

GEOGRAPHY AND CLIMATE

A country of diverse topography and climate

Geography

A Pacific Island Country

Japan is an island country forming an arc in the Pacific Ocean to the east of the Asian continent. The land comprises four large islands named (in decreasing order of size) Honshu, Hokkaido, Kyushu, and Shikoku, together with many smaller islands. The Pacific Ocean lies to the east while the Sea of Japan and the East China Sea separate Japan from the Asian continent.

In terms of latitude, Japan coincides approximately with the Mediterranean Sea and with the city of Los Angeles in North America. Paris and London have latitudes somewhat to the north of the northern tip of Hokkaido.

Japan's total land area is about 378,000 square kilometers. It is thus approximately the same size as Germany, Finland, Vietnam, or Malaysia. It is only 1/25 the size of the United States and is smaller than the state of California.

Japan's coastline is quite varied. In some places, such as Kujukurihama in Chiba Prefecture, there are long sandy beaches continuing fairly straight and uninterrupted for 60 kilometers or so, while the coast of Nagasaki Prefecture is an example of an area

characterized by peninsulas and inlets and offshore islands (like the Goto archipelago and the islands of Tsushima and Iki, which are part of that prefecture). There are also accidented areas of the coast with many inlets and steep cliffs caused by the submersion of part of the former coastline due to changes in the Earth's crust.

A warm ocean current known as the Kuroshio (or Japan Current) flows northeastward along the southern part of the Japanese archipelago, and a branch of it, known as the Tsushima Current, flows into the Sea of Japan along the west side of the country. From the north, a cold current known as the Oyashio (or Chishima Current) flows south along Japan's east coast, and a branch of it, called the Liman Current, enters the Sea of Japan from the north. The mixing of these warm and cold currents helps produce abundant fish resources in waters near Japan.

A Land of hot springs and attractive scenery

About three-fourths of Japan's land surface is mountainous. The Chubu Region of central Honshu is known as "the roof of Japan" and has many mountains which are more than 3,000 meters high.

Japan's highest mountain is Mt. Fuji (3,776 meters) on the border of Yamanashi and Shizuoka Prefectures. Japan's second-highest peak is Kitadake in Yamanashi Prefecture, at 3,192 meters, and its third-highest peak is Hotakadake at 3,190 meters, on the border between Nagano and Gifu Prefectures.



Mt. Fuji

Japan's highest peak, Mt. Fuji, is seen here from Lake Kawaguchi in April. It remains covered in snow until June.

As it is situated along the circum-Pacific volcanic belt, Japan has several volcanic regions—usually considered to number seven—from the far north to the far south. Of the total number of volcanoes, approximately 80 are active, including Mt. Mihara on Izu Oshima island, Mt. Asama on the border between Nagano and Gunma Prefectures, and Mt. Aso in Kumamoto Prefecture. Japan has almost 1/10 of the world's approximately 840 active volcanoes, even though it has only about 1/400 of the world's land area. Mt. Fuji, which has been dormant since its last eruption in 1707, is by no means incapable of erupting again in our lifetimes.

Though volcanoes can cause great harm through large eruptions, they also contribute an incalculable tourist resource. Touristic areas such as Nikko, Hakone, and the Izu Peninsula, for example, are famous for their hot springs and attractive scenery of volcanic mountains.

As all these volcanoes attest, the Earth's crust beneath the Japanese archipelago is unstable and full of energy. Thus Japan is among those countries most likely to suffer from earthquakes. Every year there are approximately 1,000 earthquakes which are strong enough to be felt. In January 1995, the Great Hanshin-Awaji Earthquake killed approximately 6,000 people, injured over 40,000, and left 200,000 homeless. An earthquake in Niigata Prefecture in October 2004 left over 60 people dead and more than 4,700 injured. In March 2011, a magnitude 9 earthquake was recorded off the coast of Sanriku (Tohoku) in the Pacific Ocean, and the ensuing tsunami, more than 10m high in places, hit the coast across a vast region from Tohoku to Kanto. The number of dead and missing after the earthquake and tsunami reached nearly 20,000.

Fast-Flowing Rivers

Mountainous Japan is blessed with many rivers. Most of Japan's rivers flow very fast, their waters reaching the ocean not long after leaving mountain valleys and basins. An example of the "steepness" of river flows is the Kurobe River, which joins the Sea of Japan after flowing only 83 kilometers from its source in the Japan Alps at an altitude of over 2,900 meters.

Japan's longest river is the Shinano River, which flows 367 kilometers from the

mountains of the Chubu region through Niigata Prefecture to the Sea of Japan. Second in length is the Tone River, which flows through the Kanto Plain to the Pacific Ocean, and third in length is the Ishikari River in Hokkaido, at 268 kilometers.

The many rivers descending from mountainous areas have done much to mold Japan's topography, creating large and small valleys and basins and producing fan-shaped deltas near the points where they flow into the sea. Most of the country's plains are small. The largest is the Kanto Plain, which includes parts of Tochigi, Ibaraki, Gunma, Saitama, Chiba, Tokyo, and Kanagawa prefectures. Other relatively large areas of flat land are the Echigo Plain (Niigata Prefecture), the Ishikari Plain (Hokkaido), and the Nobi Plain (Aichi and Gifu prefectures).

Climate

A major feature of Japan's climate is the clear-cut temperature changes between the four seasons. From north to south, Japan covers a range of latitude of some 25 degrees and is influenced in the winter by seasonal winds blowing from Siberia and in the summer by seasonal winds blowing from the Pacific Ocean. In spite of its rather small area, Japan is characterized by four different climatic patterns.

Hokkaido, with a subarctic weather pattern, has a yearly average temperature of eight degrees centigrade and receives an average annual precipitation of 1,150 millimeters. The Pacific Ocean side of Japan, from the Tohoku region of northern Honshu to Kyushu, belongs to the temperate zone, and its summers are hot, influenced by seasonal winds from the Pacific. The side of the country which faces the Sea of Japan has a climate with much rain and snow, produced when cold, moisture-bearing seasonal winds from the continent are stopped in their advance by the Central Alps and other mountains which run along Japan's center like a backbone. The southwestern islands of Okinawa Prefecture belong to the subtropical climate zone and have a yearly average temperate of over 22 degrees, while receiving over 2,000 millimeters of precipitation.

Cherry blossoms

Cherry blossoms—the symbol of spring in Japan.



Spring (March, April, May)

When winter nears its end, the cold seasonal winds blowing from the continent become weaker and more intermittent. At this time, low pressure air masses originating in China enter the Sea of Japan; these give rise to strong, warm southerly winds which travel toward this low-pressure zone from the Pacific Ocean. The first of these winds is called *haru ichiban*. While it announces the warmth of the coming spring, it sometimes causes avalanches and, crossing the mountains to the side of the country facing the Sea of Japan, it is at times responsible for exceptionally hot and dry weather and can even become the cause of large fires.

In early spring, plum blossoms start to bloom, followed by peach blossoms. During the last ten days or so of March, the cherry blossoms so beloved by the Japanese people begin to bloom.

and cyclones in other parts of the world. When a typhoon begins to take shape, it gradually moves north. Every year, during this period, around 30 typhoons form, of which on the average about 4 reach Japan, sometimes causing great destruction.

After the middle or latter part of October, Japan enjoys generally clear weather; it is neither hot nor cold. The country also enjoys especially fine weather at the beginning of November. Many of the trees take on bright autumn colors, making this time of the year, together with the time of new greenery in the spring, a truly beautiful season.

Winter (December, January, February)

Toward the end of November, cold seasonal winds begin blowing over Japan from the continent. These northwesterly winds pick up moisture over the Sea of Japan and drop much of this moisture in the form of rain and snow on the western side of Japan as they are impeded in their eastern advance by the ridge of mountains that runs through the central part of the country. The Hokuriku region (Fukui, Ishikawa, Toyama, and Niigata prefectures), which faces the Sea of Japan and is separated from other regions of Japan by high mountains, is known for its deep snows.

By contrast, the Pacific side of the country enjoys generally clear skies during the winter season. In Tokyo, despite the fair skies, winter temperatures average around 5 degrees, a difference of 25 degrees from summer temperatures of 30 degrees or more.

The islands of Okinawa Prefecture in the far southwest have a subtropical climate with less marked temperature differences between the seasons. Winter temperatures there are much more moderate than in other parts of the country.

Autumn leaves

Colorful foliage is the symbol of autumn throughout Japan.



Firework displays

Firework displays like this one are an essential part of the Japanese summer.

Summer (June, July, August)

Before the arrival of real summerlike weather, Japan has a damp rainy season known as *tsuyu*. From May until July, there is a high-pressure mass of cold air above the Sea of Okhotsk to the north of Japan, while over the Pacific Ocean there develops a high-pressure mass of warm, moist air. Along the line where these cold and warm air masses meet, known as the *baiu zensen*, or “rainy season front,” there often develop areas of low-pressure warm air. Thus the *baiu zensen*, which extends from southern China over the Japanese archipelago, causes prolonged periods of continuous rainfall.

After the middle of July, high-pressure air masses over the Pacific Ocean become predominant and the rainy season comes to an end as the *baiu zensen* is pushed northward. Seasonal winds from the Pacific Ocean bring warm, moist air to Japan, and the country has hot summer weather with many days when temperatures rise to more than 30 degrees centigrade.

Autumn (September, October, November)

From the end of summer through September, Japan is often struck by typhoons. Typhoons originate from large masses of tropical low-pressure air in the North Pacific between the latitudes of approximately 5 and 20 degrees, and are the same phenomenon as hurricanes



Shirakawa-go in Winter

The *gassho-zukuri* style farmhouses of Shirakawa village in Gifu Prefecture were inscribed on the UNESCO World Heritage List in 1995. (Photo courtesy of AFLO)

