

50 Important Topics - 2024	
Scheduled Date	Subject
01/04/24	Economy
02/04/24	Science & Technology
03/04/24	Environment & D.M.
04/04/24	Science & Technology
05/04/24	Environment & D.M.
06/04/24	-----
07/04/24	-----
08/04/24	Economy
09/04/24	Science & Technology
10/04/24	Economy
11/04/24	English
12/04/24	International Relations
13/04/24	-----
14/04/24	-----
15/04/24	Geography
16/04/24	Polity & Governance
17/04/24	Polity & Governance
18/04/24	Geography
19/04/24	Polity & Governance
20/04/24	Maths
21/04/24	-----
22/04/24	Reasoning
23/04/24	Environment & D.M.
24/04/24	Social Schemes





Sleepy Classes IAS
Awakening Toppers

RAPID REVISION

MOST IMPORTANT TOPICS FOR PRELIMS 2024

CSAT ₹1,500

GS ₹3,500

CSAT + General Studies ₹4,000



HOURS

1500 TOPICS

11th April 2024 - 29th April 2024

Special Inclusions

- 6 FLTs (3 GS+ 3 CSAT)
- Value Additions Material
- Subject Specific MCQS



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Table 12.2 : Climatic Types According to Koeppen

<i>Group</i>	<i>Type</i>	<i>Letter Code</i>	<i>Characteristics</i>
A-Tropical Humid Climate	Tropical wet	Af	No dry season
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	Polar ice cap	EF	Perennial ice
H-Highland	Highland	H	Highland with snow cover

KOEPPEN CLASSIFICATION

Introduction

- Three broad approaches have been adopted for classifying climate.
- They are empirical, genetic and applied.
- **Empirical classification** is based on observed data, particularly on temperature and precipitation.
- **Genetic** classification attempts to organise climates according to their causes.
- **Applied** classification is for specific purpose.

Koepfen 's scheme of Classification of Climate

- The most widely used classification of climate is the empirical climate classification scheme developed by V. Koepfen.
- Koepfen identified a close relationship between the **distribution of vegetation and climate.**
- He selected certain values of temperature and precipitation and related them to the distribution of vegetation and used these values for classifying the climates.
- It is an empirical classification based on mean annual and mean monthly temperature and precipitation data.
- He introduced the use of capital and small letters to designate climatic groups and types.
- Koepfen recognised five major climatic groups, four of them are based on temperature and one on precipitation

Table 12.1 : Climatic Groups According to Koeppen

<i>Group</i>	<i>Characteristics</i>
A - Tropical	Average temperature of the coldest month is 18° C or higher
B - Dry Climates	Potential evaporation exceeds precipitation
C - Warm Temperate	The average temperature of the coldest month of the (Mid-latitude) climates years is higher than minus 3°C but below 18°C
D - Cold Snow Forest Climates	The average temperature of the coldest month is minus 3° C or below
E - Cold Climates	Average temperature for all months is below 10° C
H - High Land	Cold due to elevation

Koepfen 's scheme of Classification of Climate

- Koepfen recognised five major climatic groups, four of them are based on temperature and one on precipitation
- The capital letters : A, C, D and E delineate humid climates and B dry climates.
- The climatic groups are subdivided into types, designated by small letters, based on seasonality of precipitation and temperature characteristics.
- The seasons of dryness are indicated by the small letters : f, m, w and s, where f corresponds to no dry season m - monsoon climate, w- winter dry season and s - summer dry season.
- The small letters a, b, c and d refer to the degree of severity of temperature.
- The B- Dry Climates are subdivided using the capital letters S for steppe or semi-arid and W for deserts



Table 12.2 : Climatic Types According to Koeppen

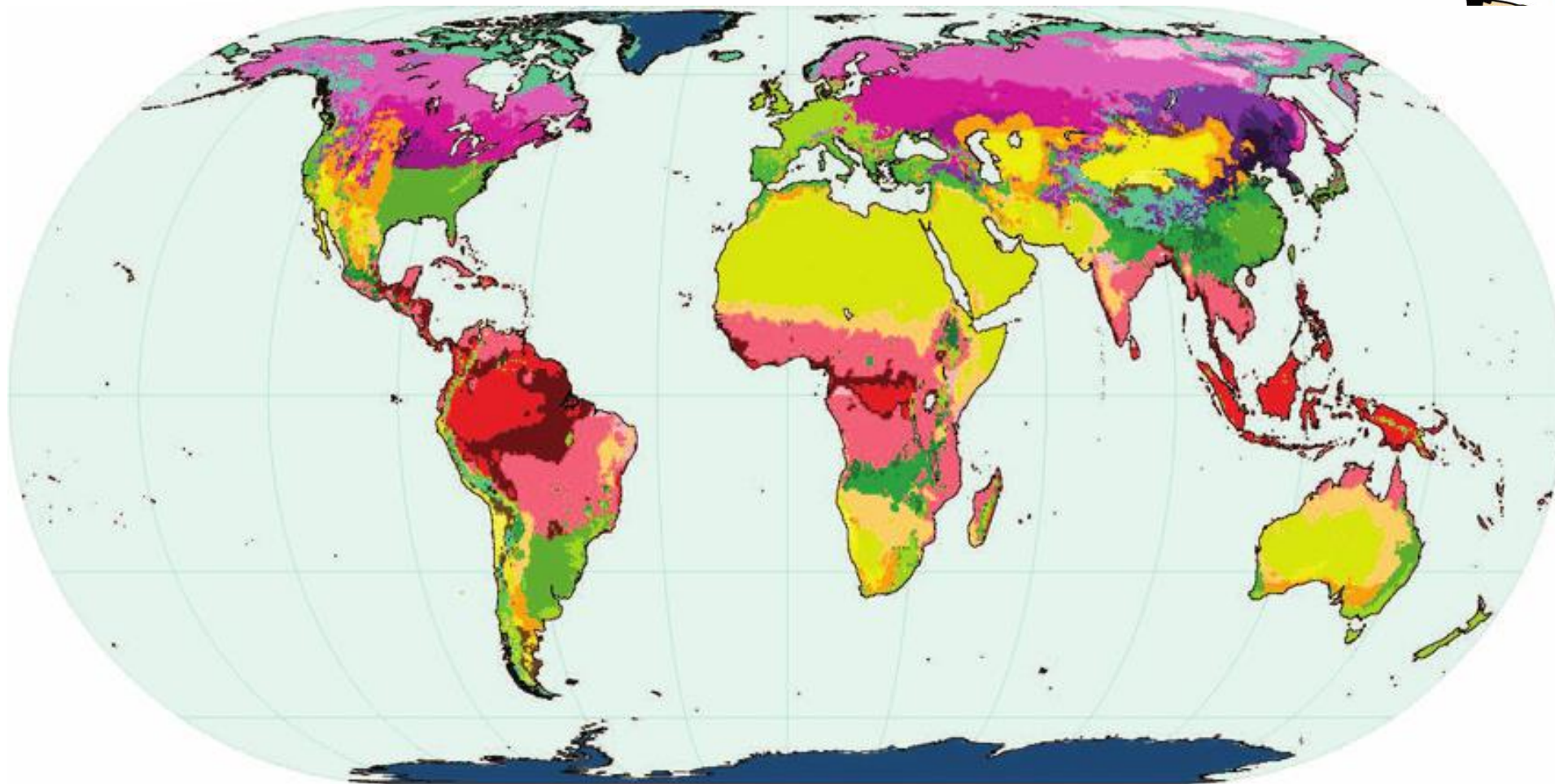
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Group A : Tropical Humid Climates

- Tropical humid climates exist between Tropic of Cancer and Tropic of Capricorn.
- The sun being overhead throughout the year and the presence of Inter Tropical Convergence Zone (ITCZ) make the climate hot and humid.
- Annual range of temperature is very low and annual rainfall is high.
- The tropical group is divided into three types, namely
 - (i) Af- Tropical wet climate;
 - (ii) Am - Tropical monsoon climate;
 - (iii) Aw- Tropical wet and dry climate.

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Köppen climate classes by major types

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Group A : Tropical Humid Climates

Tropical Wet Climate (Af)

- Tropical wet climate is found near the equator.
- The major areas are the Amazon Basin in South America, western equatorial Africa and the islands of East Indies.
- Significant amount of rainfall occurs in every month of the year as thunder showers in the afternoon.
- The temperature is uniformly high and the annual range of temperature is negligible. The maximum temperature on any day is around 30°C while the minimum temperature is around 20°C. Tropical evergreen forests with dense canopy cover and large biodiversity are found in this climate.
- .

Group A : Tropical Humid Climates

Tropical Monsoon Climate (Am)

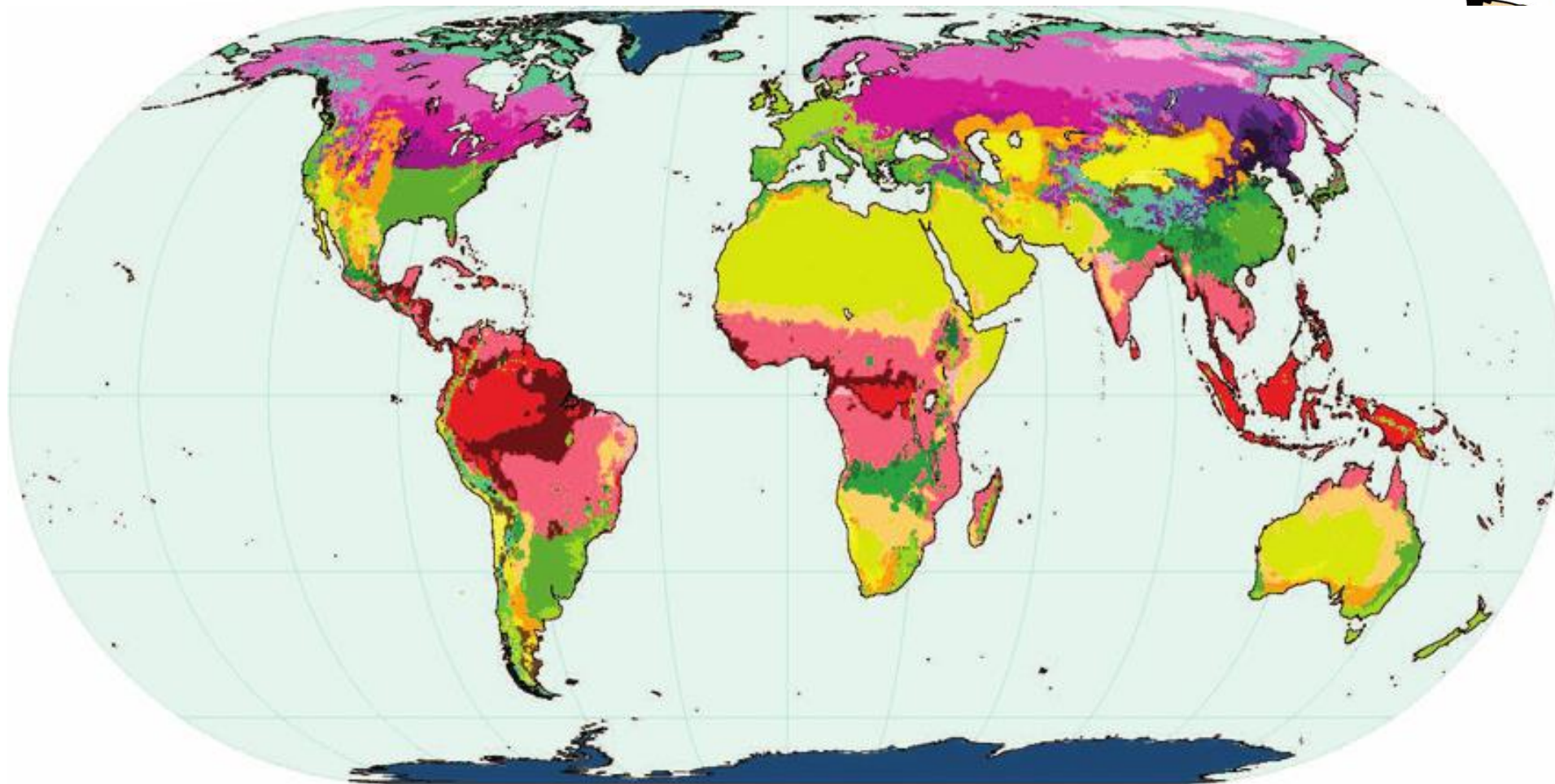
- Tropical monsoon climate (Am) is found over the Indian sub-continent, North Eastern part of South America and Northern Australia.
- Heavy rainfall occurs mostly in summer.
- Winter is dry.

Group A : Tropical Humid Climates

Tropical Wet and Dry Climate (Aw)

- Tropical wet and dry climate occurs north and south of Af type climate regions. It borders with dry climate on the western part of the continent and Cf or Cw on the eastern part. Extensive Aw climate is found to the north and south of the Amazon forest in Brazil and adjoining parts of Bolivia and Paraguay in South America, Sudan and south of Central Africa.
- The annual rainfall in this climate is considerably less than that in Af and Am climate types and is variable also.
- The wet season is shorter and the dry season is longer with the drought being more severe.
- Temperature is high throughout the year and diurnal ranges of temperature are the greatest in the dry season.
- Deciduous forest and tree-shredded grasslands occur in this climate.





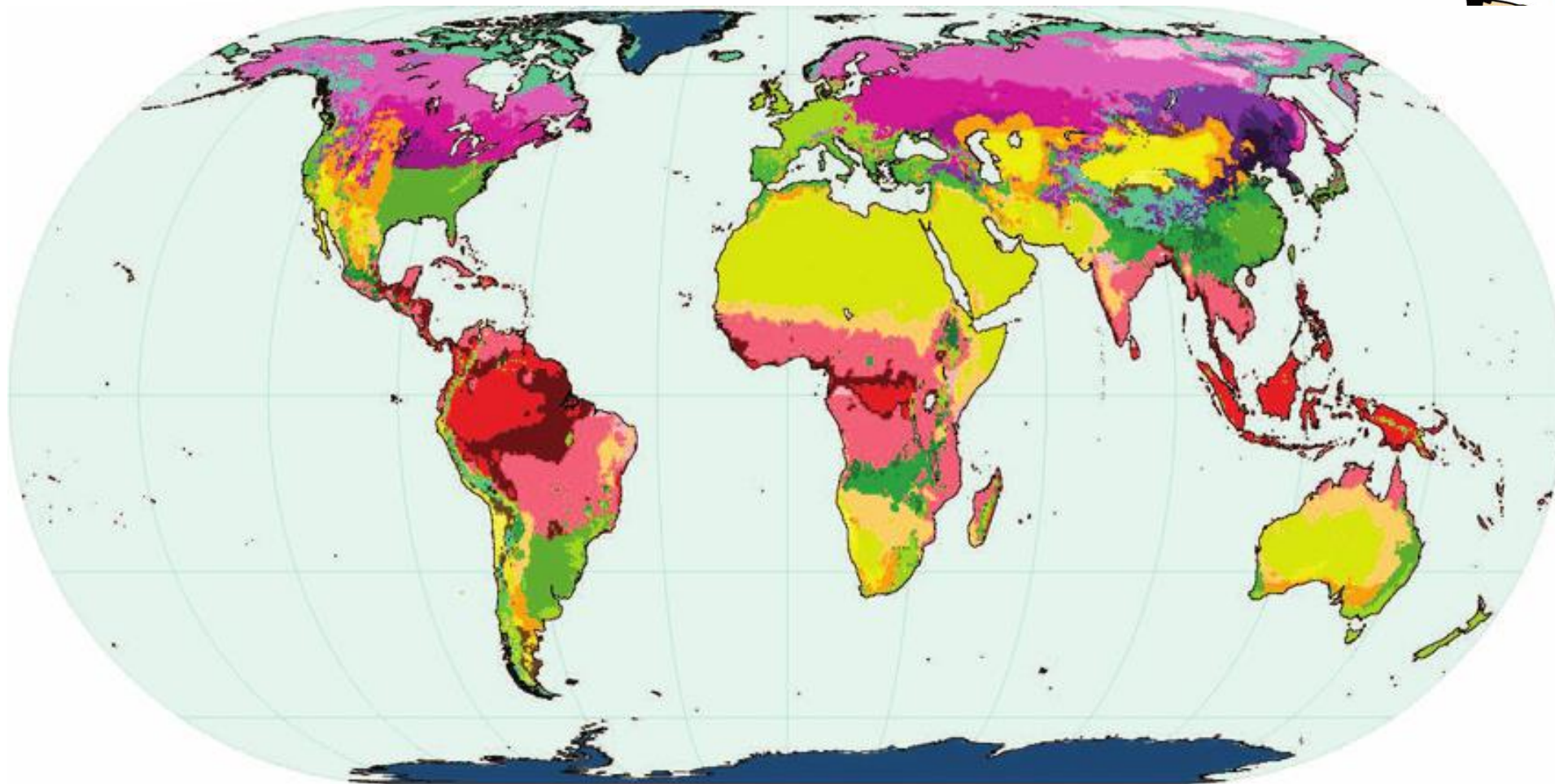
Köppen climate classes by major types

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Dry Climates : B

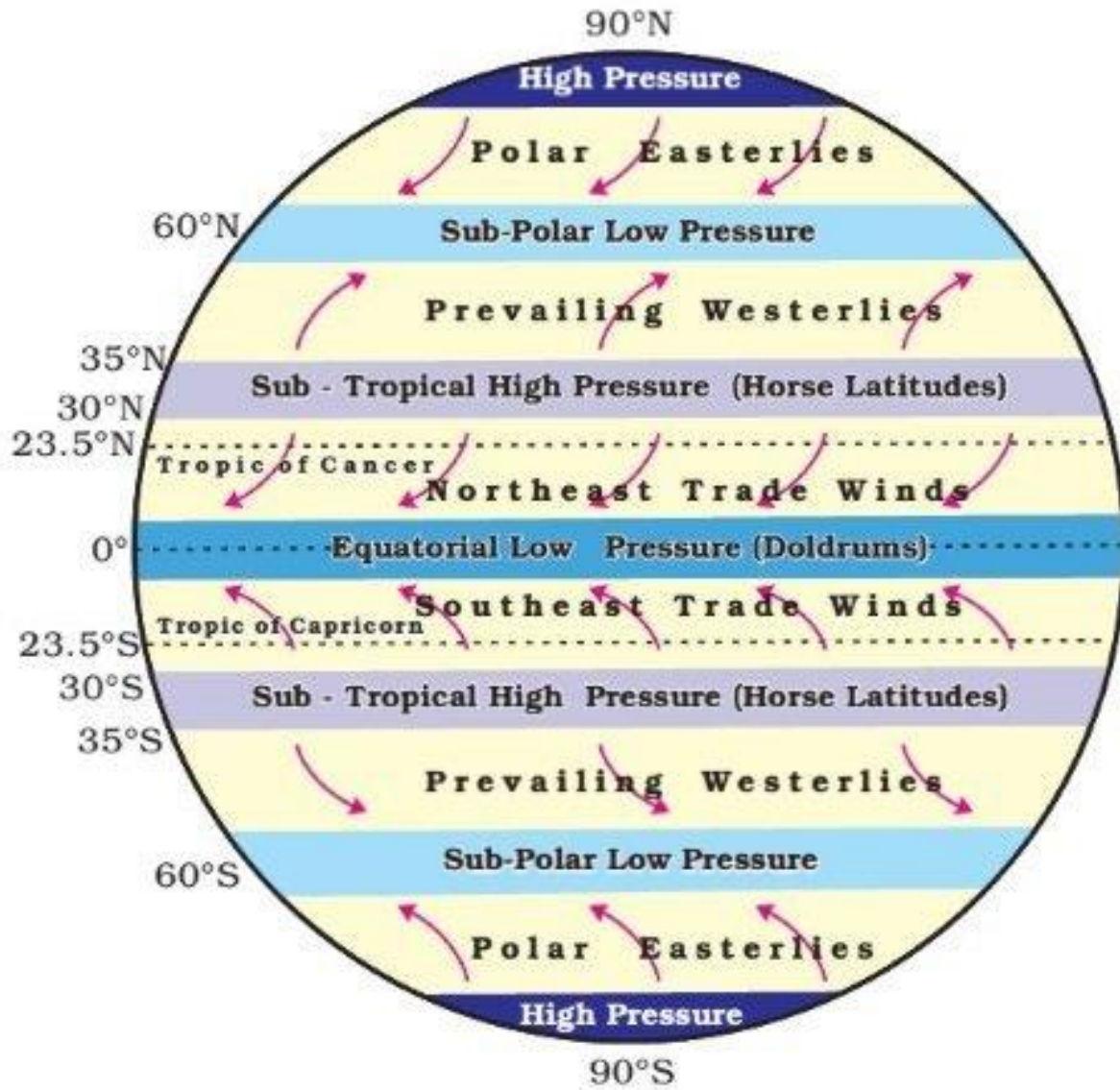
- Dry climates are characterised **by very low rainfall** that is not adequate for the growth of plants. These climates cover a very large area of the planet extending over large latitudes from 15° - 60° north and south of the equator.
- At low latitudes, from **15° - 30°** , they occur in the area **of subtropical high** where subsidence and inversion of temperature do not produce rainfall.
- On the **western margin of the continents, adjoining the cold current**, particularly over the west coast of South America, they extend more equatorwards and occur on the coast land.
- In middle latitudes, from **35° - 60° north and south of equator**, they are confined to **the interior of continents** where maritime-humid winds do not reach and to areas often surrounded by mountains.





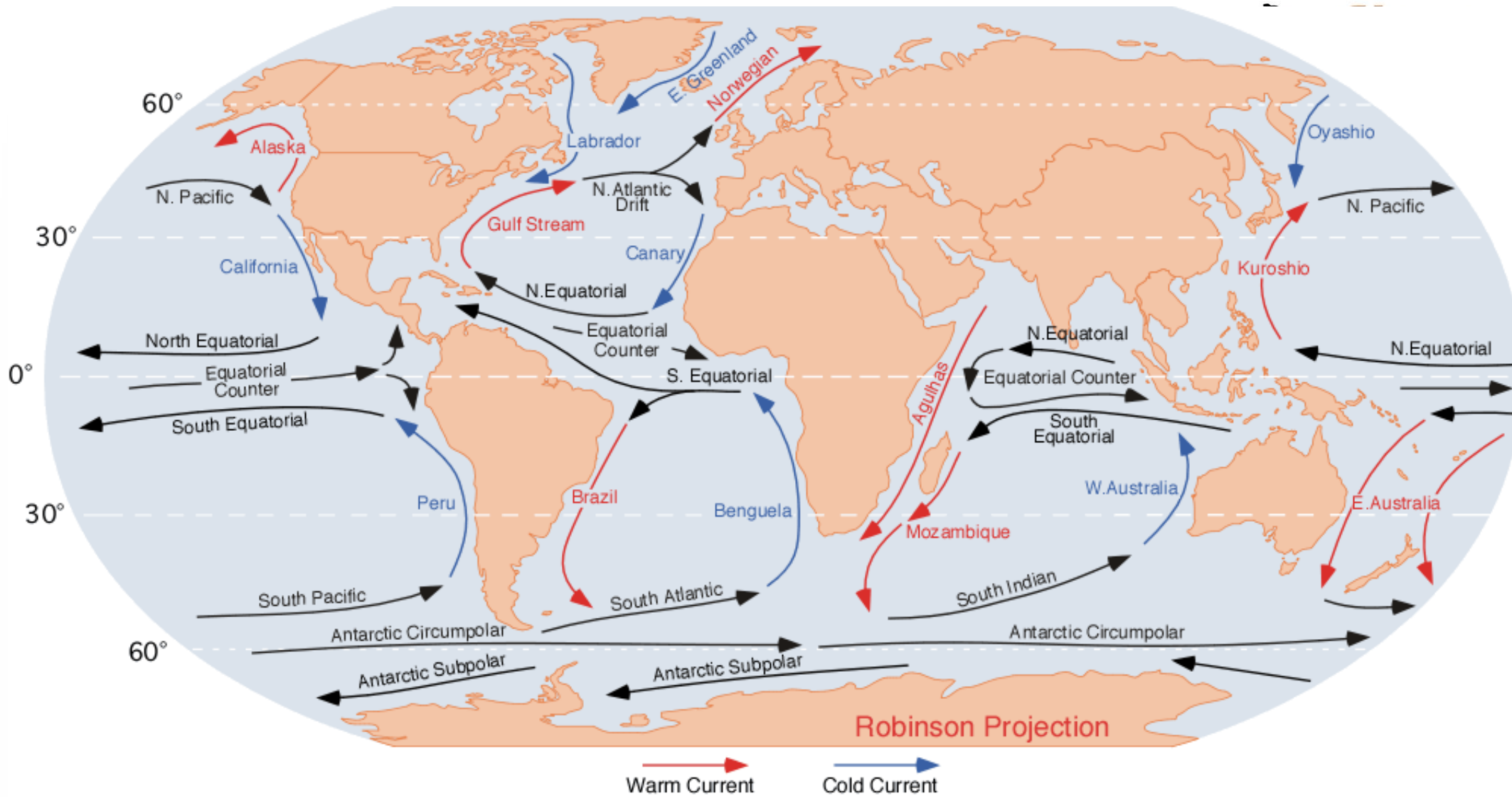
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Major Pressure Belts and Wind System





Dry Climates : B

- Dry climates are divided into steppe or semi-arid climate (BS) and desert climate (BW).
- They are further subdivided as subtropical steppe (BSh) and subtropical desert (BWh) at latitudes from 15° - 35° and mid-latitude steppe (BSk) and mid-latitude desert (BWk) at latitudes between 35° - 60°

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Dry Climates : B

- Subtropical steppe (BSh) and subtropical desert (BWh) have common precipitation and temperature characteristics.
- Located in the transition zone between humid and dry climates, subtropical steppe receives slightly more rainfall than the desert, adequate enough for the growth of sparse grasslands.
- The rainfall in both the climates is highly variable.
- The variability in the rainfall affects the life in the steppe much more than in the desert, more often causing famine.
- Rain occurs in short intense thundershowers in deserts and is ineffective in building soil moisture.
- Fog is common in coastal deserts bordering cold currents.
- Maximum temperature in the summer is very high.



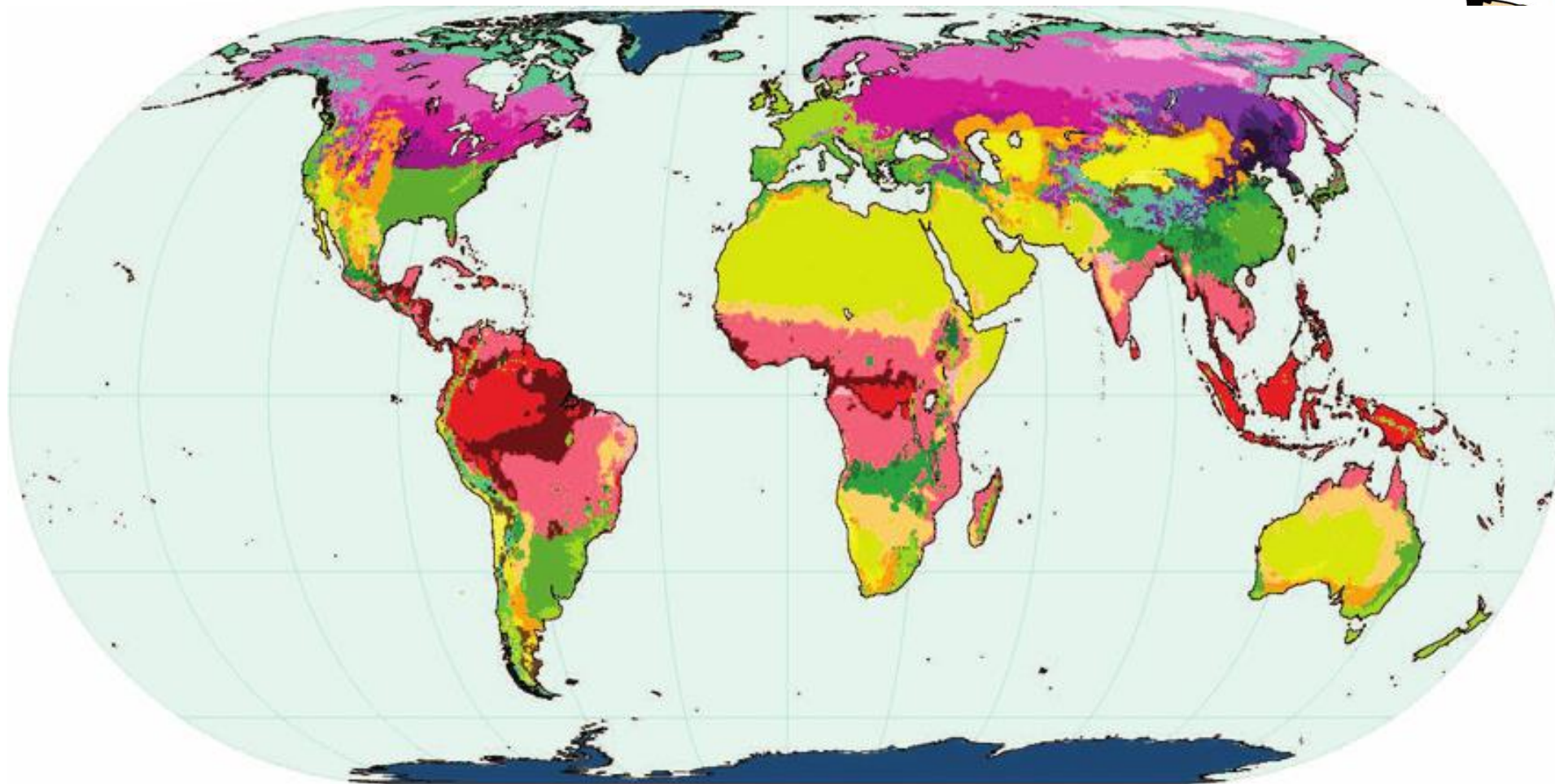
Warm Temperate (Mid-Latitude) Climates-C

- Warm Temperate (Mid-Latitude) Climates-C Warm temperate (mid-latitude) climates extend from 30° - 50° of latitude mainly on the eastern and western margins of continents.
- These climates generally have warm summers with mild winters.
- They are grouped into four types: (i) Humid subtropical, i.e. dry in winter and hot in summer (Cwa); (ii) Mediterranean (Cs); (iii) Humid subtropical, i.e. no dry season and mild winter (Cfa); (iv) Marine west coast climate (Cfb).
- Humid Subtropical Climate (Cwa) Humid subtropical climate occurs poleward of Tropic of Cancer and Capricorn, mainly in North Indian plains and South China interior plains. The climate is similar to Aw climate except that the temperature in winter is warm.

Warm Temperate (Mid-Latitude) Climates-C

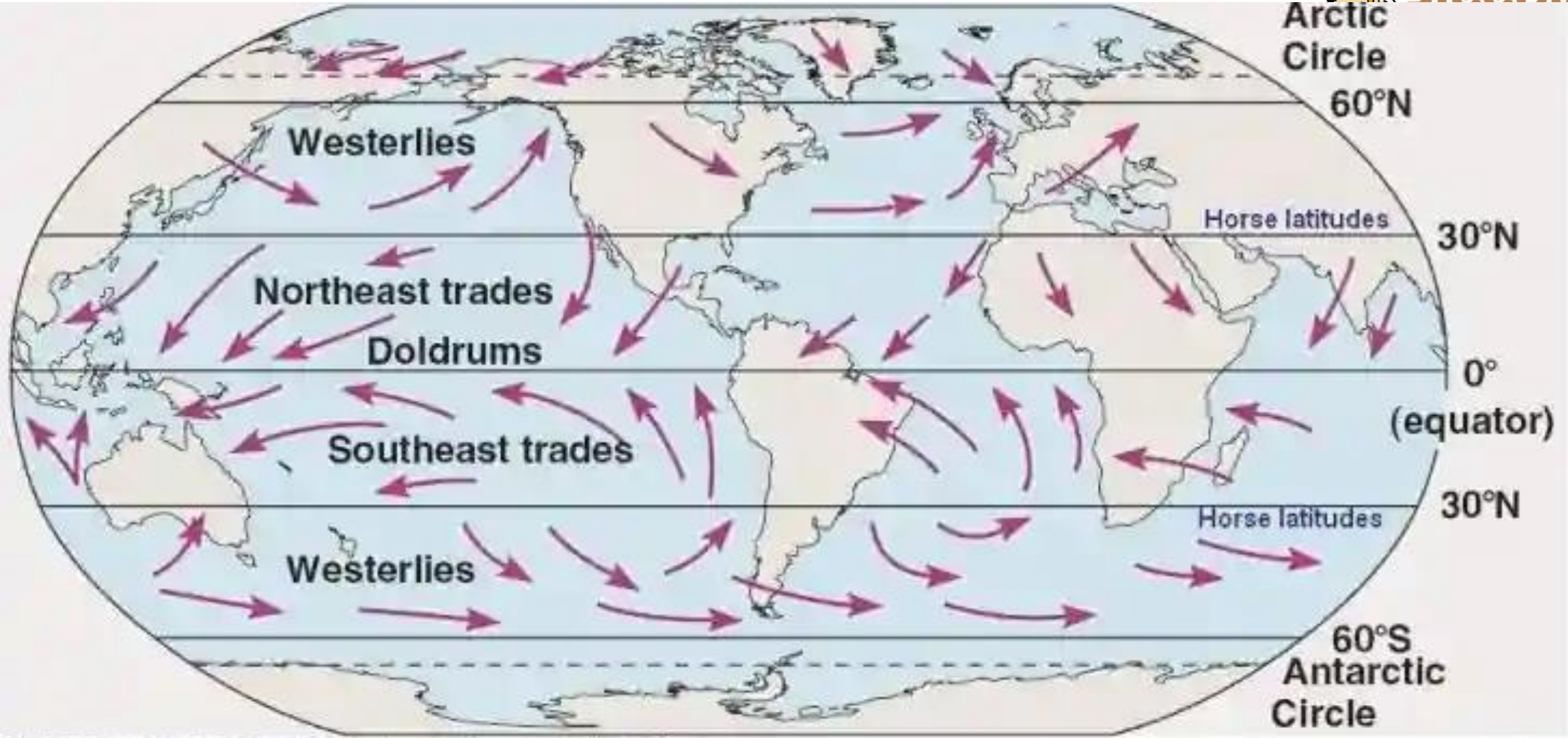
Mediterranean Climate (Cs)

- As the name suggests, Mediterranean climate occurs around Mediterranean sea, along the west coast of continents in subtropical latitudes between 30° - 40° latitudes e.g. – Central California, Central Chile, along the coast in south eastern and south western Australia.
- These areas come under the influence of sub tropical high in summer and westerly wind in winter.
- Hence, the climate is characterised by hot, dry summer and mild, rainy winter.
- Monthly average temperature in summer is around 25° C and in winter below 10°C. The annual precipitation ranges between 35 - 90 cm



Köppen climate classes by major types

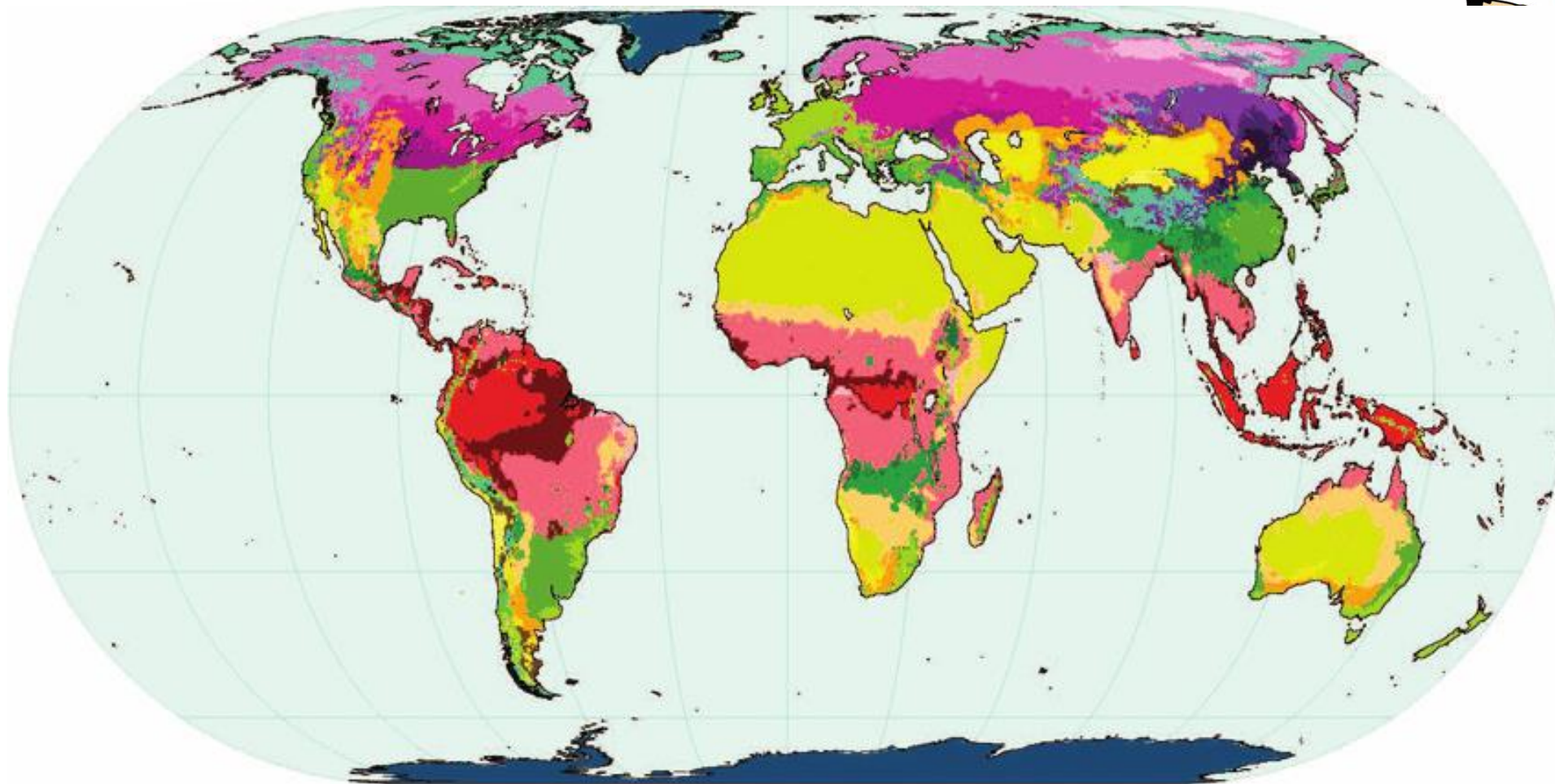
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Warm Temperate (Mid-Latitude) Climates-C

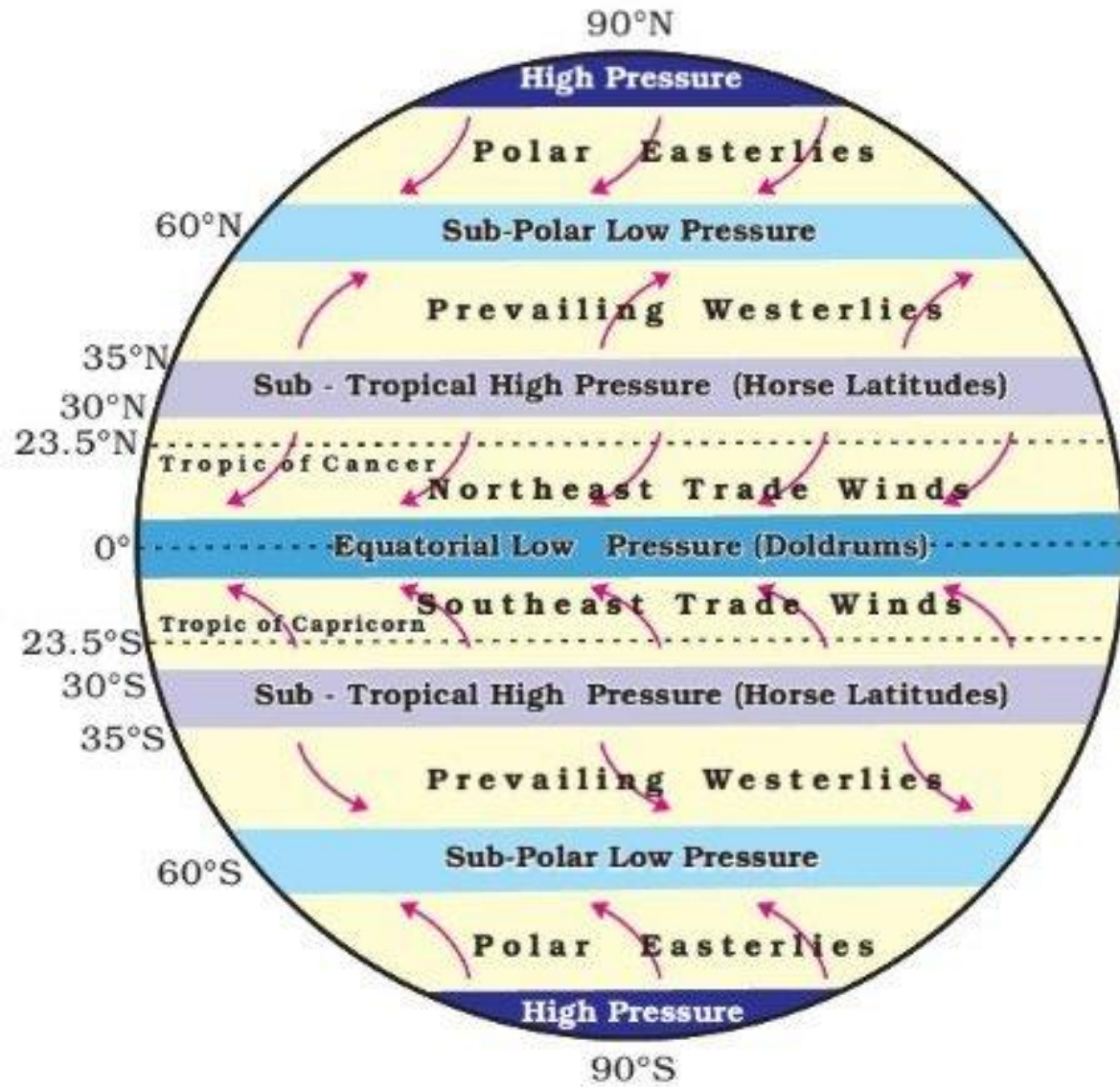
- **Humid Subtropical (Cfa)**

- Climate Humid subtropical climate lies on the eastern parts of the continent in subtropical latitudes.
- In this region the air masses are generally unstable and cause rainfall throughout the year.
- They occur in eastern United States of America, southern and eastern China, southern Japan, northeastern Argentina, coastal south Africa and eastern coast of Australia.
- The annual averages of precipitation vary from 75-150 cm. Thunderstorms in summer and frontal precipitation in winter are common.
- Mean monthly temperature in summer is around 27°C, and in winter it varies from 5°-12° C. The daily range of temperature is small.



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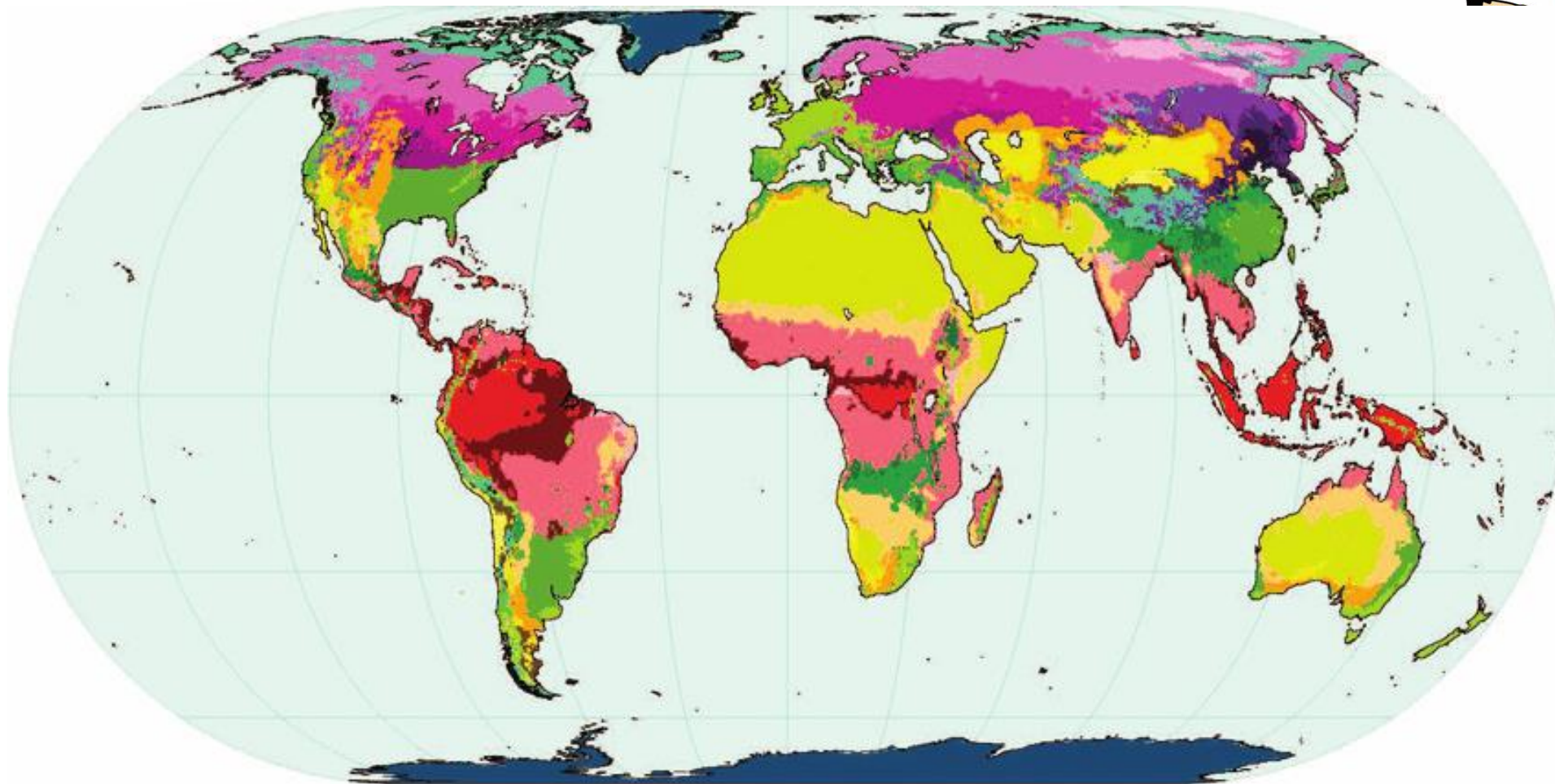
Major Pressure Belts and Wind System



Warm Temperate (Mid-Latitude) Climates-C

- Marine West Coast Climate (Cfb)

- Marine west coast climate is located poleward from the Mediterranean climate on the west coast of the continents.
- The main areas are: Northwestern Europe, west coast of North America, north of California, southern Chile, southeastern Australia and New Zealand.
- Due to marine influence, the temperature is moderate and in winter, it is warmer than for its latitude.
- The mean temperature in summer months ranges from 15°-20°C and in winter 4°-10°C. The annual and daily ranges of temperature are small. Precipitation occurs throughout the year



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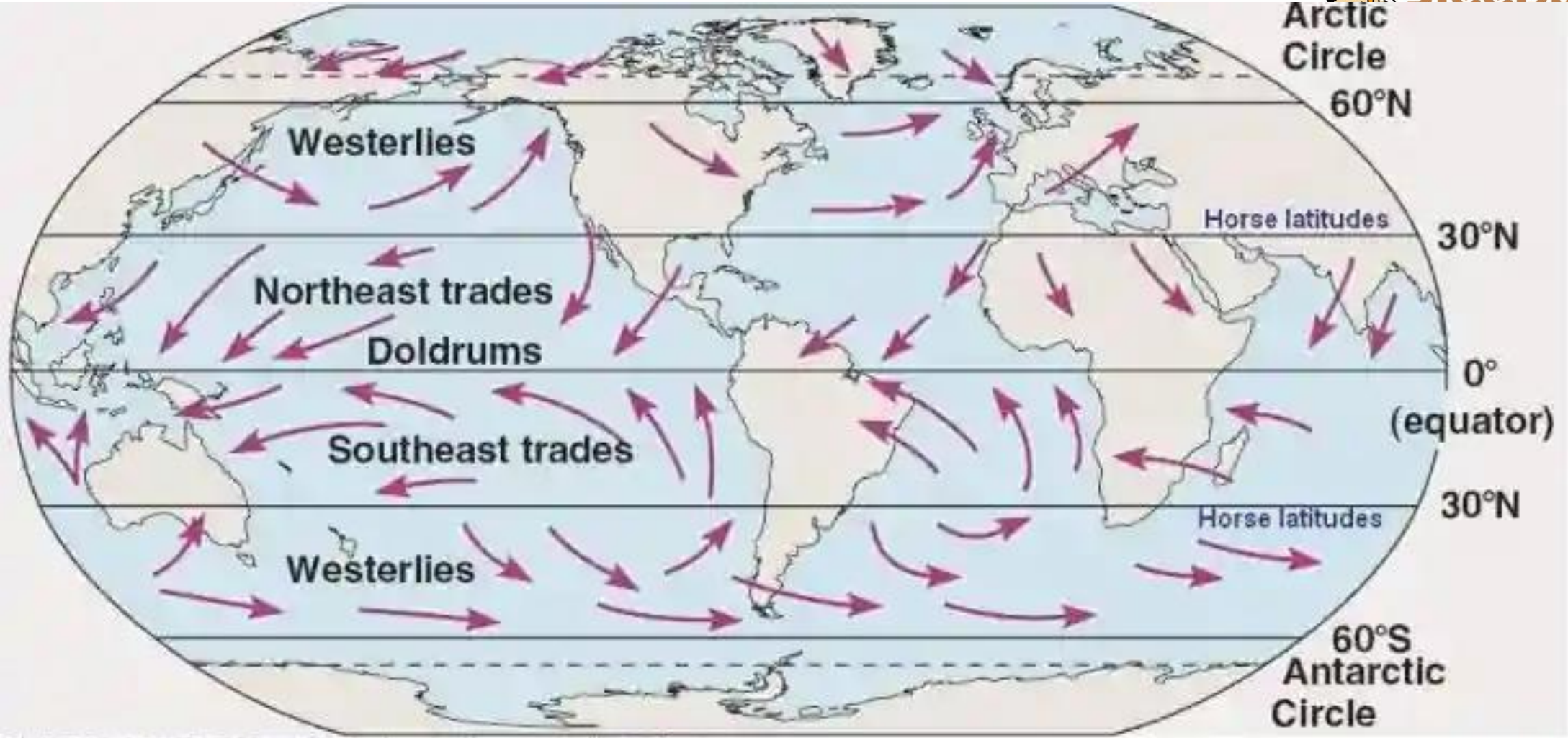
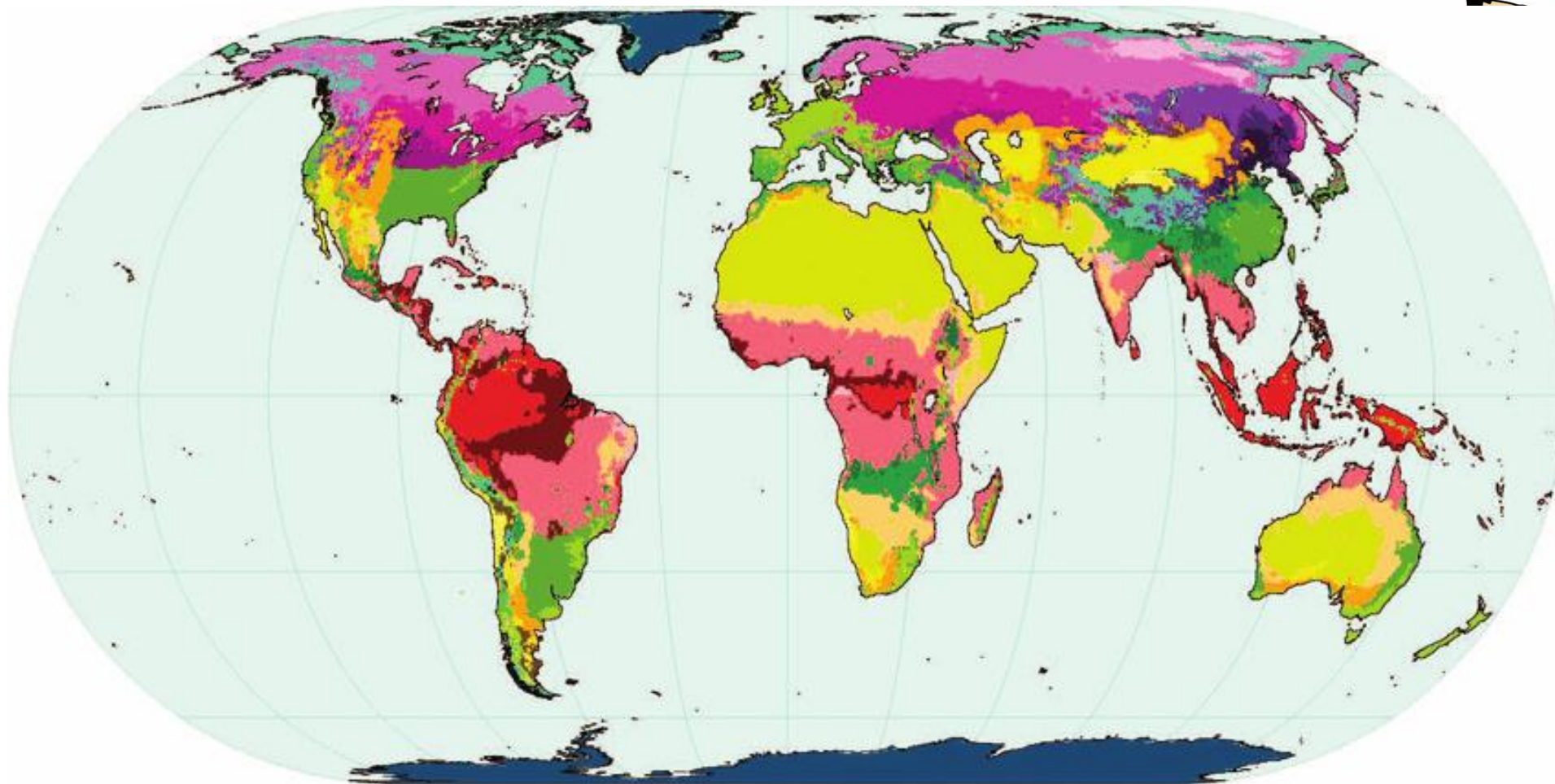


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Cold Snow Forest Climates (D)

- Cold snow forest climates occur in the large continental area in the northern hemisphere between 40°-70° north latitudes in Europe, Asia and North America.
- Cold snow forest climates are divided into two types:
 - (i) Df- cold climate with humid winter;
 - (ii) Dw- cold climate with dry winter.
- The severity of winter is more pronounced in higher latitudes.



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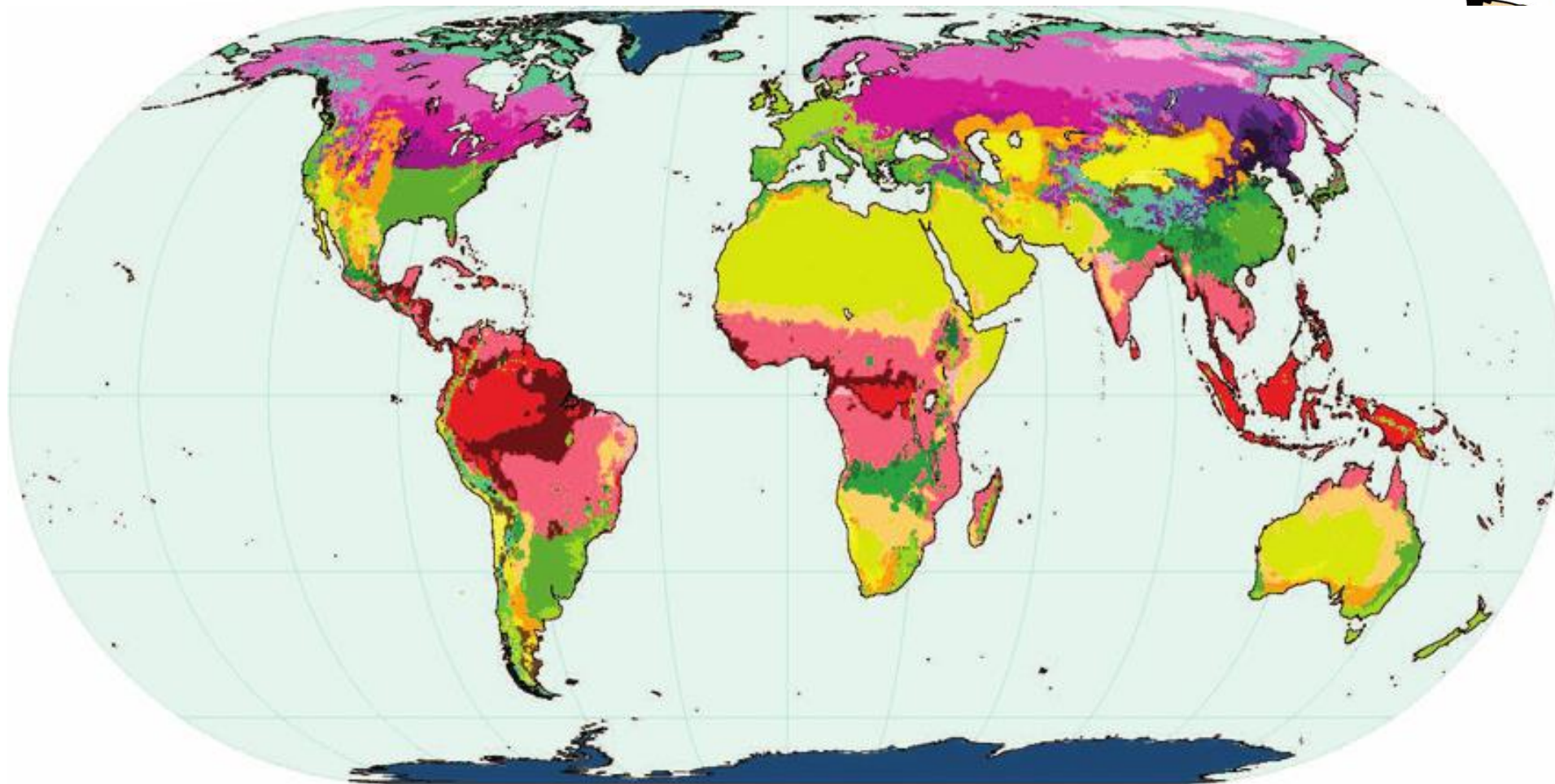
Cold Snow Forest Climates (D)

- Cold Climate with Humid Winters (Df)
- Cold climate with humid winter occurs poleward of marine west coast climate and mid latitude steppe.
- The winters are cold and snowy
- The frost free season is short.
- The annual ranges of temperature are large.
- The weather changes are abrupt and short.
- Poleward, the winters are more severe.

Cold Snow Forest Climates (D)

- Cold Climate with Dry Winters (Dw)
- Cold climate with dry winter occurs mainly over Northeastern Asia.
- The development of pronounced winter anti cyclone and its weakening in summer sets in monsoon like reversal of wind in this region.
- Poleward summer temperatures are lower and winter temperatures are extremely low with many locations experiencing below freezing point temperatures for up to seven months in a year.
- Precipitation occurs in summer.
- The annual precipitation is low from 12-15 cm





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Polar Climates (E)

- Polar climates exist poleward beyond 70° latitude.
- Polar climates consist of two types: (i) Tundra (ET); (ii) Ice Cap (EF)
- **Tundra Climate (ET) -**
- The tundra climate (ET) is so called after the types of vegetation, like low growing mosses, lichens and flowering plants.
- This is the region of permafrost where the sub soil is permanently frozen.
- The short growing season and water logging support only low growing plants.
- During summer, the tundra regions have very long duration of day light.





Polar Climates (E)

- Ice Cap Climate (EF) -
- The ice cap climate (EF) occurs over interior Greenland and Antarctica.
- Even in summer, the temperature is below freezing point.
- This area receives very little precipitation.
- The snow and ice get accumulated and the mounting pressure causes the deformation of the ice sheets and they break.
- They move as icebergs that float in the Arctic and Antarctic waters. Plateau Station , Antarctica ,79°S, portray this climate.

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Highland Climates (H)

- Highland climates are governed by topography.
- In high mountains, large changes in mean temperature occur over short distances.
- Precipitation types and intensity also vary spatially across high lands.
- There is vertical zonation of layering of climatic types with elevation in the mountain environment.

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THANK YOU