

# The Earth's major bioclimatic zones



Indonesia

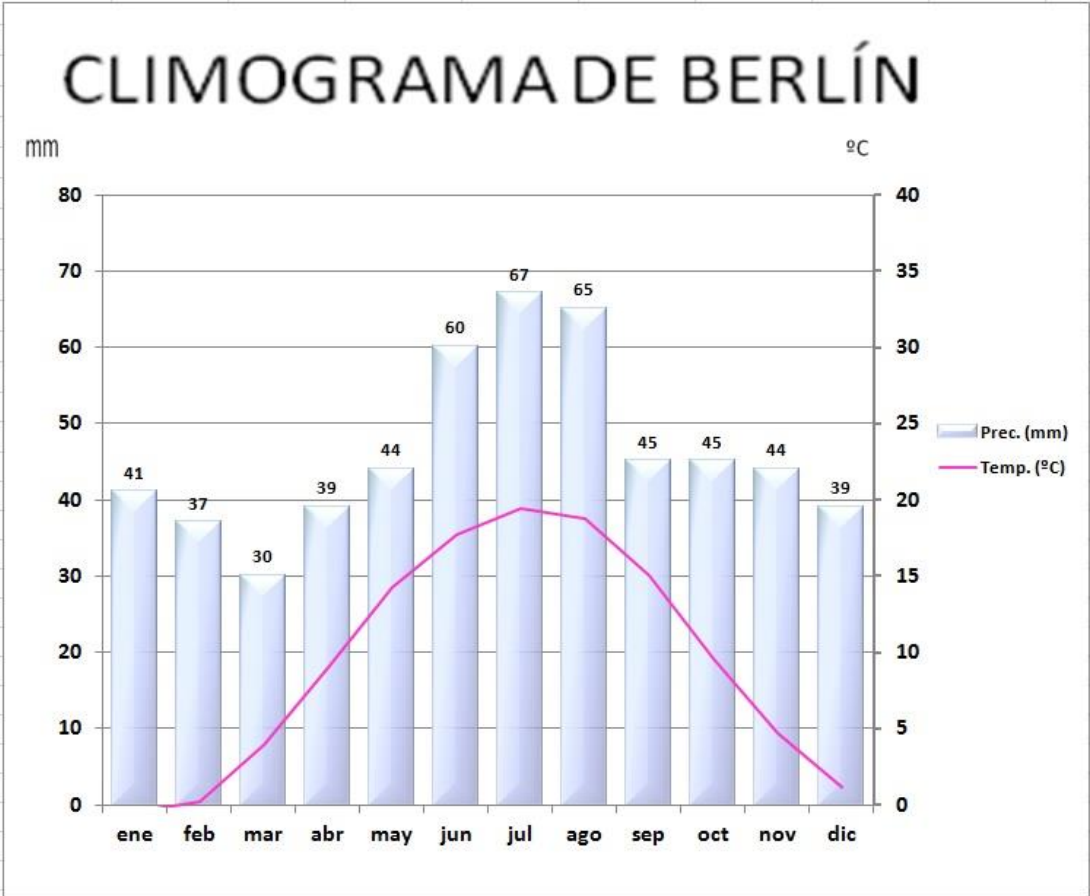


Outdonesia





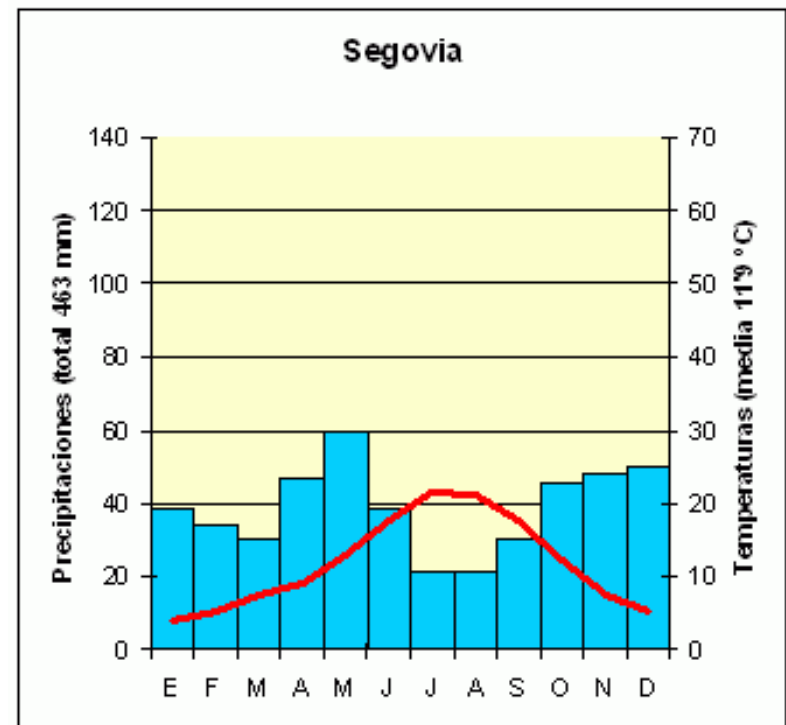
Meses	Prec. (mm)	Temp. (°C)
ene	41	-0,5
feb	37	0,2
mar	30	3,9
abr	39	9
may	44	14,3
jun	60	17,7
jul	67	19,4
ago	65	18,8
sep	45	15
oct	45	9,6
nov	44	4,7
dic	39	1,2
temperatura media	113,3	
total precipitaciones	556	
meses secos	2	





# The climograph es an essential graph

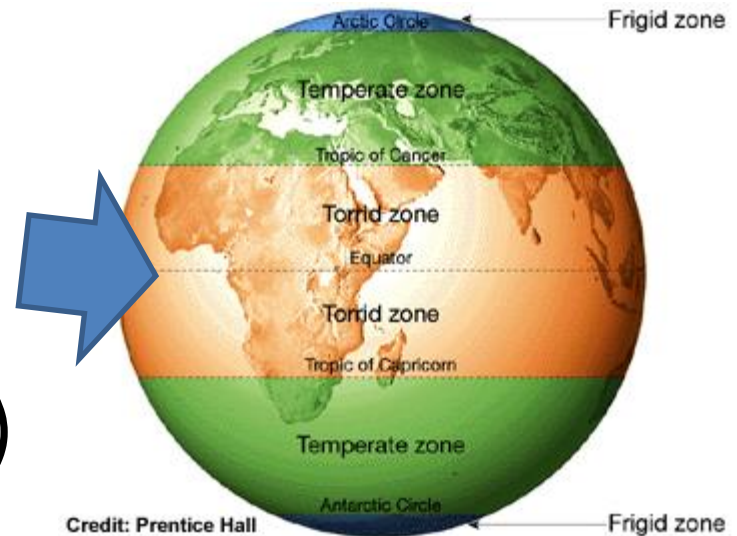
- It is a double graph.
- It has a line graph and a bar graph
- It's represents the average monthly temperatures and precipitation levels for a place throught the year.



# The torrid zone

There are three types:

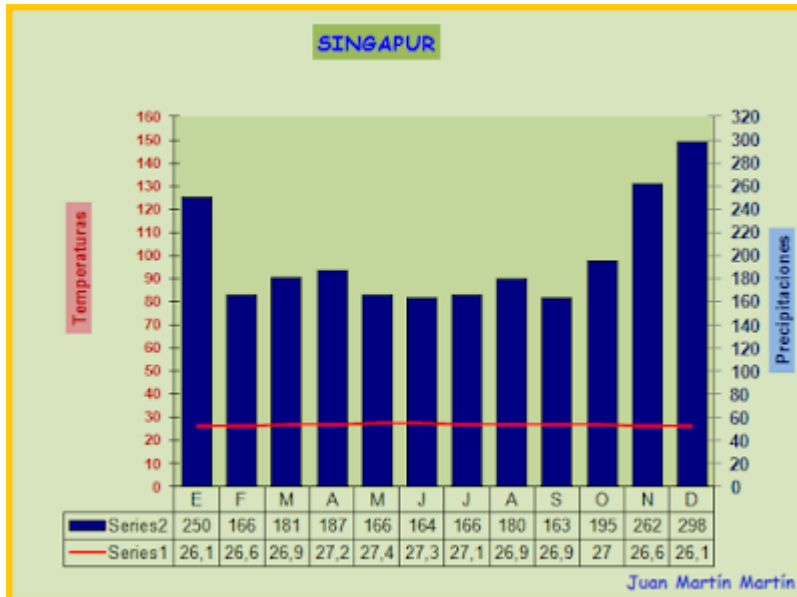
1. Equatorial
2. Tropical
3. Desert (azonal climate)





1

# The equatorial bioclimate



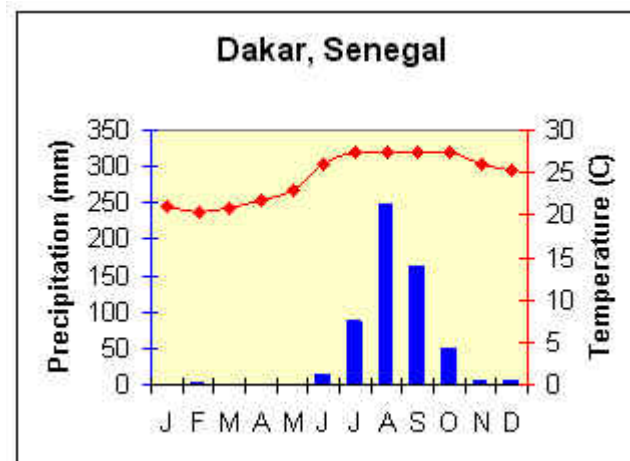
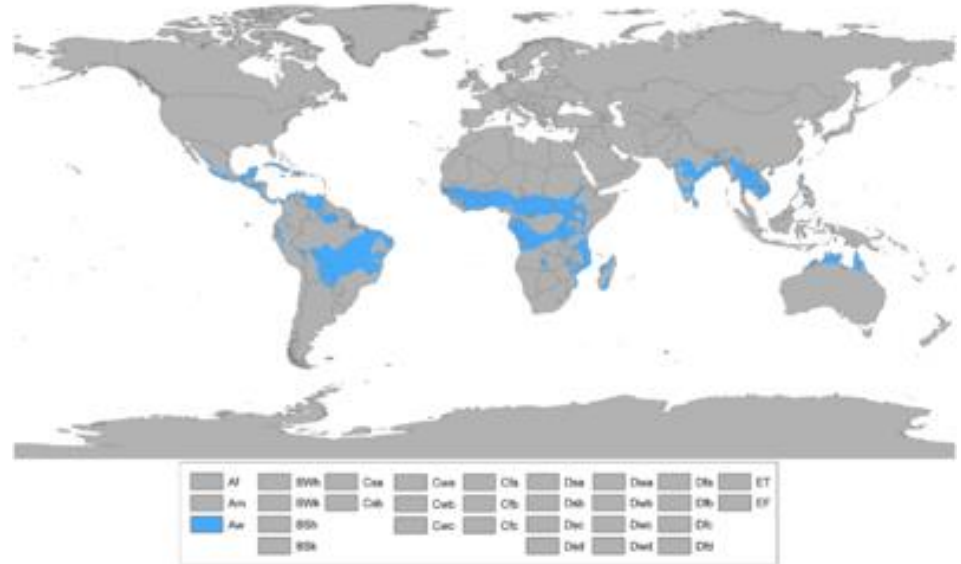


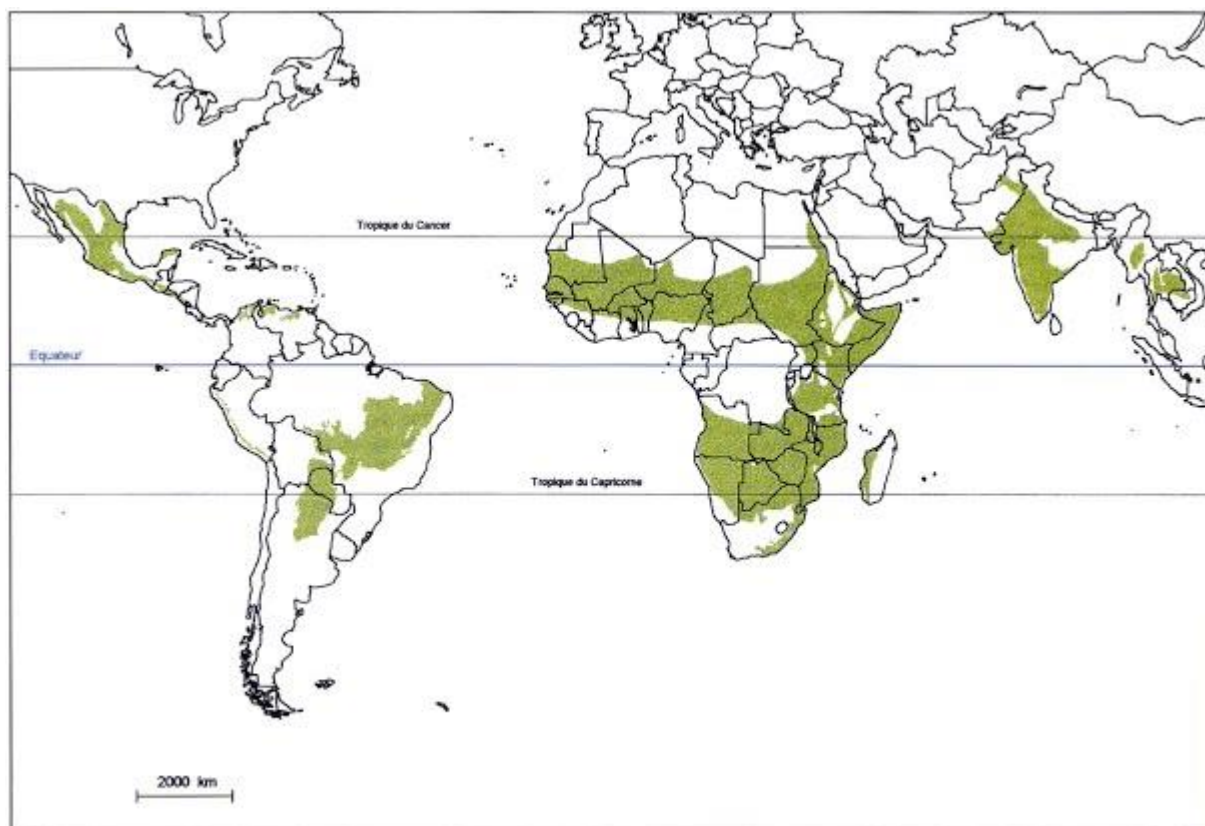


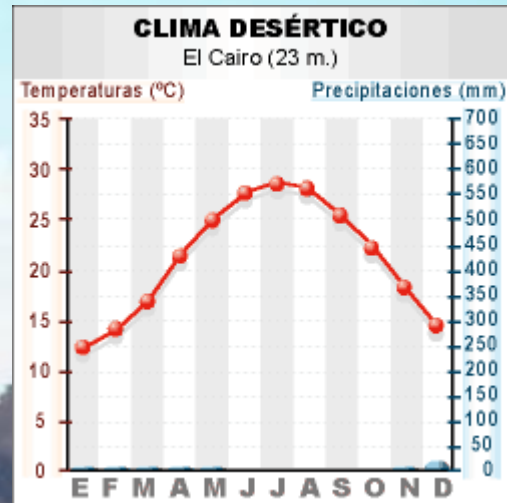




# The tropical bioclimate



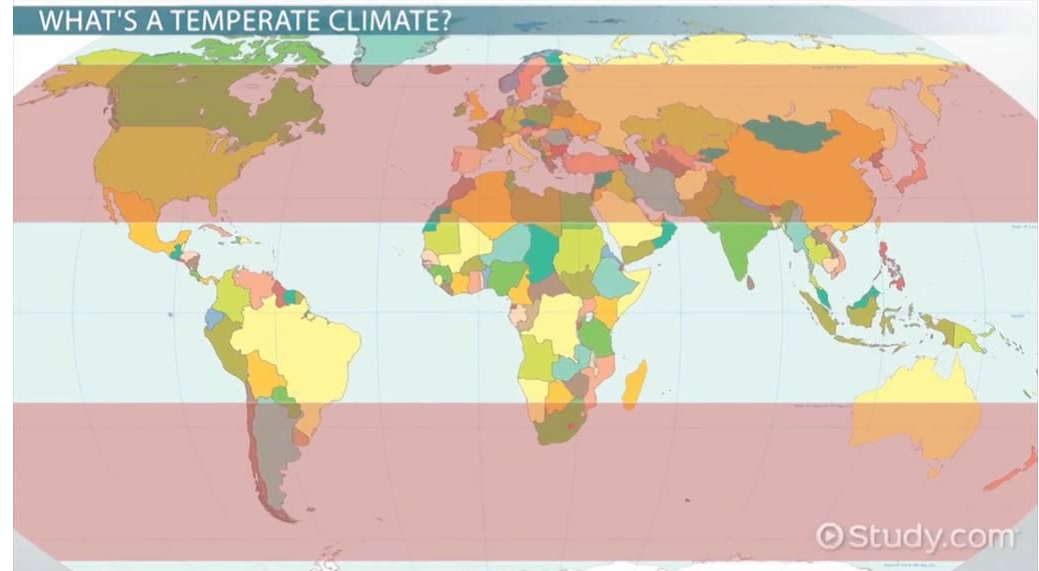




desert

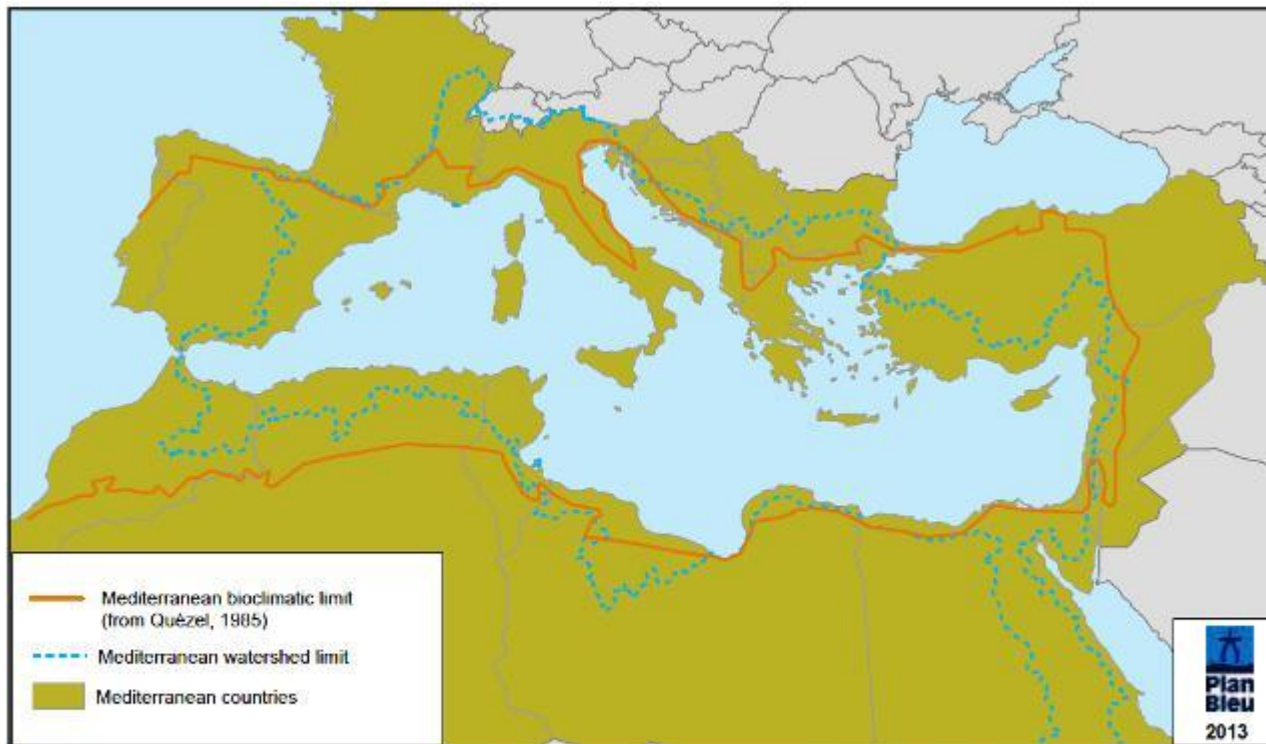
# The temperate zone

- The Mediterranean bioclimate
- The oceanic bioclimate
- The continental bioclimate





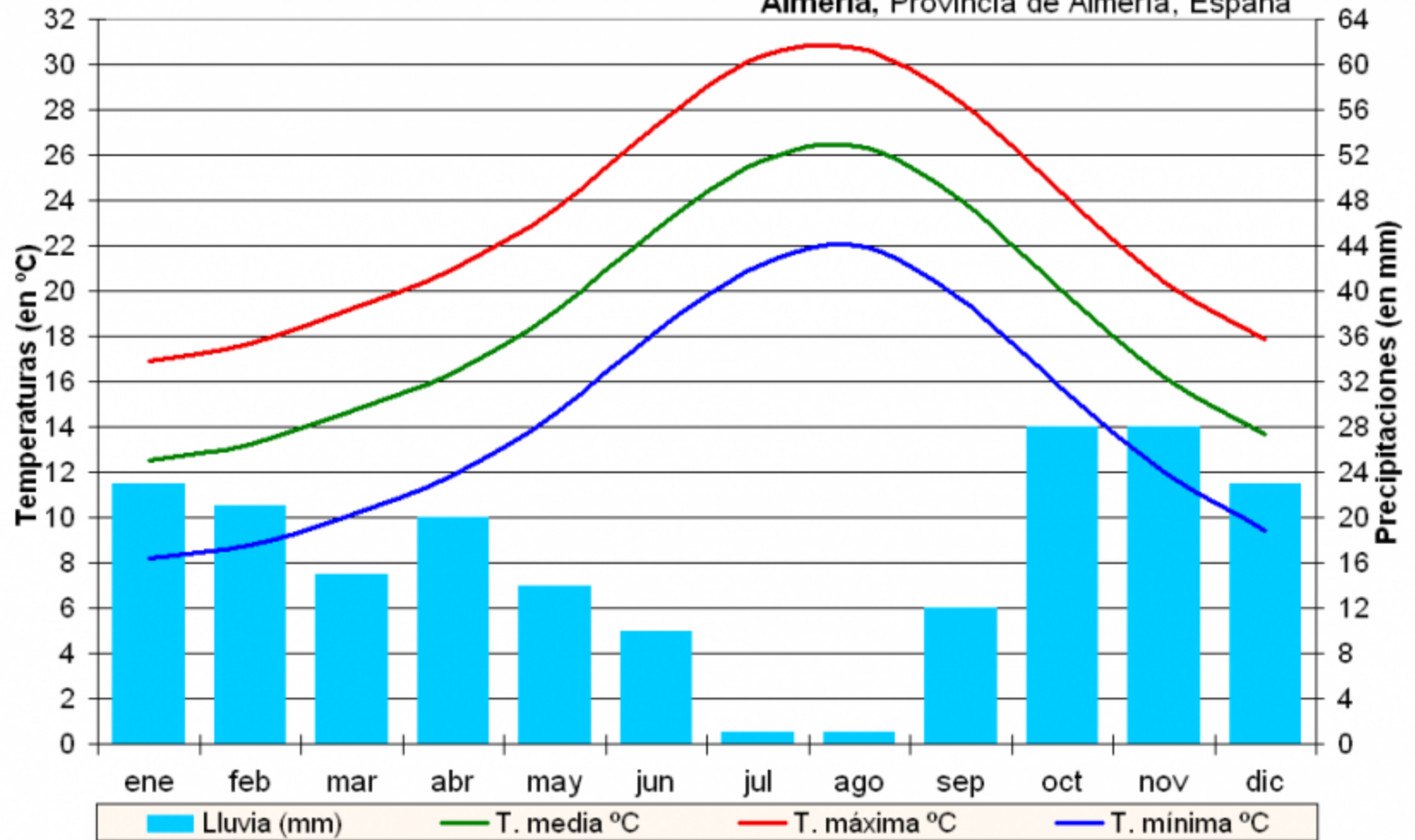
# The Mediterranean bioclimate



**Figure 1.1.** Countries of the Mediterranean region, Mediterranean bioclimatic and watershed limits. The watershed limit is defined by topography and the resulting runoff patterns of rainwater; the bioclimatic limit is the limit of the Mediterranean region in term of vegetation and climate.

**Source:** Plan Bleu from Ewing *et al.*, 2010.

# Almería, Provincia de Almería, España





# woodland

- Holm oak, cork and pine, rock rose, rosemary, kermes...









<https://www.oddizzi.com/teachers/explore-the-world/physical-features/ecosystems/mediterranean/>

# The oceanic bioclimate

- It is located along the western border of the continents

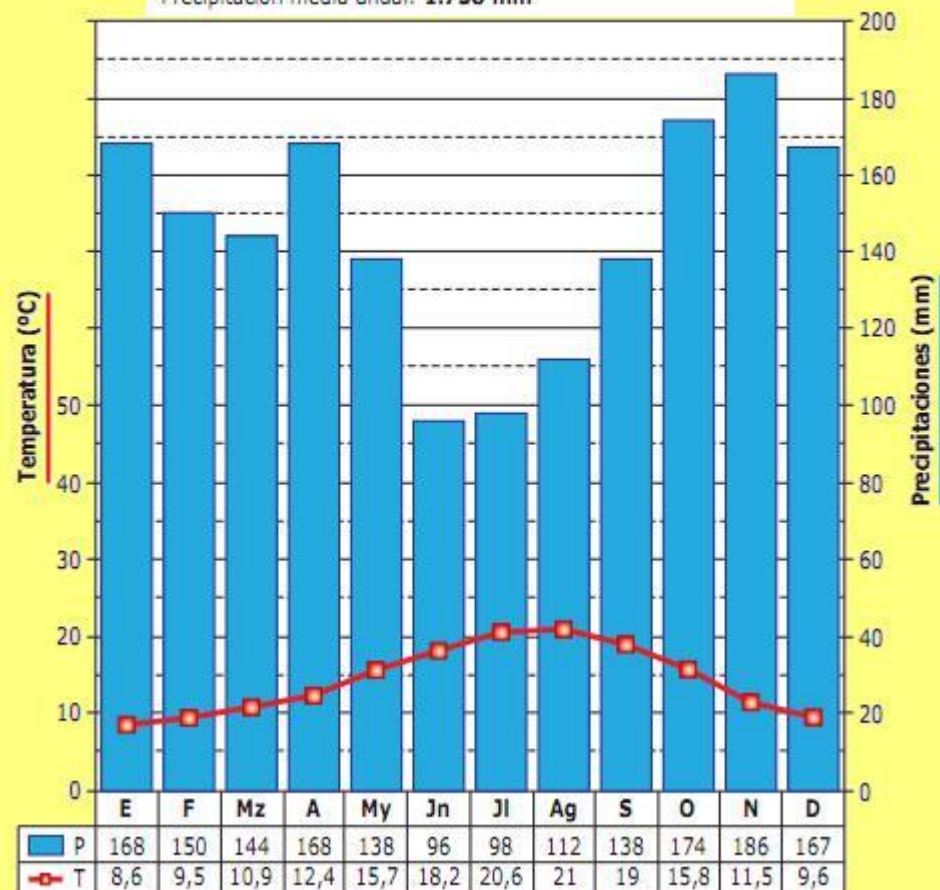


## DONOSTIA-SAN SEBASTIÁN

Altitud (m): 8 - Latitud: 43° 21' 24" N - Longitud: 01° 47' 25" O

Temperatura media anual: **14,4 °C**

Precipitación media anual: **1.738 mm**





# The influence of the sea

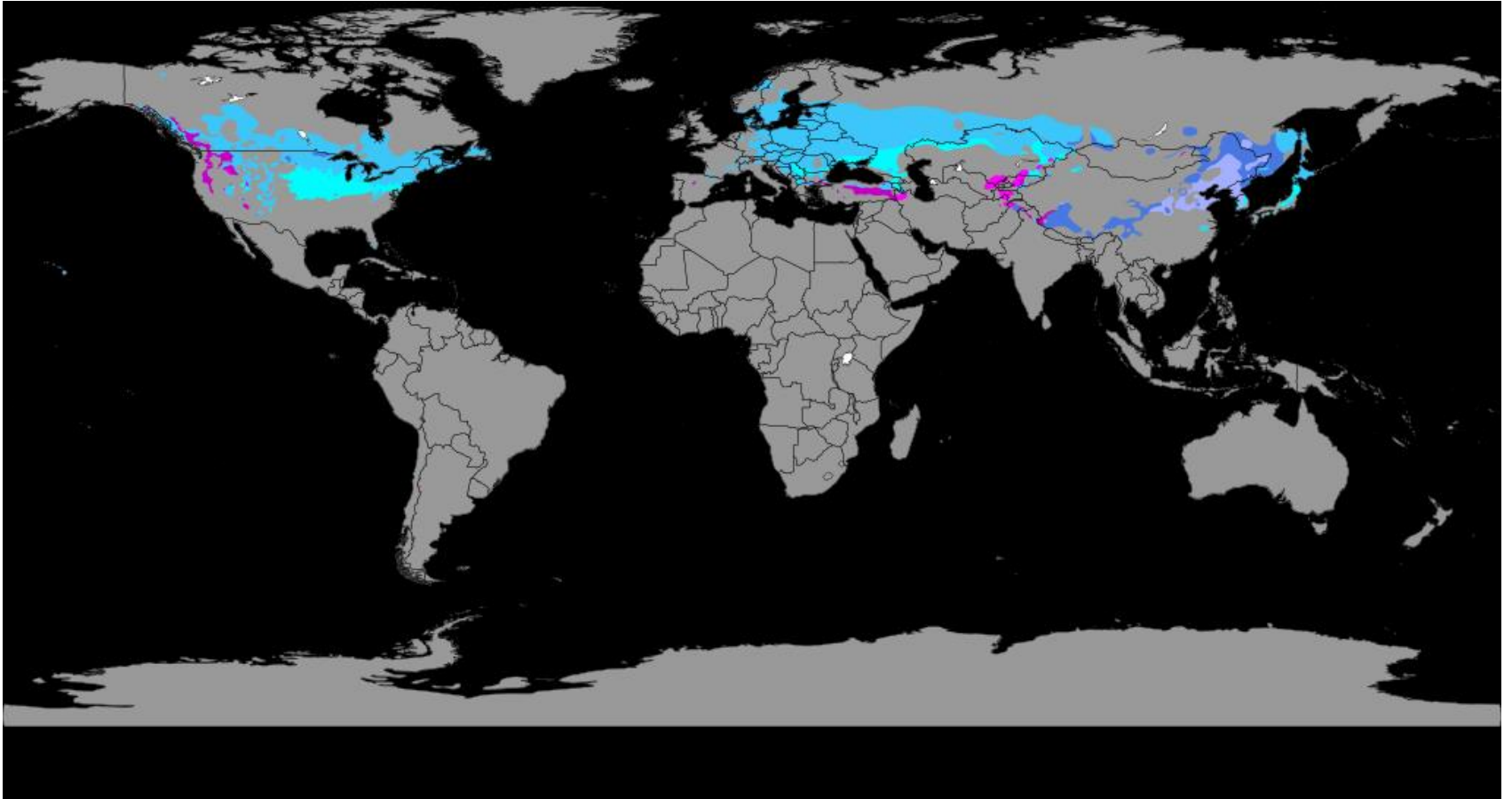




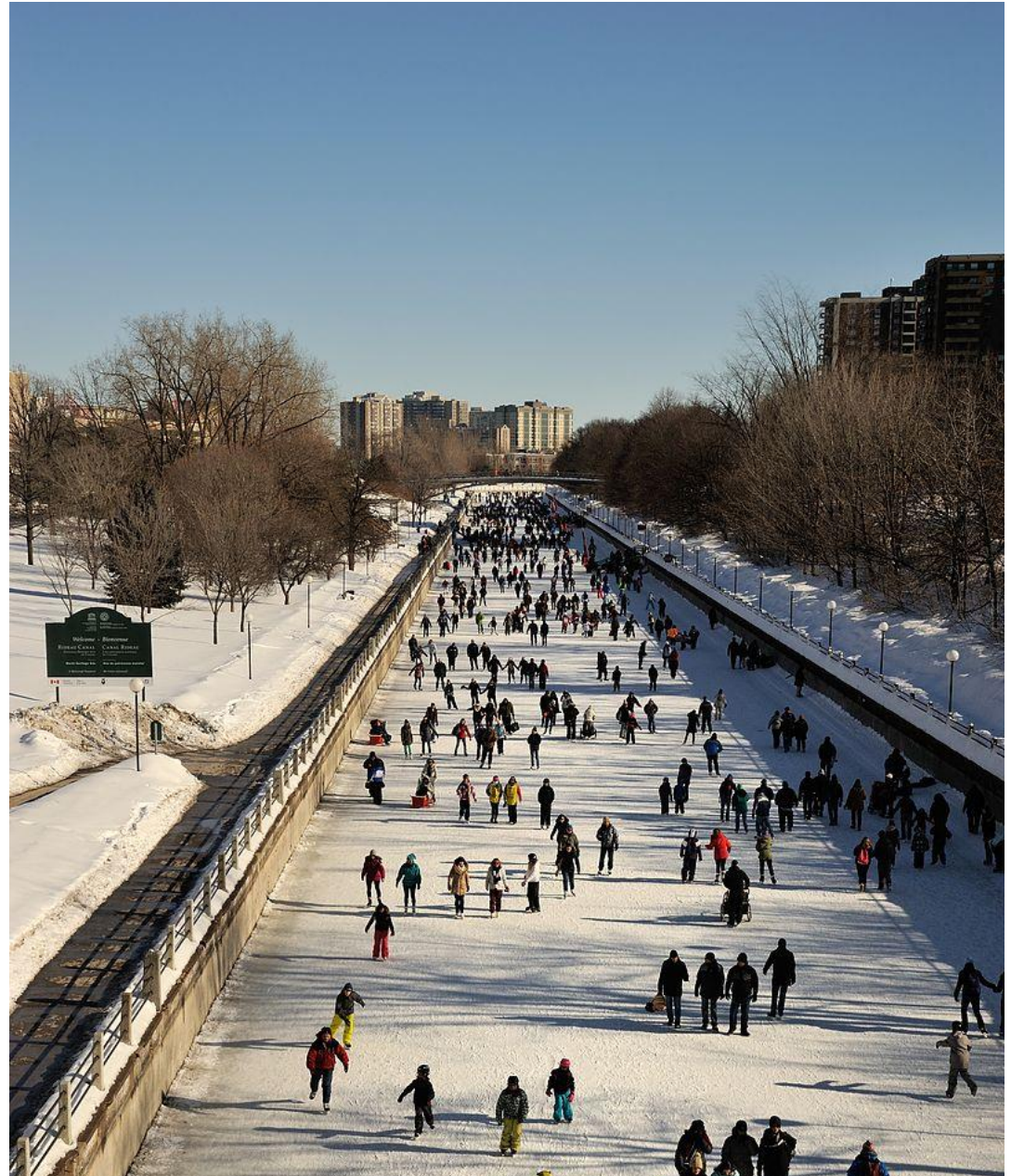
woodland



# The continental bioclimate

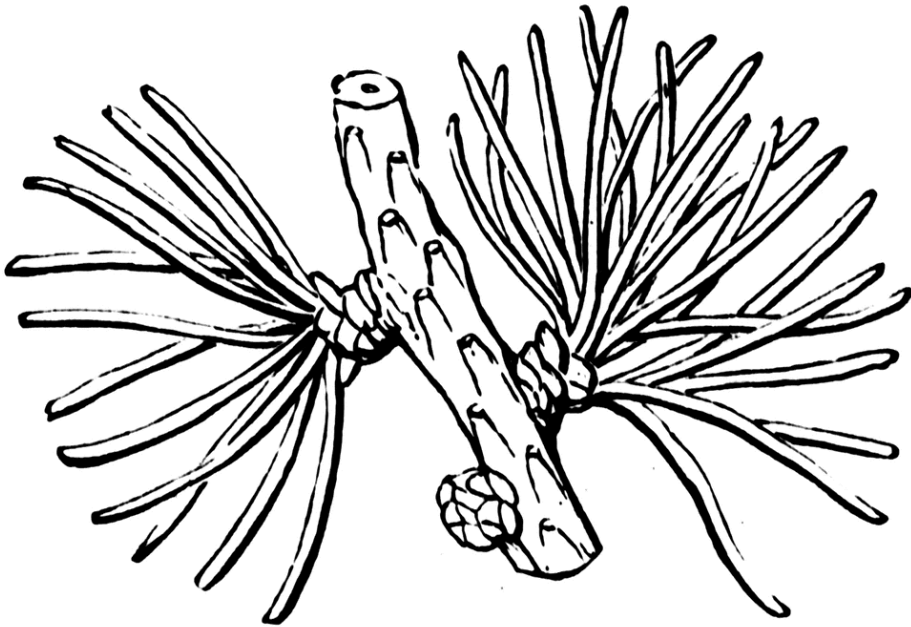


- Contrast in temperaturas
- Winter are very cold
- And summers are warm and hot





# Vegetation













# The continental bioclimate

- It is located in inland continental regions
- Contrast in temperatures... why?

## Varsovia (Polonia)

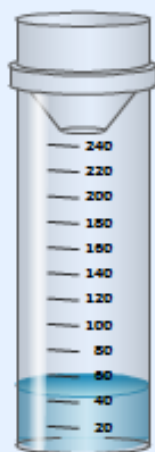
Altitud: 107 m

Latitud: 52° 10' N

Longitud: 20° 58' E

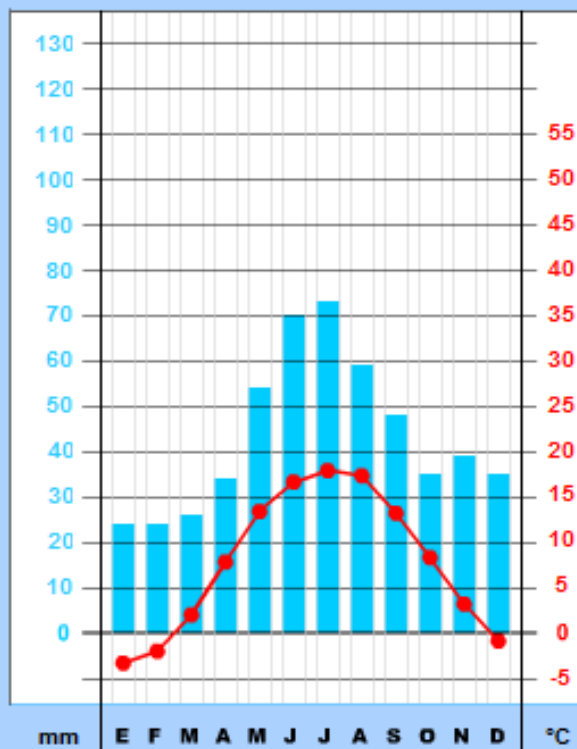
Precipitación total  
anual

**521 mm**



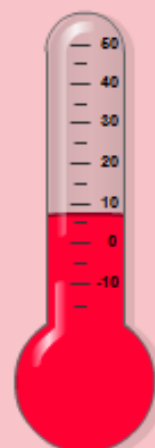
**43.4 mm**

Precipitación  
media mensual



Amplitud  
térmica

**21.2 °C**



**7.8 °C**

Temperatura  
media anual

MEDIAS MENSUALES

Precipitación (mm)

Temperatura (°C)

ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC
24	24	26	34	54	70	73	59	48	35	39	35
-3.3	-2.0	2.0	7.8	13.4	16.6	17.9	17.3	13.2	8.3	3.2	-0.9

# Vegetation

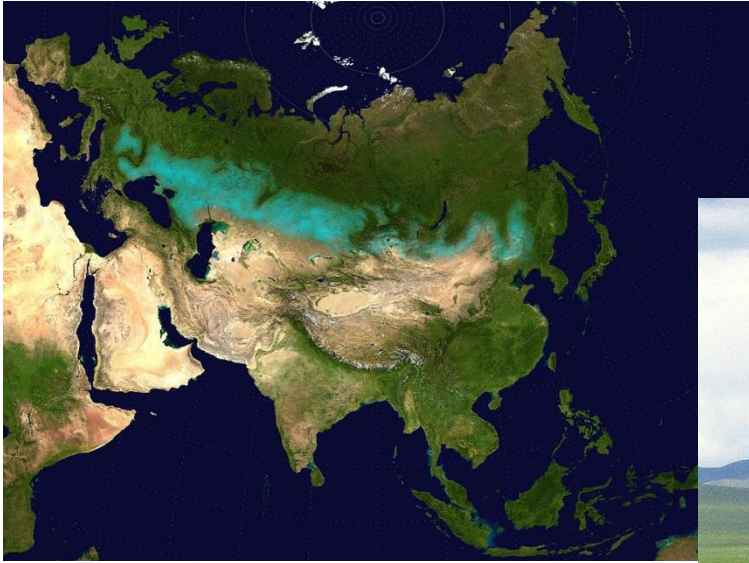
- Taiga, coniferous, trees with needle-shaped leaves (pine), grassland.
- Less precipitation: steppes

# taiga





# Steppes



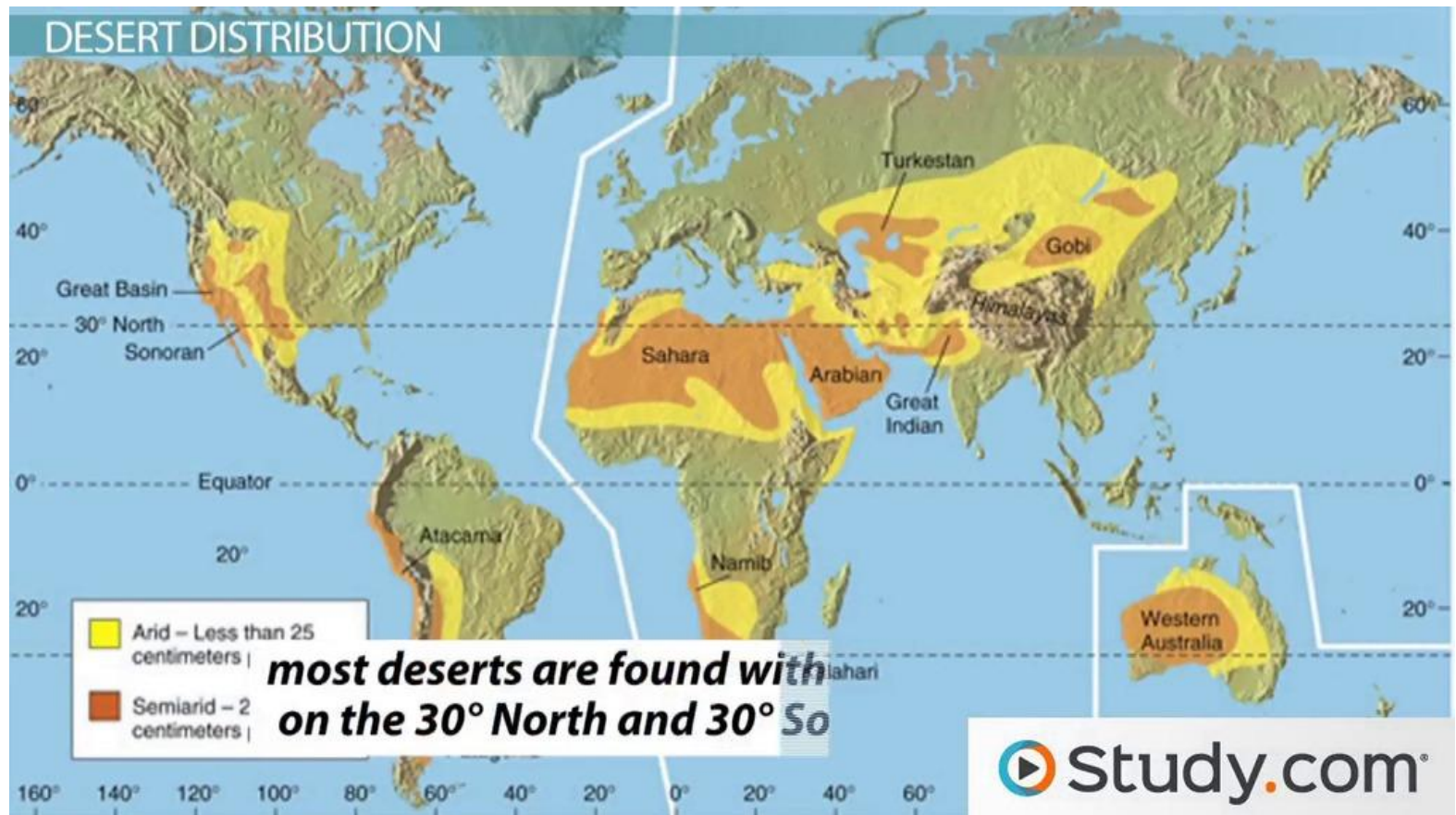


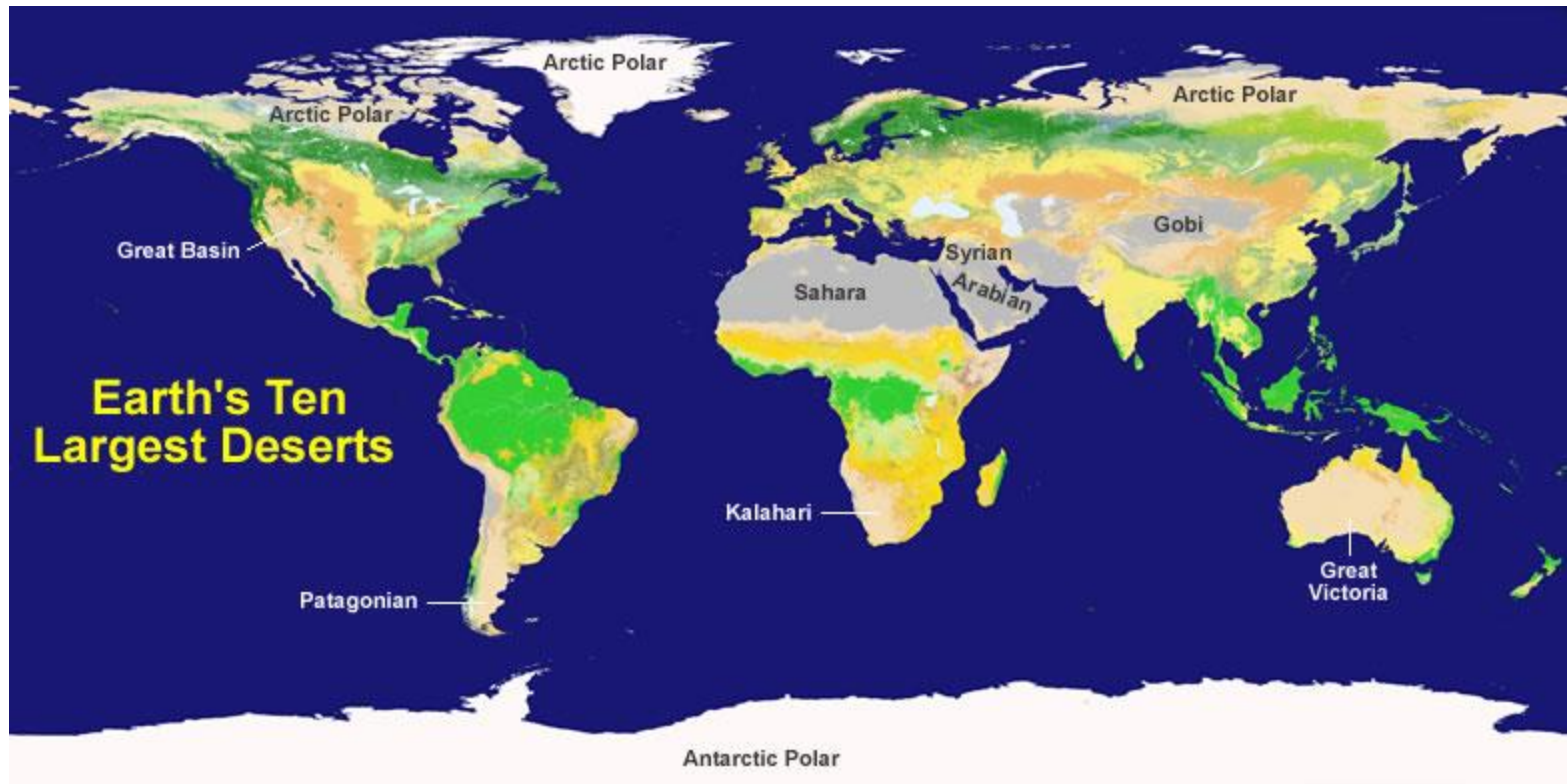




# Desert bioclimates

- 30 % of the earth landmass





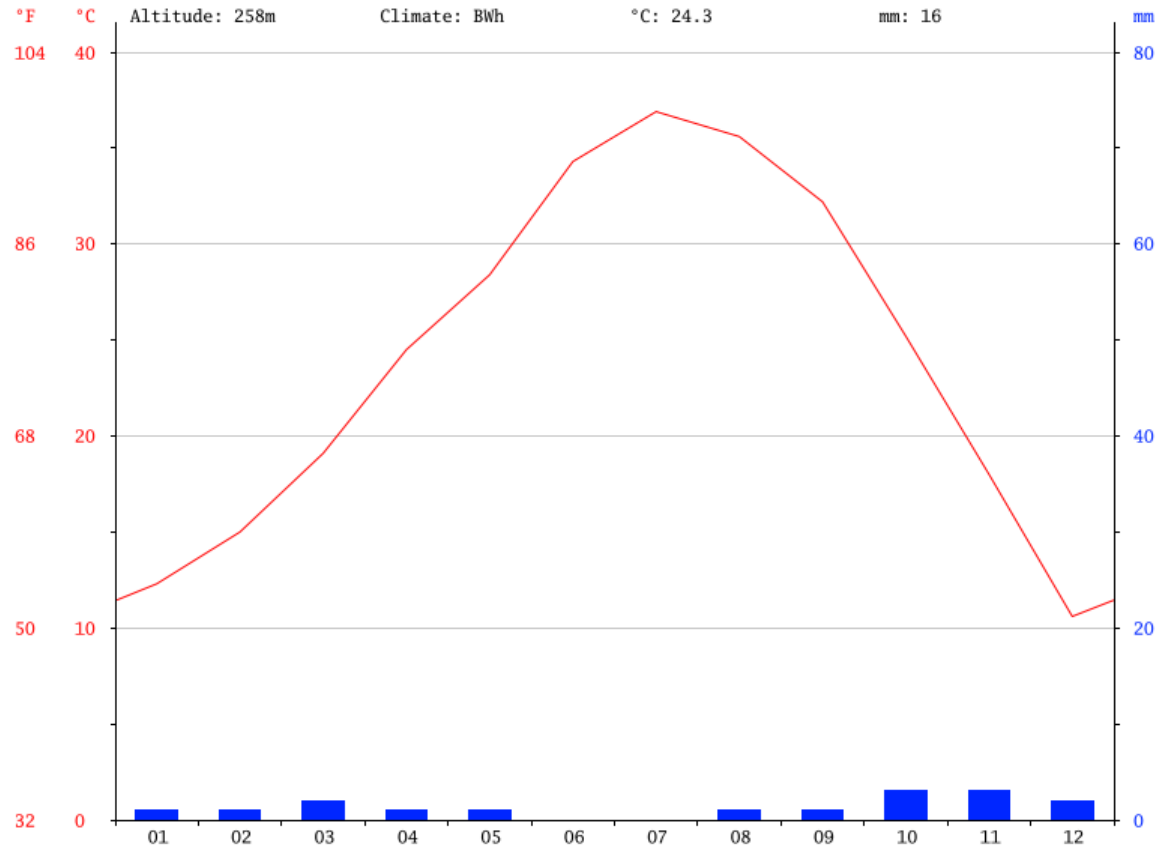


# Torrid deserts

- 30% of the Earth's landmass
- In the torrid zone, it is located near the tropics of Cancer and Capricorn, The dry conditions found there result from permanent high pressure.
- Sahara



# Torrid desert climate



# Temperate deserts

- Desert conditions are found in the inland areas of the continents. The desert is arid because an excessive distance from the sea.

Gobi Desert







**Mongolie**

**GOBI**

**HIMALAYA**

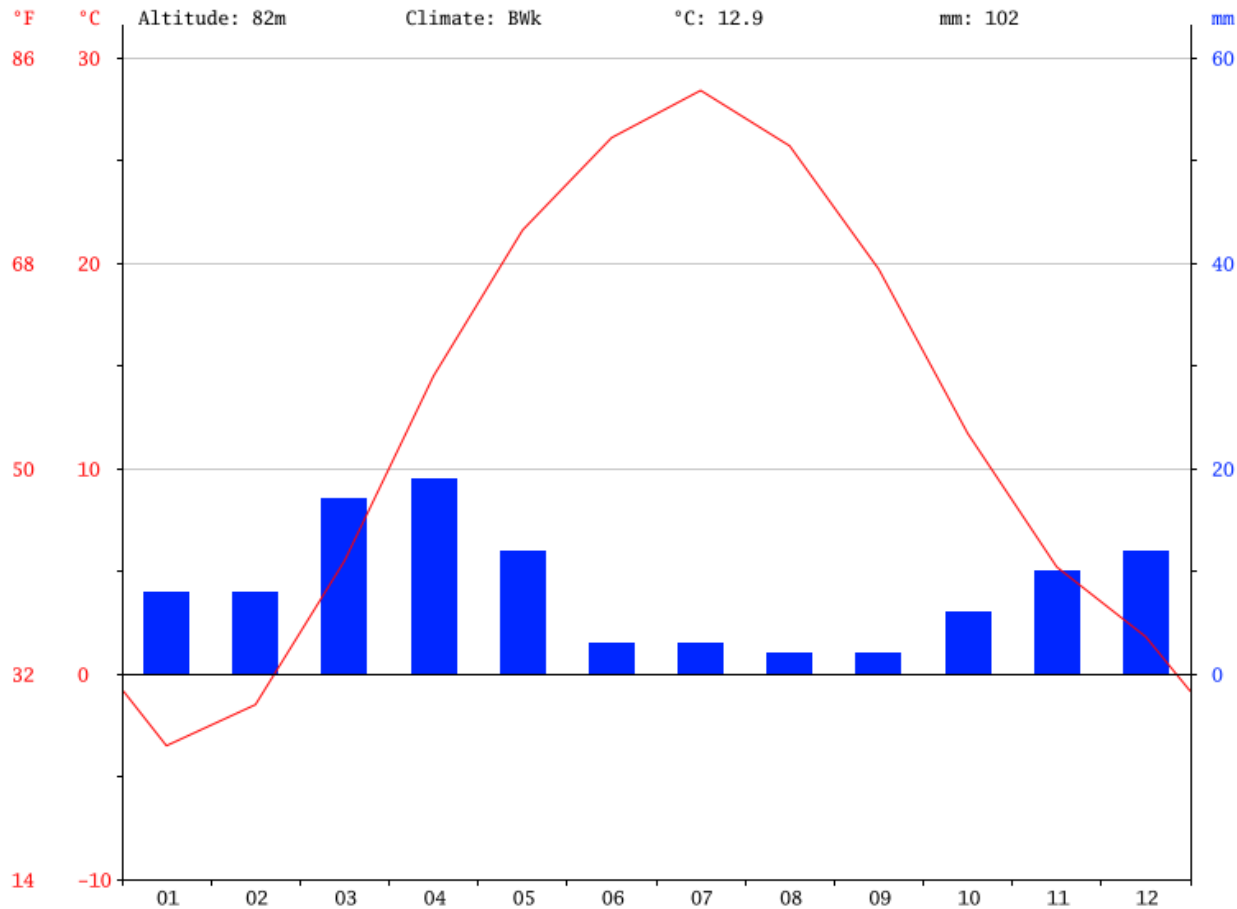
**Chine**



# Patagonian Desert



# Temperate desert climate





# Arid desert climates

- Aridity and irregular precipitations
- Marked contrast in temperature. In torrid tropical deserts, temperatures are high all year long and the sharpest contrasts are between the daytime and the night-time temperatures.
- In temperate deserts, temperatures vary during the year. Summers are very hot and winters very cold.
- Contrast are due to the lack of atmospheric humidity

- Precipitations are low and irregular
- In the steppes or semiarid edges there are like five months with precipitations.
- Water only runs in the rivers after precipitations.





# Desert vegetation



- Cacti
- Thorny shrubs
- Palm groves



- Desert vegetation is low-lying and spread out.
- Cacti and thorny shrubs predominate
- If there is an oases you will find vegetation like palm groves.























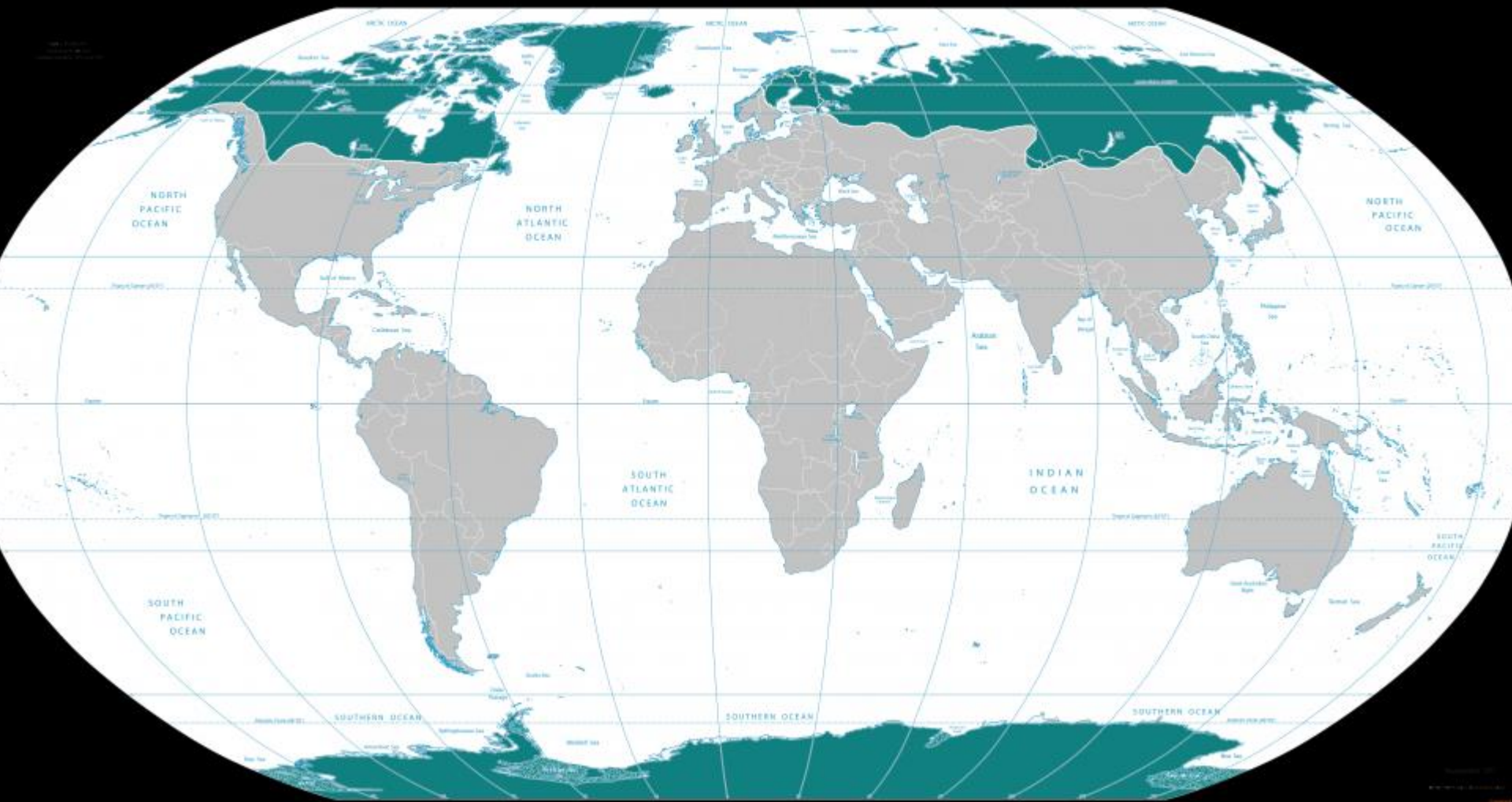




# THE FRIGID ZONE

Physical Map of the World, November 2011

From: <https://www.cia.gov/library/publications/maps-publications>  
Adapted for: Calicut







# The glacial environment



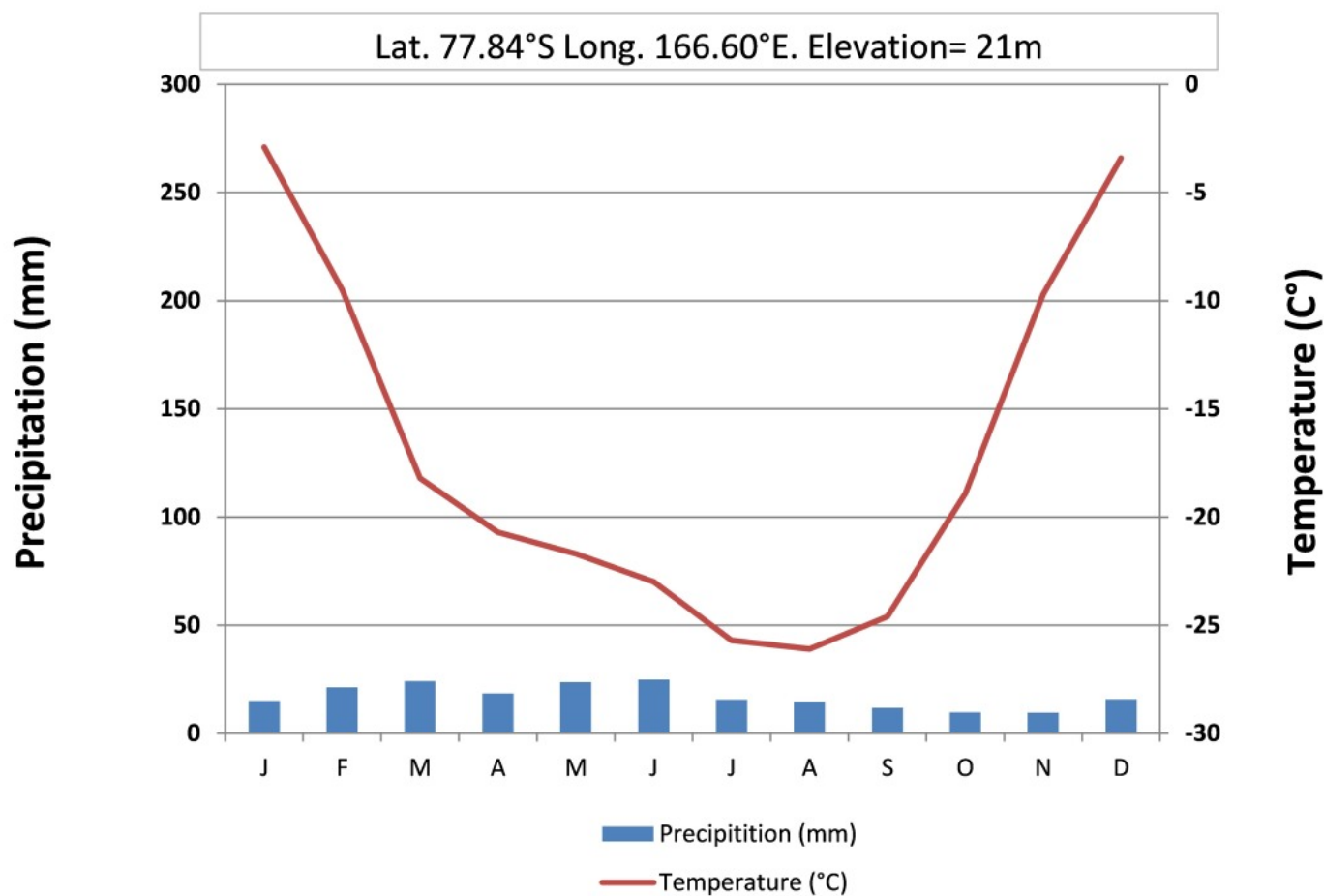
# The glacial environment

- It covers the polar ice caps, an area ranging from the 75th parallel to the North and South poles. In the northern hemisphere we have Greenland and in the south the majority of Antarctica.





# Climate Graph McMurdo Station, Antarctica



# The periglacial environment



# The periglacial environment

- In the northern hemisphere, this includes the far northern regions of North America, Europe and Asia. In the southern hemisphere the examples are Chile and Argentina

















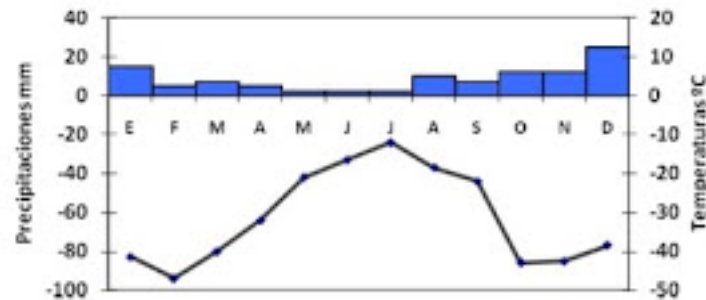


# The polar climate

- **Polar** climate has very low temperatures (it never reaches 10 °C) and low precipitations (between 250 and 300 mm) in the form of snow.

**POLAR**

	E	F	M	A	M	J	J	A	S	O	N	D		
P. mm.	15	5	7	5	2	2	2	10	7	12	12	25	Total anual 104	
T °C	-41,5	-47	-40	-32	-21	-16,5	-12	-18,5	-22	-43	-42,5	-38,5	Media anual -30,5	O.T°



**Eismitte** (Groenlandia). Situada a 70° 53' de latitud norte a 3.000 metros de altitud.



# Polar vegetation

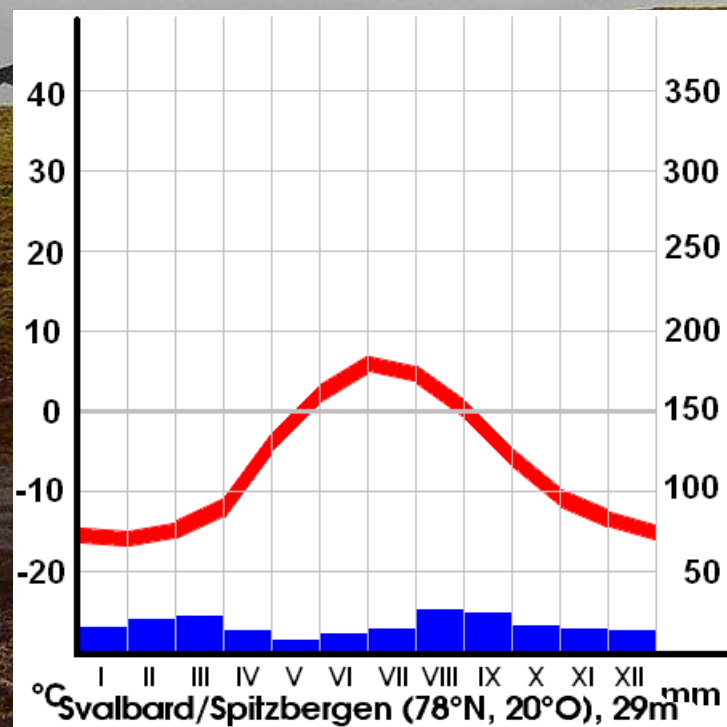
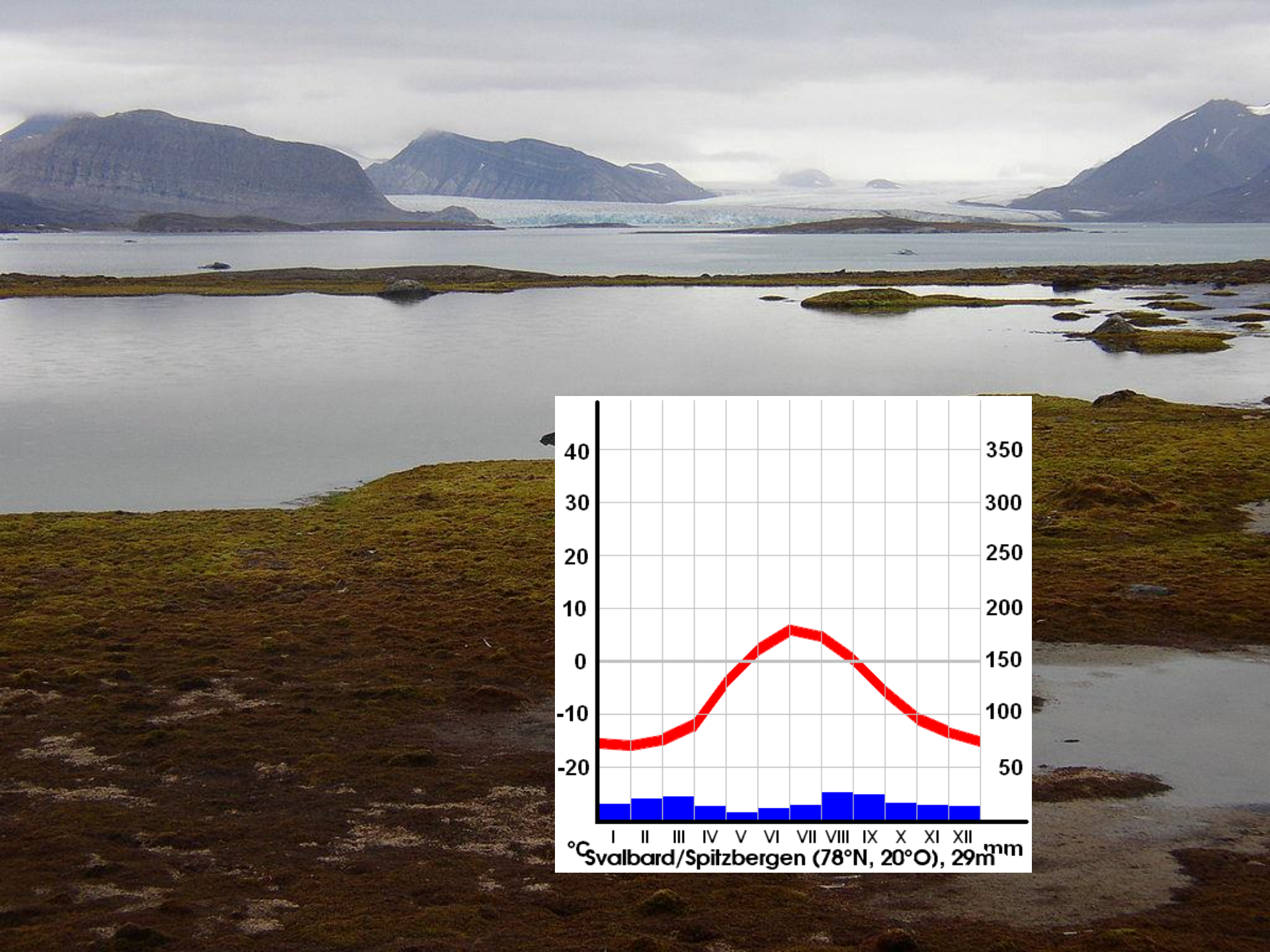
- Glacial environment
- Periglacial environment: tundra

# Tundra

- **Tundra** is a cold biome that extends from the polar regions to the coniferous forest of the taiga. Tundra is characterized by very low temperatures, very little precipitation and poor and frozen soils (*permafrost*).
- You can find mosses, lichens and dwarf willows. They grow in the short summer when the floor has water.
- The word tundra comes from the Finnish word tunturia or "treeless plain". Little plant life can survive: grasses, mosses, lichens and dwarf shrubs. The animals we can find there are adapted to such conditions: arctic foxes, lemmings, caribou, wolves, snowy owls, tundra swans, etc.











# THE MOUNTAIN BIOCLIMATE

- It is azonal
- It has two zones:
  1. LOW MOUNTAINS
  2. HIGH MOUNTAINS OF ALPINE: less than 10°C and no trees





# Climate in high-altitude environments

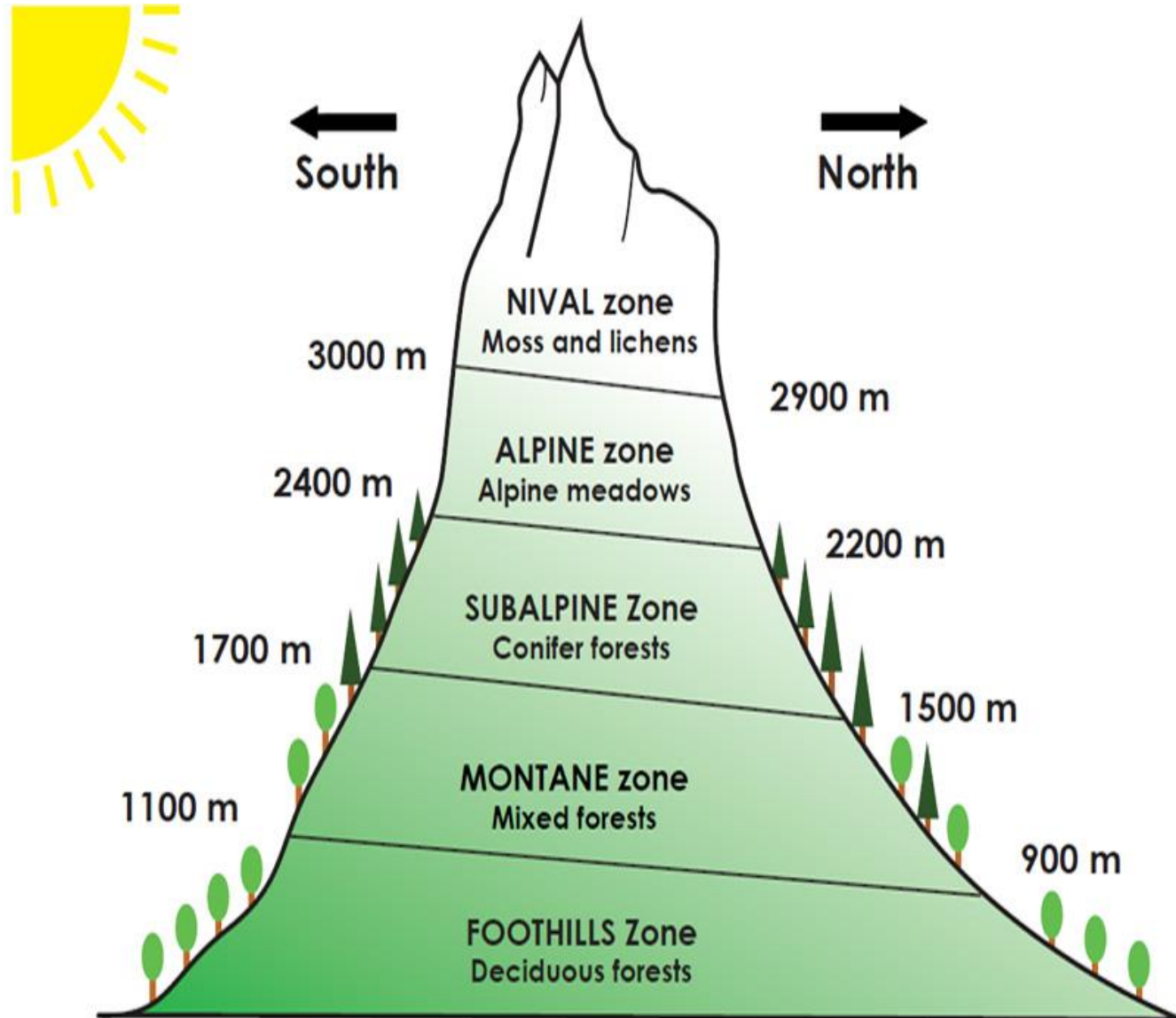
- How the temperature drops?
- Why the precipitation increase? ....
  
- But when you reach 1000 or 2000 metres of altitude because the air is dryer.
- In alpine zone we have snow.
- If you have a lot of snow what happen with the rivers?

- The climatic differences between mountains and adjacent regions are less marked than in the torrid zone.
- In the temperate zone there are high contrasts in temperatures depending of the slopes.

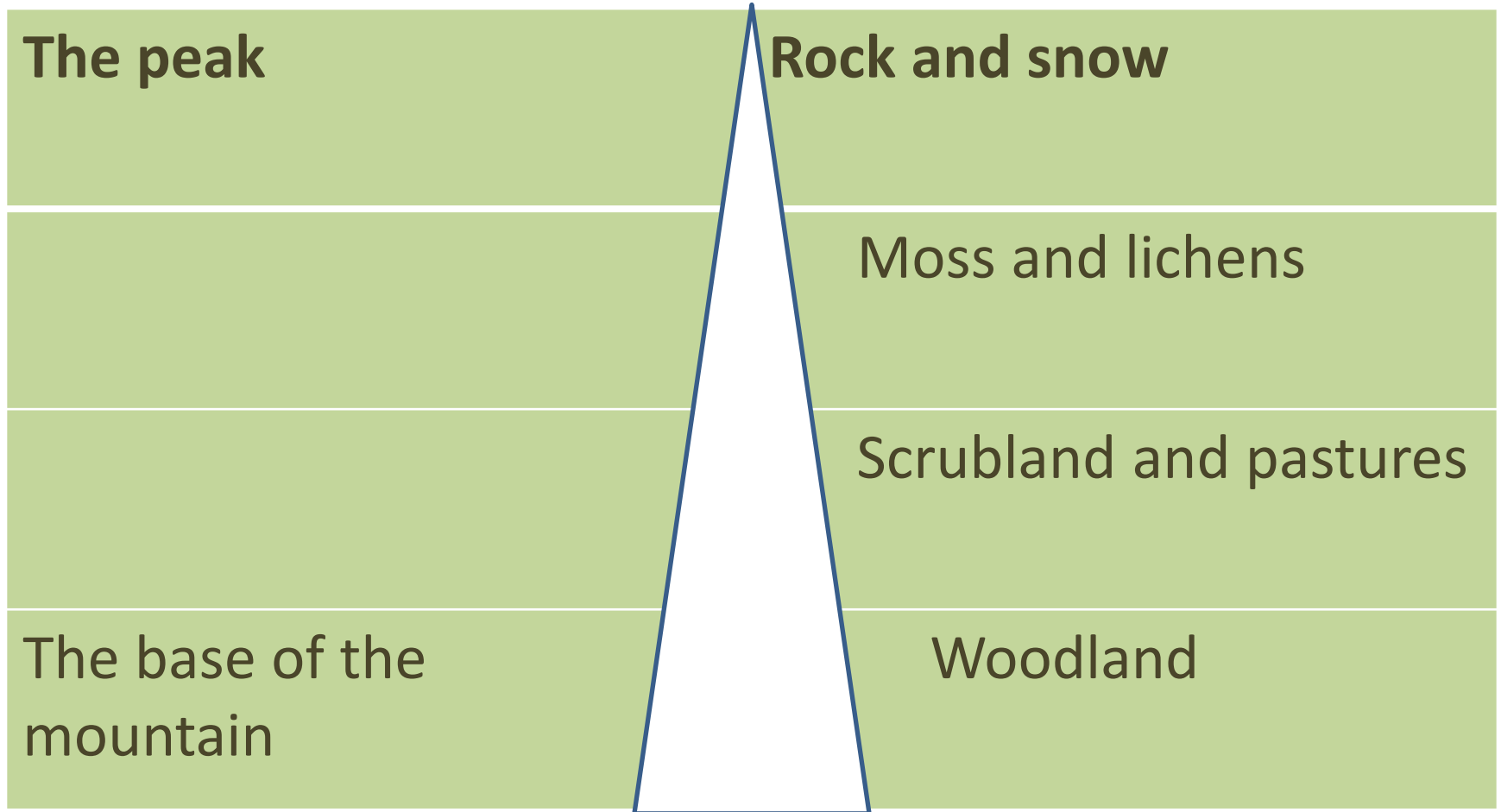




# Mountain vegetation

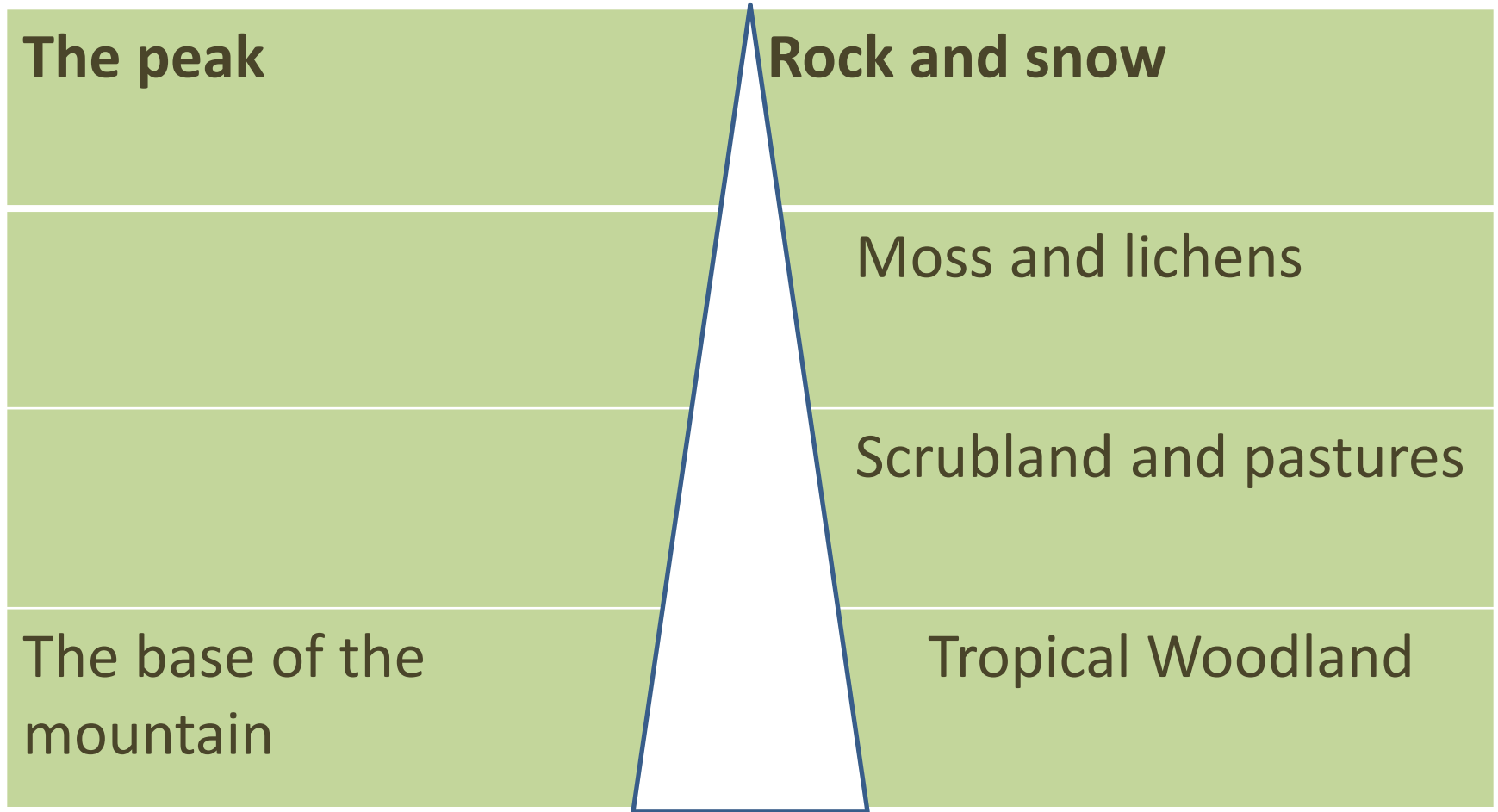


# Mountains





# Torrid zone









# Temperate zone

