Koppen Climate Classification System

By Matt Rosenberg, About.com Guide

Giving a talk some years ago at a convention of bankers in some remote resort in Arizona, I showed the Koppen-Geiger map of world climates, and explained in very general terms what the colors represent. The corporation's president was so taken by this map that he wanted it for his company's annual report - it would be so useful, he said, in explaining to representatives posted overseas what they might experience in the way of climate and weather. He had, he said, never seen this map, or anything like it; of course he would have if he had taken an introductory geography course. Every textbook has a version of it... - Harm de Blij

Various attempts have been made to classify the climates of the earth into climatic regions. One notable, yet ancient and misguided example is that of Aristotle's Temperate, Torrid, and Frigid Zones. However, the 20th century classification developed by German climatologist and amateur botanist Wladimir Koppen (1846-1940) continues to be the authoritative map of the world climates in use today.

Introduced in 1928 as a wall map co-authored with student Rudolph Geiger, the Koppen system of classification (overview map) was updated and modified by Koppen until his death. Since that time, it has been modified by several geographers. The most common modification of the Köppen system today is that of the late University of Wisconsin geographer Glen Trewartha.

The modified Koppen classification uses six letters to divide the world into six major climate regions, based on average annual precipitation, average monthly precipitation, and average monthly temperature.

* A for Tropical Humid
* B for Dry
* C for Mild Mid-Latitude
* D for Severe Mid-Latitude
* E for Polar
* H for Highland (this classification was added after Köppen created his system)

Each category is further divided into sub-categories based on temperature and precipitation. For instance, the U.S. states located along the Gulf of Mexico are designated as "Cfa." The "C" represents the "mild mid-latitude" category, the second letter "f" stands for the German word feucht or "moist," and the third letter "a" indicates that the average temperature of the warmest month is above 72°F (22°C). Thus, "Cfa" gives us a good indication of the climate of this region, a mild mid-latitude climate with no dry season and a hot summer.

While the Koppen system doesn't take such things as temperature extremes, average cloud cover, number of days with sunshine, or wind into account, it's a good representation of our earth's climate. With only 24 different subclassifications, grouped into the six categories, the system is easy to comprehend.

Koppen's system is simply a guide to the general climate of the regions of the planet, the borders do not represent instantaneous shifts in climate but are merely transition zones where climate, and especially weather, can fluctuate.

Koppen Climate Classification Chart

[Click here for an overview of the Köppen System]

A	**Tropical humid**	Af	Tropical wet	No dry season
		Am	Tropical monsoonal	Short dry season; heavy monsoonal rains in other months
		Aw	Tropical savanna	Winter dry season
B	**Dry**	BWh	Subtropical desert	Low-latitude desert
		BSh	Subtropical steppe	Low-latitude dry
		BWk	Mid-latitude desert	Mid-latitude desert
		BSk	Mid-latitude steppe	Mid-latitude dry
C	**Mild Mid-Latitude**	Csa	Mediterranean	Mild with dry, hot summer
		Csb	Mediterranean	Mild with dry, warm summer
		Cfa	Humid subtropical	Mild with no dry season, hot summer
		Cwa	Humid subtropical	Mild with dry winter, hot summer
		Cfb	Marine west coast	Mild with no dry season, warm summer
		Cfc	Marine west coast	Mild with no dry season, cool summer
D	**Severe Mid-Latitude**	Dfa	Humid continental	Humid with severe winter, no dry season, hot summer
		Dfb	Humid continental	Humid with severe winter, no dry season, warm summer
		Dwa	Humid continental	Humid with severe, dry winter, hot summer
		Dwb	Humid continental	Humid with severe, dry winter, warm summer
		Dfc	Subarctic	Severe winter, no dry season, cool summer
		Dfd	Subarctic	Severe, very cold winter, no dry season, cool summer
		Dwc	Subarctic	Severe, dry winter, cool summer
		Dwd	Subarctic	Severe, very cold and dry winter, cool summer
E	**Polar**	ET	Tundra	Polar tundra, no true summer
		EF	Ice Cap	Perennial ice
H	**Highland**