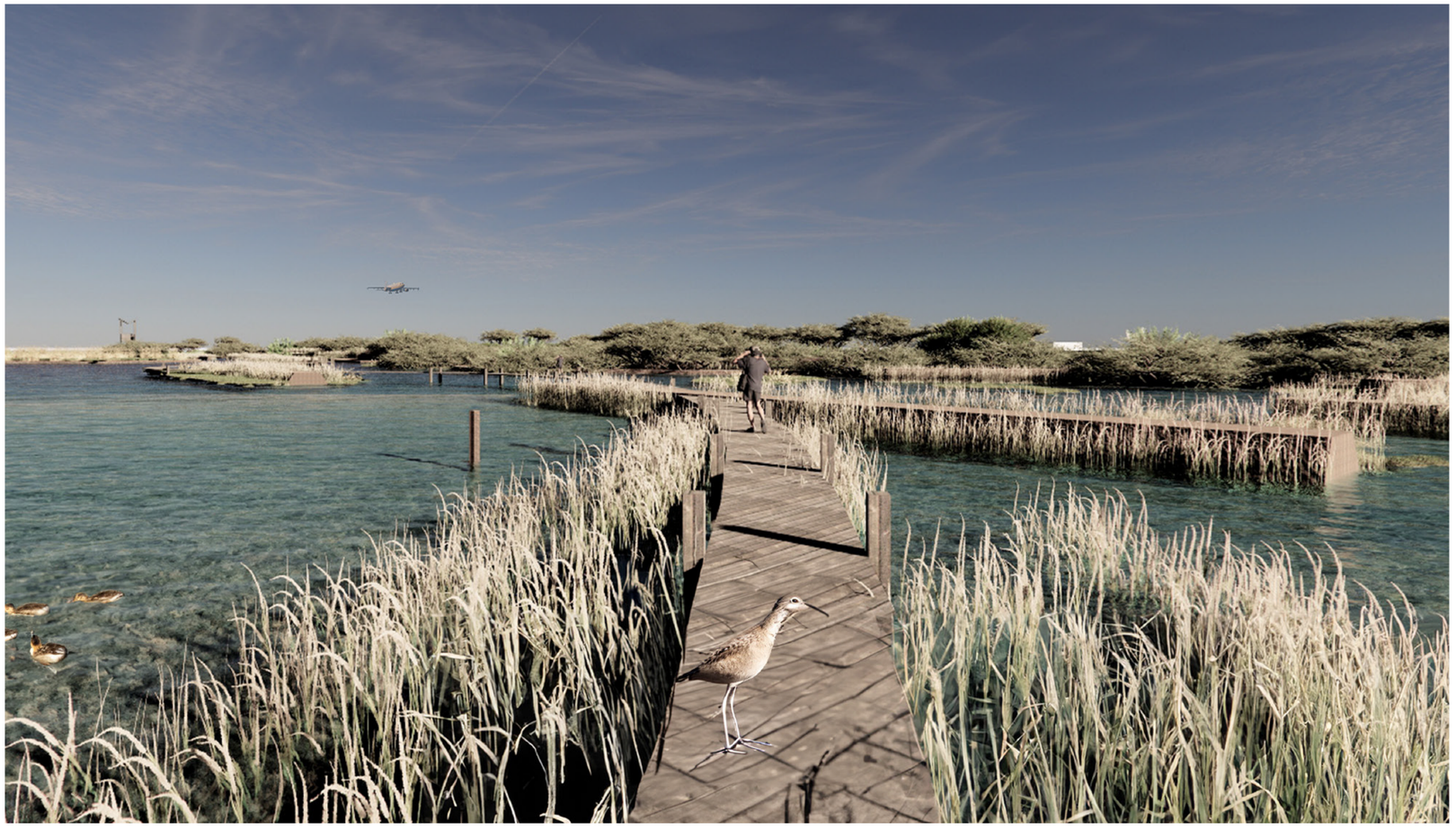



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ZOOM IN 1
ZOOM IN 2

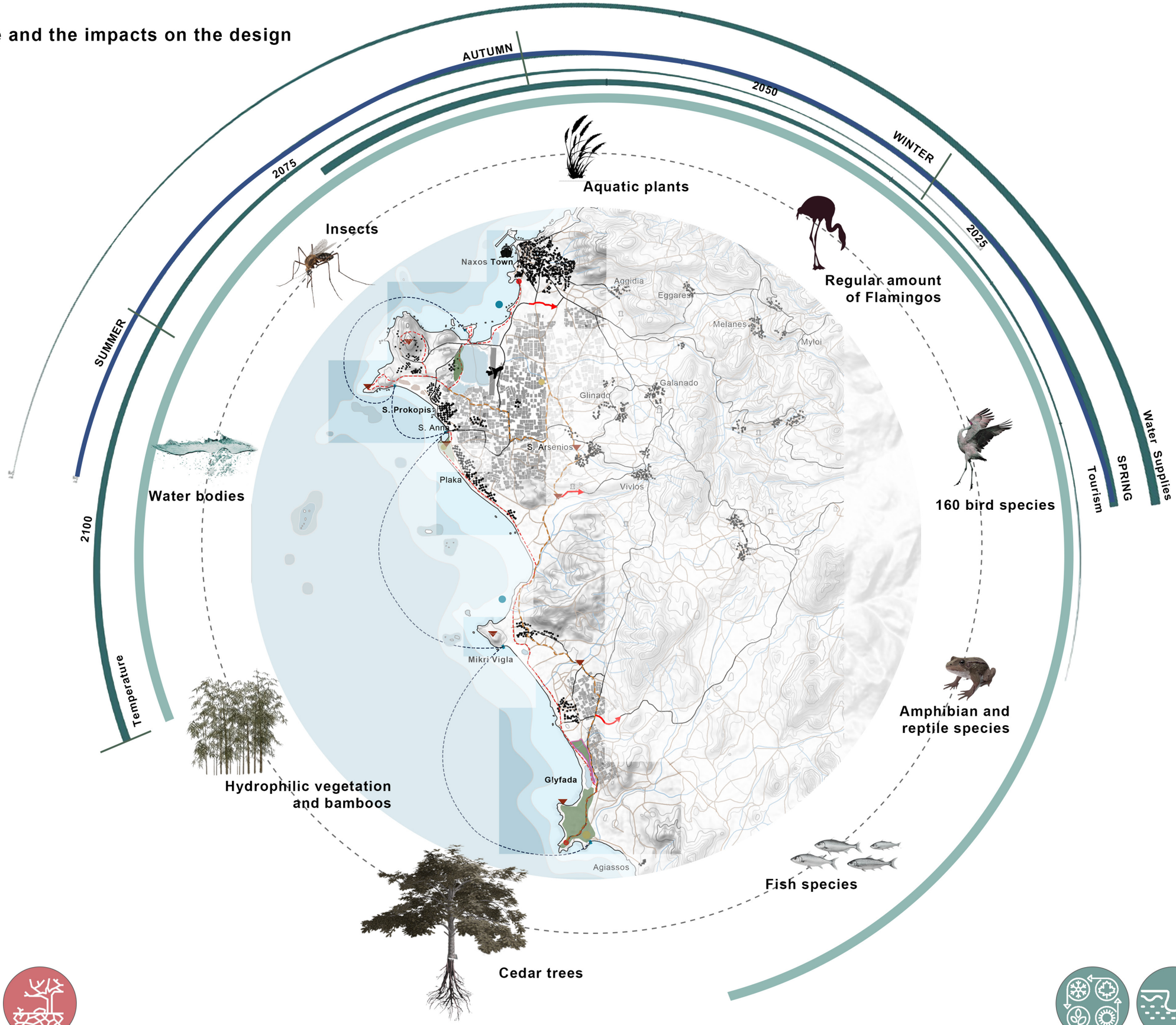






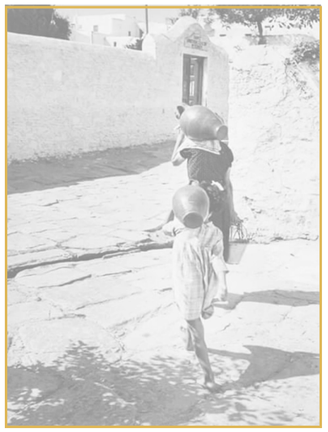


Climate Change and the impacts on the design



Design Implementation Stages





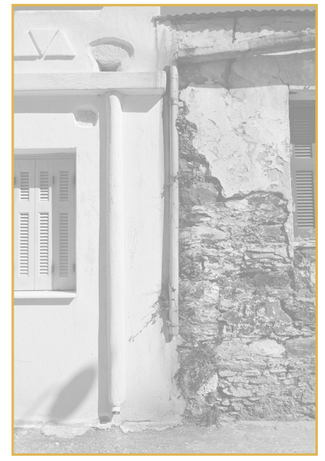












01 Create a complete proposal

Vision

!?!

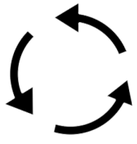
02 Discussion With locals / local authorities to share the idea



03 Funding



04 Design Implementation



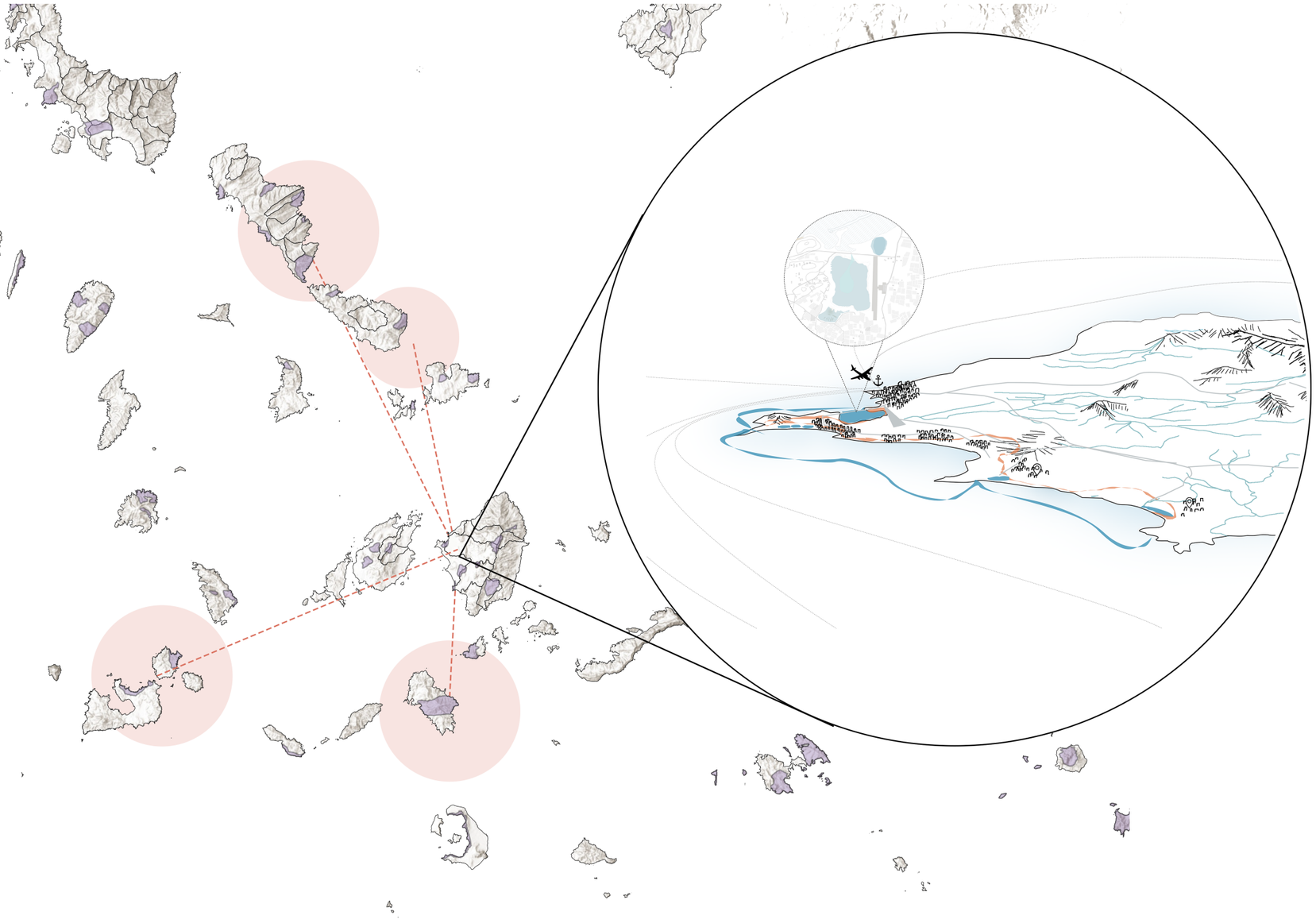
05 Eco-tourism development



06 Community Cooperation

07 Project Development



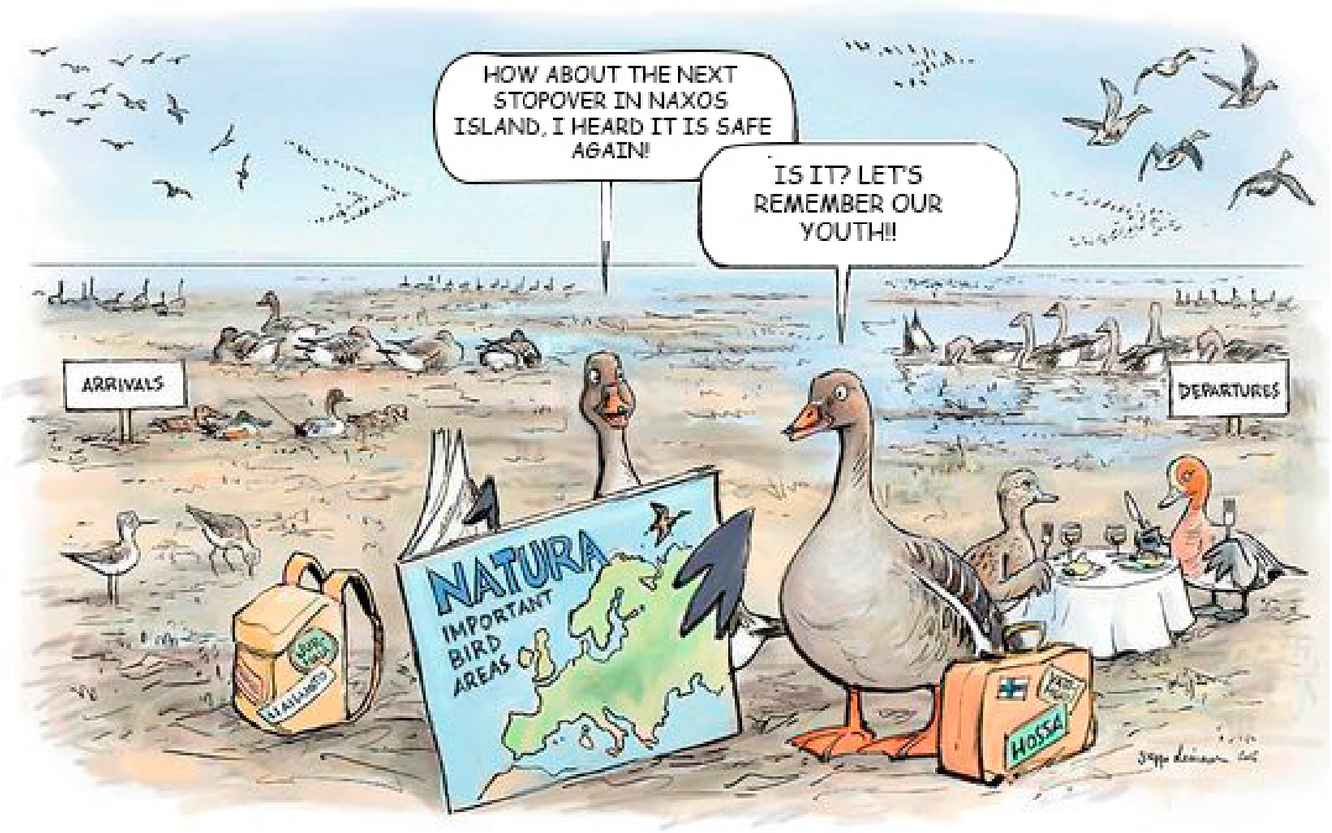


Reflection on the larger social, professional and scientific context

- Elevating public awareness of natural habitats and water dynamics through innovative landscape architecture designs

- Proposing a balanced tourism approach to mitigate over-tourism and promote sustainability in socio-economically challenged areas

- Aligning with scientific principles, the project offers a holistic solution for fostering human-environment harmony and addressing environmental challenges



THANK YOU !

“You cannot get through a single day without having an impact on the world around you. What you do makes a difference, and you have to decide what kind of difference you want to make.”

— Jane Goodall