

SITE ANALYSIS

SITE B

PANTAI KERACHUT

PENANG

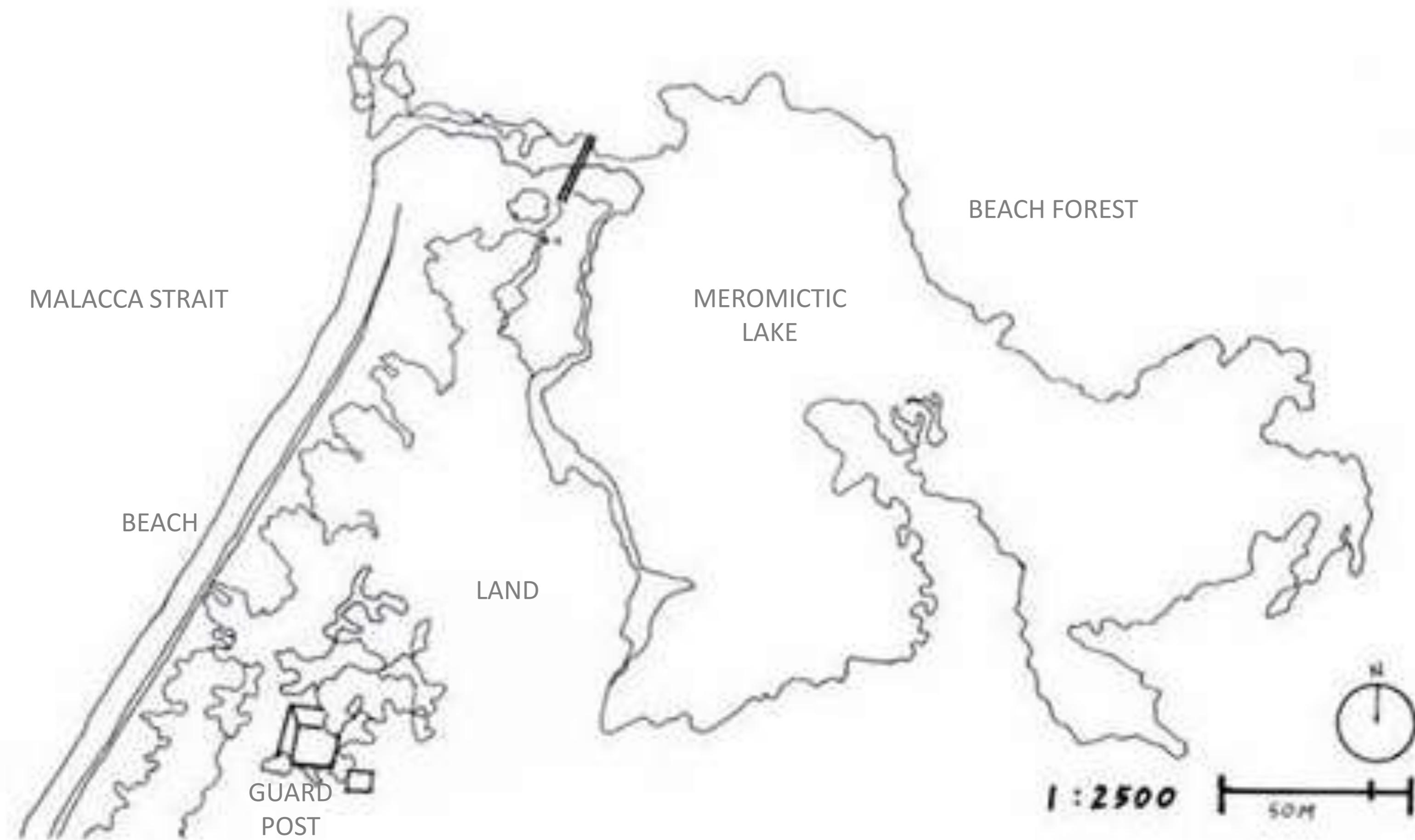
MALAYSIA

- DESIGN STUDIO 2 -

SITE ANALYSIS

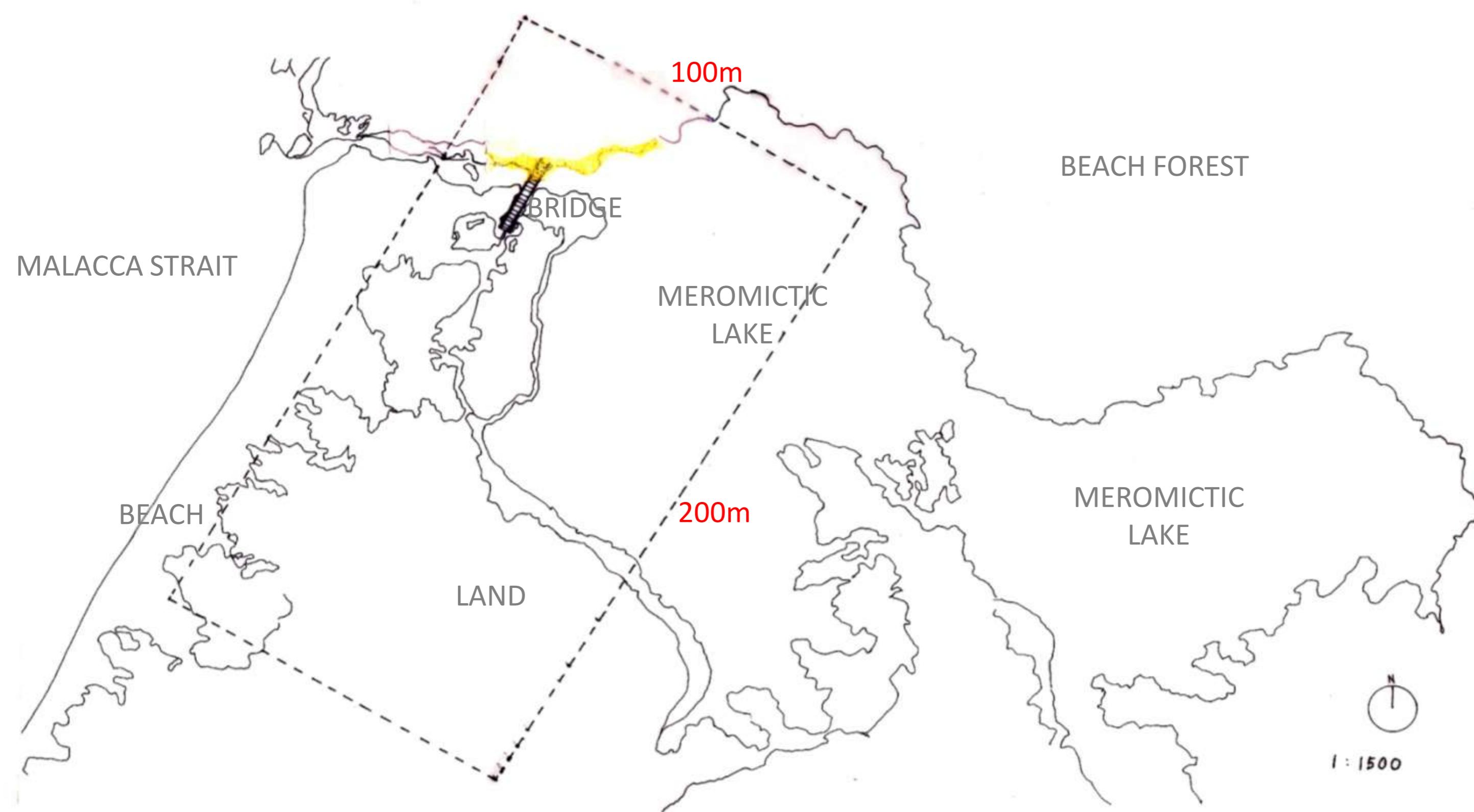
LOCATION PLAN *Pantai Kerachut*

This is the location plan of Pantai Kerachut in Penang National Park, Malaysia. This area is found at the north-western tip of Penang island. It is popular for its harmonious serenity of nature and man. A very special feature of this site is the "*Meromictic Lake*" which is a seasonal lake. The lake is surrounded by a variety of rich vegetation. The lake's mouth is connected to the *Malacca Strait*.



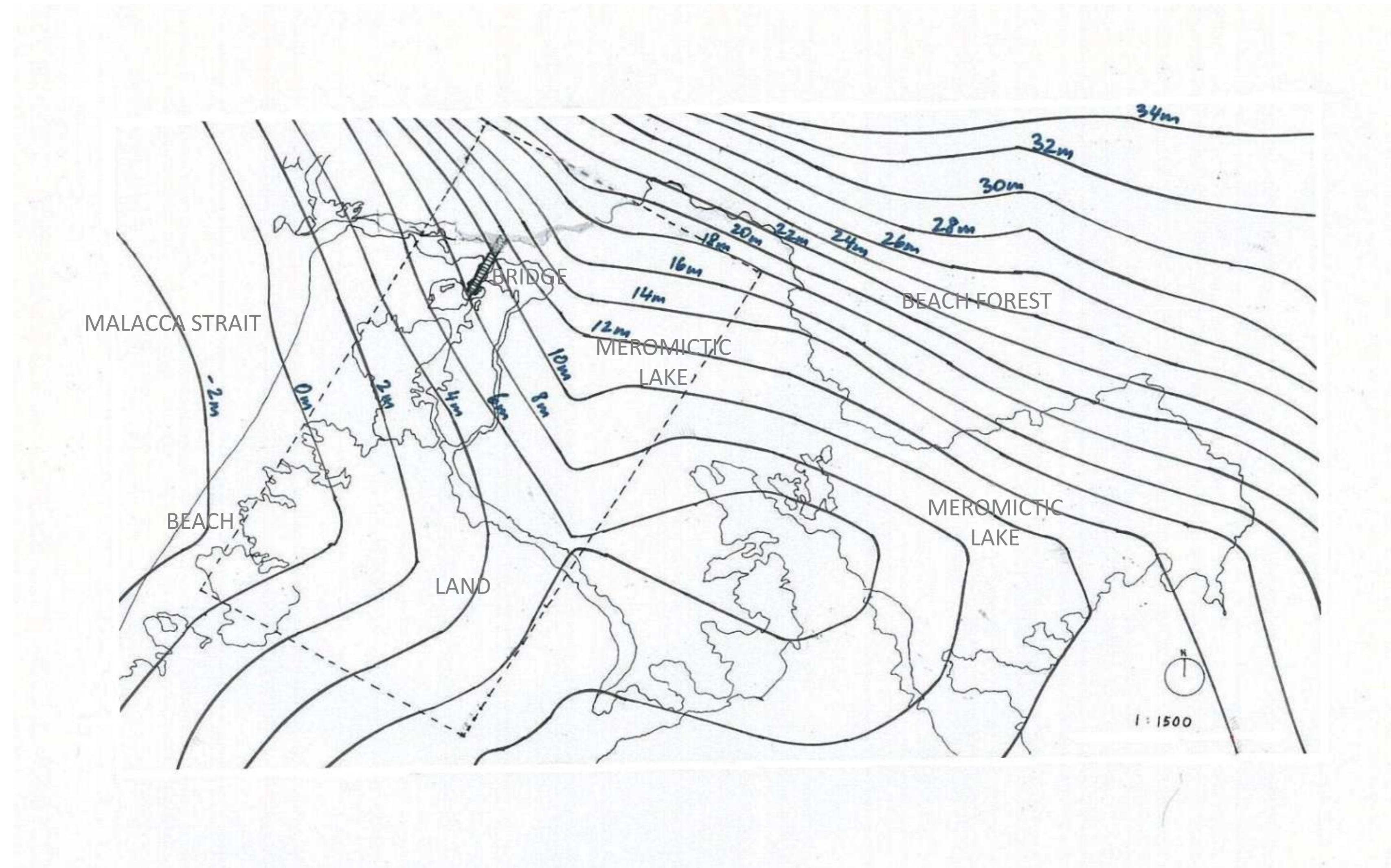
SITE PLAN

This area denotes our intended site area of $100m \times 200m$, ensuring the bridge entrance is included as well as the mouth of the lake, where a special phenomenon takes place. That of allowing sea water into the lake but preventing it from backwashing into the sea, creating two layers of water ; fresh water and sea water in the lake, hence the name, *Meromictic Lake*. Our site also allows generous amount of flat gentle land.



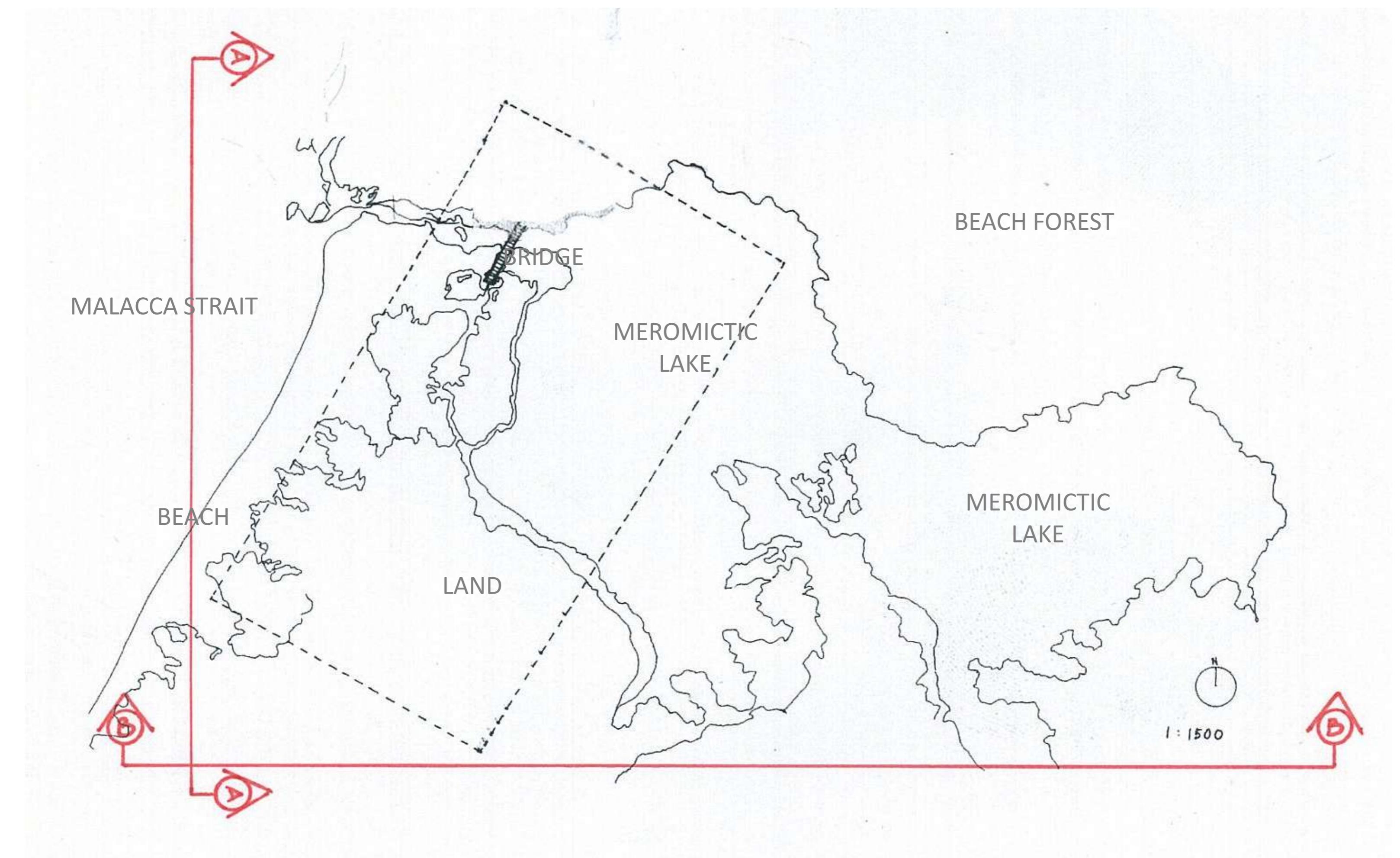
CONTOURS

The map here shows the contours of the area. The lowest contour height is -2m. And the highest is 34m. The 0m contour line represents the sea level. It is clear that this area is made of both steep terrain as well as some areas of gentle flat land.



SECTIONS

Due to the complex terrain surrounding our site, we realised it would be ideal for us to have general sections of the area instead of simply limiting it to within our site, to indicate the gradient of the slopes as well as their heights above sea level.



SECTION A-1

The sections are to indicate the shape of the terrain. Each base line of the section represents its "ground" where we walk on. The top line represents the back drop of the mountain in our area.

Legend:

■ Section A-1

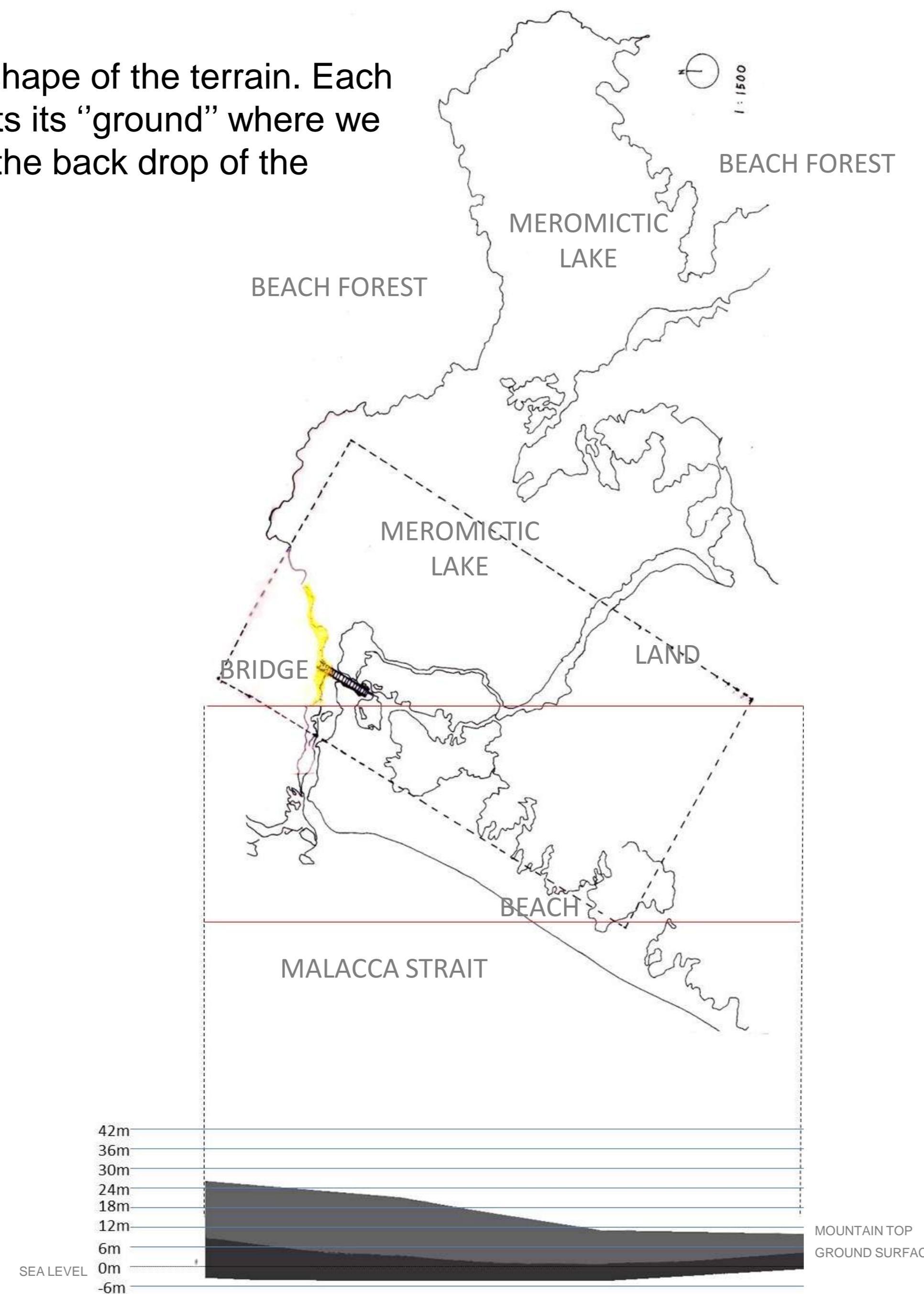


SECTION A-2

The sections are to indicate the shape of the terrain. Each base line of the section represents its "ground" where we walk on. The top line represents the back drop of the mountain in our area.

Legend:

- Section A-1
- Section A-2

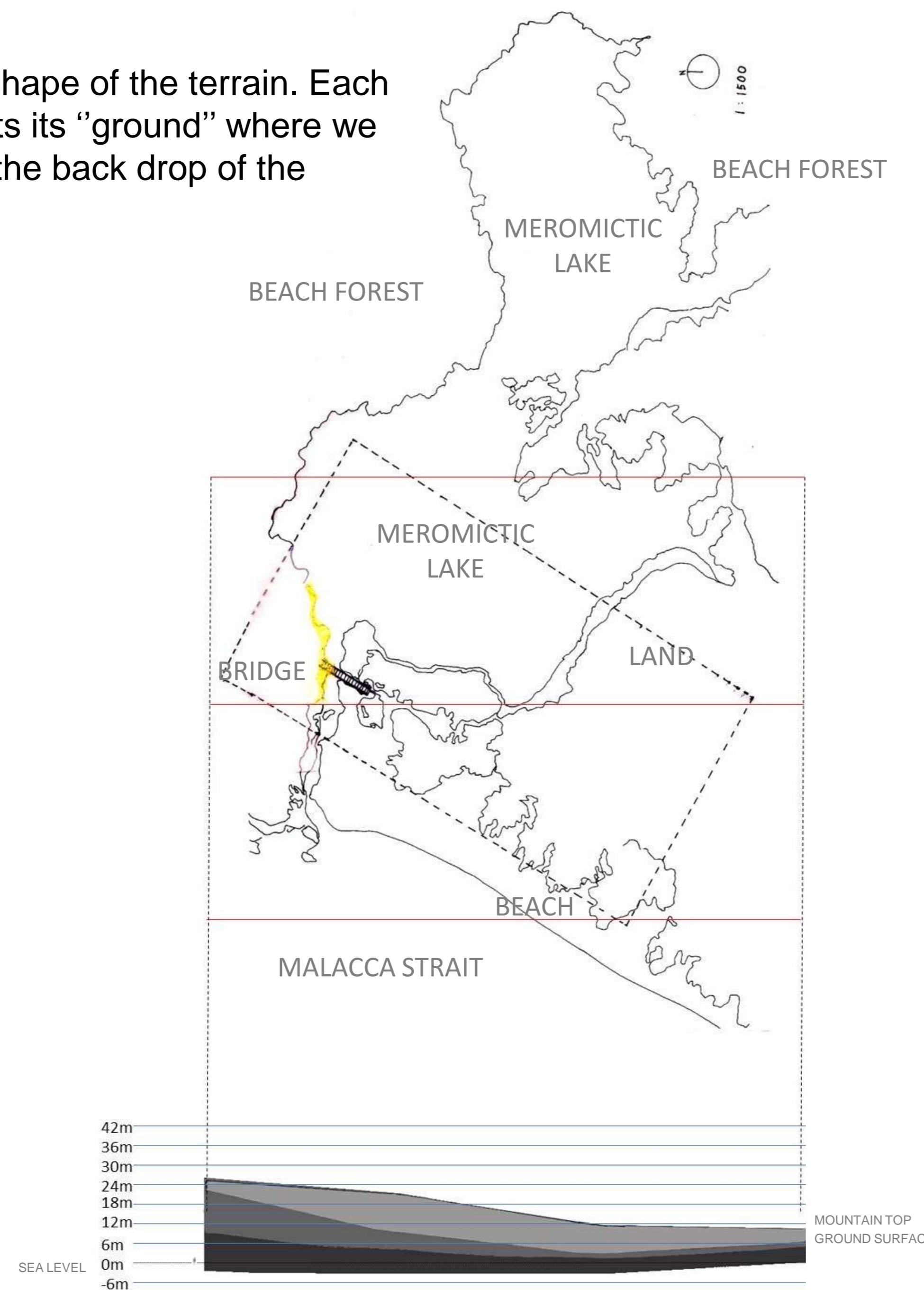


SECTION A-3

The sections are to indicate the shape of the terrain. Each base line of the section represents its "ground" where we walk on. The top line represents the back drop of the mountain in our area.

Legend:

- Section A-1
- Section A-2
- Section A-3

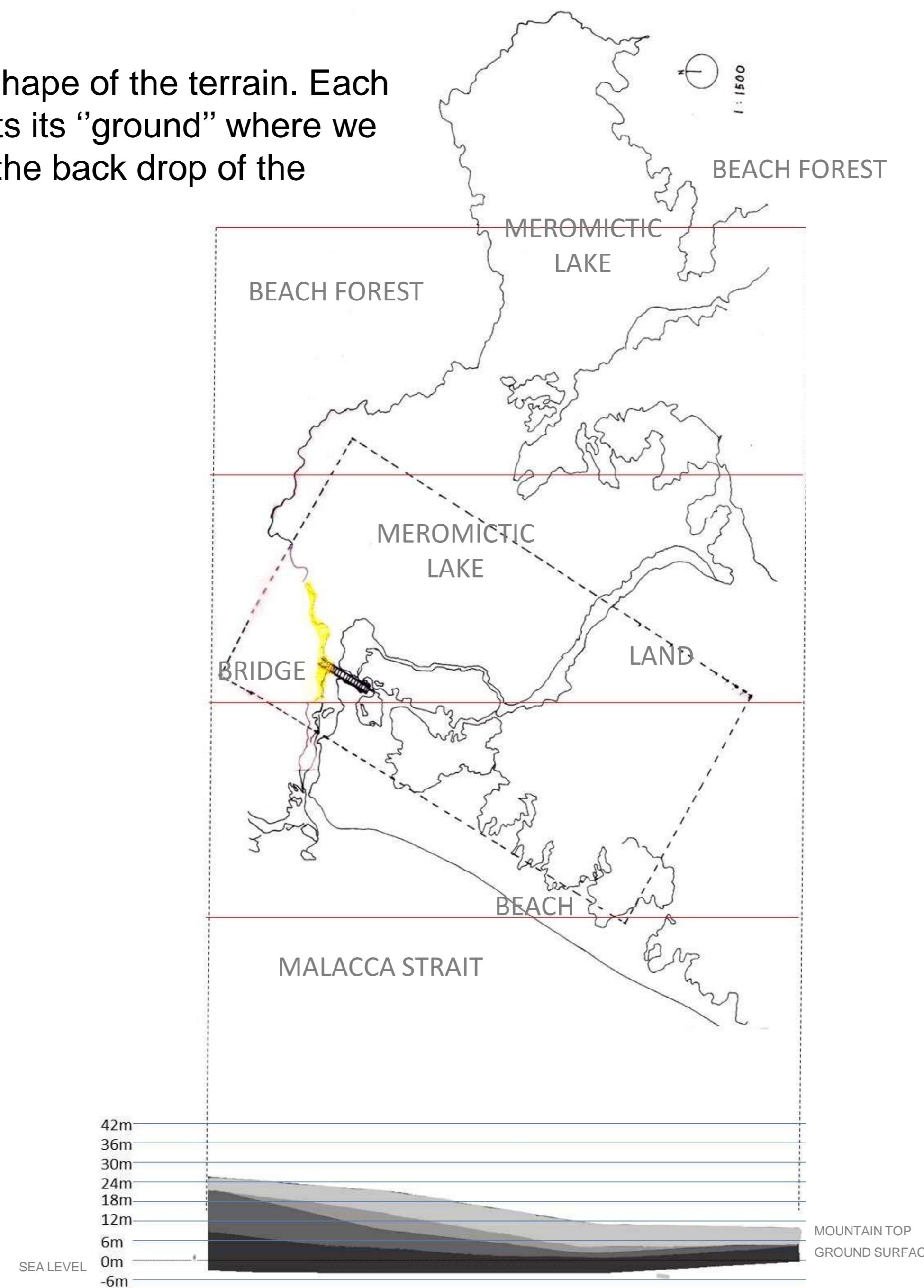


SECTION A-4

The sections are to indicate the shape of the terrain. Each base line of the section represents its "ground" where we walk on. The top line represents the back drop of the mountain in our area.

Legend:

- Section A-1
- Section A-2
- Section A-3
- Section A-4

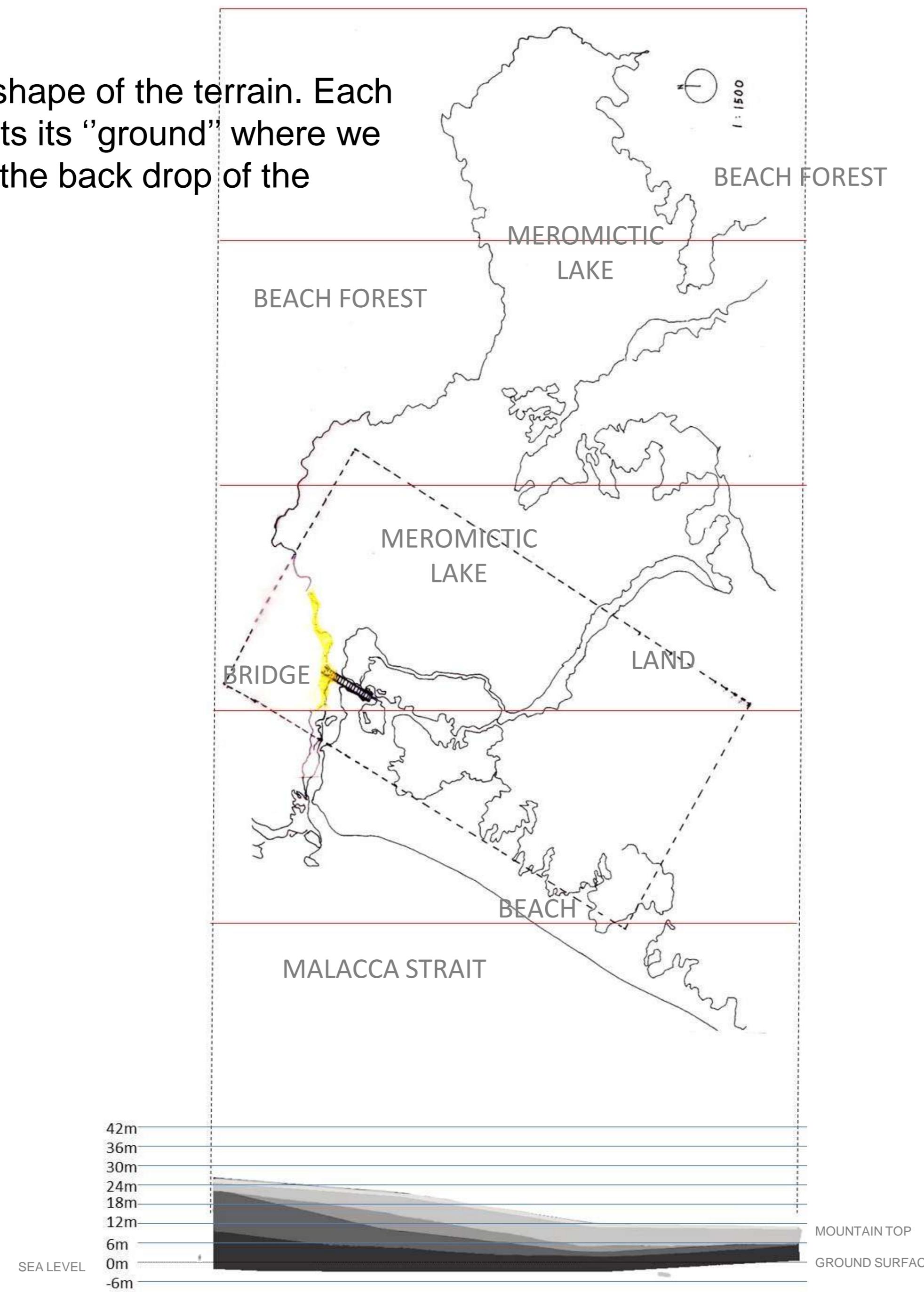


SECTION A-5

The sections are to indicate the shape of the terrain. Each base line of the section represents its "ground" where we walk on. The top line represents the back drop of the mountain in our area.

Legend:

- Section A-1
- Section A-2
- Section A-3
- Section A-4
- Section A-5

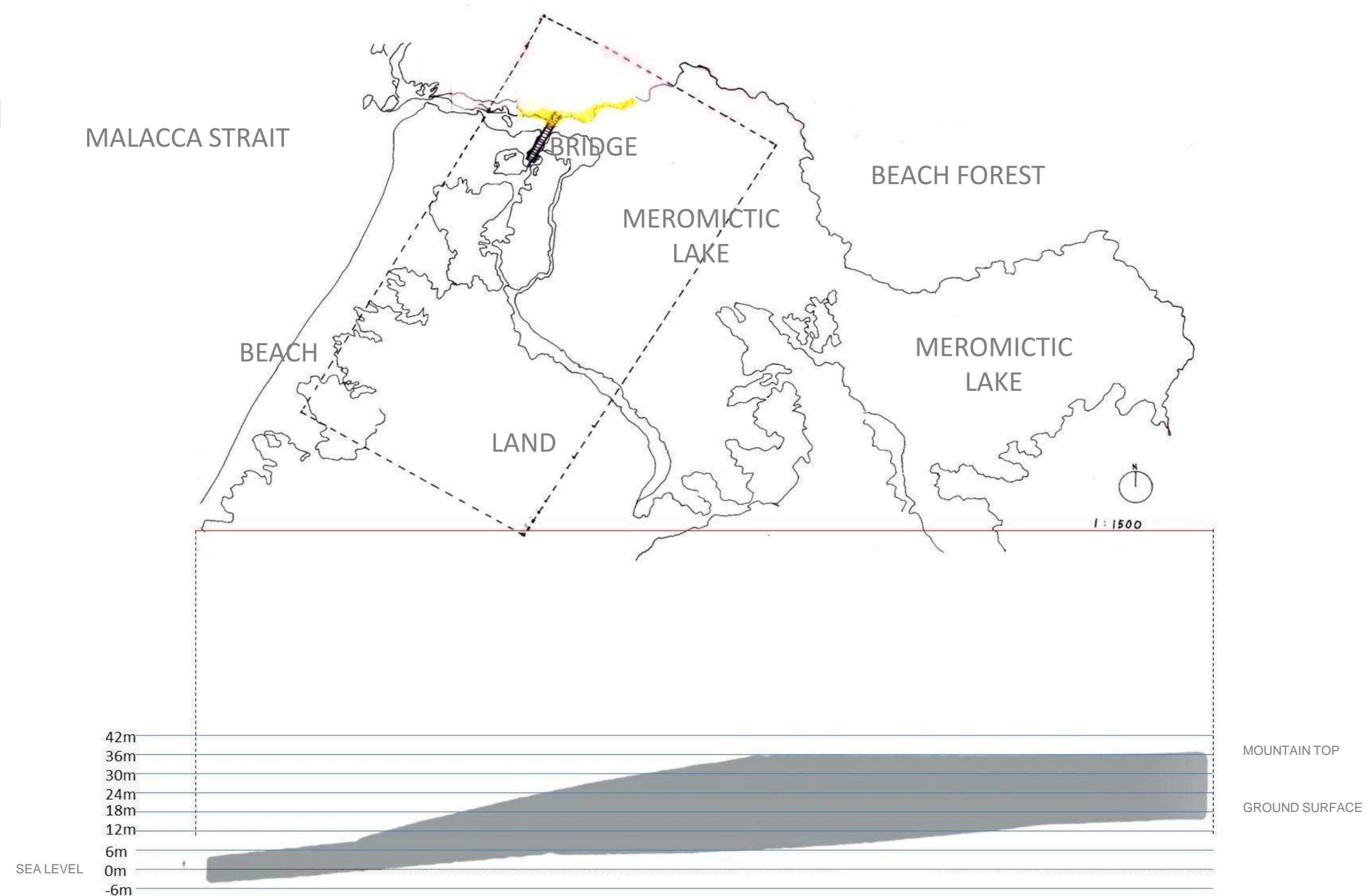


SECTION B-1

The longitudinal sections also indicates the shape of the terrain. Each base line of the section represents its "ground" where we walk on. The top line represents the back drop of the mountain in our area.

Legend:

■ Section B-1



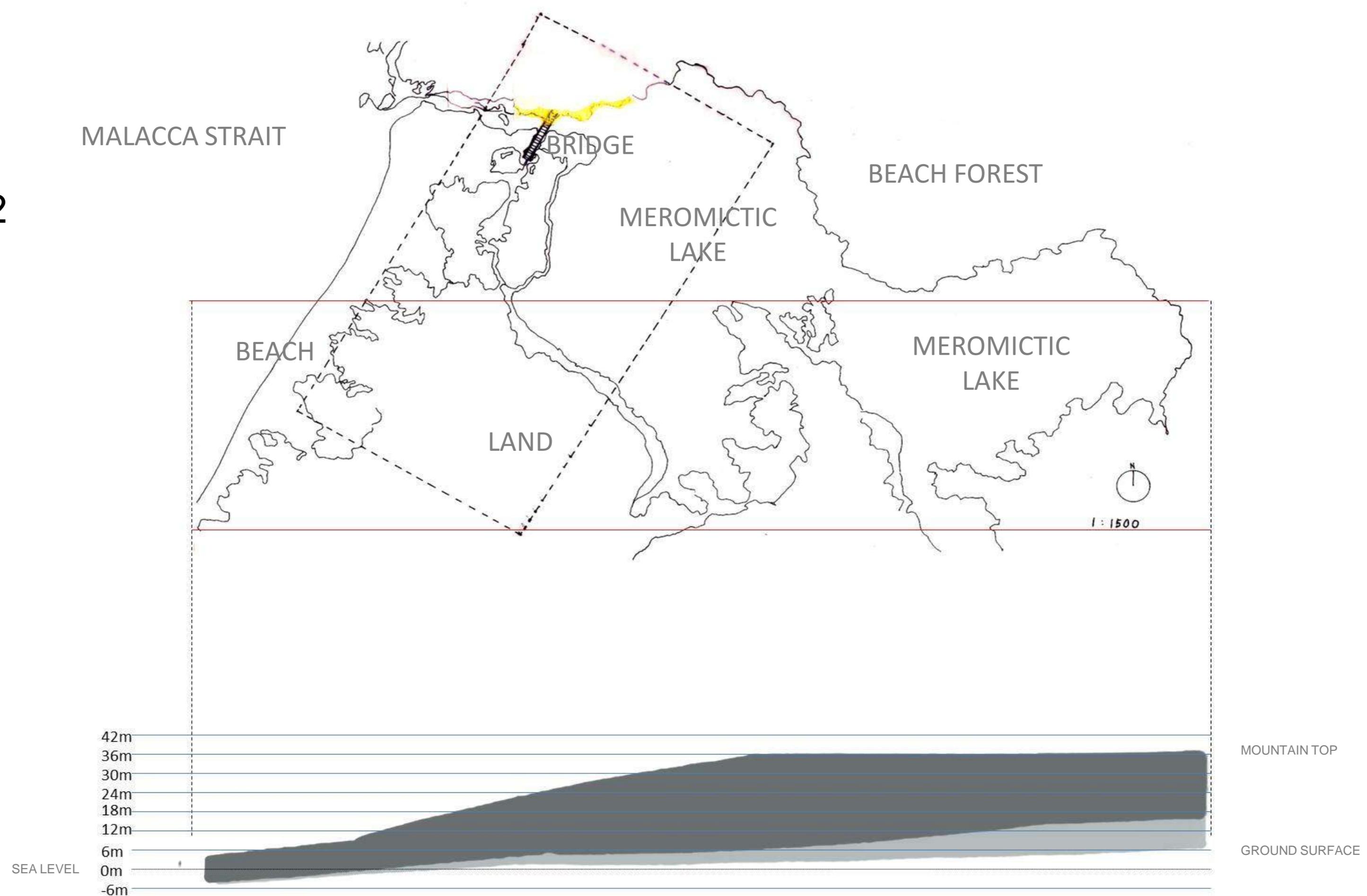
SECTION B-2

The longitudinal sections also indicate the shape of the terrain. Each base line of the section represents its "ground" where we walk on. The top line represents the back drop of the mountain in our area.

Legend:

 Section B-1

 Section B-2

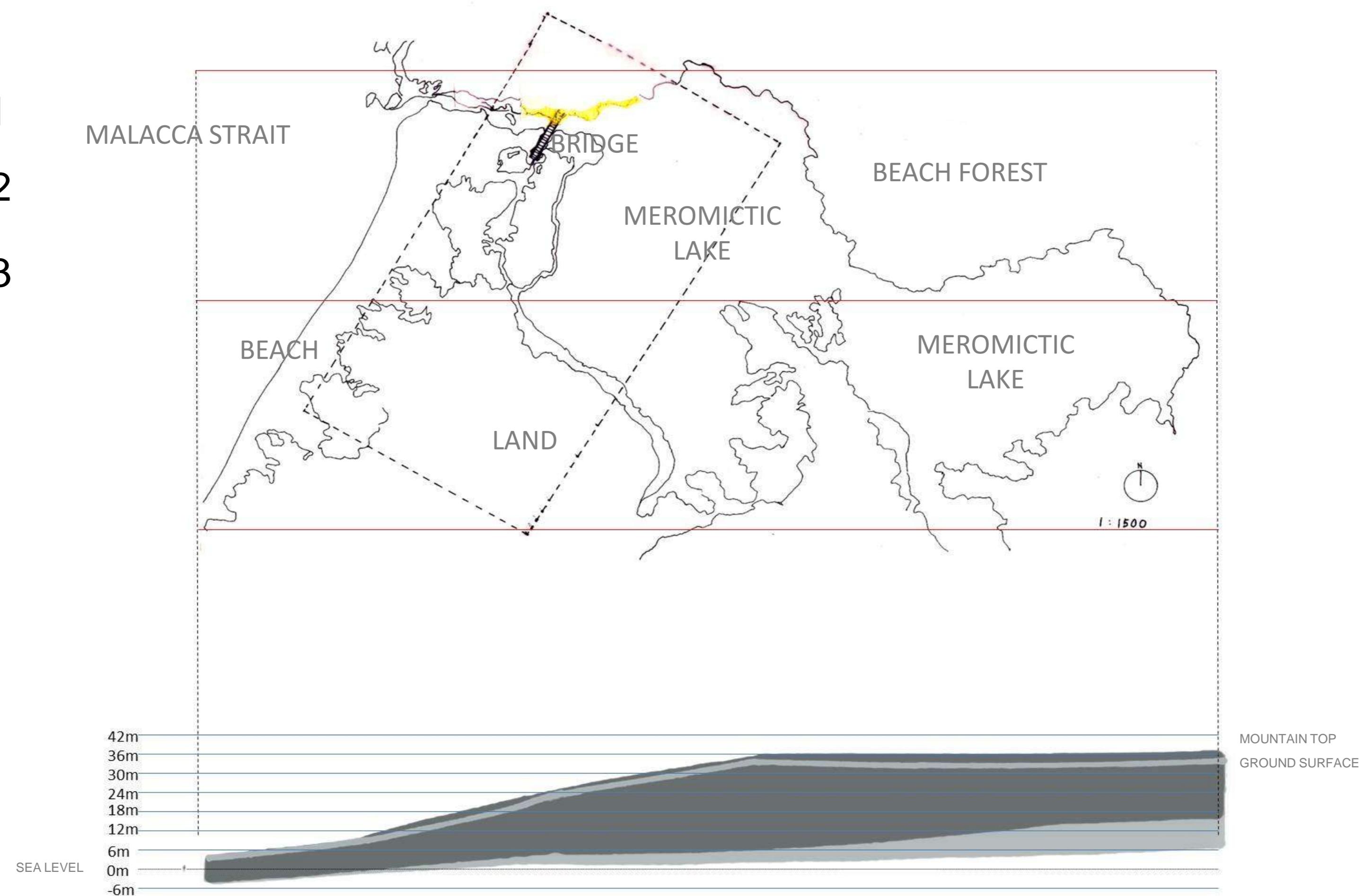


SECTION B-3

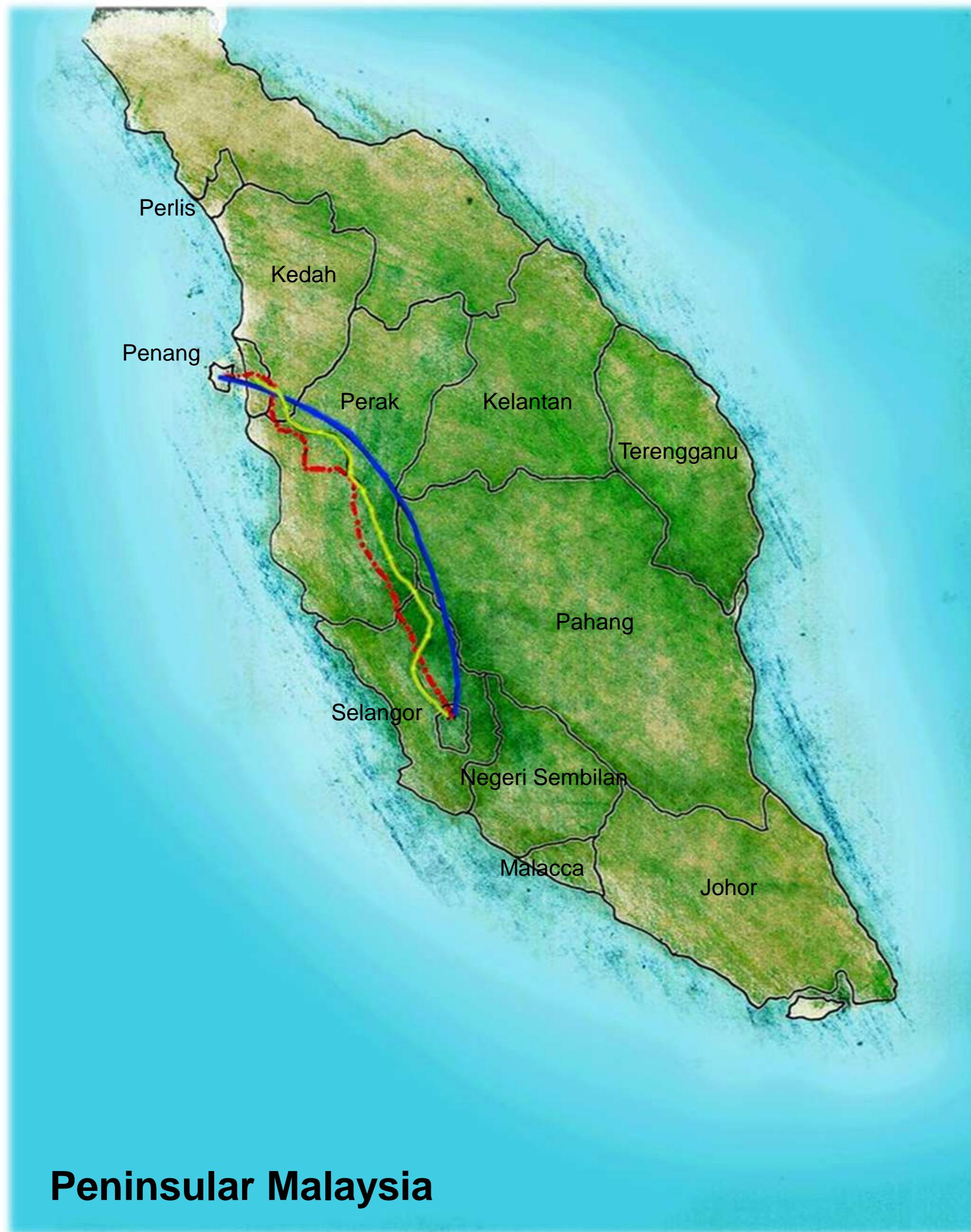
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Legend:

- Section B-1
- Section B-2
- Section B-3



MACRO



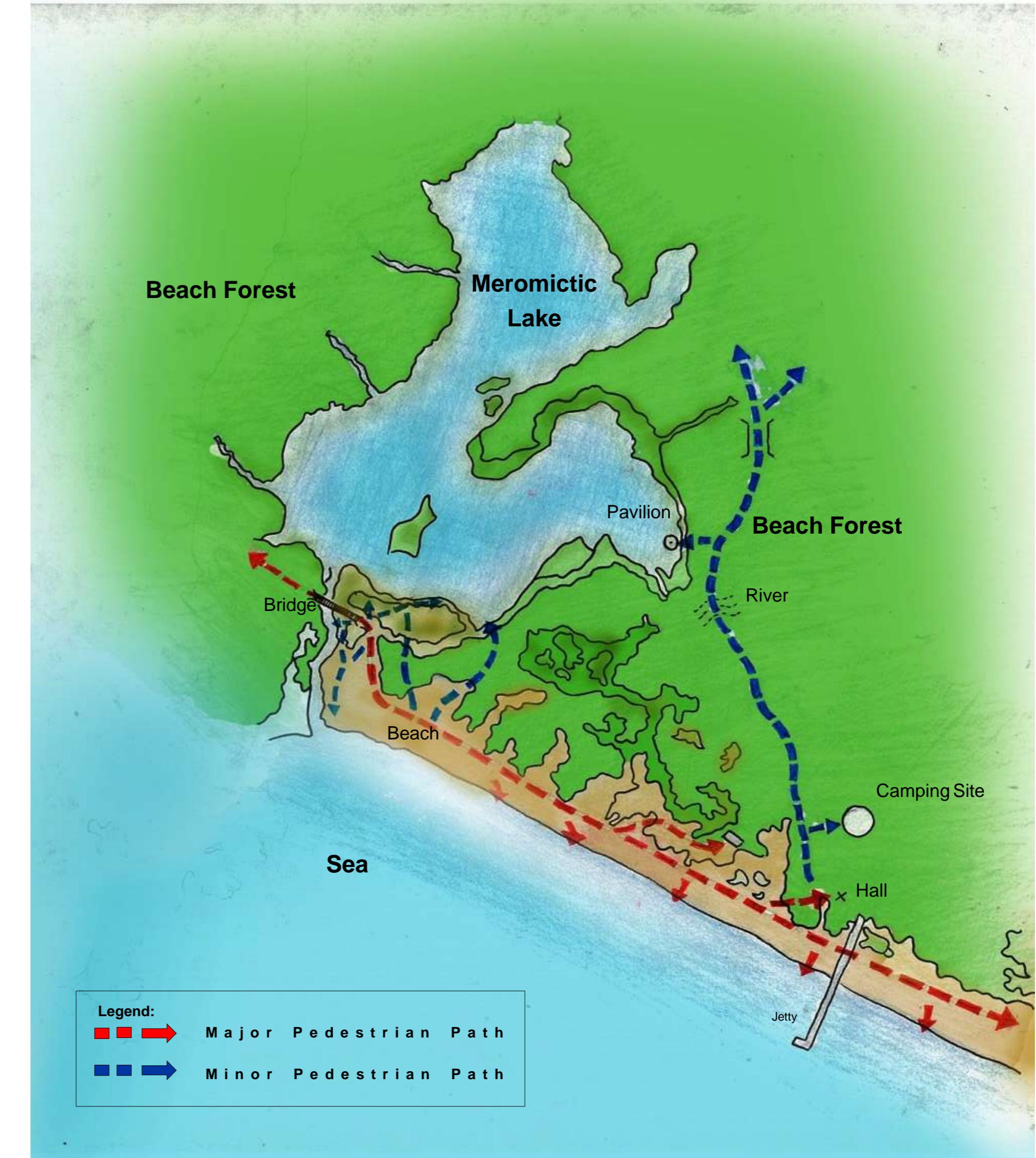
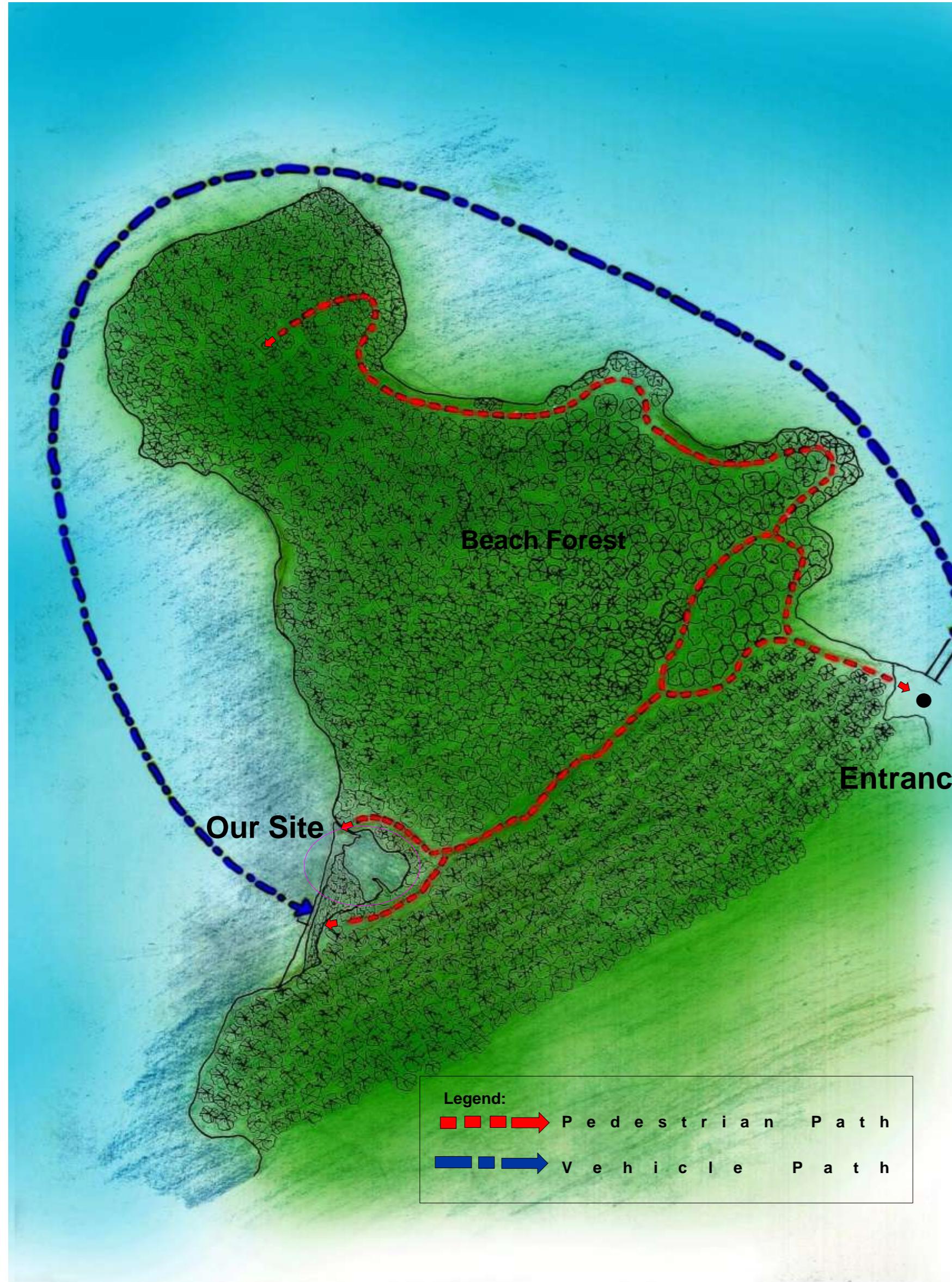
Legend :

- Airplane Route
- Car and Bus Route
- Yellow Line — Train Route

CIRCULATION

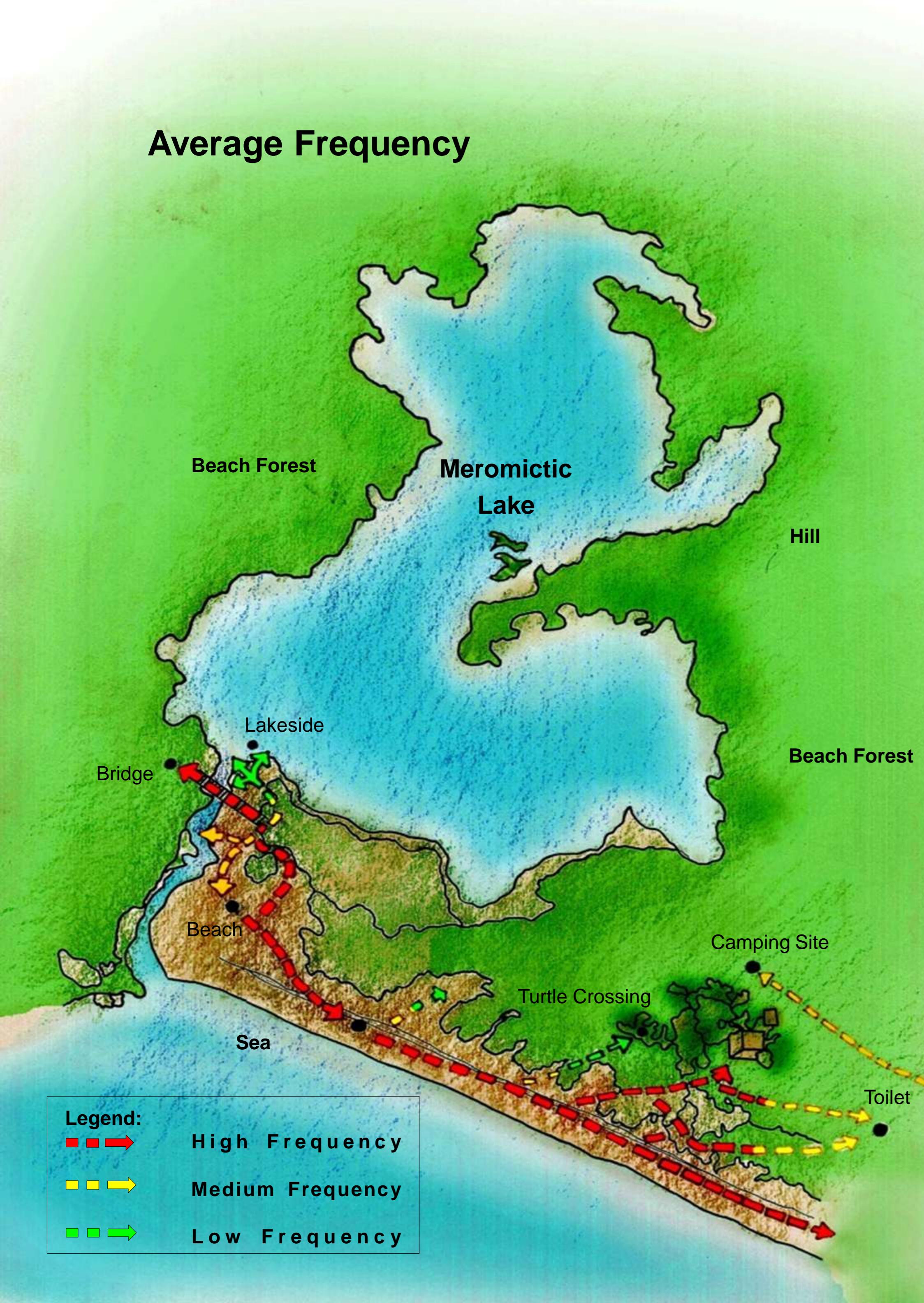
MICRO

Hiking and Boat-Riding Path (Site: Teluk Bahang--Pedestrian Path (Site: Lake)
- Pantai Kerachut)



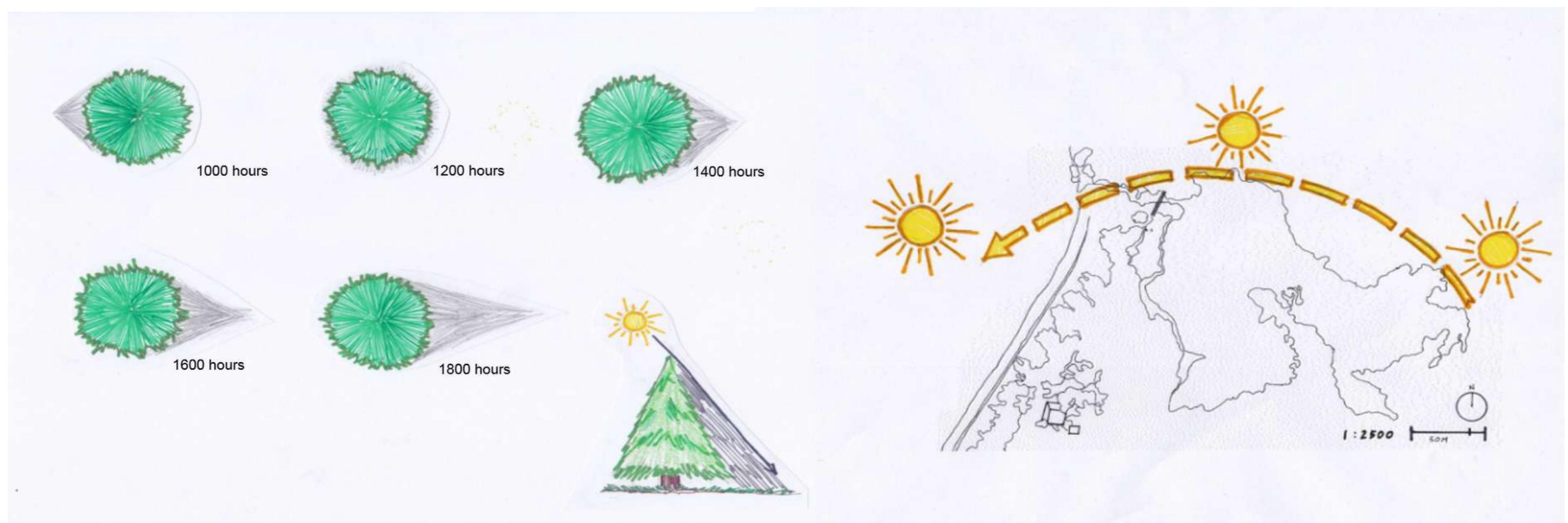
CIRCULATION

CIRCULATION



Activity	Time	Morning	Afternoon	Evening
Bridge		High	High	High
Sight Seeing		High	High	High
Sun Bathing		Low	Medium	Low
Turtle Crossing		-	-	Low
Barbeque Site		Low	Low	High
Camping Site		Low	Low	High
Toilet		Medium	High	Low
Jetty		Low	Low	Medium

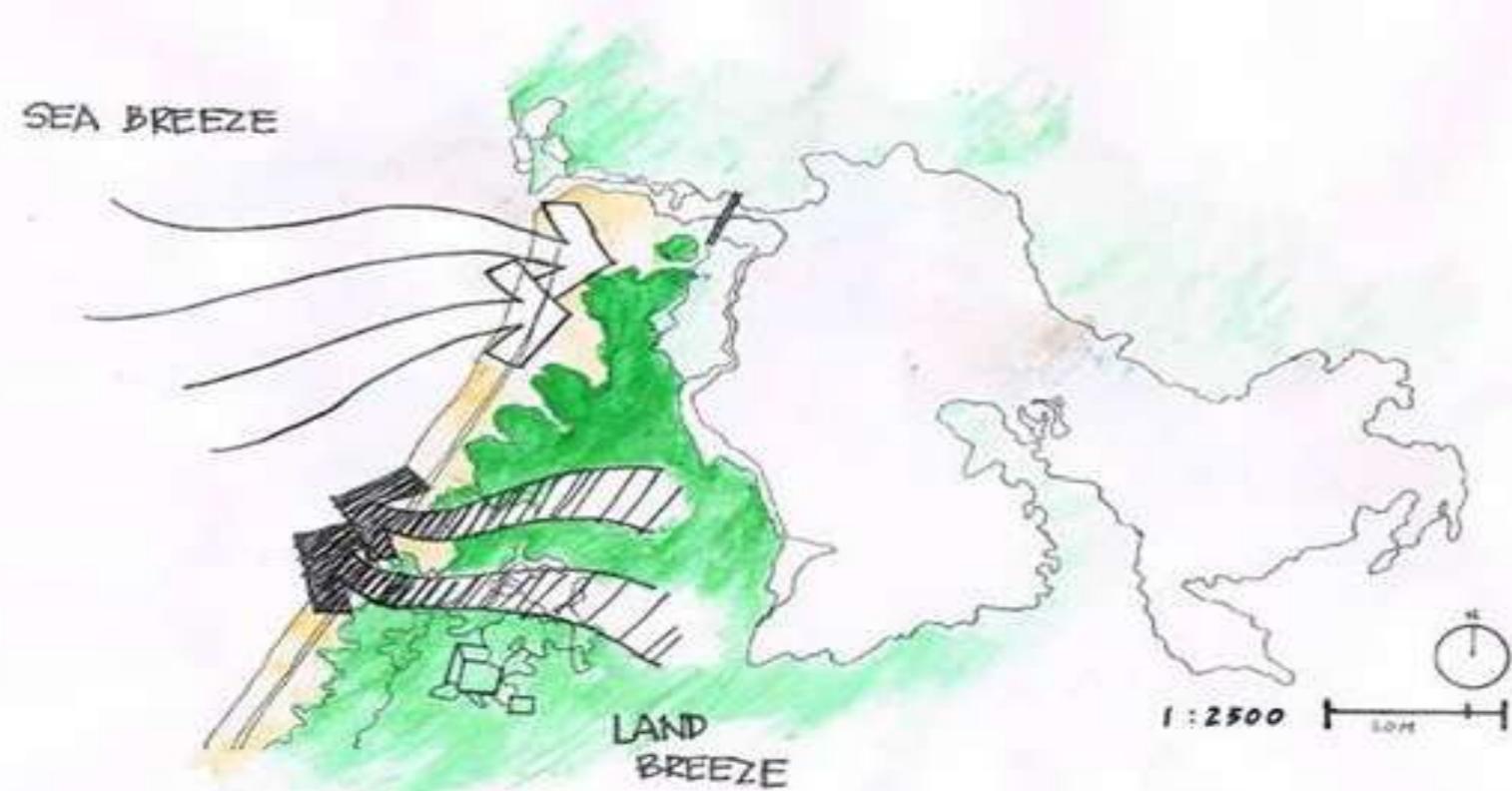
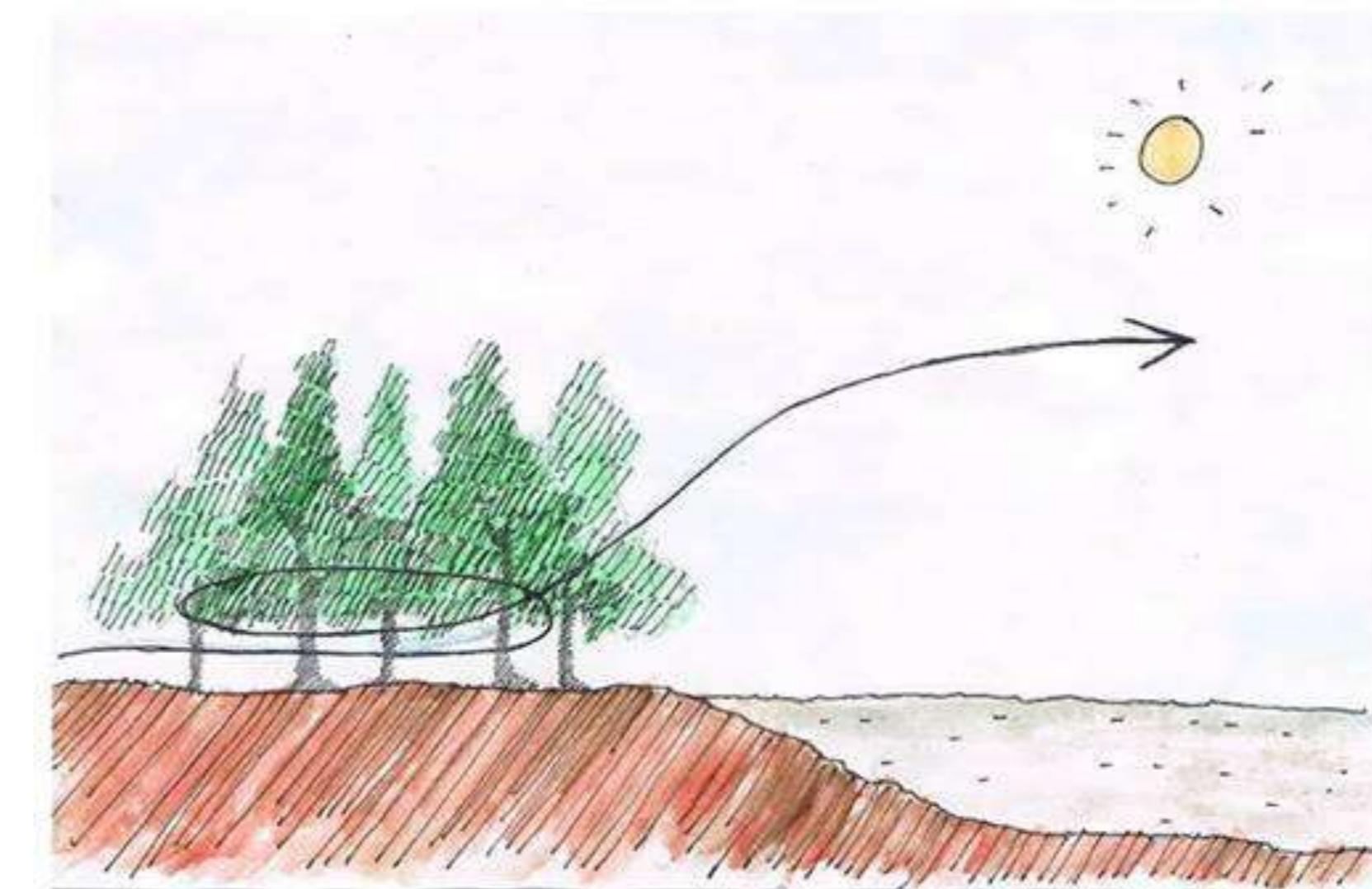
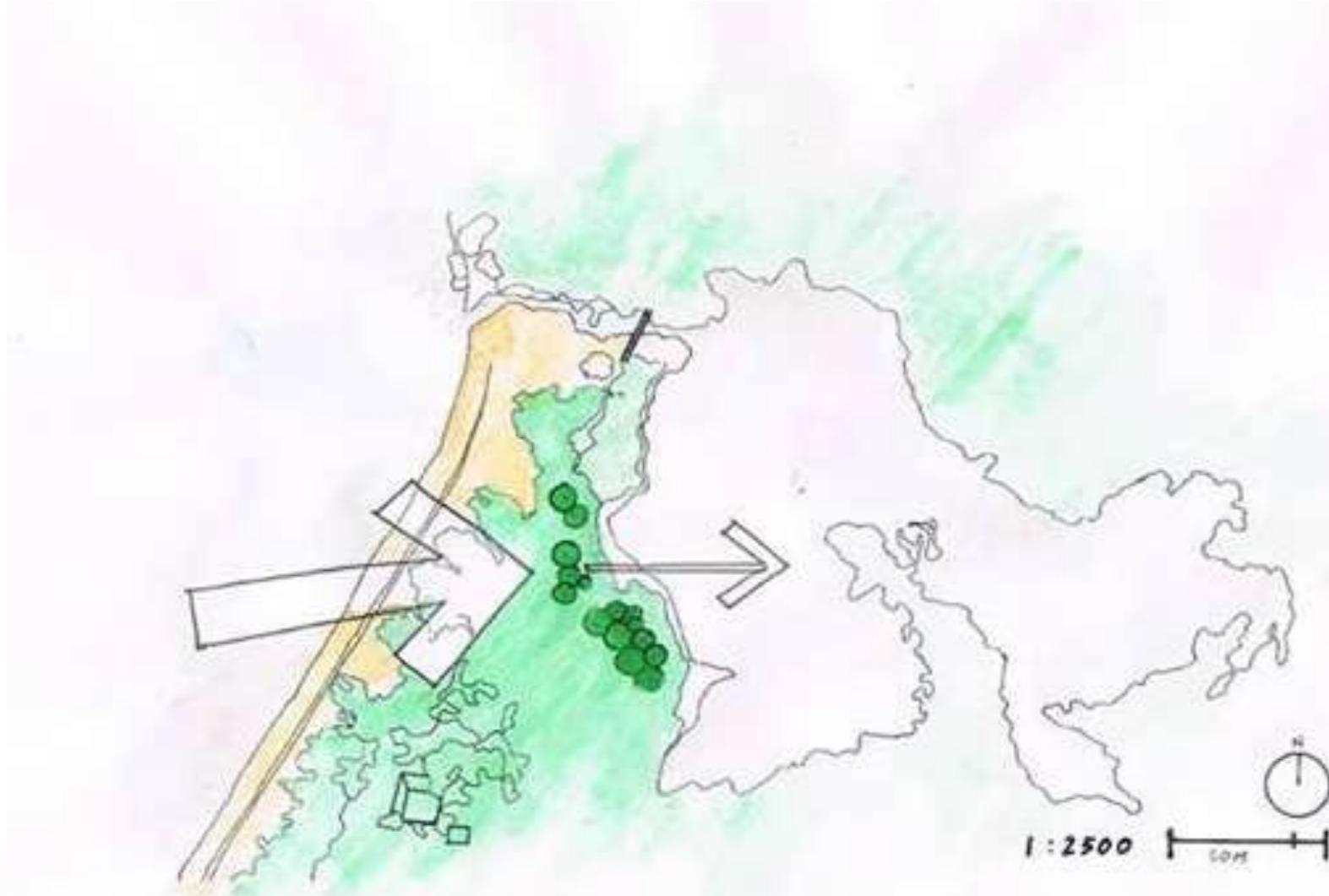
SUN



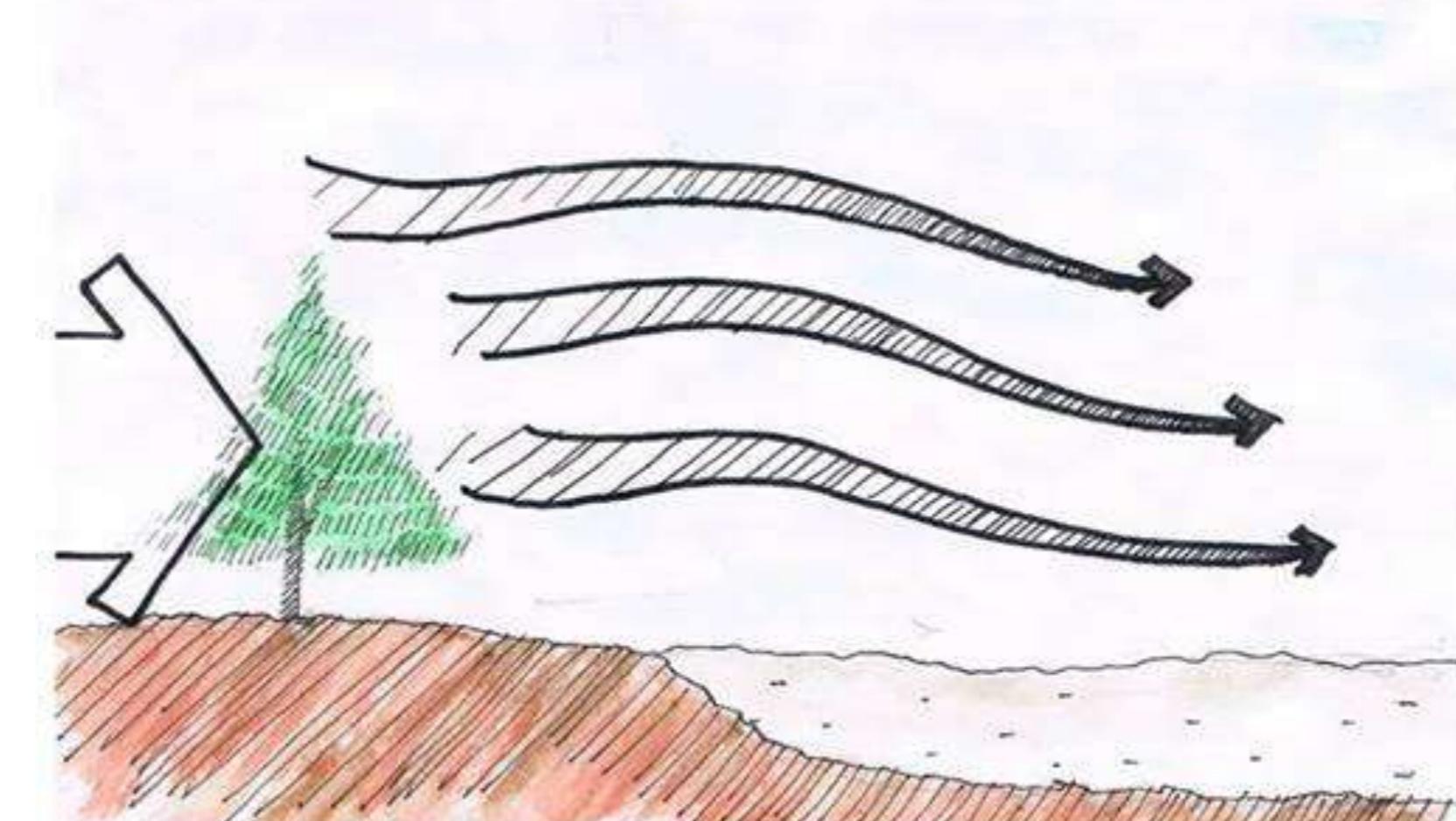
CLIMATE

WIND

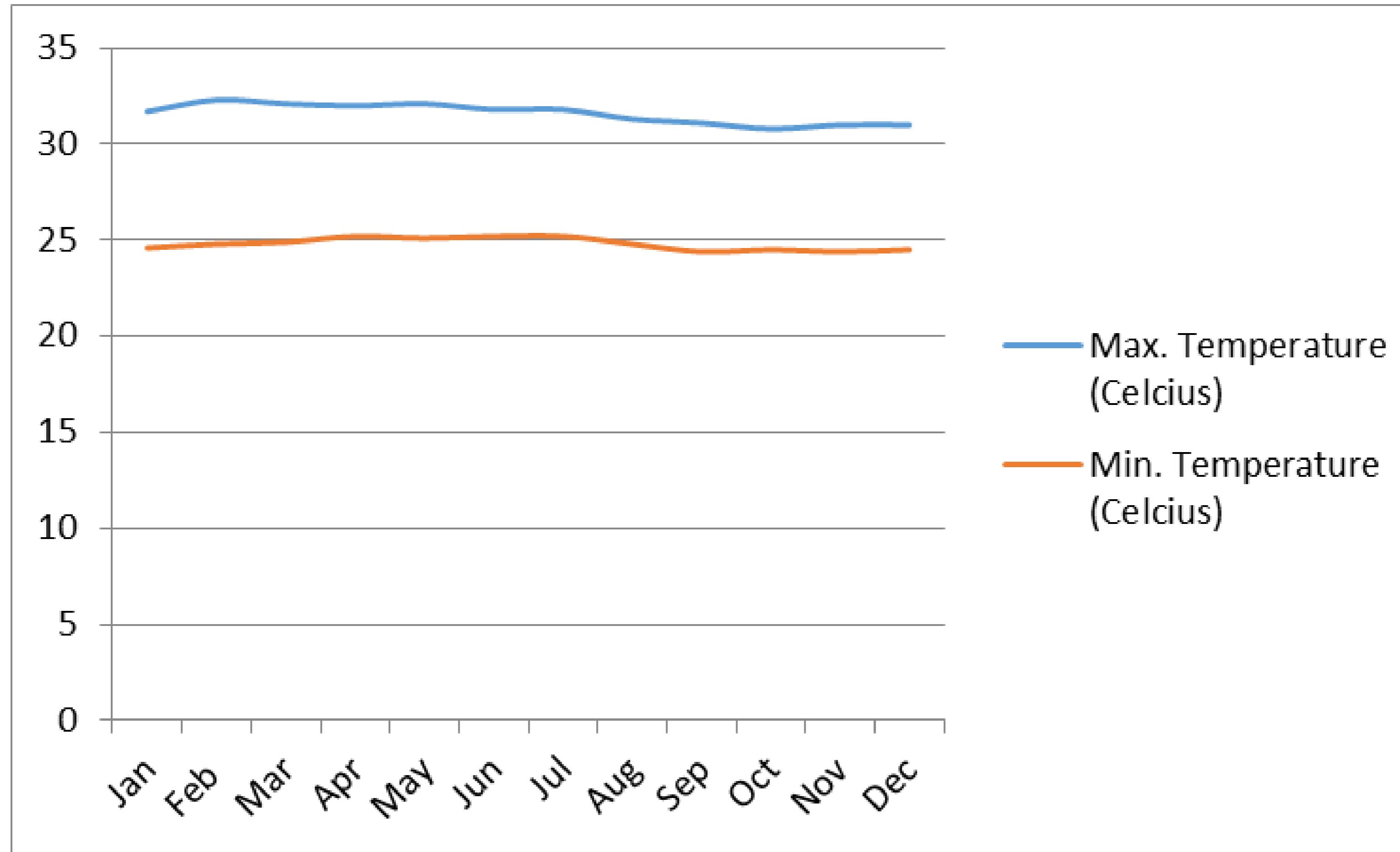
When the wind pressure flows through the enclosed area of the trees and vegetations, being smaller in diameter, the restriction causes a higher pressure at the narrow end. This difference in pressure causes the wind flow to accelerate towards the low pressure narrow section, creating a higher constant speed.



Land Breeze and Sea Breeze



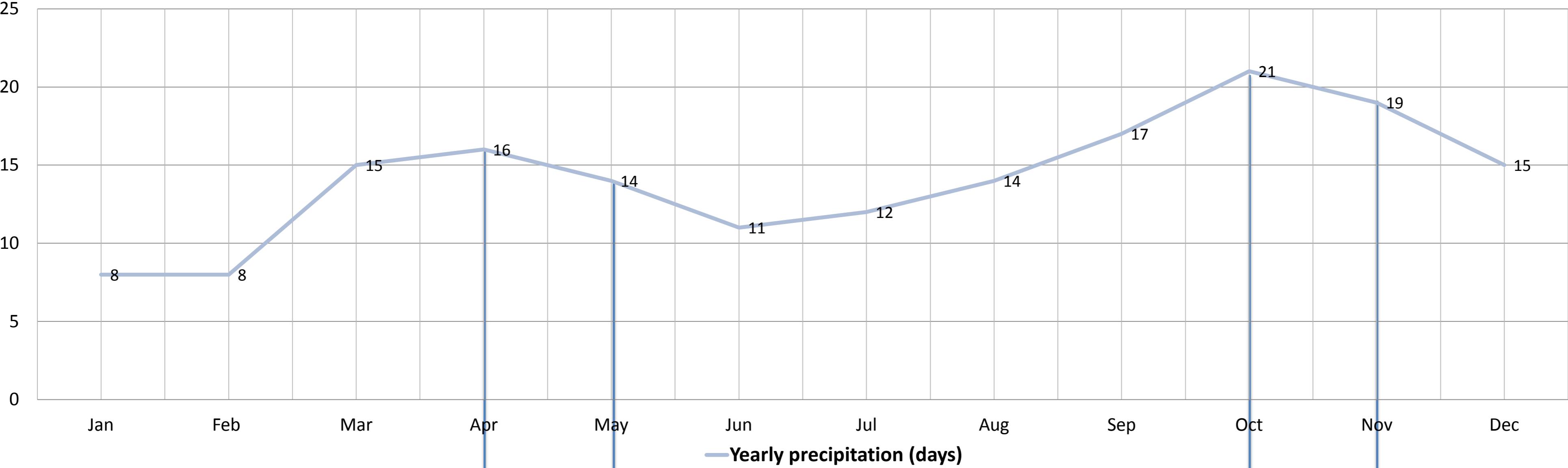
TEMPERATURE & HUMIDITY



Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max. Temperature (Celcius)	31.7	32.3	32.1	32	32.1	31.8	31.8	31.3	31.1	30.8	31	31
Min. Temperature (Celcius)	24.6	24.8	24.9	25.2	25.1	25.2	25.2	24.8	24.4	24.5	24.4	24.5

CLIMATE

LAKE CYCLE



Southwest monsoon
(Nov – March)

Intermonsoon season

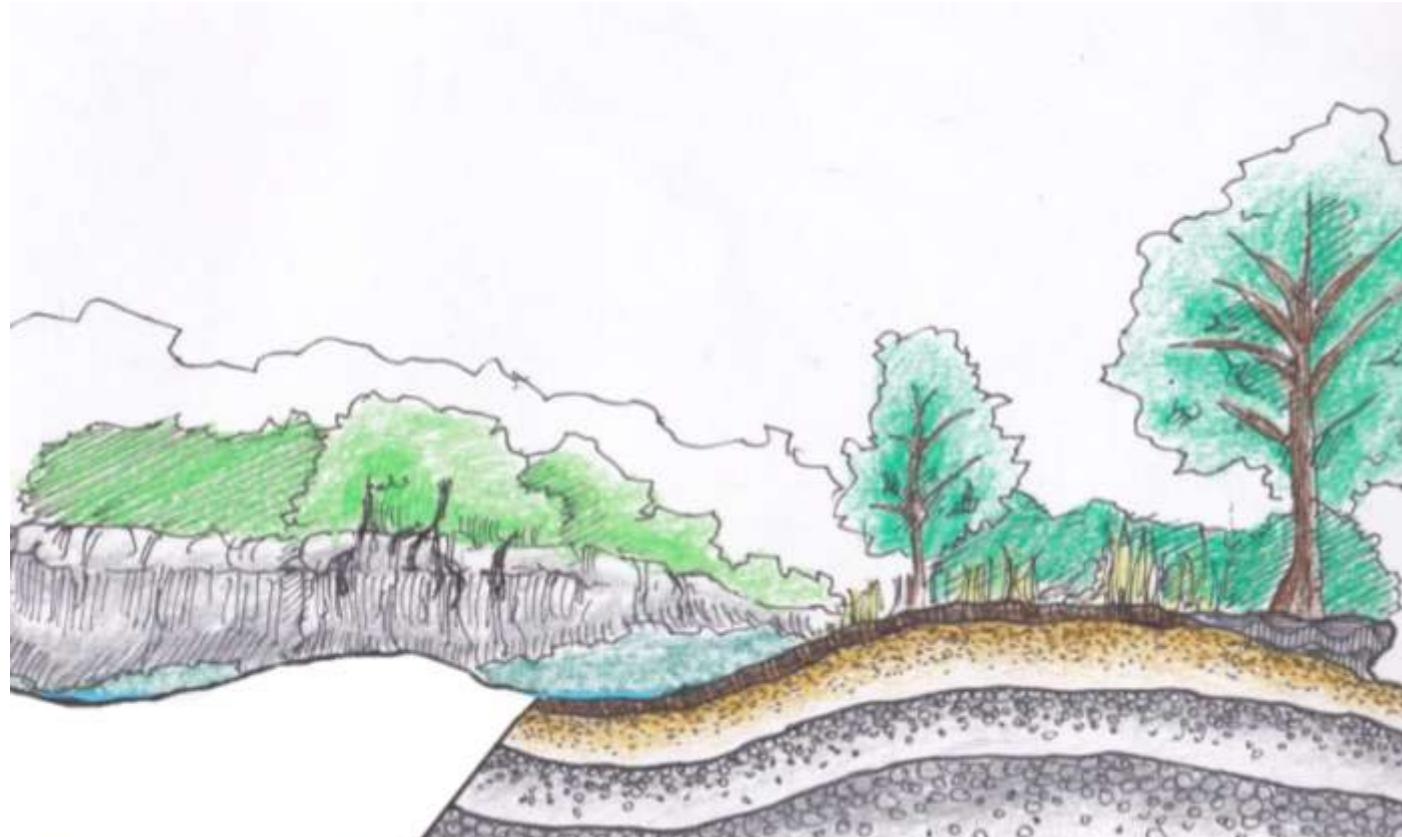
Northeast monsoon
(May – Sept)

Intermonsoon season

- The lake has low water levels during the dry season which is filled mostly with fresh water from the streams and the water levels follows the sea tide levels throughout the day.

- Formation of lake occur during intermonsoon seasons, which Sumatra winds bring in strong waves and heavy rainfalls.
- Throughout April-May and Oct-Nov, the lake will form and dry up in 1 hour 15mins for several times.

Low tide (0 ~10cm)

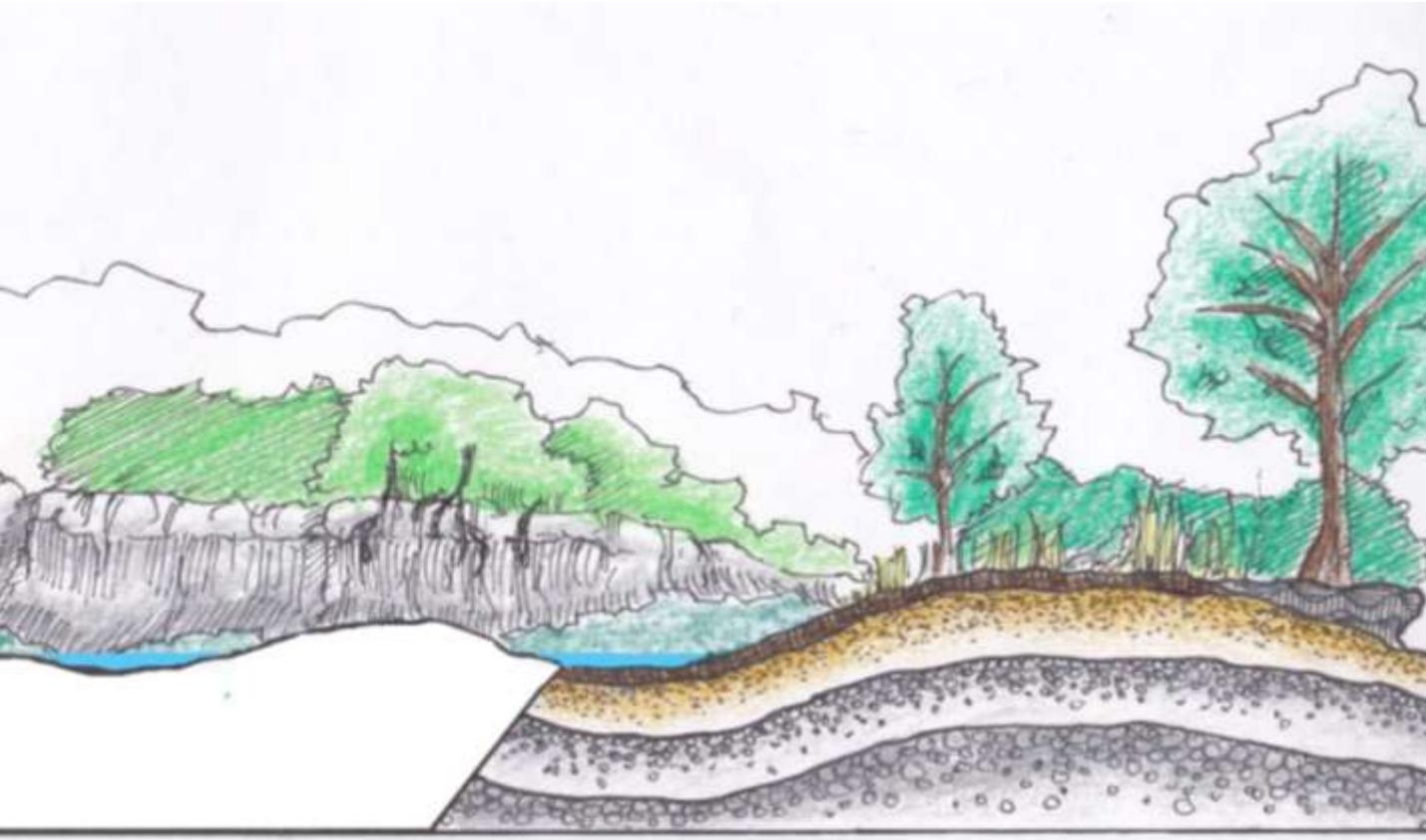


Natural dam formed

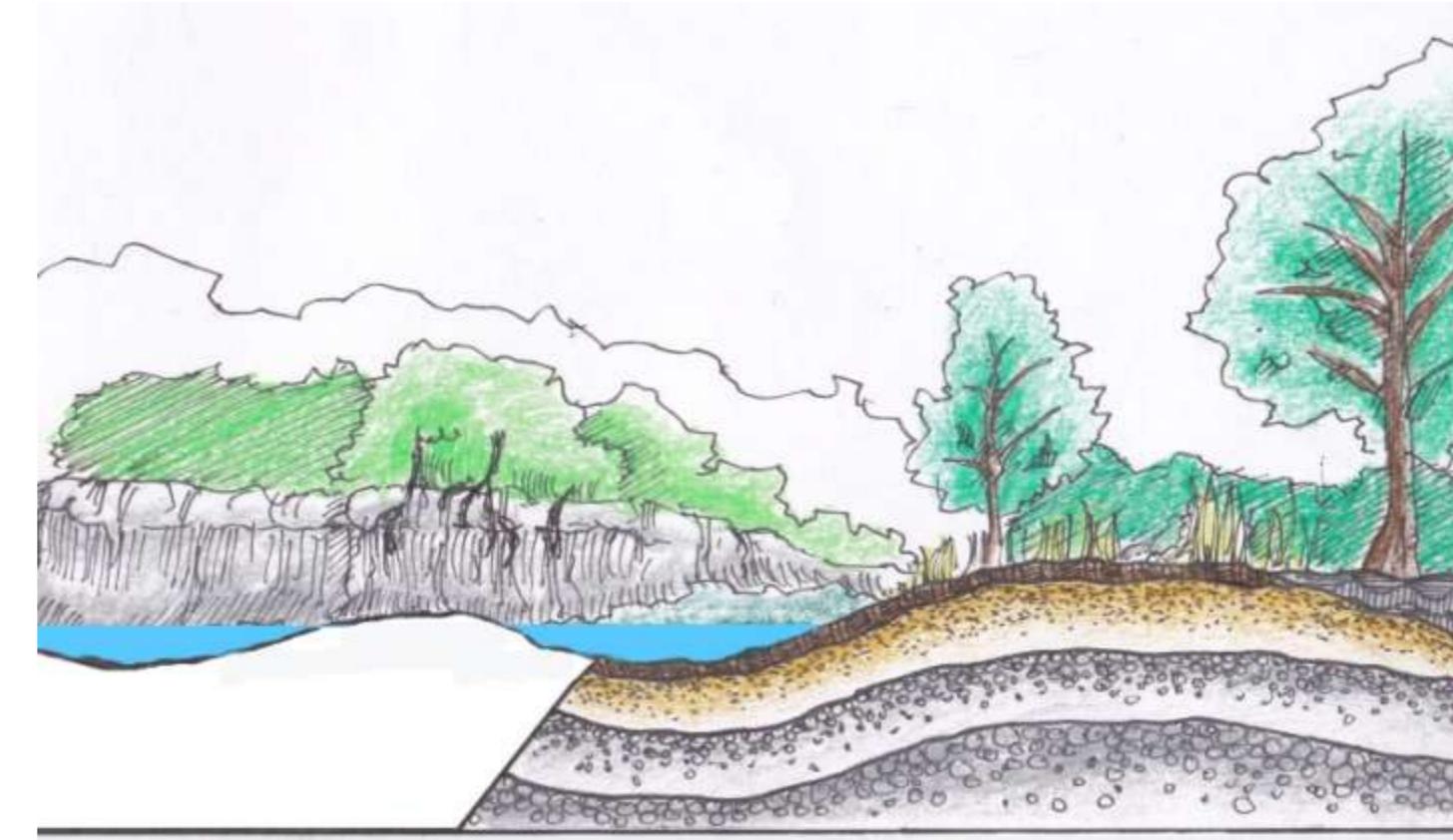


LAKE CYCLE

High tide (20~50cm)



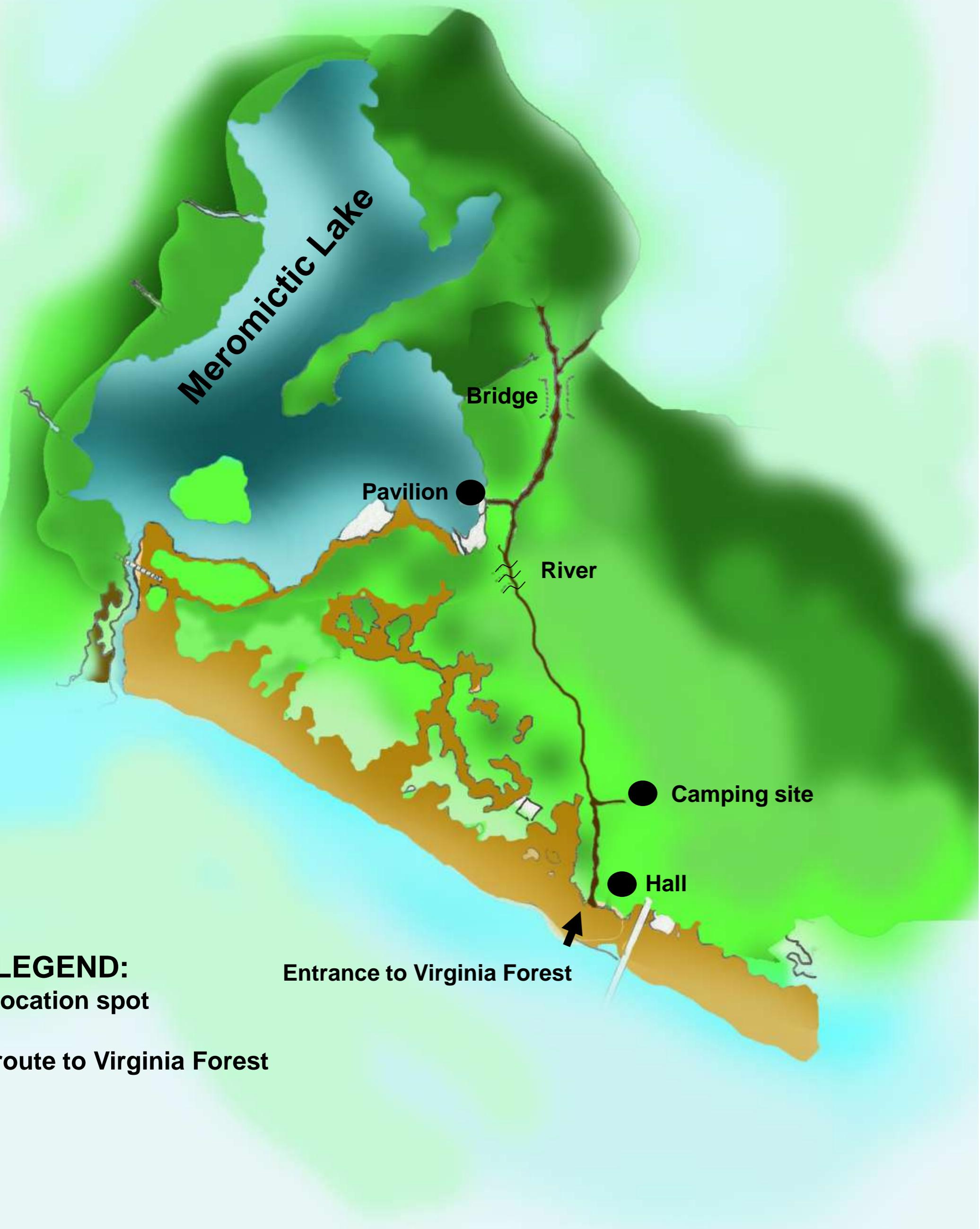
Maximum water level (~170cm excluding mud level)



Lake with maximum water level



Location of Vegetation in Virginia Forest



Meromictic Lake

The Meromictic Lake in Penang National Park is a lake that can **adapt to two types of water**: where it mainly receive water from **five different streams and the sea**.

Due to the presence of **different densities** in these two water, the lake is separated into two layers, where the sea water exist in the lower layer while other stream water lays in the upper layer.

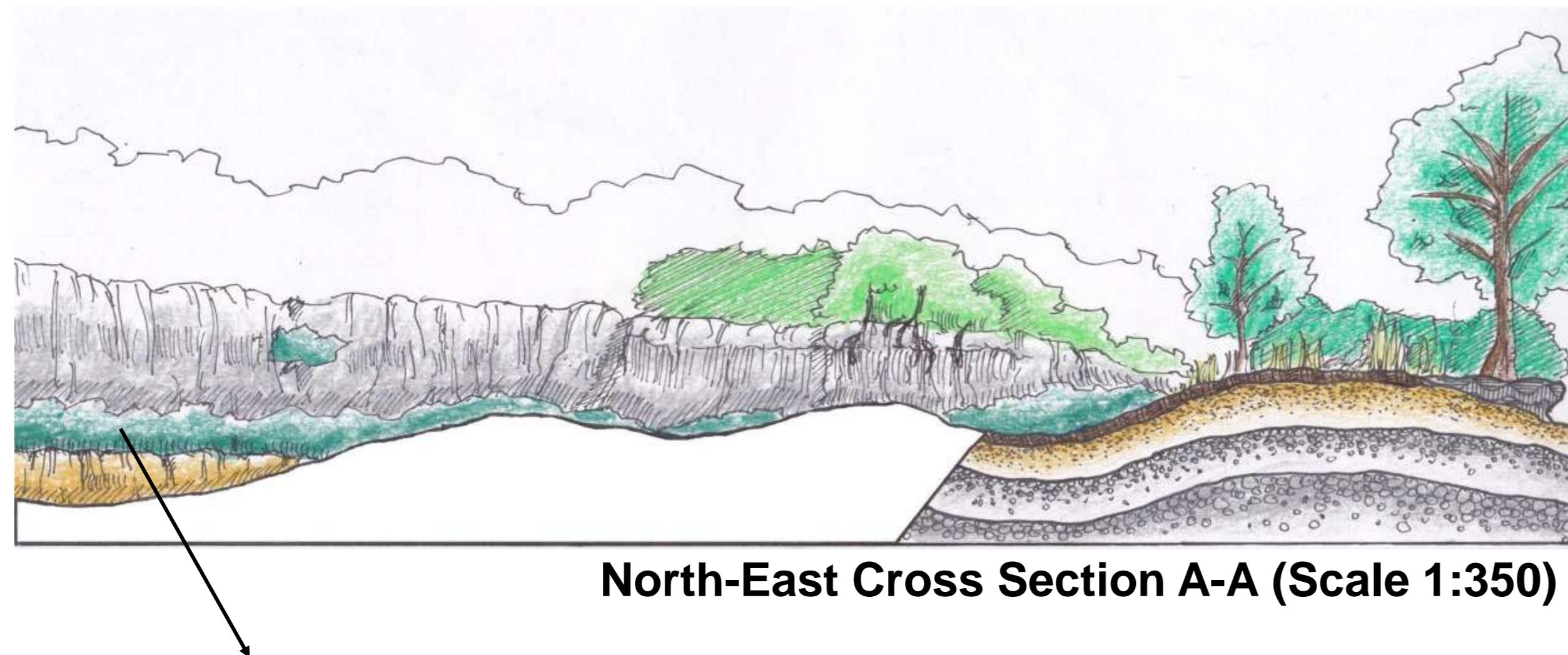
Besides, the lake also consist of two **different temperature**. The stream water on the lower part has a higher temperature if compared to the sea water which is cooler.

Landscape, Elevation & Sections

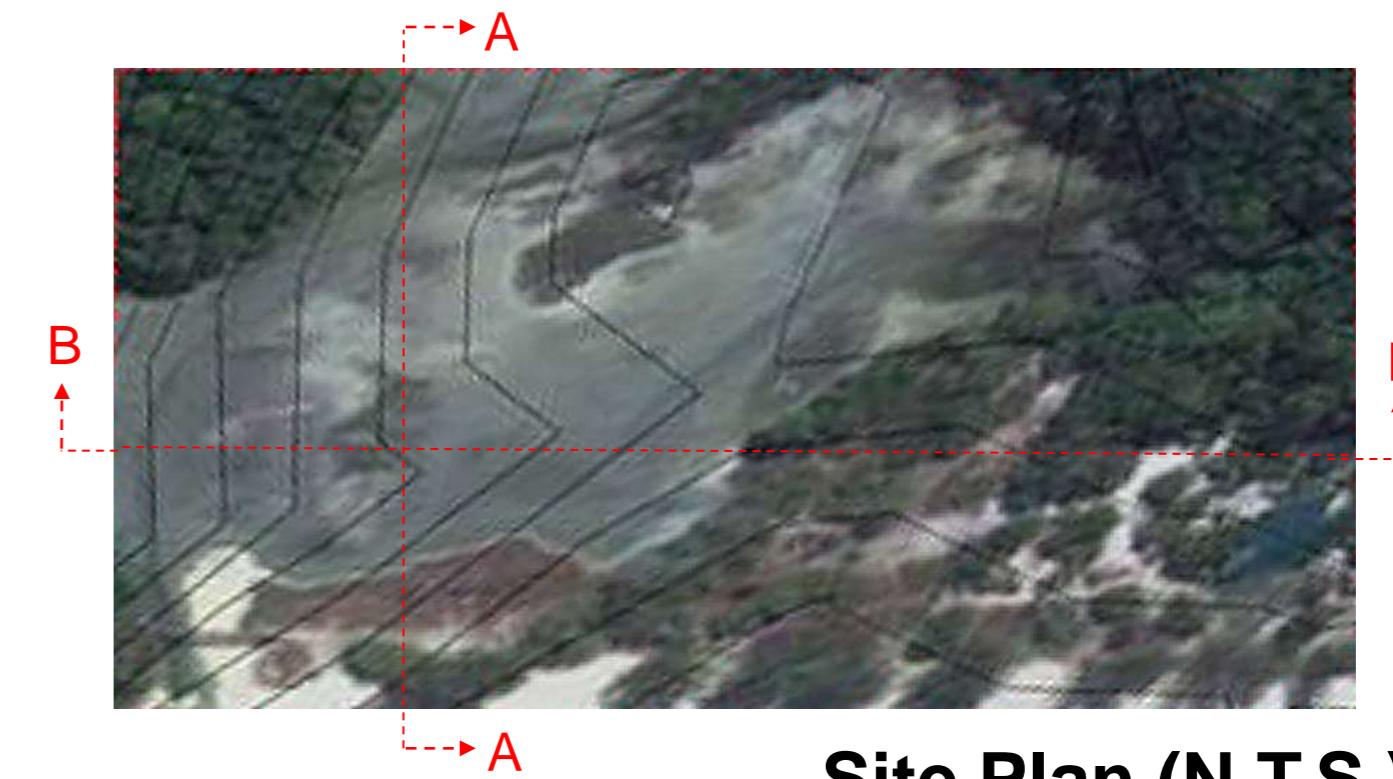
Vegetations & Aquatic Livings



East -South Elevation (Scale 1:350)



North-East Cross Section A-A (Scale 1:350)



Site Plan (N.T.S.)



Fiddler crabs

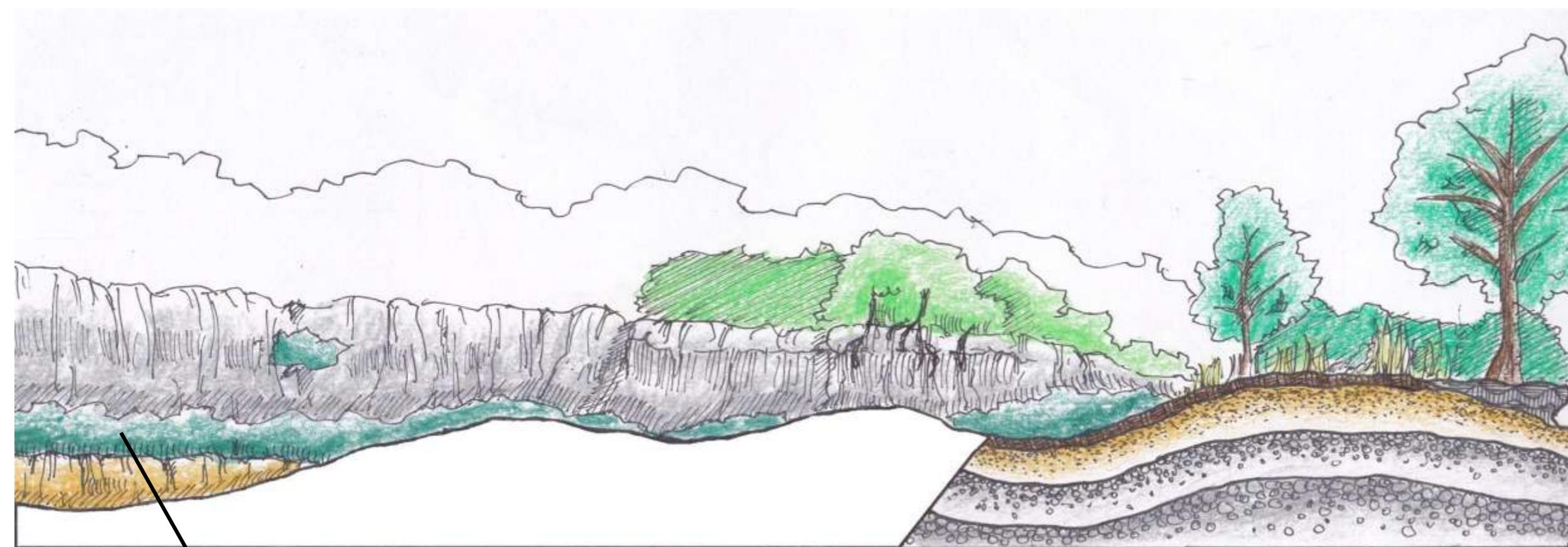
- ❖ **Shed shells** as they grow.
- ❖ Lost legs or claws during their present growth cycle, a new one will be present when they molt
- ❖ **Smallest** size about diameter of a **50 cent coin**

Landscape, Elevation & Sections

Vegetations & Aquatic Livings



East -South Elevation (Scale 1:350)



North-East Cross Section A-A (Scale 1:350)



Site Plan (N.T.S.)

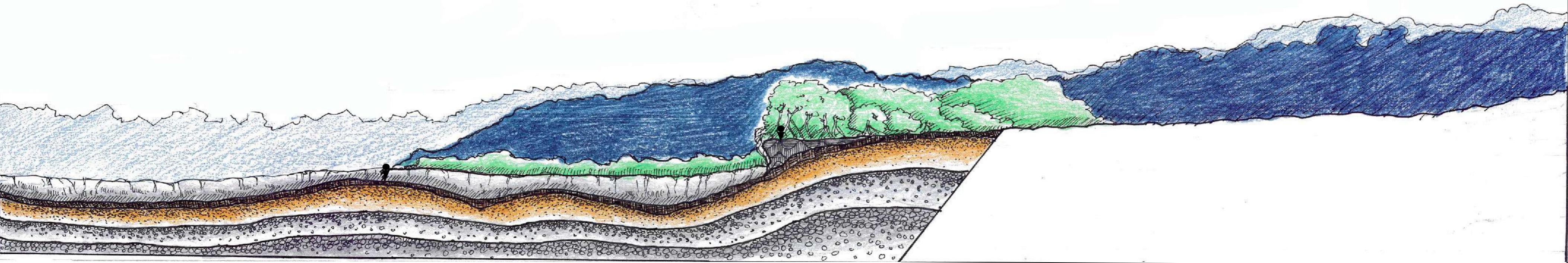


Faunus Ater

- ❖ **Brackish water snail** species with an operculum
- ❖ Aperture is ovate and white
- ❖ The **shell has two deep sinuses**: an anal sinus which is close to the suture and an anterior sinus more forward in the aperture
- ❖ Operculum is oval, corneous and dark brown

Landscape, Elevation & Sections

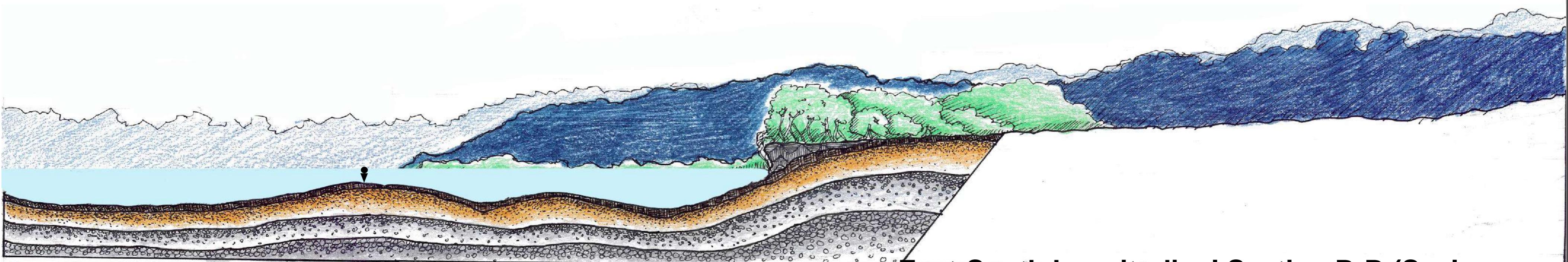
Water level of The Lake



Dry season (November~March)

- ❖ Sea water **cannot enter** the lake while **high tide**
- ❖ Water from the streams **evaporates** within **1.5 hrs**

East-South Longitudinal Section B-B (Scale 1:350)



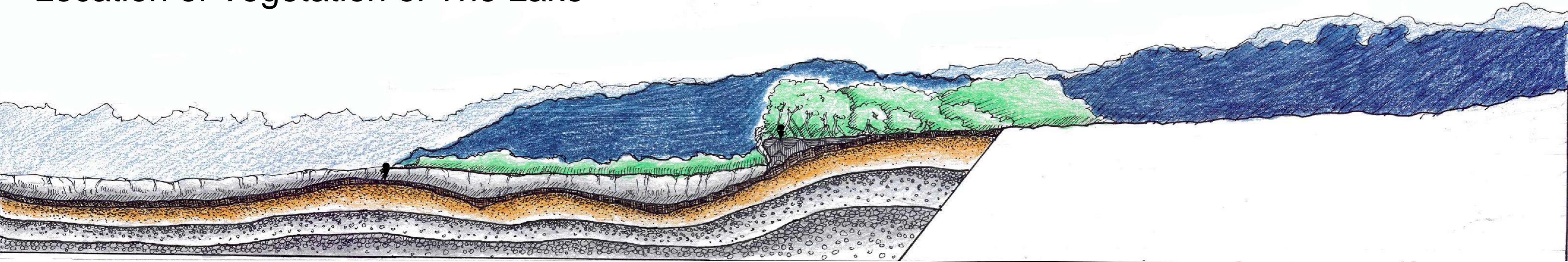
South-West Monsoon season (April~October)

- ❖ **Water level** will reach **maximum height (1.7m)** when **high tide**

East-South Longitudinal Section B-B (Scale 1:350)

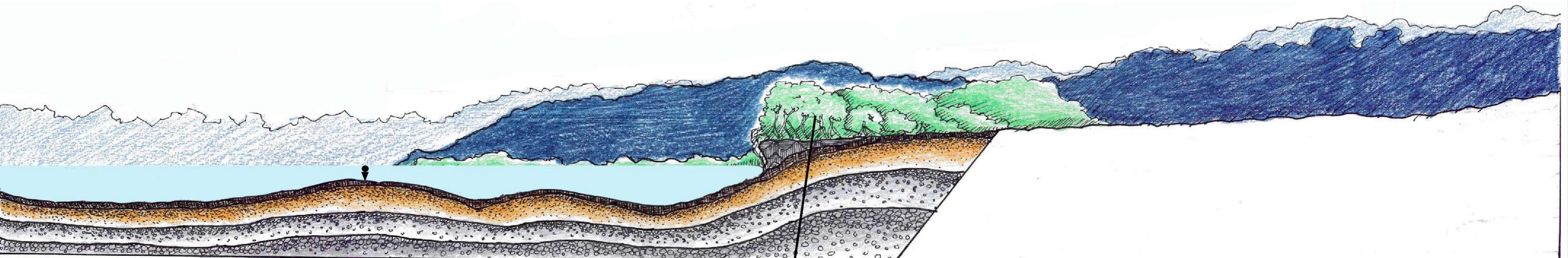
Landscape, Elevation & Sections

Location of Vegetation of The Lake



Dry season (November~March)

East-South Longitudinal Section B-B (Scale 1:350)



South-West Monsoon season (April~October)

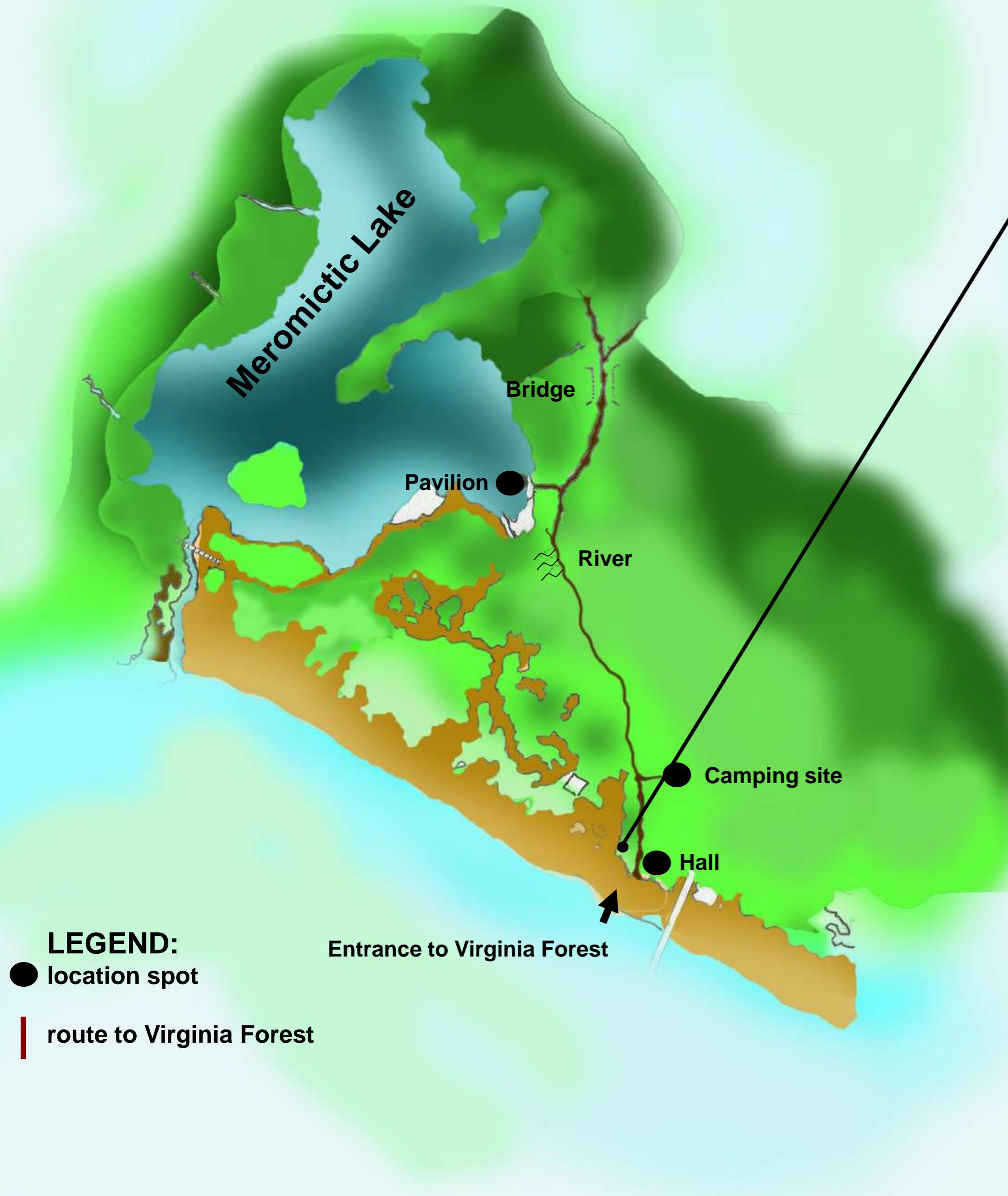
East-South Longitudinal Section B-B (Scale 1:350)



Red Mangrove

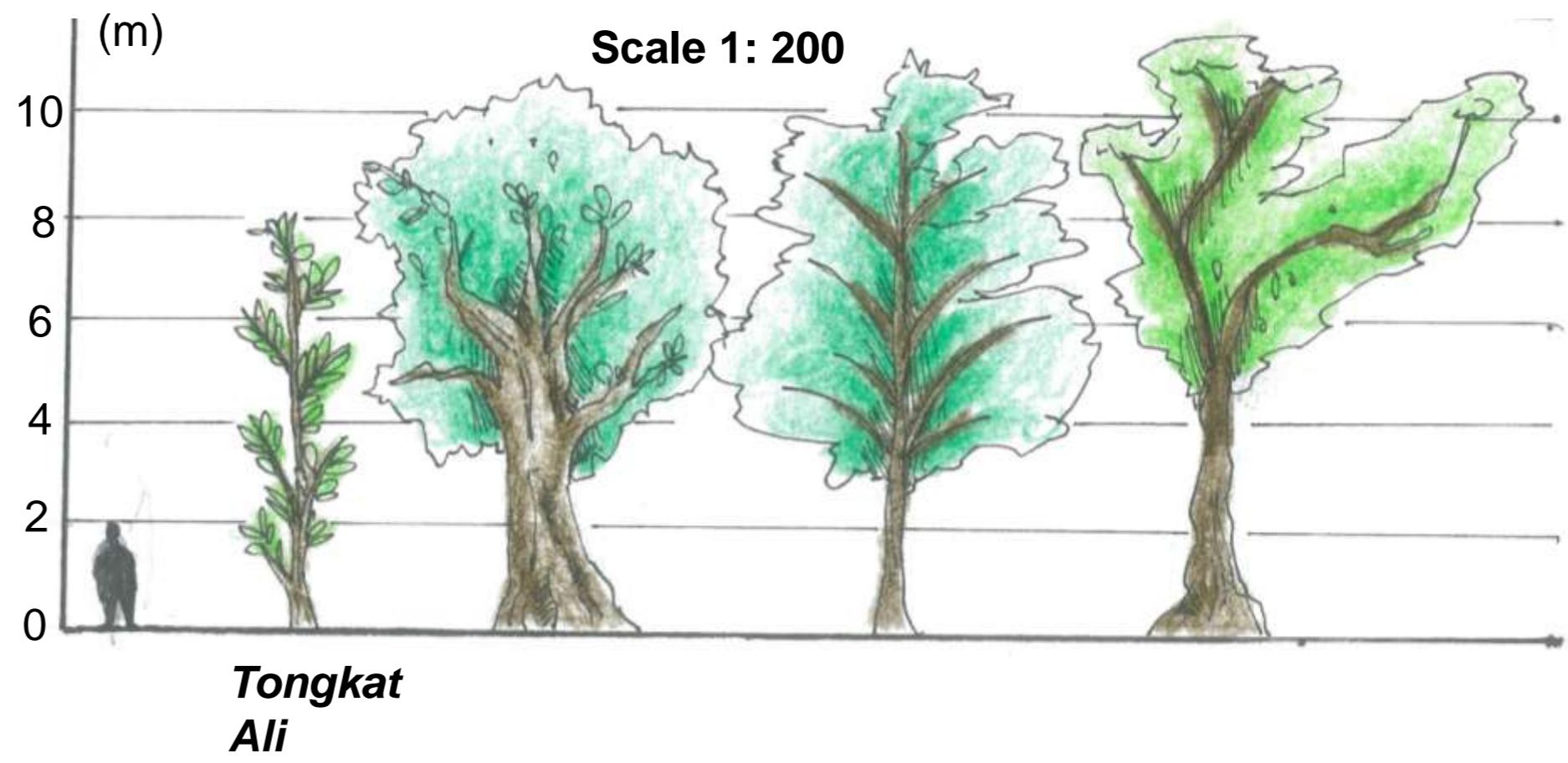
- ❖ Prop roots ("breathing tubes") **heights** of up to **30 cm**
- ❖ Prop themselves above the water level to absorb air through pores in their bark .
- ❖ Wind barrier

Location of Vegetation in Virginia Forest

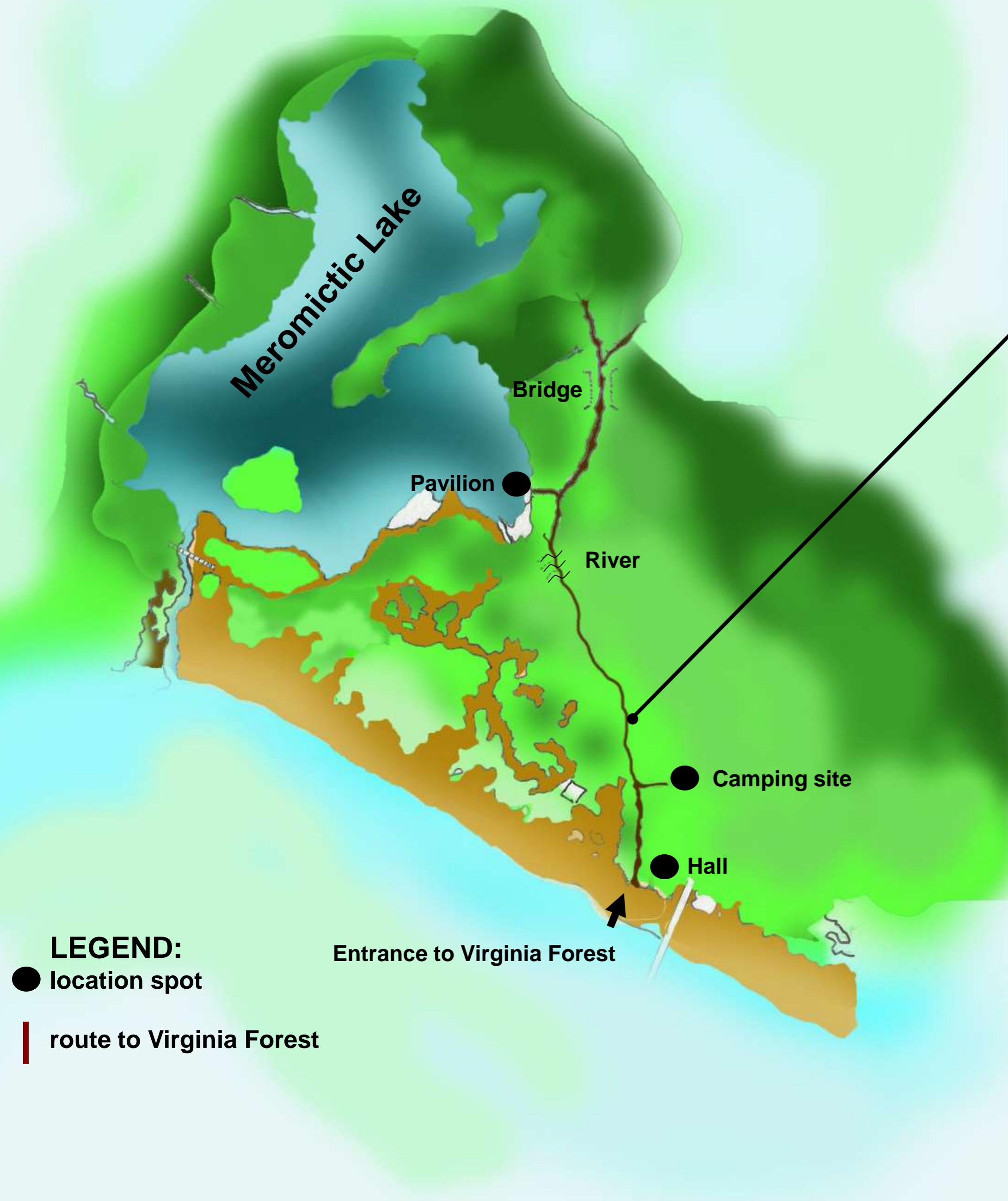


Tongkat Ali

- ❖ Height: (7-8) m
- ❖ Scientific name: *Eurycoma Longifolia*
- ❖ Another common name: Pasak bumi
- ❖ Family of Simaroubaceae
- ❖ **Evergreen** tree
- ❖ Function as *herb*: Pro-fertility and aphrodisiac

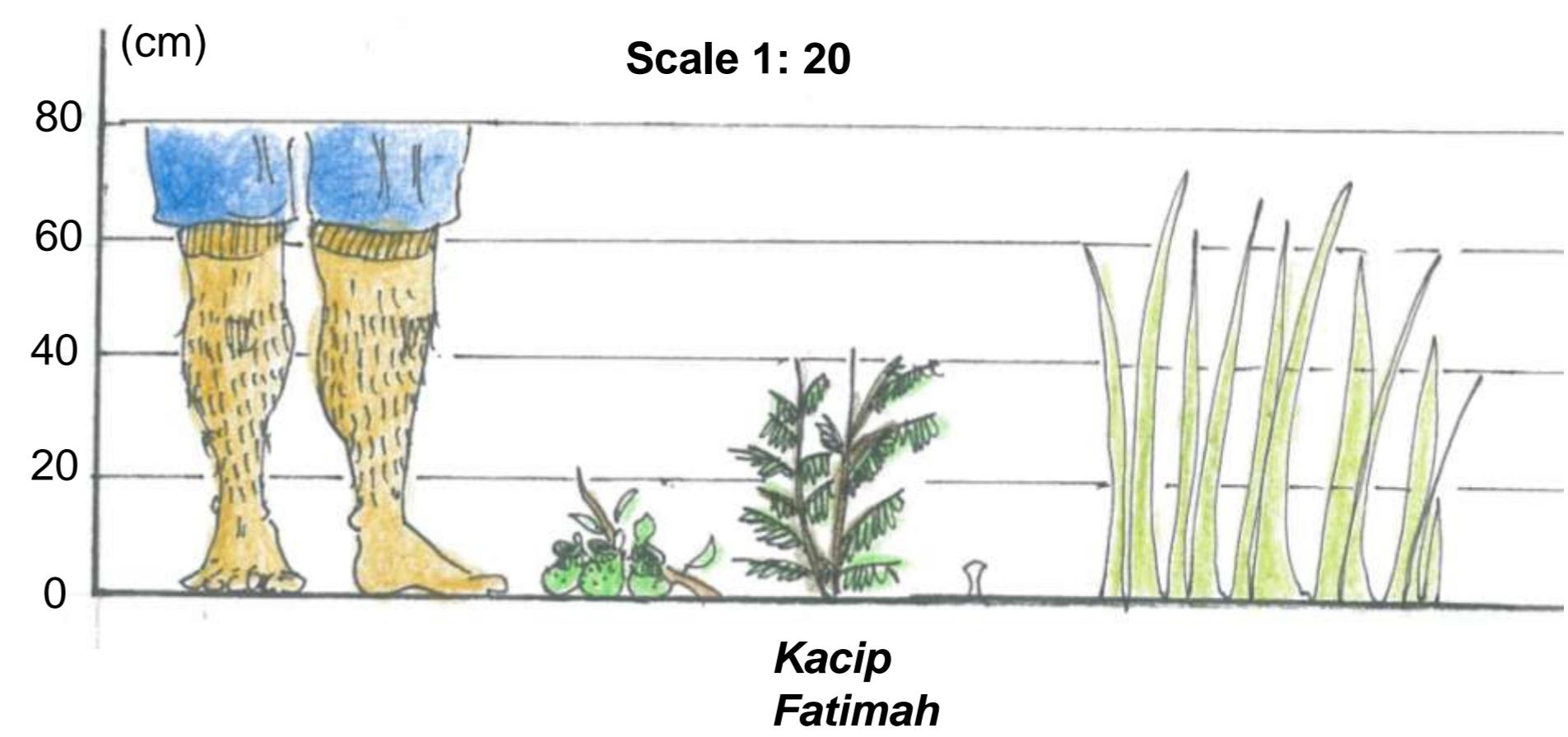


Location of Vegetation in Virginia Forest

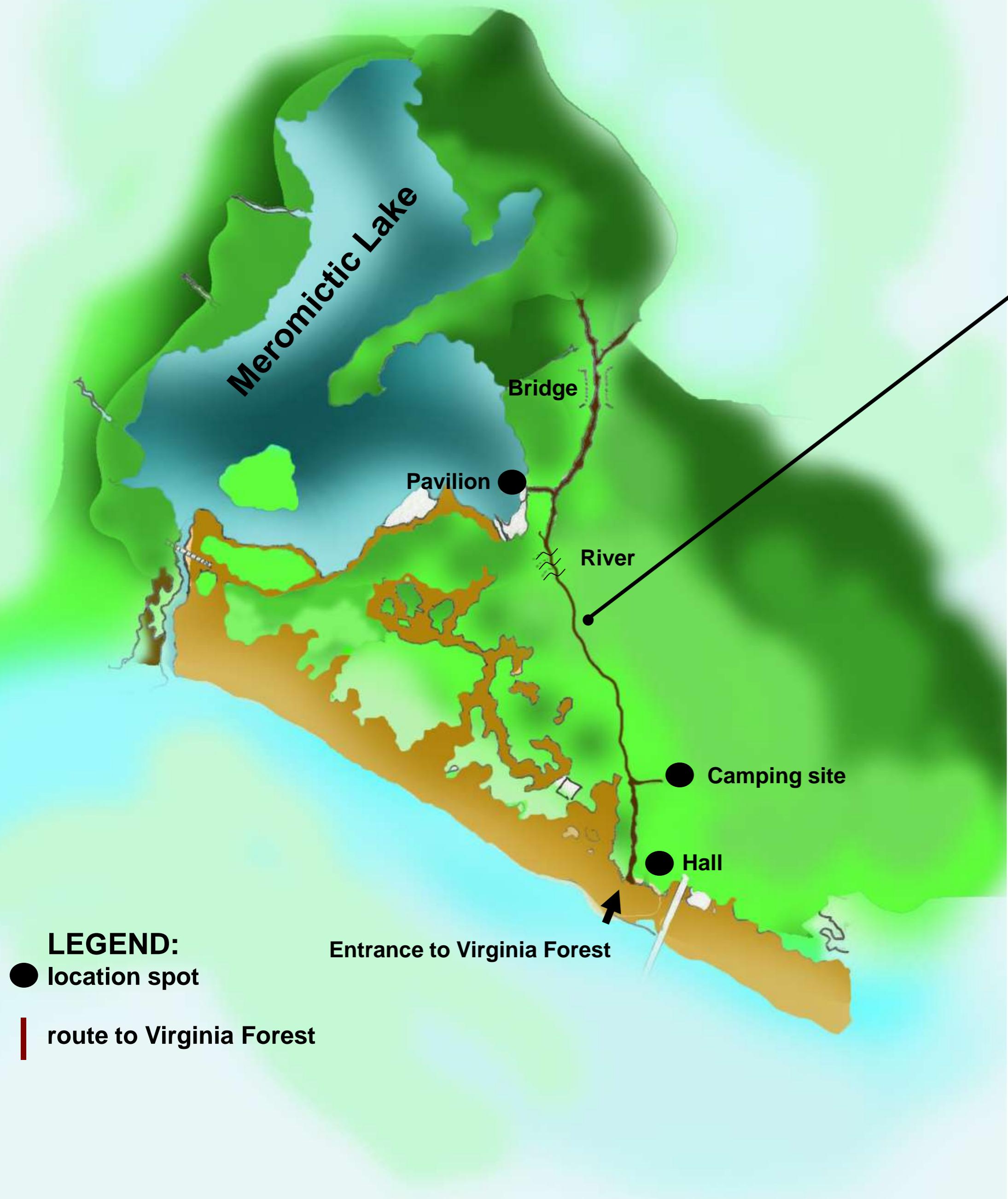


Kacip Fatimah

- ❖ Scientific name: *Labisia Pumila* Benth
- ❖ Common name: Selusuh Fatimah
- ❖ Leaf size: 0.2m
- ❖ Herbaceous shrub with creeping rhizomes
- ❖ **Surrounding:** High humidity and shady
- ❖ Function as **herb:** afterbirth care

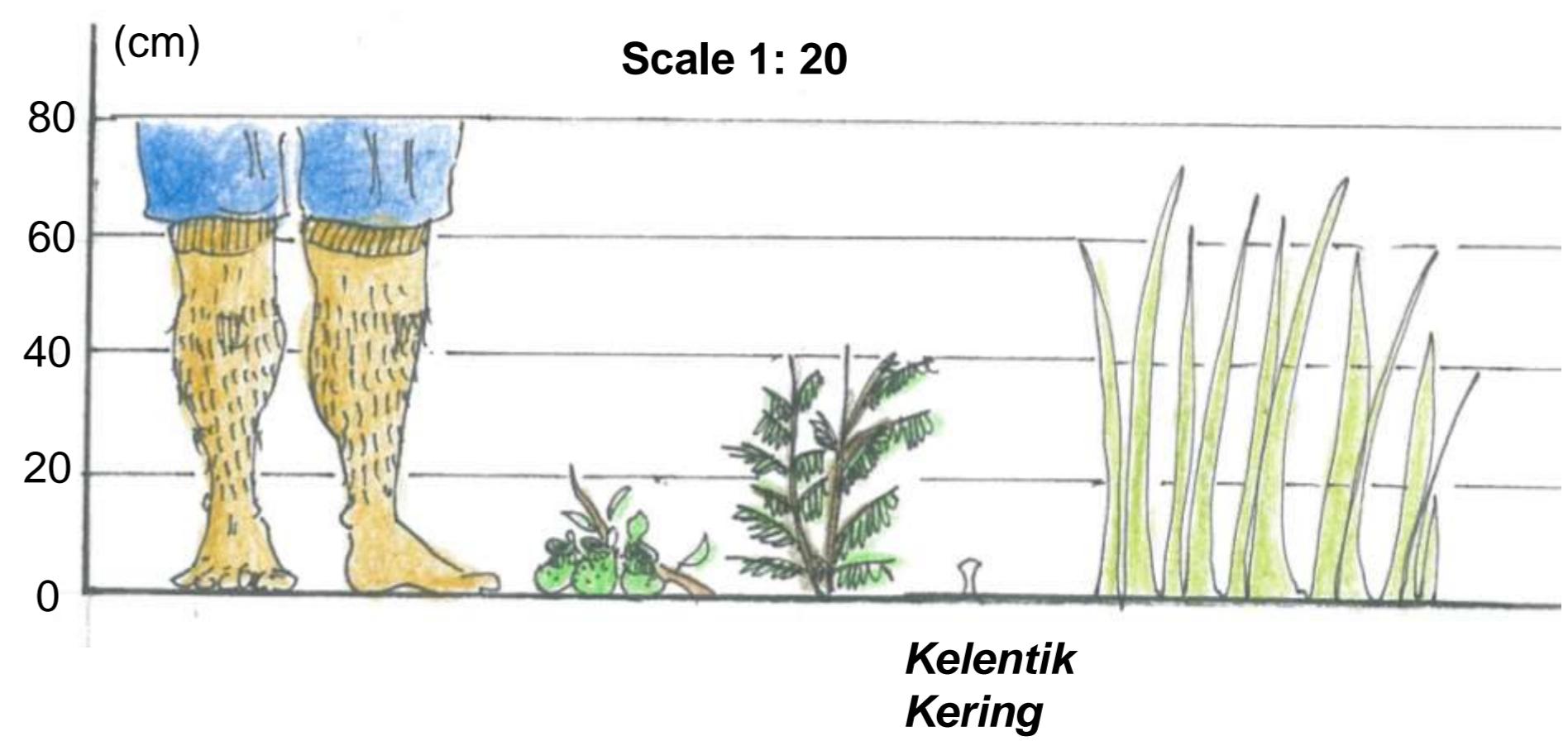


Location of Vegetation in Virginia Forest



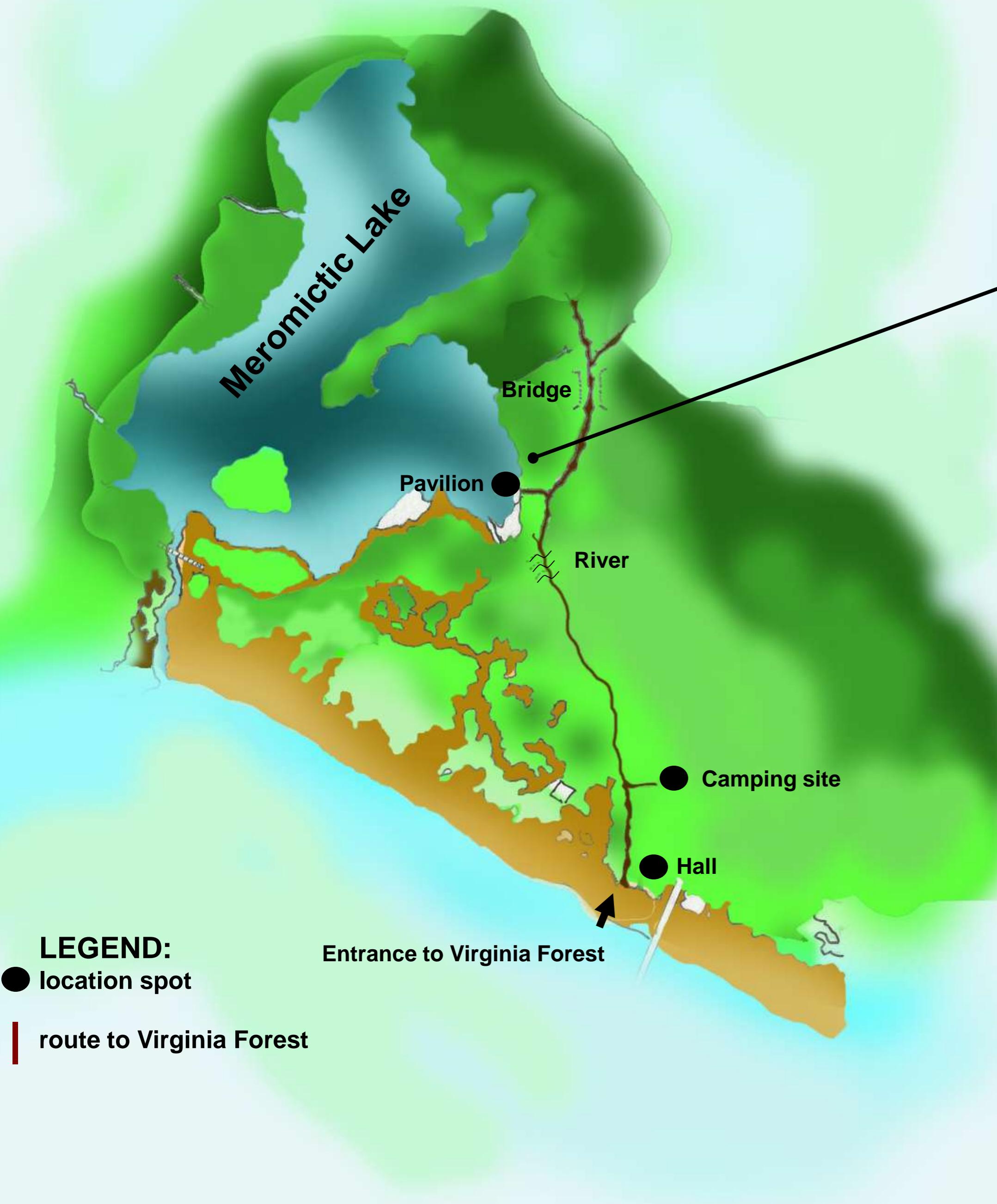
Kelentit Kering

- ❖ Yellow-footed polypore
- ❖ Microporus Xanthopus species
- ❖ Polyporaceae family
- ❖ **Diameter: 0.09m**
- ❖ Grow on rotting wood



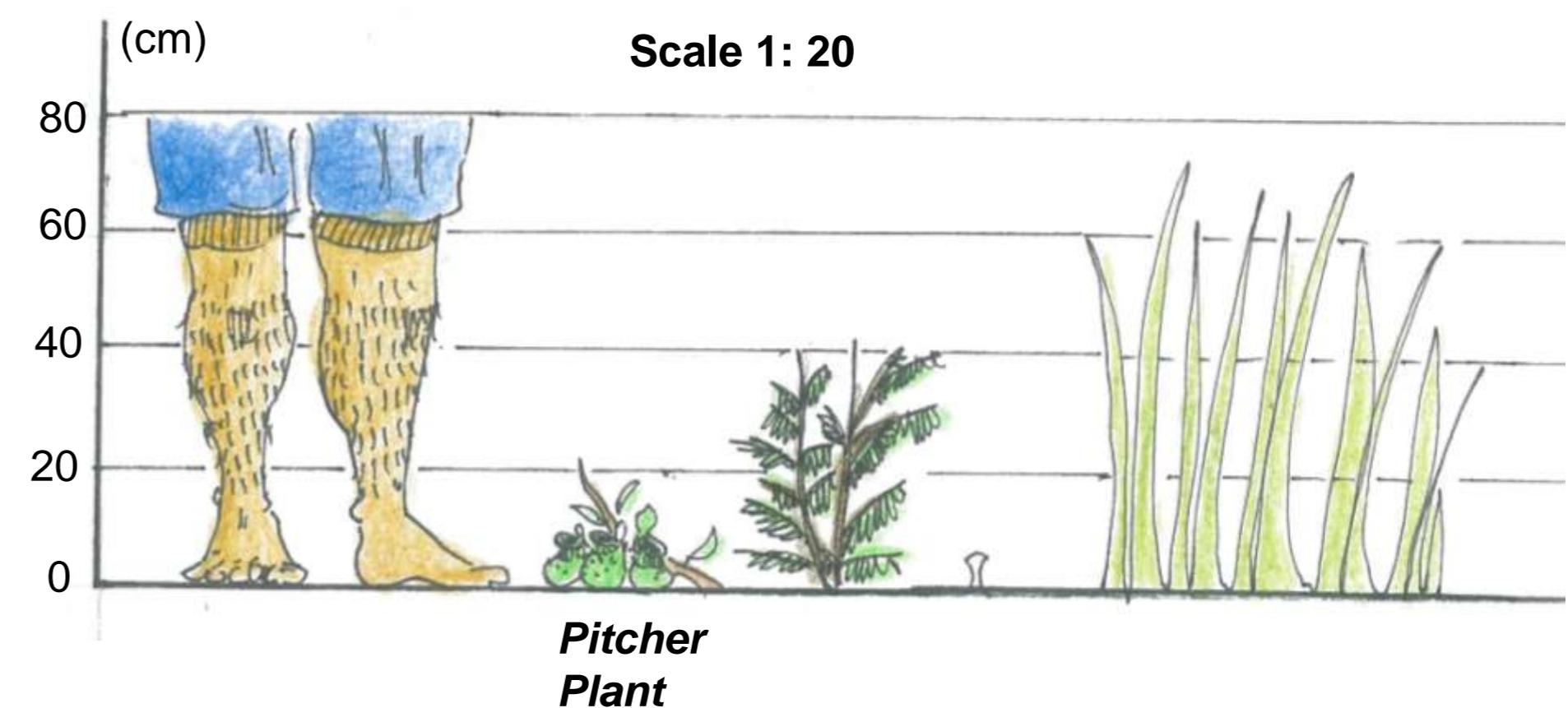
LANDSCAPE

Location of Vegetation in Virginia Forest



Nepenthes Ampullaria **(Ground species Pitcher plant)**

- ❖ Height: 0.1m
- ❖ Width: 0.07m
- ❖ Carnivorous plant, feed on insects
- ❖ Able to grow in poor soils
- ❖ Often grow in damp, shady and humid area
- ❖ Separate to two types

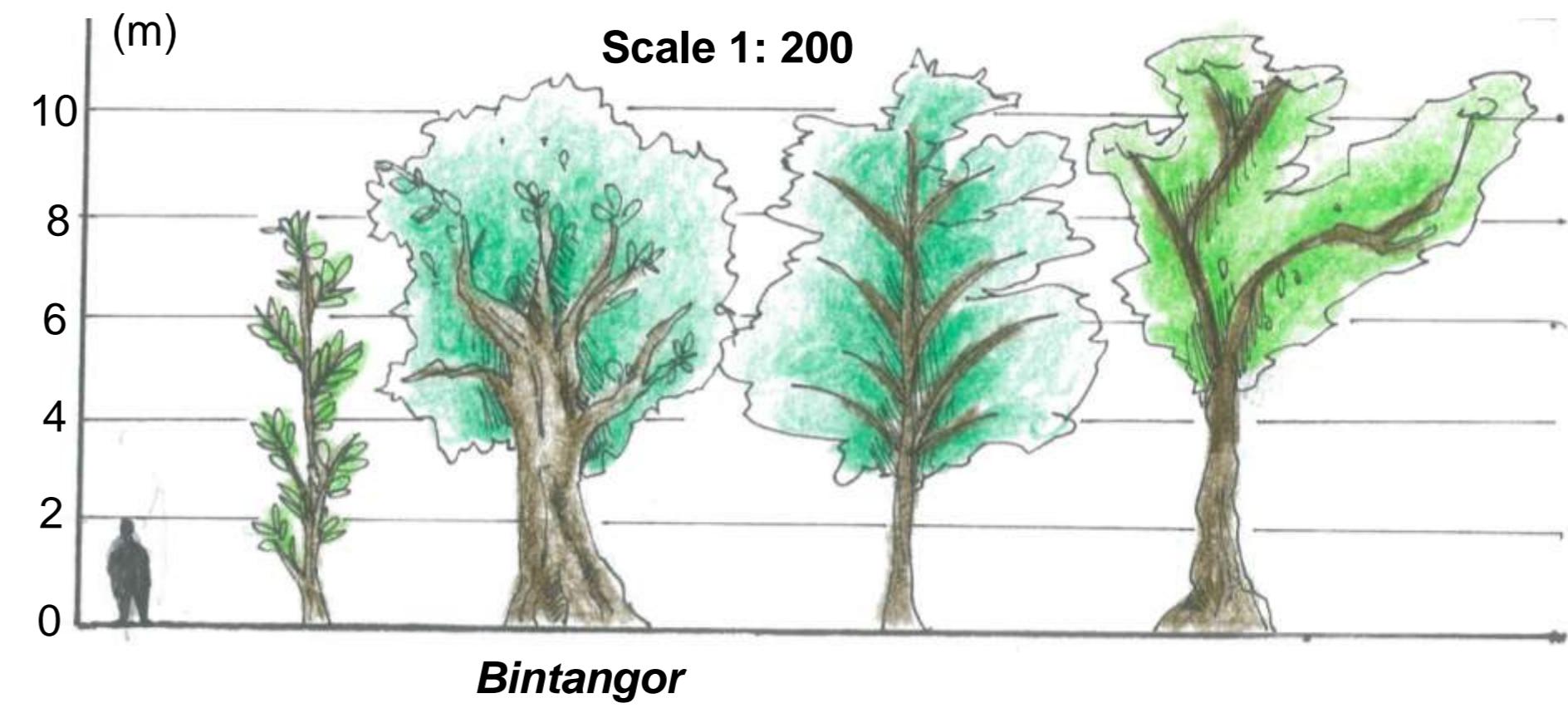


Location of Vegetation in Virginia Forest



Bintangor

- ❖ Height: 10m
- ❖ Diameter: 0.125m
- ❖ Long waxy leaves
- ❖ **Soil** condition: **swampy** area
- ❖ Poisonous latex: used for stunning fish
- ❖ Function as herb: Ease headache and rashes

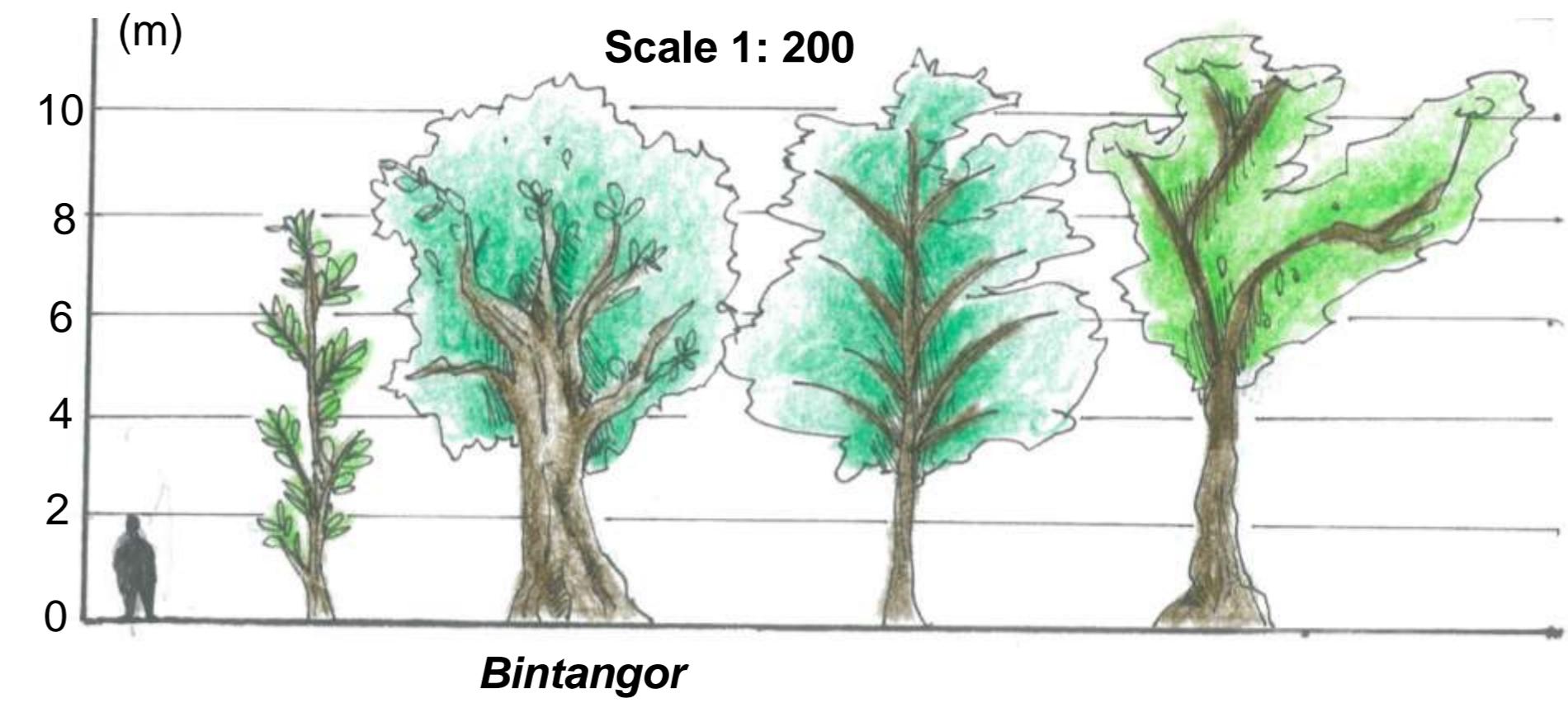


Location of Vegetation in Virginia Forest



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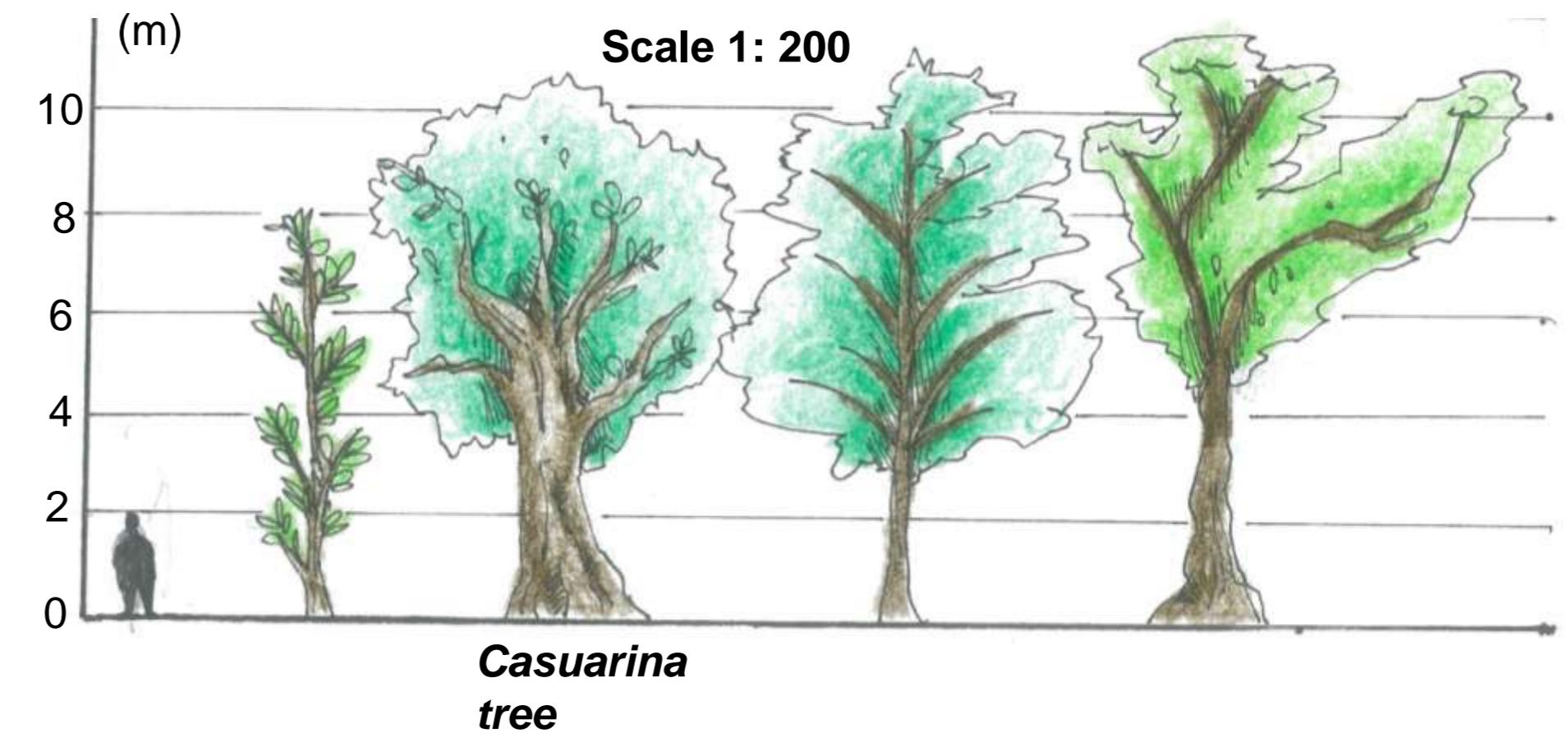
LANDSCAPE

Location of Vegetation in Virginia Forest



Casuarina Junghuhniana

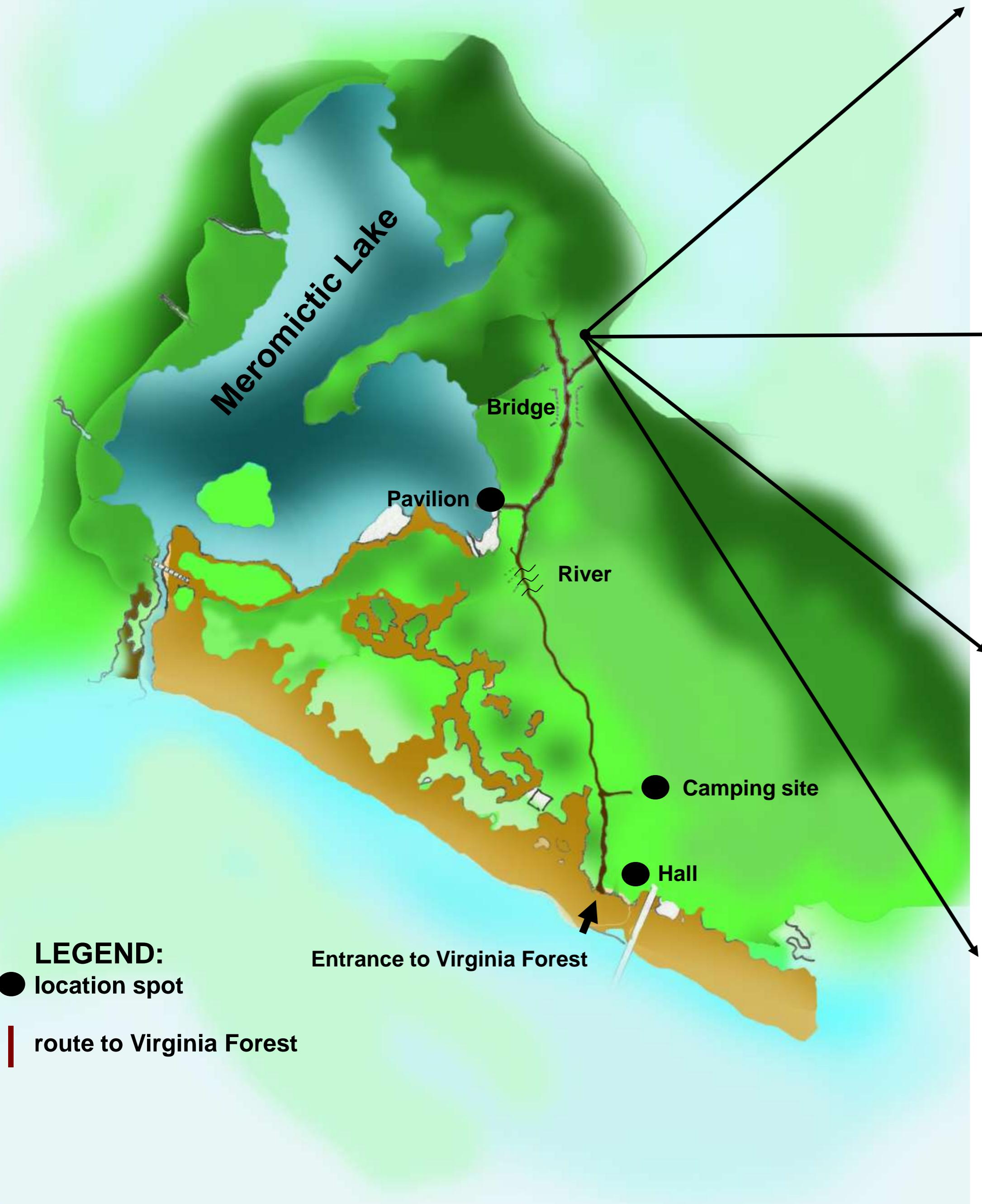
- ❖ Average **height**: 20m
- ❖ Average diameter: 40cm
- ❖ Deciduous tree
- ❖ **Soil** condition: slope, sandy soil
- ❖ Suitable species as **windbreaker**
- ❖ **Improved soil fertility**



LANDSCAPE

Location of Birds foraging in Virginia Forest

(5.00 a.m. morning)



Humming Bird

- ❖ Smallest of birds (7.5 – 13) cm
- ❖ Humming sound created by their beating wings.



Pigeon

- ❖ 12 inches.
- ❖ Feed on seeds, fruits, and plants.
- ❖ 0.5 – 2 kg .



Magpie

- ❖ Lifespan: 25 y
- ❖ 0.2 – 0.4 kg (Adult)
- ❖ Length: 37 – 43 cm (Adult), 44 – 46 cm (Adult)



Bulbul

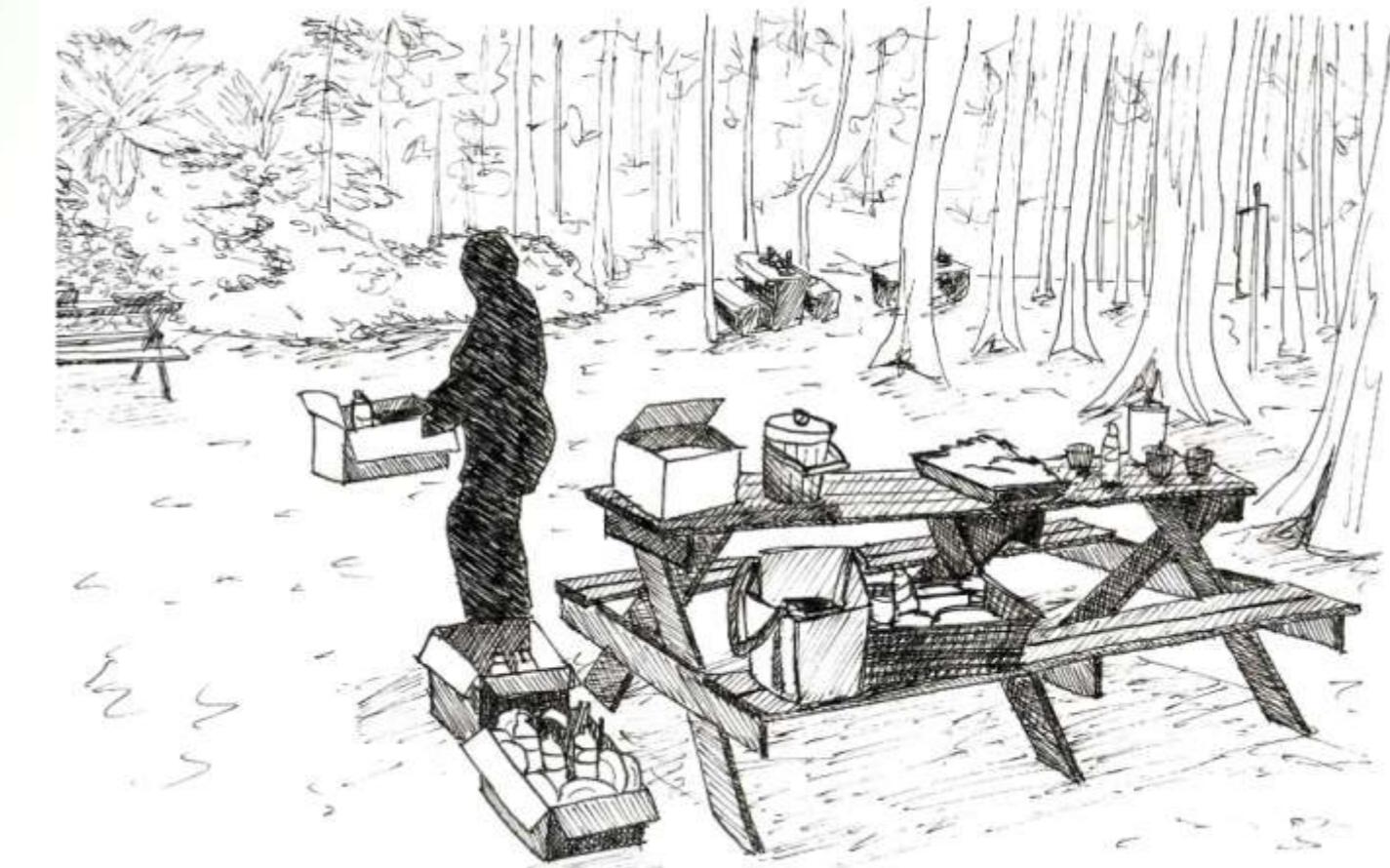
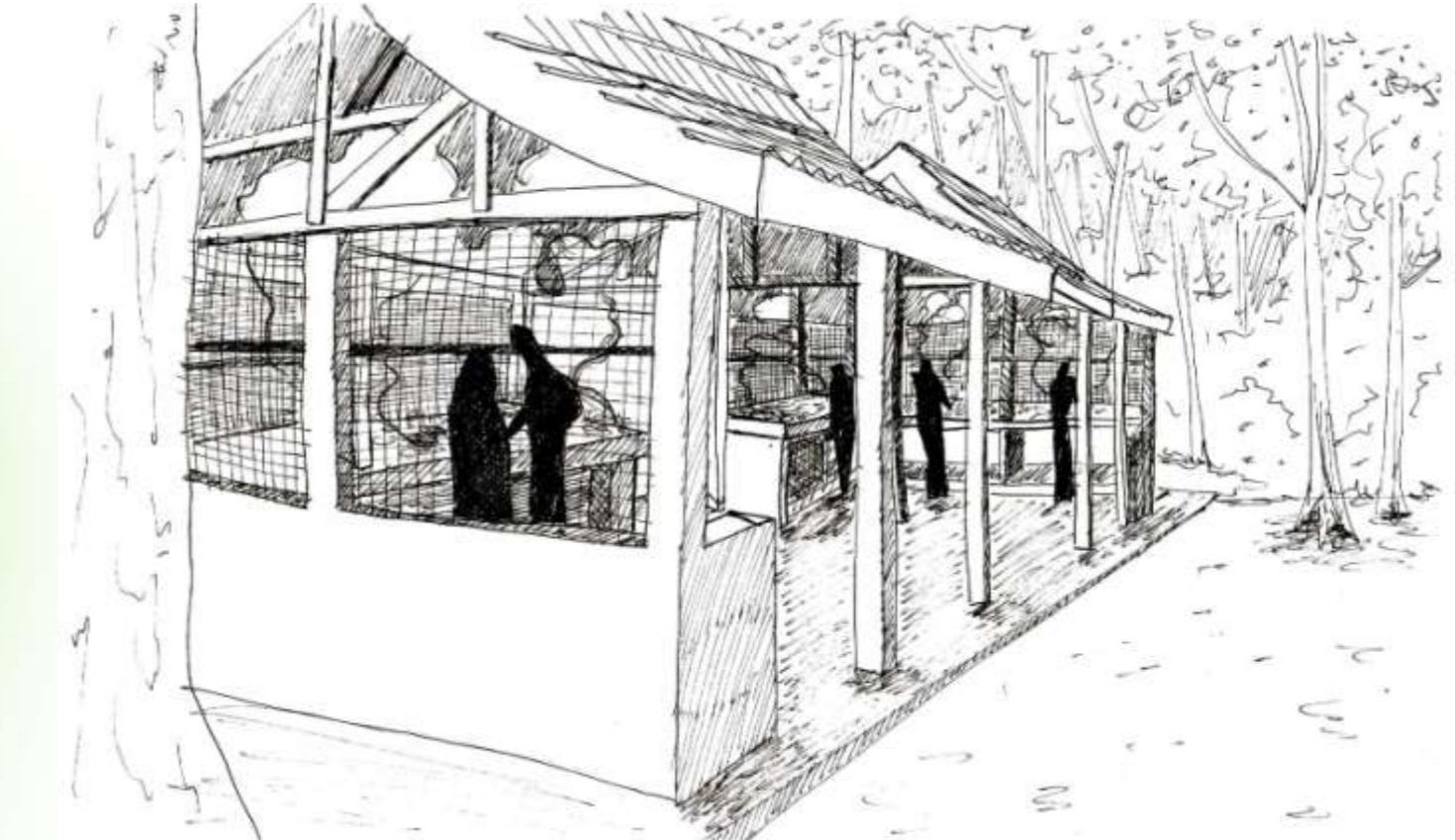
- ❖ Short-necked
- ❖ Length from 13cm to 29cm .
- ❖ Highly vocal, with the calls of most species being described as nasal or gravelly.

LEGAL ACTIVITES

ACTIVITIES

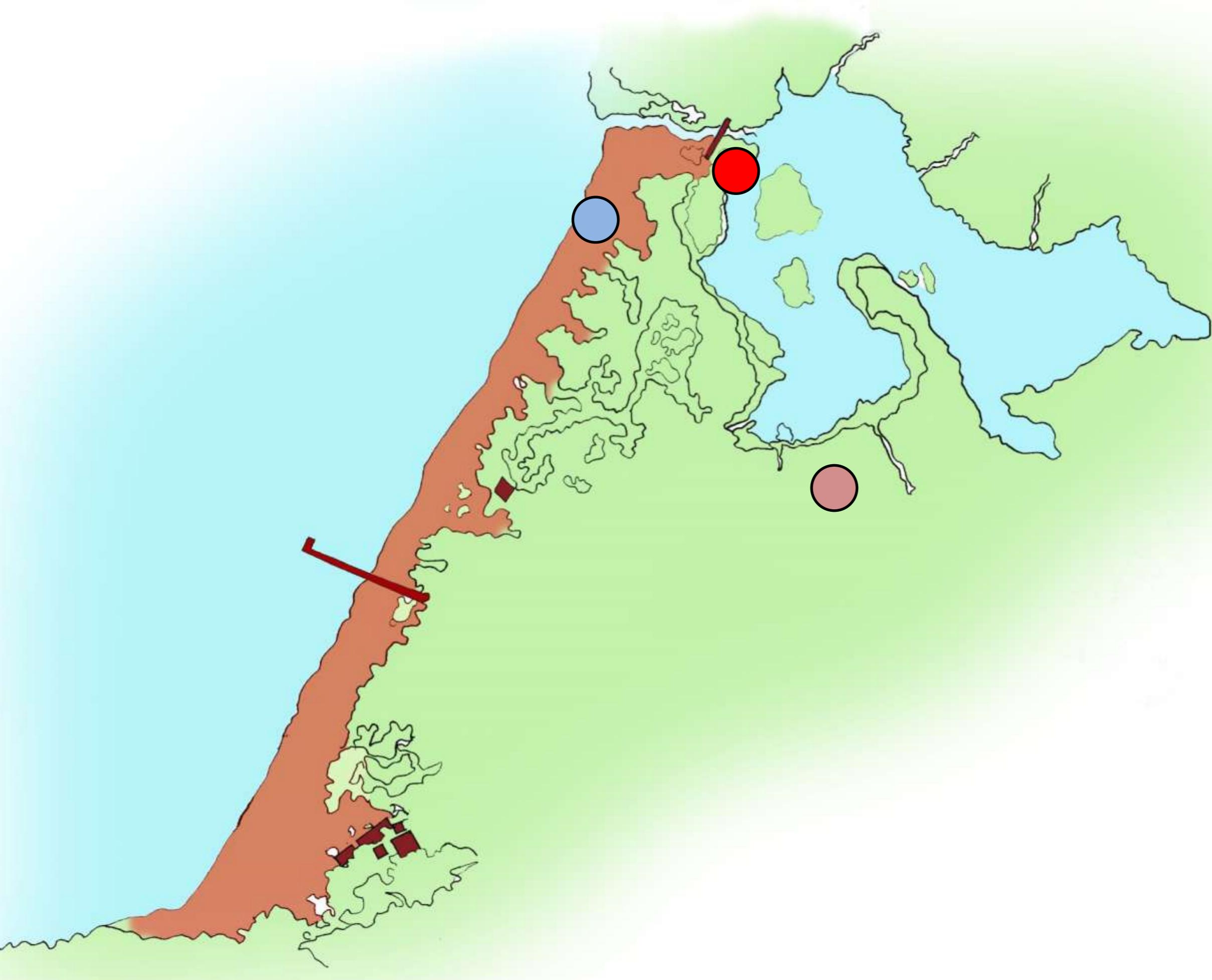


BARBECUE & PICNIC AREA



- Barbecuing normally happens in the afternoon and evening.
- Food is not provided by the park.
- Besides barbecuing, camping is available with the limitation of 100 visitors at the campsite. No charges are applied for camping.
- Cooking and camping facilities are not provided.
- These activities are mostly preferred by locals, especially during public holidays and school holidays.

LEGAL ACTIVITES



● SIGHT SEEING BY THE LAKE



● SIGHT SEEING AT THE BEACH



● SIGHT SEEING IN THE BEACH FOREST



- The best time for sightseeing at these sites is from morning to noon.
- It is not advised to visit the lake and the beach during the night because of the high tide from the sea.
- During November to March, the lake becomes dry and muddy due to the dry season so it is not ideal to visit during that time.

LEGAL ACTIVITES



● TURTLE NESTING



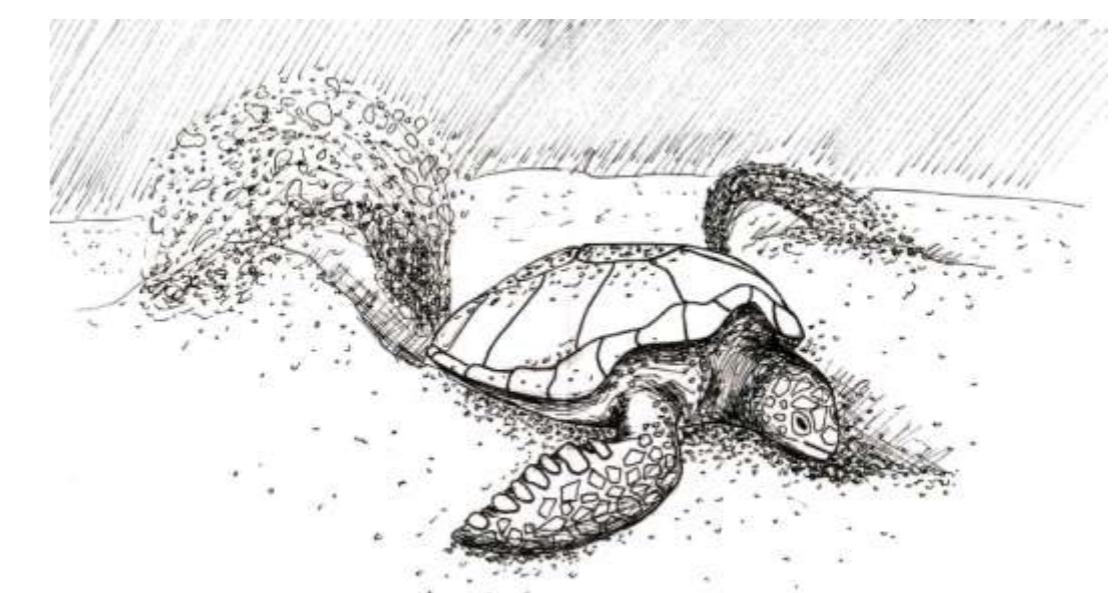
Nesting

- Green Turtles nesting: April to August
- Olive Ridley Turtle nesting: September to February
- Nesting occurs at night.
- Viewing is allowed but with minimal light shining at the turtles as to not disrupt the process.

Nesting Site Selection

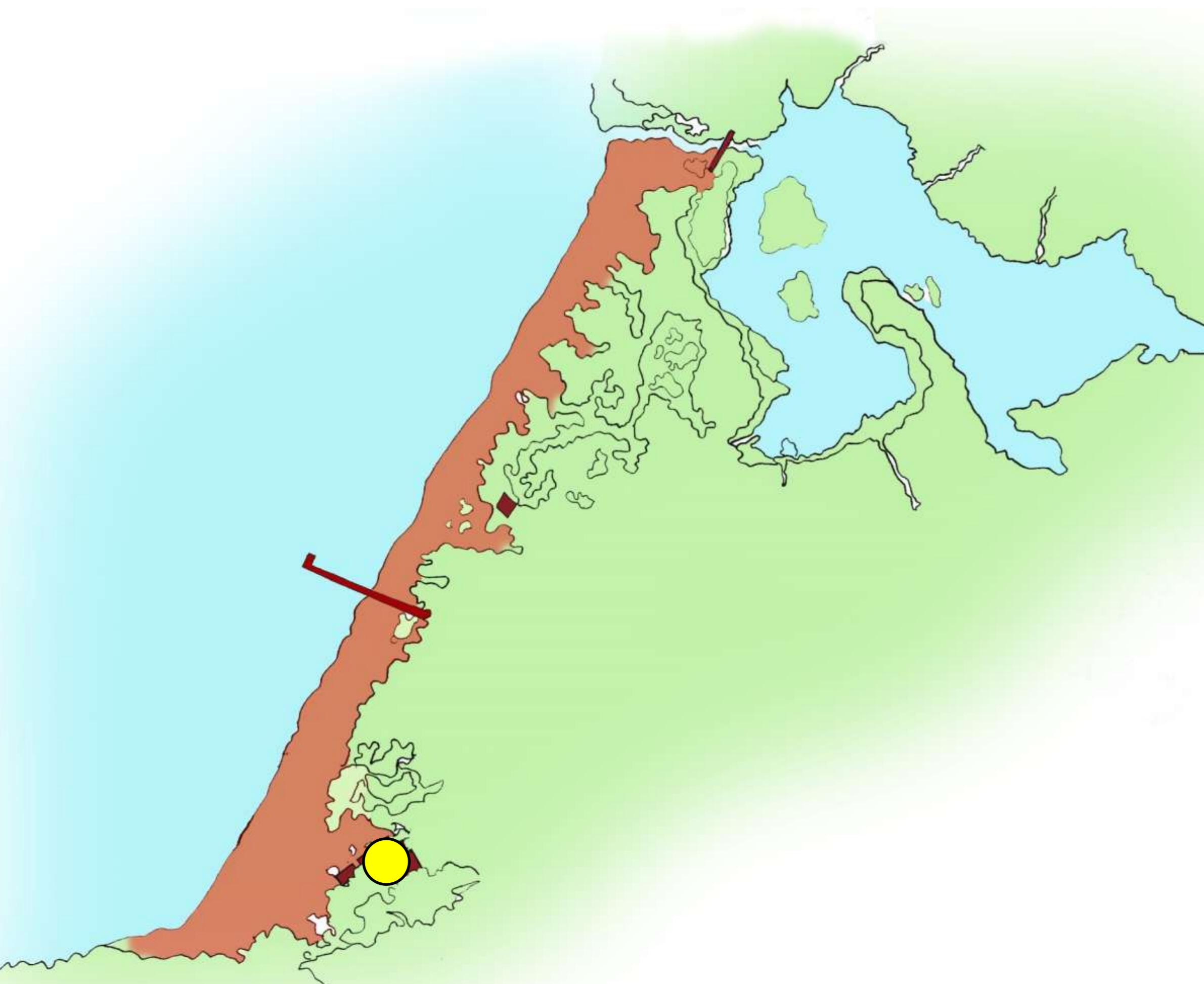
- Located under the vegetative cover of merambong trees
- Open sands
- Under bushes

Based on the statistics of 2008 & 2009, 60% of Green Turtle nests were located under merambong trees, 24.8% were located under bushes and 14.9% in open sands.

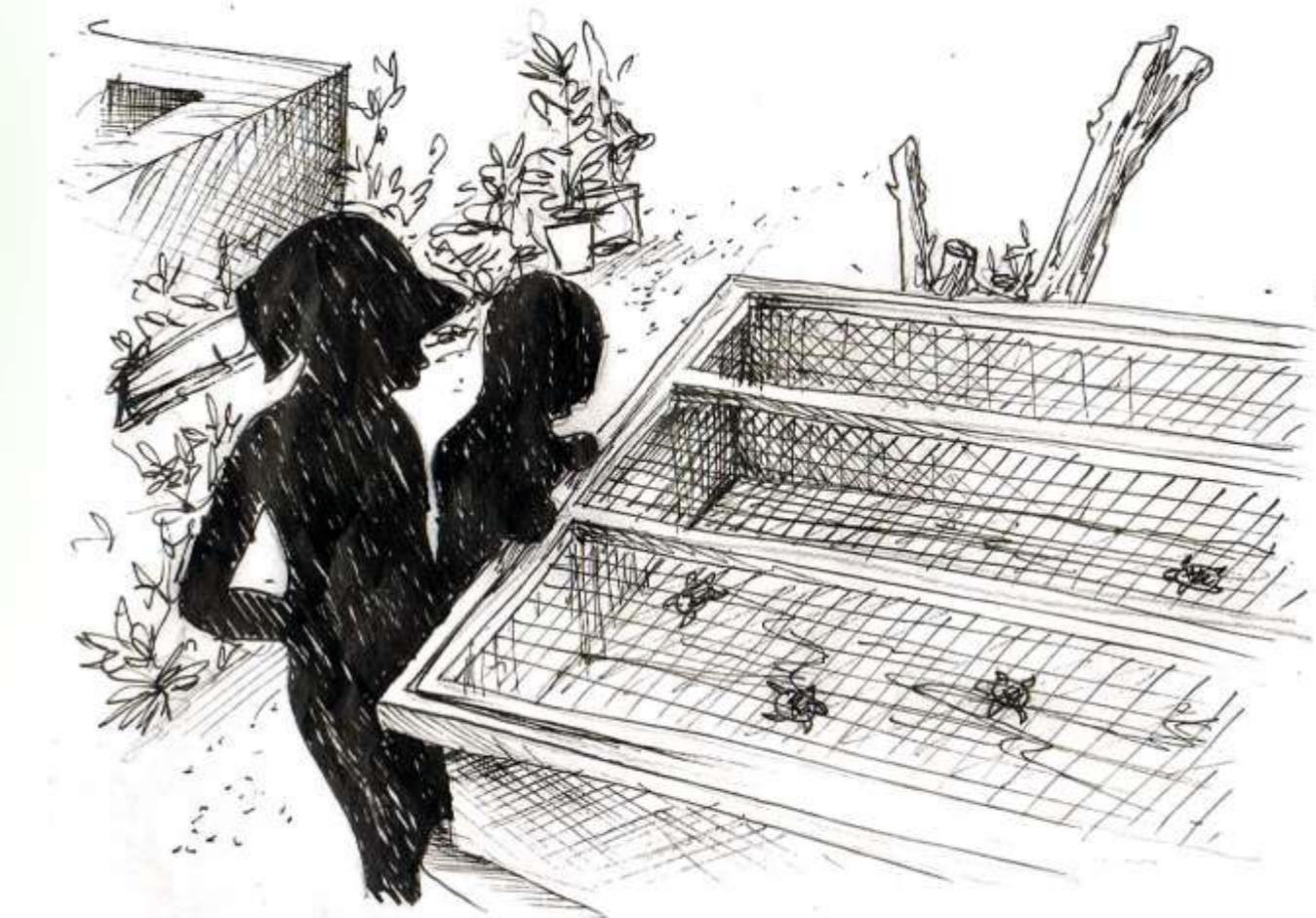


ACTIVITIES

LEGAL ACTIVITES



● TURTLE CONSERVATION SANCTUARY



Turtle Hatchery & Sanctuary

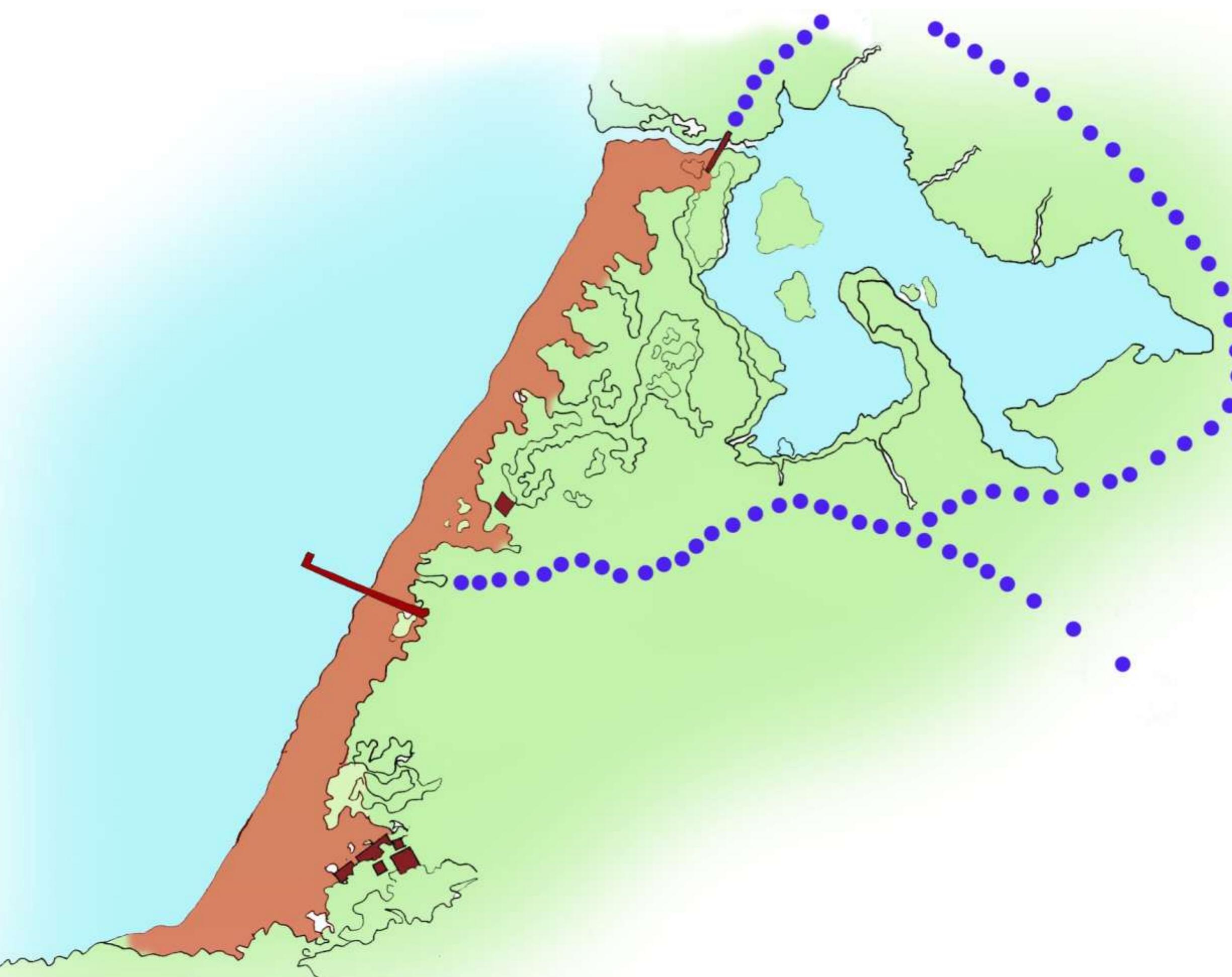
- The cage indicates that the eggs are being incubated until they are ready to be hatched.
- Office hours: 7.30AM – 6PM



- After the eggs are laid, they are reburied in the hatchery nests excavated to a depth of 60cm deep & 25cm wide.
- After placing them in the nesting chamber, the nest is compacted with remaining sand and left for incubation.
- They then label the clutches using bamboo sticks & cover the nest with a protective netting to avoid predation attempts.

ACTIVITIES

LEGAL ACTIVITES

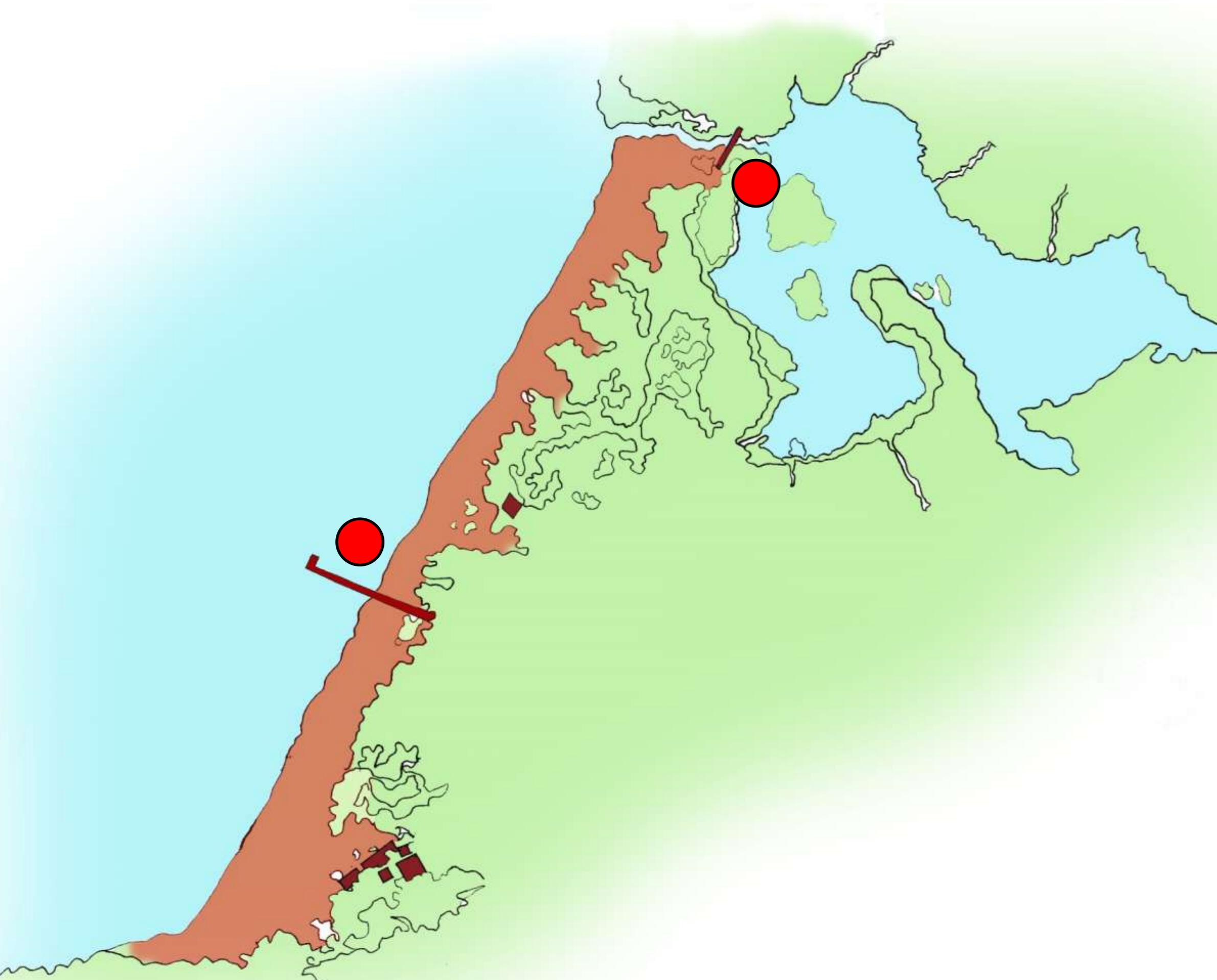


● JUNGLE TREKKING / HIKING

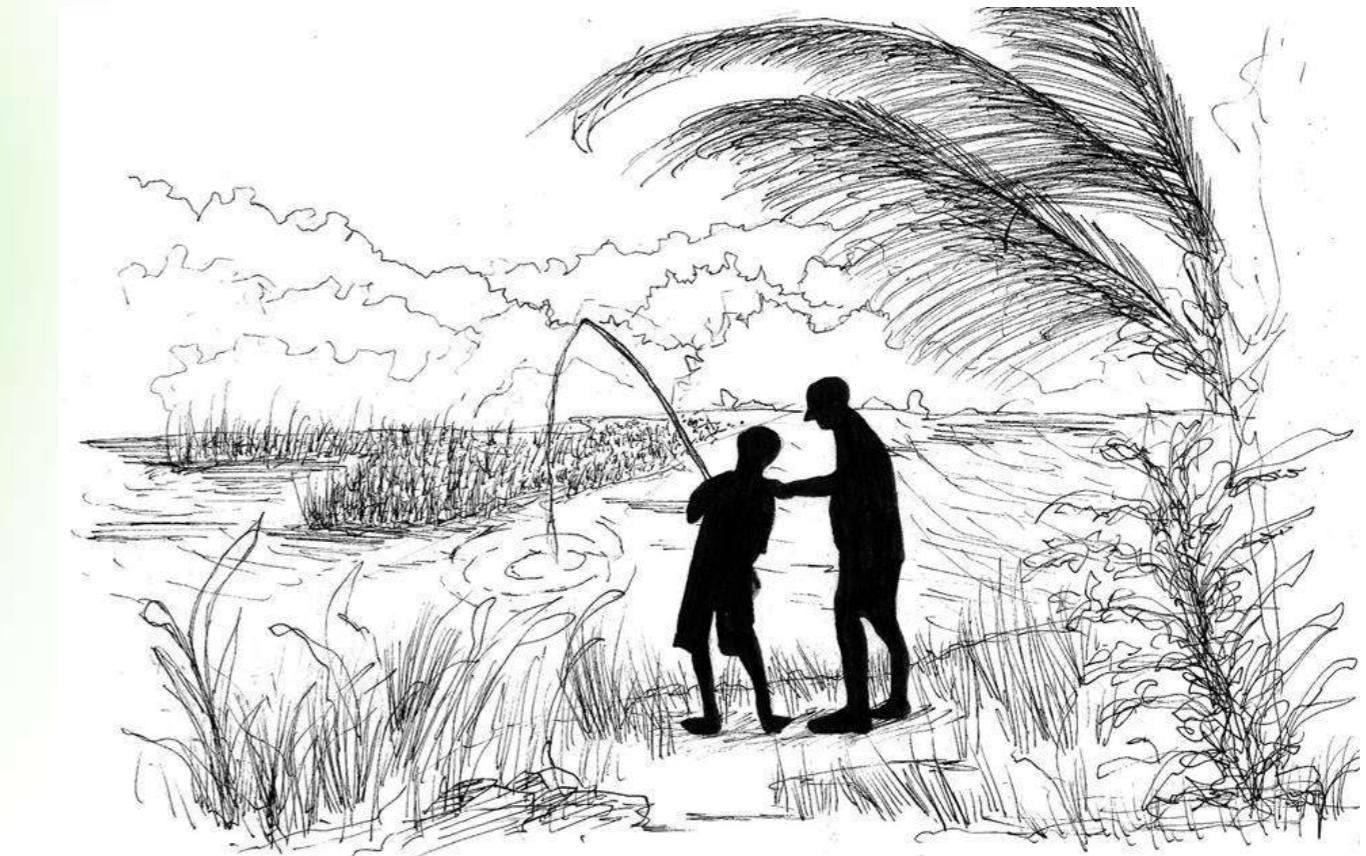


- There are 3 hiking trails in Penang National Park.
- The best months to hike is throughout the year, excluding the months of March - April because they are the ludicrously hot months therefore it is not ideal to hike.
- The distance from Teluk Bahang to Pantai Kerachut is 3km and the hike usually takes around 1.5 -2 hours, depending on individual speed.

LEGAL ACTIVITES



● JETTY / FISHING



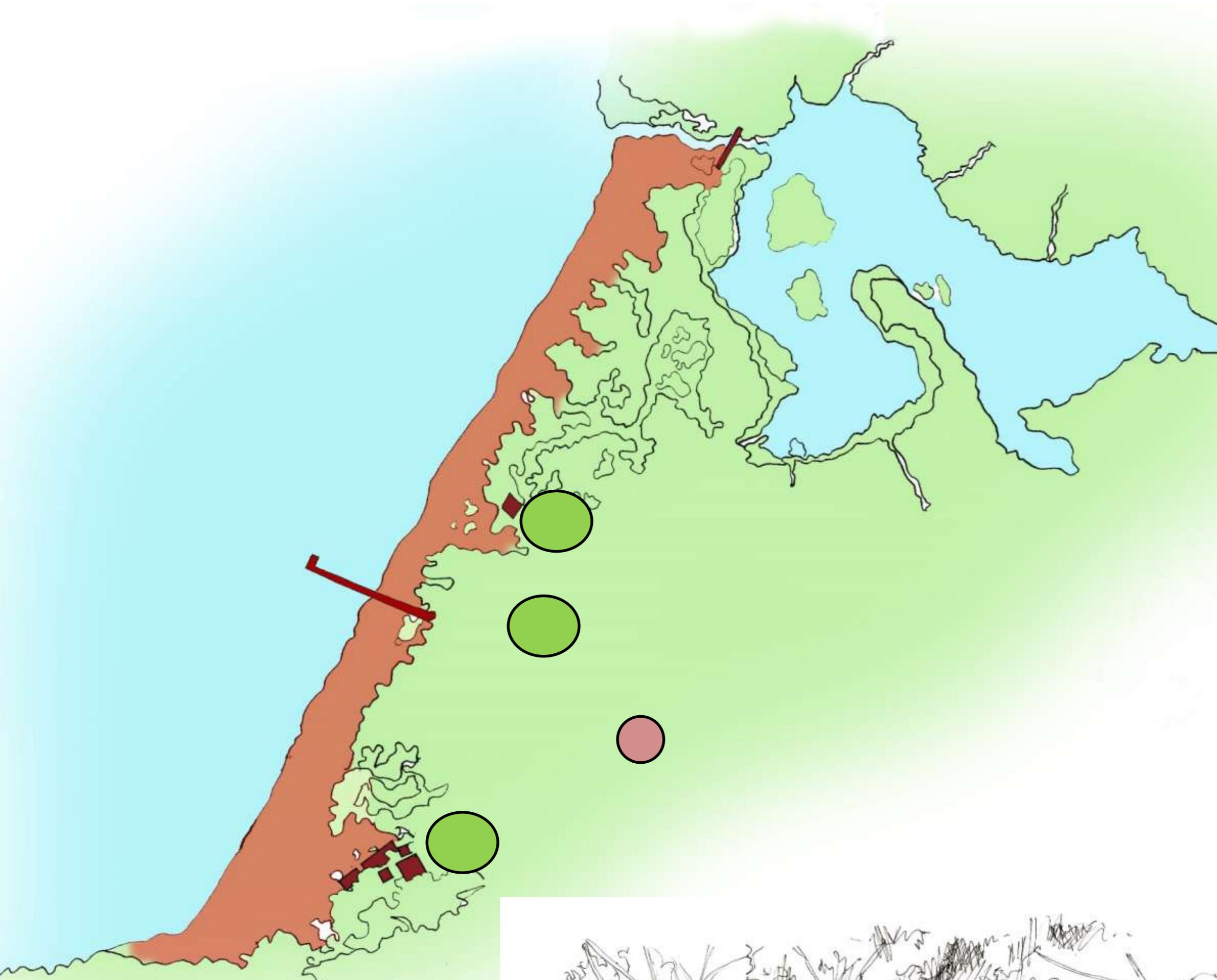
The lake is a dry mud bank during neap tides and dry season. October to April is not a good time to visit the lake.

- Pre booking is required for 15-20 minutes boat ride from Pantai Kerachut back to Teluk Bahang abd vise versa.

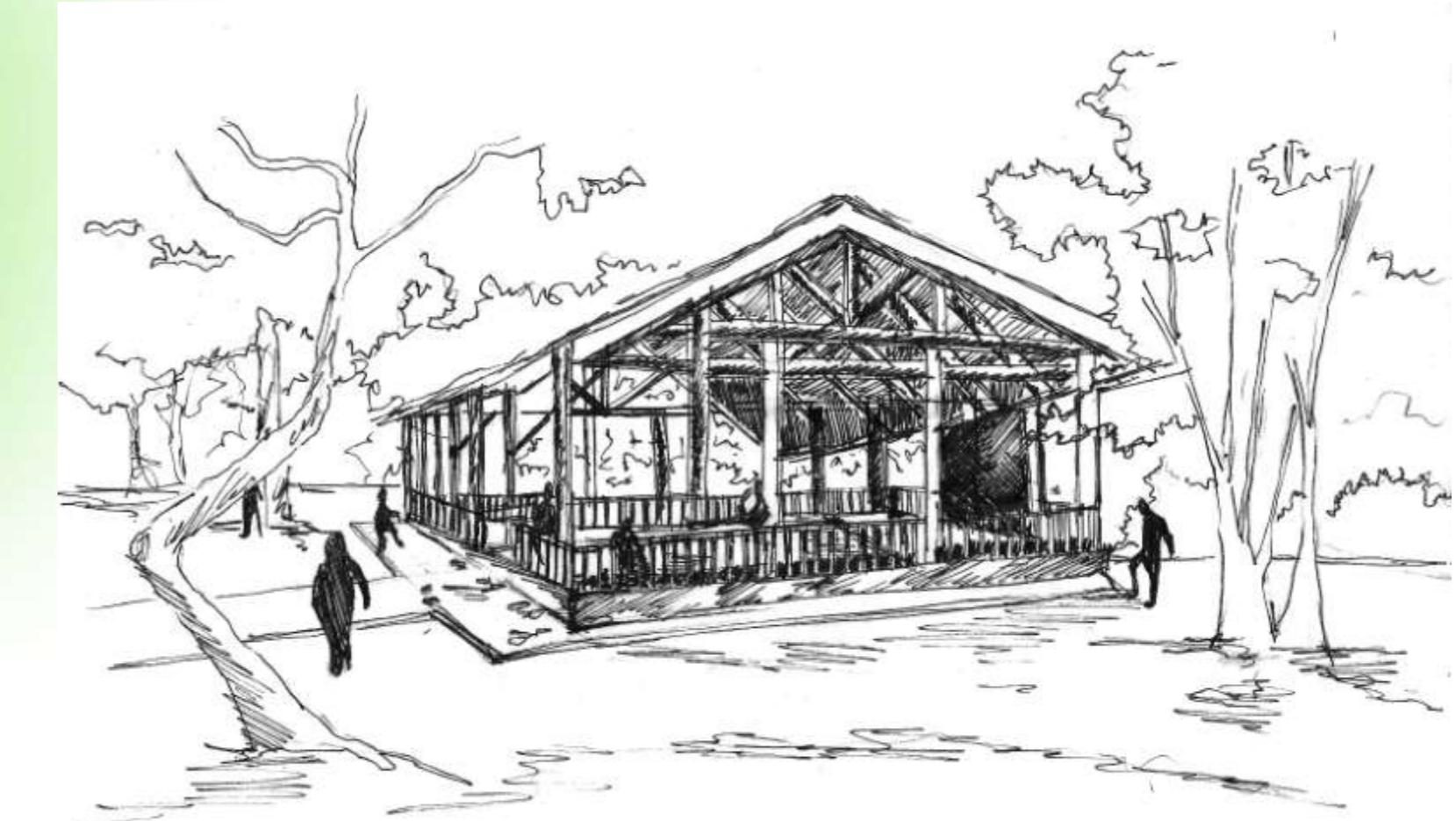


ACTIVITIES

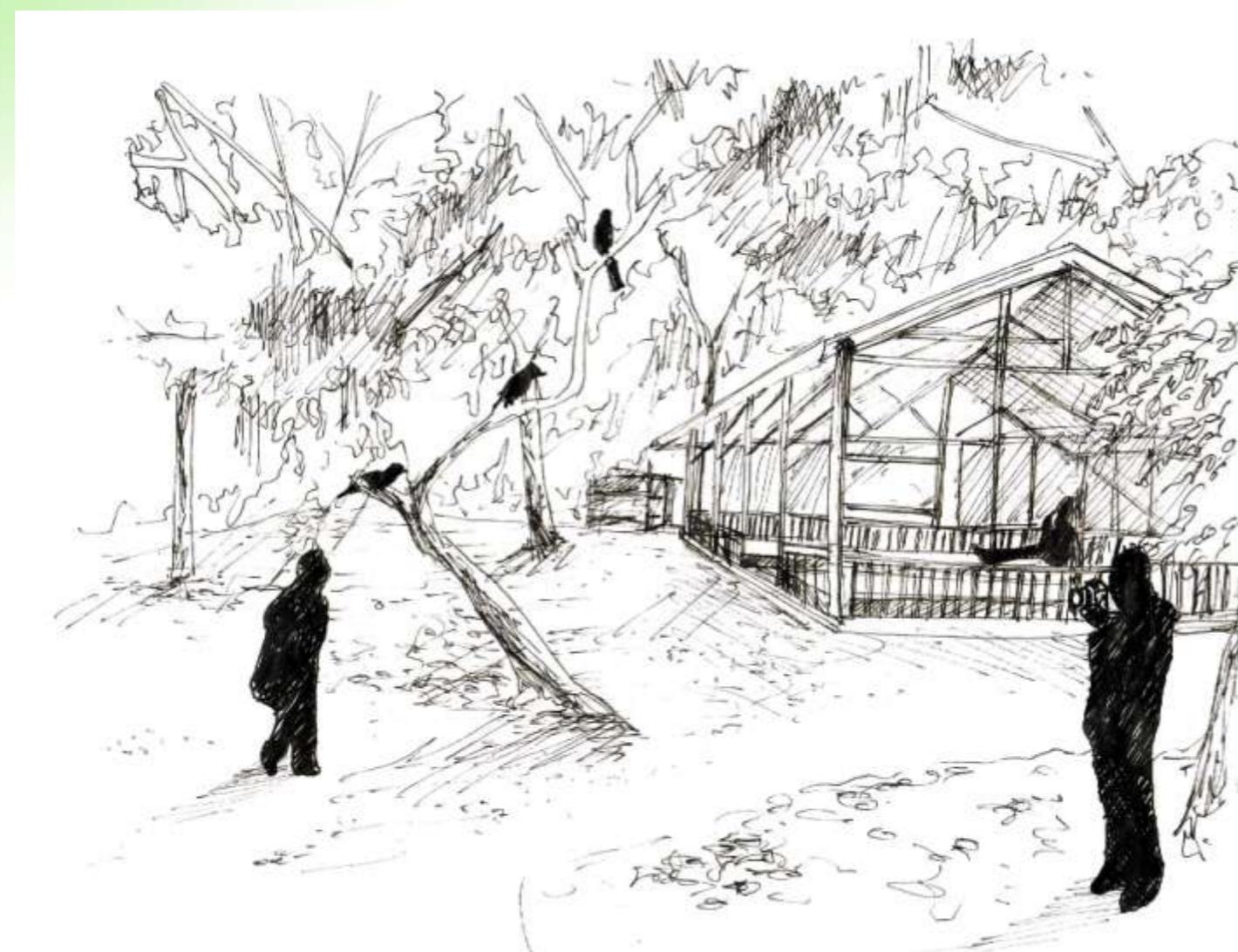
LEGAL ACTIVITES



● SHELTER



Shelter is provided for visitors to rest and bird watching. It's a place for people to gather around.

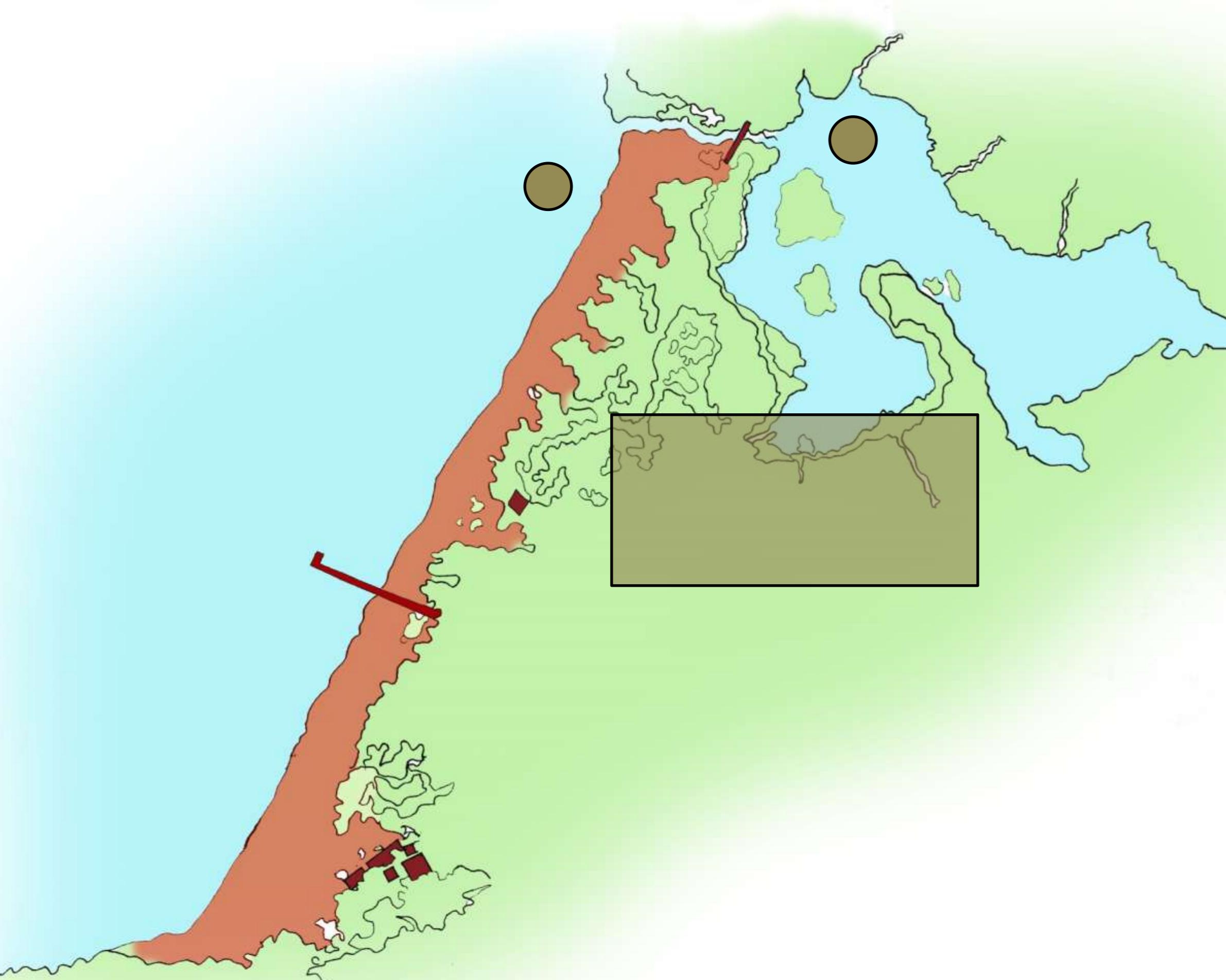


● BIRD WATCHING

Bird watching is available at 5am and in the evening. This activity happens often due to the migration of different species of birds.

ACTIVITIES

ILLEGAL ACTIVITES



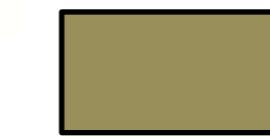
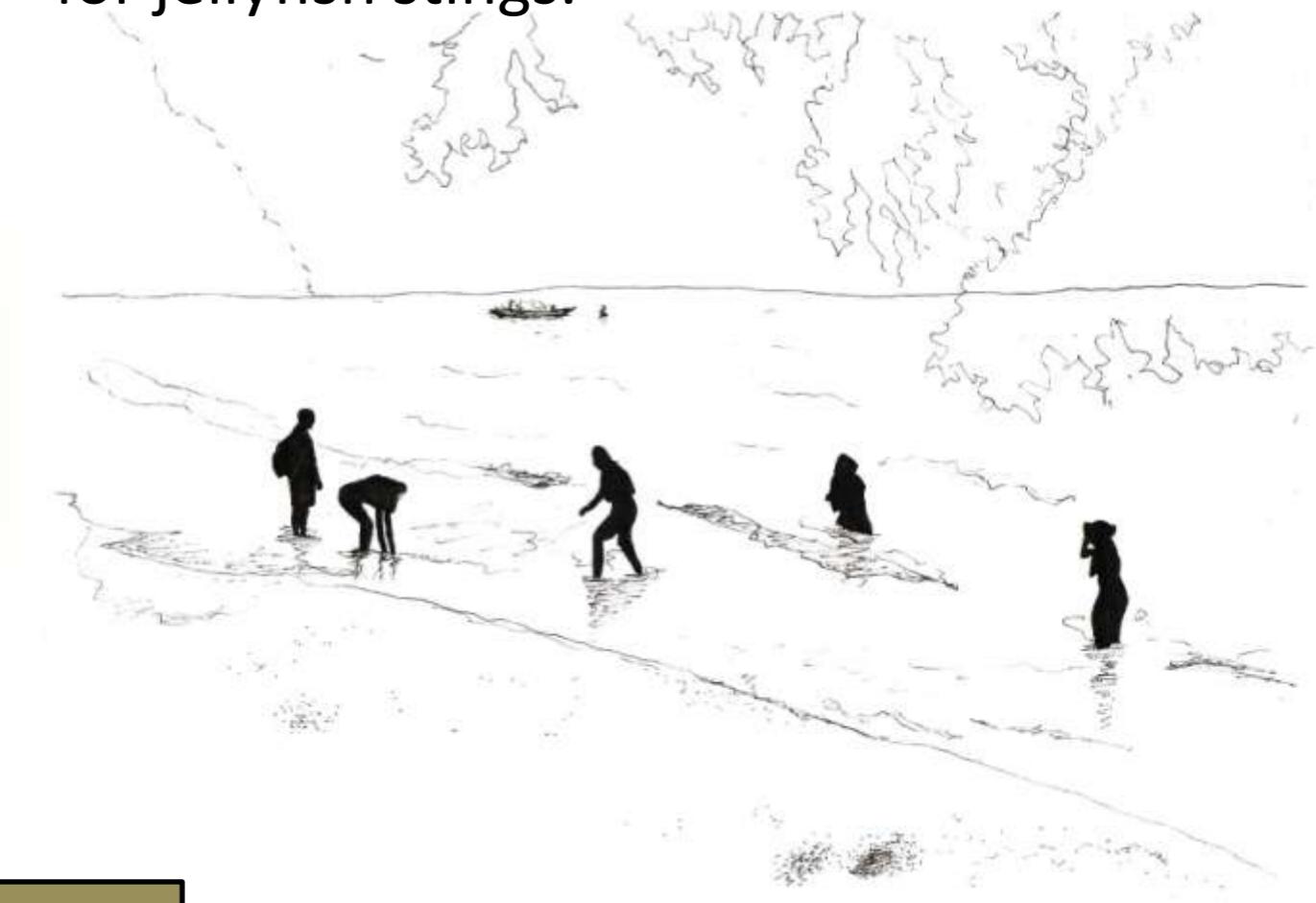
SMOKING

Smoking is prohibited throughout the park to sustain the air quality and cleanliness.



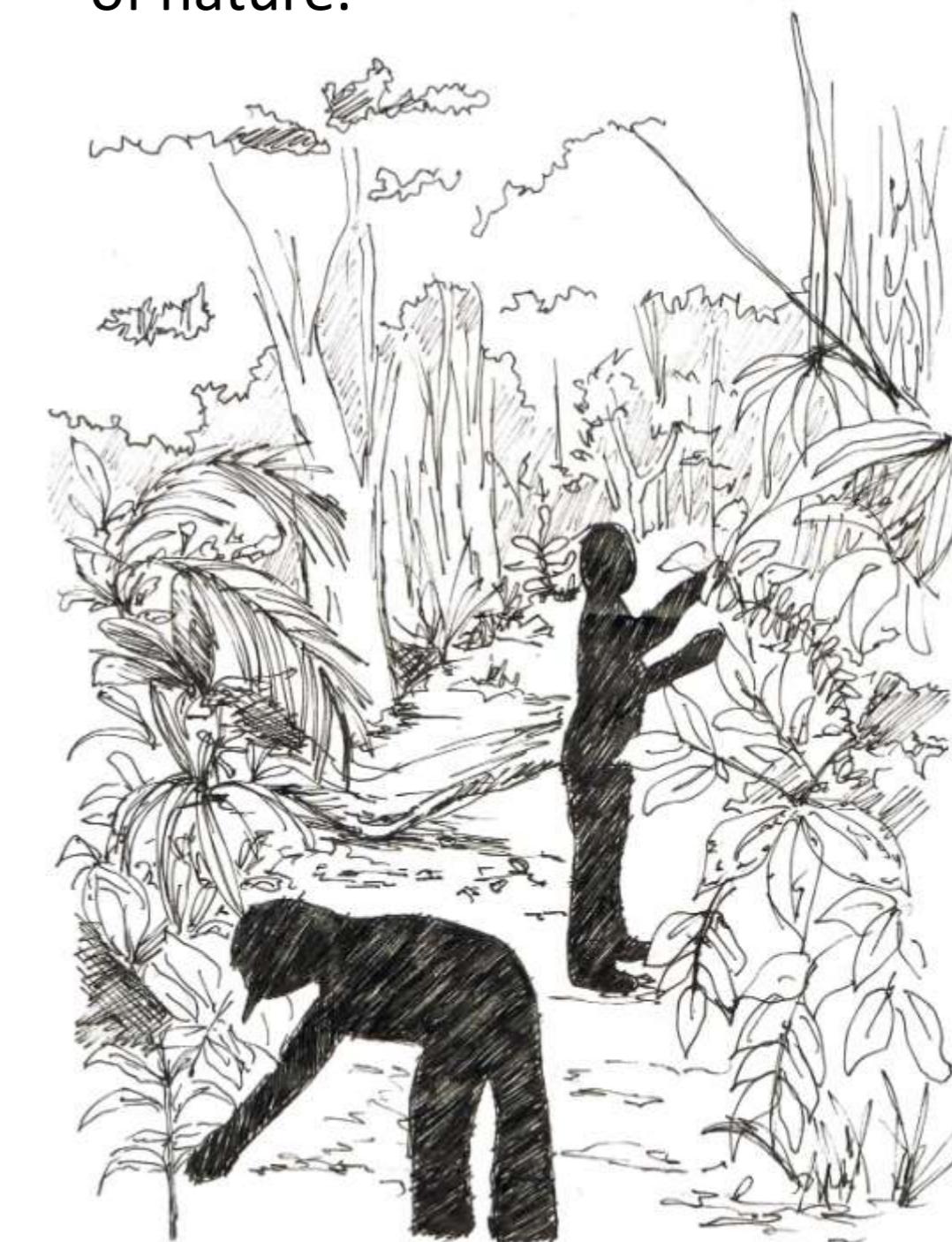
SWIMMING

Swimming is not allowed as a precaution for jellyfish stings.



HERBS COLLECTING

Herbs collecting is not allowed as a measure of preservation of nature.



ACTIVITIES

LOCATION OF EXISTING STRUCTURES

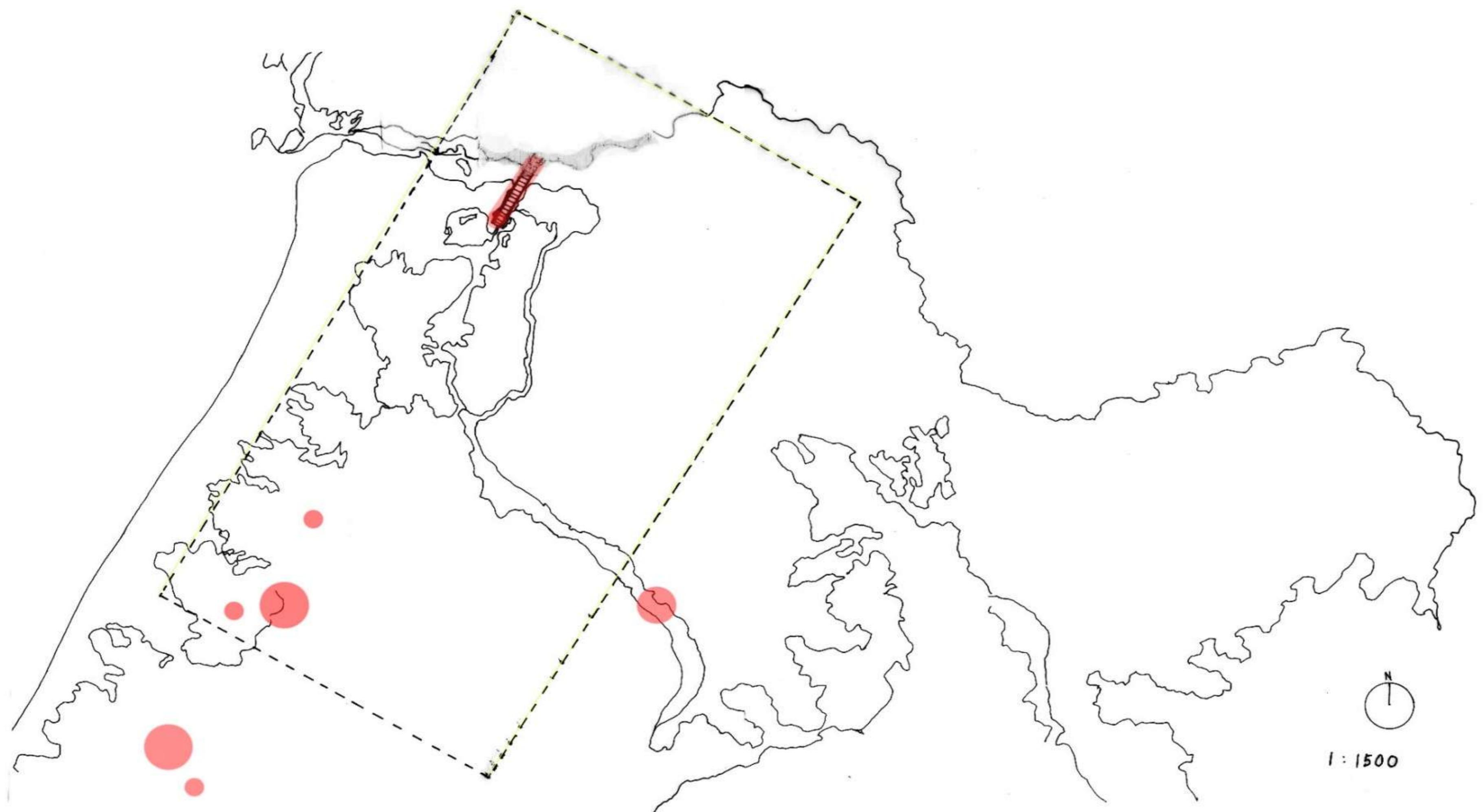
(site plan)



EXISTING STRUCTURE

LOCATION OF EXISTING STRUCTURES

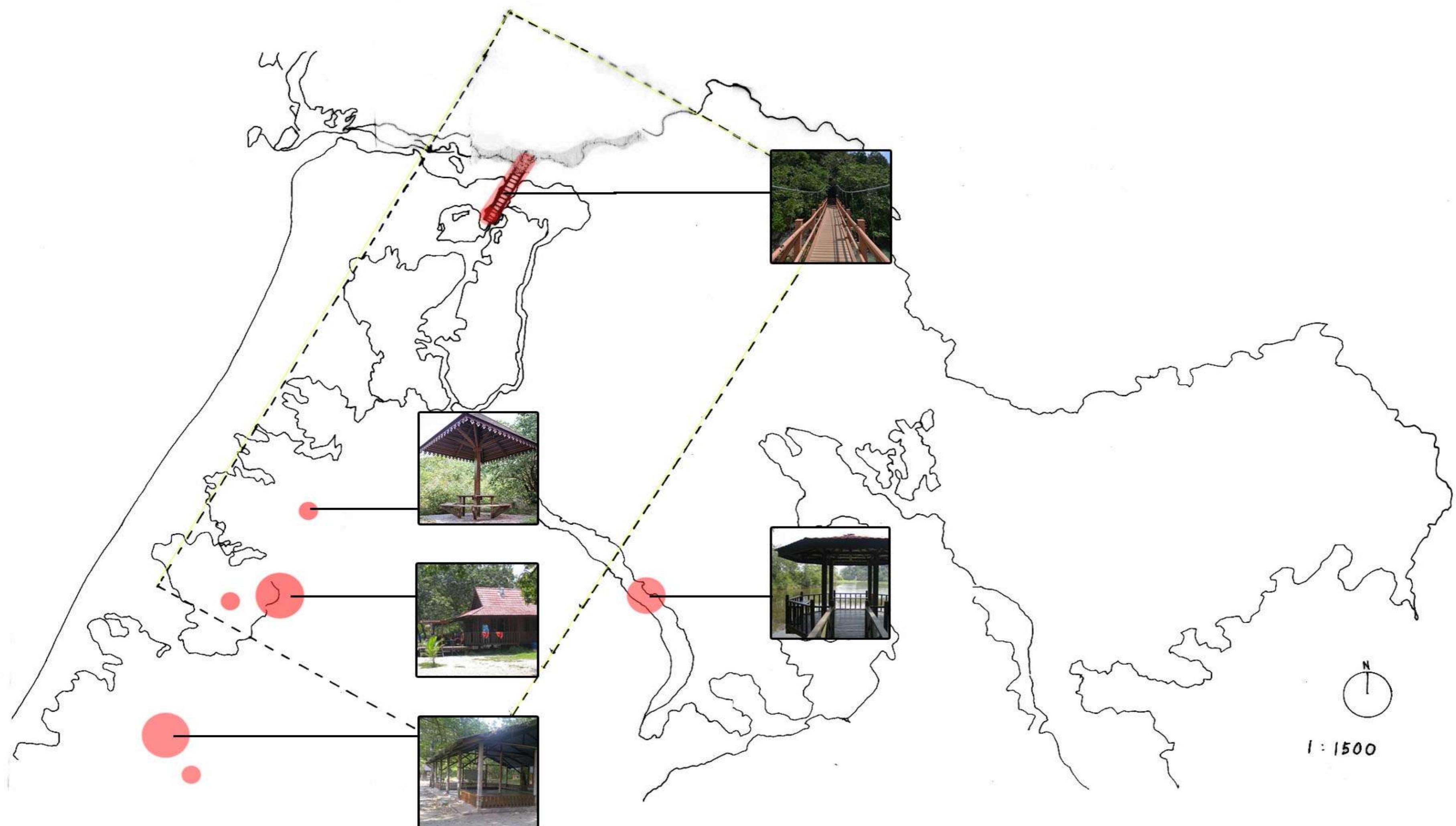
(site plan)



EXISTING STRUCTURE

LOCATION OF EXISTING STRUCTURES

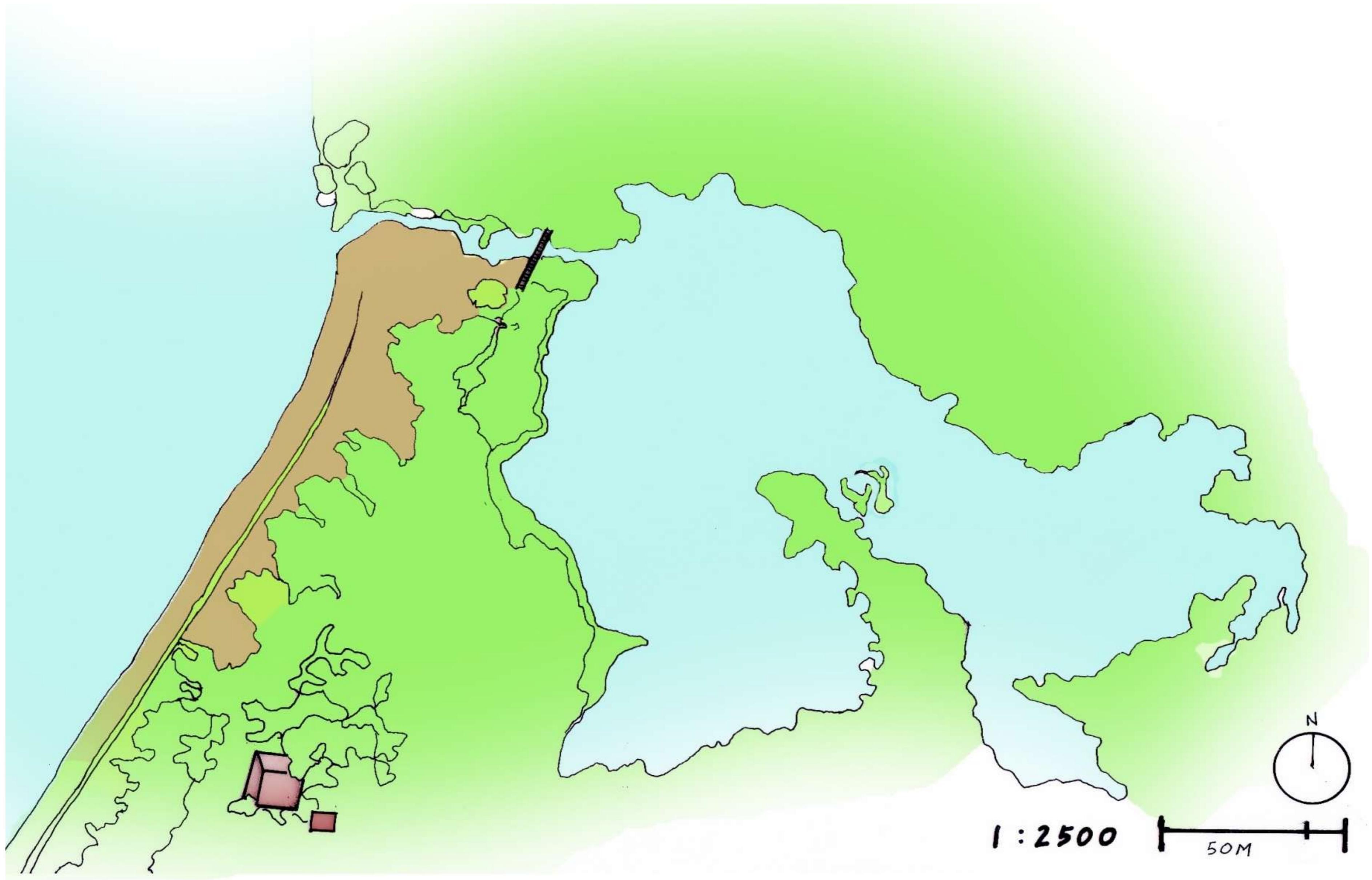
(site plan)



EXISTING STRUCTURE

LOCATION OF EXISTING STRUCTURES

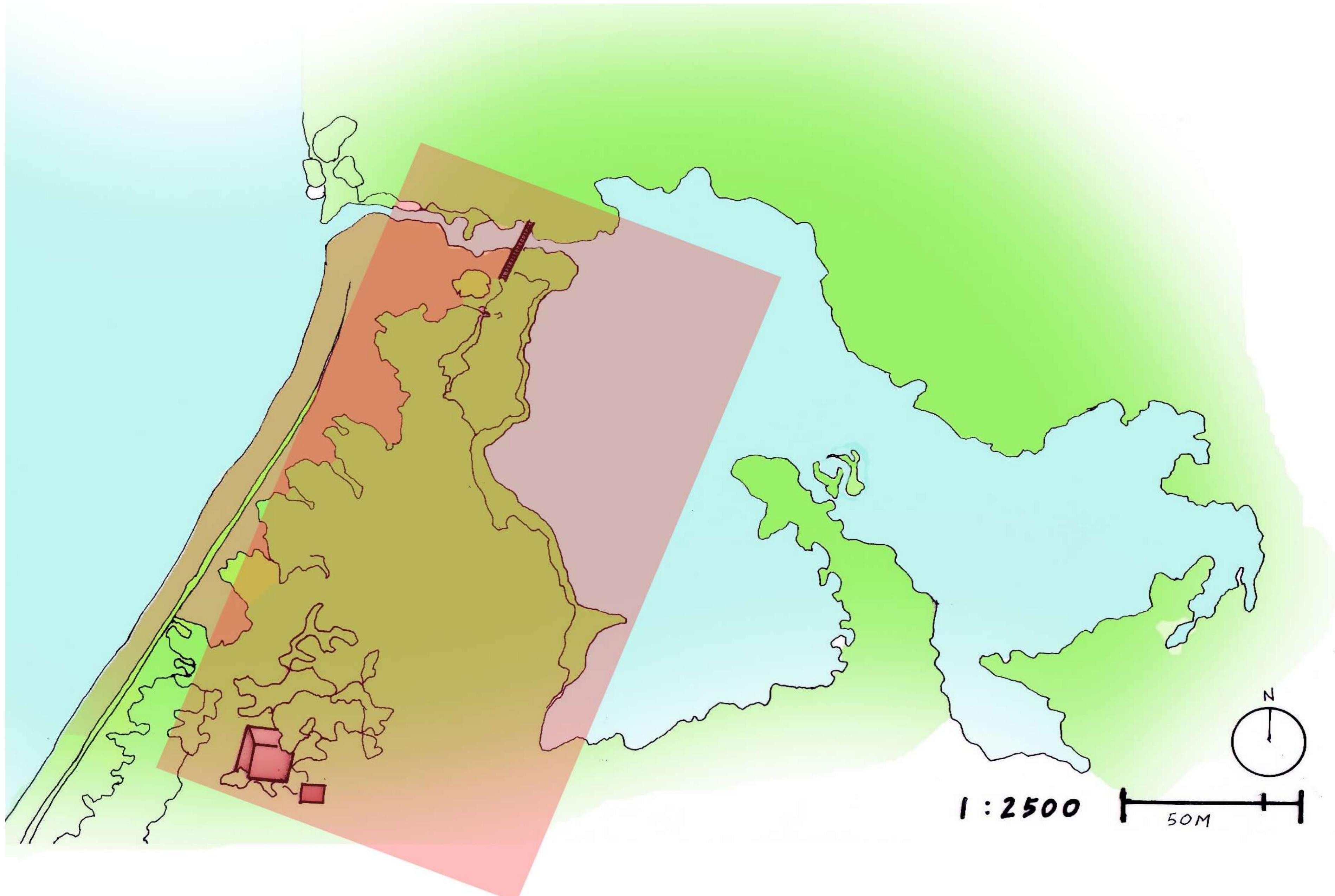
(location plan)



EXISTING STRUCTURE

LOCATION OF EXISTING STRUCTURES

(location plan)

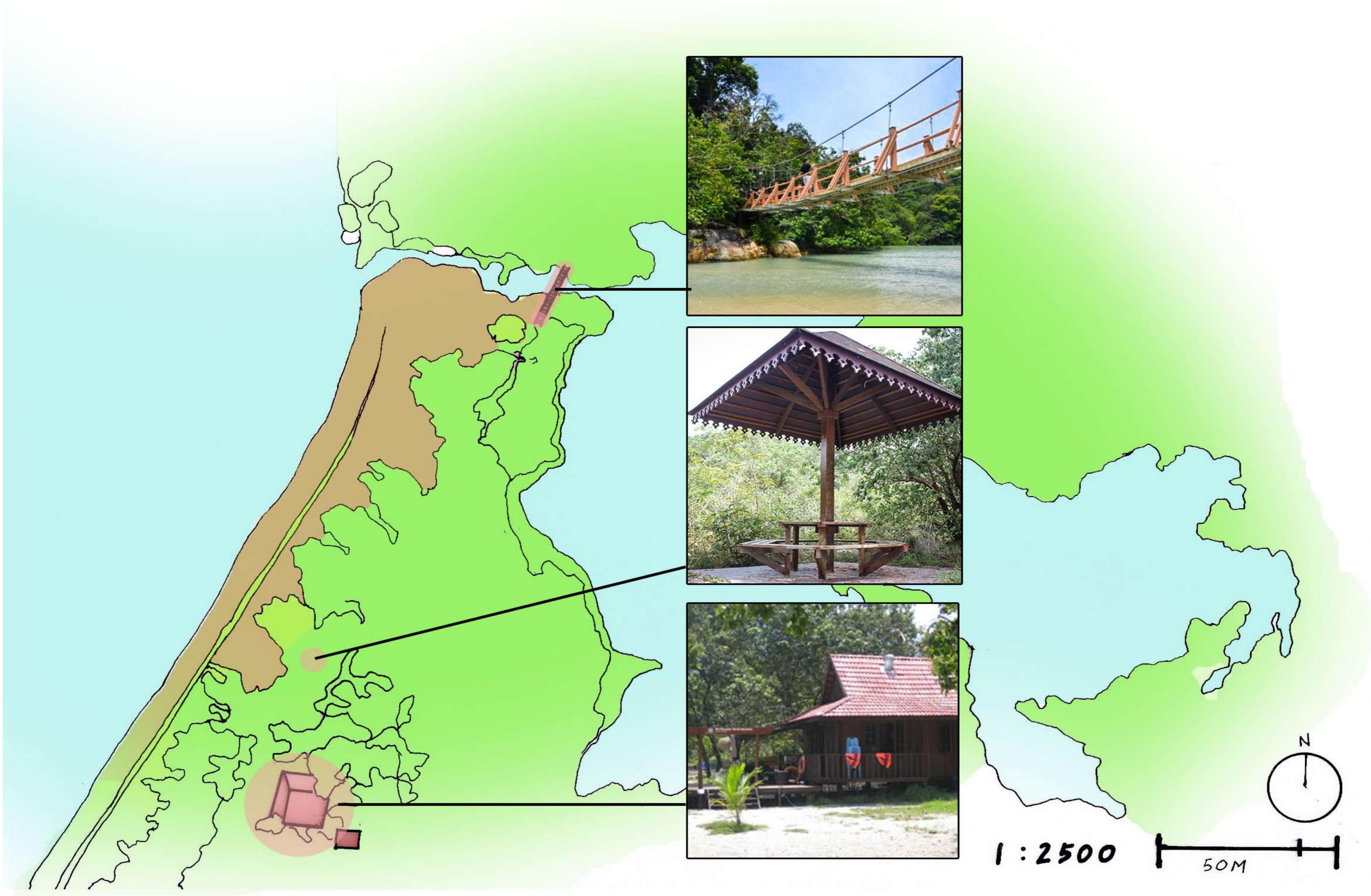


EXISTING STRUCTURE

LOCATION OF EXISTING STRUCTURES

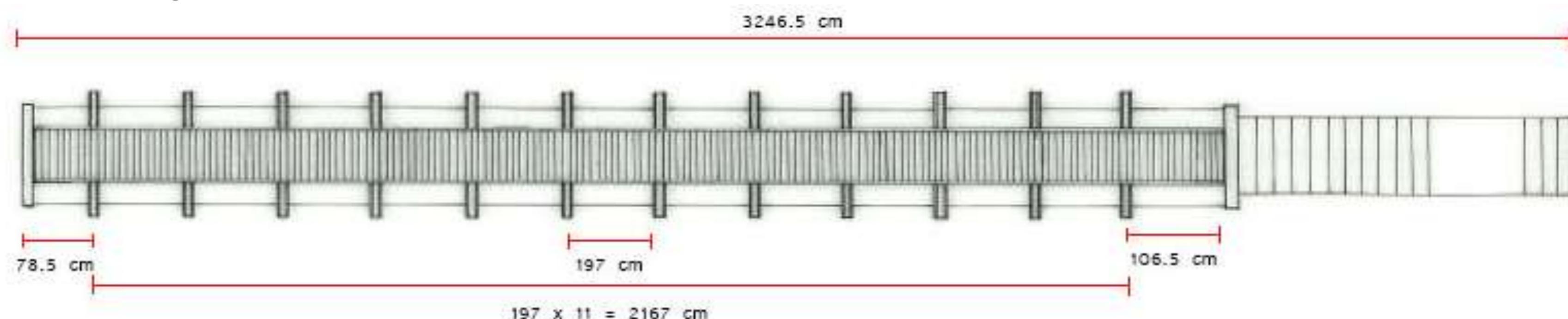
(location plan)

EXISTING STRUCTURE



MEASUREMENTS

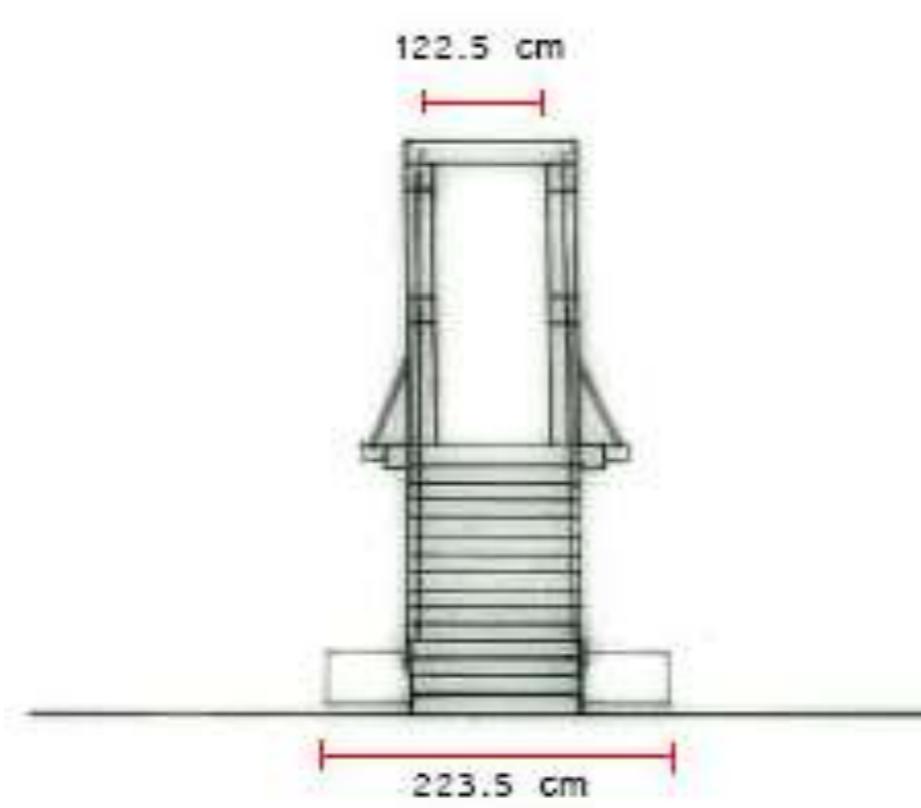
Suspension Bridge



SCALE 1:100



SCALE 1:100

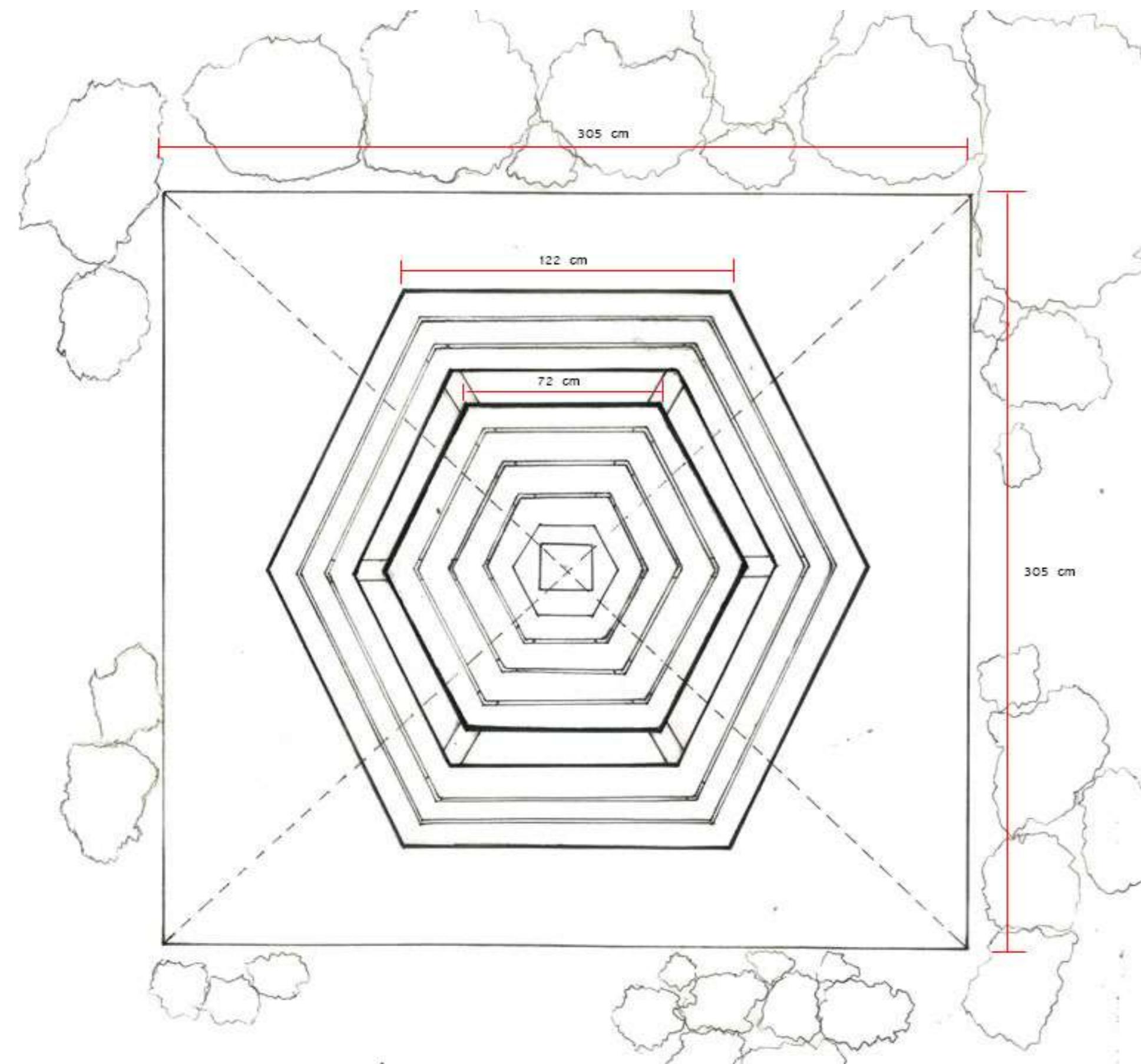


SCALE 1:100

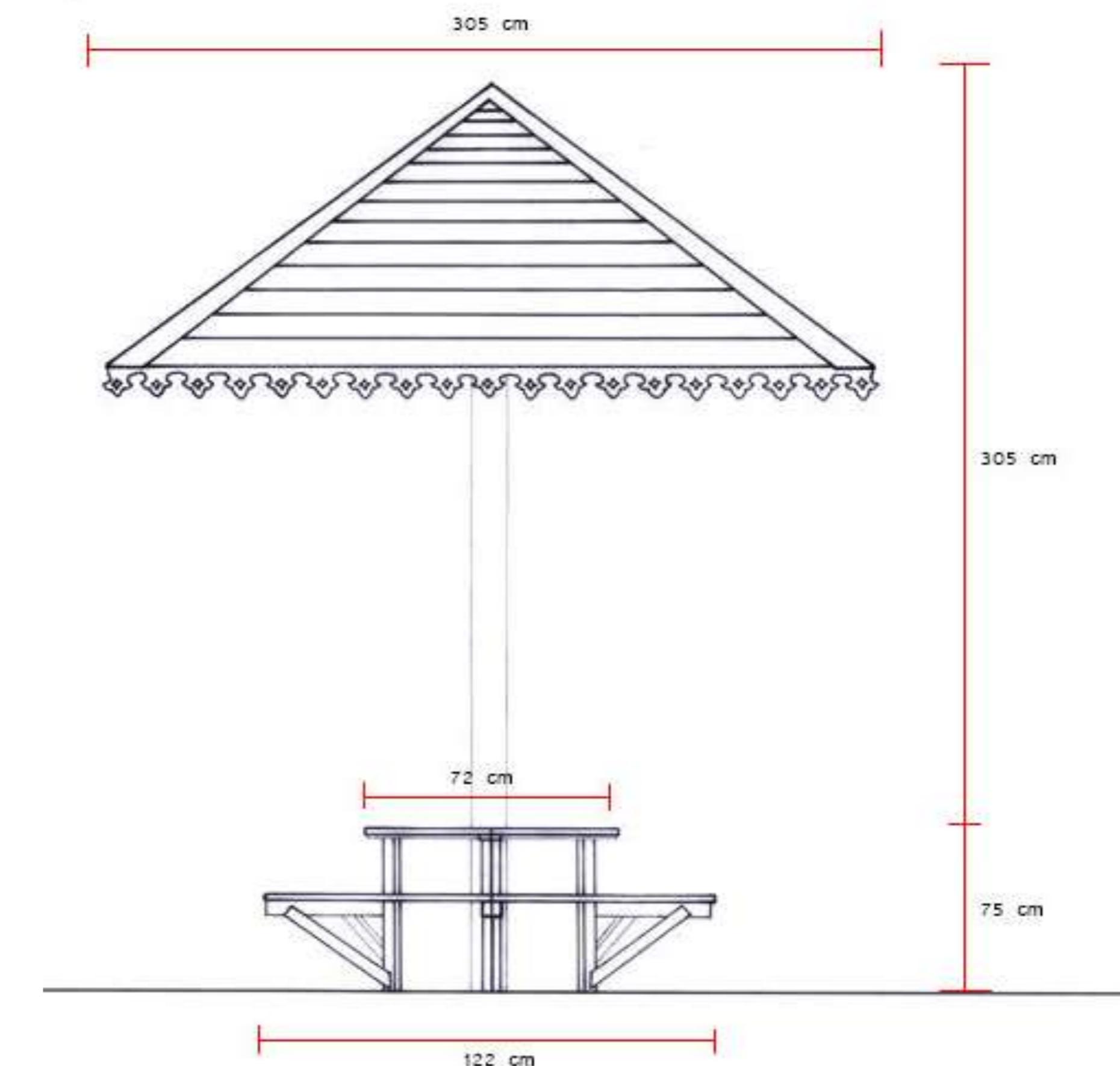
EXISTING STRUCTURE

MEASUREMENTS

Shelter



PLAN SCALE 1:20



SIDE ELEVATION SCALE 1:20

EXISTING STRUCTURE