Polski Komitet Narodowy Międzynarodowej Rady Ochrony Zabytków ICOMOS

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Fondazione Flaminia per l'Università in Romagna

Sustainable Urban Rehabilitation in Europe

Traditional, vernacular and historical architecture

Erasmus+

Sustainable Urban Rehabilitation in Europe

3rd Semester

Susana Mora Alonso-Muñoyerro
Ignacio Mora Moreno
David E. García García
M. Carolina Hernández Martínez
Camila Burgos Vargas

Traditional, vernacular and historical architecture.

HS

Heritage and Society

EC

Elective Courses

Erasmus+

SURE
SUSTAINABLE URBAN REHABILITATION IN EUROPE

UNIVERSIDAD POLITÉCNICA DE MADRID

Sustainable Urban Rehabilitation in Europe

Traditional, vernacular and historical architecture.

HS
Heritage and Society

EC
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.

Sustainable Urban Rehabilitation in Europe

Traditional, vernacular and historical architecture.

LESSON 03. Main climatic areas around the world and bioclimatic strategies: Medium latitude climates.

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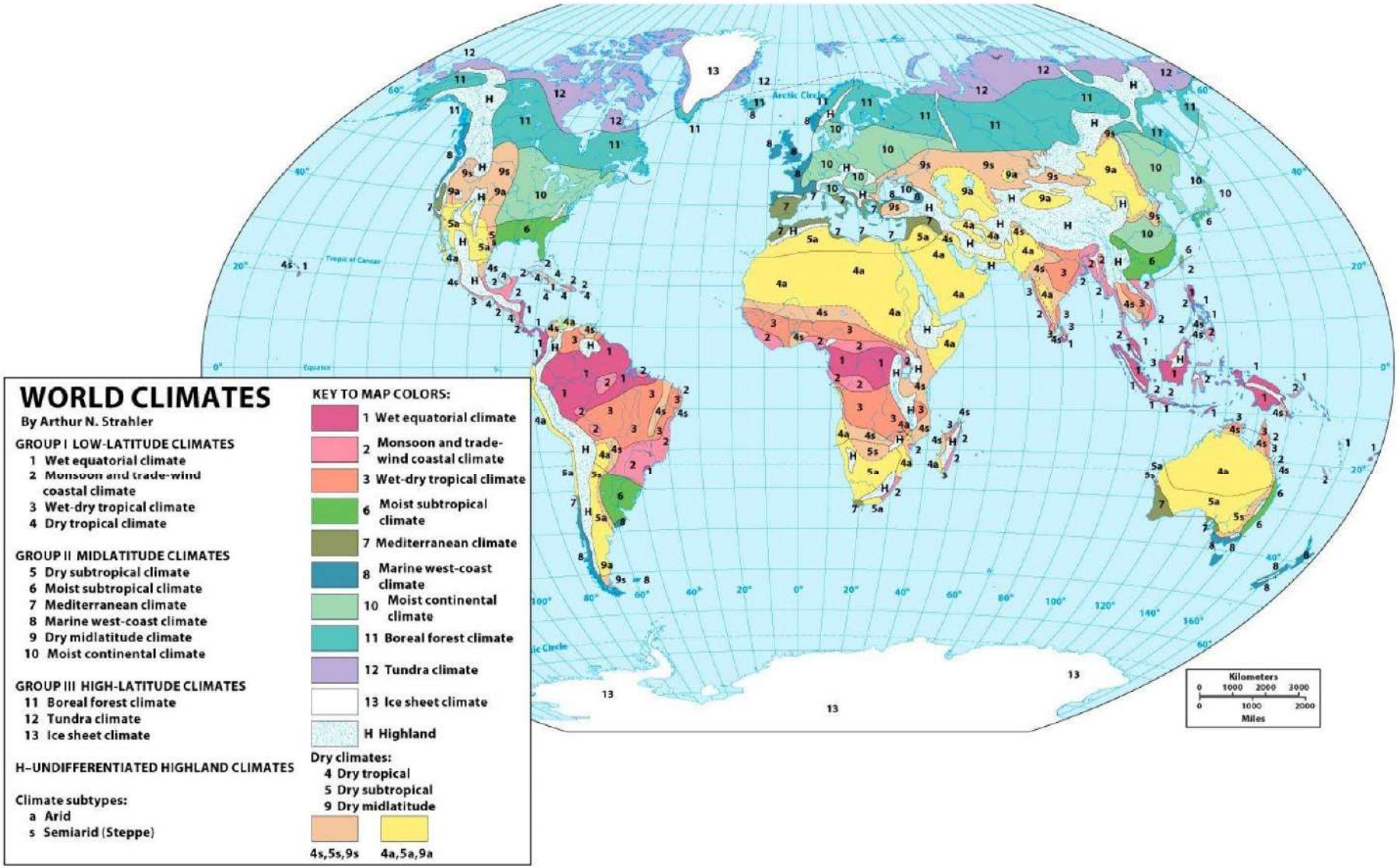


03. Main climatic areas around the world and bioclimatic strategies: Medium latitude climates.

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

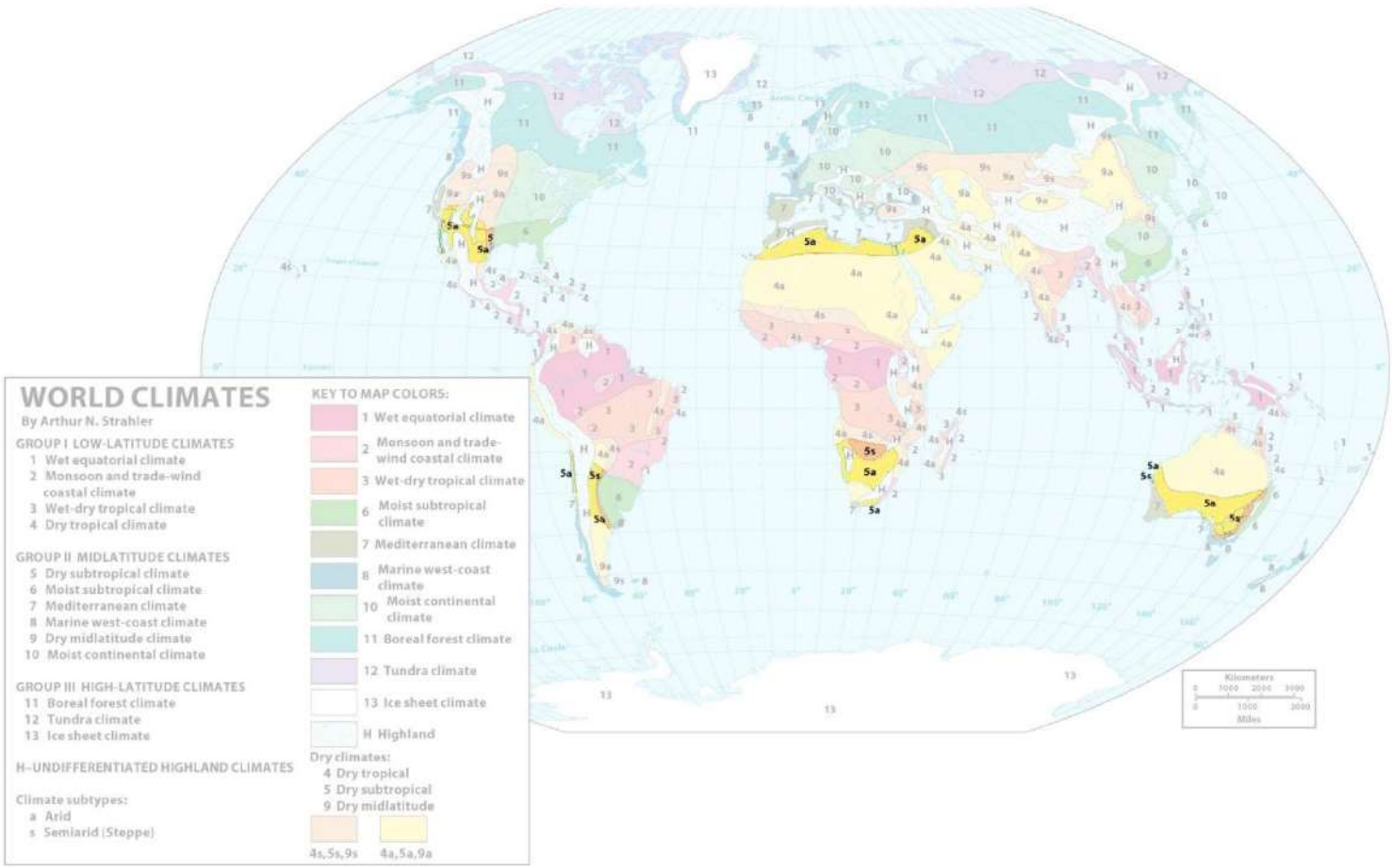
There are three main groups:

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

MEDIUM LATITUDE CLIMATES:

- Dry subtropical climate
- Moist subtropical climate
- Mediterranean climate
- Marine west-coast climate
- Dry midlatitude climate
- Moist continental climate

DRY SUBTROPICAL CLIMATE



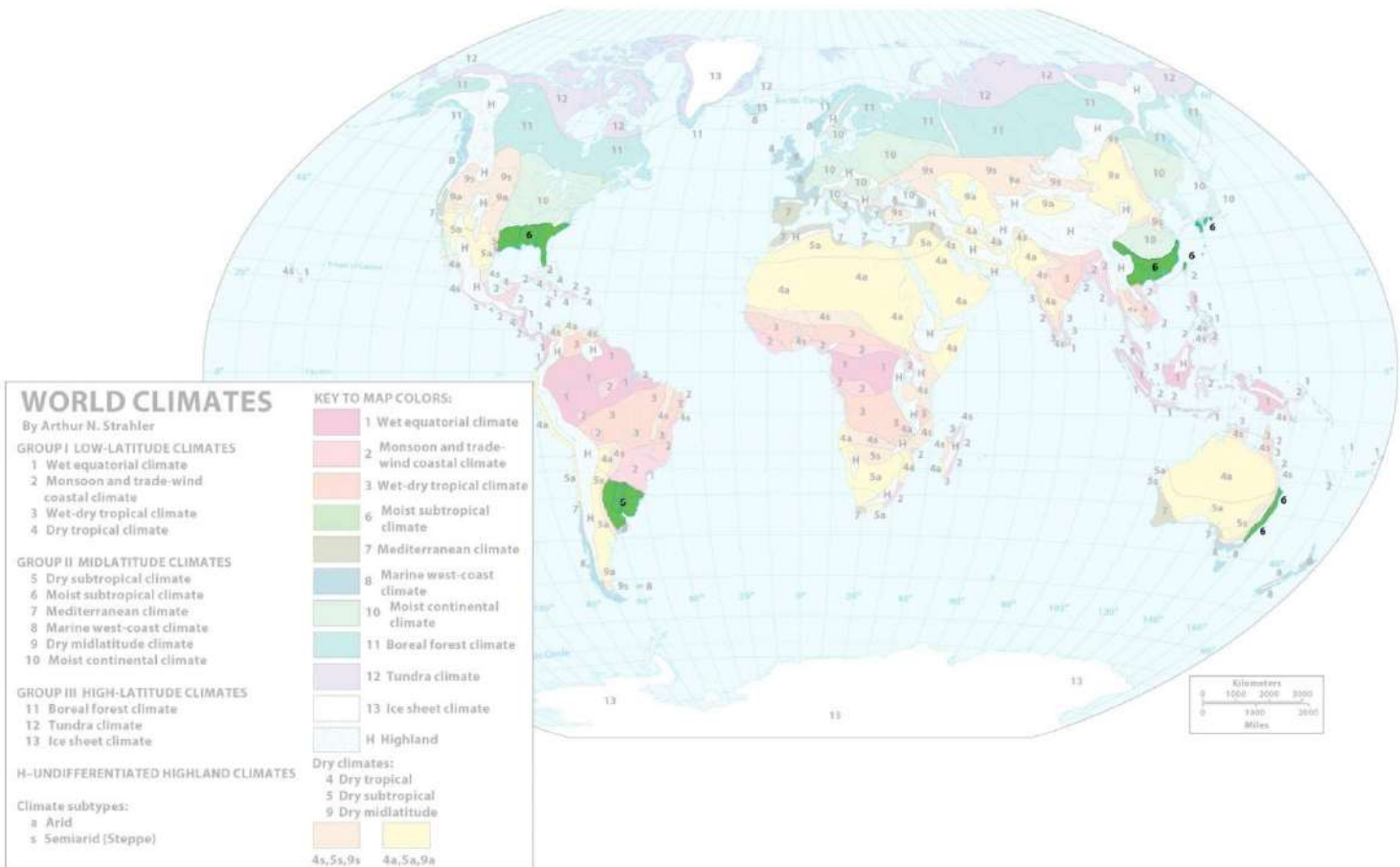
03. Main climatic areas around the world and bioclimatic strategies: Medium latitude climates.

DRY SUBTROPICAL CLIMATE

It's conditioned by continental-tropical air masses. It's an arid to semiarid climate.

Very high maximum temperatures.

MOIST SUBTROPICAL CLIMATE



03. Main climatic areas around the world and bioclimatic strategies: Medium latitude climates.

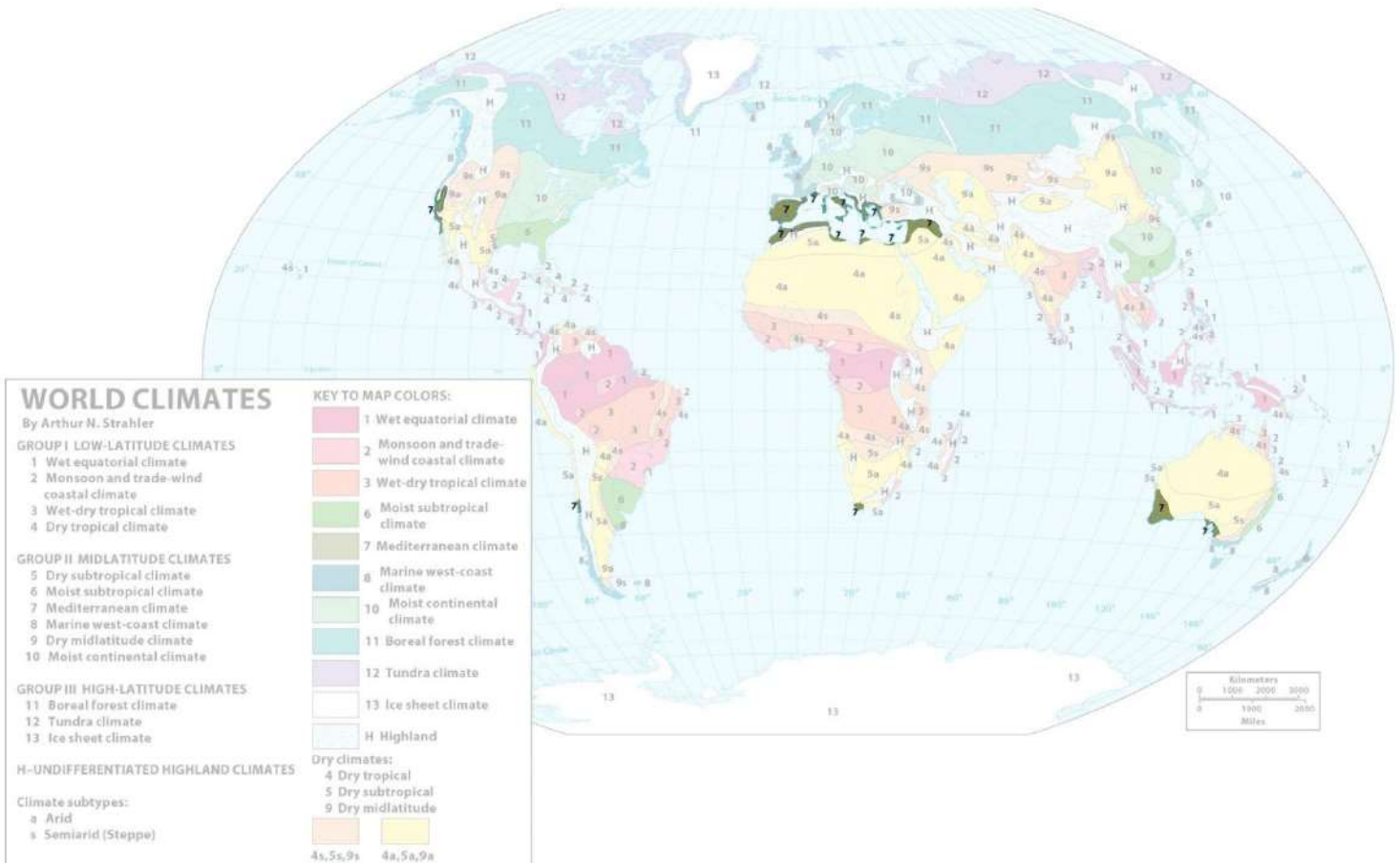
MOIST SUBTROPICAL CLIMATE

It's conditioned by moist air masses from the sea.

Frequent precipitations during summer.

High temperatures in summer and low ones in winter.

MEDITERRANEAN CLIMATE



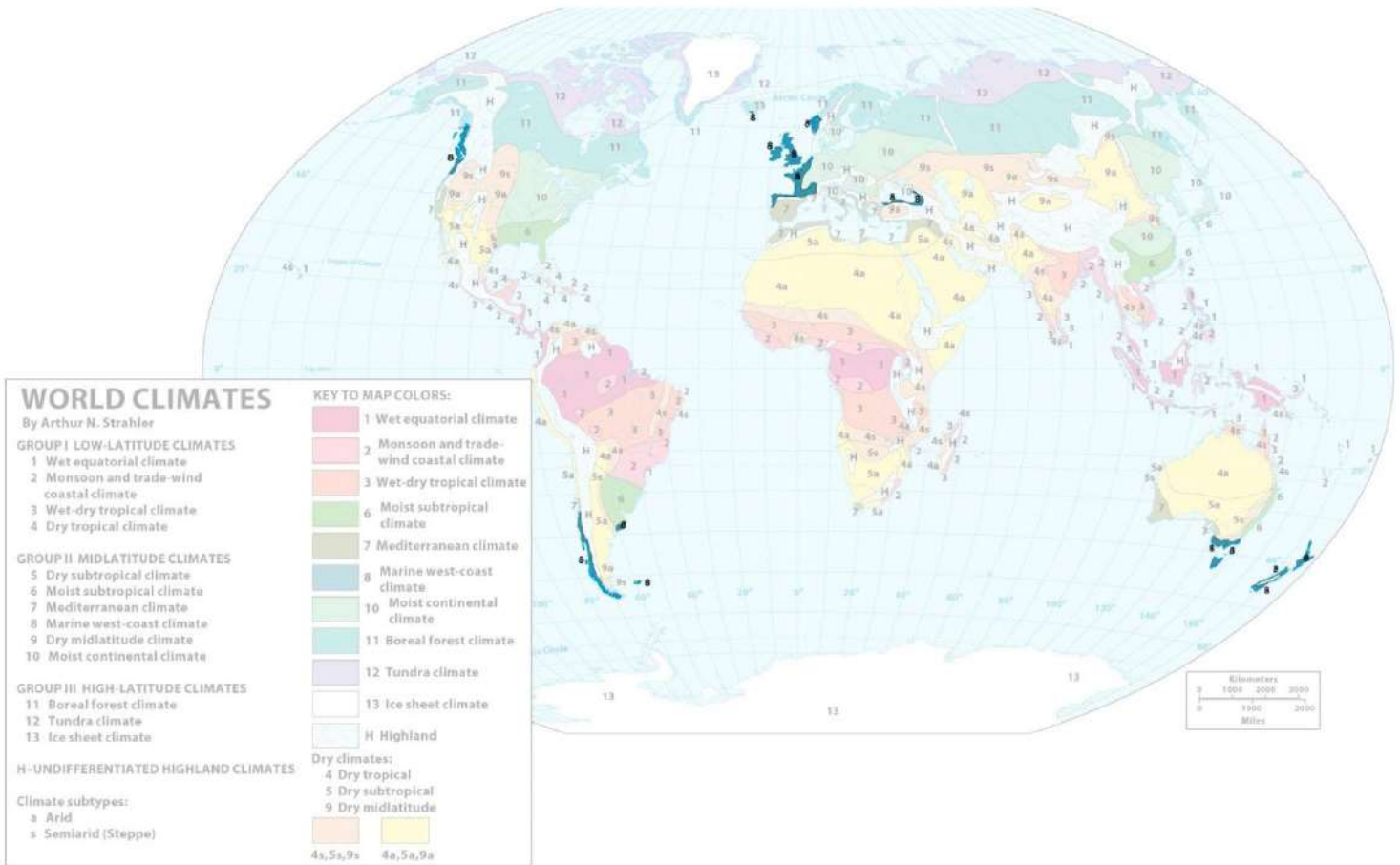
03. Main climatic areas around the world and bioclimatic strategies: Medium latitude climates.

MEDITERRANEAN CLIMATE

Hot dry summers and rainy winters.

Wide temperature oscillation during the year. Clearly differentiated seasons.

MARINE WEST-COAST CLIMATE



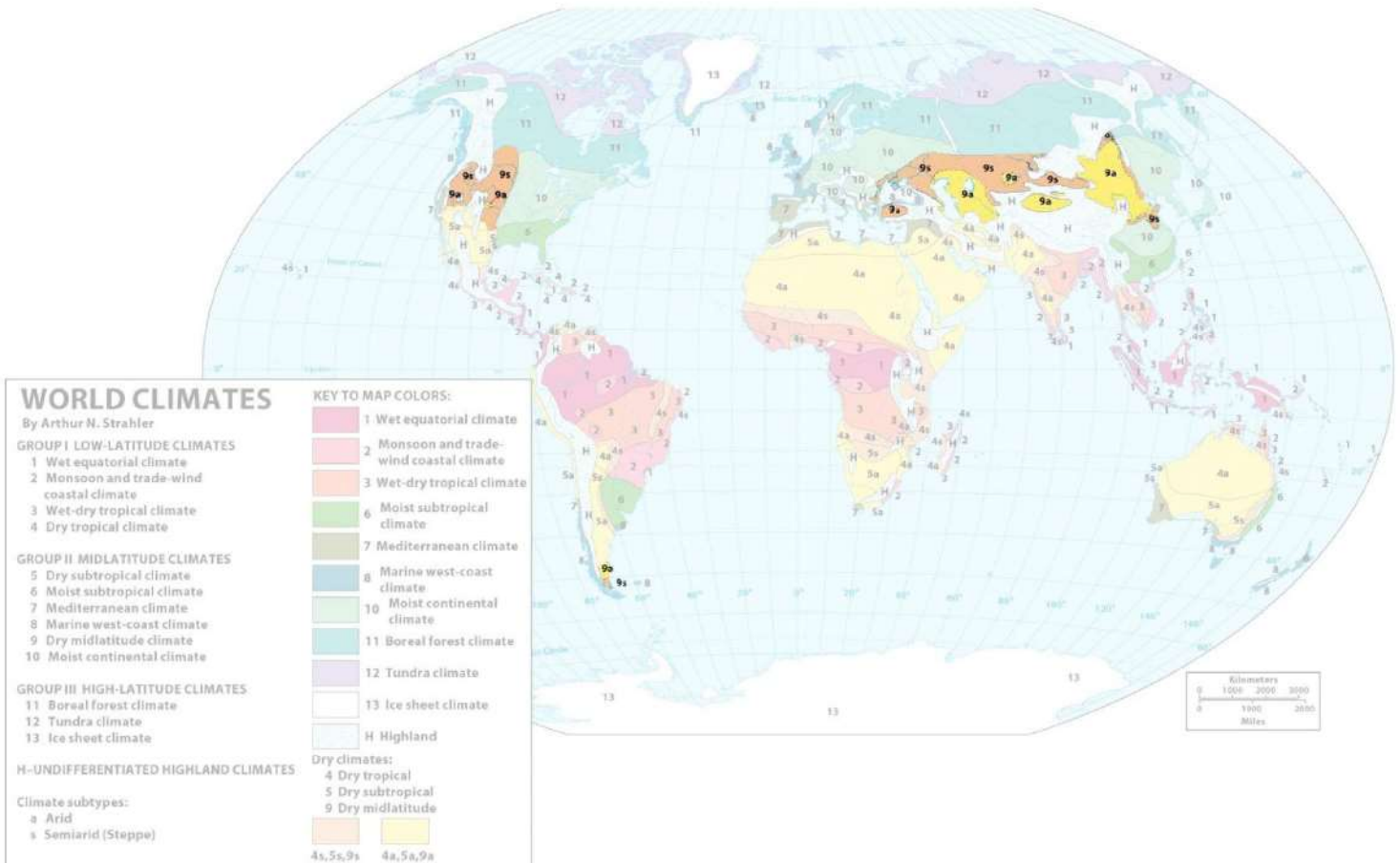
03. Main climatic areas around the world and bioclimatic strategies: Medium latitude climates.

MARINE WEST-COAST CLIMATE

It's conditioned by moist polar marine air masses that usually develop cloudiness and precipitations in winter.

Low temperature oscillation.

DRY MIDLATITUDE CLIMATE

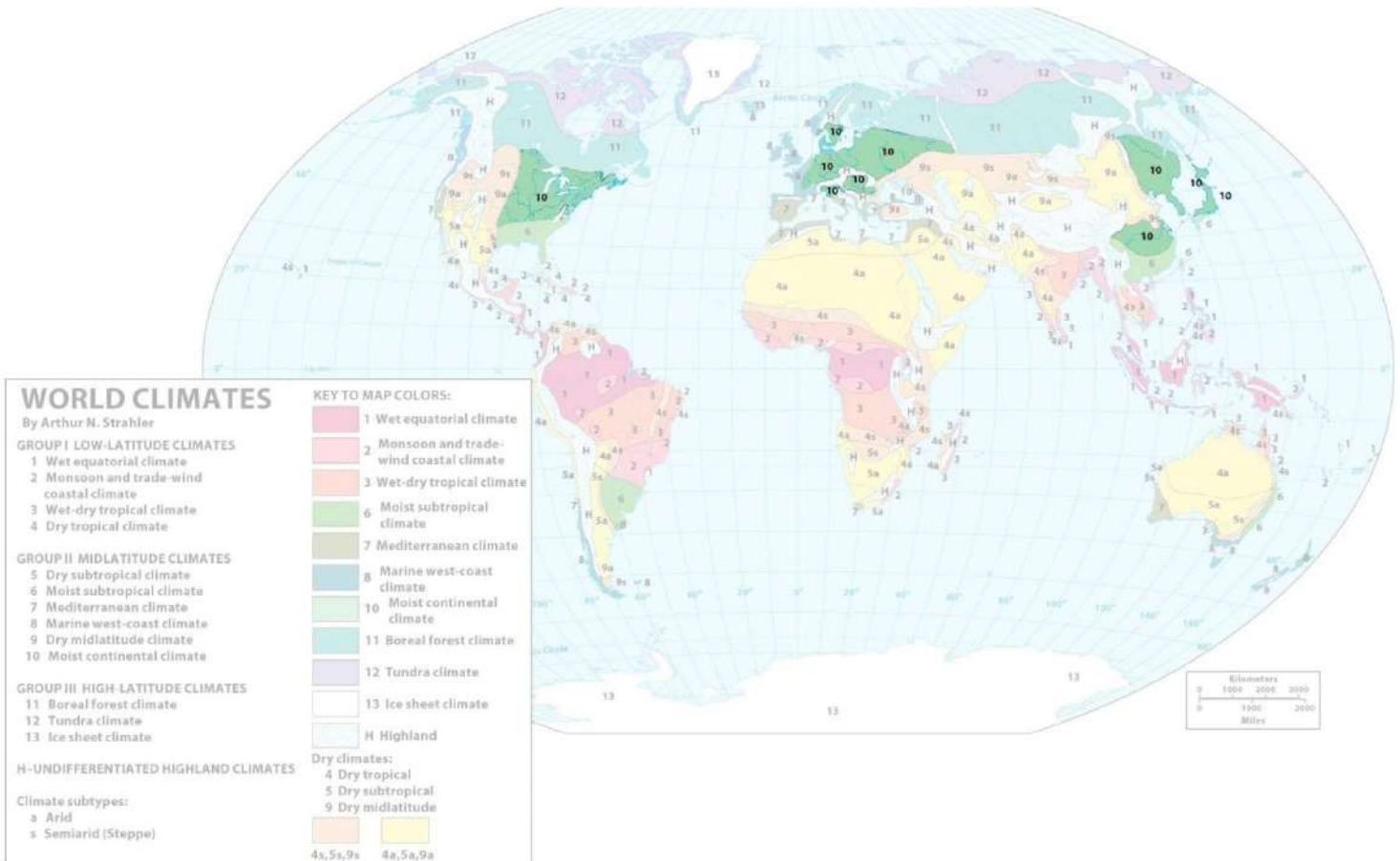


03. Main climatic areas around the world and bioclimatic strategies: Medium latitude climates.

DRY MIDLATITUDE CLIMATE

It's conditioned by dry air, so there are high temperature oscillations along the year (hot summers and cold winters).

MOIST CONTINENTAL CLIMATE



03. Main climatic areas around the world and bioclimatic strategies: Medium latitude climates.

MOIST CONTINENTAL CLIMATE

It's conditioned by polar and tropical air masses merging so the climate is very variable, with defined seasons.

Long cold winters and short fresh summers with abundant precipitations.

BIOCLIMATIC STRATEGIES

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

- Capacity of both protection and catchment from sun
- Evaporative cooling
- Radiative cooling
- Ventilation

BIOCLIMATIC STRATEGIES

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

- Patios
- Protective cornices (from sun and rain)
- Flexible openings
- Thick walls
- Use of thermal insulation
- Crossed ventilation

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