

Distribution of Land

There are a variety of different landforms that can be found in many locations. These include mountains, plains, valleys and plateaus. All of them have different identifying characteristics. These landforms can be found all over the world and can exist simultaneously.

Mountains:



The mighty chunks rise all over the world, including the oceans. They usually have steep, sloping sides and sharp or rounded ridges, and a high point, called a peak or summit. Most geologists classify a mountain as a landform that rises at least 1,000 feet (300 meters) or more above its surrounding area. A mountain range is a series or chain of mountains that are close together.

- How They Formed?

Mountains are formed when there is movement in the Earth's crust. The collision of two plates causes the land to be pushed upwards, resulting in the formation of mountains. They may also be formed as a result of volcanic activity. The world's tallest mountain ranges form when pieces of Earth's crust—called plates—smash against each other in a process called **plate tectonics**, and buckle up like the hood of a car in a head-on collision. The Himalaya in Asia formed from one such massive wreck that started about 55 million years ago. Thirty of the world's highest mountains are in the Himalaya. The summit of Mount Everest, at 29,035 feet (8,850 meters), is the highest point on Earth. The basic types of mountains are folded mountains, fault-block Mountains, Dome Mountains and volcanic mountains.

• IMPACT OF MOUNTAINS ON HABITATS AND GEOPOLITICS:

Mountains often serve as geographic features that define natural borders of countries. Their height can influence weather patterns, stalling storms that roll off the oceans and squeezing water from the clouds. The other side is often much drier. The rugged landscapes even provide refuge—and protection—for fleeing and invading armies.

Plains:



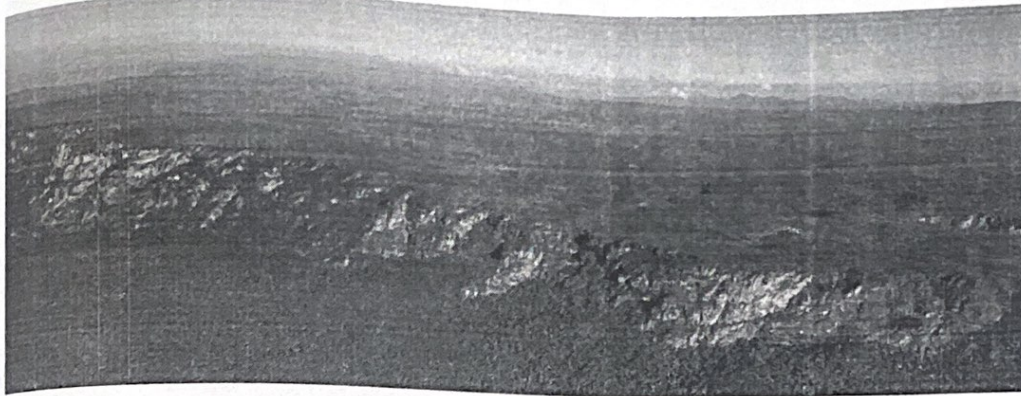
A plain landform is land that is relatively flat and does not change much in elevation within a common area. A plane is a low-lying area of land that can range from a height of above 160 meters above sea level to laying many meters below sea level. Plains vary widely in size. The smallest occupy only a few hectares, whereas the largest cover hundreds of thousands of square kilometers as, for example, the Great Plains of North America. There are a few ways that plains were and are formed. The first plains were created from lava flowing on Earth. Lava can burn things and make things that were almost flat, flatter. Planes can be formed by the uplift of sea coast, erosion from glaciers, wind and water.

List of famous plains:

- Australian Plains, Australia
- Canterbury Plains, New Zealand
- Gangetic Plains of India, Bangladesh, North India and Nepal
- Great Plains, USA
- Indus Valley Plain, Pakistan
- Kantō Plain, Japan
- Nullarbor Plain, Australia
- Khuzestan Plain, Iran
- Mazandaran Plain, Iran
- Pannonian Plain, Central Europe

- Salisbury Plain, England
- Alexis Leigh Plain, USA

Plateaus:



Plateau, extensive area of flat upland usually bounded by an escarpment (i.e., steep slope) on all sides but sometimes enclosed by mountains. The essential criteria for plateaus are low relative relief and some altitude. A plateau is a landform that has a plain crest area and is higher than its surroundings on one side or more. Plateaus can be formed by lava, water erosion, glaciers and wind. Their surfaces are often plain due to erosion.

- Intermountain Plateaus

Many plateaus are located in or near mountain ranges, where tectonic uplift raised broad areas of flat land as a single unit. As a group, they are called **intermontane plateaus**. Let's look at these more closely.

The largest plateaus on Earth formed where two tectonic plates collided. Because they are lifted far above sea level, they are known as **high altitude plateaus**. The largest and highest is the **Tibetan Plateau** in South-Central Asia, which is a flat valley floor at about 15,000 feet above sea level, rimmed on the south by the Himalayas.

The **Altiplano**, which literally means 'high plain,' is located in the Andes in western South America. It is the second largest high altitude plateau in the world, and it lies at an elevation above 12,000 feet.

Valleys:



A valley is an erosion landform that is commonly found in mountainous regions. Valleys can be carved by the flow of rivers as well as the movement of glaciers through already existing spaces. They can be U shaped or V shaped.

Some Facts about Valleys:

- When water flows from a mountain, the steeper it is the faster the water flows, and the deeper the valley it is that is created.
- The water flowing from the mountain to create the valley is from rain, snow, and melting ice. This water carves away at the mountain and the earth below for millions of years to create valleys.
- Large valleys created by glaciers are U-shaped, created over many thousands or millions of years as the large sheets of ice move down a mountain. These glaciers often follow a river valley, and change its shape from V to U.
- When a valley is not created by a river or glacier it is usually just because two plates don't completely touch.
- The weather in a valley is often protected from harsh storms and winds, but many are susceptible to flooding.
- Famous V-shaped valleys include Iao Valley in Hawaii, and the Muretto Pass in the Swiss Alps.
- Famous wider valleys in hilly country include the Loire Valley in France, the Moselle River Valley in Germany, and the Uruguay River Valley in Argentina.
- Flat country valleys tend to be almost flat, often with rivers. Examples of these types of valleys include the Nile River Valley, the Euphrates Valley in Iraq, the Danube Valley in Romania, and the Ganges River Valley at Varanasi.

- Famous valleys made by glaciers include the Mattertal in Switzerland, and the Fjaerland Fjord in Norway.

Types of Valleys:

There are following types of valleys.

- V-shaped:

A V-shaped valley, sometimes called a river valley, is a narrow valley with steeply sloped sides that appear similar to the letter "V" from a cross-section. They are formed by strong streams, which over time have cut down into the rock through a process called down cutting.

- U-shaped:

A U-shaped valley is a valley with a profile similar to the letter "U." They are characterized by steep sides that curve in at the base of the valley wall. They also have broad, flat valley floors. U-shaped valleys are formed by glacial erosion as massive mountain glaciers moved slowly down mountain slopes during the last glaciations. U-shaped valleys are found in areas with high elevation and in high latitudes, where the most glaciations has occurred.

- Flat-Floored Valley:

The third type of valley is called a flat-floored valley and is the most common type in the world. These valleys, like V-shaped valleys, are formed by streams, but they are no longer in their youthful stage and are instead considered mature. With these streams, as the slope of a stream's channel becomes smooth, and begins to exit the steep V or U-shaped valley, the valley floor gets wider. Because the stream gradient is moderate or low, the river begins to erode the bank of its channel instead of valley walls. This eventually leads to a meandering stream across a valley floor.

An example of a flat-floored valley is the Nile River Valley.

Distribution of Water

Earth is known as the "Blue Planet" because 71 percent of the Earth's surface is covered with water. Water also exists below land surface and as water vapor in the air. Water is a finite source. The bottled water that is consumed today might possibly be the same water that once trickled down the back of a woolly mammoth. The Earth is a closed system, meaning that very little matter, including water, ever leaves or enters the atmosphere; the water that was here billions of years ago is still here now. But, the Earth cleans and replenishes the water supply through the hydrologic cycle.

The earth has an abundance of water, but unfortunately, only a small percentage (about 0.3 percent), is even usable by humans. The other 99.7 percent is in the oceans, soils, icecaps, and floating in the atmosphere. Still, much of the 0.3 percent that is useable is unattainable. Most of the water used by humans comes from rivers. The visible bodies of water are referred to as surface water. The majority of fresh water is actually found underground as soil moisture and in aquifers. Groundwater can feed the streams, which is why a river can keep flowing even when there has been no precipitation. Humans can use both ground and surface water.

Distribution of the Water on Earth:

- Ocean water: 97.2 percent
- Glaciers and other ice: 2.15 percent
- Groundwater: 0.61 percent
- Fresh water lakes: 0.009 percent
- Inland seas: 0.008 percent
- Soil Moisture: 0.005 percent
- Atmosphere: 0.001 percent
- Rivers: 0.0001 percent.

Surface Water:

Surface waters can be simply described as the water that is on the surface of the Earth. This includes the oceans, rivers and streams, lakes, and reservoirs. Surface waters are very important. They constitute approximately 80 percent of the water used on a daily basis. In 1990, the United States alone used approximately 327,000 billion gallons of surface water a day. Surface waters make up the majority of the water used for public supply and irrigation. It plays less of a role in mining and livestock industries. Oceans, which are the largest source of surface water, comprise approximately 97 percent of the Earth's surface water. However, since the oceans have high salinity, the water is not useful as drinking water. Efforts have been made to remove the salt from the water (desalination), but this is a very costly endeavor. Salt water is used in the mining process, in industry, and in power generation. The oceans also play a vital

role in the hydrologic cycle, in regulating the global climate, and in providing habitats for thousands of marine species.

➤ The water cycle:

The hydrologic cycle or water cycle is a graphic representation of how water is recycled through the environment. Water molecules remain constant, though they may change between solid, liquid, and gas forms. Drops of water in the ocean evaporate, which is the process of liquid water becoming water vapor. Evaporation can occur from water surfaces, land surfaces, and snow fields into the air as water vapor. Moisture in the air can condense, which is the process of water vapor in the air turning into liquid water. Water drops on the outside of a cold glass of water are condensed water. Condensation is the opposite process of evaporation. Water vapor condenses on tiny particles of dust, smoke, and salt crystals to become part of a cloud. After a while, the water droplets combine with other droplets and fall to Earth in the form of precipitation (rain, snow, hail, sleet, dew, and frost). Once the precipitation has fallen to Earth, it may go into an aquifer as groundwater or the drop may stay above ground as surface water. The hydrologic cycle is an important concept to understand.

Glaciers and Ice Caps:

Glaciers and icecaps are referred to as storehouses for fresh water. They cover 10 percent of the world's land mass. These glaciers are primarily located in Greenland and Antarctica. The glaciers in Greenland almost cover the entire land mass. Glaciers begin forming because of snowfall accumulation. When snowfall exceeds the rate of melting in a certain area, glaciers begin to form. This melting occurs in the summer. The weight of snow accumulating compresses the snow to form ice. Because these glaciers are so heavy, they can slowly move their way down hills.

Groundwater:

Groundwater is defined as water that is found beneath the surface of the Earth in conditions of 100 percent saturation (if it is less than 100 percent saturation, then the water is considered soil moisture). Ninety-eight percent of Earth's available fresh water is groundwater. It is about 60 times as plentiful as the fresh water found in lakes and streams. Water in the ground travels through pores in soil and rock, and in fractures and weathered areas of bedrock. The amount of pore space present in rock and soil is known as porosity. The ability to travel through the rock or soil is known as permeability. The permeability and porosity measurements in rock and/or soil can determine the amount of water that can flow through that particular medium. A "high" permeability and porosity value means that the water can travel quickly.

❖ Conclusion:

Water on Earth is a finite source. Protecting the water means protecting all forms of the form and as precipitation. Groundwater can be found in aquifers. Water found on Earth surface under the ground, in vapor crude oil leaks to acid rain generated from coal burning). Acid rain falls onto the land and flows into the surface water, back into the ground, and back into the air. It can be an endless cycle. As contamination infiltrates the water cycle, more water will be impacted. Most of the water on Earth is saline. Fresh water is and will be in demand and become a very valuable resource. Care must be taken to prevent overuse of potable water sources. Care must also be taken to protect the Earth's waters from contamination. Water is indeed a valuable resource.