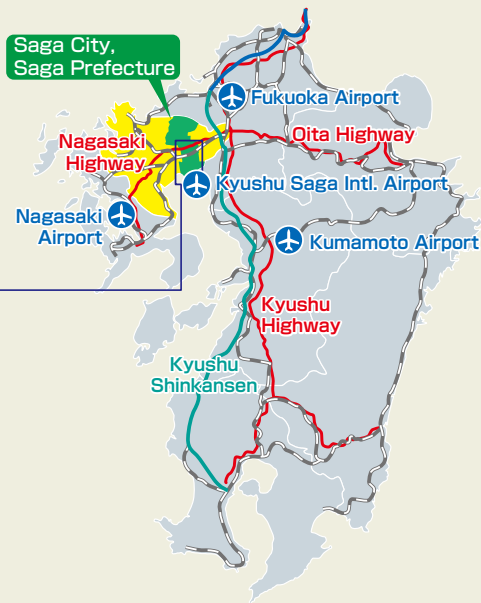
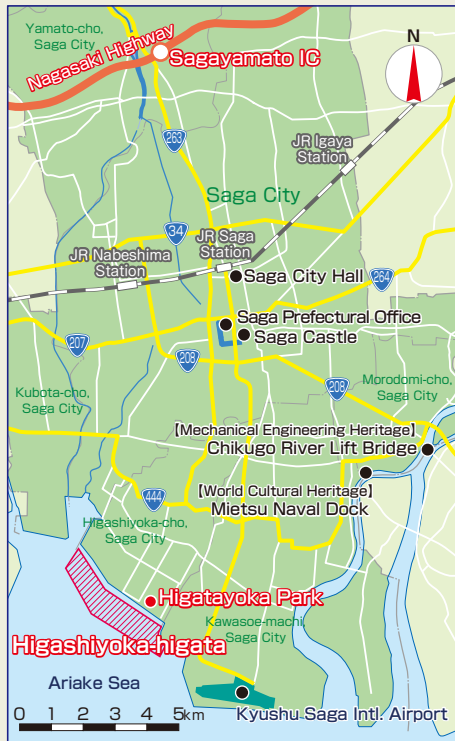
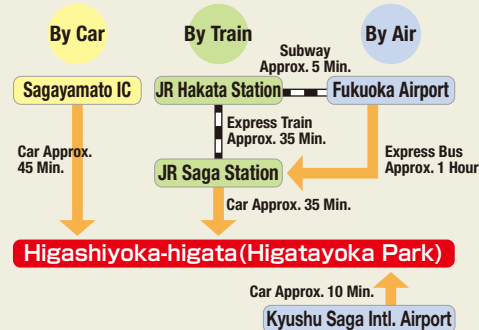


Access Guide



Traffic



※Access for Higashiyoka-higata would be easier if you search for "Higatayoka Park"
(Address: 2885-2, Shimokoga, Oaza, Higashiyoka-cho, Saga City)

Information

- The Ramsar Convention and Ramsar Sites (Ministry of the Environment)
<http://www.env.go.jp/nature/ramsar/conv/>
- Field Guide to Tidal Flats
http://www.pref.saga.lg.jp/sy-contents/higata_ikimono/
- Saga City Hall
<http://www.city.saga.lg.jp/>
- General Incorporated Association Saga Tourist Association
<http://www.sagabai.com>

The Guide Book to Higashiyoka-higata, Ramsar Site

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Kyushu Regional Environmental Office, Ministry of the Environment, Japan
Kumamoto-chihou Godochosha B 4F, 2-10-1 Kasuga, Nishi-ku, Kumamoto-shi, Kumamoto 860-0047 JAPAN
☎096-322-2413
Website: <http://kyushu.env.go.jp/>

In collaboration with : Saga city
Photo by : Chihaya Kuriyama, Mitsuo Otonari,
Saga Prefecture fishery cooperative federation,
Saga City, Saga City Tourism Association
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Ramsar Site in Saga City, Saga Prefecture

Higashiyoka-higata

The Guide Book to Higashiyoka-higata, Ramsar Site



— Protecting and Leading to the Future —

The place which was a sea until just now
has now become a huge tidal flat.
Mutsugoros are jumping,
and lovely fiddler crabs are waving their hands on the mud of the tidal flat.
Look at the sky – many migratory birds are flying over.
It is covered with bright red Shichimenso in full bloom in autumn.
What a beautiful scenery! Shichimenso
“Higashiyoka-higata”, a Ramsar site,
has given so many blessings to Maeumimon, birds and humans.
It is really the sea of treasures.

Published by Kyushu Regional Environment Office,
Ministry of the Environment, Japan

Overview of Higashiyoka-higata

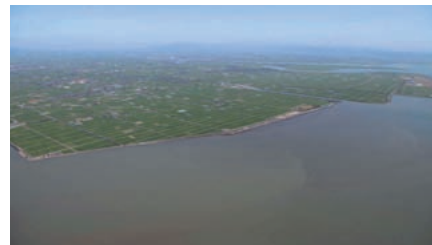
Features of Higashiyoka-higata

Higashiyoka-higata is located off the Higashiyoka shore in the Ariake Sea facing the southern part of Saga City. This single tidal flat has developed at this sea shore and the mouths of the Rokkaku River, Kase River, Honjoue River, etc. flowing into the northern part of the Ariake Sea. Higashiyoka Tidal Flat is part of a tidal flat in the Ariake Sea, and is one of the biggest tidal flats in Japan.

The difference of high and low tides of the Ariake Sea is said to be 6 meters. The Ariake Sea is located off Fukuoka, Saga, Nagasaki, and Kumamoto Prefectures, and a huge tidal flat appears at low tide. Around Higashiyoka-higata, the area is 1,300 ha and approximately 2.5 km wide from the shore. In this area, you can see valuable moorland vegetation, and abundant rare sea creatures specific in the Ariake Sea, such as benthos (lugworms, Ostracods, etc.). Mutsugoro (a kind of mudskipper) and Warasubo (a type of goby).



Ramsar Site Higashiyoka-higata



At High Tide



At Low Tide

As this tidal flat is also important as a relay and wintering point for migrant birds, including endangered species, or sandpipers and plovers, the entire tidal flat area is designated as a special conservation area of National Wildlife Protection Area.

No.1 rated features of Higashiyoka-higata

The largest number of visits by sandpipers and plovers

According to Monitoring Site 1000, a survey by the ministry of the Environment, the largest number of migrant birds, sandpipers and plovers visit Higashiyoka-higata (Daijugarami). Many other wild birds also visit this area. More than 100 kinds of wild birds can be seen throughout the year.

Site Names	The Maximum Number of the Visit
Higashiyoka-higata (Daijugarami)	12,127
Arao Seashore	4,831
Northern Part of Lake Furen	3,474
Hikawa River	3,494
Sanbanze	3,071
Shiranui Tidal Flat	2,549
Yatsu Tidal Flat	2,218
The Mouth of the Kuma River	2,202
Kasai Marine Park	2,110
Fujimae Tidal Flat	2,108

Top 10 sites with the largest numbers of visiting sandpipers and plovers, according to Spring 2015 Report by the Monitoring Site 1000 survey on Sandpipers and Plovers.

Habitat of Shichimenso

Shichimenso is an annual Chenopodiaceae plant, and a halophyte which can endure salt. They are designated as an endangered species. In Japan, they grow only in the tidal flat area around the Ariake Sea. The shoreline, from where Higashiyoka-higata can be seen, is the largest habitat of Shichimenso. The shoreline turns bright red in autumn as if a red carpet were spread over. This scenery is called "red leaves in the sea" and is a seasonal tradition of the Ariake Sea.



Bright red Shichimenso covering the shoreline(Autumn)

High and low tide difference of the Ariake Sea

The high and low tide differences of the Ariake Sea, where Higashiyoka-higata is located, is the biggest in Japan, approximately 6 meters. This area forms a huge tidal flat at low tide, 5-7 km towards the off-shore. It is approximately 40 % of the total tidal flats in Japan.



The off-shore seen from the shore. Many wild birds visit here looking for food at low tide. Norihibi (device to grow seaweeds) can also be seen in the background.

The Ramsar Convention and Wise Use

What is the Ramsar Convention?

The Ramsar Convention (formally, the Convention on Wetlands of International Importance, especially as Waterfowl Habitat) is an international treaty for the conservation and wise use of wetlands. It is named after the city of Ramsar in Iran, where the Convention was signed in 1971.

The countries which signed the Ramsar Convention are called Contracting Parties. They talk about current situation of the wetlands in each country, actions for their conservation, future plans, etc. at the Conference of the Contracting Parties (COP) which is held about every three years. The 5th COP was held in Kushiro City, Hokkaido in 1993.

The Ramsar Convention Sites in Japan

As of March 2016, 169 countries have signed the Ramsar Convention. Japan joined in 1980, and has registered 50 wetlands as the Ramsar Convention Sites.

Not only lakes, swamps and marshes, but also various wetlands such as rivers, tidal flats, Mangrove forests, coral reefs, and artificial rice fields are included to the sites. 8 tidal flats including Higashiyoka-higata are among them.

Tidal flats are often targeted for various development businesses in Japan where there are not many flat lands, and approximately 40% of tidal flats in Japan have been lost in about 50 years from 1945 to 1994. Under this circumstance, tidal flats are getting more valuable.

Relation between the tidal flat and its creatures

Rainwater falls on the land, and goes over the fields, with a lot of nutrients (nutrient matter such as nitrogen, phosphorus, and silicon, melted in the water) and organic matter, through the rivers, and then flows into the sea.

Around the tidal flat, the nutrients in the water are taken in by diatoms and phytoplanktons on the surface of the tidal flat. They are eaten by zooplanktons, which are eaten by fish and shellfish, which are eaten by humans and birds. And then, the nutrients in the water are returned to the land area again.

On the other hand, organic matter attached to the mud and grains is taken in by lugworms and crabs. These benthoses are also eaten by birds.

The connection of all creatures and their characteristics like this is called "biological diversity". Such a cycle have been repeated in the Ariake Sea as well.

Wise Use of Higashiyoka-higata

The Ramsar Convention does not require people to stop entering or utilizing wetlands to protect them, but rather require people to be involved and understand well the merits they can receive from wetlands, so that these wetlands can be permanently utilized. It is called "Wise Use".

Higashiyoka-higata has also been used and utilized in various ways.

People in this area have developed their own fisheries and fishing implements adapting to the tidal flat. They have caught sea creatures in the tidal flat such as Mutsugoro (a type of mudskipper) for food.)

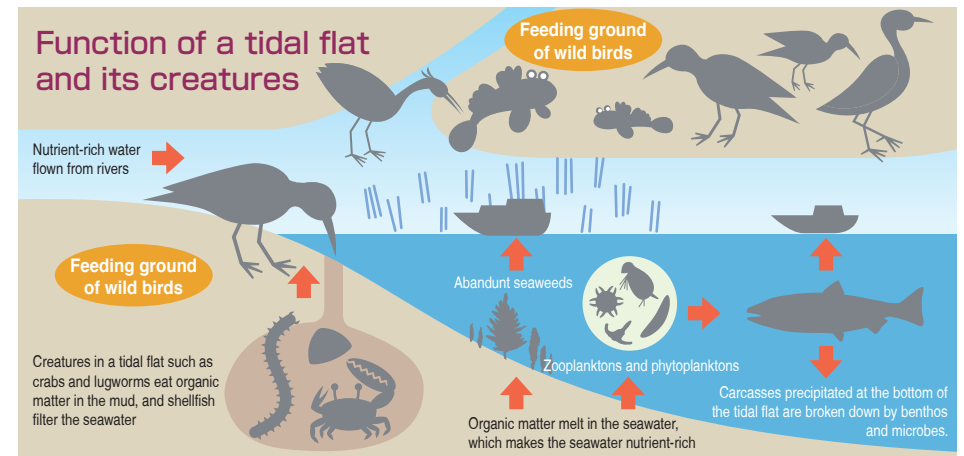
In addition, many people visit around this tidal flat to observe wild birds visiting and creatures living there. This area has also been utilized for sightseeing and leisure in recent years. For example, various events are held in this area, mainly at nearby Higatayoka Park.

People should use the tidal flat wisely and know its values and charms. It is important to make sure to hand over Higashiyoka-higata to future generations.

3 Principals of the Ramsar Convention



- = The Ramsar Sites in Japan
- = Wetlands registered as "tidal flats / river mouth tidelands"



History of the tidal flat and reclamation

History of the Saga Plain and Ariake Sea

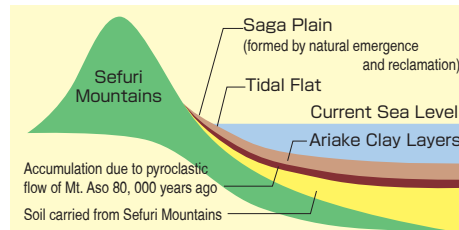
In fact, it is since the period of Showa that the area currently called “Higashiyoka-higata” has formed to what it is now. The Saga Plain facing toward Higashiyoka-higata used to be a sea before. However, the land parts have been gradually increased over a long period of time due to the inflow of soil from rivers, and the vast plain has been formed by the full-scale reclamation business started since the period of Edo. Many lands have been cultivated to produce more foods, especially due to the population explosion after the wars. The reclaimed land has been extended to 260 square km by now.

This fine soil has been carried through big and small rivers flowing into the Ariake Sea, and has become silt floating in the sea along the shore, where the sea is shallow for a good distance from the shore and has the biggest difference in Japan between high and low tides. These silts have gradually accumulated on the shoreline, by being pushed back by the current at high tide, and formed the tidal flat which appears only at low tide.

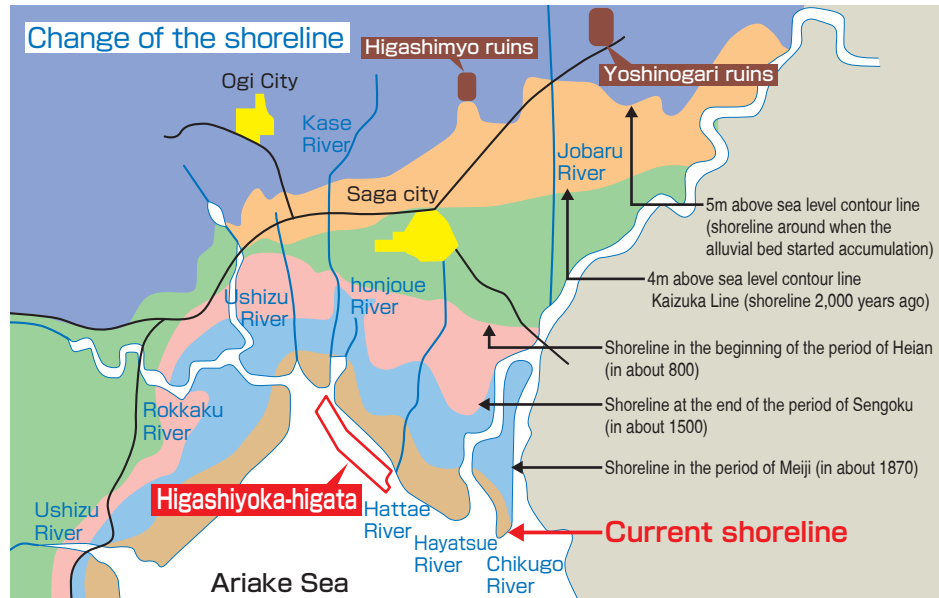
This clayey soil the Ariake Sea consists of is called “Ariake Clay Layers”. It is the cause of the brown seawater of the Ariake Sea, and is the “cradle of life” which raises many lives in the tidal flat and so on.

Ariake Clay Layers forming the Ariake Sea

Approximately 80,000 years ago, Mt. Aso in the middle of Kyushu had a big eruption and the soil was blown up and poured over the whole Kyushu area. The soil has been weathered over a long period of time and become clayey mud including vegetable organic matters.



Schematic view of the current Saga Plain (from display, Saga Prefectural Museum)



Surveying when the reclamation of Ariake started (on "History of the reclamation of Ariake" issued by Kyushu Regional Agricultural Administration Office)



Spot Inspection (on "History of the reclamation of Ariake" issued by Kyushu Regional Agricultural Administration Office)



The Higashiyoka construction area at the Ariake Sea in March 1961

Trace of reclamation in the names of the places

Many places around the Ariake Sea have names with the Chinese character “擲 (karami)”. The area of Higashiyoka-higata is also called “Daiju-garami”.

“擲 (karami)” means “a rope is twisting around a tree”. This name is after the reclamation construction in old days. People drove in pilings into the places to be a dike. They twined branches of trees and bamboos around the pilings to make the soil carried by the high tide accumulate there. They utilized the power of nature to make the ground level almost as high as the high tide level, then hardened it. After this step, they raised a dike with human power. This is why many reclaimed places were

named “something-karami”.

Otherwise, some places have names with “籠 (komori)”. “Komori” means a bamboo basket. As a method of construction, people put soil in cylinder-shaped bamboo baskets and put them side by side so that they would function as a dike. These places are often older than places called “something-karami”. These methods were possible due to the big difference of the high and low tides in the Ariake Sea. The wisdom of the ancient people is impressive.

Like this, many place names still show the history of reclamation in each area around the Ariake Sea.

Live with the Ariake Sea

Traditional Fisheries at the Ariake Sea

The difference between high and low tides of the Ariake Sea is approximately 6m. It is only 20m deep even at the highest tide, and the head of the bay, the only opening is very narrow. With such a specific environment, many rare sea creatures which seldom can be seen in other areas, such as Mutsugoro (a type of mudskipper) and Warasubo (a type of goby), also can be seen.

This vast tidal flat of the Ariake Sea is called "Maeumi (the front sea)", different from the off shore, and the sea creatures living there are called "Maeumimon (creatures living in the front sea)". People living around there were living with "Maeumimon", catching them to eat in this rich fishing ground while working as farmers at the reclaimed land.

As the farmlands around the tidal flat were the reclaimed lands, the characteristics of the soil is just like the one of tidal flat at low tide. That is why their fishing tools are also very characteristic; some of them used to be the farming tools, or have almost the same shapes as the farming tools.

However, these traditional fishing tools are not often seen anymore, because the food culture has changed and the sea creatures to be caught with these tools have remarkably decreased.



A hook-shaped claw is attached at the tip of the scratcher.



Warasubo

Subokaki (Warasubo Scratcher)

Warasubos have been adopted to a life in the mud. Most of the eye functions have been degenerated and it is difficult even to find the eyes. Not being expected from its appearance, it has a rich taste and can be eaten by drying and boiling. As they are generally living in the mud of the tidal flat, a stick with a metal hook at the tip is used to catch them by scratching the mud of the tidal flat and pulling them up.



Drying Warasubo

Dried Warasubo

Gata Ski (Ski for the tidal flat)

As Higashiyoka-higata is consisted of soft clayey mud, and the particles of the mud is very fine, your feet will sink under the mud when standing on it. This is why a push plate called "Gata Ski" is needed.



Mutsugoro dipped and broiled in soy-based sauces (1967)

Mutsukakeryo (Hooking Mutsugoro)

Mutsugoro is a family of gobies. In Japan, they only can be seen in the Ariake Sea. Their lovely figures jumping on the tidal flat can be seen at low tide.

Mutsukakeryo is a way of fishing them by throwing in a hook-shaped metal claw at the tip of a fishing pole to hook them. The splendid skill is worth being called a technique of an expert.



Mutsugoro



A hook-shaped metal claw at the tip of a stick

Takapporyo (Barrel Fishing)

Trap a pipe with a special structure (where a fish enters once, it cannot get out) at the burrow of Mutsugoro and wait for it to enter. Not like Mutsukake (hooking), Mutsugoro can be caught without being injured.



Fiddler crab

Catching crabs

One claw of a fiddler crab is bigger than the other. They can be caught by inserting your hand to its habitation hole and picking it up, or by digging the hole with a flat blade similar to a hoe, a farming tool and grabbing it with your hands.



Catching crabs (1970)

As a Ganetebo (a bamboo basket in the photo) to put caught crabs is deep, they cannot crawl up and run away.

Catching Mekaja

The official name of Mekaja is *Lingula anatina*. It is also called a "living fossil" as it remains the same figure for hundreds of millions of years.

As they live in the relatively shallow part of the tidal flat, you can pick them by digging up the superficial part of the mud with a flat blade similar to a hoe, a farming tool.



Mekaja (*Lingula anatina*)



Shappa Fumi (Stepping on giant clams)

Jappa means a giant clam, which is often used as a sushi topping as well. They dig long u-shape holes in the shallow part of the tidal flat as burrows. You can catch them by stepping one of the two holes as they pop out of the other hole with seawater.



Giant clam



Section of the burrow



Screw stick



Umitake (Barnea dilatata)

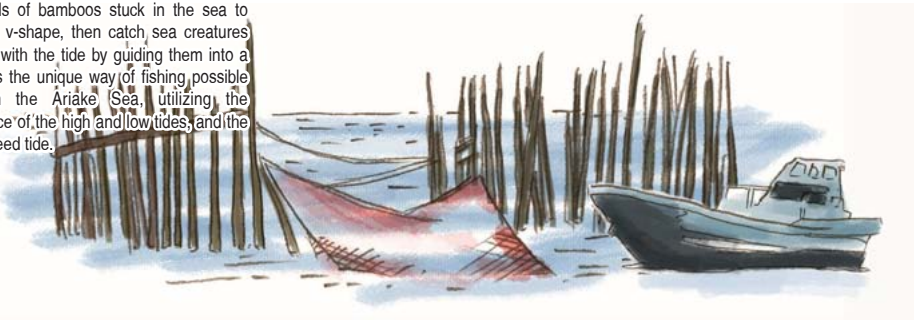


Umitake Neji (Screw to catch Barnea dilatata)

Umitake (Barnea dilatata) is a bivalve which lives burying its shells in the mud, sticking out a long water tube outside the mud. To catch Umitake, people use an iron bar perpendicular attached at the top of a stick to make a t-shape. They insert this screw into the mud and turned to tangle the water tube of the Umitake, then pick up.

Takehazeryo

Takehazeryo is a way of fishing using hundreds of bamboos stuck in the sea to make a v-shape, then catch sea creatures moving with the tide by guiding them into a net. It is the unique way of fishing possible only in the Ariake Sea, utilizing the difference of the high and low tides, and the high speed tide.

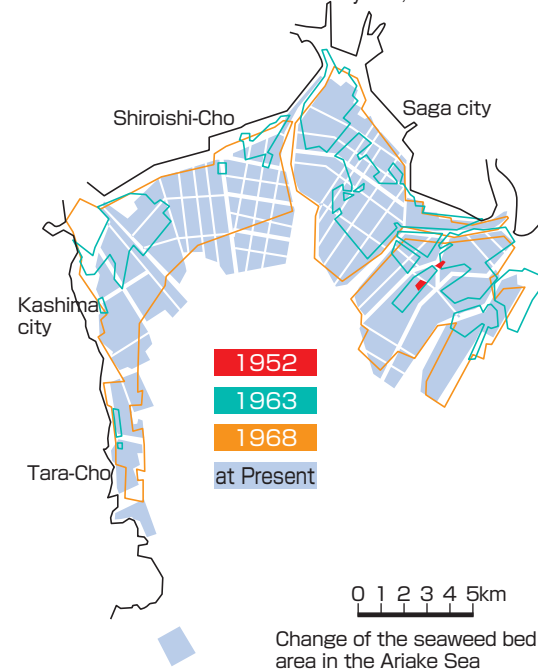


Cultivation of seaweed

The Ariake Sea has been utilized as a seaweed bed as well, making use of the nutritious seawater and the difference of the high and low tides. Norihibi (device to cultivate seaweeds) is spreading out adjacent to the south offshore of Higashiyoka-higata as well.

The first trial seaweed cultivation at the Ariake Sea started in around the period of Meiji. It is only after the war that the full-scale seaweed cultivation started in this area.

The seaweed bed area was only 112,000 meter



square (the size of 2.5 domes) in 1952, when the seaweed cultivation had been started for the first time after the war. Then the seaweed bed area was significantly increased along with the advance of cultivating technologies such as the establishment of artificial seedling collection techniques, mechanization of harvesting and drying seaweeds. Now the seaweed bed area has been expanded to more than 90 million meter square around the entire Ariake Sea, and Saga Nori (seaweed) has become No. 1 in Japan for quantities of both production and sales.



Producing seaweeds around 1952



Scenery of Norihibi (materials to cultivate seaweeds) continuing forever (photo provided by Saga Prefecture Fishery Cooperative Federation)

Ariake Sea Experience Program

With this program, you can actually experience the unique fishing at the Ariake Sea. The dates of the program depends on the season, so please contact the following by calling, etc.

Contact:
Saga City Tourism Association
Tel: 0952-20-2200



Takapporyo (Barrel Fising)

Use a special capturing device to catch creatures in the mud such as Mutsugoro



Clamming tour

Go offshore by boat and enjoy clamming at low tide.

Paradise for migratory birds

A three star restaurant for birds

Higashiyoka-higata is one of the biggest relay points / wintering spots in Japan for waterfowls including endangered species such as Black-faced spoonbill, Saunder's gull, and Far Eastern Curlew.

Especially it has the largest number of visit by sandpipers and plovers in Japan. They breed in Siberia and Alaska in summer, and go to the south such as Australia and New Zealand for wintering in winter. Thousands of sandpipers and plovers

pecking food can be seen in Higashiyoka-higata in the migrating season in spring and autumn.

Why so many wild birds fly to Higashiyoka-higata? It is because abundant creatures which can be their food such as crabs and lugworms live here due to the nutrient rich soil flowing into this area through rivers. For wild birds, the vast tidal flat spreading at low tide is like a three star restaurant full of delicious food.



Flocks of sandpipers and plovers It is just superb to see a flock of thousands of birds flying over the tidal flat.



Dunlin
Near Threatened



Black-faced Spoonbill
Endangered



Common Shelduck
Vulnerable



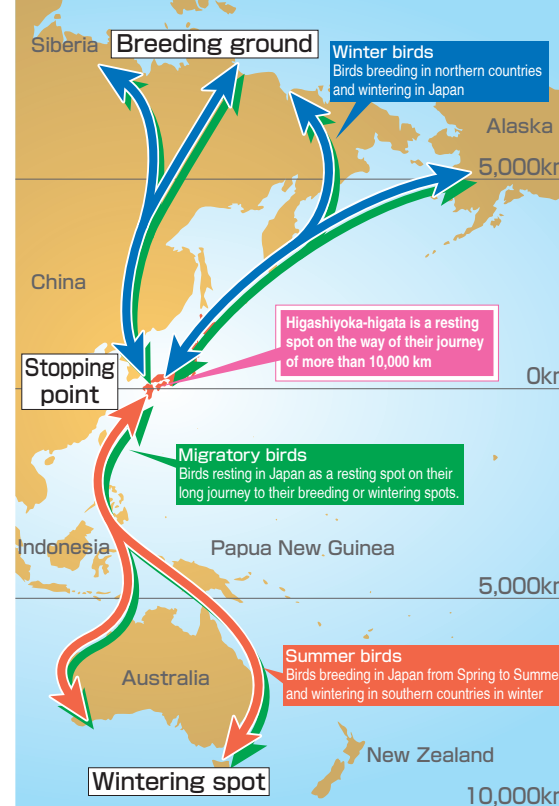
Saunder's Gull
Vulnerable



Spoon-billed Sandpiper
Critically Endangered



Eurasian Curlew



Flight route of sandpipers and plovers

To conserve tidal flats

Tidal flats are important relay points for migratory birds to rest and regain energy on the way of their journey of more than 10,000 km. However, there are less and less tidal flats in the world due to environmental developments, etc. These birds cannot reach their destination (Siberia and Australia) without having enough rests on the way of their journey.

Therefore, conservation of tidal flats leads to preservation of wild birds, and also leads to preservation of biological diversity including us, humans.

As the journey of migratory birds has no boundaries, bigger networks are also needed for conservation activities of wetlands and tidal flats, beyond the local limits.

Let' go! Bird-watching

You can observe approximately 100 kinds of birds throughout the year at Higashiyoka-higata. As there is a promenade on the shore, you can find a favorite place for bird-watching. Also, 7 telescopes are available on the dike to easily observe the tidal flat.

Points of bird-watching

- ◎ Around 1 hour before and after the high tide, especially when it is more than 5 meters, is the best time to observe wild birds closely. Please come around 2 hours before the high tide.
- ◎ The migration peak seasons for sandpipers and plovers are the beginning of May in spring and around September in autumn. Otherwise, you can enjoy observing various birds and creatures that live in the tidal flat throughout the year.
- ◎ As high and low tide time information is shown on the internet, etc., please check it in advance.
- ◎ At low tide, you can enjoy watching a vast tidal flat.
- ◎ It is very cold especially in winter. Please be sure to keep warm.

Manners for bird-watching

- ◎ Do not park cars on the dike.
- ◎ Please share the telescopes available on the dike.
- ◎ Please watch wild birds quietly.
- ◎ Please take your rubbish home with you.



Observation

Enjoy Higashiyoka-higata

Higatayoka Park

Along with the shore overlooking Higashiyoka-higata, there is Higatayoka Park full of nature and greenery. From the dike, you can enjoy watching the scenery of the tidal flat and birds anytime, through the telescopes available there.

This park is a popular spot for enjoying family leisure and so on throughout the year, as many playground equipment, a paddling pool, and an open space lawn are also available in the park.



A commentary board about Higashiyoka-higata is equipped along with the dike so that you can learn the value and appeal of the tidal flats while actually seeing it.



People conserving Higashiyoka-higata

In the neighborhood, "Ramsar Club" is having activities mainly with elementary and middle school students. The future leaders are being developed by learning the value and appeal of Higashiyoka-higata through research on the creatures in the tidal flat, bird-watching, interchanges with other registered wetlands, etc., so that they will be able to transmit the splendid points of the tidal flat.

Also, cleanup activities by volunteers are held to conserve the tidal flat and maintain the scenery.



Investigation of the tidal flat



Experience of tidal flat



Cleanup program of the shore

Higashiyoka-higata Guidance Room

"Higashiyoka-higata Guidance Room" was organized in Higatayoka Park to easily explain about creatures and wild birds in Higashiyoka-higata.

Opening Hours : 9:00~16:00

Closed days : Every Monday (if a Monday is a national holiday, then the next day), 12/29~1/3

Contact : Saga City Environmental Policy Department Environmental Policy Division TEL 0952-40-7202



On the large monitor in front, you can enjoy watching the attractive films of Higashiyoka-higata such as aerial films shot by a drone.



With panels, models, and a digital signage system, the scenery of the tidal flat and the creatures living there are clearly introduced.



The exterior of the building replicates a Jogodani-zukuri style house which was often seen in the Higashiyoka area. The characteristic structure is one of the highlights as well.

Tourism Around

©[World Cultural Heritage] Mietsu Naval Dock

It was the base for the western style navy organized by the Saga clan to prepare for the pressure from foreign countries in a very early stage at the end of the period of the Tokugawa shogunate. The oldest dry dock in Japan was also found there. It was registered as a World Cultural Heritage in July 2015, as one of the assets which comprise a singular ensemble of an "Industrial Revolution Inheritance in Japan in the period of Meiji".



©[Mechanical Engineering Heritage] Chikugo River Lift Bridge

The approximately 507 meter long Chikugo River Lift Bridge, crossing the Chikugo River, is the only movable lift bridge existing in Japan. As the Saga line of previous Japan National Railways used to be in operation in this area, the elevated part in the middle of the bridge was lowered when a train passed. It has been registered as a machine inheritance, and is currently maintained as a promenade.

