

## Access



## Information

- Ramsar Convention and Ramsar Sites (Ministry of the Environment)  
<http://www.env.go.jp/nature/ramsar/conv/>
- Kashima City Hall  
<http://www.city.saga-kashima.lg.jp/>
- Tourist Information Portal Site of Kashima City  
<http://kashima-kankou.com/>

## Guide Book to Hizen Kashima-higata, Ramsar Site

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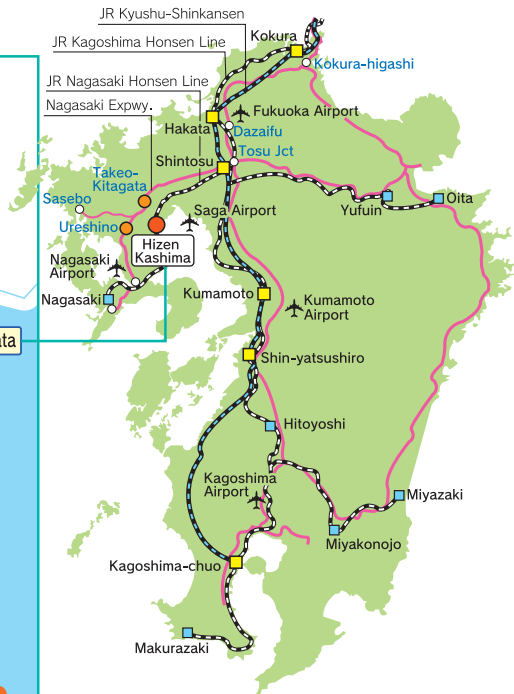
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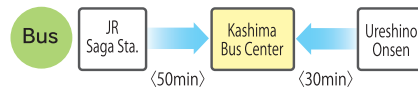
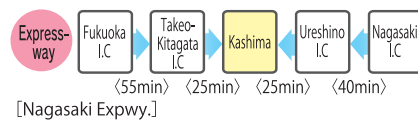
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## Traffic



Mascot character of Kashima City  
 "Kashimaru-kun"



## Ramsar Site in Kashima City, Saga Prefecture

# Hizen Kashima-higata

## The Guide Book to Hizen Kashima-higata



Living in harmony with the sea of Kashima to preserve the bountiful tidal mudflat for the future

Tidal mudflats nurture the chain of life

From laver, great blue-spotted mud skippers to migratory birds

Fishermen use traditional techniques such as Mutsukake, Takappo and Tanajibu

Local people sing and dance the Gata-age Ondo, and visit the divine islet of Okinoshima

Everyone enjoys the Gatalympics and a stroll along the Sakagura-dori street

Mud, people and creatures all stay together

In the mudflat of Hizen Kashima-higata forever

Why don't you come and see and enjoy our

Hizen Kashima-higata, beautiful Mudflat!

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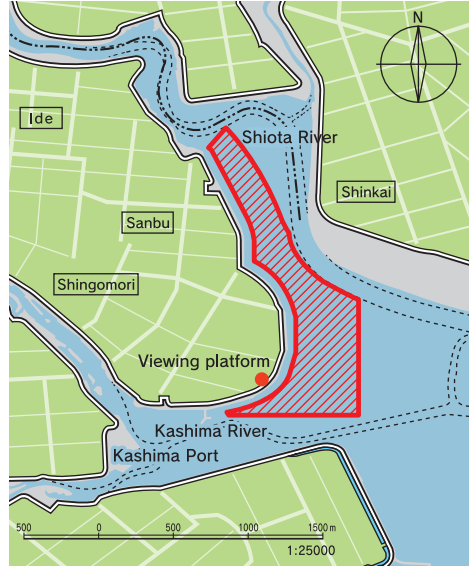
# Overview of Hizen Kashima-higata

## Hizen Kashima-higata - the treasure of the Ariake Sea

The anticlockwise tidal current in the Ariake Sea created a set of tidal flats. The large sand grains from rivers which settled at the eastern shore of the Sea formed the sandy tidal flat of Arao-higata while the smaller particles of mud which were carried to the northern recess and western shore of the Sea formed a muddy tidal flat. With the greatest tidal range in Japan, at 6 m, the Ariake Sea has nurtured a distinctive ecosystem, livelihood and culture in the communities along its coast.

Hizen Kashima-higata is located in the narrowest inner recess of the eastern shore of the Ariake Sea. The tidal mudflat with a rich biota was formed between the right bank of Shiota River estuary and the left bank of Kashima River estuary. At low tide, the mudflat stretches as far as several kilometers offshore making the water's edges almost indiscernible. The beauty of this dynamic undulation of the mudflat created by the ebb and flow of the tides and water routes gives a strong impression of "the original landscape of the Ariake Sea".

### ▼ Ramsar Site Hizen Kashima-higata (57ha, shaded portion)



Flock of whimbrels

## A tidal mudflat that abounds with life

Besides the Shiota River and the Kashima River, there are other rivers flowing into Hizen Kashima-higata such as the Ishikizu River and the Hama River which carry rich nutrients from the mountains to the tidal mudflat and the sea. The mudflat is a habitat for diverse forms of life - finfish species such as Great blue-spotted mudskipper, Mudskipper, Eel goby and Brackish goby, shellfish species such as Dilated piddock and Short-necked clam and crustacean species such as the Fiddler crab and the Intertidal mud crab. A large number of shorebird species such as Whimbrel and Dunlin and duck species fly over to feed on the creatures in the mudflat. Bird species of conservation concern such as the Common shelduck, Saunder's gull and the Black-faced spoonbill also fly over to this mudflat making it a major stopover and wintering habitat for migratory birds in Japan.

This bountiful mudflat has sustained the livelihood of local people for centuries. Local fisheries thrived using unique fishing techniques such as "Mutsukake", "Takappo" and "Tanajibu" developed by artisanal fishermen with a profound knowledge of the dynamic tidal cycle of the Ariake Sea. This area has become Japan's major laver (seaweed) production centre in recent years. The "Kashima Gatalympics" that utilizes the mudflat as a venue for fun-filled activities established a new approach to the concept of "wise use" of wetlands.

It is not extraordinary for the local people to



Aerial landscape of Hizen Kashima-higata and its vicinity at high tide

maintain their livelihood by living in harmony with diverse forms of life in Hizen Kashima-higata as they have done so for a long time.

In May 2015, Hizen Kashima-higata was designated as a Special Protection Area within the National Wildlife Protection Area and was successively designated as a Ramsar site for inclusion in the List of Wetlands of International Importance.

The local people's long-standing practice of keeping a balance between their livelihood and conservation of this mudflat was highly regarded internationally.

## Kashima City and Ramsar Convention

Kashima City, located in the southwestern part of Saga Prefecture is faced by the Ariake Sea to the east and is surrounded by the Taradake mountain system in the west. The city is nestled in a continuum of rich natural environments with mountains, rivers, Satoyama (a human-influenced natural environment comprised of farmlands, secondary forests, reservoirs and channels), and tidal mudflats. As "Tara Kaido", referred to as "the Sea Road of Nagasaki Kaido" (a road across Kyushu from Kokura to Nagasaki built during the Edo period) ran through the city, Hizen Hamashuku and Kashimashuku flourished as main traffic points for people and goods. History, traditional culture and buildings the communities inherited from their forebearers, who lived in this rich natural environment and under these geographical conditions, still remain in the city.

Folk entertainment especially Menfuryu (traditional performing arts praying for rain and good harvest) and the lion dance are still commonly seen in the city. Such unique folk entertainment and festivals have been handed down from generation to generation and are performed even today in each community as ordinary events.

Kashima City, a mid-sized city with a population of 31,000 has thriving industries, such as fisheries centered on laver culture, and mandarin orange farming on the hill side of Tara mountain system. The manufacturing sector is also vibrant producing innovative products as well as traditional crafts. In terms of tourism, the city has one of the three major Inari shrines dedicated to the god of commerce in Japan, Yutoku Inari Shrine that attracts 2.8 million worshippers a year. Other popular destinations include "Sakagura-dori", a street lined with historic buildings, "Preservation District for a Group of Historic Buildings" and "Roadside Station Kashima".

Prior to the designation of Hizen Kashima-higata as a Ramsar Site, Kashima City registered the mudflat contiguous to Shingomori as a flyway network site, an internationally important habitat for migratory shorebirds under "the East-Asian Australasian Flyway Partnership (EAAFP)" in 2002. The city has also worked for the conservation and public awareness of the tidal flat as an advanced municipality in Japan in terms of migratory bird conservation.

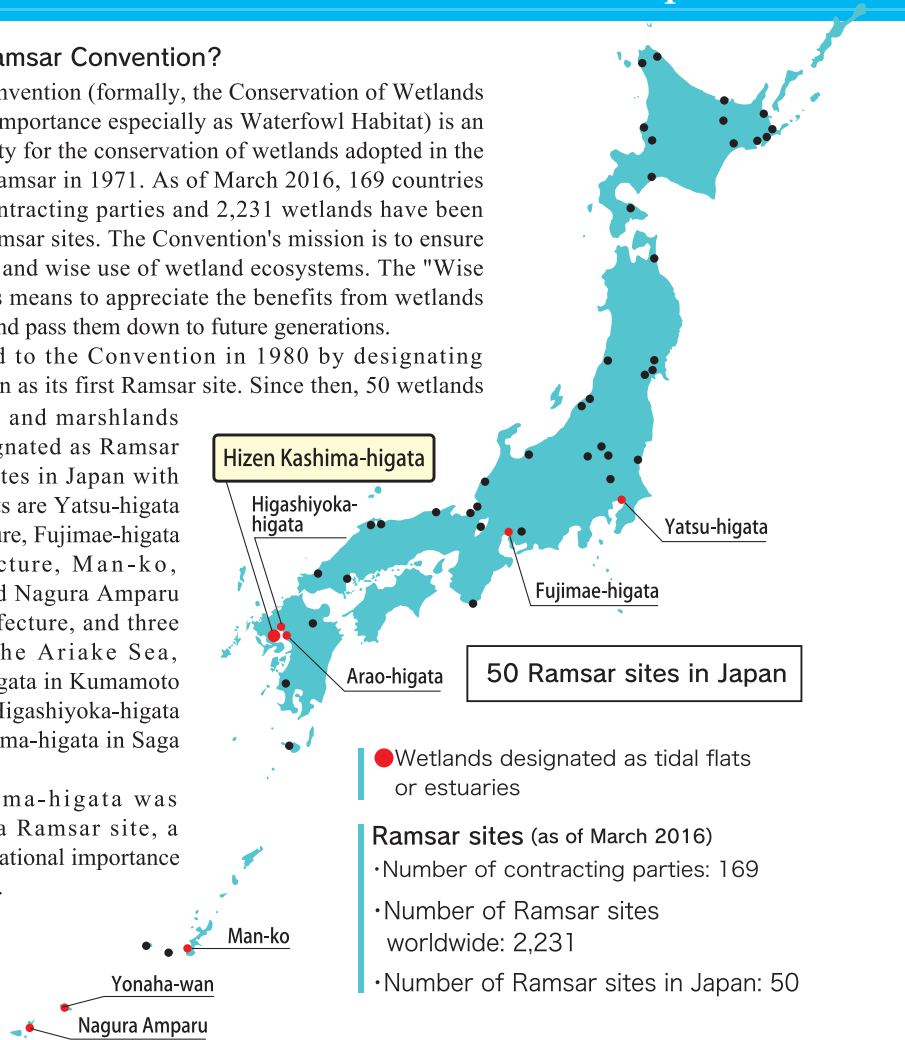
# Ramsar Convention and Its Wise Use Concept

## What is the Ramsar Convention?

The Ramsar Convention (formally, the Conservation of Wetlands of International Importance especially as Waterfowl Habitat) is an international treaty for the conservation of wetlands adopted in the Iranian city of Ramsar in 1971. As of March 2016, 169 countries have become contracting parties and 2,231 wetlands have been designated as Ramsar sites. The Convention's mission is to ensure the conservation and wise use of wetland ecosystems. The "Wise Use" of wetlands means to appreciate the benefits from wetlands bestowed on us and pass them down to future generations.

Japan acceded to the Convention in 1980 by designating Kushiro-shitsugen as its first Ramsar site. Since then, 50 wetlands including lakes and marshlands have been designated as Ramsar sites. Ramsar sites in Japan with areas of tidal flats are Yatsu-higata in Chiba Prefecture, Fujimae-higata in Aichi Prefecture, Man-ko, Yonaha-wan and Nagura Amparu in Okinawa Prefecture, and three sites around the Ariake Sea, namely, Arao-higata in Kumamoto Prefecture, and Higashiyoka-higata and Hizen Kashima-higata in Saga Prefecture.

Hizen Kashima-higata was designated as a Ramsar site, a wetland of international importance on May 29, 2015.



## Philosophy of Ramsar Convention

### Conservation

The Convention calls widely for the conservation of wetlands as important ecosystems supporting a wide range of creatures and our livelihood.

### Wise Use

The Convention advocates for the "Wise Use" of wetlands in order to strike a balance between conservation and the livelihoods of local communities. The "Wise Use" means to sustainably utilize the benefits of wetlands in a way compatible with the maintenance of the wetland ecosystems.

### CEPA

The Convention emphasizes the promotion of communication (dialogue or information exchange), capacity building, education, participation and awareness (CEPA) as a valuable process to ensure conservation and wise use of wetlands.



Traditional fishing techniques in the Ariake Sea

## International Importance of Hizen Kashima-higata

### 〈Overview of the Ramsar site〉

**Site name:** Hizen Kashima-higata

(Kashima City, Saga Prefecture / Official area – 57 ha)

**Characteristics of the site:** Hizen Kashima-higata is located at the northwestern shore of the Ariake Sea in the southern part of Saga Prefecture. It is a muddy tidal flat formed in river estuaries and seashore. Although the tidal mudflat belongs to the Central Kuroshio Current biogeographical region, it has the characteristics of brackish waters rather than sea waters due to its extreme inner location. Shorebirds such as Saunders' gull and Whimbrel fly over from fall to spring making this mudflat an important stopover and a wintering habitat for shorebirds in East Asia.

**Conservation status:** Special Protection Area within the National Wildlife Protection Area

**Ramsar Criteria:** The site has fulfilled the following criteria out of 9 Ramsar Criteria.

• **Criterion 2:** The wetland supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

• **Criterion 4:** The wetland supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

• **Criterion 6:** The wetland regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

## Wise use of Hizen Kashima-higata

Communities around Hizen Kashima-higata have implemented the "wise use" concept since olden times. Unique traditional fishing techniques such as "Machiami" and "Tanajibu" that are still practiced today are proofs that fishermen in the past utilized their knowledge of the great tidal cycle. Local fishing fleet ventured out to the waters off the west coast of the Korean Peninsula from the late 19th century to the early 20th century, which was possible only because they knew everything about the tidal variation and tidal flats. There is also a traditional practice called "Gata-age" that uses mud from the tidal mudflat as fertilizer for farming. This area has become a major laver production centre in Japan and laver culture has become a key component of local fisheries in recent years. The "wise use" concept is applied throughout these activities.

In coming years, the local communities, administrations, relevant organizations and individuals will continue to make further approaches to implement the "wise use" concept by identifying what they need and want to do for Hizen Kashima-higata, setting goals and taking action in a concerted manner in order to hand over the benefits of this mudflat to future generations and to maintain a link between the past and future of this area.

# Forest Village River Tidal mudflat Sea Chain of life

## Biodiversity of Hizen Kashima-higata

Rivers carry sediments including mud, sand, dead leaves, nutrients such as animal detritus, and organic matters such as nitrogen and phosphate from mountains and villages into tidal mudflats. Due to the strong wave of ebb and flow repeated twice a day, these sediments are mixed with sea water providing nutrients for plankton, shellfish and laver. Benthic organisms such as lugworms and crabs feed on the sediments, and migratory birds including shorebirds gather on the mudflats to feed on the lugworms, crabs and shrimps. Fish and



Migratory birds are indicators of the state of environment

Migratory birds fly over to healthy tidal mudflats supporting many organisms on which they can feed. If such mudflats disappear due to reclamation or become polluted, they no longer attract migratory birds.

It is important to conserve mudflats which attract many migratory birds and hand them on to future generations.

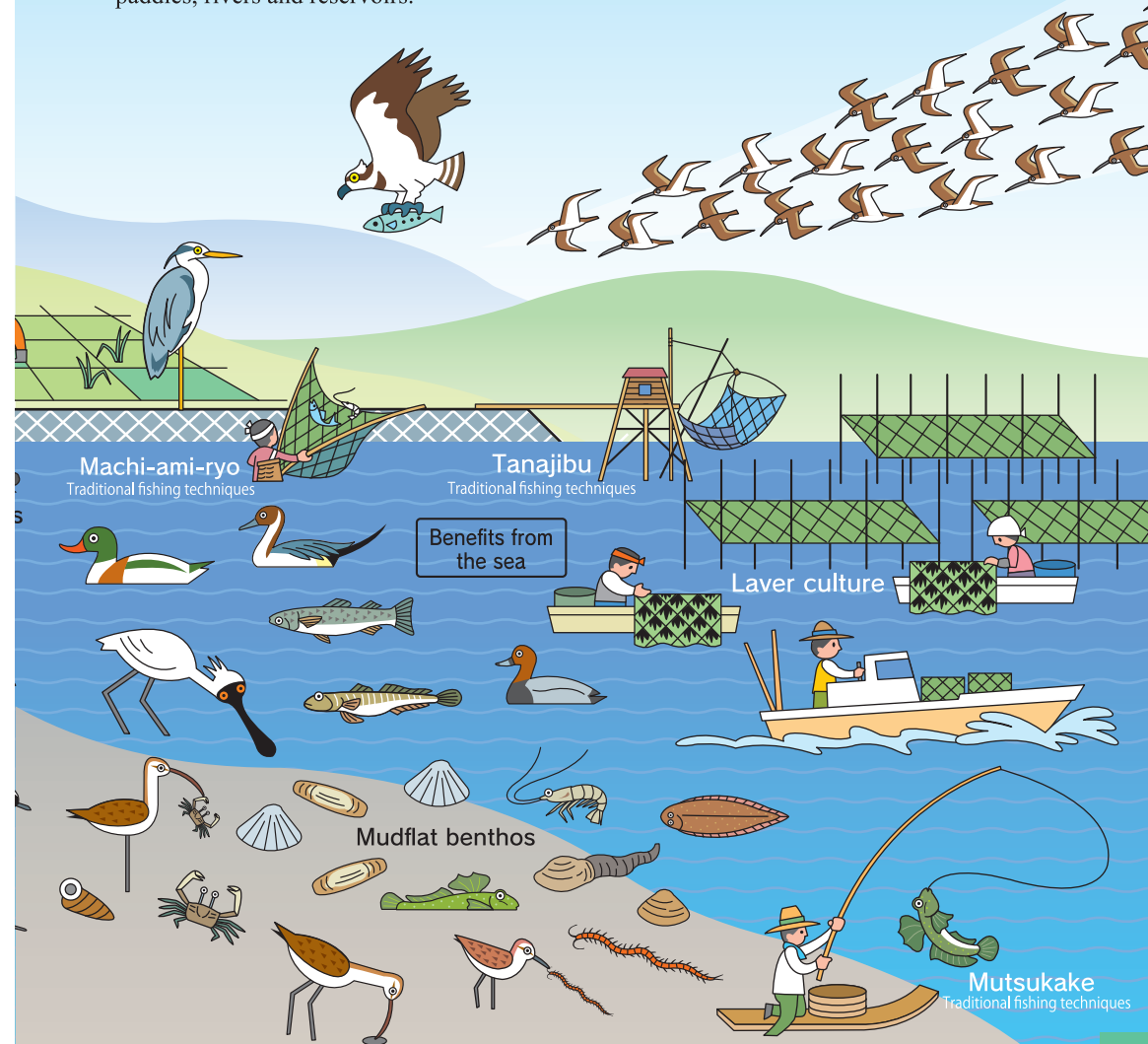
shellfish are caught by fishermen and are eventually lined up on our dining tables.

In this way, organisms on mudflats from micro-fine diatoms and plankton, larger ones such as crabs and shrimps, still larger ones such as fish and birds and even people are linked as prey and predators in the food chain. It is this food chain that forms the rich and diverse ecosystem of Hizen Kashima-higata.

Besides the Ramsar site "Hizen Kashima-higata", Kashima City has many bountiful wetland environments such as rice paddies, rivers and reservoirs.



Abundance of life in the mudflat



# "Maeumi" of Hizen Kashima and fisheries

## Fisheries along the coast of Hizen Kashima

Communities around Kashima have traditionally been engaged in both fishing and farming. They cultivated crops on hillsides and reclaimed land and went fishing inshore, which they refer to as "Maeumi". Their catch from the shallow intertidal waters was mostly shellfish such as Chinese razor clam, Dilated piddock, Pen shell, Ark shell and Short-necked clam. In mid-1950s, the estuarine area of the Hama River was lined with a countless number of oyster shacks where oyster shells were cracked open. Finfish such as Great blue-spotted mud skipper, Brackish goby, Eel goby, Japanese sea bass and Redlip mullet were also caught, but the catch decreased remarkably from 140,000 tons in 1960s to 20,000-30,000 tons in the decade after the millennium. In particular, Chinese razor clam which used to be caught in large quantity from mudflats even by children, no longer seems to be caught at all. In recent years, laver culture has become the main activity of fisheries in this area.

## Shallow intertidal waters and laver culture

It is said that laver culture started in Tokyo Bay about three hundred years ago (the Edo period) and in Kyushu it started in Kumamoto Prefecture in the late 19th century. The early laver culture technique consisted of setting bamboo sticks on the tidal mudflat. Laver culture in the Ariake Sea in Saga Prefecture started in 1905 with the transplantation of naturally seeded fascine poles from Kumamoto into the offshore tidal mudflats of Tara, Oodakuma and Kawazoe towns. The Ariake Sea turned out to be the most suitable waters for laver culture because of the wide tidal range and nutrient-rich inflowing rivers. In 1954, the government started to encourage a shift from wild fisheries to aquaculture. Laver culture started to take a great leap forward from around 1956. Mechanization of the production process started from around 1963 when machinery such as laver harvesters and dryers were introduced.

By 1966, this area has become a major laver production centre in Japan. Aquaculture innovation with the introduction of the freeze-preservation method (laver nets with spores are frozen and preserved temporarily) helped improve the quality of laver and expand production. In a matter of just two decades after laver culture had begun in earnest, "Saga Nori" (laver made in Saga) had earned the reputation of being of the finest quality and the area has become known as the largest laver producing area in Japan. However, some producers are faced with financial difficulties due to excessive capital investment as they introduced fully-automated laver dryers to save manpower in the production process. Color fading of laver due to occasional occurrence of "red tides" is also a challenge to many producers.

## Tree planting to nourish the sea – "Umi-no-Mori" (Sea Forest) project

Kashima City paid attention to the link between the forests and the sea in which forests serve to secure water resource and purify sea water and developed a plan to nurture a forest with deciduous broad-leaved trees. Such forests would have high capacity for water retention and erosion control while nourishing the soil and river water. The Umi-no-Mori project started in 1995 with an objective to plant deciduous broad-leaved trees in the upper reaches of rivers flowing into the Ariake Sea. The Environmental Sanitation Promotion Council of Kashima City is responsible for implementing the project with the cooperation of local fishermen and volunteers who plant trees in mid-March and cut the undergrowth in early August every year.



Laver culture

## Benefits from the tidal mudflat and traditional fishing techniques

Although there are fewer fishermen in this area these days, they still practice some traditional fishing techniques unique to the tidal mudflat that prevent overexploitation of resources.



## "Tanajibu", a four-armed fishing net

A wooden hut and a platform are installed by the shore. A fisherman operates "Jibu" a four-armed fishing net from inside the hut and catches prawns and other fish by submerging and lifting the net. There were many such installations along the shore of the Ariake Sea until about 30 years ago.



## "Machiami-ryo", waiting for the flow tide

A fisherman with an inverted triangular fishing net stands in the water and waits until the tidal current carries fish towards the shore. As soon as a fish enters the net, he quickly lifts it up. The main fish catch using this technique was the Redlip mullet.



## "Mutsukake", catching a Great blue-spotted mudskipper with a hook

A fisherman on a board (mudflat ski) uses a four-pronged hook tied to a 5 m pole with a long fishing line. He casts the hook over the mudflat behind a Great blue-spotted mudskipper. A quick jerk of the pole could hook a Great blue-spotted mudskipper.



## "Unagizuka", stone piling method of eel fishing

A fisherman digs a hole in an estuary, covers it with stones and leaves it. He returns after several days and removes the stones to recover the eels which took shelter inside the hole during several cycles of ebb and flow of the tide.

Other traditional fishing techniques include "Kuzzoko-ryo", a method to catch bottom fish, "Takappo", using a cylindrical fish trap made of bamboo to catch mudskippers and "Subokaki", using a hook to catch eel gobies.

# Fisheries in the past and tidal mudflat that abounds with life

## A bustling port town

It is believed that a human settlement like the port town "Hamafunazu" already existed by 1469 in Hamashuku. The area prospered as one of the post stations along Tara Kaido during the Edo period and was called "Hama-sengen", meaning "one thousand households". Kusaba Haisen, a Confucian scholar from Taku (the central part of Saga Prefecture) in the late Edo period depicted the port town in his Chinese poem as follows:

The spring breeze sweeps across town  
The town is full of flowers  
Flags of Sake breweries flutter on high  
Fishing boats with today's catch  
Hurry back to the shore  
As the tide begins to rise

This conjures an image of a prosperous fishing port. In the late 19th century, the port became the largest fishing port in Saga Prefecture. Pelagic fishing in the waters of the Korean strait and the East China Sea began in the same period. Sake brewing and sea food processing businesses also thrived and the city area of Kashima developed around those establishments.

The vestiges of old port town still survive in the streets of "Sakagura-dori" and "Hamashozumachi-Kanayamachi".

Oyster culture began to flourish in the early 20th century, and laver culture became the main activity of fisheries in this area in the mid 20th century.

## Local Tradition

Ramsar Convention refers also to a significant economic value of wetlands.

People of the Nanaura District practise a seaborne pilgrimage to the divine islet of Okinoshima to pray for rain, good fish catches and safe navigation. Every year they visit the deity "Ongami Daimyojin" enshrined on a rocky reef



Bamboo sticks for laver culture (around 1965)



Cylindrical fish trap



Preparation of laver nets



"Kitafunatsu" (around 1965)



Bustling port town



Mysid shrimp fishing



Street lined with houses with thatched roofs in Funazu District (around 1965)



"Menfuryu", praying for good harvest



Seaborne pilgrimage to Okinoshima



Lifting the mud from the mudflat



"Gatabo", a boy catching Chinese razor clams

"Okinoshima" off the coast of Nanaura on the evening of June 19th by the lunar calendar. A large fishing fleet illuminated by moonlight and lanterns heading out to sea with the sound of drums and bells affords a fantastic scene to viewers. The community also inherits traditional performing arts such as "Menfuryu", praying for a good harvest of rice from their rice paddies.

## "Gata-age", lifting the mud from the mudflat

In the past, mud from the mudflat was used as fertilizer or a soil improvement material. The work of lifting the mud from the mudflat is called "Gata-age" and a dance song which relates to this work "Gata-age Ondo" (or Shinchi Bushi) is still performed in the community. The lyrics of the song express the close relationship between people and the mudflat.

## "Gata-age Ondo" (Shinchi Bushi), Mud Lifters' Song

When I look out on Onojima Island from the bank of Shinchi  
I can see a pretty lady Oharu carrying the mud on her shoulders  
Why don't you drop by my place as you are in my neighbourhood?  
I will treat you to a cup of hot sake

## Memory of playing in the mudflat

Children playing in the mudflat are called "Gatabo". In the mid 1950s, children went out on the mudflat when the tide ebbed and caught many Chinese razor clams. Some children earned pocket money by selling their catch. They also caught short-necked clams, oysters, dilated piddocks and gobies. Such creatures were also lined up on their dining tables. The mudflat was a familiar playground for children in summer. Bringing children back to wetlands is also an objective of Ramsar Convention.

# Hizen Kashima-higata is an important stopover for migratory birds

## Tidal flats are important environment for migratory birds.

Migratory birds are important indicators of the conservation status of ecosystems as they fuel their long-distance flights by eating a lot of creatures in the tidal flats.

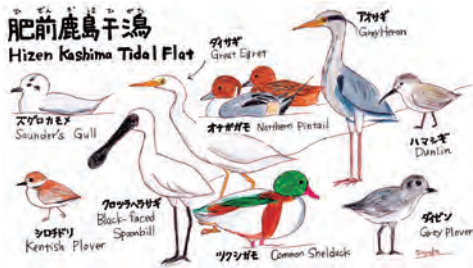
During winter months, when their habitats and foraging grounds in the north are covered with ice and snow, they migrate south to tidal flats and estuaries in warmer climes where they can catch fish and crabs to build up their energy stores. In spring, they migrate north to return to their habitats for breeding.

However, habitats for migratory birds have been lost due to reclamation and development of tidal flats in many parts of the world. It has resulted in a serious population decline of migratory birds, especially shorebirds, which are dependent on tidal flats.

Tidal flats are important habitats for migratory birds just as hotels and rest houses are for people. The long migration routes of migratory birds cannot be protected by a single country or region. Partnerships and cooperation among many countries are necessary to protect migratory birds.



**Migration routes of migratory birds in East Asia**  
Although their habitats differ from species to species, migratory birds in this region generally migrate north to their breeding grounds in northern China and Siberia between spring and summer and migrate south to their wintering grounds in Southeast Asia and Australia between autumn and winter.



## Hizen Kashima-higata is a major stopover and wintering habitat for migratory birds in Japan.

Many migratory birds (water birds) are attracted to the extensive tidal flats in the Ariake Sea because of the high concentration of their food such as lugworms, crabs, finfish, and shellfish. Hizen Kashima-higata attracts about 40 tidal-flat dependent shorebird species such as Whimbrel, Dunlin, Terek Sandpiper, Greenshank, Grey Plover, and duck species such as Common Shelduck, Common Pochard, Mallard, Northern Pintail and Eurasian Widgeon. Saunder's Gull, a vulnerable seagull, also flies over to this tidal mudflat. The number of Black-faced Spoonbill, an endangered bird which attracts much attention in East Asia, wintering in this mudflat has increased since around 2000. All these birds use Hizen Kashima-higata as their stopover or wintering habitats. For instance, the Whimbrel breeds in tundra areas in Siberia from spring to summer and spends its winter in a warmer



Bird watching

habitat in Southeast Asia from autumn to winter. Sometimes, more than 1,000 whimbrels (a day) stop over at Hizen Kashima-higata during their migration between April and May. They are often found catching crabs and lugworms to replenish their energy stores, loafing and sleeping while standing on one leg to rest in the mudflat, en route to their destination thousands of miles away.



Flock of dunlin

## Migratory birds found in Hizen Kashima-higata



**Whimbrel**  
(Family: Scolopacidae)  
Catches crabs with its decurved bills. Population peaks during the spring migration season.



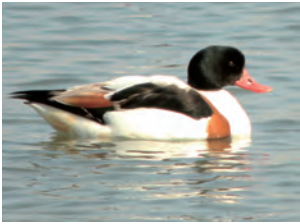
**Terek Sandpiper**  
(Family: Scolopacidae)  
Up curved bill and orange legs appear distinctive. Flies over to the mudflat in flocks in spring and autumn.



**Dunlin**  
(Family: Scolopacidae)  
Most commonly found wader in Japan. Flocks in flight present a grand spectacle. Summer plumage shows black belly.



**Black-faced Spoonbill**  
(Family: Threskiornithidae)  
Black spatulate bills appear distinctive. Uses a unique way of foraging, sweeping its bills from side-to-side.



**Common Shelduck**  
(Family: Anatidae)  
Abundant along the northern shore of the Ariake Sea. Eats diatom by placing its bills on the surface of the mudflat.



**Saunder's Gull**  
(Family: Laridae)  
Summer plumage shows black head. Makes a sudden plunge into the mudflat to catch crabs.