
Variations on Climatic and whether conditions on different zone

Climate isn't the same thing as weather. Weather is the condition of the atmosphere over a short period of time; climate is the average course of weather conditions for a particular location over a period of many years.

One of the factors that influences climate is the angle of the sun's rays. In the tropics, between 23.5° N and 23.5° S, there is at least one time of year when the noontime sun is directly overhead and its rays hit at a direct angle. This produces a hot climate with relatively small temperature differences between summer and winter. Climate is also controlled by wind, oceans, and mountains. Winds bring moisture to land. North and south of the Equator, the trade winds blow from the northeast and southeast, respectively. These winds converge in the tropics, forcing air to rise. This produces thunderstorms, humidity, and monsoons.

Mountains force wind to rise as it crosses over them. This cools the air, causing moisture to condense in clouds and rain. This produces a wet climate on the upwind side of the mountains and an arid "rain shadow" on the downwind side. Moist, tropical climates are hot and humid. Steppes and deserts are dry, with large temperature variations. Plentiful lakes, rivers, or nearby oceans give humid, middle altitude climates cool, damp winters, but they have hot, dry summers. Some of these climates are also called Mediterranean. There is a vast variety of end uses to weather forecasts. Weather warnings are important forecasts because they are used to protect life and property. Forecasts based on temperature and precipitation are important to agriculture, and therefore to traders within commodity markets. Temperature forecasts are used by utility companies to estimate demand over coming days. On an everyday basis, many use weather forecasts to determine what to wear on a given day. Since outdoor activities are severely curtailed by heavy rain, snow and wind chill, forecasts can be used to plan activities around these events, and to plan ahead and survive them. Weather forecasting is a part of the economy, for example, in 2009, the US spent approximately \$5.1 billion on weather forecasting, producing benefits estimated at six times as much. Continental climates occur in the centers of large continents.

The weather has a lot of different factors. When someone asks how the weather is today, you need to think about temperature, humidity, precipitation, wind, cloudiness, and atmospheric pressure. All these different parts work together to create the weather you see when you walk out the door.

Climatology and Weather Forecasting is important since it helps determine future climate expectations. Through the use of latitude, one can determine the likelihood of snow and hail reaching the surface. You can also be able to identify the thermal energy from the sun that is accessible to a region. Climatology is the scientific study of climates, which is defined as the mean weather conditions over a period of time. A branch of study within atmo-

spheric sciences, it also takes into account the variables and averages of short-term and long-term weather conditions. Climatology is different than meteorology and can be divided into different areas of study. Various approaches to this field can be taken, including paleoclimatology, which focuses on studying the climate over the course of the Earth's existence by examining records of tree rings, rocks and sediment, and ice cores. Historical climatology focuses primarily on climate changes throughout history and the effects of the climate on people and events over time. Though both climatology and meteorology are areas of study that are considered branches of similar areas of study, climatology differs from meteorology because its focus is on averages of weather and climatic conditions over a long period of time. Meteorology focuses more on current weather conditions such as humidity, air pressure, and temperatures and forecasting the short-term weather conditions to come. The mission of the Climatology and Weather Forecasting uses provides a forum for publishing new findings on Environmental principles and technology. Currently our primary research objective is to encourage and assist the development of better and faster measures of Environmental activity. In cases where we believe we can contribute directly, as opposed to through highlighting the work of others, we are producing our own measures of Climatology and Weather Forecasting. The weather affects us in many ways. Day-to-day changes in weather can influence how we feel and the way we look at the world. Severe weather, such as tornadoes, hurricanes, and blizzards, can disrupt many people's lives because of the destruction they cause.

Humidity refers to the amount of water vapour in the air. Water vapour is a gas in the atmosphere that helps make clouds, rain, or snow. Humidity is usually expressed as relative humidity, or the percentage of the maximum amount of water air can hold at a given temperature. Cool air holds less water than warm air. At a relative humidity of 100 percent, air is said to be saturated, meaning the air cannot hold any more water vapour. Excess water vapour will fall as precipitation. Clouds and precipitation occur when air cools below its saturation point. This usually happens when warm, humid air cools as it rises.

Cloud patterns indicate the presence of weather systems, which produce most of the weather we are familiar with: rain, heat waves, cold snaps, humidity, and cloudiness. Weather systems are simply the movement of warm and cold air across the globe. These movements are known as low-pressure systems and high-pressure systems.