In the word geopark, “geo” stands for geography and geology, and is combined with the word “park.” Geoparks are parks where numerous assets of global activities that are geologically important, valuable and beautiful coexist. Unlike world heritage sites, which are recognized by international treaties, geopark-related activities are facilitated by the Global Geoparks Network with the assistance of UNESCO, and include the protection and preservation of natural landscapes and geology as well as the lives of the people that use the landscapes/geology, products and history.

Global Geoparks and Japanese Geoparks

Internationally, Global Geoparks are recognized by the Global Geoparks Network. They can be found in 90 locations in 24 countries around the world. Japan’s Global Geoparks include Tosa Caldera and Unyu Volcanic Geopark, Hakone Geopark, Lake Akan, and Izu Volcanic Region Geopark (Shizuoka) and Suruga-Yatsugatake Geopark (Yamanashi), Munakata Geopark (Kumamoto). The Japanese Geoparks Network includes 25 locations.

Remaining a geopark

Rather than installing fences to keep visitors away, a geopark is designed for visitors to see, touch and experience up close, and at a location where they can enjoy cultural activities. All the following criteria must be met for it to remain a geopark.

1. Each of the geological sites (geosites) must be accompanied by an explanation, and the geotourism about the sites must already been established.
2. Each of the tours must include some stories and develop in accordance with its route or stories.
3. The educational program unique to the relevant location must be available to everyone learning about geology/geohistory.
4. A consistent management system must have been established, such as the use of staff and guides to carefully preserve and utilize the geosite.
The Kirishima Mountains command a history of volcanic activity, the breath of the Earth (geo)

The Kirishima Mountains consist of more than 20 volcanoes located within a 30-kilometer x 20-kilometer area extending southward from Miyazaki Prefecture to Kagoshima Prefecture, Japan. This area forms the southwestern tip of the Kii Peninsula, and the Kirishima Mountains, including the Kirishima, Aso, and Yufu Mountains, were designated as a World Heritage site in 2007.

The region’s volcanic history is closely tied to the subduction of the Philippine Sea Plate beneath the Eurasian Plate. This tectonic activity has resulted in the formation of the Kirishima Mountains, which are characterized by a diversity of volcanic landscapes, ranging from active volcanoes to fossilized volcanic features. The region is a popular destination for geologists, hikers, and nature enthusiasts, offering a unique opportunity to explore the geological processes that have shaped this area.

The Kirishima Mountains are also significant for their biodiversity. The area supports a rich array of plant and animal species, many of which are endemic to the region. The volcanic landscapes provide unique habitats that support these species, contributing to the region’s ecological diversity.

The Kirishima Mountains are not only a geological and biological treasure but also hold cultural significance for the people of Japan. The area has a long history of human habitation, and the mountains have played a central role in local traditions and beliefs. The region is home to a number of shrines and temples, which have been constructed and maintained by the local community for centuries.

In conclusion, the Kirishima Mountains are a remarkable example of the interplay between tectonic processes, geological evolution, and cultural development. The region’s unique combination of natural beauty, scientific interest, and cultural significance makes it a must-visit destination for anyone interested in the history and science of volcanoes and nature.
The history of the Kirishima Mountains was created by numerous eruptions

Around 340,000 years ago
A huge eruption occurred in the area that includes the current Ebino-shi and Yusuicho. A massive amount of pyroclastic flow accumulated around the area and formed Kakuto Caldera.

Around 200,000 years ago
Based on Mt. Kurinodake and other older mountains, the volcanoes of Mt. Shimosato, Osuni Pond, Mt. Hinaamidake and other mountains remained active.

Around 30,000 years ago
The massive eruption of Aira Caldera created a plateau called Shirasudachi and caused shirasu (fine-grained pumice and volcanic ash) to accumulate all around Kirishima. Sakuraima subsequently became volcanically active.

Around 30,000 years ago
The volcanoes of Mt. Imeri, Mt. Koshikidake and Mt. Karakudake were active.

Around 17,000 years ago
Mt. Karakudake underwent a massive eruption and became what it is today. In the southeast area, the Takashihomone ridge became volcanically active.

Around 17,000 years ago
Mt. Yadake and Mt. Kurinodake were active at almost the same time. Mt. Yadake is also one of the oldest volcanoes (altitude: 1,192 meters).

Around 7,300 years ago
Volcanic ash resulting from the eruption of Kikai Caldera accumulated around the Kirishima Mountains.

Around 7,300 years ago
Mt. Kurinodake was active around 200,000 years ago and is one of the oldest volcanoes in the Kirishima Mountains today (altitude: 1,084 meters).

Around 7,300 years ago
This volcano was active around 40,000 years ago and has a beautiful shape. It is also referred to as "Shirasu" (altitude: 1,344 meters).

Around 7,300 years ago
This volcano was active around 50,000 years ago when Kakuto Bochi and a lake (altitude: 846 meters).

Around 7,300 years ago
This volcano was formed by activity that occurred around 10,000 years ago (altitude: 1,392 meters).

After the completion of the Takashihomone ridge, Mikike underwent a massive eruption around 4,600 years ago. Mt. Ohata and Pudo Pond also experienced eruptions that were followed by lava.

Ohachi expanded after becoming volcanically active around 1,950 years ago. Mt. Shimosode was formed around 5,000 years ago, and Mt. Isu formed on the Ebino Highlands.

Numerous traces of disasters arising from these eruptions remain.

Kobayashi Caldera (formed around 530,000 years ago) and Kakuto Caldera (formed around 340,000 years ago) are located to the north of the Kirishima Mountains. The volcanic activity in the Kirishima Mountains, located to the southern end of the two calderas, is divided into the early and late periods, namely before and after the formation of the Kakuto Caldera. Most of the volcanoes that can currently be seen on the earth’s surface were formed by the activity that occurred during the late period.

The Kirishima Mountains consist of these mountains.

The circle was drawn on the basis of Kanto 3D data, from the 5-meter mesh altitude data from a national map published by the Geospatial Information Authority of Japan.

1. Mt. Kurinodake
2. Mt. Yadake
3. Mt. Shimosode
4. Mt. Shiratori
5. Mt. Ebino-shi
6. Osuni Pond
7. Mt. Hinaamidake
8. Mt. Imeri
9. Mt. Karakudake
10. Mt. Nakaoka
11. Takeishiho ridge
12. Mt. Osuni Pond
13. Mike
14. Ohachi
15. Mt. Isu

This volcano was formed by the most explosive eruption in the history of the Kirishima Mountains, which occurred around 4,600 years ago (altitude: 1,084 meters).

Located to the west of the Takashihomone ridge, this volcano became active around 1,950 years ago. Unlike Mt. Shimosode, Ohachi is still highly active (altitude: 1,608 meters).

This volcano was formed by activity that occurred around 10,000 years ago (altitude: 1,392 meters).

This volcano was formed by activity that occurred around 1,950 years ago (altitude: 1,608 meters).

This volcano was formed by the eruption of Goshiki Tamba and was a lake (altitude: 381 meters).

This volcano was formed by eruption that occurred during the period when Mt. Karakudake was formed (altitude: 1,392 meters).

This volcano was formed by the eruption of the crater lake during the Edo period. It is the newest volcano in the Kirishima Mountains (altitude: 1,310 meters).
With their abundant precipitation, the Kirishima Mountains send large quantities of water and hot springs into neighboring areas. Water emerges from the foot of the mountain and takes the form of a waterfall, which fascinates people. The water is used in local agriculture and irrigation. Hot springs in this area have helped many local inns and therapeutic baths prosper since the very old days. Furthermore, the energy from the ground heat is used to generate geothermal power, and provides people with numerous benefits. Around the Kirishima Mountains, you can fully enjoy the topographical grandeur of the volcanoes and the blessings of nature that are derived from them.

**Benefits of volcanoes**

- **Hot springs**
- **Abundant produce**
- **High quality spring water**
- **Geothermal energy**

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**Major geosites near the Kirishima Mountains**

- **Yadeke Highlands (Ebinoshi)**
- **Maruko Youki (Yusumizumi)**
- **Marus Waterfall (Kirishima-shi)**
- **Chach Lava of Kirishima Shrine (Kirishima-shi)**
- **Kirihar Waterfall (Seo-shi)**
- **Nanaare Waterfall (Ebinoshi)**
- **Suki Waterfall (Kobayashi-shi)**
- **Barunomiya Valley (Kobayashi-shi)**
- **Seiko Falls (Miyakonojo-shi)**
The Diversity of Nature and the Volcanic Activities that Nurture It

The reason for the existence of the Kirishima Mountains
Japan lies on the boundaries of four tectonic plates. The place where the Philippine Sea Plate is being overlapped by the Eurasian Plate lies near the eastern edge of Kyushu. 
Away from the cooling presence of water, near the convergence point of the overlapping plates, the temperature required for rocks to melt is reached and magma is formed. This magma rises up to the surface and shows itself in an eruption. The Kirishima Mountains were formed in this manner. 
The distance from the area where the rock melts to where it surfaces is approximately 100km. Thus, the Western Japan Volcanic Belt runs parallel to the ocean trench.

Glacial Period • Interglacial Period cycle and plant life
The Beech and Mongolian Oak trees that grew near the base of the mountain during the glacial period can now only be seen at a high elevation. Furthermore, these plants, which are said to be left over from the last glacial period, can be seen in great numbers on the volcanoes that were formed before the glacial period. Whereas, you will not see such plant life on volcanoes that are relatively younger than the glacial period.
On younger volcanoes, there are instead, red pines, pampas grass, and miyama Kirishima bushes.

The transition of plant communities (transition of vegetation)
The transition of plant communities, describes the process in which the types of plants growing in a certain area change over a period of time. In the Kirishima Mountains, there are mountains that have recently erupted and thus have no vegetation. If they remain dormant after this happens, in a few hundred to a thousand years, the transition as laid out below will take place. However, if there is another eruption, the process will be reset to the barren stage.

2011 eruption of Mt. Shinmo

From January 28th through 29th, a full-scale eruption occurred, spewing magma and a large amount of spatters. Volcanic ash fell on Miyazaki city, Minamiaso, and Nakajima city in Miyazaki prefecture.
A volcano producing ash and volcanic debris, the Kirishima mountain was formed with the atmospheric vibration causing doom to break and alter windows to shatter.

2011.1.27 late at night

2011.1.28 early morning

2011.1.27 evening

The eruption of Mt. Shinmo (1/26 27) produced five times more ash and outdid the full year of eruptions of Mt. Sakurajima.