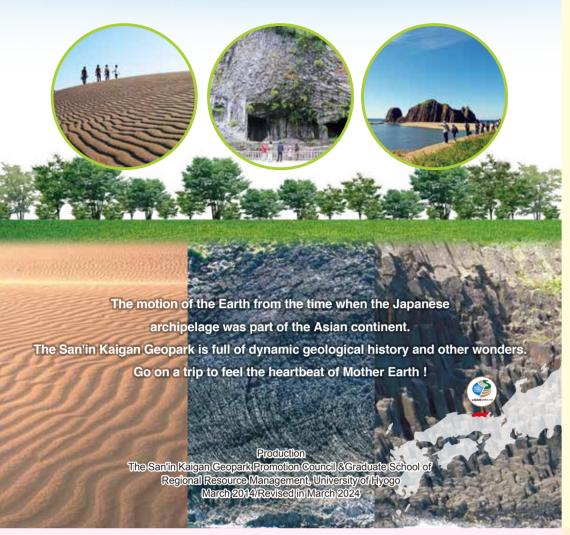
# San'in Kaigan UNESCO Global Geopark

**JAPAN** 



## San'in Kaigan Global Geopark

San'in Kaigan Geopark: recording earth's ever-changing activities

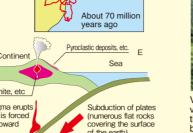
### The Japanese archipelago as part of the Asian continent

Long ago, the Japanese archipelago was part of the Asian continent. As a result of volcanic activity, pyroclastic flow occurred on the surface of the earth, while magma slowly got cold and hardened to form granite deep underground.



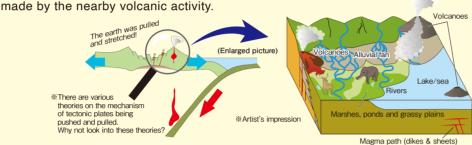








The edge of the continent began to split. During the separation, hollows were formed, which later became lakes and rivers. Elephants, deer and other animals lived in these freshwater areas. Later, the hollow spread to form the Sea of Japan. In the process, many volcanic rocks were



About 20 mill





the Sea of Japan (Kasumi Kaigan Coast, Kami Town)



Tailmamihonoura Shin'onsen Town



Volcanic rocks (lava) in the early age Volcanic rock (sheet) in the latter age of the formation of the Sea of Japan Shishi-no-kuchi (lit. the mouth of lion) (Tateiwa Rock, Kyotango City)

## and the formation of the Sea of Japan

#### Activity of the Japanese archipelago

After the Japanese archipelago began to look like it does today, volcanic activity continued and at the same time, ria coasts and coastal terraces were formed, as well as deep valleys and beautiful waterfalls in the mountains. In the meantime, plains, basins and sand dunes were also formed and people began to live in this region.



Volcanic rocks that spouted out through volcanic activities after the formation of Sand dunes formed by the sedimentatio

volcanic activities after the formation of the Sea of Japan and a waterfall formed by later erosion.



San'in Kaigan Geopark The Pacific Ocea

by later erosion (Kirigataki Waterfalls, Shin'onsen Town)

#### Various landscapes and people's lives in the San'in Kaigan Geopark

Beautiful landscapes featuring various kinds of rocks, strata, and coastal landforms, as well as inland waterfalls and valleys can be observed in the San'in Kaigan Geopark. Making use of such features, the people of the region developed a highly characteristic way of life.

marine landforms

Sand dunes, sandbars & Ria coasts & lagoons



Making use of sand dunes as

Chinese shallot field

(Fukube Sand Dunes, Tottori City)

Burial mounds on terraces (Onaru Burial Mound Group,

Kyotango City)

Coastal terraces

(Takeno Kaigan Coast, Toyooka City)

Highlights: Hattandaki Waterfalls, Saruodaki Waterfalls, Highlights: Kasumi Coast, Tajimamihonoura,



Waterfalls & valleys

intangible folk-cultural property)

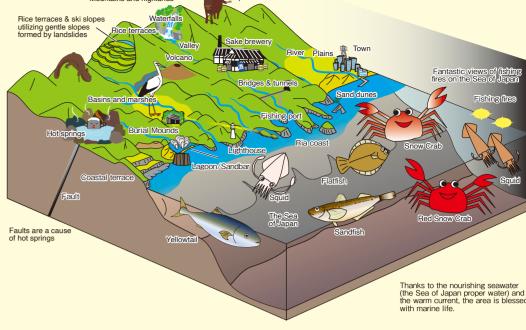




Rice terraces (Rice terraces of Nukida, Kami Town)

Geological features, natural environment, people's lives, the time when the Japanese archipelago was part of the Asian continent, through the formation of the Sea of Japan, to the present. Mountains and highlands

The rocks and strata in the San'in Kaigan Geopark contain the history of the earth from



#### Access



## Biodiversity

The formation of the Sea of Japan and the movements of the earth brought about an environment blessed with diverse geological and geomorphological features, which serve as the natural habitat of various creatures.

#### Sand dunes & sandbars

Animal species include:



Marshes, streams & rice fields Oriental White Stork Japanese Killifish Four-spot Midge





### Mountains & highlands

Plant species include: Japanese Beech Tree Mongolian Oak Japanese Judas Tree Horse Chestnut

Animal species include: Asiatic Black Bear Golden Eagle

Oriental White Stork



Forests near coasts Horned Turban Shell Abalone / Iwagaki Oyste Wakame Seaweed Japanese Black Pine Sea Urchin Osprey



Evergreen Broad-leafed Forests

#### Coastline of the Sea of Japan Marbled Rockfish Oval Squid

Red-spotted Grouper Largescale Blackfish Horse Mackerel



School of Horse Mackere

Offshore of the Sea of Japan Animal species include:

Red Snow Crab Firefly Sauid



Snow Crab

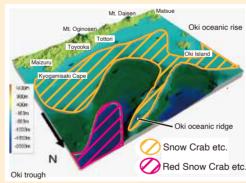
### Geo-gourmet

Various foods owe their great taste to the characteristic climate of the San'in region.

#### Snow crab & red snow crab ★Find out what's "Geo" about crabs here!

The Sea of Japan is a huge depression formed after the separation of the Japanese archipelago from the Asian continent. Its center is very deep, but the depth of the channels connecting it to the neighboring seas are shallow (around 50-140m). Therefore, the exchange of seawater is limited to the surface of the ocean's layers, meaning "the Sea of Japan proper water" exists in deep waters. Thanks to this oxygen-rich cold seawater, coldwater fish and shellfish, such as crabs, can live in the Sea of Japan.

Another feature of the Sea of Japan is its complicated submarine topography. Thanks to this, two kinds of crabs are enjoyed in this area, namely, the snow crab and the red snow crab. Snow crabs live at a depth between 100-500m, and red snow crabs live at a depth between 500-2500m. Each type of crab has its own unique taste. The com plexities of the submarine topography bring about a variety of marine resources as well as the habitat isolation of each crab.



Submarine topography for the Sea of Japan

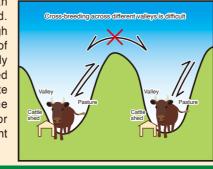


#### Japanese black cattle (Tajima cattle & Impaku cattle) ★ Find out what's "Geo" about Japanese black cattle here!

Japanese black cattle are raised in and around the San'in Kaigan Geopark area. Because each inland village was surrounded by steep mountains, it was difficult to mate cattle from

As breeding was limited to separate valleys for a long time, excellent pedigrees unique to each valley were established. By cross-breeding such varieties, an

even better bloodline of Tajima Cattle has been developed. The area has other factors ideal for the production of high quality cattle. In recognition of this individual management of cattle (such as keeping "Cow's Lineage Record"), in July 2023, the Food and Agriculture Organization of the United Nations designated it as a World Agricultural Heritage Site as the "traditional Tajima cattle breeding system in the Mikata region where humans and cattle coexist." For example, cold winters and sheds and pastures at different altitudes are ideal for making cattle with good marbling.



#### ☆Tajima Cattle is the breeding cattle for Kobe Beef and Matsusaka Bee

#### Vegetables grown in Sand Dunes ★Find out what's "Geo" about vegetables in sand dunes!

In sand dunes, the grains of sand are almost uniform in size and hardness, so root crops can grow large and straight. Using this, sweet potatoes and Chinese yams are produced in this region. Watermelons and melons are also grown in sand dunes because of good drainage and easy control of water and fertilizers.

(Kannabe Highlands, Toyooka City)

With people's endeavors and the technological development, the Tottori Sand Dunes have become one of the most eminent Chinese shallot producing areas in Japan since they were successfully cultivated there in 1914.





Melons grown in sand dunes in Kyotango City

coastal areas

White squid (Swordtip squid)

Cut up alive to be served as fresh

the clear, white body is sweet and

### Variety of geo-gourmet

Bounty of the sea Firefly Squid

elegant flavor.

Riches of the soil

■Rice various locations



The fishery yield of firefly sauid is the The San'in region, as well as Akita highest in Japan. Firefly squid caught

Prefecture, is a major production area. in the San'in region feature a sweet, Fatty young sandfish are mainly caught

(rice terraces) Rice

and Stork-friendly Rice

Sandfish

coastal areas

#### Fruits & vegetables grown in highlands various locations rand-name rice with unique characteristics are developed, including Tango Rice cabbages and Muraoka Rice, Tanada

delicious.



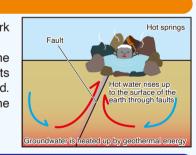
and vegetables, such adishes, are grown or sunny hills and

### Unique climate and peoples' lives

Various cultures and industries that have supported and developed the local communities were established under the unique climate of the San'in region. They are also utilized as tourist attractions.

A large number of hot springs in the San'in Kaigan Geopark have long been utilized as therapeutic bath resorts.

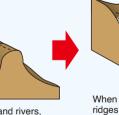
There are many faults, or fractures and discontinuities of the ground caused by the movement of the earth. The faults function as conduits to bring water up from deep underground. The heated underground water rises up as hot springs to the surface of the earth through the faults.



#### Ria coasts - Ports to wait out storms

When the sea level rises, its complicated geographical features (mountains and valleys) create coastlines called ria coasts. These coves are good natural harbors, as they block seasonal winds from the Sea of Japan. They also flourished as ports for Kitamaebune (commercial ships) to wait out storms long ago.

# How are ria coasts formed?



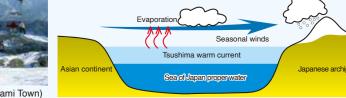
The ground is gradually worn away by rain and rivers, forming mountains and valleys.

When the sea level rises, valleys sink into the sea and ridges become capes. Capes act as wind breakers and

#### Weather, climate & benefits of the Sea of Japan

The San'in region is a rainy and snowy area. The locals' phrase "Don't forget to bring an umbrella with you even if you forget your lunch box" expresses this situation well. In winter, there is a lot of snowfall caused by the northwest seasonal winds from Siberia. The snow in the mountains is over one meter in depth. This is because the moisture-laden seasonal winds from the Tsushima warm current on the surface of the Sea of Japan blow against the mountains, climb upward and form snow. People's lives in the San'in region are greatly affected by the climate. On the other hand, deep in the Sea of Japan, the cold "Sea of Japan proper water" exists. Thanks to the Tsushima warm current and the cold proper water, the harvest from the Sea of Japan includes both coldwater fish and shellfish (crabs,etc.) and warmwater fish and shellfish (yellowtails,etc.).







Hakuto Kaigan Coast

A coastal area known for the Japanese myth "the White Hare of Inaba." Hakuto Shrine, located nearby, is believed to work miracles for the skin.



Tottori Sand Dunes
[Nationally Designated Natural Monument]
The large coastal sand dunes spanning
16 km from east to west right on the
Sea of Japan. There are three lines of
undulating sand dunes.



Uradome Kaigan Coast

[Place of Scenic Beauty]

The coast is home to strangely-shaped rocks and sea caves which are composed of granite and formed by the erosion of violent waves from the Sea of Japan. The white sandy beaches with pine trees here are also very beautiful. This scenic coast was



Moroyose Kaigan Coast

Moroyose is a good natural harbor and a port of call for Kitamaebune (trading ships between Osaka and Hokkaido in the Edo Period) as they waited out storms.Old houses on the streets, which developed on the sandbars in Hamasaka, have been left



natural monument and place of scenic

Tajimamihonoura

Tajimamihonoura features rocky coasts replete with cliffs and sea caves that were formed by erosion due to strong waves from the Sea of Japan. It is a nationally designated

Kas

The Kas
coast w
includin designated



The Kasumi Kaigan Coast is a rocky coast with many beautiful spots, including Yoroi no Sode (nationally designated natural monument).

Imagoura Beach

Imagoura is a cove that flourished as a port of call for Kitamaebune ships (commercial ships).

Wave-cut benches that have developed around the seashore are ideal for playing on. The curiously shaped Frog Island and Obikinohana observatory are popular among visitors.



Takeno Kaigan Coast

Takeno developed as a base for Kitamaebune (commercial ships) because the Nekozaki Peninsula protected it from seasonal winds. There are many uniquely-shaped rocks, sea caves, and cliffs. Takeno Coast is selected as one



Kumihama Bay & Shotenkyo Sandbar Sea-level changes made this beautiful lagoon, Kumihama Bay, and a sandbar known as Shotenkyo. Oyster farming is flourishing here, and oyster floats create a quaint atmosphere.



Kotohikihama Beach

[Natural Monuments and a Place of Scenic Beauty]
Kotohikihama Beach is a sandy beach composed of "singing sand" approximately 1.8 km in length.

When walking on the beach, visitors will notice the squeaking sound that

Tateiwa Rock

Tateiwa Rock

Tateiwa Rock

Tateiwa Rock

Tateiwa Rock

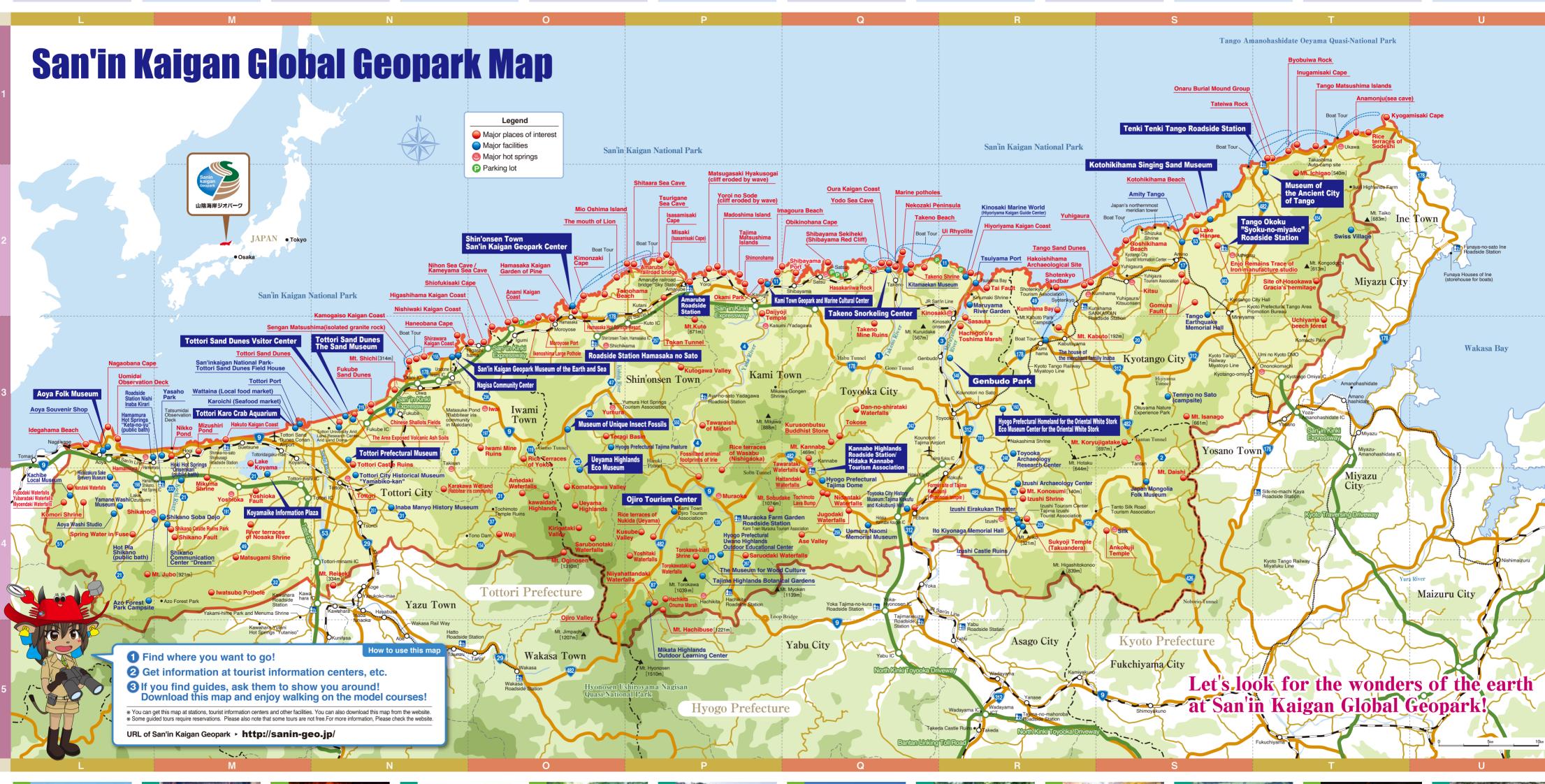
Tateiwa Rock

with well-developed andesite columnar joints. The contrast of the black rock and white beach is beautiful. There is an interesting legend about defeating ogres, related to Tateiwa.



Kyogamisaki Cape

"Kyogamisaki" literally means "cape of Buddhist scriptures." It is named this way because the rocks with columnar joints look like Buddhist scriptures. Kyogamisaki Lighthouse is designated as a Heritage of Industrial Modernization.





Lake Koyama

Lake Koyama is a lagoon formed by Koyama Sand Dunes (a part of Tottori sand dunes) that developed in the mouth of an inner bay. It is 18 km around and 6.9 square km in size with an average depth of about 2.8 m.



Iwai Hot Springs
Iwai Hot Springs, where the water comes directly from the source, boasts about 1300 years of history. An old custom called "Yu-kamuri," where people put a towel on their head in a bathtub and pour hot water on their own head with a dipper, has been handed down from the old days.



Arakane Copper Mine (Iwami Mine Ruins)

This is a vein deposit made in the following process: hot water came into the underground cracks, and then various elements from the rocks around melted into the hot water and crystallized in the cracks. Copper was



Rice Terraces of Yokoo
The 100 best rice terraces in Japan
The beautiful rice terraces utilize
gentle slopes which were formed by
landslides. There is an ownership
system in place for the rice terraces.



performed as well.

Amedaki Waterfalls

The contrast of the waterfall with a height of 40 meters and the surface of the rock is truly dramatic. It is designated as one of the 100 best waterfalls in Japan. The opening festival for the falls is held every year. Traditional events, such as Umbrella Dancing, are



Yumura Hot Springs

Yumura Hot Springs is a historic, quiet and therapeutic mountain hot spring resort that opened in the Heian Period (848). Hot spring water of 98°C gushes out in large quantities.



Ueyama Highlands

Rare creatures including golden eagles and Asiatic black bears are found here. Lava as well as other solid rocks can also be seen. In addition, numerous waterfalls are dotted around.



Yoshitaki Waterfalls

This waterfall consists of andesitic lava. The fall is made up of two parts, and the upper one allows visitors to observe the fall from behind. There are many falls and valleys around Yoshitaki Wateralls.



Saruodaki Waterfalls

It is called Saruodaki because it looks like a tail of a monkey (saru = monkey, o = tail, daki = waterfall). The height of the falls is about 60 m and it is selected as one of the 100 best waterfalls in Japan.



Mt. Kannabe

This is the newest volcano in the Kansai region. The crater is visible from the top of the mountain. In winter, it's crowded with skiers and snowboarders.



Kinosaki Hot Springs

It is said that Kinosaki Hot Springs has a history of about 1300 years, and was initially discovered by a priest called Dochi. Visitors can enjoy 7 public baths in Kinosaki, all the while wearing yukata, a casual summer kimono.



Genbudo Cave

[Nationally Designated Natural Monument]
This is a great outcrop of basalt with magnificent columnar and platy joints.
The lava cooled down about 1.6 million years ago and formed these beautiful joints.