



***Traditional, vernacular and historical architecture***



**Erasmus+**

## Traditional, vernacular and historical architecture.

HS

Heritage and Society

EC

Elective Courses



## Traditional, vernacular and historical architecture.



Heritage and Society



Elective Courses

1. Introduction to vernacular architecture.
2. Main climatic areas around the world and bioclimatic strategies. Low latitude climates.
3. Main climatic areas around the world and bioclimatic strategies. Medium latitude climates.
4. **Main climatic areas around the world and bioclimatic strategies. High latitude and undefined location climates.**
5. Materials and constructive systems in vernacular architecture.
6. Vernacular architecture in Europe: Mediterranean coast.
7. Vernacular architecture in Europe: Atlantic coast.
8. Vernacular architecture in Europe: Central Europe.
9. Vernacular architecture in Europe: Nordic area.
10. Vernacular architecture in Europe: High mountain areas.
11. Vernacular architecture: Singularities I: Caves.
12. Vernacular architecture: Singularities II: Architecture and production.
13. Vernacular architecture: Singularities III: External Influences.
14. Vernacular architecture and landscape.
15. Spanish traditional architecture.

## Traditional, vernacular and historical architecture.

### **LESSON 04.** Main climatic areas around the world and bioclimatic strategies: High latitude and undefined location climates.



# WORLD CLIMATES

By Arthur N. Strahler

## GROUP I LOW-LATITUDE CLIMATES

- 1 Wet equatorial climate
- 2 Monsoon and trade-wind coastal climate
- 3 Wet-dry tropical climate
- 4 Dry tropical climate

## GROUP II MIDLATITUDE CLIMATES

- 5 Dry subtropical climate
- 6 Moist subtropical climate
- 7 Mediterranean climate
- 8 Marine west-coast climate
- 9 Dry midlatitude climate
- 10 Moist continental climate

## GROUP III HIGH-LATITUDE CLIMATES

- 11 Boreal forest climate
- 12 Tundra climate
- 13 Ice sheet climate

## H-UNDIFFERENTIATED HIGHLAND CLIMATES

### Climate subtypes:

- a Arid
- s Semiarid (Steppe)

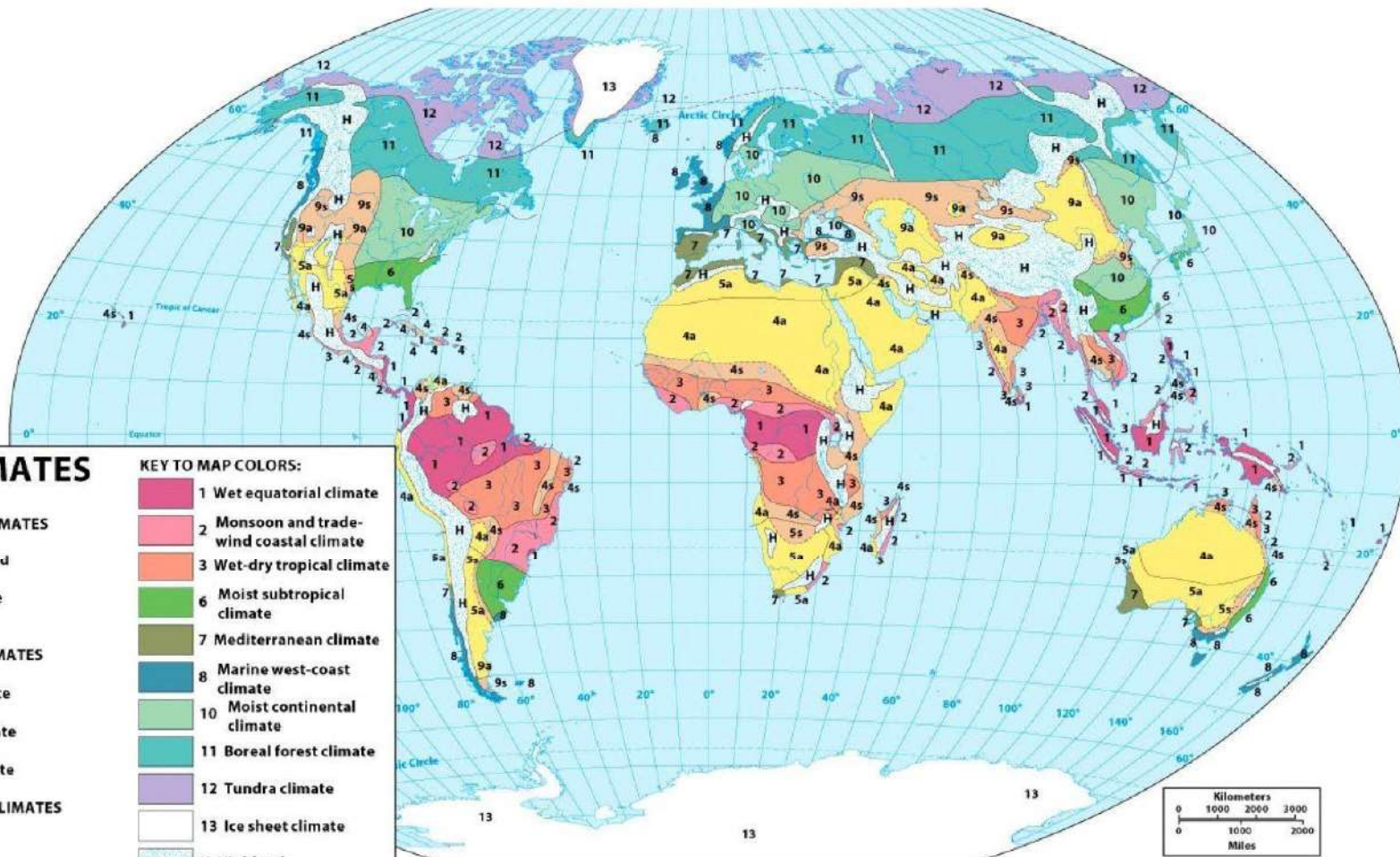
### KEY TO MAP COLORS:

- 1 Wet equatorial climate
- 2 Monsoon and trade-wind coastal climate
- 3 Wet-dry tropical climate
- 6 Moist subtropical climate
- 7 Mediterranean climate
- 8 Marine west-coast climate
- 10 Moist continental climate
- 11 Boreal forest climate
- 12 Tundra climate
- 13 Ice sheet climate
- H Highland

### Dry climates:

- 4 Dry tropical
- 5 Dry subtropical
- 9 Dry midlatitude

- 4s, 5s, 9s
- 4a, 5a, 9a



World climates were classified by A. N. Strahler according to the latitudes in which they exist.

There are three main groups:

- Low latitude climates. From 0° to 23° N/S.
- Medium latitude climates. From 23° to 50-60° N/S.
- High latitude and high mountain climates. From 50-60° to 90° N/S and high altitudes everywhere.

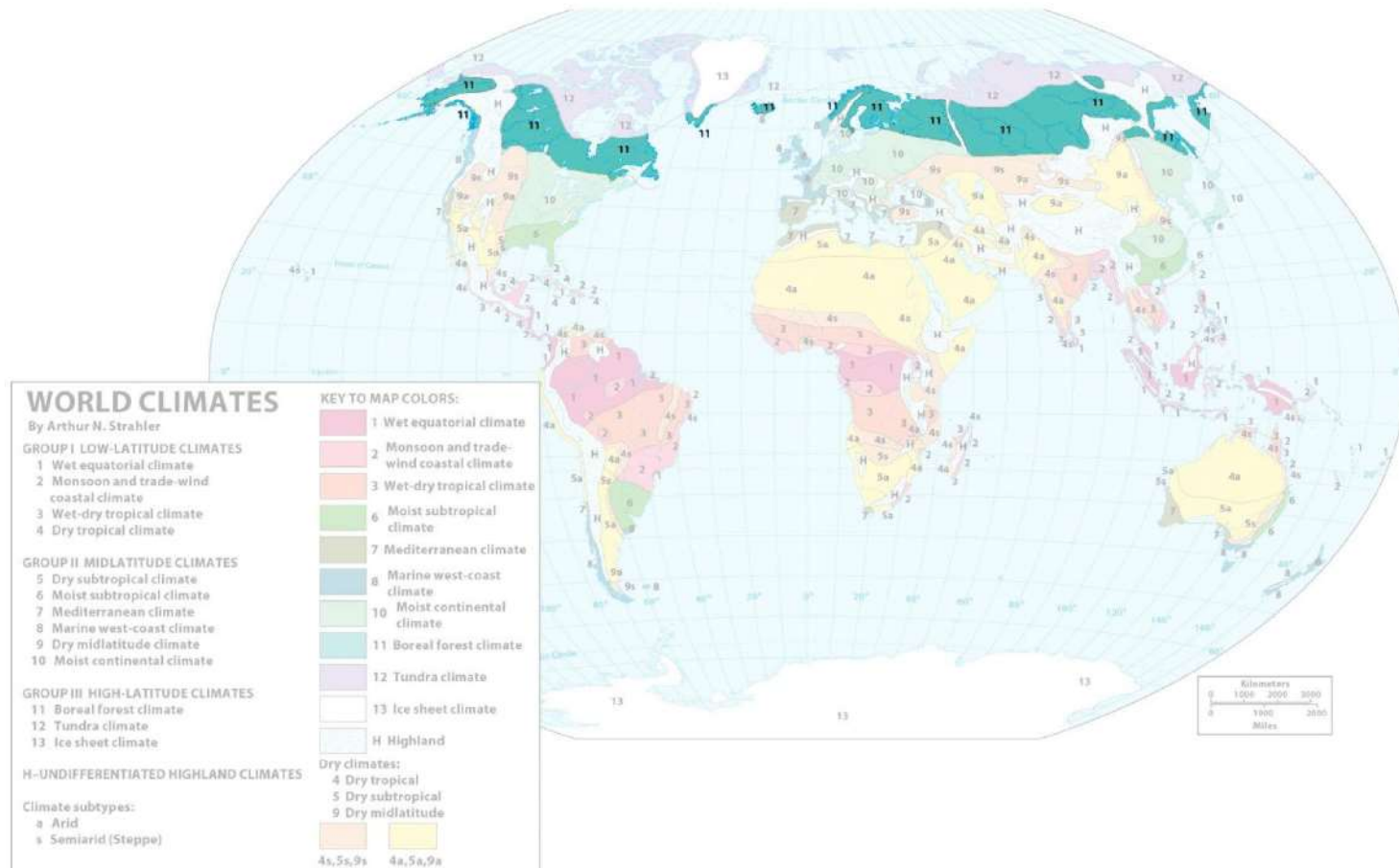
LOW LATITUDE CLIMATES:

- Boreal forest climate
- Tundra climate
- Ice sheet

UNDEFINED LOCATION CLIMATE:

- High mountain climate

# BOREAL FOREST CLIMATE



04. Main climatic areas around the world and bioclimatic strategies: High latitude climates.

## BOREAL FOREST CLIMATE

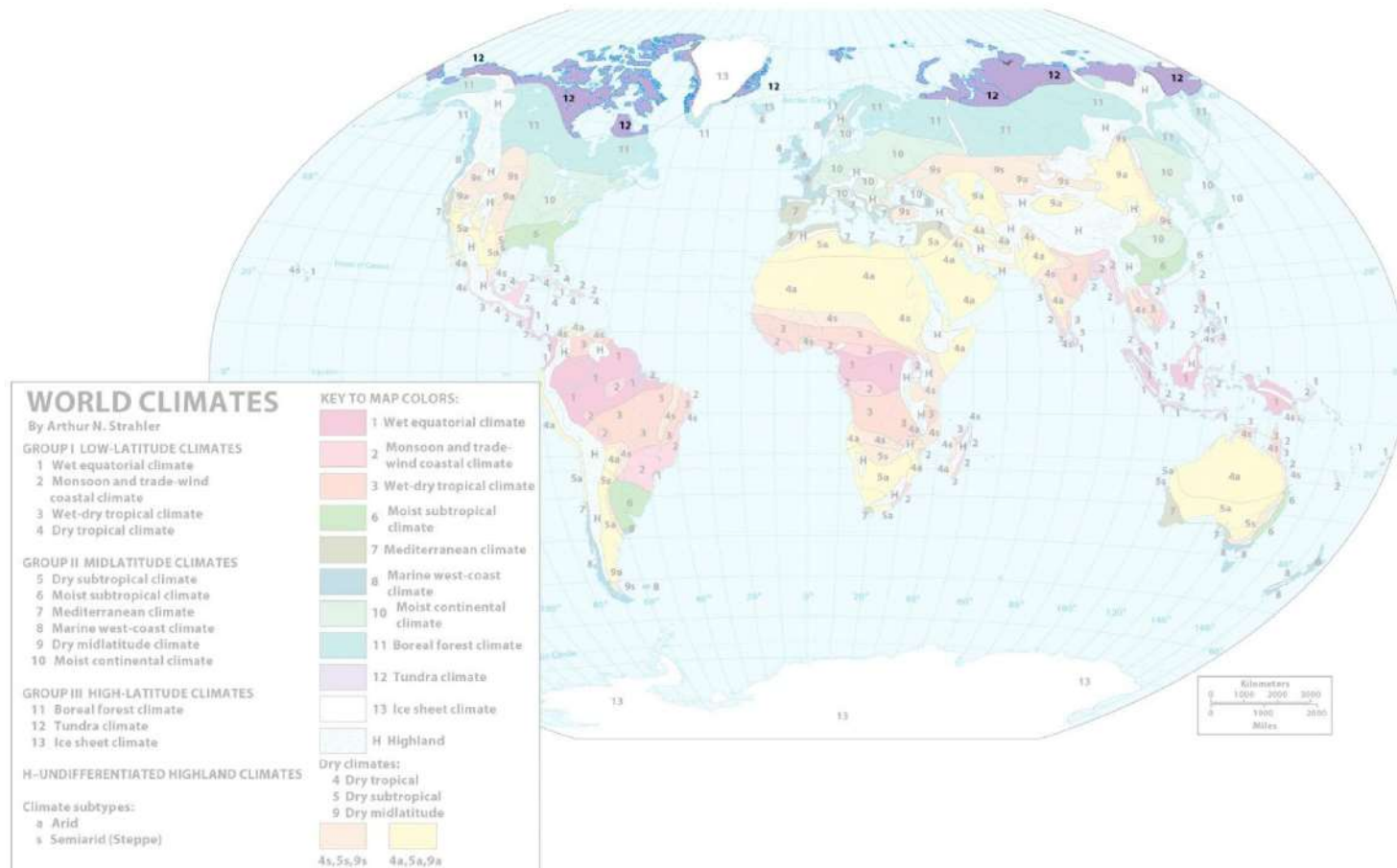
Cold and moist climate with very cold winters and warm summers. It's conditioned by the polar air mass.

Very big temperature oscillations along the year.





# TUNDRA CLIMATE



04. Main climatic areas around the world and bioclimatic strategies: High latitude climates.

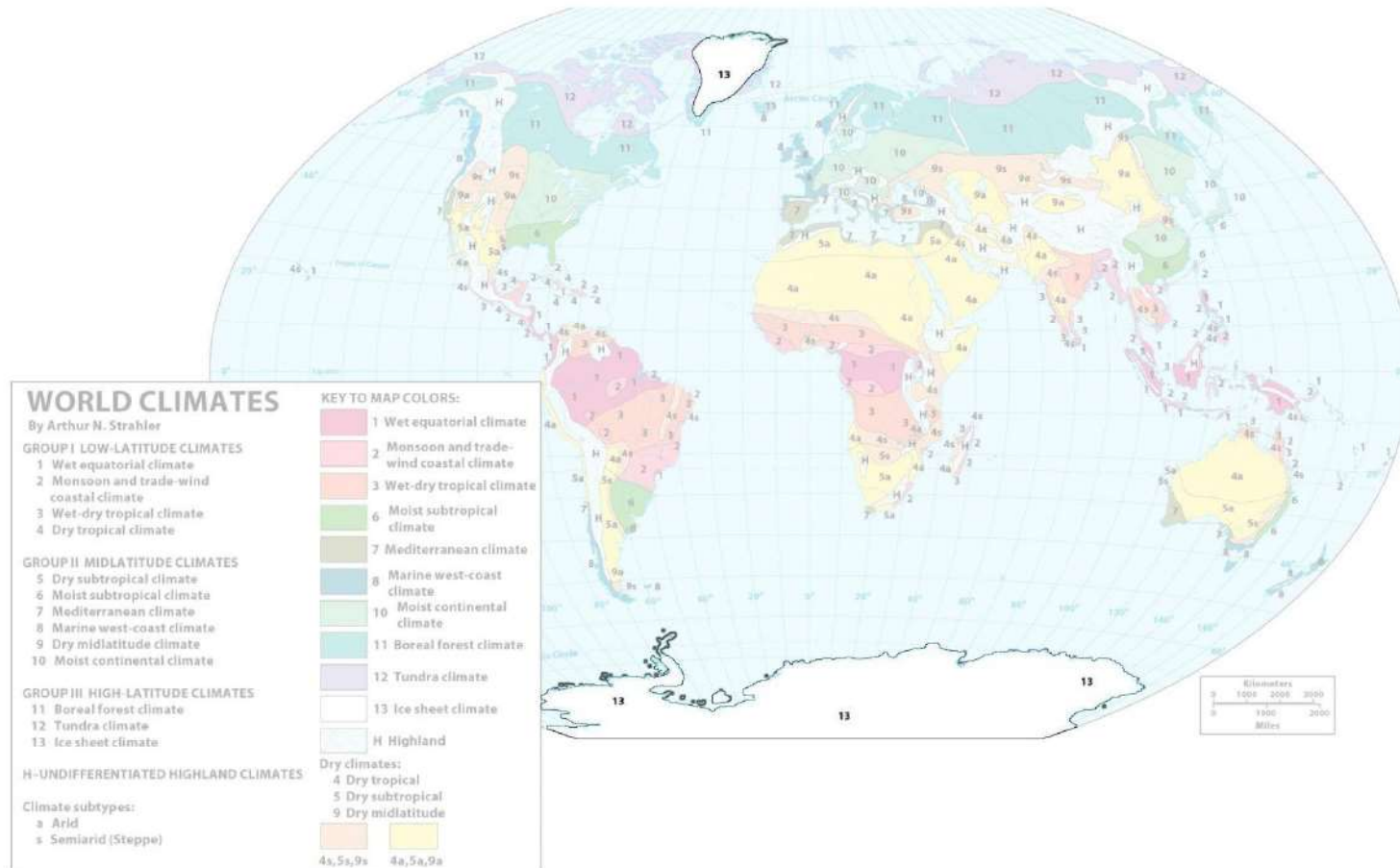
## TUNDRA CLIMATE

Located in areas where polar and arctic air masses merge.

Very cold climate, absence of warm season.



# ICE SHEET



04. Main climatic areas around the world and bioclimatic strategies: High latitude climates.

## ICE SHEET CLIMATE

Polar climate, origin of arctic and antarctic air masses.

Average temperature is never over 0°C.





## BIOCLIMATIC STRATEGIES

In this latitude, the main strategies to achieve comfort are:

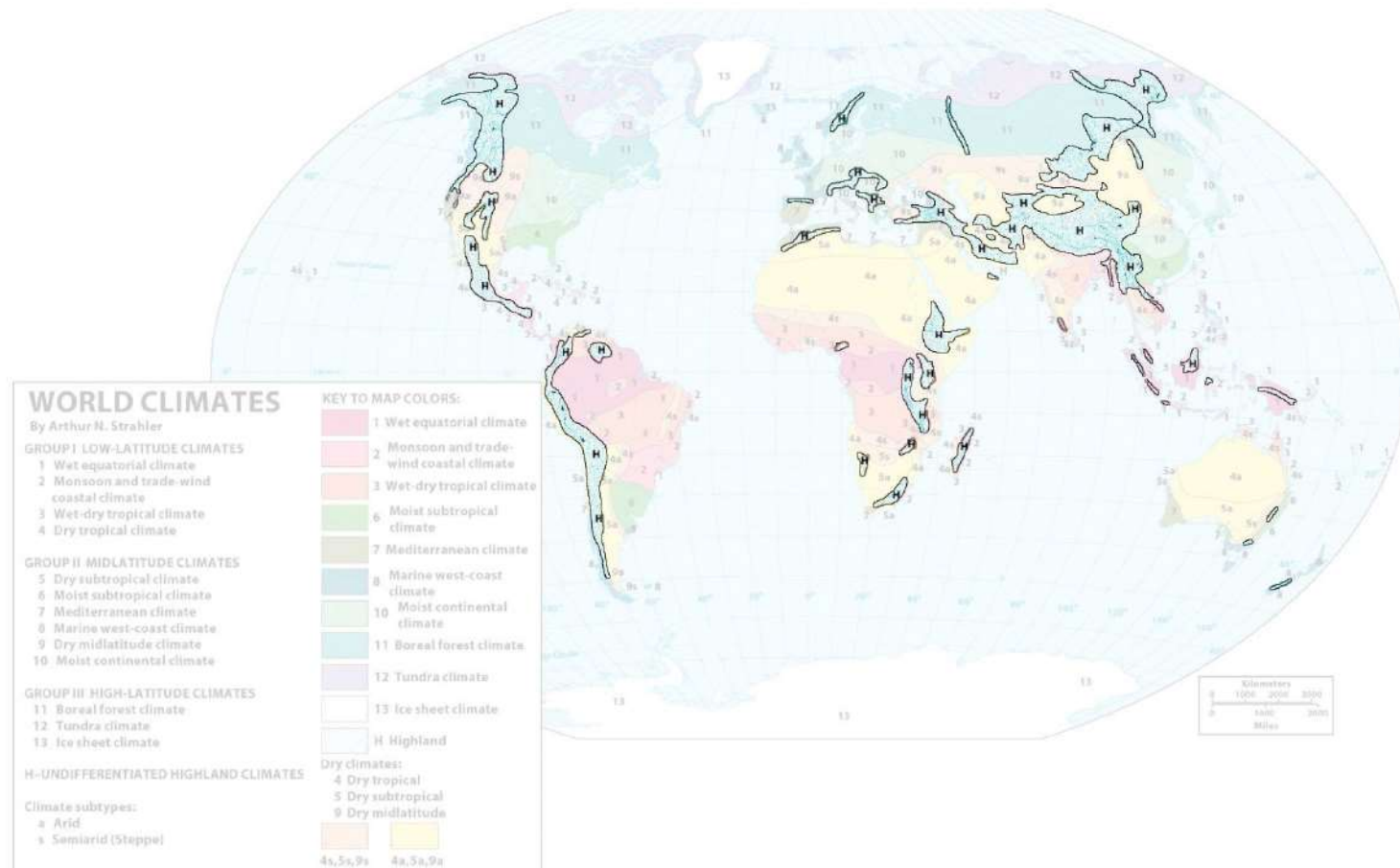
- Thermal insulation for energy preservation
- Ventilation

## BIOCLIMATIC STRATEGIES

The strategies applied result in some characteristic elements used in vernacular architecture, such as:

- Low shape factor
- Thick walls
- Use of wood
- Small openings
- Chimneys
- Vegetal insulating roofs

# HIGHLAND CLIMATE



04. Main climatic areas around the world and bioclimatic strategies: High latitude climates.

## HIGHLAND CLIMATE

As height increases, temperature, humidity and pressure decreases.

The slopes orientation conditions solar radiation and wind effects.

Depending on the shape of the mountain chains the characteristics of the weather variate.





## BIOCLIMATIC STRATEGIES

In this latitude, the main strategies to achieve comfort are:

- Thermal insulation for energy preservation
- Thermal inertia
- Solar catchment

## BIOCLIMATIC STRATEGIES

For the highlands climate, the characteristics are:

- Low shape factor
- Thick walls
- Use of wood
- Medium protected openings



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