

# Andes Mountain Climate

## Highland Climate (H)

The Andes mountain climate is one of the most interesting climates in the world, because it changes drastically throughout the region. For instance, in Ecuador there are some tropical rainforests and just a couple of miles away is Cotopaxie, a frosted peak. Another thing about the Andes Mountain climate is that the temperature changes drastically when you move to a neighboring country, such as from Colombia to Ecuador. In Colombia it rains often, but in Ecuador it is usually dry. The climate is split up in many different zones. Tierra caliente is the hot land, where jungles, fruit and crocodiles grow and live, but paramo (wasteland) is a hardy place where the only things that can survive are lichens and mosses.

The Andes Mountains have a very high snow line in Peru and northern Chile reaching an altitude of over 19,000 feet. The Andes Mountains are the longest stretch of mountains in the world. They stretch for 4,500 miles on the west coast of South America. It is one of the highest mountain ranges in the world. The peak called Anconcagua in Argentina is 22,834 feet high. The Andes Mountains, even though they are very tall, do not compare with the Himalayas, which are still more rugged and taller.

The Köppen climate classification system is a way of showing on a map where certain climates are found. Vladimir Köppen devised it in 1918. The climates, precipitation and temperature classify it month by month. The Köppen system represents each climate by one or more letters. For instance, in **Af** the **A** stands for heat and precipitation, and **f** stands for precipitation in all months, which is the climate zone for rainforests. **H** stands for highland, or mountain climates.

The following classifications are the classifications for the biomes at the base and around the Andes Mountains. As you go up the mountains the temperature goes down. The classification surrounding the Andes Mountains starting with Colombia is **Af**, which equals tropical rainforest climates. This is where you find the "cloud forests" of the Andes. Moist, warm air meets cold mountain air which creates mists or clouds most of the year. In Ecuador the classification is **Aw** which is Tropical climates and has its dry season in winter. The Andes experience a summer and winter season here. In Peru the classification is also **Aw** and that is tropical climates and desert climates. High altitude plains are found here. In Bolivia the classification is **Bwh**. That is dry climates, with desert climates and dry and hot. Chile has two classifications, which are **Csb** and **Cfb**. **Csb** is warm temperatures, dry season is in summer and warmest month is 71.6°F. **Cfb** is Warm temperatures, precipitation in all months and warmest month is 71.6°F. Argentina is **Bwk**. That means dry climates, dry season in winter and dry and cold. All of the Andes Mountains are classified as **H**.

The temperatures of the biomes around the Andes Mountains vary from place to place. In Colombia it is wet and warm, with an average temperature of 64°F. In Ecuador it is very warm in the deserts and the average is 68°F and stays that temperature through out Peru, until you get to Bolivia. In Bolivia you would find that it is dry and hot with an average of 64°F. Then you would find the last and

largest country that is home to the Andes Mountains, Chile. Chile is split up into two different temperature regions; the northern part of Chile has an average of 64°F, and the southern part has an average of 71°F. In winter the temperatures usually average about less than 52°F. In the summer it usually averages 68°F. These temperatures are mainly from biomes around and in the Andes Mountains.

The precipitation of the Andes Mountain climate changes but not drastically between two places. In Colombia there is a lot of rainfall all year round. In Ecuador there is the desert climate without much rainfall. Peru is similar to Ecuador. In Chile there are two different climates but in both there is a sufficient rainfall all year round. The rain fall in the summer averages less than 8 in. In the winter it averages less than 4 in. These numbers are from biomes in and around the Andes Mountains.

The Andes Mountain climate extends from at latitude 10°North latitude to 50° South and longitude 65° to 80° West.

by Christian C. 2002

---

### **bibliography:**

"Andean Climate", <http://www.ddg.com/LIS/aurelia/andcli.htm>

(November 2001)

Jacobson, Daniel. (1998). "Andes". Grolier. Connecticut.

Critchfield, Howard. 1998. "Climate". Grolier. Connecticut.

Strahler, Arthur. & Strahler, Alan. Elements of Physical Geography. New York.

Anderson, James. World Atlas. New York. Dorling Kindersley. (1997).

29 November 2010 | Marianna Keen

**Conflicts for water are having a major impact on livelihoods, tourism and economies while expectations for climate talks in Cancun are dwindling.**

This year temperature records were set in 17 countries from Finland to Colombia and more than 700 extreme weather natural disasters have occurred throughout the world, according to UN records. Hundreds of millions of people have been displaced and have been forced to adapt to major climate changes for which they are not responsible. The 16th Conference of Parties (COP16), which began today, is being anxiously awaited.

Farming in the Andes has changed to the point where locals fear that soon the land will no longer be habitable. The changing weather and drying out of streams and rivers have changed the landscape and threatened agriculture and livelihoods to the extreme. Water has become increasingly valuable in the Andes and the situation is leading to rising conflict.

Organisations including Oxfam are examining solutions to help vulnerable communities adapt, such as by helping to install irrigation systems. Increasing demand for irrigation and drinking water is draining aquifers faster than they can naturally refill, and a scheme to channel more water from the Andean highlands, which receive seasonal rainfall, is resulting in dispute between big agribusinesses on the coast and provincial llama herders in the mountains.

Tourism has also been impacted in the region following conflicts for water. In September, authorities in Peru suspended train services to the Inca citadel Machu Picchu due to protests over an irrigation project, which is feared to leave communities without water.

Today, 193 governments are meeting in Cancun to agree a climate plan to succeed the Kyoto Protocol over the next twelve days. With modest ambitions set, and tension between richer nations continuing, the prospects for the conference are widely perceived to have diminished. Latin American governments, along with the World Bank, have been working to create a new framework that places water at the centre of the adaptation agenda at COP16, highlighting the urgency of the matter.

The Latin American governments involved, including Mexico and Peru have aimed for a policy victory in Cancun, which is achievable and legally binding. The hope is that by creating a new set of issues that escape the existing stalemates, a failure such as that in Copenhagen can be overcome and an agreement can be forged.

"Water belongs to the people who need it most, and we need it most," says Gino Gotuzzo, of the Farmers Association of Ica, Peru, in an interview with the Guardian. Governments, corporations and communities all anticipate the progress in Cancun in the coming days; however with many groups in conflict, there is concern about whether the requirements of all can be met.

Author: Marianna Keen | Climate Action

According to Carlos Amat y Leon, Peru's former agriculture minister and coordinator of the research team, this is equivalent to "the amount that [the Andean] countries devote to public health expenses today".

He adds that the estimated cost could be higher if losses in biodiversity and clean water supply, damage to human health, and El Niño-related impacts are also taken into account.

The researchers extrapolated data from a range of international studies about the economic impact of natural disasters in the four countries, such as floods and avalanches. They analysed the cost of rebuilding houses and infrastructure, as well as the relocation of the affected population, Amat y Leon told SciDev.Net.

They conclude that investment in scientific research is crucial to evaluate changes in Andean and Amazonian ecosystems — namely their effects on biodiversity, economic and social infrastructure — and the development models of the countries themselves.

The study also highlights the key role in the region played by the Andes, which provides ten per cent of global water sources through to its glaciers. Experts say that the melting of glaciers in central Andes has accelerated over the last 25 years.

The researchers say that the Andean countries provide a clear indication of the impact of climate change worldwide in the future, making it the ideal place to try technologies and scientific methods to prevent, reduce and adapt infrastructure to a range of challenges.

The study also predicts that 70 per cent of Andean people will have severe difficulties in accessing clean water sources by 2025. By 2020, about 40 million people will be at risk of losing their water supplies as well as some crops, due to the melting of the glaciers and greater desertification of the Andean mountains.

The study was presented at the Summit of Latin American, Caribbean and European countries held in Lima, Peru, last week (15—18 May).