

## The Northernmost Dugong In Dire Danger

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On March 22, 2013, Minister of Defense Itsunori Onodera filed with the Governor Hirokazu Nakaima of Okinawa Prefecture application for permission to landfill the waters off Henoko, Nago City to construct a new US Marine Corps Airbase. Twenty one million cubic meter of landfill material is planned to be dumped to the place where, according to the Prefecture, the natural environment must be strictly conserved.

The waters off Henoko, situated on the eastern shore of Okinawa Island, is one of few remaining shores still rich in wildlife. The water area planned for landfill is a part of the habitat of the Okinawa dugong, the northernmost of the species and on the verge of extinction.

Governor Nakaima requested, on April 12, the Okinawa Defense Bureau, a division of the Defense Ministry, to clarify the places from where the landfill materials are to be obtained and to state whether or not they contain hazardous materials. The Bureau submitted, on May 30, a revised version of the application according to which the most of the landfill materials would be purchased from various dealers with whom the contract would be signed after the landfill project is permitted. The nature of the materials, therefore, are unknown. However, the revised version gives some information about the kind of the landfill materials and general locations from where the materials would be obtained.

Application for landfill may be admitted only if the project would not cause environmental contamination. We will show below, from the stand point of dugong protection, that there exists a high probability for the landfill to cause environmental contamination and that it goes against the principles of the Basic Act on Biodiversity.

The planned Henoko base

The planned base would occupy about 205ha of the waters off Henoko and a part of Oura Bay; about 160ha of the sea area would be filled in; about 78.1ha of seagrass colony would be destroyed; about 6.9ha of coral would be lost. (Dugong feeds on seagrass, which is not a kind of seaweed, but a flowering plant that grows in shallow water.)

The formal name for the planned base is 'The Replacement Facility for the Futenma Air Station'. The Futenma Air Station is a US Marine base situated in a heavily populated area in Okinawa and is known as the 'most dangerous air base in the world'. The US agreed in 1996 to return the base to Japan within six to seven years. In April, 2013, however, both Japan and the US agreed that the base would not be returned before 2022, and if returned, it would be only after the 'Replacement Facility' is completed. In October, 2012, notoriously accident-prone military helicopter MV22 Osprey was introduced to the Futenma base steamrolling overwhelming opposition by the Okinawa people.

Okinawa Prefecture, 0.6% in area of Japan, is burdened with 74% of the US bases in the country. Noise, danger and never ending abuse of the local residents by the members of military have turned the Okinawa people strongly against a new base in their prefecture.

Agreement based upon the US Japan Security Treaty regarding facilities and areas and the status of US Armed Forces in Japan gives the US military free access to any port or airport in Japan, rights to use all public utilities and services belonging to, or controlled by the government of Japan. The US military in Japan behaves as an army of occupation. Japanese rulers, on the other hand, have long regarded Okinawa as a place to be sacrificed for the metropolitan parts of the country. Repeated demand by the Okinawa people for immediate return of the Futenma base and no further base in their prefecture have been ignored by the Japanese government. Instead, the government offers large sums of money to force the new base plan down the Okinawa people's throat. The money is to be used to build infrastructures and other facilities not really needed by the local people. The constructors, in most cases, are powerful enterprises in the metropolitan areas. The money flows back to the 'main land', and the Okinawa people are left with destroyed environment and the burden of maintaining the facilities. Being aware of these facts, the citizens of Nago City support their Mayor Susumu Inamine who is firmly against the new base plan.

## The Okinawa Dugong

Dugong (*Dugong dugon*) belongs, with manatee, to the order Sirenia which has been included on the IUCN Red List for the Threatened Species for decades. Dugong is a marine mammal that lives exclusively on seagrass and in coastal waters. An adult dugong eats 28~40Kg of seagrass per day. Dugong is an important member of the coastal ecosystem. Dugong is a sensitive animal and produces a single calf every few

years.

The Okinawa dugong is, as stated above, the northernmost population of the species. It used to be commonly seen around Okinawa Island. Local people of Okinawa, then an independent Ryukyu Nation, used to revere dugongs as spirits of the sea. Dugongs were also hunted for meat and their bones were used as tools and ornaments. They have been an important part of the local culture. In 1897 the Meiji Government forcibly ended The Ryukyu Dynasty and annexed the island nation to Japan. Over-hunting diminished their population and reckless fishing using explosives and poison after the end of the World War II drove them close to extinction. Extensive land development also caused coastal water pollution and habitat degradation.

In 1972 the Okinawa dugong was designated as a Natural Monument by the Law for Protection of Cultural Properties. The Fishery Resources Conservation Law prohibited the hunting of dugongs in 1993. The Mammalogical Society of Japan listed the dugong as an endangered species in 1997. In 2005, Okinawa Prefecture listed dugong as threatened IA (CR). In 2007 the Ministry of the Environment reviewed the Red List of Japan and included dugongs as critically endangered animals (IA). However, dugong's habitats are not legally protected and their by-catch is not penalized.

Seagrass colonies are still seen along the eastern and northern shores of Okinawa Island including Henoko waters. However, fast spreading 'artificial beaches' created for tourists attraction is seriously degrading the coastal ecosystem. During aerial surveys by the Ministry of the Environment from 2002 to 2005 only three to ten dugongs were seen per year.

## The EIA

On December 28, 2011, the Defense Department submitted an Environmental Impact Assessment to the Governor of Okinawa Prefecture concerning the planned land filling and the base construction. The Governor issued his opinion on March 27, 2012, stating his grave concern that the projects might cause serious environmental impact in spite of the conclusion of the EIA claiming that 'no particular environmental harm would occur according to the execution of the projects'. The Governor pointed out more than 570 items in the EIA as inappropriate and stated that it is impossible to conserve the environment by the measures proposed in the EIA.

The Defense Department organized a group of specialists to review the EIA and, on December 18, 2012, submitted a Revised Version of the EIA.

In Japan the EIA is compiled by the contractor of the project. The purpose of the EIA

is not so much to conserve the environment as to draw up ‘appropriate measures helpful to conserve the environment while executing the project’.

The Defense Department assigned several firms to compile the EIA; seven retirees from the Department were among the staff members of the firms.

As a rule, in Japan, the conclusion of the EIA says, ‘no particular environmental harm would occur while executing the project’.

The EIA proceeds in three stages: Scoping, compiling Preparatory Assessment and presenting the Final Assessment. A concerned person may offer opinions with regards to items contained in the first two documents.

On August 19, 2009, a law suit was filed in Naha District Court in Okinawa demanding the Government and the contractor of the new base construction to start afresh the Scoping and the Preparatory Assessment stages of the EIA as, the plaintiffs claimed, these parts of the EIA go against the purposes of the Law concerning the EIA and also violate the rights of the citizens to offer opinions because the concerned papers hid important items such as the deployment of MV22 Osprey in the planned base; the citizens may not offer opinions concerning items not included in the first two documents of the EIA.

Professor Toshio Kasuya, a renowned specialist in marine mammals, presented his opinion to the Naha District Court on January 13, 2012, stating his sharp criticism on the EIA; he wrote that it is essential to avoid a further disruption of the marine ecosystem.

The Court rejected the suit on February 20, 2013, ruling that citizens are given the opportunity to present opinions concerning the EIA but not legally provided with the rights for it; the court did not care to go into the matter of illegality of the EIA procedures. The plaintiffs decided to appeal the ruling.

The planned landfill and the new base construction would be devastating to the coastal ecosystem, harmful to the local people’s living and in defiance of the opposition by the whole of Okinawa people and go against the principles of the Basic Act on Biodiversity.

Let us point out below, from the view point of protecting the Okinawa dugong, that the EIA (revised version) is far from being scientific.

#### 1) Dugong and the waters off Henoko

The EIA claims that only three dugongs were observed. It also says that no dugong sighting was reported in the waters off Henoko since 2003.

In April, 2003, survey work for another EIA for an airbase construction at sea off

the Henoko beach was started. This project, also called the construction of The Futenma Airstation Replacement Facility, was the antecedent to the present airbase construction project. The project, started in July, 2002, was a copy of a plan drawn up by the US Marine in 1966 to build an airbase at sea off the Henoko beach. The project was met by strenuous opposition which succeeded in preventing even one pile from being rammed in to the seabed. Powerful international pressure opposing the air base construction, and the Dugong vs Rumsfeld suit started in September, 2003 in San Francisco, California also helped the opposition. The air base at sea project was withdrawn and, in 2006, it was replaced by the present plan placing the base closer to the shore. It is clear that the disturbance accompanying the antecedent project discouraged the dugongs from frequenting Henoko waters.

It should also be noted that a US Marine Corps base Camp Schwab, located near the planned construction site, has been a source of the disruption to the coastal ecosystem. However, as the EIA admits, dugongs have been visible at Henoko waters until 2003.

2) The number and behavior of remaining dugong population

Any experienced wildlife researcher knows the near impossibility of assessing exact number of an isolated wildlife population. The names and/or affiliation of the persons who actually carried out the dugong observation for the EIA are not identified. The EIA simply reports that there are three remaining dugongs around Okinawa Island: individuals A, B and C. According to the EIA the individuals A and B seem to be mother and her calf seen along the north-eastern shores of Okinawa Island while the individual C is regularly observed at Kayo waters, approximately five kilometer to the east of Henoko beach. The observation operation has been quite disruptive. Numerous pieces of equipment were placed at Henoko waters and Oura Bay as if to scare dugongs away from places near the construction site. The aircrafts tracking the dugongs, the EIA reports, at times lowered the flight altitude to see if such action drove off the animals.

Survey of the dugong trenches, traces of the dugong feeding, was carried out until 2009 and, according to the EIA, the trenches were mostly found in Kayo waters. In June, 2011, however, an NGO group found a numerous dugong trenches in a deep seabed at Oura Bay. The EIA also admits that a few trenches were found at Henoko waters also.

A construction work to guard the local community from typhoons has been carried out on Kayo beach since the beginning of the year 2013. The construction is now carried out on land but there is a possibility that this work would disrupt Kayo

waters ecosystem and discourage the remaining dugongs from frequenting there. The dugong behavior pattern will change as time passes. However, the EIA assumes that the remaining dugongs would stay within the range recorded by the aircraft observation, one kilometer away from the construction site throughout the execution of the project.

### 3) Noise Impact

Ramming piles, dumping rocks and dredging cause intolerable noises. The EIA adopts, as 'limit of noise tolerable to dugong', the noise level considered by a study of the dugong behavior in Australian waters. It also adopts, as 'noise level harmful to the marine mammal', the 'standard' recommended by the US Army. The EIA admits that during the early period of the base construction there are occasions when both the 'limit of tolerable noise' and 'noise level harmful to marine mammals' are surpassed within the range of the dugong movement observed from aircraft during the EIA study. The EIA document then says, "Efforts shall be made to lower the noise levels, and if any change in the dugong behavior might be observed a study shall be carried out to see if such a change is related to the construction works. If the results of the study is conclusive to the adverse effects of the construction works measures such as reviewing the construction methods shall be taken without delay."

The final EIA document and its revised version admit the use of MV22 Osprey and also admit that the 'noise level harmful to marine mammals' would be surpassed at spots directly under the flight courses. However, the EIA claims, the locations in question are not included within the dugong movement ranges observed during the assessment study.

### 4) Impact Related to Vessels Movement

According to the EIA, during the construction period, there will be occasions when more than fifty construction vessels will be at work. Professor Kasuya says, in his opinion presented to the Naha District Court, "According to an observation carried out in Australia, dugong's reaction to the vessels depends on the water depth of the location, vessel speed and direction of the vessel movement. However, the result of the study reports, there were occasions when dugongs reacted to the vessel movement one kilometer away, took refuge and needed more than one hour to return to the original places. It is also known that dugongs avoid approaching the water areas frequented by vessels." However, the EIA only states that, "Attempts shall be made to limit the vessel speed and to keep a visual watch in order to avoid hitting dugongs."

If the new base were constructed oil tankers and other transportation vessels

would frequent the area. According to the EIA, the maximum noise level caused by the vessel movement will be 103dB. The EIA says, "Considerations such as lowering the vessel speeds shall be made so that the probability for causing adverse effects to dugongs would be small."

5) The 'Extinction Risk'

The revised version of the EIA adopted an opinion of a specialist concerning the probability of extinction of the Okinawa dugong a hundred years from now. According to the specialist's calculation, the totality of seagrass colonies around Okinawa Island may support approximately one hundred dugongs but no more. In order to carry out computation, he then assumes that a dugong lives as long as there is food supply and a mature female dugong mates and reproduces as long as she finds a male. Since there remains such a small number of dugong the probability for the population of the Okinawa dugongs to consume the remaining seagrass colonies within the following hundred years, namely the 'extinction risk for the Okinawa dugong' is less than one percent. The specialist then calculates the 'extinction risk' assuming the loss of 78ha of the seagrass colony through the execution of the planned landfill and concludes that the increase of the 'risk' is about 0.01%, a 'negligible number'.

According to the specialist's theory, the smaller the number of surviving dugong is the smaller would be the 'extinction risk'; there is no need to list the Okinawa dugong as threatened.

6) Landfill

Professor Mitsuru Sakuma writes in 'Yama ga Kieta-Zando Sanpai Sensou (Mountains Disappeared; Construction Waste, Industrial Refuse and People's Resistance)', published by Iwanami Shoten, "Within the recent 40 years a large number of mountains disappeared to produce 12 billion ton of material to build the 'concrete jungles' in the metropolitan areas. Many million tons of the waste emitted by the 'concrete jungles' now form a series of phantom mountains standing at the places where the real mountains stood."

The period of 'rapid economical growth' in Japan brought a grave damage to its biodiversity; in order to obtain raw materials for concrete and cement and to extract landfill materials mountains were flattened and the coastal sea-bed was made bare by gigantic suction machines. In Hiroshima Prefecture, facing Setonaikai, an inland sea west of Kyoto and Osaka, a group of local fishermen stood up against devastating sand extraction from coastal areas and, with the help of the Chugoku Shimbun, a local media which exposed the grim state of sea-bed, succeeded, in 1998,

to have Hiroshima Prefecture prohibit the extraction of the sea-sand.

Extraction of the landfill materials and dumping them to Henoko water, still rich in wildlife, both would give devastating damages to the environment. The EIA for the Henoko landfill project, however, fails to mention anything about the nature of the landfill materials. The EIA is fatally defective.

As stated above, it was only after Governor Nakaima demanded the revision of the application for landfill the Okinawa Defense Bureau gave some information about the landfill materials extraction sites:

- a) 3,600,000 cubic meter of soil would be acquired in Nago; a portion from a refuse dump, a byproduct of leveling a part of the Camp Schwab site, and another would be extracted from a mountain near Henoko Dam. It is possible that the refuse within the Camp is contaminated by harmful matters related to the camp activities such as military drills. Extraction of a huge amount of soil from a mountain means destruction of the mountain ecosystem.
- b) 580,000 cubic meter of the sea-sand would be extracted from a number of places around Okinawa Island. One such location is about 80 km south-west of Henoko. The extraction would aggravate destruction of marine ecosystem. Lines of vessels carrying the sand would disturb the dugongs. Sand dumped to Henoko waters and Oura Bay might contain invasive species. Instead of attempting to assess the impact of introduction of invasive species, the application says, "The specifications for the purchased materials shall contain clauses assuring ecological safety of such materials."
- c) 16,440,000 cubic meter of rock pieces would be acquired from quarries in Okinawa Island, Tokunoshima Island, about 150 km to the north of Henoko, Amami-Oshima Island, 50 km further to the north, and several places in Kyushu and quarries facing Setonaikai. Some of these rock pieces may be highly alkaline. It should be made sure that the pieces do not contain poisonous chemicals such as arsenic, cadmium etc.
- d) In addition, construction refuse, deposit dredged from dams or ports, crashed concrete waste would also be used; acquisition places are not given.

The application says, "The specifications for construction refuse shall contain clauses assuring that the above material would pass the norm concerning the environmental safety of soil." The 'norm', issued by the Ministry of Environment, requires the amount of certain poisonous matters contained in the soil to be within the permissible density. The 'norm' also states, "As regards the soil not satisfying the norm, attempt shall be made to



have such material attain the required safety levels as soon as possible.”

The Asahi Shimbun, a leading news paper in Japan, reports in its February 17, 2012 issue, that arsenic surpassing the permissible concentration was detected from a construction refuse disposal site in Chiba Prefecture. The disposal site had all the soil carried into the site pass the ‘norm’. This report is only a part of similar cases. Professor Sakuma writes, in his book mentioned above, that Kimitsu City, in Chiba Prefecture, notes that the most of the construction refuse is polluted.

Deposit dredged from dams or ports may contain harmful materials such as neonicotinoid insecticides, banned by the EU in 2013 as they may be the primary cause of bee colony collapse disorder. Neonicotinoid insecticides are widely used in Japan since 2000 and reported to be harmful to marine invertebrates. Deposit in many estuaries and bays in the north-eastern part of Japan are contaminated by radioactive matters emitted by the Fukushima Daiichi Nuclear Reactors.

Sources of the concrete waste planned to be used for the landfill must be clarified. The concrete waste may be highly alkaline. The waste may also be contaminated.

#### 7) Basic Act on Biodiversity

The Article 3 (1) of the Act says, “Conservation of biodiversity shall be carried out for the purpose of ensuring that conservation of endangered wildlife species, etc. is aimed at and that the diversified natural environment is conserved according to the natural and social conditions of the region, taking into consideration that maintenance of sound and bountiful nature is indispensable for conservation of biodiversity.”

The clause (2) of the same article states, “Use of biodiversity shall be carried out for the purpose of using national land and natural resources by a sustainable method to ensure that impacts on biodiversity are avoided or minimized, taking into consideration that biodiversity has been damaged along with changes in socioeconomic activities and that use of natural resources is likely to have an impact on biodiversity in Japan and abroad.”

The Article 14 (1) says, “The Government shall, for the purpose of conservation of the biodiversity of endemic organisms, conserve regions that are found to be important in terms of conservation of biodiversity, including those having natural characteristics that represent the natural environment of Japan and those that are important as habitats of diversified organisms, regenerate any ecosystem that has

been damaged in the past and take other necessary measures.”

It is clear that the Henoko landfill project goes against the principles of the Basic Act on Biodiversity.

The Article 27 says, “Local governments shall implement policies pursuant to the policies of the government in the preceding Section and other policies for conservation and sustainable use of biodiversity according to the natural and social conditions of their areas, aiming at comprehensive and planned promotion of these policies.”

As mentioned before, the planned landfill site is set aside by Okinawa Prefecture as an area where natural environment must be strictly conserved. In accordance to the Basic Act on Biodiversity, Governor Nakaima is obliged to turn down the landfill application.

August 21, 2013

Errata:

I made mistake as regards the individuals A,B,C of the Okinawa dugongs (p.5); the individual A,B and C should be read, respectively, B,C and A. A is the one regularly seen in Kayo , B and C are mother and her offspring. I apologize.

Please spread the word and, if possible, submit your opinions to the following:

1) The US President Barack Obama

[www.whitehouse.gov/contact](http://www.whitehouse.gov/contact)

President Obama should be made aware that forcing through the Henoko base would not only harm the endangered Okinawa dugong but also make the Okinawa people, long abused by the Japanese government, strongly resent the US presence in their Prefecture.

2) The Japanese Prime Minister Shinzo Abe

[https://www.kantei.go.jp/foreign/forms/comment\\_ssl.html](https://www.kantei.go.jp/foreign/forms/comment_ssl.html)

Prime Minister Abe should be told that the people of the world, including many Americans, are uneasy about his enthusiasm in building up military forces, his disregard of the Okinawa people’s opinion and his indifference to the plight of the endangered dugong.

3) The Okinawa Prefecture Governor Hirokazu Nakaima  
[kouhou@pref.okinawa.lg.jp](mailto:kouhou@pref.okinawa.lg.jp)

Governor Nakaima needs to be encouraged so that he continues to stand with the Okinawa people against the Henoko base.