

Life Alongside the Ancient Land and Sea

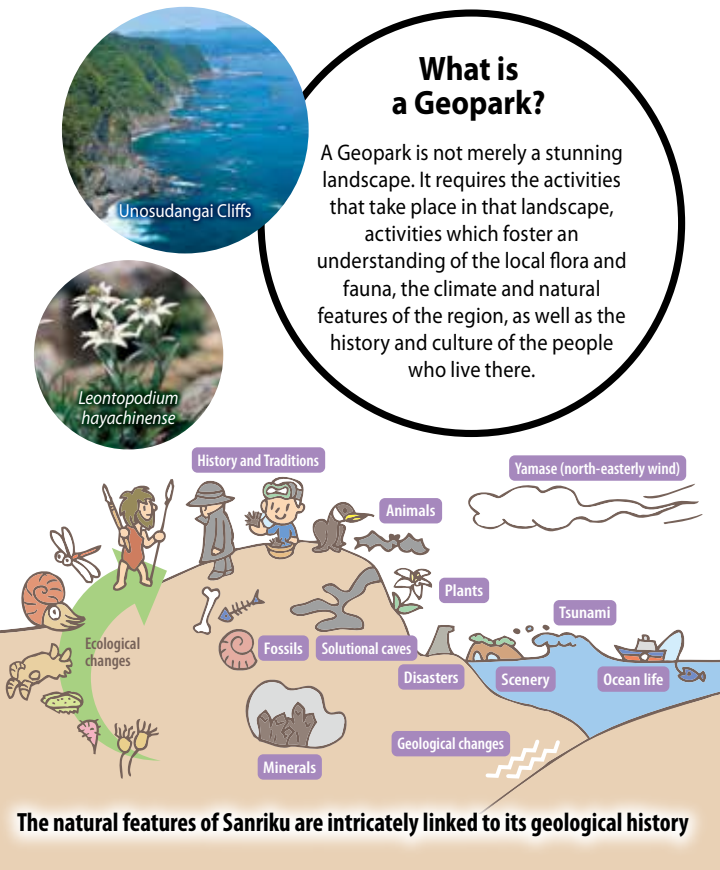
A Geopark is an outdoor museum, where visitors can experience the wondrous and wicked forces of nature.

Facing the Japan Trench in the Pacific plate subduction zone, the Sanriku region offers an important and continuous record of some five hundred million years of geological history, and is said to be the oldest part of the Japanese archipelago.

Historically, the region has experienced numerous massive earthquakes and tsunami, the most recent being the Tohoku earthquake and tsunami of March 2011. It is our duty to tell future generations what precautions our ancestors took against such natural disasters, and to share our own experiences of 3.11.

In 2013, Sanriku Geopark received official status as a Japanese Geopark and educational field for instructing future generations on geological history and pass down about disaster memories.

We hope to preserve the land and sea of Sanriku, so that people may continue to live there for years to come.



Five Amazing Features of Sanriku Geopark

Visitors to Sanriku Geopark can experience and learn about the area's five hundred million years of geological history, the impacts of tsunami on its coastline, its rich biodiversity and the lives of the people who call it home.

Feature 1 Five hundred million years of geological history

Five hundred millions years of history as told by the land itself

Feature 2 The blessing of the rias coastline and the work of coastal terraces

The southern Sanriku rias coastline and the northern Sanriku marine terraces

Feature 3 A totally unique ecosystem

A unique ecosystem created by geological and climatological factors

Feature 4 A wealth of subterranean resources

Resources tied to our modern industrial heritage

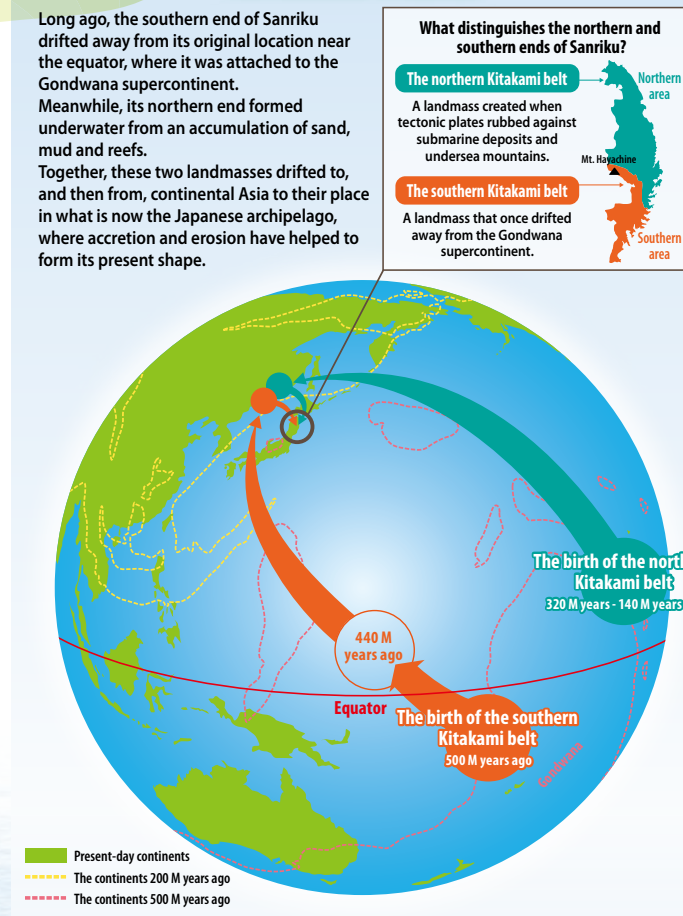
Feature 5 A history of coexistence with tsunami

Sanriku's tsunami history and folklore can be passed down to future generations

Feature 1 Five hundred million years of geological history

Bearing the traces of some five hundred million years of history, the Sanriku region offers a variety of landscapes born of accretion and erosion.

How did Sanriku come to be? - The formation of Sanriku -

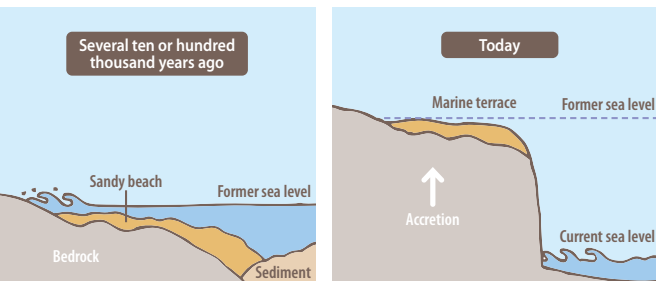


These distinctive natural features have helped develop the industries of Sanriku, such as the cultivation of shellfish in calm-water bays and the production of dairy on the marine terraces.

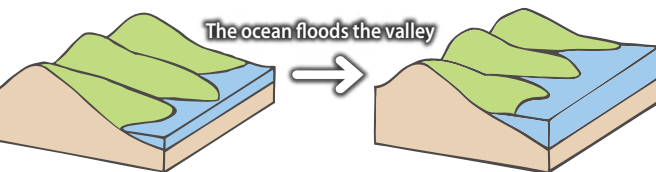


Feature 2 The blessing of the rias coastline and the work of coastal terraces

A rias coast is characterized by a series of inlets and bays that have formed in river valleys. A marine terrace is characterized by a straight coastline of cliffs formed from what was once an underwater flat shore by changing land and sea levels.



Marine terraces develop when changing land and sea levels raise a flat ocean surface that has been long eroded by waves. The marine terraces of the Sanriku coast were formed several ten or hundred thousand years ago, and their flat surfaces have historically been used to raise livestock.



Rias coasts are former river valleys that have been drowned by a postglacial rise of sea levels. Sawtooth coasts are a common sight at the southern end of Sanriku. While their mix of promontories and inlets tends to amplify the size of tsunami, their calm-water bays are perfect for the cultivation of oysters and other shellfish.

The geological history of Sanriku

Note: Major events in the Earth's history Principal geosite

Cenozoic Era Quaternary period

2.58 M years ago - Appearance of Homo sapiens

- Solutional cave...Uchimagido Cave (Kuji City)
- Rokando Cave (Sumita Town)
- Marine terrace...Ono Marine Terrace (Hirono Town)
- Kurosaki (Fudai Village)
- Rias coast...Yamada Bay (Yamada Town)
- Namiita Coast (Otsuchi Town)
- Singing sand... (Hachinohe City), Kikunaki Beach (Kesennuma City)
- Blowhole... (Miyako City), Shiofukuiwa (Kesennuma City)

Kurosaki

Cenozoic Era Quaternary period

23 M - 2.58 M years ago

The formation of the Japanese archipelago, and the birth of humanity (i.e. the first appearance on earth of a family of early hominids closely related to modern human beings (Homo sapiens), who are members of the subtribe Hominina, and are part of the family Homininae, to which the Sahelanthropus and Australopithecus subtribes also belong)

Cenozoic Era Paleogene period

66 M - 23 M years ago

The flourishing of mammals

- Jodogahama Bay... (Miyako City)

Jodogahama Bay

Mesozoic Era Cretaceous period

145 M - 66 M years ago

The flourishing of angiosperms

- Amber... (Kuji City)
- Haibe and Koikoboro... (Tanohata Village)
- Mochi-ryu fossil site... (Iwaizumi Town)
- Horajima Island... (Otsuchi Town)
- Granodiorite...Mt. Hashikami (Hashikami Town)
- Mineral resources...Ruins of a molybdenum mine (Kuji City), Ruins of the Noda Tamagawa Mine (Noda Village), Kamaishi Mine (Kamaishi City), Ruins of the Otani Mine & Shishiori Gold Mine (Kesennuma City)
- Anatoshiso... (Ofunato City) ● Omoto plant fossil site... (Iwaizumi Town)
- Kabushima Island... (Hachinohe City)

Mt. Hashikami

Mesozoic Era Jurassic period

210 M - 145 M years ago

Flourishing of large dinosaurs, and the appearance of avian creatures

- Haratai mixed rocks... (Miyako City)
- Toyomane River chert-clastic Rock sequence... (Yamada Town)

Toyomane River

Mesozoic Era Triassic period

252 M - 201 M years ago

Dawn of dinosaurs, appearance of mammals

- Pillow lava and Kuji Gorge slickenside... (Kuji City)
- Misaki... (Kesennuma City)

Misaki

Paleozoic Era Permian period

299 M - 252 M years ago

Formation of the supercontinent Pangaea

- P-T boundary layer... (Iwaizumi Town)
- Ogama/Oreishi, Hanzo and the Dairesiki Coast... (Kesennuma City)
- Permian period fossil site...Yahagi Town (Rikuzentakata City)
- Iwatsaki... (Kesennuma City)

P-T boundary layer

Oreishi, Karakuwa Peninsula

Paleozoic Era Carboniferous period

359 M - 299 M years ago

Flourishing of plants, appearance of reptiles

- Yukiawa Carboniferous period fossil site... (Rikuzentakata City)

Yukiawa Carboniferous period fossils

Paleozoic Era Devonian period

419 M - 359 M years ago

Appearance of amphibians

- Senjogataki Lepidodendron fossil site... (Kamaishi City)
- Paleozoic outcrops along Omori Road... (Ofunato City)

Senjogataki Lepidodendron fossils

Paleozoic Era Silurian period

444 M - 419 M years ago

Insects and plants emerge on land, appearance of jawed fish

- Paleozoic outcrops along Omori Road... (Ofunato City)
- Higuchiawa Gotlandian fossil site... (Ofunato City)

Higuchiawa

Paleozoic Era Ordovician period

485 M - 444 M years ago

Appearance of marine animals

- Hikami granite and Tsubonosawa metamorphic rocks... Mt. Hikami (Rikuzentakata City)
- Mineral resources...Remains of Tamayama Gold Mine (Rikuzentakata City)
- Yakushigawa Gorge Paleozoic world... (Miyako City)
- Mt. Hayachine... (Miyako City, Tono City, Hanamaki City)

Mt. Hayachine

Paleozoic Era Cambrian period

539 M - 485 M years ago

Explosive growth of organic life

- P-Tsubonosawa metamorphic rocks...Mt. Hikami (Rikuzentakata City)

Tsubonosawa metamorphic rocks



Access

As of July 2023

Getting to Sanriku by JR

Shin-Aomori Sta. - Morioka Sta. (JR Tohoku Shinkansen Line)	Approx. 55 minutes
Aomori Sta. - Hachinohe Sta. (Aomori Railway)	Approx. 90 minutes
Misawa Sta. - Hachinohe Sta. (Aomori Railway)	Approx. 20 minutes
Morioka Sta. - Miyako Sta. (JR Yamada Line)	Approx. 130 minutes
Hanamaki Sta. - Kamaishi Sta. (JR Kamaishi Line)	Approx. 110 minutes
Ichinoseki Sta. - Kesennuma Sta. (JR Ofunato Line)	Approx. 80 minutes
Akita Sta. - Morioka Sta. (JR Akita Shinkansen Line)	Approx. 90 minutes
Sendai Sta. - Morioka Sta. (JR Tohoku Shinkansen Line)	Approx. 40 minutes
Tokyo Sta. - Morioka Sta. (JR Tohoku Shinkansen Line)	Approx. 140 minutes

Getting to Sanriku by car

Aomori - Hachinohe (Prefectural Road 44, 47, 242, etc.)	Approx. 120 minutes
Hachinohe - Kuji (Sanriku Coast Road)	Approx. 40 minutes
Ninohe - Kuji (Prefectural Road 24, 42, National Route 281)	Approx. 70 minutes
Morioka - Miyako (National Route 106, Miyako-Morioka Trans-Prefectural Highway)	Approx. 75 minutes
Hanamaki - Kamaishi (Kamaishi Expressway)	Approx. 65 minutes
Kitakami - Ofunato (National Route 107)	Approx. 80 minutes
Oshu - Ofunato (National Route 397, 107)	Approx. 80 minutes
Ichinoseki - Rikuzentakata (Prefectural Road 19, National Route 343)	Approx. 80 minutes
Ichinoseki - Kesennuma (National Route 284)	Approx. 80 minutes
Sendai - Miyako (Sanriku Coast Road)	Approx. 165 minutes

Getting to Sanriku by airplane

Sapporo (New Chitose) - Iwate-Hanamaki	Approx. 55 minutes
Tokyo (Haneda) - Aomori	Approx. 75 minutes
Tokyo (Haneda) - Misawa	Approx. 75 minutes
Tokyo (Haneda) - Akita	Approx. 65 minutes
Nagoya (Komaki) - Iwate-Hanamaki	Approx. 70 minutes
Kobe - Iwate-Hanamaki	Approx. 90 minutes
Osaka (Itami) - Iwate-Hanamaki	Approx. 80 minutes
Fukuoka - Iwate-Hanamaki	Approx. 120 minutes

Sanriku Geopark Promotion Conference

Miyako District Government Complex,
1-20 Satsuki-cho, Miyako City, Iwate Prefecture, Japan
Telephone: 0193-64-1230 Fax: 0193-64-1234 <https://sanriku-geo.com>

July 2023

A Tour of Sanriku Geopark Suggested Driving Routes

1 Hachinohe - Kuji
Hear the cries of gulls, and feel the gentle sea-breeze in your hair as you unlock the ancient secrets of gleaming amber.

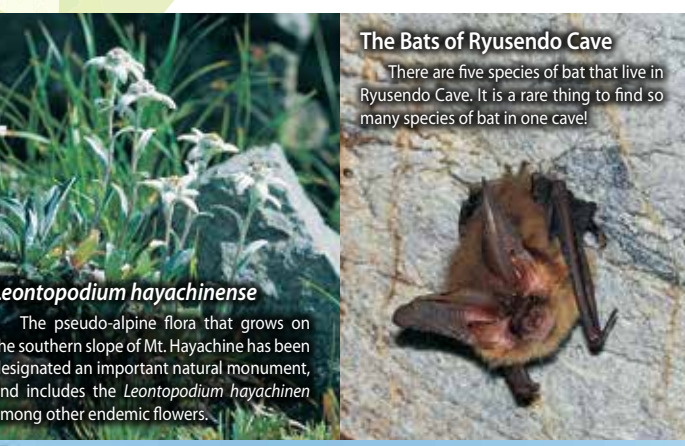
Hachinohe Station	15 min. by car	Kuji Station	20 min. by car
Korekawa Jomon Kan	25 min. by car	Kosode Coast	25 min. by car
Kabushima Island	15 min. by car	Roadside Station Noda - Purple	10 min. by car
Tanesashi Natural Lawn	25 min. by car	Marine Rose, Noda Tamagawa	15 min. by car
Roadside Station Hashikami	25 min. by car	Fudai Floodgate	15 min. by car
Mt. Hashikami	35 min. by car	Kurosaki/Kitayamazaki	25 min. by car
Taneichi Seaside Park	50 min. by car	Roadside Station Tanohata	10 min. by car
Kuji Amber Museum	10 min. by car	Unosudangai	35 min. by car
Roadside Station Kuji Yamase Dofukan	40 min. by car	Roadside Station Iwaizumi	15 min. by car
Hachinohe Station		Ryusendo Cave	60 min. by car
		Kuji Station	

3 Kamaishi - Miyako
Learn how people earned a living from mining for iron, pay homage to the memory of natural disasters, and cleanse your soul in the beauty of the pure land.

Kamaishi Station	45 min. by car	Kesennuma Station	20 min. by car
Hashino Iron Mine	45 min. by car	Roadside Station Oyaigaigan	10 min. by car
Horajima Island	15 min. by car	Iwatsaki	50 min. by car
Namiita Coast	10 min. by car	Karakuwa Peninsula	35 min. by car
Roadside Station Yamada	10 min. by car	The Miracle Pine	25 min. by car
Yamada Bay	30 min. by car	Ofunato Municipal Museum	
Roadside Station Miyako - Naado	10 min. by car	Goishi Coast	30 min. by car
Jodogahama Bay	25 min. by car	Roadside Station Sanriku	30 min. by car
Taro Seawall	5 min. by car	Rokando Cave	70 min. by car
Sannoiva Rocks	5 min. by car	Kesennuma Station	
Roadside Station Taro	5 min. by car		
Kamaishi Station	70 min. by car		

Feature 3 A totally unique ecosystem

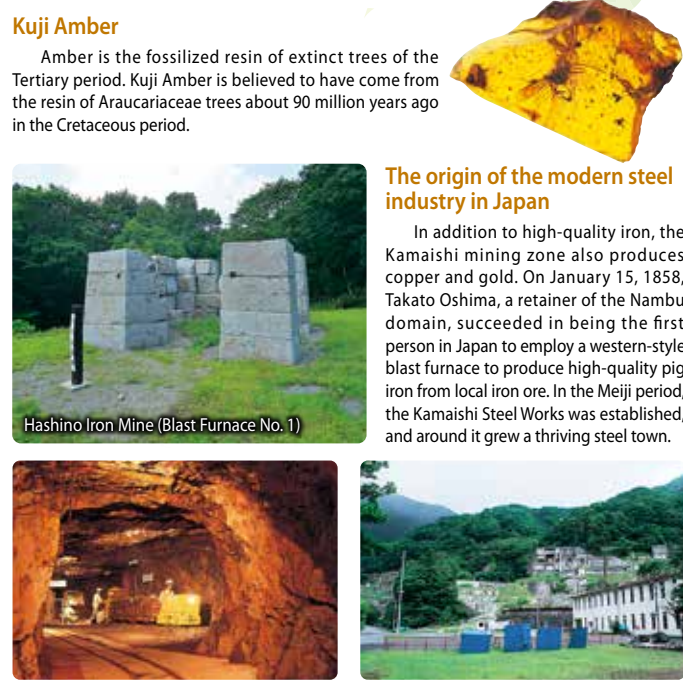
Visitors to Sanriku will find a diverse and totally unique ecosystem in which the topography and rocks of the region, as well as its keen north-easterly winds (known as "yamase"), foster the growth of endemic alpine flowers, such as the *Leontopodium hayachinense*.



Be advised: The landscape and natural environment of most certified Geoparks in Japan fall under the protection of the Natural Parks Act and the Act on the Protection of Cultural Properties. These laws form a system that allow anybody to enjoy the park according to sustainable practices. To ensure the sustainable use of the park's natural environment, we ask that you do not remove plants, animals or rocks, as doing so may result in a significant alteration of the environment. Furthermore, in some parks, it is strictly forbidden to move such things from their original locations.

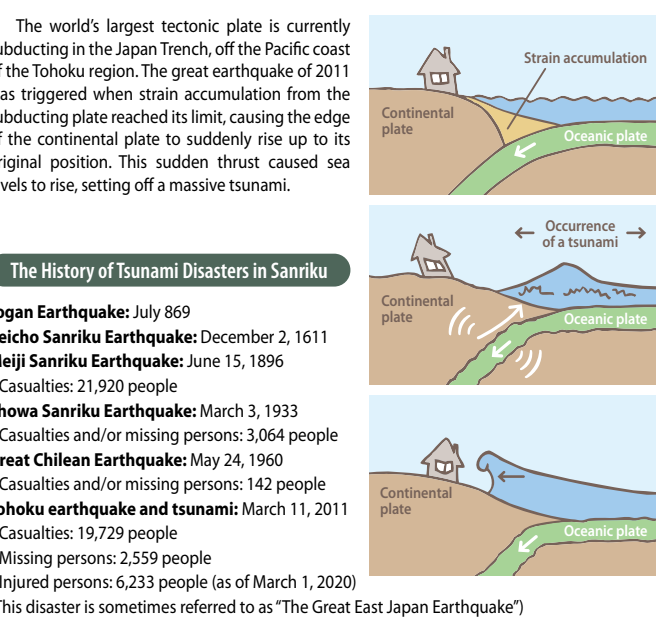
Feature 4 A wealth of subterranean resources

Sanriku's wealth of natural resources has contributed to its cultural and industrial development for generations. It is one of Japan's largest producers of amber (Kuji Amber), its Kesen Gold Mine helped foster Hiraizumi gold culture, and its Kamaishi Mine lay the foundation for modern steelwork in Japan.



Feature 5 A history of coexistence with tsunami

Earthquakes and tsunami are a common occurrence in the Sanriku offing due to the ongoing subduction of the Pacific Plate. Tsunami have even left their mark on ancient rock strata. The Sanriku region is an educational field for passing down the wisdom and lessons of previous generations on how we may coexist with tsunami and other such natural disasters.



Let's Go to Sanriku Geopark! Recommended Geosites

MAP 3-A

2 Tanesashi Coast Natural Lawn

Hachinohe City

The Tanesashi Coast combines rocky reefs and sandy beaches, fosters the growth of diverse flora, and expresses itself differently in every season. Until the mid-1950s, horses grazed on its natural lawn. It consists of multiple flat marine terraces that were once used as a horse ranch for the Nanbu domain.

MAP 3-B

4 Taneichi Seaside Park

Hirono Town

Surrounded by the rich natural landscape of northern Sanriku, Taneichi Seaside Park is a public park located at the southern end of Taneichi Fishing Port. The peculiarly artistic Madoiwa ("Window Rock"), which can be seen nearby, was forged some 85 million years ago by the rough waves of the north sea. True to its name, it is a rock with a window-like hole in it.

MAP 3-C

6 Kuji Mountain Stream

Kuji City

Kuji Mountain Stream is hailed as one of the most scenic spots in Kuji-Hiraniwa Prefectural Natural Park. With its outcrops of pillow lava and limestone, it serves as a chart telling the dynamic story of oceanic plates and their movement over hundreds of millions of years. Once level with the ocean floor, its slickenside limestone cliffs now rise vertically into the air.

MAP 4-D

8 Kurosaki

Fudai Village

Kurosaki is a scenic destination with cliffs that rise perpendicularly 200 meters above sea level. At its southern end is Anmou Falls. The largest waterfall in Iwate Prefecture, Anmou has a drop of 150 meters, and empties directly into the ocean.

MAP 3-E

10 Ryusendo Cave and Ryusen-Shindo Cave

Iwaizumi Town

Ryusendo Cave is one of the three major limestone caves of Japan, and has been designated as a national natural monument. At least 3,600 meters of the cave has been excavated to date, though it is said to extend over 5,000 meters into the mountainside. Furthermore, the cave boasts some of the clearest spring water in the world.

MAP 4-F

12 Sannoiva Rocks

Miyako City

The Sannoiva Rocks are a set of three oddly-shaped rocks that have been carved by wind and wave over the course of many ages. Horizontal stripes created by 110-million-year-old sandstone and (Miyako group) conglomerates can be seen on their surface. Virtually unaffected by the Tohoku earthquake and tsunami, these rocks are an enduring symbol of the awesome power of nature.

MAP 4-H

14 Yamada Bay and Holland Island

Yamada Town

Yamada Bay is shaped like a closed draw-string bag. Its calm waters and nutrient-rich environment make it ideal for oyster cultivation. Ocean water first entered the bay about ten thousand years ago. Oshima Island, which is located in the bay, was once visited by a Dutch ship during the Edo Period. For this reason, it is sometimes called "Holland Island".

MAP 3-H

16 Hashino Iron Mine

Kamaishi City

In addition to housing Japan's oldest extant Western-style blast furnace, the ruins of Hashino Iron Mine stand as an industrial artifact for everything from mining to smelting. Three blast furnaces, a canal, an accounting office, and other such relics of the early-modern steel industry are set in a beautiful natural environment surrounded by forests and rivers.

MAP 3-K

18 Goishi Coast and Anatoshiiso Rock

Ofunato City

These beautiful landmarks were shaped by the waves over the course of some 130 million years. The Anatoshiiso has three holes, through which can be heard the booming voice of the Kaminari-iwa ("Thunder Rock"). Depending on the weather, visitors to Cape Goishi may even be able to see as far as Mt. Kinika. The area has been designated as both a place of scenic beauty and a natural monument.

MAP 3-J

19 Remains of Tamayama Gold Mine

Rikuzentakata City

The Tamayama Gold Mine refers to a crystal and gold deposit (pegmatite ore deposit) formed when Hikami granite (formed approximately 450 million years ago) slowly cooled and solidified deep underground. It was known as a representative gold mine of the Kesen region, boasting historical facts and legends of prosperity, characterized by its large scale and abundant gold production.

MAP 3-K

20 Oogama/Oreishi/Hanzo (Karakuwa Peninsula)

Kesennuma City

Located on the rocky Karakuwa Peninsula, Oogama-Hanzo is a scenic spot formed of limestone and marble that is over 200 million years old. At the southern end of the peninsula, near Osaki Shrine, a massive subtropical tabunoki tree can be seen. Visitors to the Karakuwa Peninsula Visitor Center can experience the awesome force of nature by way of a multi-sensory exhibit involving video, audio and physical effects that simulate tremors and wind.



MAP 3-A

1 Kabushima Island

Hachinohe City

Kabushima Island was formed when an underwater volcano erupted some 130 million years ago. When the nanohana blossoms are in bloom, 30,000 black-tailed gulls descend upon the island, making it the world's largest nesting ground. Observe a gull's nest up close, and witness how the baby gulls are reared on the rich bounty of an ocean into which two rivers flow.

MAP 3-B

3 Mt. Hashikamidake

Hashikami Town

Mt. Hashikamidake (739.6 meters) was formed deep underground when magma slowly cooled into a solid shape. Then, over the course of 100 million years, it rose above sea level, where it was eroded by water until it took on the smooth shape of a recumbent cow. Tourists descend upon the mountain annually to see its approximately 20,000 azaleas bloom.

MAP 4-D

5 Kosode Coast

Kuji City

Kosode Coast was the setting for the 2013 film Ama-chan. The cliffs, oddly-shaped rocks and reefs of its coast were formed about 130 million years ago from granite and lava. Columnar joints can be seen on the famous Meoto-iwa ("Married Couple Rocks"). The nutrient-rich kelp on its reefs make it an ideal place for female divers to farm delicate sea urchin and abalone.

MAP 4-D

7 Tofugaura Coast

Noda Village

Drawing a gentle arc with its periwinkle "azuki sand", the Tofugaura Coast has been used as an utamakura (a rhetorical device of Japanese poetry) throughout the ages, and is considered to be a place of great scenic beauty. Much of the beach was washed away during the Tohoku earthquake and tsunami, and its revitalization is eagerly anticipated.

MAP 4-D

9 Kitayamazaki/Unosudangai

Tanohata Village

On the Japan Travel Bureau Foundation's tourism resource list, Kitayamazaki has been awarded a grade of "A" for displaying a scenic beauty that is representative of Japan. Its cliffs, which rise nearly 200 meters, stretch for about 8 kilometers to the north and south. Closer to the water, visitors are drawn to the oddly-shaped rocks and sea caves.

MAP 2-G

11 Mt. Hayachine

Miyako City

Mt. Hayachine (1,917 meters), the highest peak in the Kitakami Mountains, is composed of rocks such as peridotite and serpentinite from the Ordovician period of the Paleozoic Era over 400 million years old. Despite the challenging soil and environment for plant growth, unique species such as *Leontopodium hayachinense* and serpentine plants like *Arenaria katacana* thrive in the area.

MAP 4-G

13 Jodogahama Beach

Miyako City

The name "Jodogahama" originates from when the Monk Reikyō said of the place, "It is like the pure land (Jōdo)." Formed some 52 million years ago from solidified magma, its topography has been sculpted over the years by waves and wind since it appeared above sea level.

MAP 4-H

15 Horaijima Island

Otsuchi Town

This gourd-shaped island in Otsuchi Bay was formed from granite some 100 million years ago during the Cretaceous period. Although its lighthouse was destroyed in the Tohoku earthquake and tsunami, it has since been reconstructed in the form of an hourglass, shining its light of hope for the safety of ships at sea, and for the revitalization of the region.

MAP 3-I

17 Rokando Cave

Sumita Town

Rokando Cave is a solutional cave with limestone that is some 320 million years old. It is confirmed to have a total length of 3,635 meters. It is best-known for its "Waterfall of the Heavenly Cave", which boasts a drop of 29 meters, making it Japan's tallest subterranean waterfall. Visitors to the cave will also have the opportunity to see sea lily fossils.

Use these QR codes to access the Sanriku Geopark website

Sanriku Geopark homepage

Northern block attractions

Central block attractions

Southern block attractions