

## Encyclopedic Entry

# South America: Physical Geography

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South America, the fourth-largest [continent](#), extends from the [Gulf](#) of Darién in the northwest to the [archipelago](#) of Tierra del Fuego in the south.

South America's [physical geography](#), [environment](#) and [resources](#), and [human geography](#) can be considered separately.

South America can be divided into three physical [regions](#): [mountains](#) and highlands, river [basins](#), and [coastal plains](#). Mountains and coastal plains generally run in a north-south direction, while highlands and river basins generally run in an east-west direction.

South America's extreme geographic variation contributes to the continent's large number of biomes. A [biome](#) is a community of animals and plants that spreads over an area with a relatively uniform [climate](#).

Within a few hundred kilometers, South America's coastal plains' dry [desert](#) biome rises to the rugged [alpine](#) biome of the Andes mountains. One of the continent's river basins (the Amazon) is defined by [dense](#), tropical [rain forest](#), while the other (Paraná) is made up of vast [grasslands](#).

With an unparalleled number of plant and animal species, South America's rich [biodiversity](#) is unique among the world's continents.

## Mountains & Highlands

South America's primary mountain system, the Andes, is also the world's longest. The range covers about 8,850 kilometers (5,500 miles). Situated on the far western edge of the continent, the Andes stretch from the southern tip to the northernmost coast of South America. There are hundreds of peaks more than 4,500 meters (15,000 feet) tall, many of which are volcanic.

The highest peak in the Andes, Aconcagua, stands at 6,962 meters (22,841 feet) and straddles the Argentina-Chile [border](#). Aconcagua is the tallest mountain outside Asia.

High [plateaus](#) are also a feature of the Andes. The [altiplano](#) of Peru and Bolivia, for example, has an elevation of about 3,700 meters (12,300 feet). The Patagonia region of Argentina and Chile consists of lower-elevation plateaus and [rugged glaciers](#).

Most plants in the alpine biome are small, and their leaves are stiff and strong to protect them from frost and drought. The largest [herb](#) in the world, *Puya raimondii*, is known as the Queen of the Andes. A *Puya raimondii* can live for 100 years and can grow to more than 9 meters (30 feet) tall. The leaves of this [endangered species](#) all

grow from one woody [stem](#), allowing moisture to run down the leaves to the base of the plant.

Outside the Andes, South America has two principal highland areas: the Brazilian Highlands and the Guiana Highlands. Located south of the Amazon River in Brazil, the Brazilian Highlands are made up of low mountains and plateaus that rise to an average elevation of 1,006 meters (3,300 feet). The Guiana Highlands are located between the Amazon and Orinoco Rivers. The heavily forested plateau of the Guiana Highlands covers southern Venezuela, French Guiana, Guyana, northern Brazil, and a portion of southeastern Colombia.

## River Basins

South America has three important river basins: the Amazon, Orinoco, and Paraguay/Paraná.

The Amazon River basin has an area of almost 7 million square kilometers (2.7 million square miles), making it the largest [watershed](#) in the world. The basin, which covers most of northern South America, is fed by tributaries from the glaciers of the Andes. Every second, the Amazon River empties 209,000 cubic meters (7,381,000 cubic feet) of [freshwater](#) into the Atlantic Ocean.

The Amazon River is the life force of the equally vast Amazon rain forest, which makes up about half of the rain forest of the entire planet. This [tropical](#) biome has as many as 100 different tree species on a single acre, including the rubber tree, silk cotton tree, and Brazil nut tree. Other important plant species include palms, ferns, and ropelike vines known as *lianas* that network throughout the rain forest's dense [canopy](#).

The diversity of animal life in the Amazon rain forest is [unsurpassed](#) in the rest of the world. The rain forest is perfectly suited for [arboreal](#), or tree-living, animals. More than 2 million species of insects are native to the region, including hundreds of spiders and butterflies. [Primates](#) are abundant—howler monkeys, spider monkeys, and capuchin monkeys—along with sloths, snakes, and iguanas. Thousands of native birds include brightly colored macaws, parrots, toucans, and parakeets.

The Orinoco River flows north of the Amazon. The Orinoco flows in a giant [arc](#) for more than 2,736 kilometers (1,700 miles), originating in the Guiana Highlands of northern Brazil and discharging in the Atlantic Ocean in Venezuela. The Orinoco River basin covers an area of about 948,000 square kilometers (366,000 square miles) and encompasses approximately 80 percent of Venezuela and 25 percent of Colombia.

A vast [savanna](#) or grassland region, known as the Llanos, is the primary biome of the Orinoco River basin. The Llanos is primarily made up of grasses. [Swamp](#) grasses, [sedges](#), and bunchgrass are found in wet, low-lying areas. Carpet grass is found in the higher and drier elevations.

Like most grassland biomes, the Llanos is the perfect habitat for many bird species, including the scarlet ibis, bellbird, and umbrellabird. Important river species include the piranha, electric eel, and the Orinoco crocodile, which can reach a length of more than 6 meters (20 feet).

The Paraguay/Paraná River basin covers almost 2.8 million square kilometers (1,081,000 square miles), which is much of southeastern Brazil and Bolivia, Paraguay, and northern Argentina. The Paraná River includes Iguazu Falls, a massive series of waterfalls that extend for 2.7 kilometers (1.7 miles).

Along with the Uruguay River, the Paraná River empties into the Rio de la Plata [estuary](#) between Argentina and Uruguay. The Rio de la Plata is the most populated region of both countries. The capital cities of Buenos Aires, Argentina, and Montevideo, Uruguay, practically face each other across the estuary.

The Paraguay/Paraná River basin supplies water to the [plains](#) biome, or Pampas, of South America. The Pampas have rich, [fertile soil](#) and predictable rainfall patterns. They are the most important grazing and [cropland](#) areas on the continent.

## Coastal Plains

A coastal plain is an area of low, flat land next to a seacoast. South American coastal plains are found on the northeastern coast of Brazil, on the Atlantic Ocean, and the western, Pacific coast of Peru and Chile. The coastal plains of northeastern Brazil are extremely dry. The Brazilian Highlands act as a **wedge** that pushes moist sea winds away from the coastal plains.

The western coastal plains are also extremely dry. They are trapped between the cold Peru Current to the west and the Andes Mountains to the east. The Peru **Current** brings cold water to the Pacific coast of Peru and Chile. This cold surface water results in **thermal inversion**: cold air at sea level and stable, warmer air higher up. Thermal inversion produces a thick layer of **clouds** at low altitudes. These low-lying clouds blanket much of the Pacific coast of South America. They do not allow **precipitation** to form.

The Atacama Desert is part of the western coastal plain. The Atacama is considered the driest region in the world. The average rainfall is about 1 millimeter (0.04 inches) a year, and some parts of the Atacama have never had rain in recorded history.

Very few plants grow in this desert. Even **bacteria**, insects, and **fungi** are scarce. Larger animal species are also rare, and include the grey fox, a type of deer called the **huemul**, and the viscacha—the largest member of the **chinchilla** family. Ocean birds, such as penguins, cormorants, and pelicans, are found on the desert coast. While Atacama lacks **flora** and **fauna**, it is a rich source of **copper** and a chief source of **revenue** for the Chilean **economy**.

## VOCABULARY

Term	Part of Speech	Definition
<b>alpine</b>	<i>adjective</i>	having to do with mountains.
<b>Altiplano</b>	<i>noun</i>	high plateau in the Andes Mountains of South America.
<b>arboreal</b>	<i>adjective</i>	having to do with trees.
<b>arc</b>	<i>noun</i>	part of the outline of a circle.
<b>archipelago</b>	<i>noun</i>	a group of closely scattered islands in a large body of water.
<b>bacteria</b>	<i>plural noun</i>	(singular: bacterium) single-celled organisms found in every ecosystem on Earth.
<b>basin</b>	<i>noun</i>	a dip or depression in the surface of the land or ocean floor.
<b>biodiversity</b>	<i>noun</i>	all the different kinds of living organisms within a given area.
<b>biome</b>	<i>noun</i>	area of the planet which can be classified according to the plant and animal life in it.
<b>border</b>	<i>noun</i>	natural or artificial line separating two pieces of land.
<b>canopy</b>	<i>noun</i>	one of the top layers of a forest, formed by the thick leaves of very tall trees.
<b>capital</b>	<i>noun</i>	city where a region's government is located.
<b>chinchilla</b>	<i>noun</i>	rodent native to South America.
<b>climate</b>	<i>noun</i>	all weather conditions for a given location over a period of time.
<b>cloud</b>	<i>noun</i>	visible mass of tiny water droplets or ice crystals in Earth's atmosphere.
<b>coastal plain</b>	<i>noun</i>	low, flat land lying next to the ocean.

<b>continent</b>	<i>noun</i>	one of the seven main land masses on Earth.
<b>copper</b>	<i>noun</i>	chemical element with the symbol Cu.
<b>crop</b>	<i>noun</i>	agricultural produce.
<b>current</b>	<i>noun</i>	steady, predictable flow of fluid within a larger body of that fluid.
<b>dense</b>	<i>adjective</i>	having parts or molecules that are packed closely together.
<b>desert</b>	<i>noun</i>	area of land that receives no more than 25 centimeters (10 inches) of precipitation a year.
<b>drought</b>	<i>noun</i>	period of greatly reduced precipitation.
<b>economy</b>	<i>noun</i>	system of production, distribution, and consumption of goods and services.
<b>endangered species</b>	<i>noun</i>	organism threatened with extinction.
<b>environment</b>	<i>noun</i>	conditions that surround and influence an organism or community.
<b>estuary</b>	<i>noun</i>	mouth of a river where the river's current meets the sea's tide.
<b>fauna</b>	<i>noun</i>	animals associated with an area or time period.
<b>fertile</b>	<i>adjective</i>	able to produce crops or sustain agriculture.
<b>flora</b>	<i>noun</i>	plants associated with an area or time period.
<b>freshwater</b>	<i>noun</i>	water that is not salty.
<b>frost</b>	<i>noun</i>	thin coat of ice covering objects when the dew point is below freezing.
<b>fungi</b>	<i>plural noun</i>	(singular: fungus) organisms that survive by decomposing and absorbing nutrients in organic material such as soil or dead organisms.
<b>glacier</b>	<i>noun</i>	mass of ice that moves slowly over land.
<b>grassland</b>	<i>noun</i>	ecosystem with large, flat areas of grasses.
<b>gulf</b>	<i>noun</i>	portion of an ocean or sea that penetrates land.
<b>herb</b>	<i>noun</i>	type of seasonal plant often used as a medicine or seasoning.
<b>huemul</b>	<i>noun</i>	deer native to South America. Also called the South Andean deer.
<b>human geography</b>	<i>noun</i>	the study of the way human communities and systems interact with their environment.
<b>mountain</b>	<i>noun</i>	landmass that forms as tectonic plates interact with each other.
<b>Pampas</b>	<i>noun</i>	flat grasslands of South America.
<b>Patagonia</b>	<i>noun</i>	large plateau in southern South America, stretching from the Andes Mountains to the Atlantic Ocean.
<b>physical geography</b>	<i>noun</i>	study of the natural features and processes of the Earth.
<b>plain</b>	<i>noun</i>	flat, smooth area at a low elevation.
<b>plateau</b>	<i>noun</i>	large region that is higher than the surrounding area and relatively flat.
<b>precipitation</b>	<i>noun</i>	all forms in which water falls to Earth from the atmosphere.

<b>primate</b>	<i>noun</i>	type of mammal, including humans, apes, and monkeys.
<b>rain forest</b>	<i>noun</i>	area of tall, mostly evergreen trees and a high amount of rainfall.
<b>region</b>	<i>noun</i>	any area on the Earth with one or more common characteristics. Regions are the basic units of geography.
<b>resource</b>	<i>noun</i>	available supply of materials, goods, or services. Resources can be natural or human.
<b>revenue</b>	<i>noun</i>	income, or money earned before production costs are subtracted.
<b>rugged</b>	<i>adjective</i>	having an irregular or jagged surface.
<b>savanna</b>	<i>noun</i>	type of tropical grassland with scattered trees.
<b>sedge</b>	<i>noun</i>	grass-like plant native to wetlands.
<b>soil</b>	<i>noun</i>	top layer of the Earth's surface where plants can grow.
<b>stem</b>	<i>noun</i>	main stalk of a plant.
<b>surpass</b>	<i>verb</i>	to go beyond a set limit.
<b>swamp</b>	<i>noun</i>	land permanently saturated with water and sometimes covered with it.
<b>thermal inversion</b>	<i>noun</i>	climate pattern where the air is warmer at higher elevations.
<b>tributary</b>	<i>noun</i>	stream that feeds, or flows, into a larger stream.
<b>tropical</b>	<i>adjective</i>	existing in the tropics, the latitudes between the Tropic of Cancer in the north and the Tropic of Capricorn in the south.
<b>unique</b>	<i>adjective</i>	one of a kind.
<b>waterfall</b>	<i>noun</i>	flow of water descending steeply over a cliff. Also called a cascade.
<b>watershed</b>	<i>noun</i>	entire river system or an area drained by a river and its tributaries.
<b>wedge</b>	<i>noun</i>	triangle shape.

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### Websites

- National Geographic Projects: Patagonia Meteorite Impact Field Project
- National Geographic Travel: South America



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