

Mercury

- Closest planet to Sun
- Smallest planet in solar system
- Diameter: 4900 km
- Fastest planet takes 88 days to complete revolution
- Planet with no satellite

Venus

- Hottest planet in solar system
- Brightest planet in Solar System known as - Evening Star & Morning Star
- No satellite
- known as - Earth's Twin (similar mass & size)
- Rotates clockwise

Earth

- only planet to give support to life
- known as - Blue Planet (70% water)
- one satellite - Moon
- Densest in the entire solar system

Mars

- Known as - Red Planet (Iron Oxide (FeO))
- 2nd smallest planet
- Two satellite - Phobos & Deimos
- Largest Volcano & tallest mountain - Olympus Mons

Jupiter

- Largest planet shortest rotation (10 hours)
- Atmosphere has Hydrogen, Helium, other gases
- Third brightest after Moon & Venus
- Largest satellites - Io, Europa, Callisto & Ganymede (largest among all) (all discovered by Galileo)
- Has unclear ring around it

Saturn

- Second largest planet
- Has bright & concentric rings made of tiny rocks, gas, dust, ice
- least dense planet
- Largest satellite - Titan
- 1655 - Huygenes (discover Saturn's rings)
- 1675 - Cassini (discovered Cassini divisions)

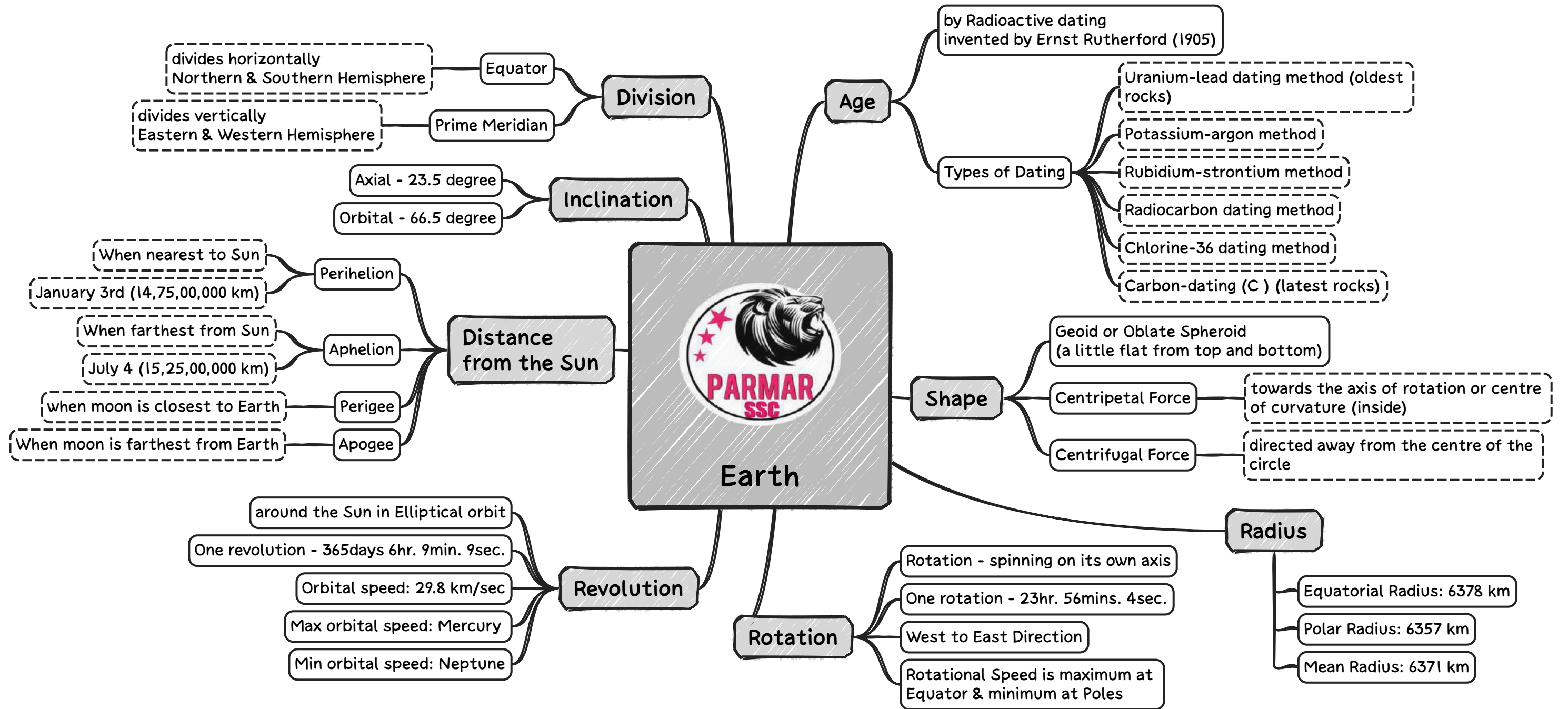
Uranus

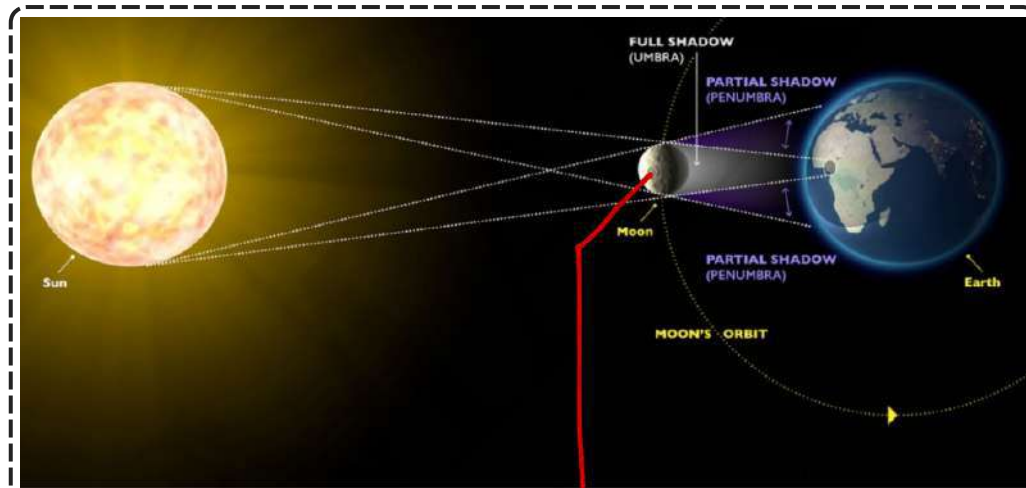
- Green Planet (Methane)
- Discovered by William Herschel in 1781
- Known as - Ice Giant
- Atmosphere has Hydrogen, Helium, Water, Ammonia, Methane
- Coldest planet
- tilted 98 degree at its axis known as - Rolling/Lopsided Planet
- Rotates clockwise like Venus

Neptune

- Farthest planet
- known as - Ice Giant
- Atmosphere has Hydrogen, Helium
- Bluish in colour due to Methane
- Discovered by Johann Galle and Urbain Le Verrier in 1846 (only planet found by Mathematical Predictions)
- Has 14 satellites famous moon - Triton



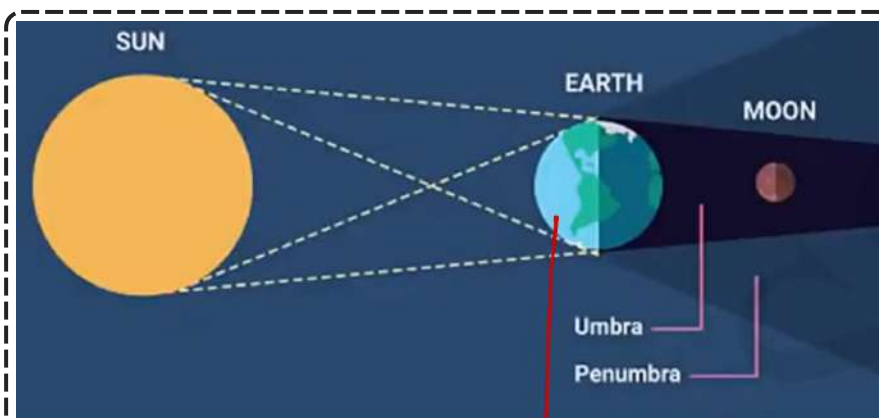




Moon is blocking Sun's light



Total Solar Eclipse Annular Solar Eclipse Partial Solar Eclipse



Earth blocks Sun's light
(light refraction)

Super Moon - during Lunar Eclipse + Perigee Moon
(appears bigger)



Longitude

Imaginary vertical lines form North to South

Angular Distance of a plane from Prime Meridian

Distance from each longitude varies from poles towards equator

Least distance at poles - 0 km
Maximum distance at equator - 111.32 km

Total longitudes: 360

All longitudes divide Earth into 2 equal parts

Prime Meridian - 0 degree
(passes from Greenwich, London)

International Date Line - 180 degree
(Zig-Zag line)

Passes through 8 countries -
UK, France, Spain, Algeria, Mali,
Burkina Faso, Togo & Ghana

Latitude

Imaginary horizontal lines from East to West

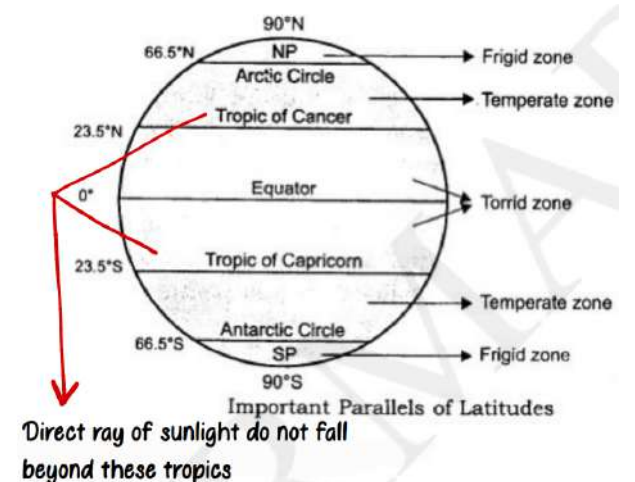
Angular Distance of a place from the equator

Distance b/w each latitude is same

1 degree of latitude = 111 km (approx)

Total latitudes - 181

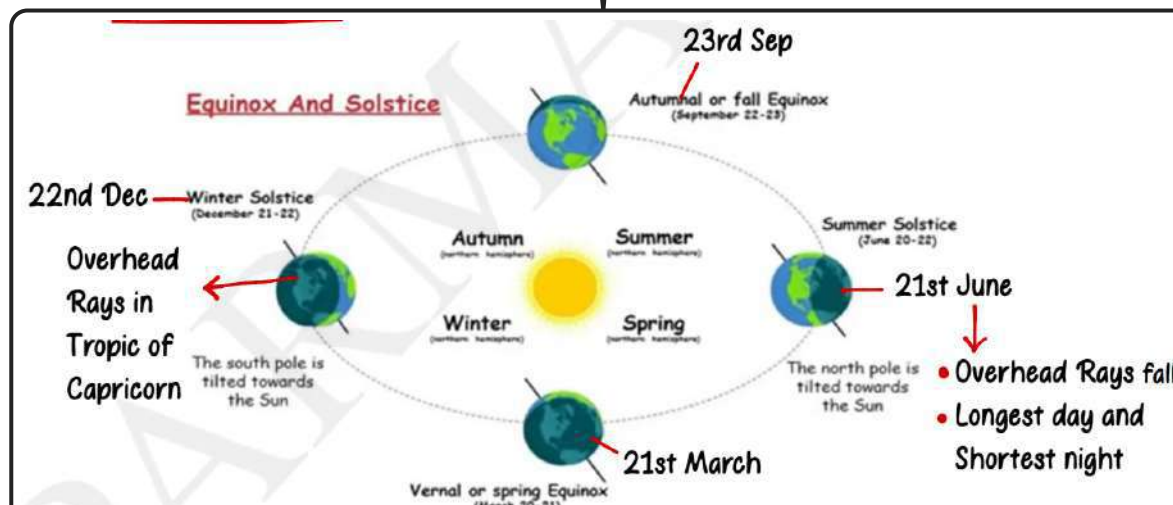
Largest - Equator
Smallest - Poles
(North & South)



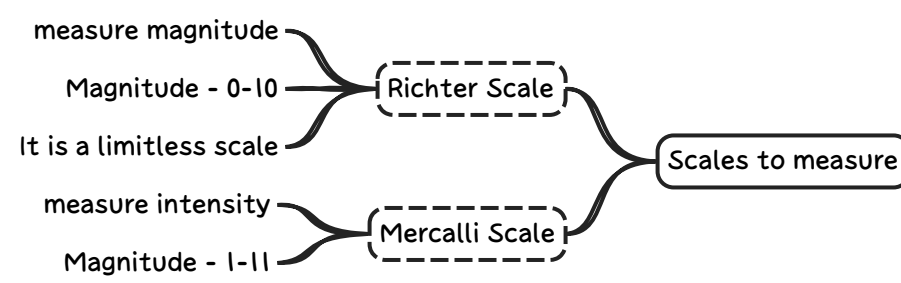
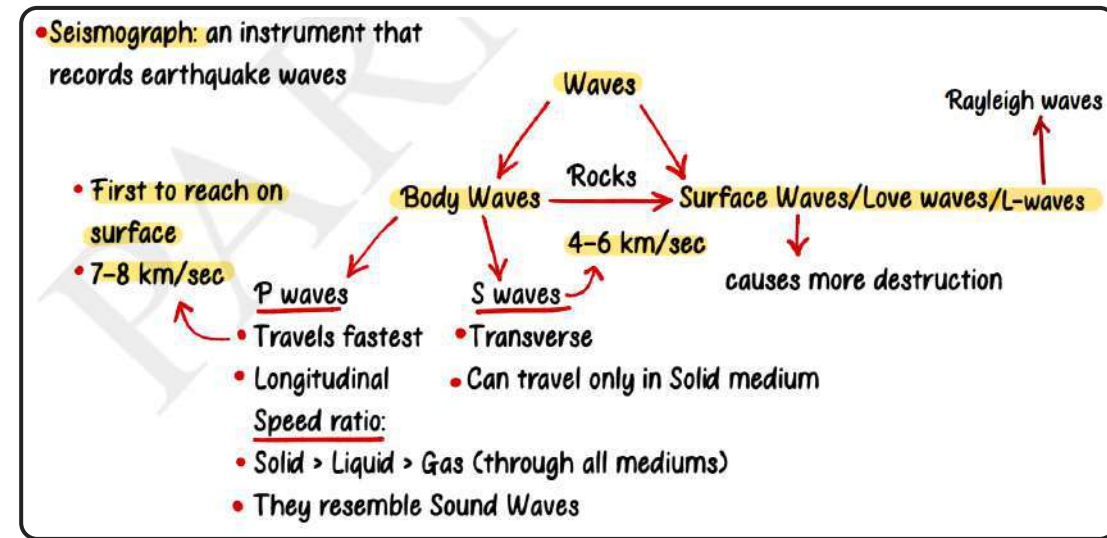
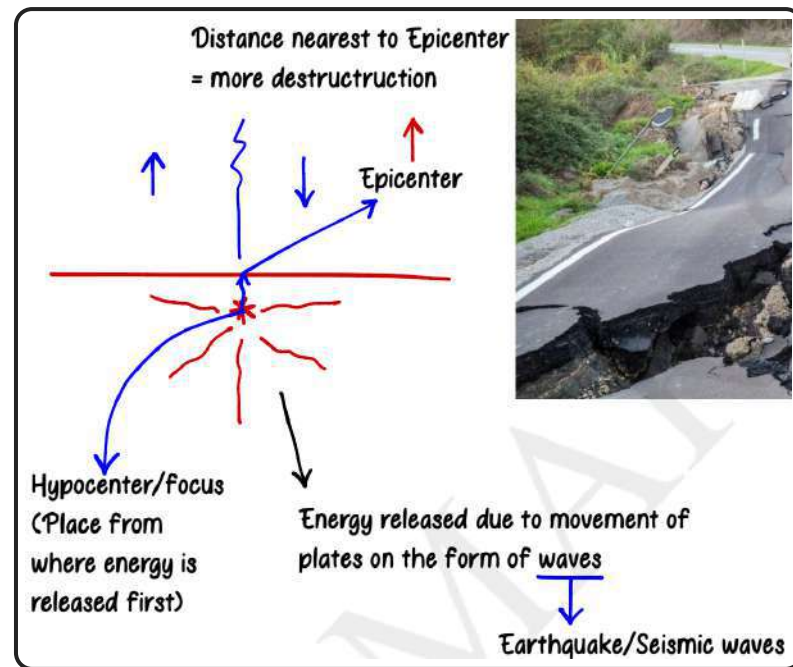
Direct ray of sunlight do not fall
beyond these tropics

Eclipse

Solstice & Equinox



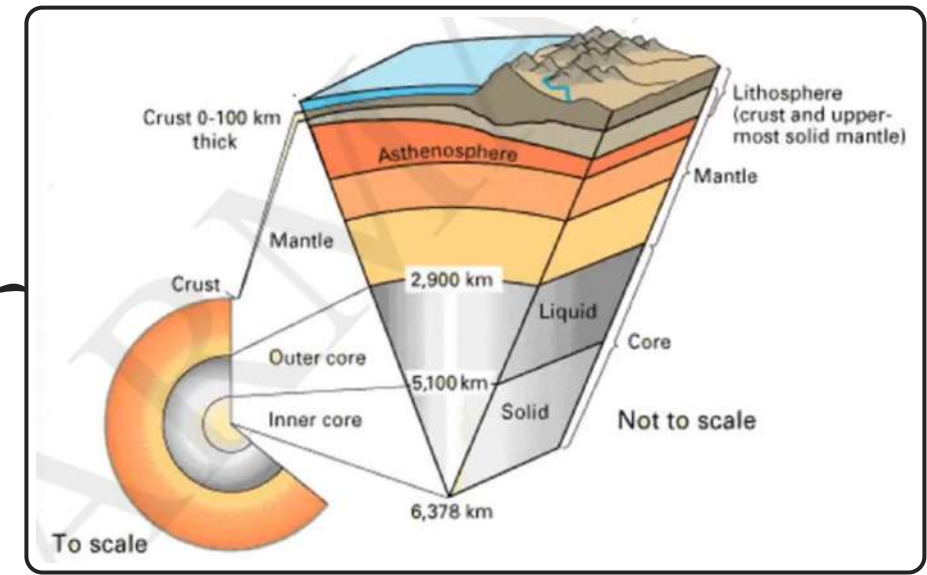
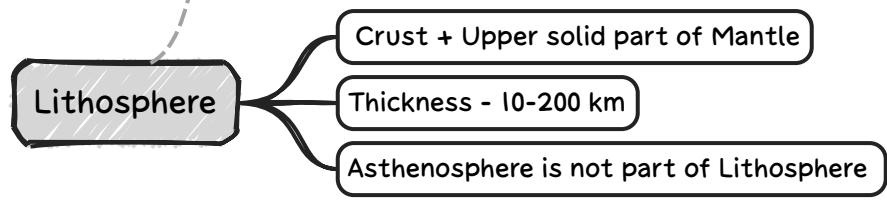
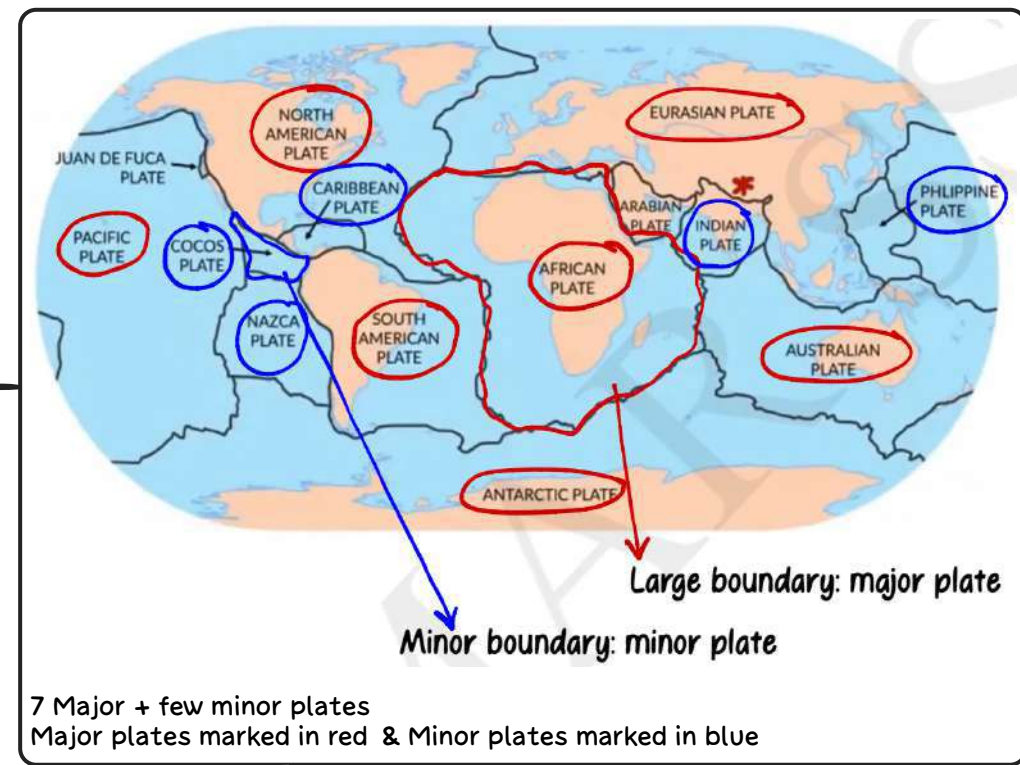
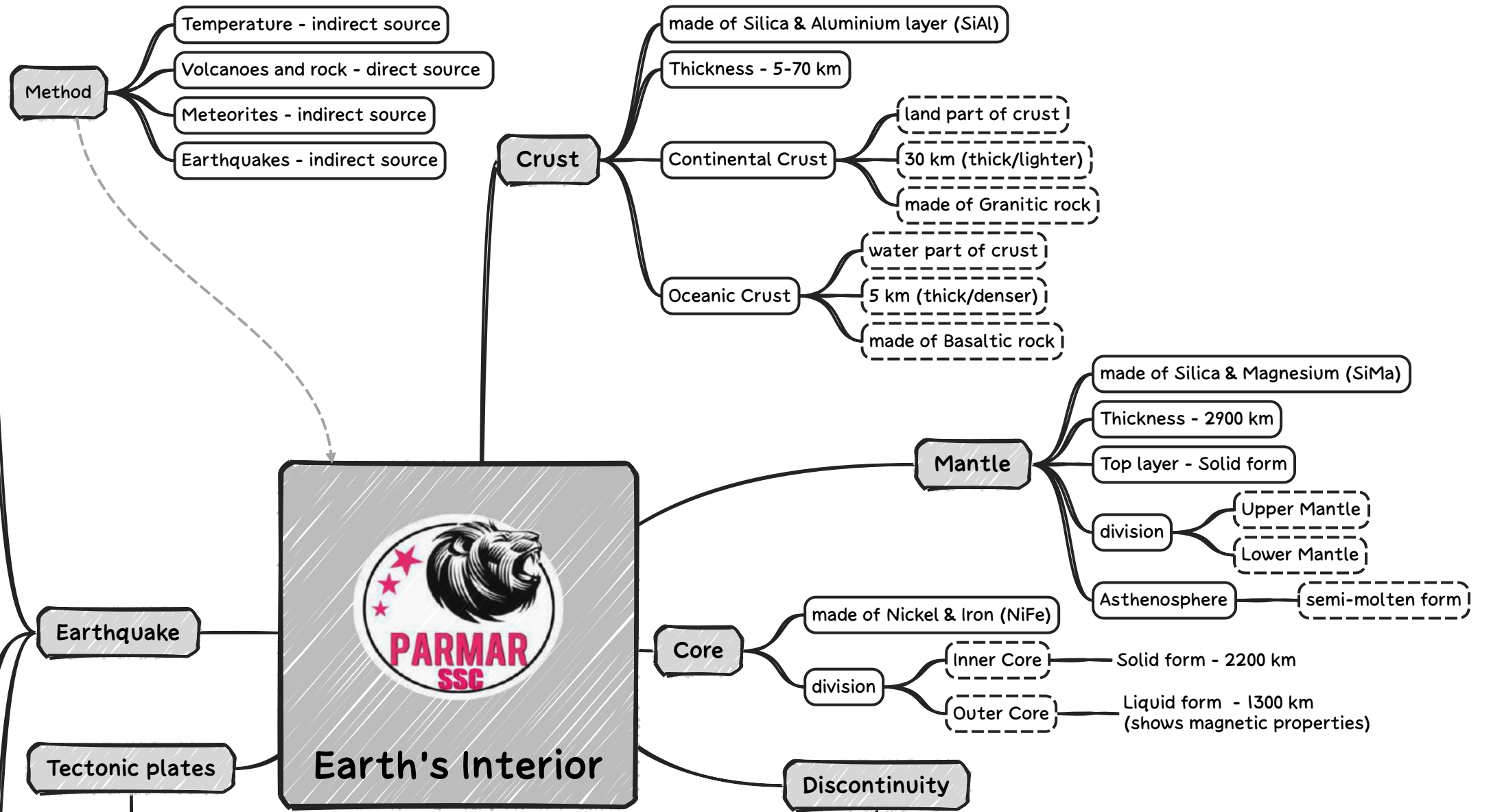
Summer Solstice - continuous Sun rays on North Pole for 6 months
Winter Solstice - continuous Sun rays on South Pole for 6 months
Equinox - direct Sun rays fall on the Equator



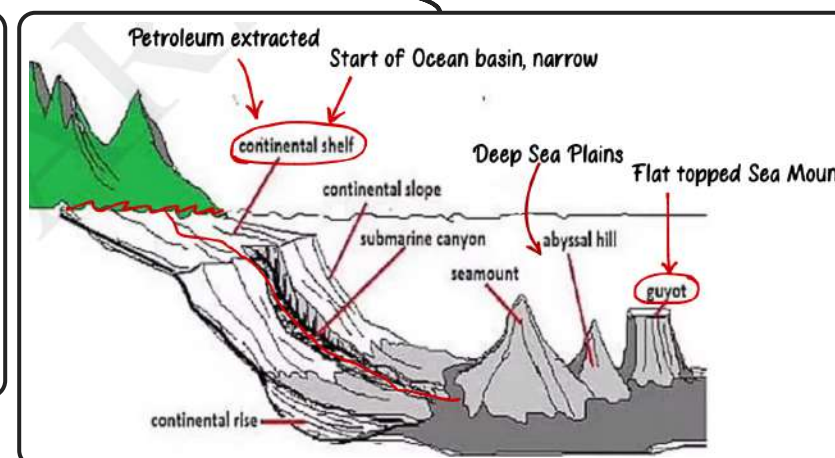
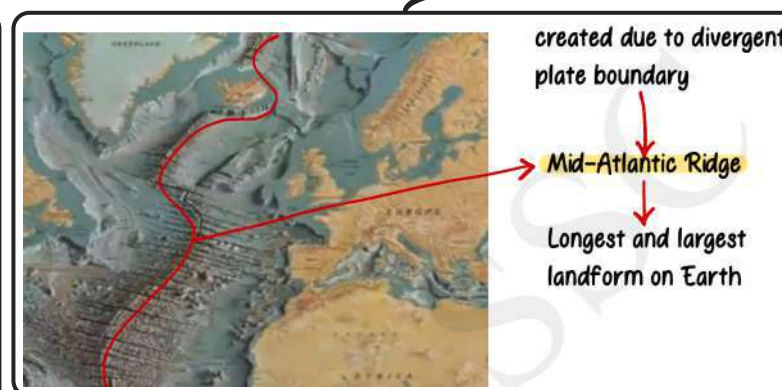
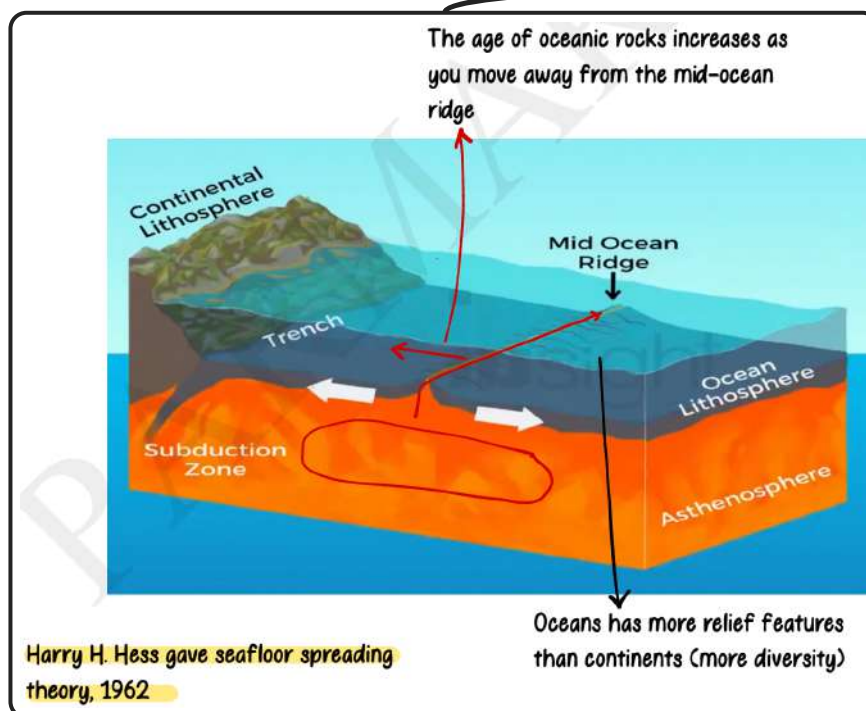
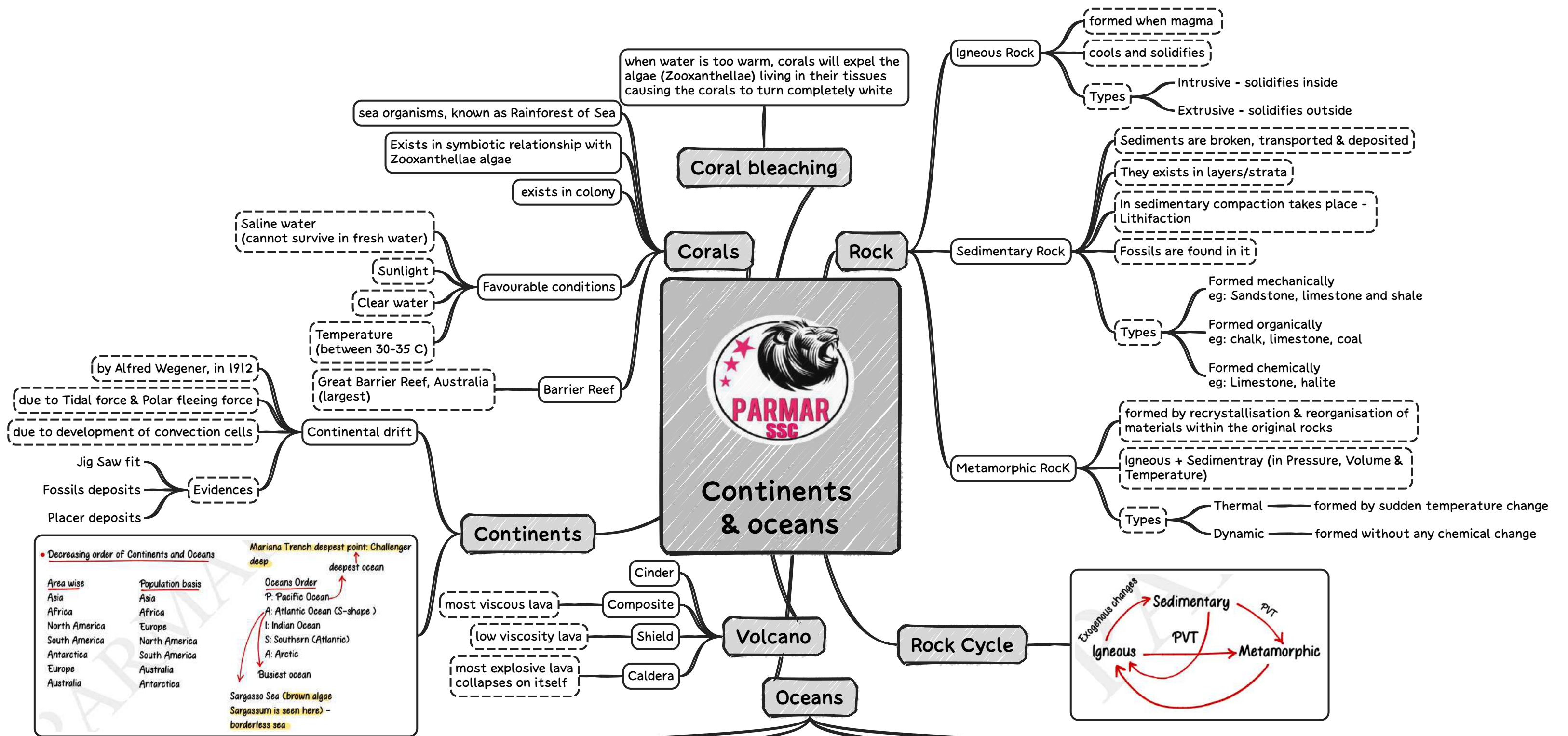
Type of Margin	Divergent	Convergent	Transform
Motion	Spreading	Subduction	Lateral sliding
Effect	Constructive (oceanic lithosphere created)	Destructive (oceanic lithosphere destroyed)	Conservative (lithosphere neither created or destroyed)
Topography	Ridge/Rift	Trench	No major effect
Volcanic activity?	Yes	Yes	No

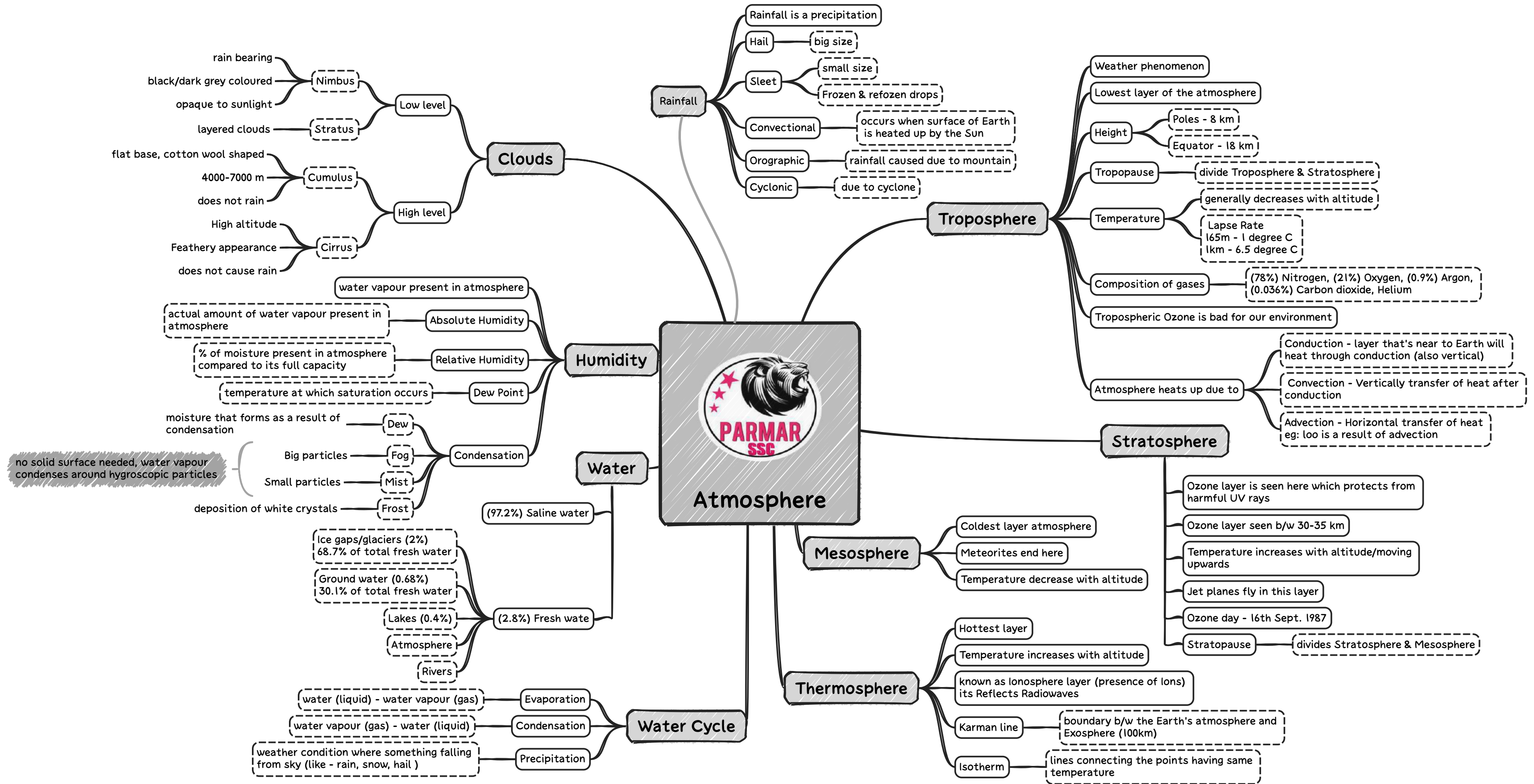
(a) (b) (c)

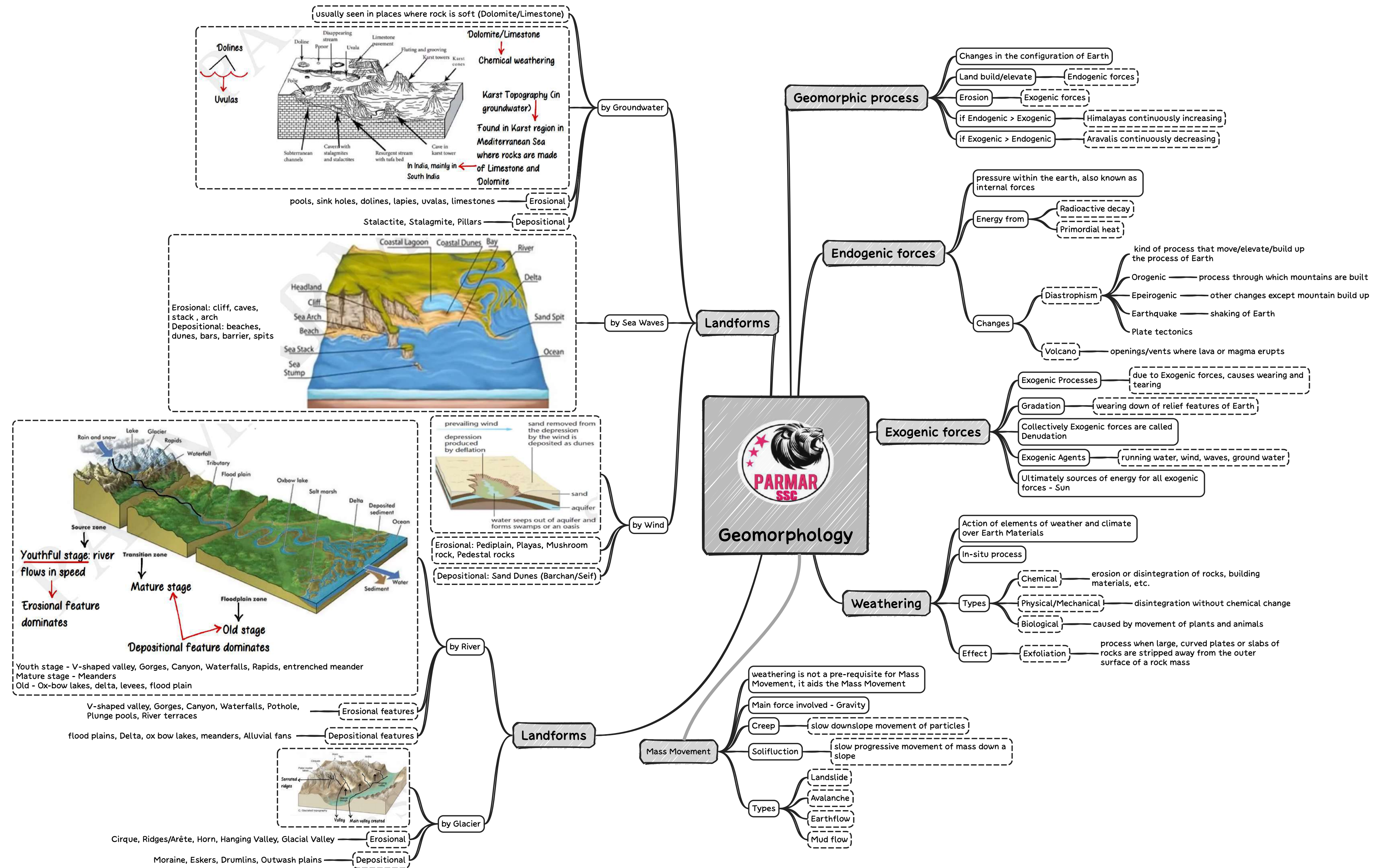
Crust destruction

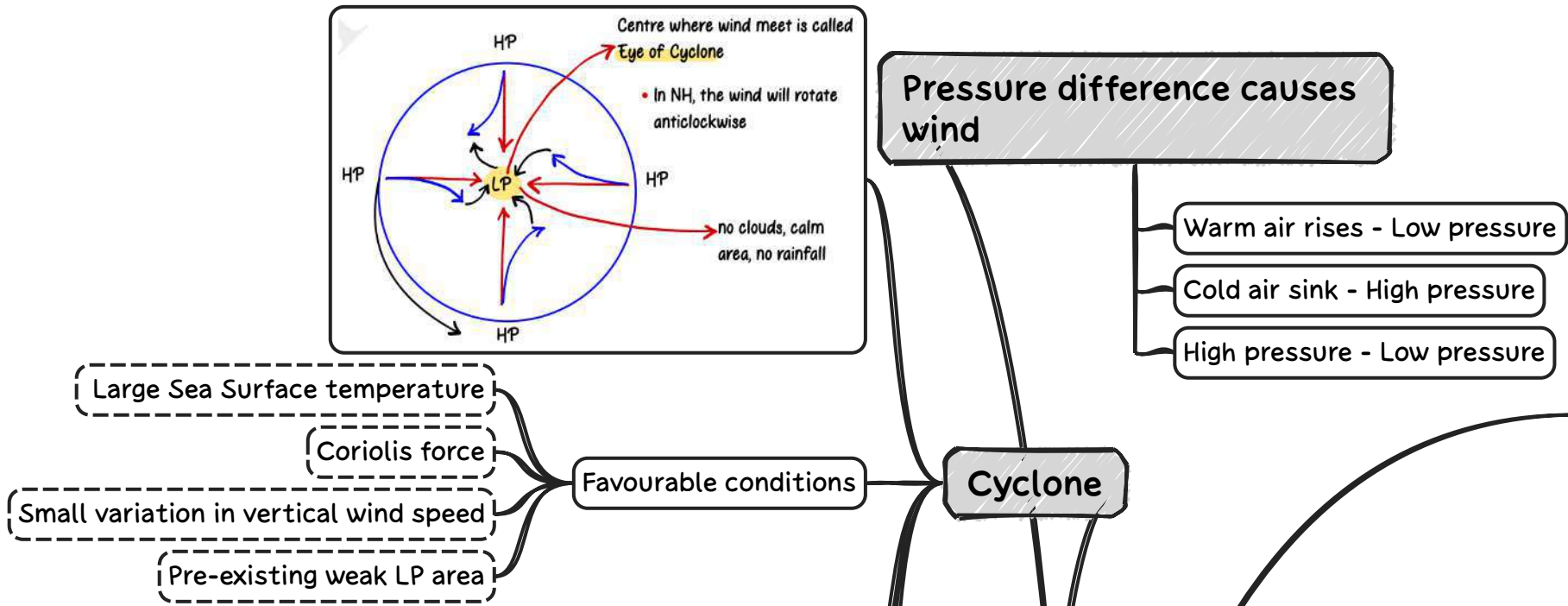
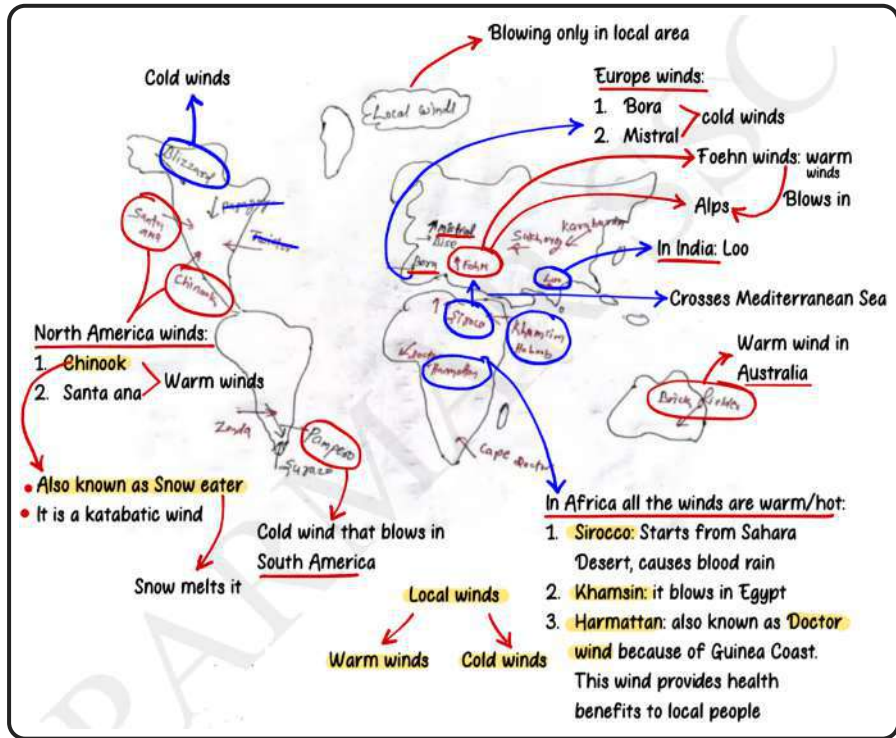
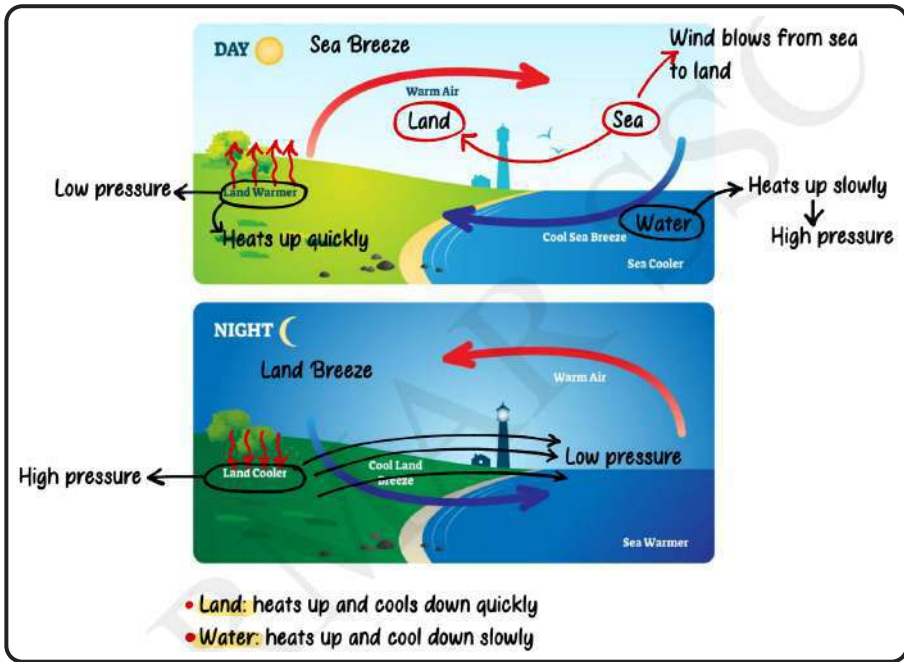


S. No	Discontinuity	Layers	Depth
1.	Conrad	Outer and Inner Crust	45 km
2.	Moho	Crust and Mantle	100 km
		Inner Crust and Outer Mantle	
		Inner Crust and Asthenosphere	
3.	Repiti	Outer Mantle and Inner Mantle	700 km
4.	Gutenberg-Weichert	Mantle and Core	2900 km
		Inner Mantle and Outer Core	
5.	Lehmann	Outer Core and Inner Core	5200 km



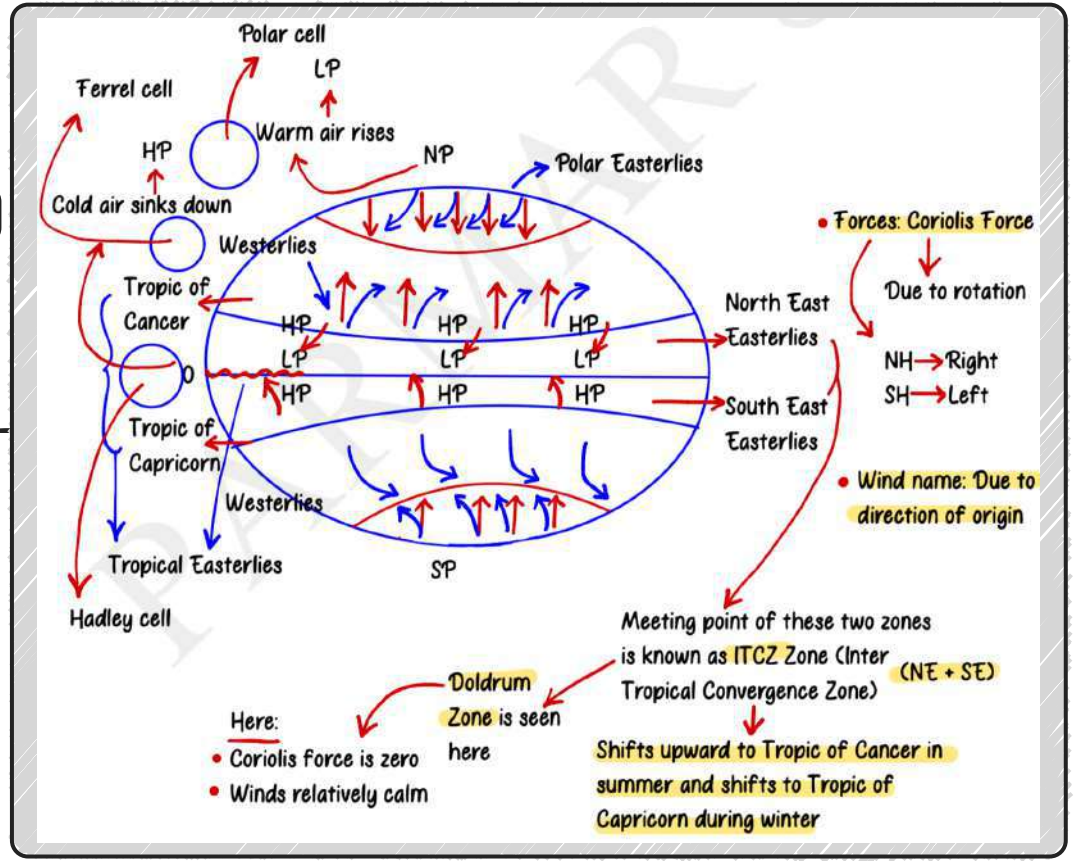
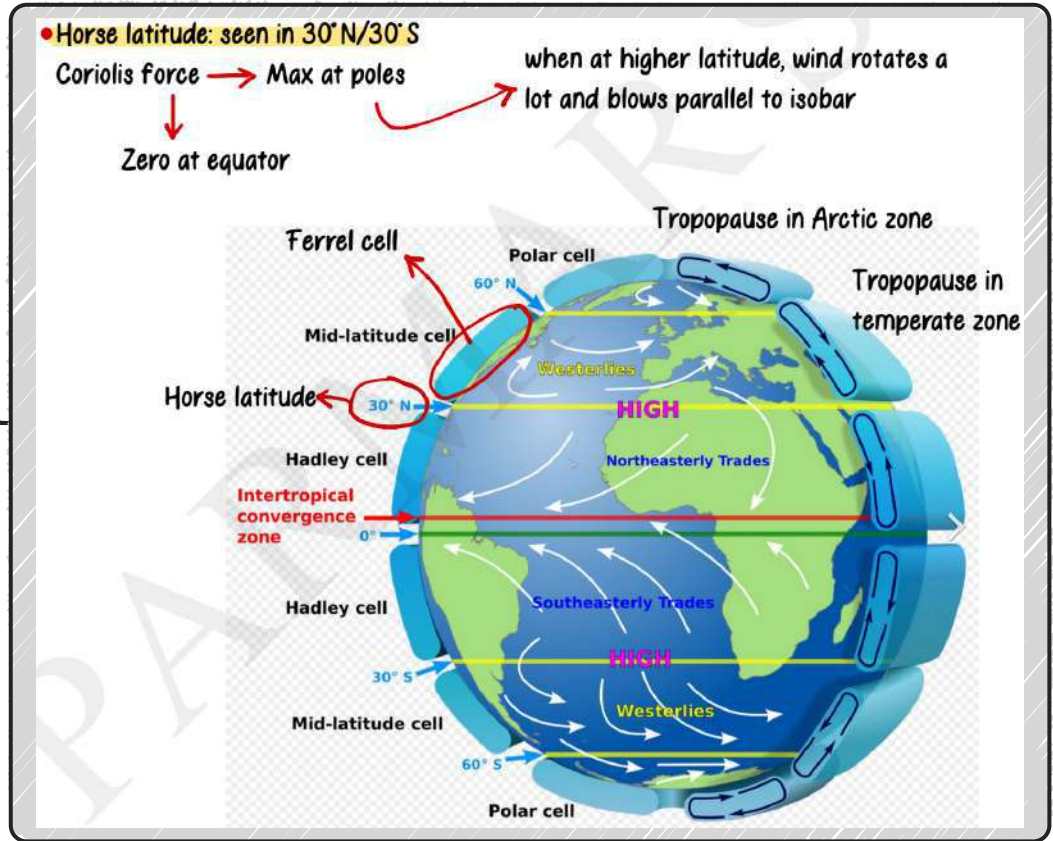
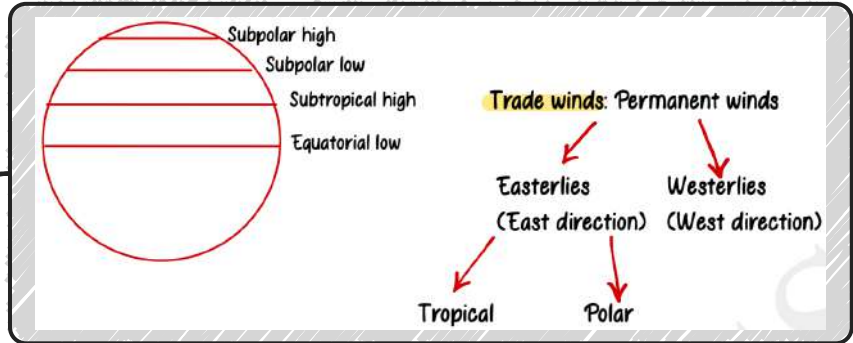
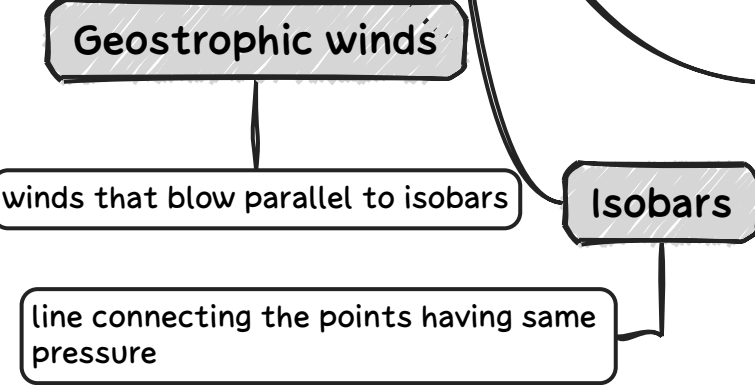


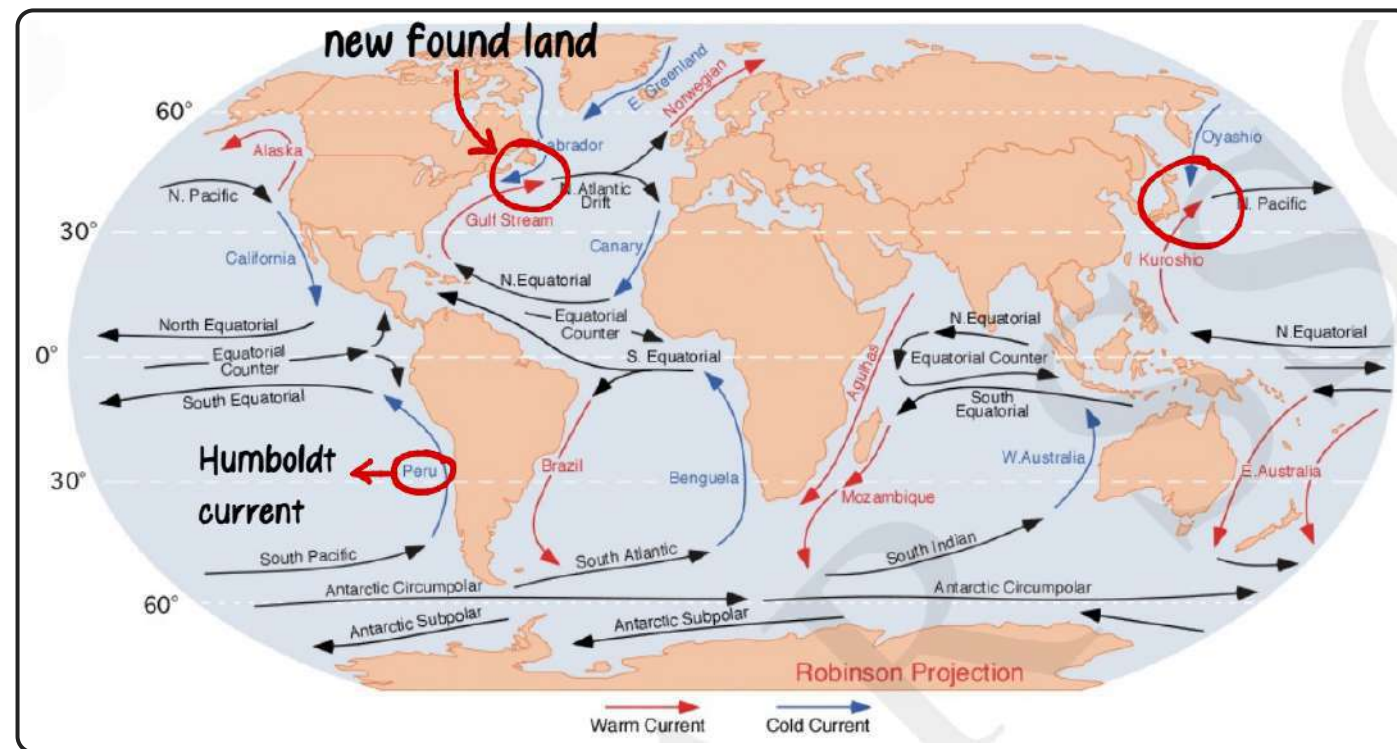




Land & Sea breeze

Local wind





Benguela, Peru, Greenland, Oyashio, Labrador, Falkland, West Australian Drift, Canary & California

Cold Ocean Current

Heating by Sun

Wind

Density different

Coriolis force

Coastline of continents

Reasons of origination

Surface - 10%

Deep Sea - 90%

Types

Creates foggy conditions: worse for Harbours

Warm ocean current + cold ocean current = Best fishing zones

Max. desert seen on Western side of the continent

Cold ocean current - creates desert

Effects



Climate

Weather

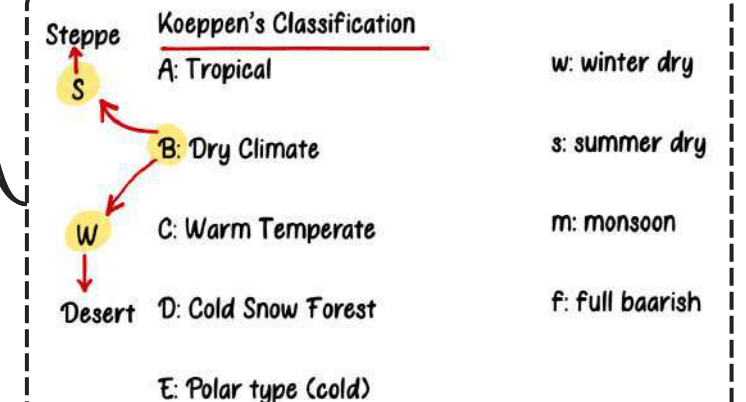
short term

Climate

long term (Roughly 30 years data is taken)

Empirical Climatic Classification

by Koeppen, in 1918



Ocean Currents

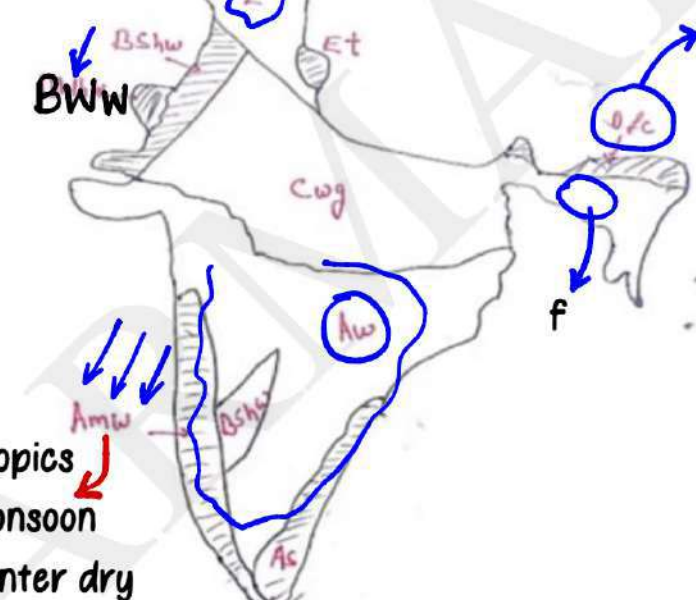
Tundra type of climate due to extreme conditions

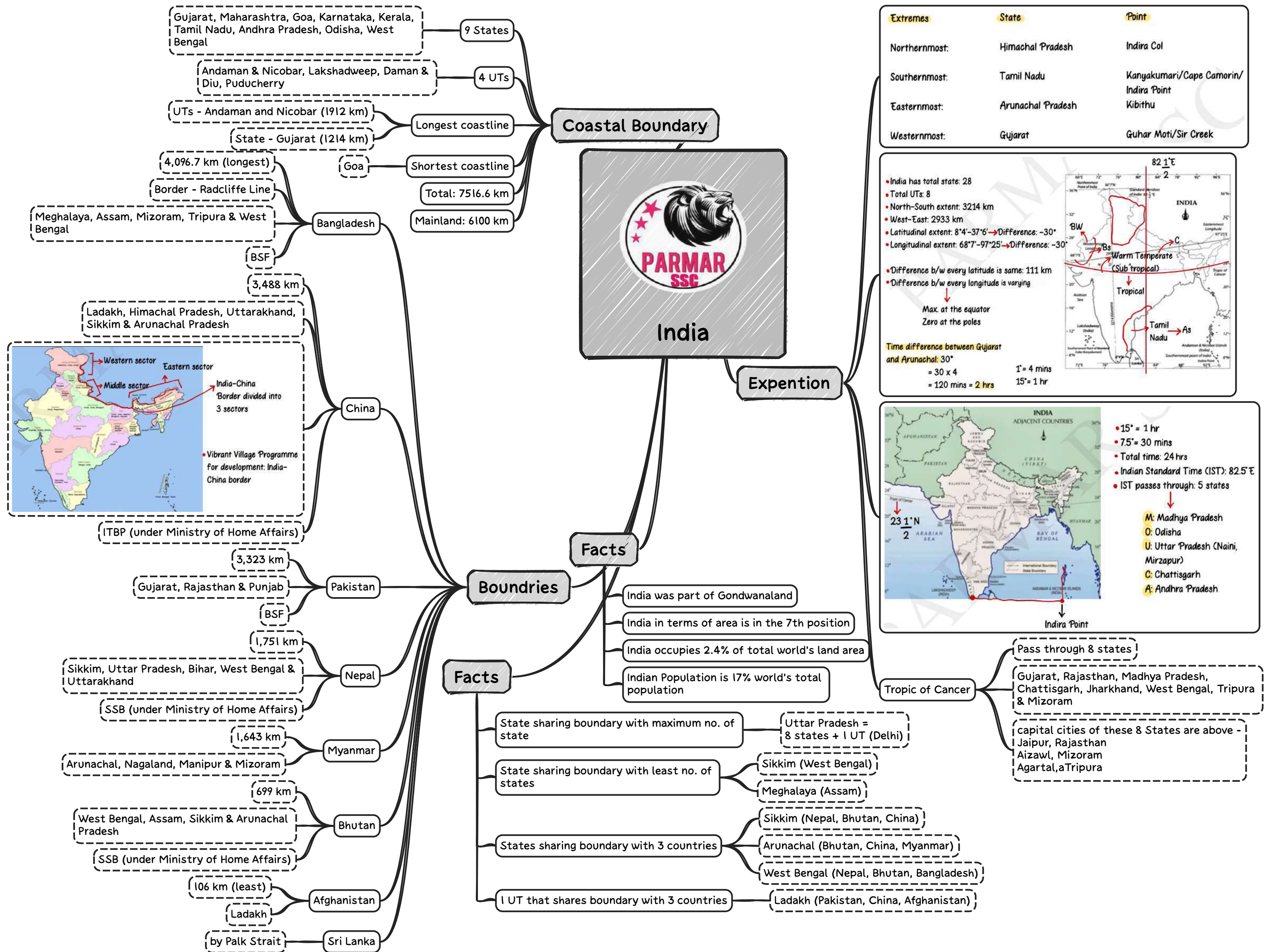
cold polar/tundra

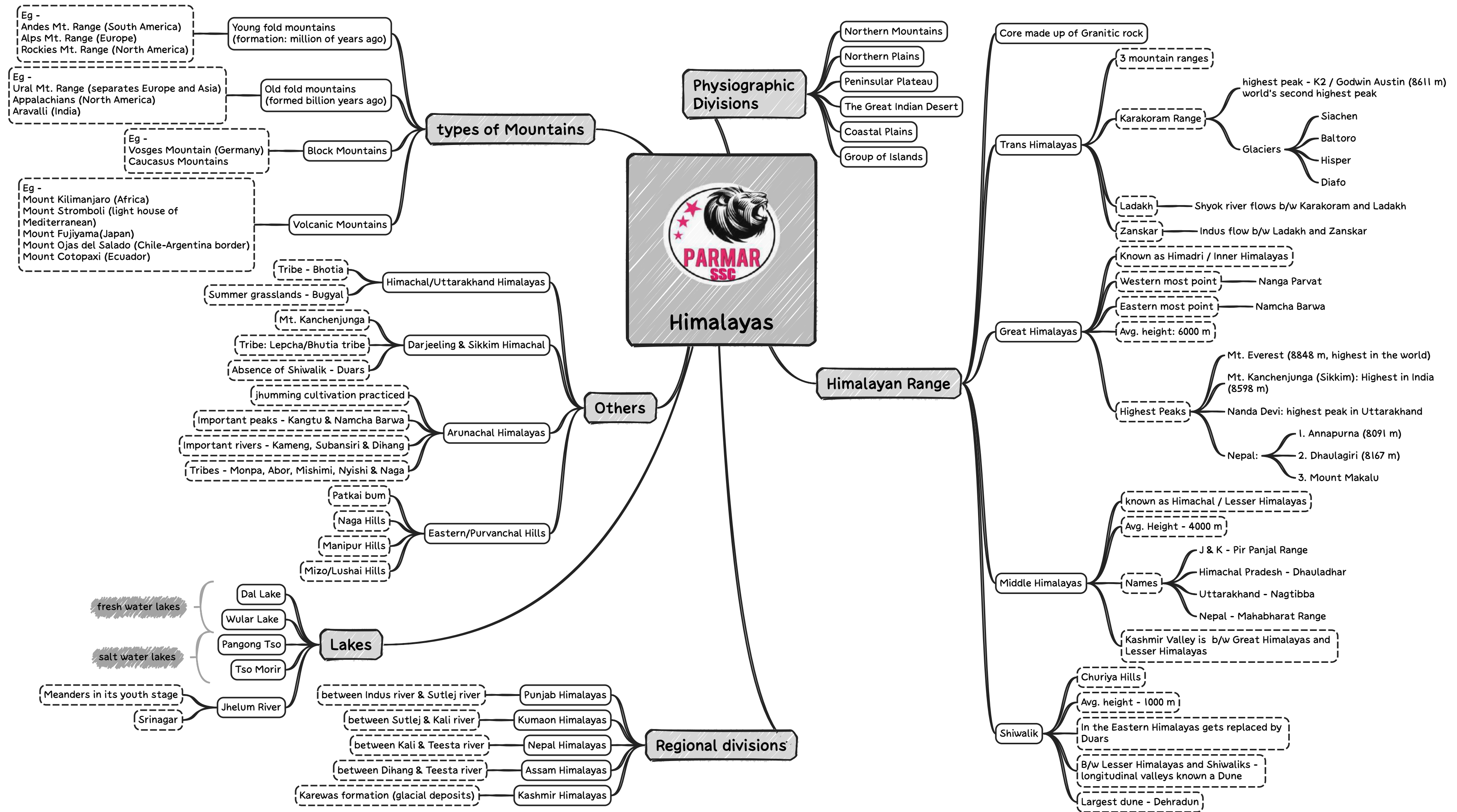
cold snow forest

BWw

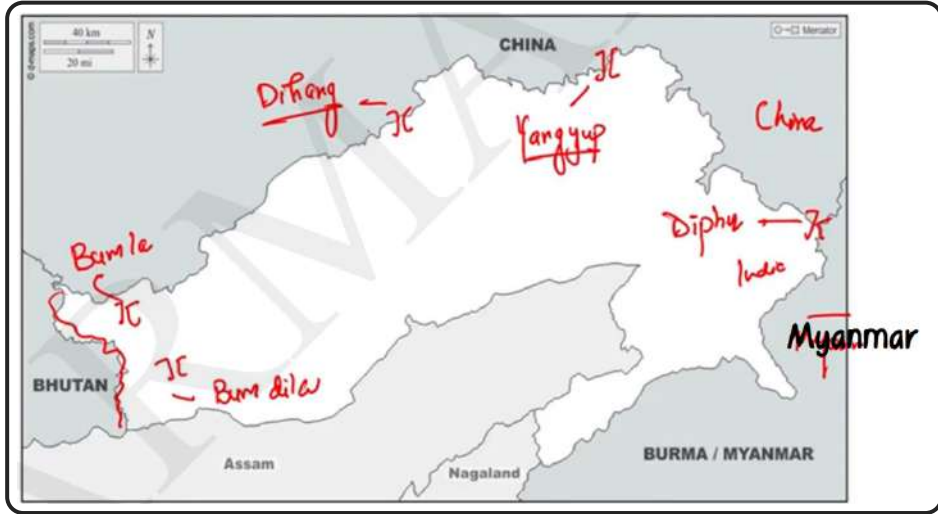
- Tropics
- Monsoon
- Winter dry



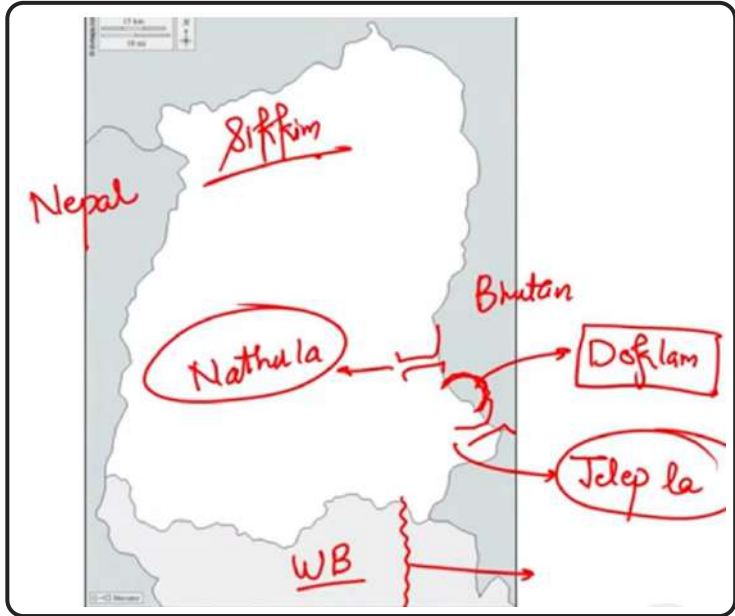




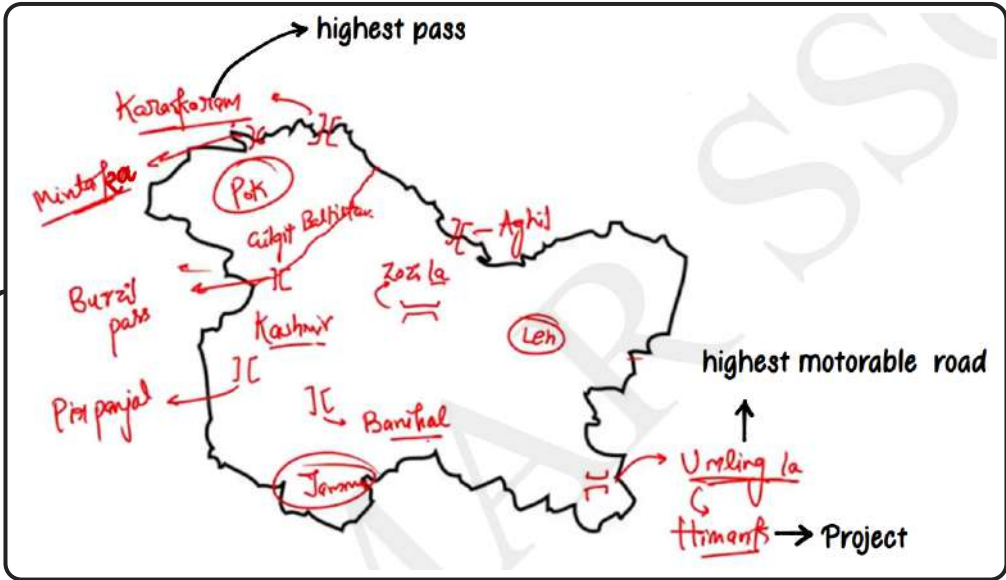
Arunachal Pradesh



Sikkim

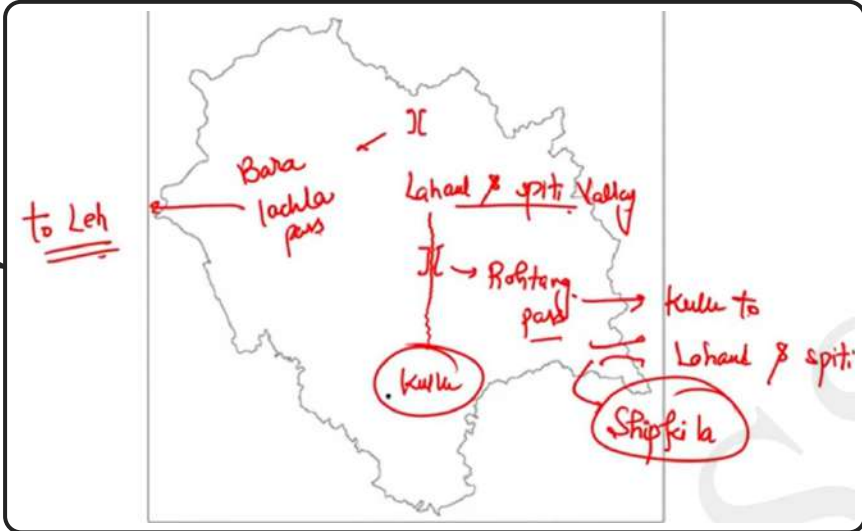


Jammu & Kashmir



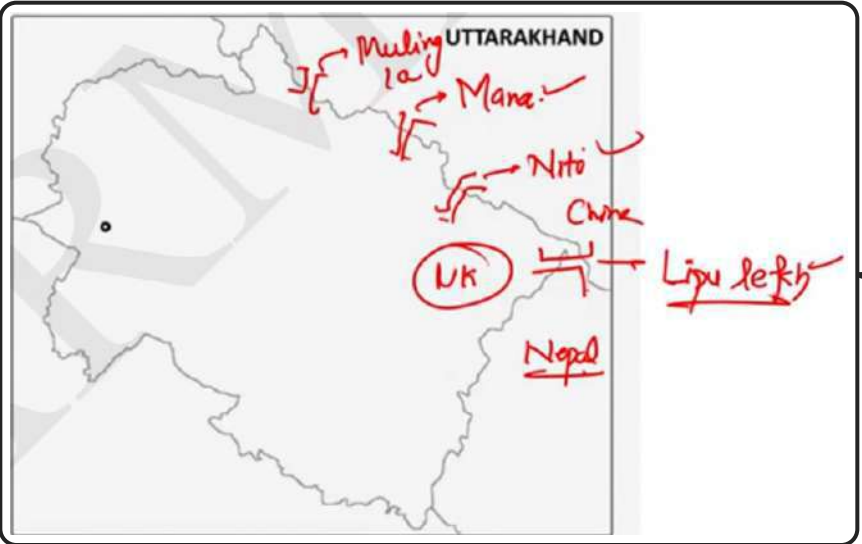
- Jammu to Kashmir/Srinagar - Banihal & Pir Panjal
- Kashmir to Gilgit - Burzil
- Kashmir to Leh - Zoji La

Himachal Pradesh

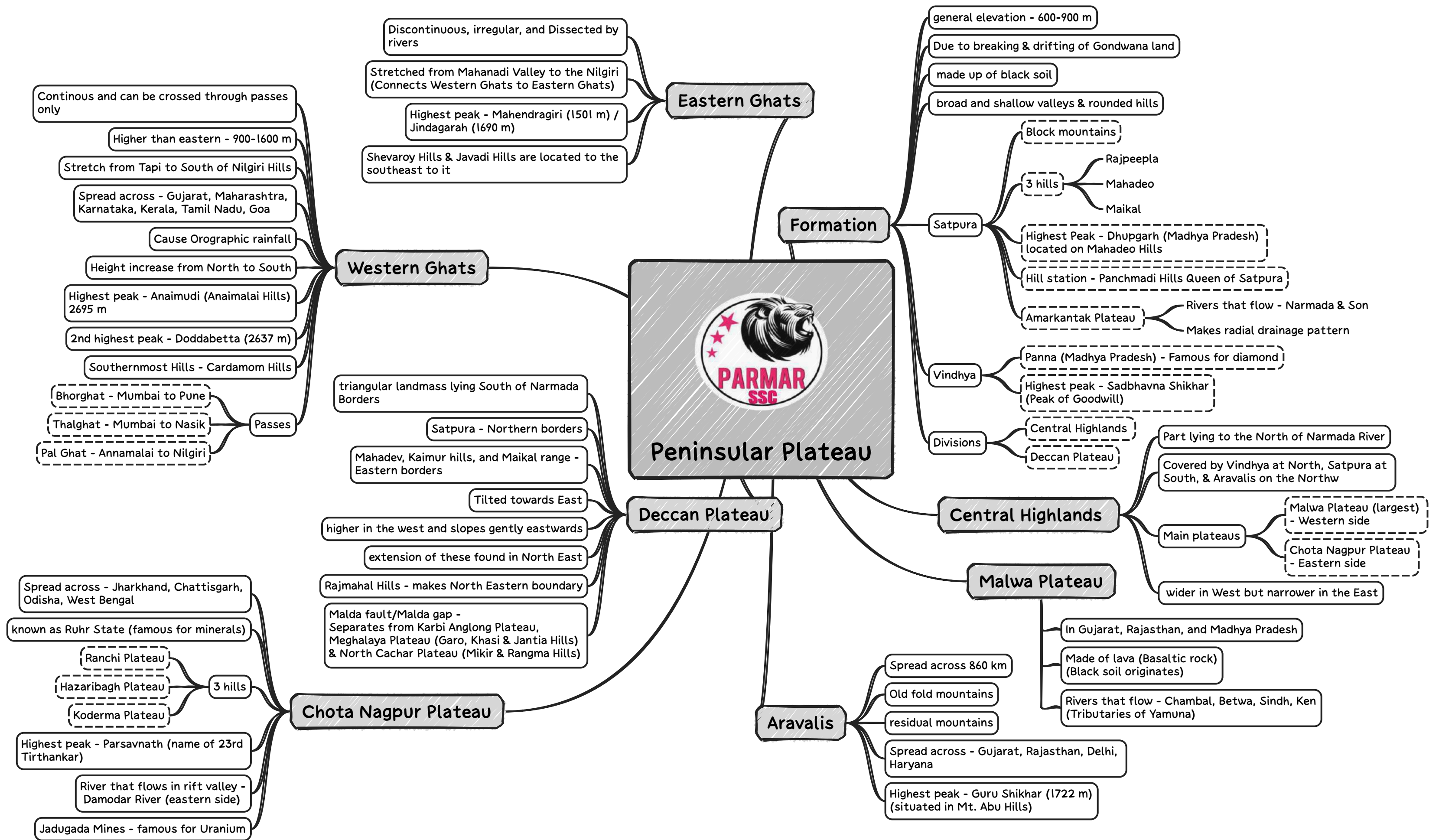


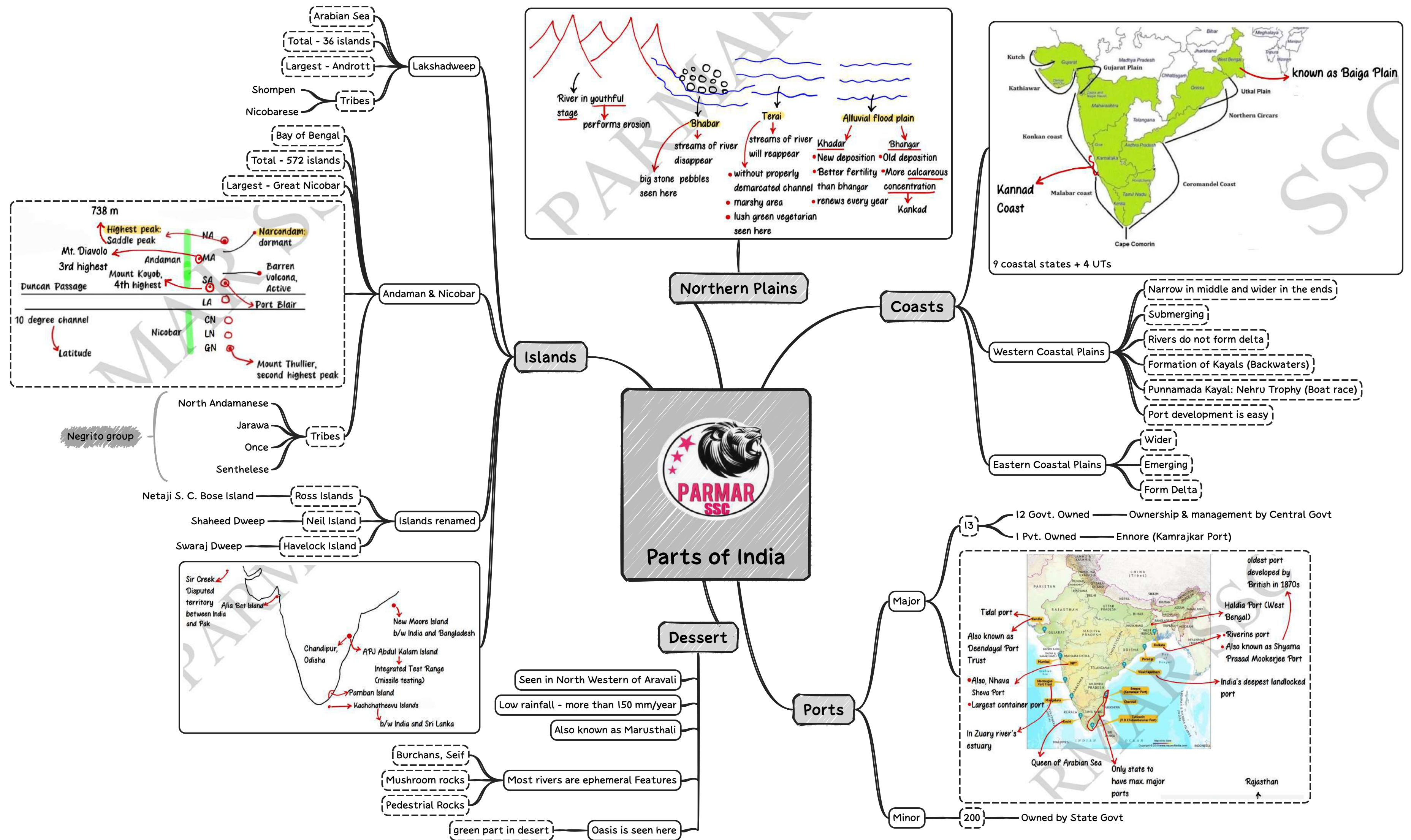
- Rohtang pass connects - Kullu to Lahaul and Spiti Valley
- Baralacha La - Lahaul and Spiti to Leh
- Atal Tunnel in Rohtang Pass

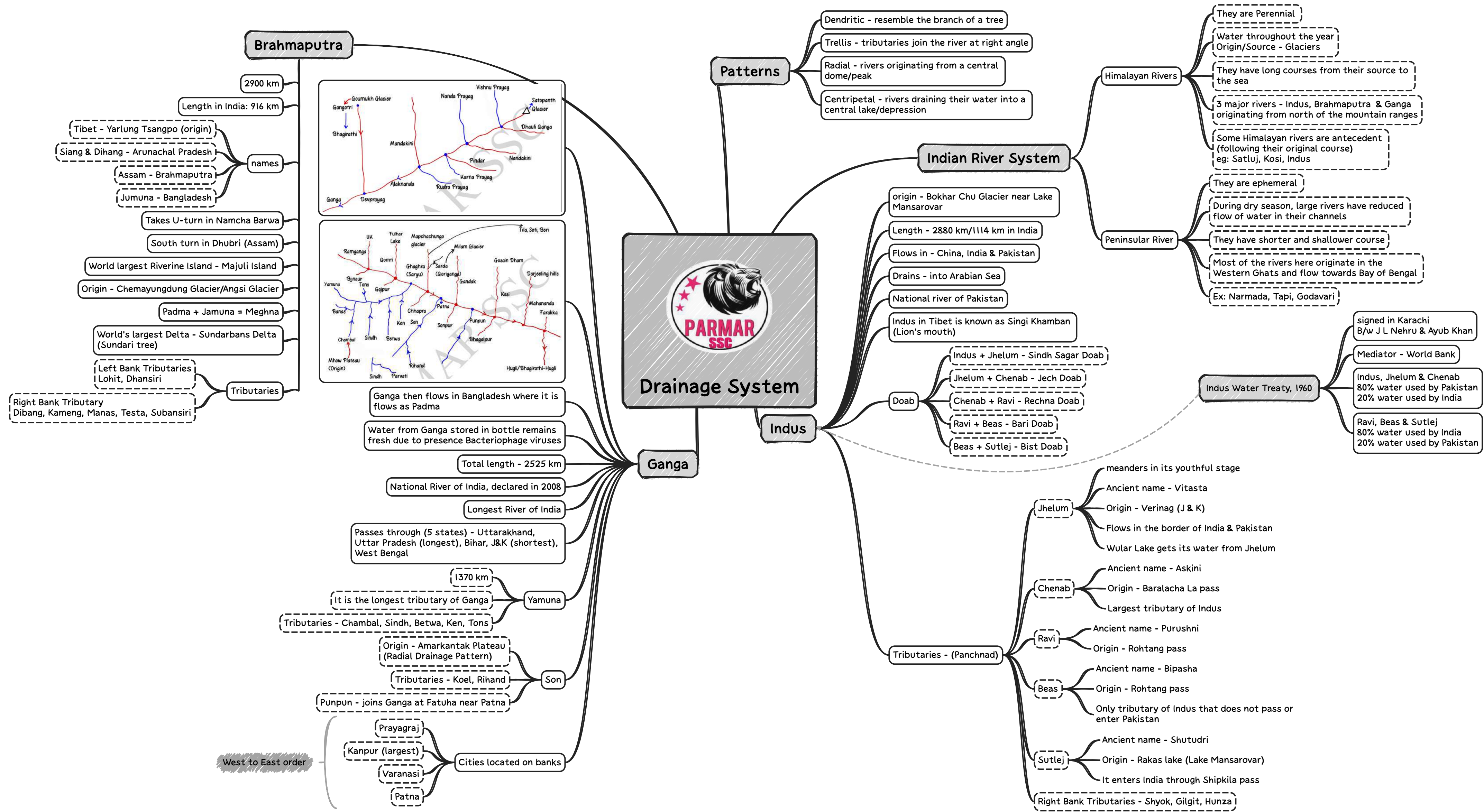
Uttarakhand

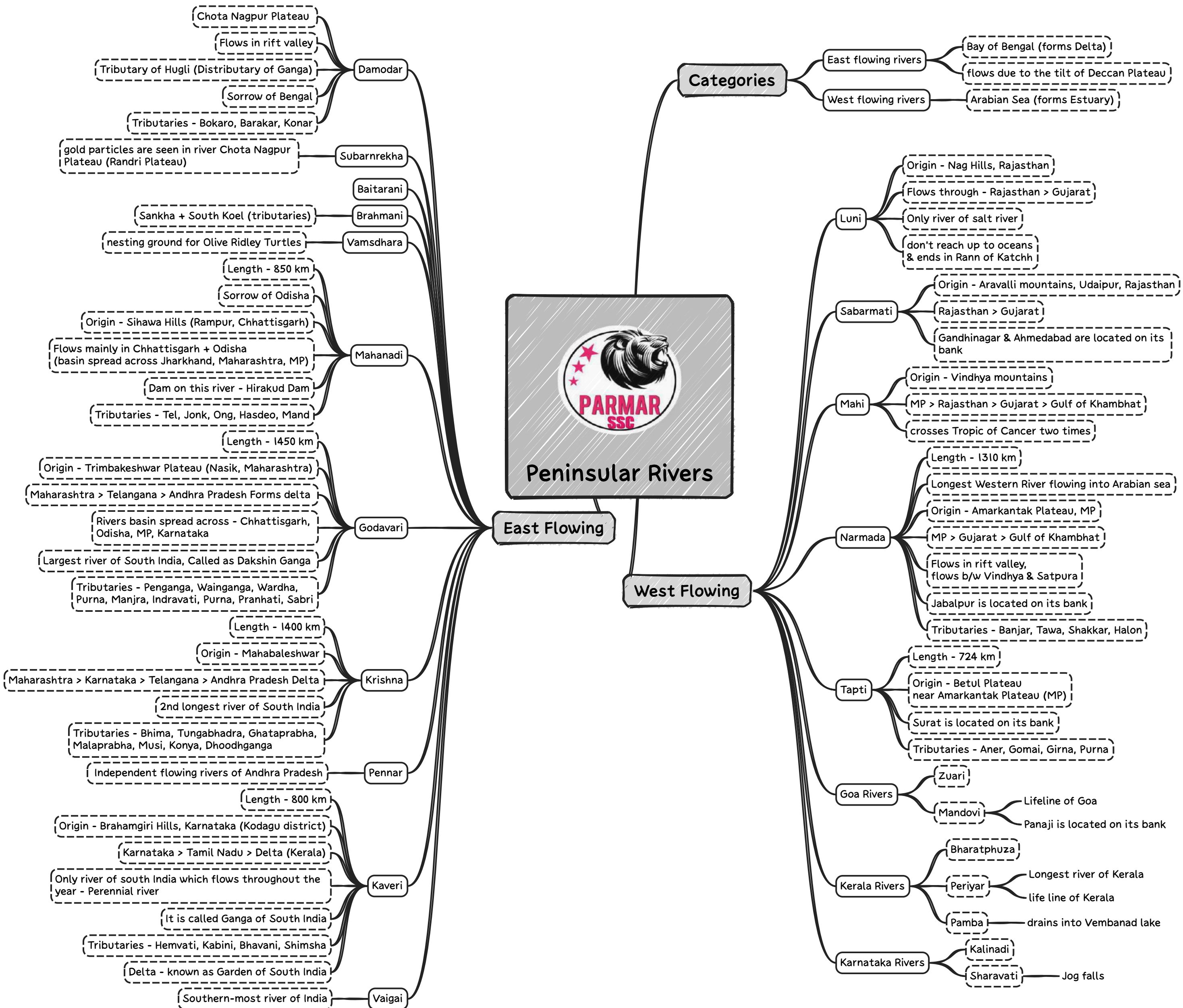


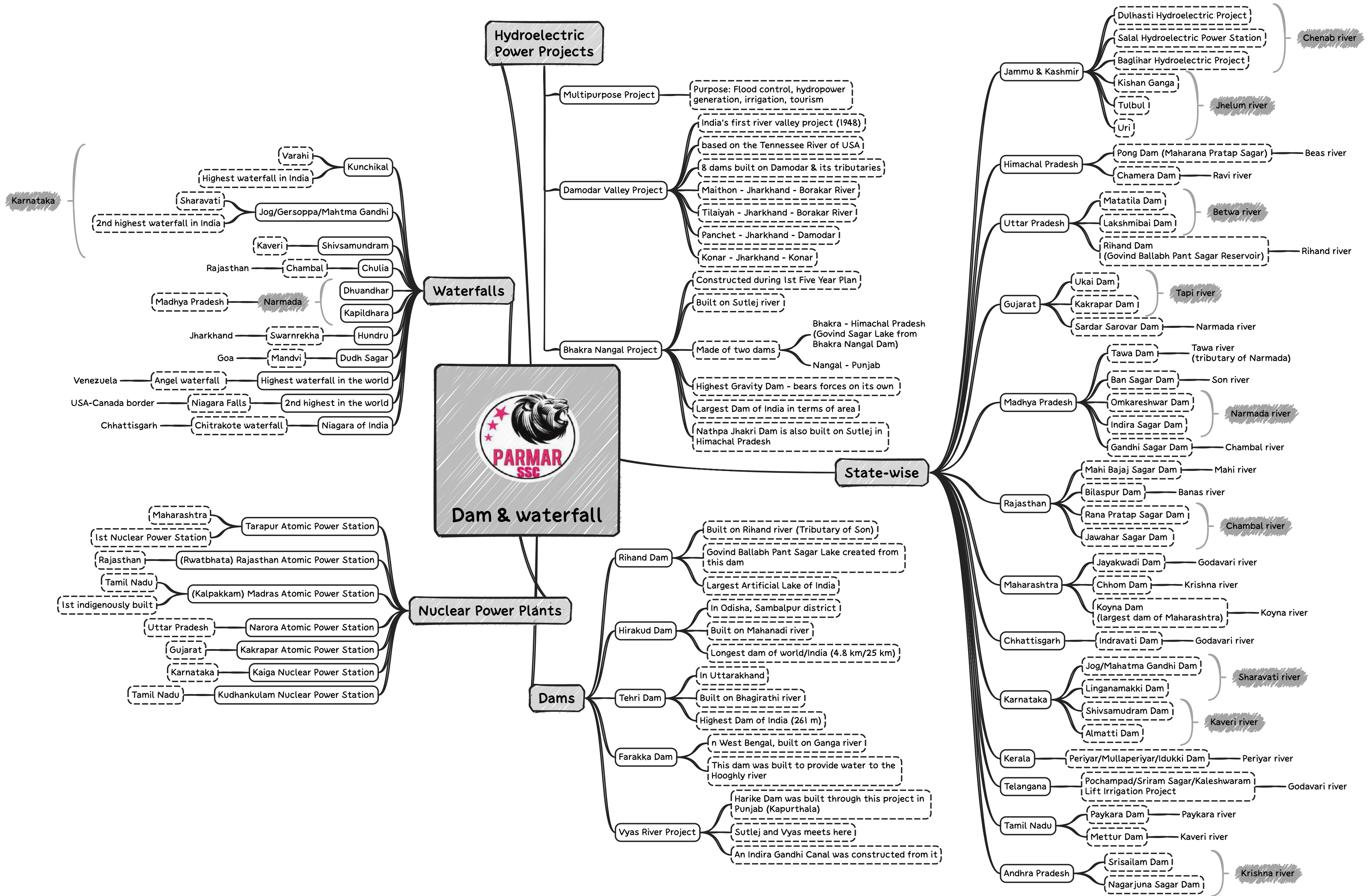
Lipu Lekh located at Trijunction

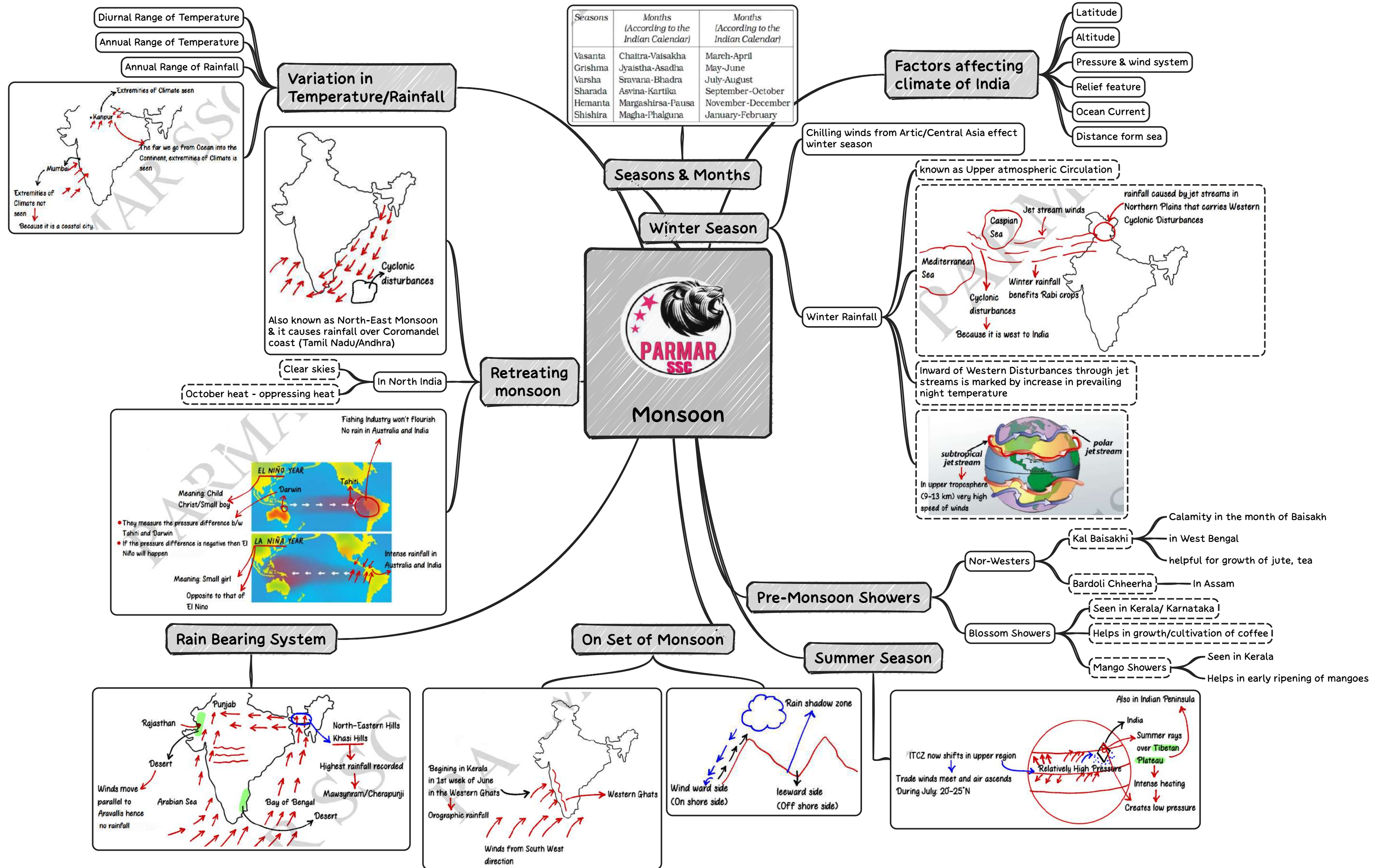


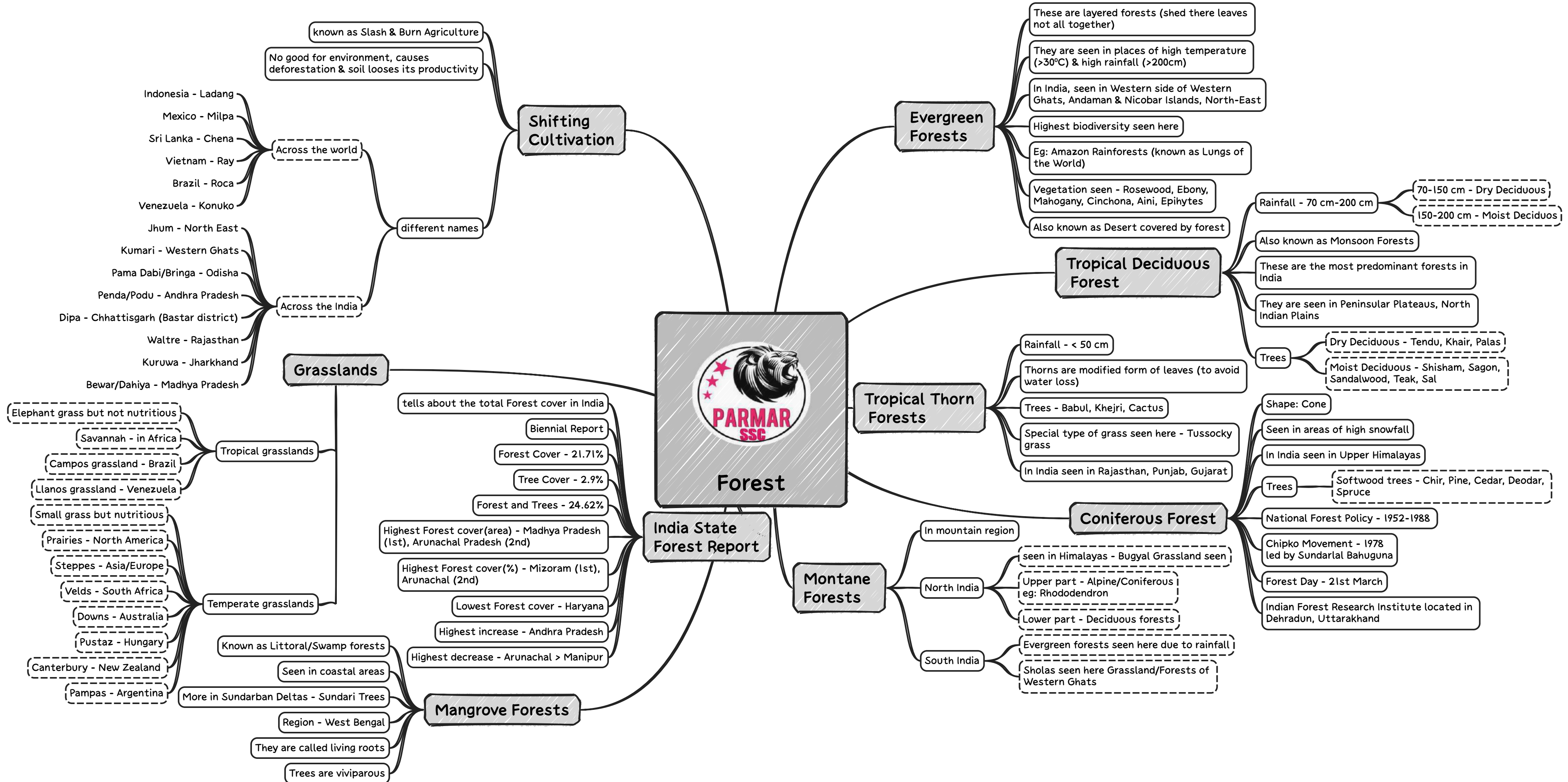


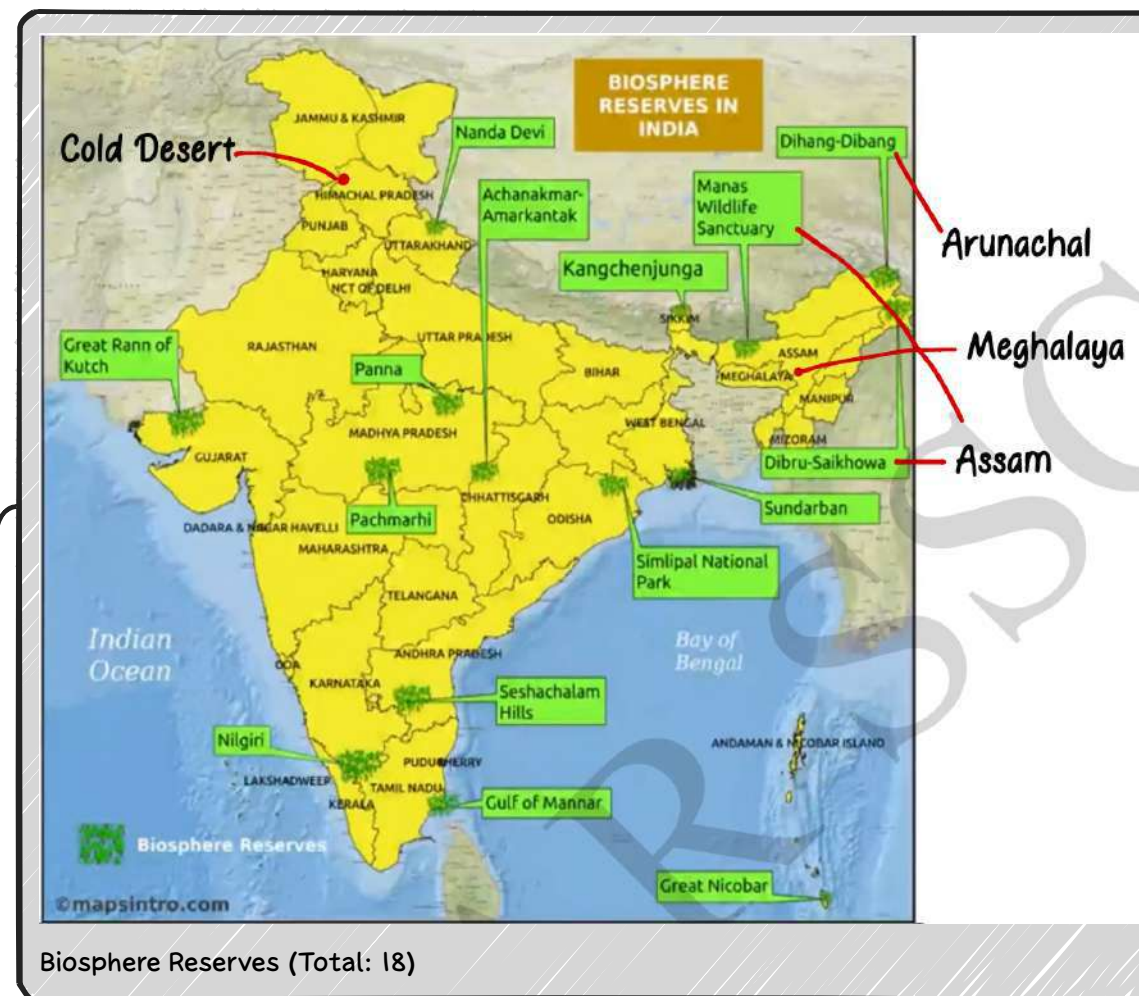
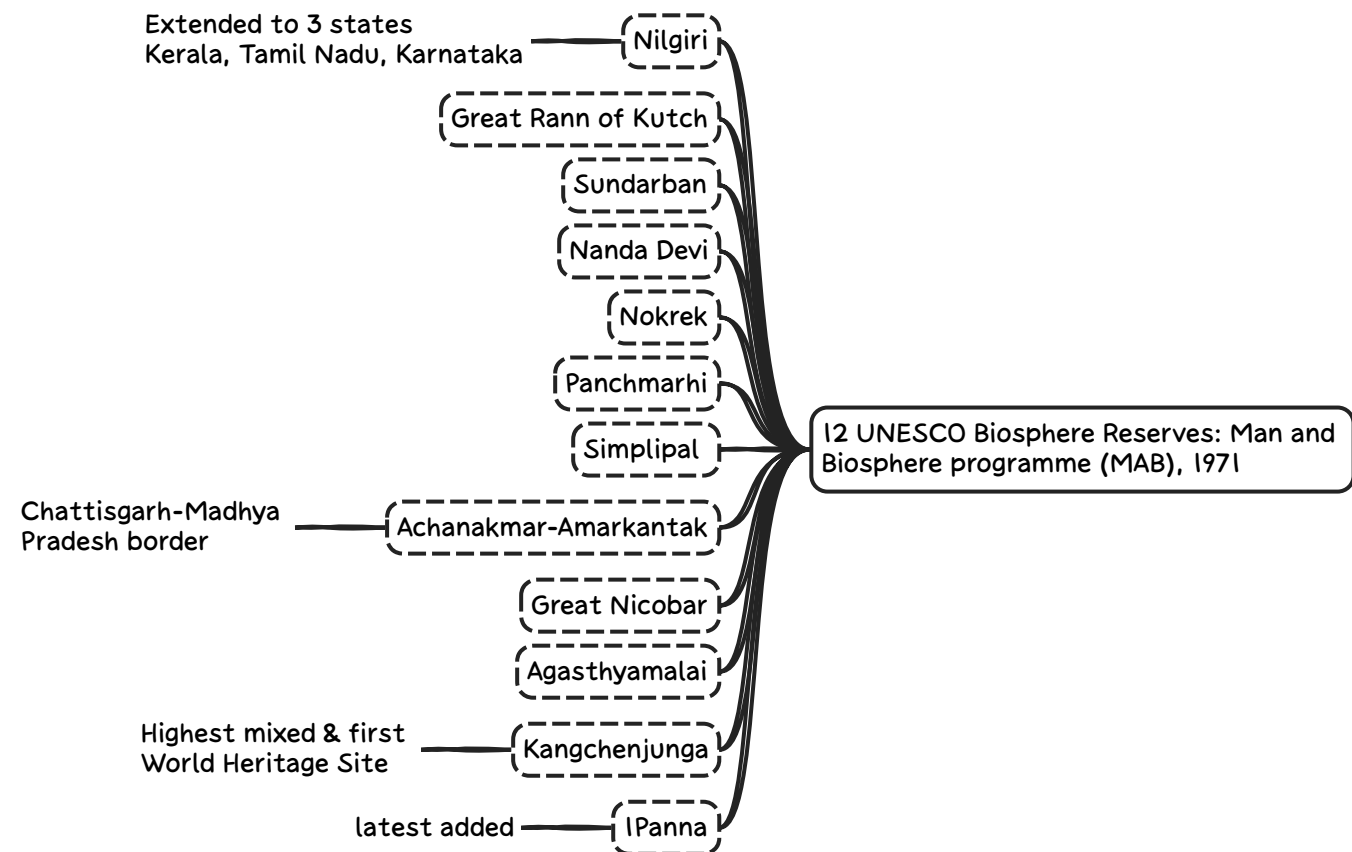
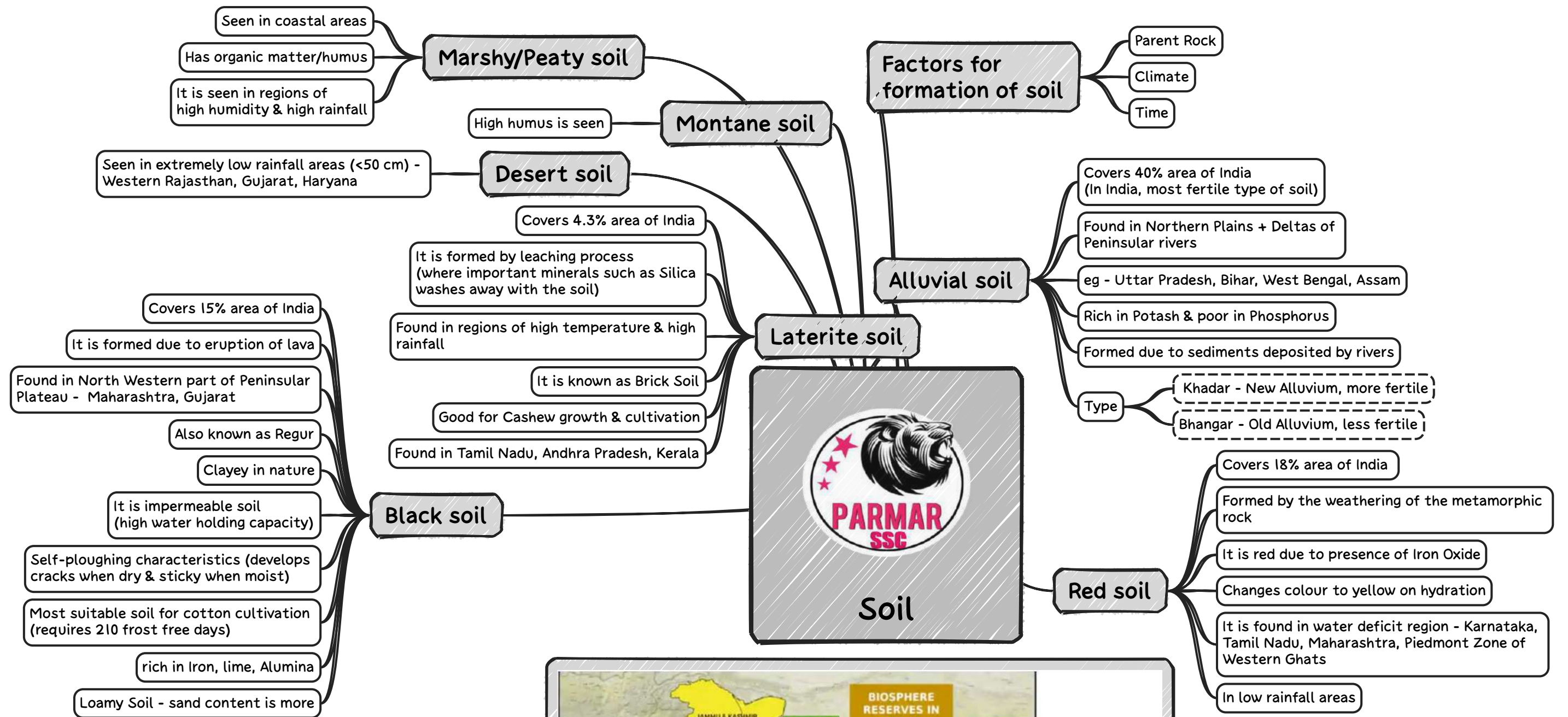












- Nilgiri Biosphere Reserves - 1st Biosphere Reserve in Kerala, Tamil Nadu, Karnataka
- Largest - Great Rann of Kutch

