

The Riches of Japanese Wetlands in Danger of Dying Out

Emergency Project in the International Year of Biodiversity

Save! The seas of Isahaya, Awase and Nagashima



Although the United Nations declared this year as the International Year of Biodiversity, wetlands across Japan continue to disappear due to destructive projects. In particular, reclamation projects in the seas of Isahaya Bay, which destroyed one of the largest tidal flats in Japan causing serious damage to the fishing industry, Awase tidal flat, where the resumption of the reclamation work was announced in August, and Nagashima Island in Kaminoseki, Yamaguchi Prefecture, which is about to be filled to construct a nuclear power plant, are attracting international attention as symbols of acts of folly that destroy the bounty of our seas.

It is time for the Government of Japan to fulfill its responsibility as the host to the Tenth Meeting of the Conference of the Parties to the Convention on Biological Diversity. To conserve the bounty of wetlands and save the seas of Isahaya, Awase and Nagashima from acts of folly, the government must shift its policy away from destruction towards conservation and restoration of wetlands.

The Save Awase Higata Association
Isahaya Bay Emergency Rescue Task Force – Tokyo Office
The Association for the Conservation of Nagashima Island

ISAHAYA

Closure of Isahaya Bay Dike and Environmental Disturbance in Ariake Sea

Open the Floodgate to Recover Prosperous Fishing Industry and Achieve the Coexistence of Agriculture and Fisheries

Takayuki Jinnai, Isahaya Bay Emergency Rescue Task Force - Tokyo Office

Isahaya Tidal Flat - once a treasure trove of biodiversity

Isahaya Bay, located in the west side of Ariake Sea of Kyushu, used to be a “treasure trove of nature” with a vast expanse of tideland teeming with the Mudskipper (*Boleophthalmus pectinirostris*) and other fish and molluscan species and serving as a wintering habitat for many migratory birds. Isahaya Tidal Flat, which boasts one of the largest tideland areas of 2,900 ha in Japan, is a habitat for more than 300 benthic species and a foraging site for 232 bird species including 57 shorebird species. Many endangered or endemic species and high biological productivity with an annual average haul of 22.6 tons per square kilometers of tideland made this tidal flat a treasure trove of biodiversity. Isahaya Tidal Flat has served also as a breeding ground for key aquatic species of commercial value and has played a role of “the cradle of Ariake Sea”.

Environmental Destruction by Isahaya Bay Reclamation Project

Despite such importance of the Bay, a reclamation project with the purpose of farmland development and

disaster control commenced in 1986. And when the Bay was closed off by a seven km flood-control dike in April 1997, the tidal flat dried up and all the creatures on the tidal flat perished. The impact extended over a wide area. In 2000, a massive red tide occurred in Ariake Sea causing discoloration and the record-low yield of cultured laver seaweed.

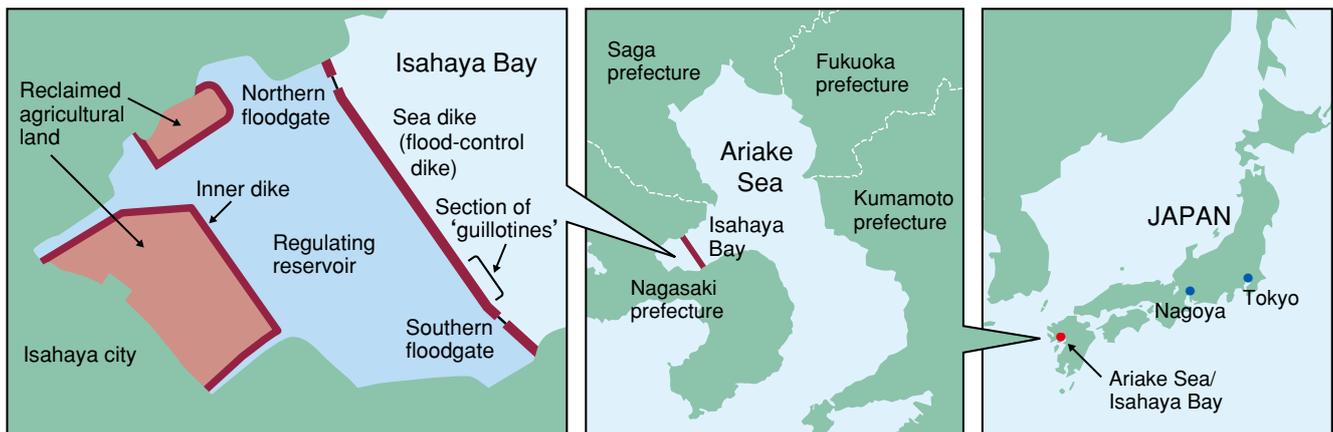
The environment impact has been further aggravated since the reclamation work was completed in 2008 and farming started on the reclaimed land. When there was a healthy tidal flat, benthic species functioned as a natural water purification system. Now, without the healthy tidal flat, concentrations of pollutants in the regulating reservoir exceed the environmental quality standard by a wide margin, and massive water blooms produce natural toxins making the water quality even worse. The large volume of polluted water discharged from the regulating reservoir into the bay can cause red tides. Moreover, the closure of the floodgate caused the sea current to slow, gave rise to red tides, oxygen deficiency and sedimentation of silt on the sea bed. These have led to die-offs of fish and shellfish species inflicting damage on the fishing industry almost every year. Sharp drop in populations of various



Isahaya Bay once teemed with flora and fauna. (Community of the Suaeda japonica Makino)



Closing the flood-control dike on April 14, 1997. Described as “guillotine”.



Schematic illustration of Ariake Sea and Isahaya Bay Reclamation Site.



Dried and cracked Isahaya tidal flat.



The flood-control dike across Isahaya Bay.



Damages on Asari clams in Isahaya Bay.



Water bloom in the regulating reservoir.

species has been observed including shellfish such as the Pen shell (*Atrina pectinata* Linnaeus) and Japanese littleneck (*Ruditapes philippinarum*), bottom fish such as the Bastard halibut (*Paralichthys olivaceus*) and Right-eyed flounder (*Pleuronectes platessa*), and crustacea such as the Japanese tiger prawn (*Marsupenaeus japonicus*) and Japanese blue crab (*Portunus trituberculatus*).

Closure of Isahaya Bay dike and calls for the opening of the floodgate

The word “closure” may mean to some that the floodgate is completely closed all the time. In fact, the water is discharged into the Bay at low tide on a regular basis because river water keeps flowing into the regulating reservoir inside the flood-control dike. On the other hand, the water inside the regulating reservoir needs to be fresh water as it is used for farming, and the floodgate is controlled so as to keep the saline water from flowing into the reservoir at high tide.

Instead of having a one-way discharge of water from the reservoir to Ariake Sea, the floodgate should be operated in two ways to draw sea water into the regulating reservoir. That will improve the water quality inside the reservoir and avoid the polluted water from being discharged into Ariake Sea. “Opening the floodgate” means this two-way operation of the floodgate.

If the opening of the floodgate is widened gradually to restore the tidal current flow, it may help reduce the risk of red tides and oxygen deficiency, and bring about positive effects on laver culture and coastal fishing. A tidal flat may develop naturally around the remaining mudflat in the foreground of the interior of the flood-control dike. The alternative source of fresh water will be secured in preparation for the opening of the floodgate so that the farmers can use not the polluted water from the reservoir but clean water for farming.

Although Isahaya Bay Reclamation Project alone does not have much disaster control effect on the hinterland in heavy rain without installing discharge pumps and widening the channels, engineering work in preparation for the opening of the floodgate will help achieve the purpose of disaster control. In this regard, opening the floodgate is beneficial both for fishing and farming.

The government must make a decision now! The world demands that the floodgate be open.

The government of Japan did not comply with Saga District Court’s order to open the floodgate in June 2008 and appealed to the High Court. Although an opposition party came to power in September 2009 and the Review Committee established by the new government reaffirmed the opening of the floodgate as part of its manifesto in May 2010, their campaign pledge has not been fulfilled yet. If anything, there is concern that they would eventually break their promise overpowered by Nagasaki Prefectural Government, bureaucrats in the Ministry of Agriculture, Forestry and Fisheries and other pro-reclamation groups. While the plan to open the floodgate is postponed, the environment of Ariake Sea is deteriorating and fishing industry in Ariake Sea was hard hit by oxygen deficiency and red tides again this summer. Not only the fishing industry but also human communities surrounding Ariake Sea are at risk of breakdown. The new government must act up to their slogan, “the 1st priority is the life of the people”, by opening the floodgate of Isahaya Bay as soon as possible and realize a society where both agriculture and fishery can coexist. Doing so is also the responsibility of the government hosting COP10 of CBD.

Website

<http://www.isahaya-higata.net/>
<http://www.justmystage.com/home/kenshou/>

Stop the reclamation and leave Awase tidal flat and adjacent shallows to our decendants.

Seiji Maekawa, The Save Awase Higata Association

Awase tidal flat lies in the eastern part of Okinawa City, the 2nd most populated municipality in the middle of the main island of Okinawa. The tideland area of approx. 265 ha makes Awase tidal flat the largest of its kind in Okinawa Islands. Since Okinawa's return to Japan in 1972, many tidal flats in Okinawa Prefecture have been lost or degraded due to reclamation or red soil contamination resulting from deforestation in the northern part of the main island. Only a few tidal flats remain today, including Awase, Sajiki in Nanjo City, and Akamine Coast off the shore of Naha Airport. Of these, Awase is attracting attention as a tidal flat with rich biota, miraculously preserved, and the campaign to protect it is gaining momentum. Although a successful lawsuit by fishermen, conservationists and ordinary citizens brightened prospects for its conservation, Awase is on the verge of crisis again as Okinawa City has submitted a new land use plan, had it approved by the central government and expressed its intention to resume reclamation work.

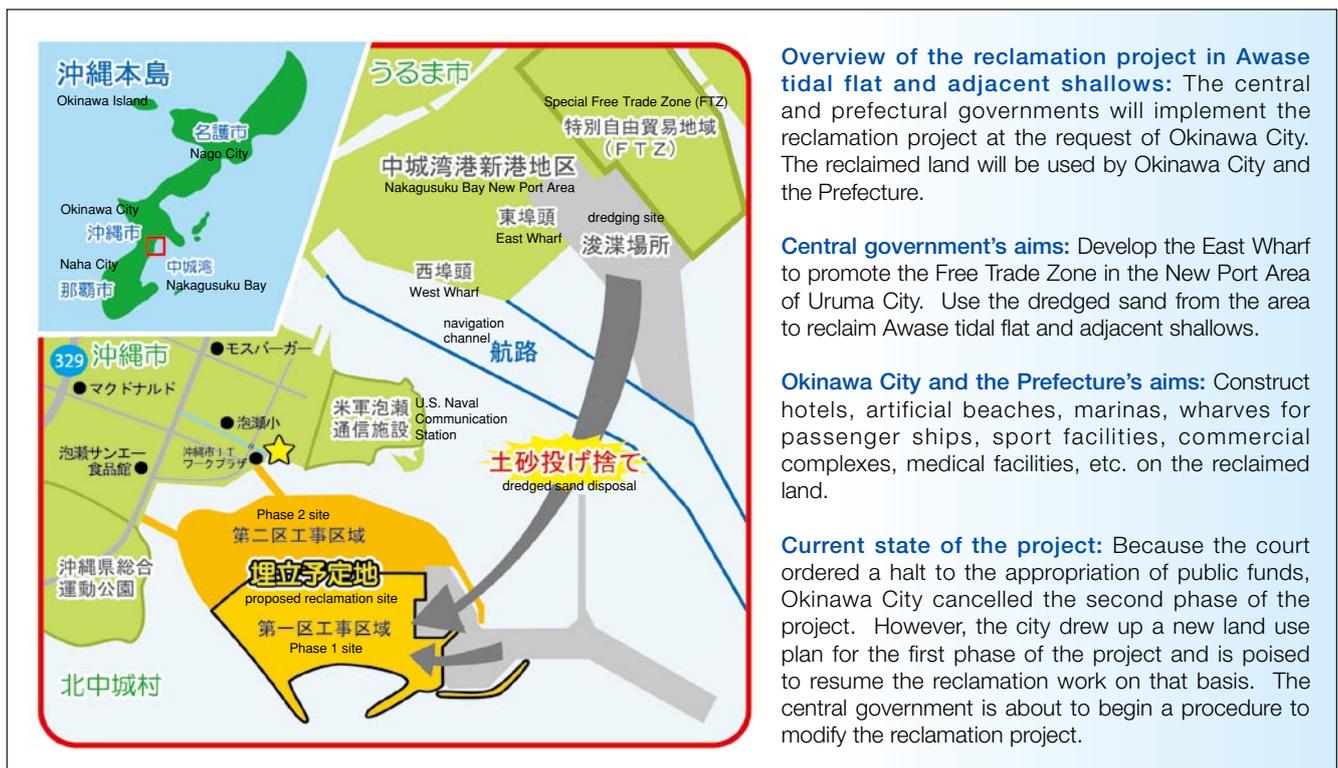
Awase tidal flat is a treasure trove of biodiversity

Seagrass beds in Awase tidal flat are known as the "cradle of the sea", and are the second most ecologically important seagrass beds in Okinawa Prefecture after those in Henoko, the proposed relocation site for the U.S. Marine Corps' Futenma Air Base in the northern part of the main island. The area is ecologically abundant with a 353 ha seagrass bed in the tidal flat and the shallows around the

187 ha reclamation site, and a 79 ha seagrass bed inside the reclamation site, 25 ha of which has over 50% coverage of macro-algae.

The reclamation site and the surrounding waters are home to coral colonies (mainly of branching corals) covering 30,000m² of the surrounding waters and 1,000m² of the site. The symbiosis of corals with seagrass represents a unique ecosystem in this area. The tidal flat is underlain by a wide range of substrates from mud, gravel, and fine to coarse sand. Such diverse features of the natural environment became a hotspot for biological diversity. Awase tidal flat and adjacent shallows have the richest diversity of molluscan species in Japan with approx. 360 species. (Shells of approx. 500 species were collected from the area.) Of the 14 seagrass species distributed over Okinawa Islands, 13 are found in Awase tidal flat and adjacent shallows. After commencement of the reclamation work, ten species were newly discovered, including a seagrass *Halophilla okinawense* J. Kuo, bivalves *Semelangulus lacrimadugongi* and *Litigiella pacifica*, a fish *Acanthopagrus chinshira*, a crab *Macrophthalmus (Macrophthalmus) microfylacas*, and a lugworm *Phyllochaetopterus awasensis*.

The area is also a habitat for many endangered species including *Pseudodichotomosiphon constricta* (yellow-green algae), *Scartelaos histophorus* (fish) and *Platalea minor* (bird). The project owners themselves (central and prefectural governments) report 128 endangered species using the area as their habitat, including 65 shellfish species, 22 fish, 18



Ecologically valuable creatures in Awase tidal flat.



Pseudodichotomosiphon constricta (Yamada) Yamada; endangered yellow-green algae.

Okinawa (Awase tidal flat etc.) is the sole habitat in the world.



Scartelaos histophorus; endangered fish.

Okinawa (Awase tidal flat etc.) is the sole habitat in Japan.



Acropora aspera and *Thalassia hemprichii* (Ehrenb.) Aschers.

Symbiosis of branching corals with seagrass.



Mictyris brevidactylus stimpson; popular creature on Awase tidal flat.

Recently discovered species, endemic to Okinawa.

crustacean, 22 bird, 13 sea weed/grass and 1 other.

Progress of the reclamation work, litigation, and preparation, submission and approval of Okinawa City's new land use plan

Reclamation work in Awase tidal flat and adjacent shallows, a treasure trove of biodiversity has commenced. Ecologically abundant seagrass beds have been destroyed and largely lost in the guise of transplantation. The seagrass beds along the coast were lost due to sand sedimentation and the tidal flat ecosystem has been degraded leading to declines of shellfish species. At the site of the first phase of the project, newly discovered species, ecologically valuable species and seagrass beds were all buried alive and the coral colonies were stripped from their habitat to be transplanted elsewhere.

The Save Awase Higata Association took the government to court. Both Naha District Court (Nov, 2007) and Fukuoka High Court (Oct. 2009) decided in our favour ruling that promoting the project while its economic benefits are unclear would be illegal.

Despite defeat in both district and high courts, Okinawa City drew up and submitted a new land use plan, which they claim to be economically viable and maintained that they could resume the reclamation work when it was approved by the central government. The new administration came to power by promising the citizens that they would shift resources from concrete to people, cancel wasteful public works projects, re-examine the reclamation project in Awase

tidal flat, suggesting the possibility of their cancelling it, and deal severely with Okinawa City when a new land use plan was submitted. However, when Okinawa City submitted the new land use plan, the central government approved it on the same day allowing the city to announce its intention to resume reclamation work. This incredible flip of the central government's position is clearly in breach of their manifesto commitment.

Outlook for the future

Okinawa City submitted the new land use plan to the central government without prior notice or consultation with citizens, members of the city council and political parties that support the mayor. The contents of the plan do not justify the claimed economic benefits of the project as the demand and visitor projections are faulty, and there are uncertainties about private sector investment. The high court noted that the economic benefits of the new land use plan needs to be confirmed through a considerable robust assessment based on criticisms of the previous plan. Despite this, Okinawa City's new plan does not address those criticisms. We will continue to strive hard to protect Awase tidal flat and adjacent shallows.

We call on our friends and nature lovers all over the world to work together to protect Awase tidal flat and adjacent shallows.

Website <http://saveawasehigata.ti-da.net/>

NAGASHIMA

Do not fill the sea of life!

A view of “coexistence with nature” from the planned site of Kaminoseki Nuclear Power Plant

Midori Takashima, The Association for the Conservation of Nagashima Island

Kaminoseki - a hotspot of biodiversity

• A treasure house of rare creatures

Nagashima Island in Kaminoseki Town, Kumage County, Yamaguchi Prefecture and its surrounding waters is a treasure house of rare creatures of world significance. The main features of this area include: 1. It is the sole year-round habitat of the Japanese murrelet (*Synthliboramphus wumizusume*) classified as “Vulnerable” on the IUCN Red List. 2. It is the world’s first identified inland-sea breeding ground of the Streaked shearwater (*Calonectris leucomelas*). 3. It is a breeding habitat of the Corniostroid gastropod (*Tomura cf. yashima*), which holds the key to understanding the evolution of the snail. 4. It is the habitat of the brachiopod (*Ceratia nagashima*), whose confirmed global population is only one.

• The ultimate paradise in Seto Inland Sea

This area is also described as “the ultimate paradise in Seto Inland Sea” because of the habitat integrity of species which are endangered or critically endangered in other parts of Japan. Such species include:

The Japanese wood pigeon (*Columba janthina*), designated as a natural monument, and classified as “Near Threatened” on the Red Data Book by the Ministry of the Environment. The Finless porpoise (*Neophocaena phocaenoides*), the world’s smallest whale, classified as “Rare” by the Fishery Agency. The Lancelet (*Branchiostoma belcheri*), which is said to be an ancestor of humans, classified as “Vulnerable” on the Red Bata Book by the Fishery Agency.

A natural environment that nurtures “a hotspot of biodiversity”.

• The original landscape of Seto Inland Sea

Much of the diverse ecosystem in Seto Inland Sea was lost due to human intervention such as land-reclamation, seawall construction and sand mining in the 1960s. Meanwhile, the natural environment of Nagashima Island and its surrounding waters, the planned site for Kaminoseki Nuclear Power Plant has miraculously remained undisturbed. While only 21.4% of the coastline of the entire Seto Inland Sea remains natural, 75% of the coastline in

Nagashima Island of Kaminoseki Town has been maintained in its natural state. In particular, evergreen broadleaf forests surrounding Tanoura Bay, which will be felled to make way for the premises of the nuclear power plant, have been used with respect by the community as a source of fuel wood and charcoal, and as a fish breeding forest.

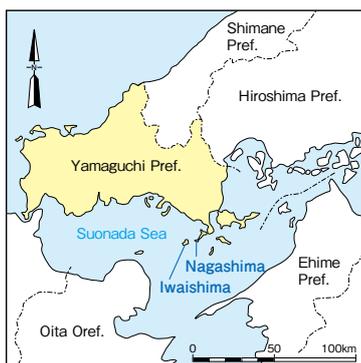
• Rich clear water ecosystem in Tanoura Bay

A survey of submarine groundwater discharge in Tanoura Bay found that a large quantity of groundwater is welling up from the seafloor, equivalent to torrential rain with a maximum rainfall of 780 mm/day. Only a few such inlets remain in Seto Inland Sea today. Lower water temperatures inside the bay compared to those of the outer bay area provides suitable habitat conditions for *Coccolophora langsdorfii* and other marine algal species endemic to the Sea of Japan. Seaweed beds of various algal species supply abundant nutrients for plankton and juvenile fish to grow.

The natural environment of Nagashima at a crisis

• Reclamation work commenced without reactor construction permit

Kaminoseki Nuclear Power Plant is planned to be built on such an abundant ecosystem. The plan to construct two advanced boiling water reactors with a capacity of 13.37 mil.kw was announced in 1982. The project has been substantially delayed due to strong opposition by 40% of the local residents including those on Iwaishima Island 3.8km away across the water from the planned site. Despite this, Mr. Sekinari Nii, Governor of Yamaguchi Prefecture granted the project implementing body, Chugoku Electric Power Company a license to fill public waters of Tanoura Bay even before the company had obtained a central government permit to construct the nuclear reactors. The power company started a large-scale clearing of evergreen broadleaf forests to prepare the land side of the site in April, 2009 and tried to commence reclamation work in September 2009, but has so far only been able to place buoys along the boundary of the reclamation site as the work has been blocked by local residents and opposition supporters.



Tanoura Bay in Nagashima Island



Palace in sea



Coccophora langsdorfii



Synthliboramphus wumizusume



Calonectris leucomelas



Tomura cf. yashima



Ceratia nagashima

• **Sloppy environmental impact assessment, and ground and geological survey**

The draft environmental impact statement the power company submitted to the Ministry of International Trade and Industry (presently Ministry of Economy, Trade and Industry) in late April 1999 was grossly inadequate in that it overlooked the impact on the Finless porpoise (*Neophocaena phocaenoides*), Peregrine falcon (*Falco peregrinus*), Lancelet (*Branchiostoma belcheri*) and Corniostriid gastropod (*Tomura cf. yashima*).

Central government took the unprecedented step of advising the company to undertake a supplementary investigation. As a result, the project was delayed by one year. Subsequently a number of rare species including the Japanese wood pigeon (*Columba janthina*) and Japanese murrelet (*Synthliboramphus wumizusume*) were discovered by the Association for the Conservation of Nagashima Island and Japanese researchers, and every time a new species was found, supplementary investigation was required. From 1999 to the present, the inadequacy of the environmental impact statement has been pointed out seven times by the Ecological Society of Japan, three times by the Japanese Association of Benthology and two times by the Ornithological Society of Japan. Nevertheless, Chugoku Electric Power Company has not responded to their advice. On February 15, 2010, these three academic societies jointly issued the “Resolution on the suspension of construction works in the proposed site of Kaminoseki Nuclear Power Plant and a demand for re-investigation followed by measures to conserve its biodiversity.” This is a very unusual move by Japanese academic societies.

Save the sea of life!

• **The nuclear power plant will kill “the sea of life”!**

Local fishermen describe Tanoura Bay as “the cradle of fish”. It is the rich biological resources nurtured by this sea that make it possible for many bird species and finless

porpoise to feed and survive, and for fishermen to maintain their livelihood. The sea of Kaminoseki is indeed “the sea of life”.

Mr. Ichiro Yuasa, Chairperson of “Peace Deposit”, says it takes 18 to 24 months to replace 90% of the water in the entire Seto Inland Sea. For this reason, it is projected that the large quantities of warm water discharge from the nuclear power plant will diffuse and stagnate and to lead to a rise in sea temperature in the entire Seto Inland Sea. Moreover, the warm water discharge from the plant contains residual chlorine used to prevent barnacles and other shells from adhering to the inner surface of the nuclear reactor. This may affect fish roes and juvenile fish leading to serious damage to coastal fishing industry. The Kaminoseki Nuclear Power Plant project may kill “the sea of life”.

• **For CBD COP10**

One can find both rich biodiversity and sustainable coexistence between man and nature which may continue into the future in Nagashima and Iwashima Islands. Japan should present this area to the world with pride as a model of what COP10 of CBD tries to achieve.

Iwashima Island’s features are not limited to its rich ecosystem. Local people are engaged mainly in pole-and-line fishing in order to use marine resources in a sustainable manner. Their main agricultural crop, loquats, are largely pesticide-free. They recently started sustainable agriculture on abandoned paddy fields and farmlands, and grazing cattle and pigs.

They are indeed on their way toward “developing a sustainable society for the future”. We call upon the backing of the international community to ensure that the Japanese government clearly places measures for the conservation of the Seto Inland Sea, especially around Kaminoseki, in its national strategy and to ensure that the nuclear power plant project is cancelled.

Website <http://green.ap.teacup.com/sunameri/>



International Year of Biodiversity Emergency Project “Save! the Seas of Isahaya, Awase and Nagashima” Declaration on the Wetland Day in Japan 2010

Our hometown is surrounded by the seas. From ancient times, we have lived off the blessing of the seas, have been in close contact with the seas and nurtured by the seas. Our life and living have been supported by wetlands, in particular, coastal wetlands and shallows of the seas including tidal flats, seaweed beds and coral reefs which have some of the richest biodiversities of earth and are regarded as irreplaceable environment just as rain forests.

The seas of life, however, have been destroyed one after another in a matter of a generation. Tidal flats and seaweed beds were filled. The shores were cased with concrete into geometric shapes severing links between mountains, rivers and the seas.

Such acts of folly which destroy our seas now need to undergo an examination by people of the world, who helped develop the Ramsar Convention and Convention on Biological Diversity.

The United Nations declared this year as the International Year on Biodiversity. The chain of life of diverse species is an essential premise for a sustainable society, which would never be achieved without the riches of the seas. Now is the time for us to put an end to the history of folly that destroys the riches of our seas.

Things in progress in Awase, Isahaya and Nagashima are the symbols of such acts of folly.

Thirteen years on since the closure of the flood-control dike of Isahaya Bay on April 14, 1997, one of the largest tidal flats in Japan has been lost and the fishing industry has been suffering a serious damage. The floodgate has not been opened even after the change of government, and it is hoped that the gate will be opened without a moment's delay.

Even after the court ordered a suspension of public spending for the reclamation project, the government plans to resume the reclamation work on Awase tidal flat, one of the largest of its kind on Ryukyu Islands. The tidal flat is still enclosed by the dike.

Chugoku Electric Power Company plans to construct a nuclear power plant on Nagashima Island in Kaminoseki, Yamaguchi Prefecture, which is described as the most beautiful place in Seto Inland Sea. The treasure trove of diverse life including the Japanese murrelet (*Synthliboramphus wumizusume*) is about to be filled.

We hereby appeal to the central government, local government and private businesses:

In order to avoid making the International Year of Biodiversity a mere sloganeering, policies must be shifted away from destruction towards conservation and restoration of wetlands and save the seas of Isahaya, Awase and Nagashima from acts of folly.

Without responding to our appeal, Japan would never be able to fulfill its responsibility as the host to the Tenth Meeting of the Conference of the Parties to the Convention on Biological Diversity, which is held in the International Year on Biodiversity.

Save! The Seas of Isahaya, Awase and Nagashima Project

October 2010

Participating Organizations

The Save Awase Higata Association
Isahaya Bay Emergency Rescue Task Force – Tokyo Office
The Association for the Conservation of Nagashima Island

Supporting Organizations

WWF-Japan, The Nature Conservation Society of Japan, Japan Civil Network for Conservation on Biological Diversity,
Ramsar Network Japan, Japan Wetlands Action Network (in random order)

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