



# Okinawa's Treasure, the World's Treasure: Let's Pass it on to the Future

## Summary Report of the Symposium on Henoko-Oura Bay

### *Greetings,*

Henoko-Oura Bay in the northern part of Okinawa Island, Japan, is a beautiful area blessed with a diverse marine environment. With its coral reefs, seagrass beds that the dugong feeds upon, and sandy mud bottom, the area supports and sustains various forms of life and is Okinawa's treasure.

Okinawa's treasure is facing a crisis, however. The Japanese and U.S. governments are now land-reclaiming this marine area as part of their plan to construct a U.S. military base in Henoko-Oura Bay. The Okinawa prefectural government believes that construction work must stop immediately to protect this irreplaceable treasure.

With a strong sense of urgency, the Okinawa prefectural government held “the Symposium on Henoko-Oura” on March 24, 2018, aiming to encourage people to gain a better understanding of the value of Henoko-Oura Bay.

The Okinawa prefectural government has created this booklet to provide the international community with a summary of the presentations delivered at the symposium. The prefectural government hopes that many people read this booklet and encourage their countries and their organizations to join our efforts to protect the globally significant marine area of Henoko-Oura Bay as the world's treasure.

March 30, 2018  
Okinawa Prefectural Government



### **Okinawa's Treasure, the World's Treasure: Let's Pass it on to the Future The Symposium on Henoko-Oura Bay**

Date: March 24, 2018  
Place: The National Theatre Okinawa  
Sponsor: Okinawa Prefectural Government  
Organize/Co-Sponsor:  
The Nature Conservation Society of Japan

# ENVISIONING HENOKO-OURA BAY FROM THE PERSPECTIVE OF THE WORLD'S OCEANS

Keynote Speaker: François Simard (IUCN Marine Expert)

Marine Conservation: Global Challenges and ways forward in relation to Aichi target 11 and SDG 14.

Marine Protected Areas (MPAs) is the best tool available for marine conservation. Within the IUCN categories of MPAs, there is many different MPAs, from the full reserve, or no-take zone, to the multiple-use MPAs. They all follow the same definition that an MPA is an area dedicated to marine conservation. In other words, the degree to which human activities are allowed depends upon the conservation objectives of each MPA. Clear objectives and conservation management plans are the key to MPAs.

Aichi Target 11 aims at covering 10% of the ocean with protection measures, whether those are MPAs or “other effective conservation measures” (OECMs).

According to MPAs Atlas, only 3.66% of the Ocean is currently protected. More efforts need to be made if we want to make Aichi targets a reality. Moreover, it is recognized that 10% is not enough and that a target of 30% at longer term is desirable.

I came to Okinawa not as a representative of the IUCN, but as a marine expert. Yesterday I visited Oura Bay. The bay was beautiful and healthy with rich biodiversity. Such diverse coral reefs are rare in the world, and they must be protected. Impacts of construction work on the ecosystem of any marine area are immeasurable, and this is why Environment Impact Assessment (EIA) holds such importance when construction work has to take place. EIA conducted by the proponent of a project is valuable; however, the proponent’s intentions might intervene its EIA. It is thus essential to use the standards that are globally accepted by experts to evaluate impacts on the environment. Also, different evaluations should be made from multiple points of view as to accurately understand impacts on ecosystem services as well.



## Compatibility of fishing and collecting activities and management categories

Table 6: Compatibility of fishing/collecting activities in different management categories – a preliminary assessment.

IUCN category	Long term and sustainable local fishing/collecting practices	Recreational fishing/collecting	Traditional fishing/collecting	Collection for research
Ia	No	No	No	No*
II	No	No	Yes**	Yes
III	No	Yes**	Yes**	Yes
IV	Variable	Variable	Yes	Yes
V	Yes	Yes	Yes	Yes
VI	Yes	Yes	Yes	Yes

Key:

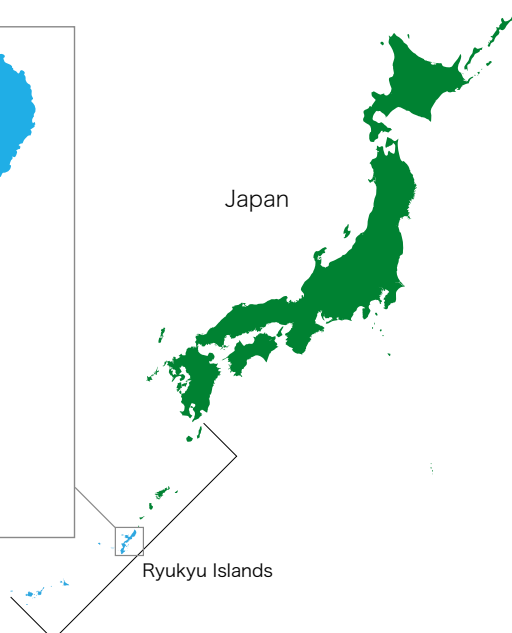
- \* Any extractive use of Category Ia MPAs should be prohibited with possible exceptions for scientific research which cannot be done anywhere else.
- \*\* In Categories II, III and III MPAs traditional fishing/collecting should be limited to an agreed sustainable quota for traditional, ceremonial or subsistence purposes, but not for purposes of commercial sale or trade.
- # Whether fishing or collecting is or is not permitted will depend on the specific objectives of the MPA.

Okinawa 24 March 2010

▲ IUCN offers seven categories of protected areas. Depending upon the category, certain activities are allowed (green) and other activities are prohibited (red).



▲ Establishing an MPA to protect ecosystem services.



It is also important to consider mitigation measures as to reduce the impacts of a project on the environment. Irreversible impacts must be avoided. For example, if a project brings about changes in the current pattern, sediments are likely to be deposited in different locations than the ones where sediments usually accumulated. Noise during works is susceptible to impact significantly

marine organisms, dugong in particular. Finally, it is vital to utilize MPAs and fishing rights to strengthen conservation efforts. Local community members can engage in eco-tourism thereby by making the best use of the natural environment in a sustainable manner. I hope we can protect the sea of Henoko-Oura Bay.

## REASONS FOR BIODIVERSITY: HENOKO-OURA BAY

Speaker: Masahito Yoshida (University of Tsukuba, World Heritage Studies)  
Importance of Biodiversity in Oura bay

Not many people know the importance of the natural environment of Henoko-Oura Bay. Located on the east coast of northern Okinawa, the Bay served as a port for yanbarusen, traditional-style wooden sailboats, during the era of the Ryukyu Kingdom. This history tells that the Bay is deep. The distinctive geography of Oura Bay supports its unique ecological system. With the Oura River and the Tima River flowing into the Bay, wetlands spread and mangroves grow at the estuaries. Seagrass beds in the shallow inou or reef moat, sandy-mud zones at the deep sea bottom, and coral reefs and limestone caves in Nagashima Island are all parts of this diverse natural environment.

I have spent ten years working with local citizens to conduct jungusa watch, surveying seagrass beds in this marine area. The area of seagrass beds in Henoko is the largest in Okinawa Island and is characterized by its diversity in seagrass species. Seagrasses are plants that once evolved on land and have re-adapted to the marine environment. They flower and have seeds. They are different from seaweed such as mozuku. Dugongs and sea turtles feed upon seagrass. Before construction work started, we could find dugong feeding trails in seagrass beds in many parts of Henoko-Oura Bay. Seagrass beds are found in Setake and Kayo, areas that are near Henoko. We also found dugong feeding trails in seagrass beds on the sandy-mud bottom of Oura Bay.

In the past, few studies were conducted in the deeper areas of Oura Bay. In the 2000s, surveys were conducted on benthos in the sandy-mud bottom and found many new shell and crustacean species.



▲ Blue coral colony at *Chiri bishi*  
The size of the colony is 50 m in length, 30 m in width and 12 m in height.  
Photo by Osamu Makishi

In Oura Bay, various coral colonies including those of Hump coral or *Porites cylindrica* and *Porites rus* are found. In 2007, at the reef known as *Chiri bishi*, a colony of blue coral or *Heliopora coerulea* was found. The colony looks like a little mountain rising from the sea bottom. It provides a habitat for many other marine organisms including crabs and sea cucumbers. Despite the name “blue coral,” the surface of blue coral is not blue at all; when broken, the exposed cross section is blue. The meaning of the local term *chiri* is a “cut” or “end” and *bishi* coral reef. People did not know about the *Chiri bishi* until recently since it is impossible to walk from the shore to the *Chiri bishi*. Recent studies show that the *Chiri bishi* blue coral has a different genetic composition than the blue coral found at the Shiraho area of Ishigaki Island.

Nagashima Island is known as a breeding/nesting ground for black-napped terns. Recently, limestone caves formed with corals were discovered on the island.

As this type of limestone cave has not been found in other parts of Japan, the caves are of significant scientific value.



Henoko-Oura Bay presents a diverse and unique environment. In this area, the more studies that are conducted, the more discoveries that are made. Yambaru National Park and the candidate site for World Natural

Heritage status cover only the land area of the northern part of Okinawa Island. To protect the environment, I believe, they need to expand the protected coverage to the marine area including Henoko-Oura Bay.

## ENDEMIC SPECIES AND RARE SPECIES AS POTENTIAL LOCAL RESOURCES

Speaker: Yoshihisa Fujita (Okinawa Prefectural University of Arts)  
Crustacean Species Diversity and Habitat Diversity in Oura Bay

Each of the islands in Okinawa has a unique natural environment and organisms which nurture the distinctive culture of the island. Biodiversity and endemic species are local treasures and resources, and we need to take care of them.

In 2009, we planned to study crustacean species in a bay environment, and we chose Oura Bay as our survey site. Within a week of our survey, we found 510 crustacean species from 249 genera of 65 families. Over ten percent of these species were "undescribed species" (or new species) or species that were recorded for the first time in Japan. Our survey results reflected the rich natural environment of Oura Bay. It is important to emphasize that many crustacean species were found in the sandy-muddy bottom zones, and this particular environment previously received little attention since it had been regarded as not suitable for organisms.

The environment that each organism requires for its survival is different from those of other organisms. Organisms inhabit not only coral reefs and seagrass beds but also shore rocks, sandy

beaches, and splash zones with boulders as they adapt to these different environments. I see that the relationships between organisms and their environments parallel the relationships between foods and the plates on which the foods are served. We should try to see things from the perspective of organisms living in the environment. This attitude is important especially if we are to alter their environments.



## THREATS TO THE NORTHERNMOST DUGONG

Speaker: Taro Hosokawa (Dugong Network Okinawa)  
The Okinawa Dugong

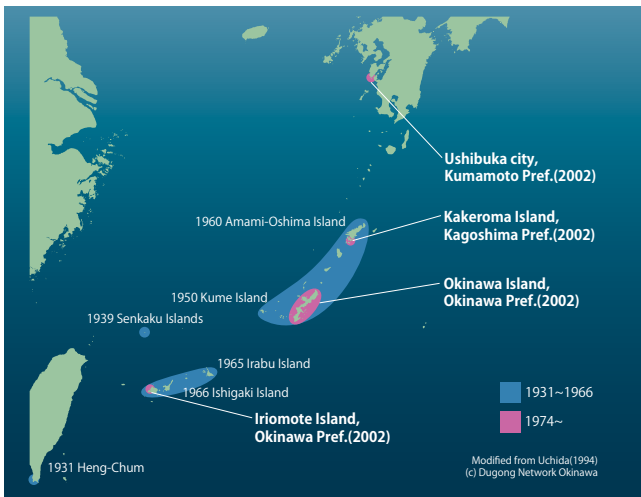


▲ On April 15, 2014, dugong feeding trails were found at 20 meters below the water surface near *Chiri bishi*. Photo by Team Zan

Today, in Japan, the dugong is listed as a critically endangered 1A (CR) species by the Ministry of the Environment.

In Okinawa, dating back around 3,500 years, during the shell midden period, the dugong was already an integral part of culture and society. Its meat was consumed, and its bones were used for ornaments. During the Meiji and Taisho periods, however, the dugong population declined drastically as it was overhunted. While a 1997 survey confirmed that dugongs were still present in Okinawa, they were in further decline as they were killed in bycatch.

In Okinawa today, the feeding grounds of the dugong have been reduced by development and



▲ Marine areas in Japan where dugongs were confirmed.

have deteriorated because of red soil runoff. The dugong continues to be threatened by bycatch, underwater disposal of undetonated explosives, and the U.S. military's training activities. Since 2007, the Okinawa Defense Bureau's environmental impact assessment surveys recorded three individual dugongs (known as Individual Dugong A, B, and C). Dugong C also used to be present in Oura Bay. However, since the construction of the military base began, Dugong C has been missing from the waters of Okinawa, and no feeding trails have been found in the areas of Henoko-Oura Bay. The construction work is impacting the dugong, and the operations of the base will undoubtedly further affect the Okinawa dugong.

## CONSTRUCTION WORK ALREADY IMPACTING THE ENVIRONMENT

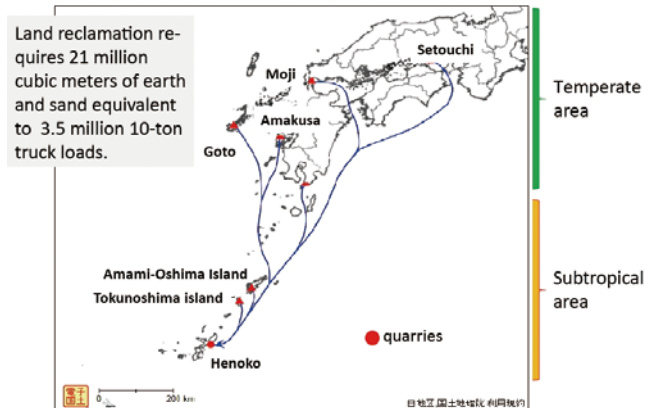
Speaker: Mariko Abe (The Nature Conservation Society of Japan)  
Update and Problems of Henoko New Base Construction

In April 2017, land reclamation work began in Henoko-Oura Bay. Although the work is still at the initial stage of a lengthy construction process, we can already see impacts of construction work on the environment.

More than 300 concrete blocks of various sizes have been sunken onto on the sandy and muddy bottoms of Oura Bay where various organisms inhabit. The diverse sea bottom topography of the bay could be in danger of being lost.

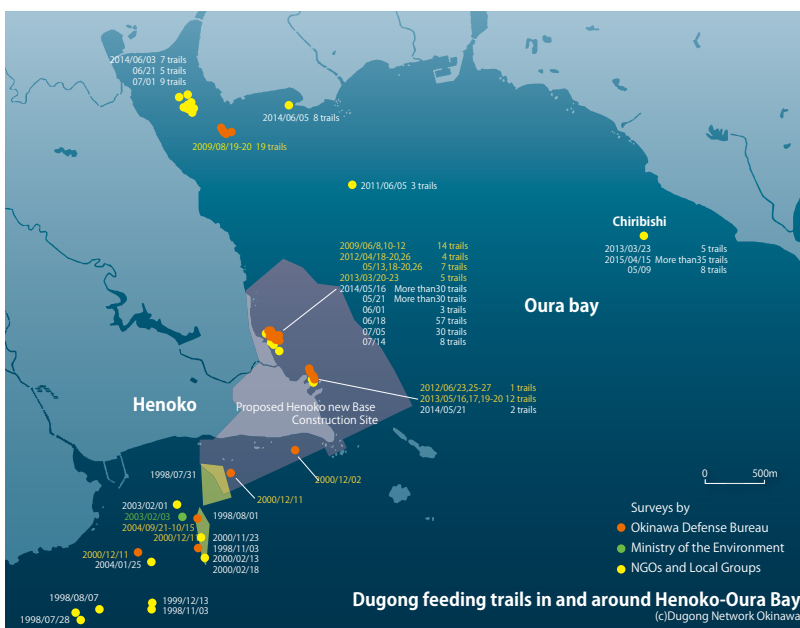
Construction work has altered the behavior of a dugong known as Dugong C. It has not come to use the area since the spring of 2015. In the area south of Camp Schwab, where the largest area of seagrass beds around Okinawa Island exists, construction of five seawalls is now underway. The issue of alien species being

For land reclamation, earth and sand will be transported from quarries in and outside Okinawa.



▲ For land reclamation, earth and sand will be transported from areas outside Okinawa including the Kyushu and Setouchi areas.

introduced through transport of earth and sand from outside Okinawa for land reclamation remains unsolved. The mitigation measures proposed and taken appear ineffective. Given that nothing else seems to stop construction work, it is imperative that the land reclamation permit should be revoked. This marine area should be designated as an environmental protection area, instead.



◀ During surveys conducted from May 16 through July 14 2014, many dugong feeding trails were found in parts of Oura Bay including the proposed land reclamation area.

## CORAL REEFS AS AN EXTENSION OF THE LOCAL COMMUNITY

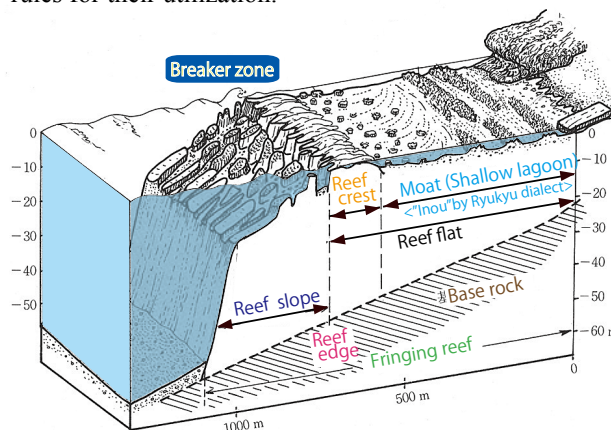
Speaker: Tatsuo Nakai (Kokushikan University)  
Importance of Protecting Biodiversity of Coral Reefs

What does it mean to protect coral reefs? The first thing we need to realize is that corals and coral reefs are different. Corals are organisms, and coral reefs are geological structures which have been created by the accumulation of organisms such as corals and foraminifera, known as hoshizuna or star-sand in Okinawa.

One of the characteristics of the coral reef environment is that the waves break at the edge of coral reefs, several hundred meters or a few kilometers offshore. There, the depth of the water abruptly changes from deep to shallow, and the rough waves from offshore suddenly become weak. This is why coral reefs are called "natural breakwaters." Within the inou or shallow moat, diverse environments exist as the waves from offshore and the rivers from the land create various impacts on the moat. The moat provides habitat not only for corals. The areas of exposed rock, sandy gravel, seagrass bed, and wetland-mangrove are habitats for many other organisms. The conservation of coral reefs does not mean that only corals need to be protected. It requires that the configuration of coral reefs, the structure of the moat, and the whole ecological system, which provide habitats for various organisms, be protected as well.

People call the shallow moat "sea firm" because they can obtain daily foods from it and take great care of it. Its shallowness makes it possible for people to walk from the beach to the moat. People believe that while offshore is connected to Niraikanai, a world for gods, the inou or moat is an extension of the land they live on.

Coral reefs have shaped the culture of Okinawa. At present, the value of coral reefs as tourism and recreational resources has increased. Meanwhile, because of the concern that ships would be stranded on coral reefs, many coral reefs in Okinawa have been altered. Moreover, because shallow moats are easy to land reclaim, many shallow reef areas in Okinawa have been land reclaimed. Henoko is facing a similar situation, and this could lead to the loss of Okinawa's treasure: coral reefs. Future generations also have the right to enjoy the services from the sea. We must re-examine the ways we deal with both the "blessings" and "awe-enticing" features of coral reefs, including our rules for their utilization.



Structure of Typical coral reef (Fringing Reef)  
The figure is created based on surveys in Yoron Island by Nakai, Kayane et al., with changes made to the original figure according to Kaizuka et al.(1985)

## PANEL DISCUSSION "LET'S PASS HENOKO-OURA BAY"

In the second part of the symposium, we held a panel discussion titled "Let's Pass Henoko-Oura Bay on to the Future." With Mr. Masahito Yoshida as our moderator, all the speakers in the first session were invited, along with Mr. Tatsuro Nakai, to participate in a lively discussion.

**Yoshida:** Please share your additional information or comments on the first part of the symposium.

**Simard:** At present, plastic waste is a serious issue for the world's marine environment. I was pleasantly surprised that I did not see any in Henoko.

**Fujita:** I have visited many islands in Okinawa for my research. Each island faces various environmental issues. Many changes could occur only in a few years. I hope I could say "these islands have not changed a bit" and could feel relieved when I revisit them ten years later from now.

**Hosokawa:** It is essential to let more people know about the uniqueness of Oura Bay. Unlike other organisms, human beings have this enormous power to alter the environment. The first part of the symposium reminded me that we have



to be conscious of this.

**Abe:** A great deal of information has been generated regarding the biodiversity of Oura Bay. However, we have not been able to stop the military base construction there, and I find this situation frustrating. I was reminded that the Environmental Impact Assessment conducted for the base construction was not up to the world's standards.

**Yoshida:** We have received many questions from the floor. This question is: While the Japanese the Environmental Impact Assessment confirmed the presence of only three individual dugongs, is it conceivable that we have more dugongs than three?

**Hosokawa:** In 2014, a marine mammal was found drifting, but the Okinawa Defense Bureau was not able to confirm it. In 2016, a dugong calf was sighted. The EIA was conducted only in the northern and central part of Okinawa Island. Given that there are some areas and islands where no survey has been done on the dugong, it is conceivable that there could be more than three dugongs in Okinawa. Also, there are possibilities that the Japan Current might carry dugongs up to Okinawa. It is, therefore, crucial that we keep safe habitats for them.

**Yoshida:** This question is, why the Henoko area was not considered for World Natural Heritage or National Park status. The Yambaru area was nominated for World Natural Heritage status because of its terrestrial endemic species. They have evolved on Okinawa Island, which had been separated from Eurasian Continent for a period of 1.5 million to 2 million years. Okinawa is in the subtropical zone with the humid climate, and this combination between subtropical zone and humid climate is rare in the world. Henoko-Oura Bay shows ecological continuity between the rivers and the sea. This continuity is vital for Okinawa and should meet the criteria for World Natural Heritage regarding the ecosystem and ecological processes. We also have a question for Mr. Simard. It is: Given the importance of having a third-party EIA review, are there any countries that have institutionalized such a third-party review?

**Simard:** In Europe, a third-party review has been incorporated into the EIA process. There was a case in Western France where the construction of a large airport to replace an old, small airfield was stopped. In this case, no special animals like the dugong were involved. However, considerable thought was given to whether such an airport was necessary. In the end, the plan was abandoned.

**Yoshida:** We invited Mr. Simard as a marine specialist, not as a representative of IUCN. However, I would like to ask Mr. Simard what IUCN would suggest for the protection of Henoko-Oura Bay.

**Simard:** IUCN is neither an NGO nor the United Nations. It is an organization whose members include state governments and NGOs. In the event of a conflict between its members, IUCN encourages them to discuss until they reach an agreement. The role of IUCN is to provide a space to talk or a platform for discussion.

**Yoshida:** This question asks whether land reclamation will change the currents.

**Nakai:** When you take a look at aerial photos of Cape Henoko and areas around it, you would see lines over coral reefs, indicating that the flow of water moves the sand. There is no doubt that land reclamation will change the flow of water, as well as the movement of sand. It is also possible that land reclamation can cause the water to become muddy and sediments to accumulate in areas where the flow of water is altered. The EIA for the base construction did not predict how changes in the flow of water would impact the movement of the sand at the bottom. It is conceivable that if changes occur in the sand at the sea bottom, they can affect benthos as well.

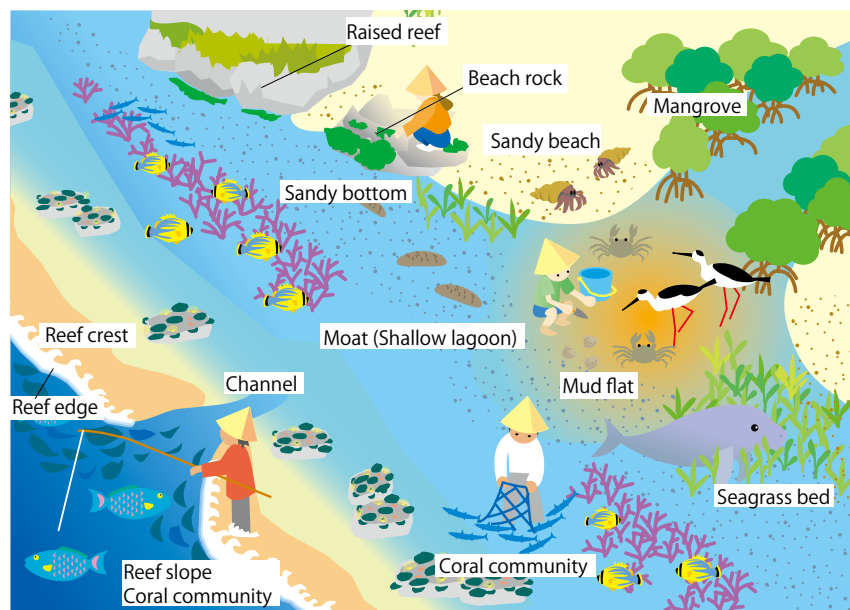
**Yoshida:** I would like the panel members to give us suggestions as to how we can pass Henoko-Oura Bay on to the future.

**Fujita:** As a researcher, I would like to make an effort to provide research results to the public. I would also want people to attend meetings like this symposium and develop interest not only in the environment of Henoko but also those of the areas where you live.

**Hosokawa:** I would like people to see the sea from the perspectives of their own interests. I believe that the more we understand what we see, the better our natural environment will become.

**Abe:** There is a limit to international efforts to protect the environment of Henoko-Oura Bay. As such efforts may be interpreted as interference in the internal affairs, they alone could not stop construction work. We need to think about how to create a protected area “bottom-up” with domestic and local municipalities.

**Yoshida:** The more we hear from the panel members, the more we realize how significant the area of Henoko-Oura Bay is. If the area is land reclaimed, the natural environment will be lost forever, but if we can make wise use of the environment, it would provide us with blessings. This view is essential in the protection of nature. It is a tremendous challenge to stop the base construction. However, we should collaborate to protect and pass this treasure on to the future.



## Statement on the Protection of the Precious Natural Environment of Henoko-Oura Bay

The area of Henoko-Oura Bay stands out as one of the most biodiversity-rich marine areas in Japan while Japan herself is considered as a "hot spot" of biodiversity in the world. The dugong, Japan's Natural Monument, inhabits this area and endangered sea turtles also come to lay eggs on its beaches. Other significant features of the area include the seagrass beds, which are the largest in Okinawa Island, the colony of genetically distinctive chiri bishi blue coral, and rare limestone caves formed with corals.

Because of these features, the Okinawa Prefectural Government has designated the marine area of Henoko-Oura Bay as "Rank I" (the highest) in the Okinawa Prefectural Government's Guidelines on the Conservation of the Natural Environment. The designation requires stringent protection of the natural environment. The Japanese Ministry of the Environment has selected the area as a potential candidate for Ramsar Site status because it satisfies the criteria of Wetlands of International Importance. The ministry has chosen the area as one of Japan's "Ecologically or Biologically Significant Marine Areas."

Nature and life supported and sustained by the environment over many seasons and years support the livelihoods of local people and provide the foundation for local culture. It is necessary for us to reexamine the significant value of the natural environment of Henoko-Oura Bay and pass it on to our children and grandchildren.

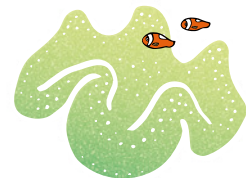
However, the construction of seawalls for a new U.S. military base in Henoko-Oura Bay began in April 2017, and as construction work continues, we are facing the possibility that the richness and significant value of this coral ecological system in this marine area will vanish forever, without the people of the world ever knowing about it.

The Okinawa prefectural government has engaged in various projects to protect this marine area. They include projects launched by the dugong protection committee, the drawing up of guidelines for nature conservation, the authorization of agreements on environmental conservation and usages of the natural environment among eco-tour operators, the adoption of an ordinance for restrictions on soil and rock importation, and the designation of restricted areas for fishing. The Okinawa prefectural government is also preparing to designate the Oura Bay as a natural park, provided that land reclamation work at Henoko stops and the water area now used for U.S. military training and operations is returned to Okinawa.

Recognizing that those of us living in the present have the responsibility to know that the life and the natural environment this marine area supports and sustains are invaluable and to protect this beautiful sea, we sincerely wish to pass the marine area of Henoko-Oura Bay to the future. We hereby demand the Japanese and U.S. governments to take the following actions:

1. Immediately halt the current construction work associated with the Henoko new military base construction plan, conduct thorough studies to gain the accurate understanding of the impacts of base construction on the ecological system and ecological services of Henoko -Oura Bay, and re-evaluate the impacts.
2. Protect the invaluable environment of Henoko-Oura Bay and abandon the Henoko new base construction plan.

March 24, 2018  
The Okinawa Prefectural Government  
All Participants of the Henoko-Oura Bay Symposium



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