



INTERNATIONAL SYMPOSIUM  
ON **SEA TURTLES** '88

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HIWASA TOWN

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2018

THE MARINE TURTLES IN CHINA

1988 REVIEW

by

TAN YAN XIANG

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JULY 30 - AUGUST 3, 1988



## The Status of Research and Conservation of Marine Turtles in China

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Five marine turtles are found in the coast of China, namely: Chelonia mydas, Eretmochelys imbricata, Caretta caretta gigas, Lepidochelys olivacea and Dermochelys coriacea. Chelonia mydas is most abundant, and nests in the coast of the Southchina sea island, southeast part of Hainan Island and some beaches along Guangdong province.

Because of the high economic value of the marine turtles, it's population is decreasing rapidly. Coastal residents are accustomed of eating meat and eggs of sea turtles; shells are used for medicine or made into arts and crafts. With the increasing population of humanbeings in the coastal areas, turtles have less place to survive, only a few areas remain for the species to breed, and is in danger or extinction somewhere. The status of Chinese sea turtles is of world wide concern, national and international authorities have attached importance to this resource.

No thorough in investigations of the patterns, distribution and migrations had been done for a long time until recent years. Since Chinese marine turtles are mainly distributed in Southchina sea, China Agriculture Administration conducts a survey of the southsea turtles from April 1987 to the end of 1988 to get the resource status for making protection regulations, promoting the development and conservation of the resource.

On 21 & 22 March 1987, a working meeting on the survey of the south China sea turtle resources was held in Haikou city, Hainan province. The meeting showed the status of the conservation actions, worked out a research program, also discussed and modified "Manual of Southsea Turtle Research and Conservation Techniques",

especially, a investigation program from April 1987 to March 1989 was adopted.

### A. Brief report of the survey

The survey is a major research program of China Ministry of Agriculture, performed by Conservation Station of Southsea Turtle Resources, started in April 1987, and is going to end at the end of 1988.

In the year 1987, in a survey total 184 days were conducted between 20 April to 20 October on Northisland and Southisland of the Xisha Islands, another survey lasted 153 days from 1 June to 31 October at the Seaturtle Bay of Huidong country, Guangdong province. On the two sites measurements and species identification were done to 341 turtles; the number of eggs and hatched eggs were counted in each nest of total 182 nests, 74 turtles were tagged and released; we collected atmospheric phenomena and hydrology materials at the sites during our surveys; in six other islands recorded 126 ascending turtles and 49 nests.

#### Methods of investigation:

- a. Close the beaches in the survey area, and all the fishing boats are stipulated not to go to the investigated islands.
- b. Keep day and night watch on ascending turtles, and make records of them, some turtles are tagged and released. Encircle the turtleeggs in hatching period with fishing nest, release the hatchlings after counting the number, at last dig into the sand to see how many unhatched and what caused it.
- c. Survey on islands without permanent workers:

Except Southisland and Norethisland, there is no permanent worker of six other islands. On every daytime survey members travel to these islands by boats to record the number of ascending turtles, eggs and hatchlings.

- d. Make known to people the importance of seaturtle conservation. Yongxing island which is located 10 km south away from the Qilian islands is the entrance to the Xisha islands, fishing boats often stay at the island waiting for permission, adding supplies or to avoid wind. At this opportunity survey



members often have discussions with fishermen here in order to let more people understand the importance of turtles conservation.

In 1988, our plan is not only to investigate the population of the marine turtle resource and historical change of nesting beaches to get a overall knowledge of the resource, but also to continue the survey at the above two working stations which can provide us continuous information of the nesting beaches. Survey in 1988 will last until the end of December, more sites will be investigated, and more tagged turtles will be released.

**e. Work of tagging:**

In 1987 20 turtles were tagged in Huidong country, 53 in the Xisha islands, and 1 in Dongwan country, all together 74 turtles. The stainless tag is 7 cm long, 1 cm wide with following words on it:

Return: 20 Nancun Rd. Haizhu, Guangzhou, the P.R. China

**B. Conservation work on Southsea marine turtles:**

a. In May 1986, the Seaturtle Bay of Huidong country was decided to be a seaturtle nature reserve, it has a total area of 4 kilometre square including beaches and the surrounding water, on the border of the reserve a 1000 metre long iron net is installed. Another reserve in the Xisha islands is ready to be built.

Effective management and strict conservation rules have put an end to free capture and killing of marine turtles in the reserve. In 1986, 122 female turtles came ashore laying eggs, 41% more than 1985 (87 female turtles); recorded number of nests is 78, 70% more than 1985 (47 nests) number of hatchlings is 7490, 87% more than 1985 (3933 hatchlings).

b. Primary experiments on the raising of hatchlings to increase the survival rate have started in 1985. 100 hatchlings are cultured in a 18 metre square tank, 52 of them live over winter in 1986, and 41 of 93 hatchlings live over winter in 1987.

c. In 1986, only seaturtles in the reserve were under protection, in other places of Guangdong province hunting and killing still existed. Over hunting in the Xisha islands were not stopped; things were even worse in the Nansha islands; in the Donsha islands due to the exploitation of new fisheries, turtle resources are also destroyed. Fishermen from Qionghai country, Hainan province had captured 2034 turtles in the Xisha islands and Donsha Islands until the end of 1986. In many countries seaturtles were sold on fairs, so what we need is effective action to protect marine turtles in a wide rang. The "Law of fishing", "Regulation of Breeding and Protection of Quantung Resources", "Methods of Conservation of Seaturtles Resources" are being carried out, and widely publicized to people.

The marine turtle is a international resource, China government has written to WWF & IUCN requesting for assistance for conservation work, we believe that cooperation and exchange of experiences between countries are very important and useful.



INTERNATIONAL SYMPOSIUM ON SEA TURTLES IN '88

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THE MARINE TURTLES IN MICRONESIA

1988 REVIEW

by

MIKE A. McCOY

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JULY 30 - AUGUST 3, 1988

# TURTLES IN THE CENTRAL CAROLINE ISLANDS OF MICRONESIA

## Abstract

The islands of the Central Carolines are politically a part of the newly-independent Federated States of Micronesia. The major species present is *Chelonia mydas*, however hawksbill (*Eretmochelys imbricata*) also occur, but in far fewer numbers. Traditionally sea turtles have always formed a part of the diet of the people of Micronesia, particularly those in the "outer islands". Recent increased pressure from local traditional hunting as well as greater access to nesting beaches by motorized craft have increased pressures on turtles throughout Micronesia. There have been some conservation efforts, but these are sporadic and not coordinated. The current legal situation with respect to turtles is not clarified, as United States laws which formerly protected certain species no longer apply. Recommendations are given to rectify some of these problems and to make the citizens of this new nation more aware of the current problems confronting turtle populations in Micronesia.

## Introduction

The islands of the central Carolines stretch roughly along 7 degrees North latitude from about 140 degrees East to 168 degrees East longitude. Most of the islands are inhabited, however there are some which are not. It is these latter islands and atolls which are the most important nesting sites for sea turtles in Micronesia. The major species prevalent throughout the islands is the green turtle, *Chelonia mydas*. Hawksbill, *Eretmochelys imbricata*, also occur but are generally not as numerous, except in the Palau islands in the westernmost part of Micronesia. There are rare sightings and records of the olive ridley (*Lepidochelys olivacea*) and the leatherback, whose closest recording nesting is on the islands off the northern coast of Papua New Guinea.

## Nesting Locations

The nesting sites are mainly in the atolls of Ngulu, Ulithi, Olimarao, Namoniur, and Oroluk. The individual islands of Pikelot,

Gaferut, and East Fayu are also important nesting sites. With the exception of Ngulu, Ulithi, and Oroluk all of these islands or atolls are uninhabited. On Ngulu and Ulithi nesting takes place on islands far removed (more than 15 miles) from the inhabited islands in the atolls. On Oroluk however there is only one small island which has supported a resident human population for the past 15 or 20 years. Turtles which now nest on Oroluk are now prone to capture; and complete loss of the nesting population at this particular atoll must be recognized as a distinct possibility.

## Migration Patterns

For the most part, migration patterns among all turtle species in Micronesia are unknown. There have been only two recent records of tag recoveries, and only one of those can be substantiated. In this case a turtle tagged at Oroluk atoll was recovered a year later near Taiwan. In the other case there was a report of a turtle from northern Papua New Guinea being recovered at Kosrae island in the eastern Carolines, however the records of this incident are now lost.

## Use of Turtles by the Inhabitants of Micronesia

Generally, it is the people of the "outer" islands, those islands far from the centers of commerce and transportation, who most utilize turtles. In the central Carolines these people sail their traditional canoes many miles to the nesting areas to obtain turtles as a food source to be returned to their home islands. This practice has been carried out for generations, hardly without interruption. (However, during the Japanese administration of Micronesia and up until the end of World War II, long distance canoe voyaging was prohibited and strongly discouraged by the foreign rulers.)

Turtles were and still are obtained on the nesting beaches as well in the waters around the islands. In the latter case, both males and females are captured while mating in the lagoons or open sea near the nesting beaches. In some instances a captured female will be tethered to a tree near the beach at night and allowed to swim in the shallow water to attract other turtles which are then captured. Turtles are



transported live back to the inhabited islands aboard the canoes. They are then killed and the meat distributed to the people by the Chiefs on those islands.

To a lesser extent, turtles are caught in the more heavily populated centers of Micronesia and also used for food. In these islands, motorboats are used to chase turtles across the shallows and they are often speared. In Micronesia these islands are higher in elevation and generally volcanic in origin. They do not have nesting beaches but contain turtle grass within the lagoons which is a food source for green turtles. On some islands, notably Yap and Pohnpei, people have learned to dive near the reefs and hook sleeping or resting turtles in the skin with long hooks attached to bamboo poles. The people claim that this method of fishing for turtles was learned from the Okinawa people who were in Micronesia during the Japanese administration prior to World War II. It is interesting that these techniques have not been adopted by the people of the outer islands who live closer to the nesting beaches. They prefer to rely solely on their traditional methods of capture.

Hawksbill turtles were also utilized in the past for traditional ornaments such as combs and for making hooks for skipjack tuna fishing. On some islands there were elaborate customs and taboos associated with the taking of hawksbill turtles for these purposes, and the turtle itself was never eaten or considered a food item. Today, ornaments are still produced on a small scale for sale to tourists. This persists even though there are prohibitions against their importation into the US. There is increasing demand by mainly Japanese tourists for these items.

#### Changes Which Have Occurred in the Last thirty Years to Affect Turtle Populations

There have been many changes to the lives of the people in the central Carolines during the past 30 years. Many of these changes have affected turtles and the peoples' relationship to them. One of the most important has been the impact of the introduction of Christianity which removed many of the older taboos and customs associated with turtles. These customs and taboos made hunting and canoe voyaging

very difficult and probably resulted in fewer turtles being taken in the past.

Education has also had an impact, although it is hard to determine exactly how much it has affected peoples' perceptions about turtles. One of the things that has not happened is that western education has tended to bypass conservation and environmental education, particularly in elementary schools. Thus, very little is known about turtle biology by students who rely on their ancestors' knowledge which has been passed down through many generations. This traditional knowledge is most accurate when it relates to turtle hunting, seasons and so forth. It is least accurate when describing aspects of turtle biology (such as reproductive capacity).

Improved transportation has come about, particularly in the last 10 to 15 years. New ships have been used by the government to service the outer islands. On occasion these ships also call at the uninhabited islands and capture turtles. The turtles thus obtained are usually given to the islanders for food on their home island. This in itself is not bad, but the relative ease by which ships can now reach the islands and return turtles to inhabited islands has created a demand by people to utilize them more often for this purpose.

The advancing money economy in Micronesia has also had an impact on turtles. While it was prohibited under the US administration to capture or sell turtles because of US laws, turtles were still often sold in the population centers (US law exempted traditional taking of sea turtles for subsistence purposes). As local businessmen are becoming more affluent, some of them have invested in fishing boats or transportation vessels which enable them to reach the islands where turtles are nesting. Although their taking of turtles by these vessels is in a sense illegal, there is not much public outcry or concern for these activities. Some of these vessels are provided through bilateral foreign aid. While they are ostensibly to be used for fishing, they sometimes are employed in voyages to turtle nesting areas. When compared with the carrying-capacity of the traditional canoes, the ships can of course carry many more turtles. They can also



transported live back to the inhabited islands aboard the canoes. They are then killed and the meat distributed to the people by the Chiefs on those islands.

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operate in less than favorable weather which might hinder canoe voyaging.

Even the inhabitants of the outer islands who do not directly participate in these activities are affected by the changes of the 20th century. Their canoes are now equipped with dacron sails, allowing them to sail faster and safer to turtle islands. In the past they often used canvas or even pandanus-mat sails, the latter having to be lowered and covered in rainstorms. The new sails thus make canoe travel easier today than in the past.

There is a large amount of commercial shipping traffic passing through Micronesia, as well as fishing by foreign vessels licensed by the government. To date there has been only one major shipwreck on a turtle nesting island, and in that incident although the ship was wrecked, most of the fuel oil was removed by the US Coast Guard to minimize damage to the nesting beach.

Almost all uninhabited islands have wrecks of smaller vessels, usually foreign fishing boats; however these do not seem to have had much impact on turtle nesting at those sites.

#### Impact of Activities of Foreign Fishing Vessel

Before the declaration of Micronesia's 200-mile Exclusive Economic Zone, fishing vessels occasionally stopped at some of the smaller islands to trade. In anticipation of such visits (which were strictly illegal, even under laws in force at the time) inhabitants of the outer islands would capture and raise small hatchlings in the hope of trading to the crew of a fishing boat for cigarettes or food. However these visits have stopped almost completely since 1979 and the introduction of the 200-mile fishing regulations. This in turn has lessened the incentive for raising smaller turtles, although some are still occasionally kept as pets.

A major problem is posed by the existence of certain fishing vessels from Taiwan who visit the uninhabited islands to steal clams, fish and turtles when available. These vessels are illegal throughout the region, but their activities have not stopped, even with the introduction of the 200 miles laws.

Other forms of legal commercial fishing by foreign vessels have an unknown impact on turtles. Longliners from Taiwan, Japan and Korea all fish in Micronesia under license from the government. Their fishing effort has been fairly steady for the past eight or ten years, and while they occasionally take a turtle by longline, it is never reported unless there is a government observer on board. Government observers currently are able to cover only a very small portion of the trips undertaken by these fleets, so no accurate or complete data is available.

#### Past Conservation Efforts

There have been only sporadic efforts at conservation or research with sea turtles in Micronesia. Early in the 1970's a small hatchery operated in one of the outer islands of Yap. A tagging project was carried out on Oroluk atoll in Pohnpei during 1985-86 resulting in some valuable data on the sea turtles at that location.

#### Current Legal Situation

The "Compact of free Association" between the Federated States of Micronesia and the United States went into effect in late 1986. Micronesians are free to make their own conservation laws and to carry out their own programs. However these areas have not been given priority and there has been a vacuum created in Micronesia with the expiration of US laws affecting these species.

The Federated States of Micronesia is not yet a signatory to the CITES convention, although they actively participate in the South Pacific Regional Environmental Program, based at the South Pacific Commission in Noumea, New Caledonia.

#### Recommendations

1. Turtles should be obtained for subsistence food purposes only. They should not be allowed to be sold or placed in commerce.
2. Only traditional methods of capture should be allowed, and that only when employing canoes to voyage to the uninhabited nesting beaches.

3. A total ban on the taking of turtle eggs should be put in place.

4. An organized conservation effort should begin, consisting initially of (1) data collection (2) tagging and (3) conservation education.

5. Foreign fishing vessels, in particular longliners, should be required by their home country to report any turtles taken incidental to fishing operations. This information should be shared with the countries in the region.

6. The current legal situation should be clarified by the introduction of laws which will provide the best possible protection for turtles, while at the same time keep in mind its traditional use as an important food item and protecting the rights of the outer island people to this food source under terms noted in items #1, 2 and 3 above.

Mike A. McCoy  
July, 1988

operate in less than favorable weather which might hinder canoe voyaging.

Even the inhabitants of the outer islands who do not directly participate in these activities are affected by the changes of the 20th century. Their canoes are now equipped with diesel motors allowing them to sail faster and safer to turtle islands. In the past they often used canoes or even pandanus-root rafts. The latter having to be lowered and covered in rainstorms. The new rafts that might cause travel easier today than in the past.

There is a large amount of commercial shipping traffic passing through Micronesia, as well as fishing by foreign vessels licensed by the government. To date there has been only one major shipment of a turtle nesting island and to that incident although the ship was wrecked, most of the fuel oil was removed by the US Coast Guard to minimize damage to the nesting beach.

Almost all uninhabited islands have records of smaller vessels, usually foreign fishing boats, however they do not seem to have had much impact on turtle nesting in those areas.

### Impact of Activities of Foreign Fishing Vessels

Under the protection of Micronesia's 200-mile Exclusive Economic Zone, fishing vessels occasionally stopped at some of the smaller islands to trade. In anticipation of such visits (which were strictly illegal, even under laws in force at the time) inhabitants of the outer islands would capture and raise small baitfish in the hope of trading in the case of a fishing boat for cigarettes or food. However, these visits have stopped almost completely since 1979 and the introduction of the 200-mile fishing regulations. This in turn has increased the incentive for raising smaller turtles, although some are still occasionally kept as pets.

A major problem is posed by the existence of certain fishing vessels from Taiwan who visit the uninhabited islands to stock tanks with turtles when available. These vessels are illegal throughout the region, but their activities have not stopped in view with the introduction of the 200-mile law.



INTERNATIONAL SYMPOSIUM ON SEA TURTLES IN '88

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PROTECTION OF LOGGERHEAD TURTLES IN HIWASA-TOWN

1988 REVIEW

by

YASUO KONDO

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JULY 30 - AUGUST 3, 1988

## PRESENTATION

### "Protection of Loggerhead Turtles in Hiwasa Town"

MR. YASUO KONDO

Good morning ladies and gentlemen. My name is Yasuo Kondo. Thirty nine years ago when I was 21 years old I started working at Hiwasa Junior High School as a teacher of Science. The site of the junior high school is the same as now, but at that time the building was very poor compared to what it is right now, and it was only half completed. And some grades, some students had to study at a different building in the town.

In my second year, in 1950, I would like to talk about what happened in this year. One day in June of 1950, after the school curriculum was finished, one student found a dead loggerhead buried in the beach of Ohama. It was only a one minute walk away from the high school and he hurried to school to me, and he said "I found a dead loggerhead," and together with some other members of the Science Club we hurried to the area and we found a dead loggerhead. It was taken away of its meat and it was buried in the beach, and the smell attracted some wild dogs which were digging out the dead body.

That was 30 or 40 years ago. At that time we residents of Hiwasa had a very awesome picture of the sea turtle. We believed that it is a kind of mission of the sea God that they mysteriously come from somewhere in the sea and arrive at the beach in the night, and they lay eggs. That was our knowledge on the sea turtle at that time.

Not only the people of Hiwasa-town, but the people all around the beach regarded the sea turtle as a mission from the sea God and that was the time when we had a very spiritual respect toward the sea turtle. And when we found the dead loggerhead, which had its meat taken away, myself and the students were very much shocked, and we felt a large amount of anger towards this action. We were very angry at whoever did this. And our students proposed "let's study about the sea turtle, and let's educate the people in the society so that no one will ever try to kill or cause damage to the sea turtle." This is what happened 38 years ago in the town of Hiwasa, and this was the very outset of the period in which we started to regard the sea turtle, not as a mysterious animal, but as a scientific animal, or as an object of scientific research.

In those days, Japanese society was very poor. Here it says "natural preservation," but in those days we did have talks on preservation and conservation, but people did not have enough time to think about the nature but people were very much occupied with their own lives. People were very much concentrating on how they can rebuild their way of living to

the level it used to be before the War. However, with this incident at Hiwasa Junior High School, three students and myself had no knowledge on the sea turtle. In those days we did not even use the terms like "loggerhead" or "green turtle," we called it the large sea turtle, or just sea turtles. And one student asked me what was the name of the turtle, and we returned to school and we had a large encyclopedia which was said to be the most detailed dictionary. And there were four types of sea turtles mentioned: "loggerhead," "green turtles," "leatherback," and "ridley." And we felt that this must be the loggerhead. But according to the dictionary, it has a picture of a baby turtle, just hatched out from an egg. And as you all know, the baby turtle and adult turtle are very much different in how they look.

This is the four year old turtle. When you look at the center of the carapace, it has this shape, hexagonal shape, but when it was a baby it was very flat. As it grows older, it becomes rather long in this direction.

This is one difference between the adult turtle and the baby turtle. However, in the book that we looked up, we only had a picture of a baby turtle, and when you say "chick" is a chicken, we cannot say that this is a good book. And when you have a baby picture of a human being and you say this is a human being, this is not right. But in those days, the people's knowledge was so poor that that was regarded as a full-fledged knowledge on the sea turtles.

And what we can be very much proud of in Hiwasa of just the temple, and the beautiful beach, the Ohama beach. And we are very much exasperated to find that our precious beach was soiled by the dead turtle, and we started our activity with this incident.

But we did not know what to start with, since the turtles come from ashore at midnight, we just thought "perhaps we should start looking for the sea turtles in the evening -- we can see what time they arrive; how they dig holes; how many eggs they lay; how deep is the hole; how is the temperature of the ocean." These are the things that we started investigating.

We started our first survey on a Saturday evening three or four days after the incident. We had a thermometer and alarm clock in a tent. We had an alarm clock only because we had no money to buy a wristwatch. The only timekeeper we had in our house was this alarm clock. And we had no referential literature. We had no books that we could rely on.

Fortunately, this beautiful nesting area of the turtle was very close to the junior high school. It was like our yard or court yard, and I lived very



close to the junior high school too, and it was very convenient for us to do all our activities.

And the contents of the activities were detailed in the brochure that we have distributed, the activities that we carried out included investigations and how they come and how they hatch, and students asked me how, or how many days it will take for the eggs to be hatched. Usually it takes 20 days or 21 days for chicken eggs, but we don't know about the turtle eggs. So we buried the eggs in three different areas with different degree of sunset, with different degree of sunshine on the sand. We had three areas A, B, and C. And we tried to find out what are the effects of the sunshine, or the humidity of the sand on the eggs.

And many of the students came to see those eggs, and the hatched babies. And we were talking about when we should release, or return those hatchlings to the sea, and also there was the problem of what we should feed. First we fed worms but the worms were not taken. And then after a few days, the hatchlings started to float on the surface, and we felt that the hatchlings are going to die. And also after four or five days one student said "because they are living in the ocean, perhaps they might eat some fish," and we went to the market and we collected the fish discarded on the floor, and we fed the fish, and the turtles ate them. And it was a great pleasure for us to see the turtles eating the fish.

As these hatchlings became larger, we thought that we should return them as early as possible, but we lost the timing because it got very cold in winter. Then we decided perhaps we should keep them during the winter, and after one year we might be able to find out how much they will grow in one year. So we kept them for a year, and for another year, and for another year. This is four years old. This is how we kept the turtles. And the Municipal Government told us that perhaps we should make a tank because the turtles got very large. And they made us a tank.

However, this keeping or this nurturing, rearing of the sea turtle was too heavy a burden for school students to carry out, which led to the establishment of the Municipal Aquarium. The work of the studies of the students are explained here in this booklet. Dr. Kamezaki prepared us with this book, and young researchers still look into these booklets, and they say that our work was very excellent, and I am very much pleased to hear that. First there were only three people, then six, and then eight members started to have a survey, and our work was ended after 10 years at Hiwasa Junior High School. But it was then carried out by the aquarium and by the museum, and this has led to this symposium. I'm very happy to see that a small town like Hiwasa is now known as a mecca of sea turtles.

Now the students are very old now. They are about 52 or 53. Even the youngest member then is now 42 or 43. Mr. Kondo Kazuyoshi was at the reception, and he was the last student who made a survey, and he is the Municipal Assembly member of the town. Several dozens of people studied about the sea turtle in their high school, and they are very much honoured and proud to see this international symposium on sea turtles. I share the same feeling.

However, I have one concern. 38 years ago we started a survey of sea turtles at the junior high school. With our affection towards the sea turtles, and with our affection toward our home town. But the fact that the survey was treated by the death of the loggerhead is the very sad thing, and the one who killed was a fisherman from Kochi Prefecture, our neighbouring prefecture. Kochi Prefecture is next to Tokushima. Kanoura is only 30 kilometres away from here. I looked at the map. It's only 30 kilometres away from here, and in Kochi Prefecture, even now still people eat the meat of the sea turtle. They kill the sea turtle, and they sell the meat, even at this very moment.

Dr. Uchida and Mayor Ikeda made their efforts to protect the sea turtles in Tokushima, but there are only a few spots where the sea turtles are conserved to this degree. We would like to have a wider range to be covered for the protection and preservation of the sea turtles, and we would like to spread this activity and campaign all over Japan. This is my strong hope.

Thank you very much for your kind attention.

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## PRESENTATION

### "Protection of Loggerhead Turtles in Hiwasa Town"

#### MR. SATORU NAKAHIGASHI

Mr. Kondo talked about our history of sea turtles in the earlier half of the history, and we only have 20 minutes for two of us, I would like to talk very quickly. I would like to talk about our activities on the preservation of sea turtles since 1960 or 1965. The preservation activity by the junior high school students is now carried out by the town.

In 1967, the sea turtle was designated as the national treasure. This is not designated in the large area, but just it is not the designation of the species, but it is the designation of the areas. The beach is about 60 metres long, and the area, offshore area of 200 metres is also designated as a national treasure. With this designation we appointed the people, official in charge of monitoring surveillance of the sea turtles. The officials in charge of checking the sea turtles when they land in the evening.

And this table shows, it's not very clear perhaps but the number of turtles landing on this Ohama coast in 1967 we had a designation of the national treasure, we don't have detailed figures before this year, but ever since this year we had appointed the officials who can check the number of turtles every night. We had 308 landing in 1968. When Japan enjoyed a very high growth of economic activities, we had a drastic decrease in the number of sea turtles landing here. In 1953 we only had 29 sea turtles, which is the smallest number we ever had. And in this year, in Hiwasa, we established the Hiwasa Town Sea Turtle Protection Policy Committee, which is mentioned in my abstract. The policies or regulations established in this year still are effective now, and they serve as the basis of our preservation of sea turtles in Ohama.

This is the northern part. This is the Chelonian Museum. This is the beach. The aim of the Committee is to protect the natural treasures. In Tokushima, we have Tokushima Futures Control Regulation, and we are not allowed to take eggs, and the sea turtles between the period from May and August. And this is a stretch of about 400 metres. This is the Hiwasa town road of about 400 metres. During the night time the traffic is limited. This is off-limit area in the evening for the traffic. Now if the vehicles pass the road, the light will be seen from the sea. In order to prevent that, we decided to restrict the traffic of this road. No cars are allowed to pass the road from 8:00 in the evening until 4:00 o'clock the next morning. And the beach is about 60 metres here. The width is about 60, and it stretches about 500 metres, and before the Committee was established, there was a free entrance to the beach. But we also made restrictions on the entrance of the beach. But we had an exception in

which, under the guidance of the officials, people are allowed to enter the beach to see the egg-laying activities of the turtles. We have municipal facilities, as well as restaurants and eating houses or guest houses of private ownership. In order to provide calm and dark environment for sea turtles, we ask for the cooperation of the facilities around here to have their lights dimmed. The egg-laying period is from mid-May to the end of August. So our restrictions are to be carried out from the 1st of June until the end of August every night.

This is the brochure for the protection of the sea turtles. We scatter those inserts or leaflets to people to announce that we have these restrictions in this period from June 1st till the end of August. We distribute these leaflets to the tourists and ask for their cooperation.

This shows our history of conservation policy in Hiwasa Town. In 1950 the survey started, and up until this period, Mr. Kondo has just touched upon, and in 1967 the sea turtle was designated as a natural treasure and we enforced our restrictions for the preservation and conservation of the turtles. The Chelonian Museum was established, and we had a so-called Curator Summer School for the people all over Japan.

That, in Hiwasa Town, for the conservation of sea turtles, including the people, the town, the organization of the Prefecture, and the Municipal Offices we have this Committee called Hiwasa Town Sea Turtle Protection Policy Committee to carry out different restrictions for the conservation of the sea turtles. We have several major restrictions, one of which is the traffic control. The second major restriction relates to the pedestrian entry of the beach. We also have regulations on lighting. We make sure that the lighting will not be too bright. We also appoint officials for monitoring the turtles' arrival, as well as to monitor the egg laying actions.

I am sorry my explanation is not in full detail because of the time limitation. However, we do have some problems. This Five-Year Regulations, we do allow the public to see the sea turtles, which is one attraction for the tourist business. When we have many tourists coming, we will have a rather noisy environment around the beach. Therefore our future challenge for this Hiwasa Town is to have further education on the observers. We must educate the people with manners on which they should be accustomed to when they are to observe wild animals.

For those of us who are of great concern or great interest with the sea turtles, we also hope that we have a kind of liaison committee or kind of organization for Japan in the entire world.

Thank you very much.

INTERNATIONAL SYMPOSIUM ON SEA TURTLES IN '88

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PRESENTATION OF LOGGERHEAD TURTLES IN HAMAMATSU  
AND PROBLEMS BEING ENCOUNTERED

1988 REVIEW

by

TAKEJI MAZUKA

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JULY 30 - AUGUST 3, 1988



## PRESENTATION

### "Preservation of Loggerhead Turtles in Hamamatsu and Problems Being Encountered"

MR. TAKEJI MAZUKA

Thank you very much for your kind introduction. I do not have any career or position in the survey or study of loggerhead turtles. But looking at the present situation of the sea turtles in Hamamatsu, I took some steps in order to protect the Hamamatsu. If we can protect the nature at the seashore, we can protect the sea turtles. Therefore, we tried very hard for that direction. And today I would like to report to you about the preservation activities which we have taken in the past one year.

And when I return to Hamamatsu I would like to report the situation which happens in the international conference held here, and we would like to make full use of the material that I learned here at this symposium.

And I am taking the activities of protecting the wild birds and animals in this area. And many people ask me "are you the representative person who is protecting the wild birds?" "But are you also the representative of the sea turtles, the loggerheads in Hamamatsu?" "No, I'm not. I am just a human being, and I am the representative of Man."

Now, I would like to use the overhead projector. We have an Association which is called the Hamamatsu Sanctuary. The aim is to protect the nature and to inherit the nature to our children and it started four years ago.

And a few years ago our association has regular members, and the members are 635. The motivation when I started the protection of the sea turtles is that I am living near to the Enshunada Sea. We can see the wild animals such as the sparrows, and this is the symbol mark of the Association of Hamamatsu Sanctuary, and the sparrows having nests we have a risk of non-existence of the area where the sparrows can make nests, and it also symbolizes the strength of women. The women are very strong and important for bearing children, therefore this is the symbol of our association which symbolizes strength of the women and importance of the good environment for women.

Of course you know what is a sanctuary. It is a place where we protect nature. We are aiming to make a natural park where we can study the natural ecology.

This is the map of the location where we have activities. I started our activities to make this area as the bird sanctuary, which was about eight years ago. And in this area there is a Nakajima dune, and since some decades ago, there was a report of arrival of the

loggerheads to this shore. And there is a small town which has a small population compared with the Hamamatsu. It started to protect the loggerheads and I felt that in this area also we should protect loggerheads, and we started our survey in order to protect the loggerheads in this area. And we started our survey just since last July.

32 loggerheads arrived at this seashore, and this year more than 100 sea turtles arrived. And in the area we surveyed was consigned by the Hamamatsu City, and that is the area which was 1.5 kilometres from Hamamatsu City. And this is the area where many sea turtles come. But while we were conducting the survey, we found that up to this area this was 12 kilometres, and in all those areas we could find sea turtles for laying eggs.

With the consignment by the Hamamatsu City, we started our survey. But also WWF Japan also asked us to make the project of the survey of sea turtles in Hamamatsu, and from this area to this area the length is 18 kilometres. We started our survey. We have a night patrol since there is a lot of cases of stealing eggs at night, and this is the area for laying eggs, so we are starting to do the survey on the situation of laying eggs in this area.

In our Association we collect data from the members as to the activities. I made up this data on the 25th of July, and on the 31st of July 117 had arrived to the seashore and 55 turtles succeeded in egg laying. Therefore, the success of our egg laying is 47%, and it means that there are many problems in this area as to the egg laying in Hamamatsu City.

Last year the egg laying percentage was 50.5 per cent. As to the period of the survey of the loggerhead, we start from 10th of May this year until 10th of November of this year. And timing is from 4:00 to 6:30 in the morning. And a member of the Association would not watch the egg laying. Therefore the time for survey is from 4:00 to 6:30. And the night patrol is to prevent the egg stealing.

As to the incubation survey, in the year of '87, the percentage was 86.8, and 56 % for the Omaezaki where we were suggesting as a national treasure it is quite high. This is the proceeding of the preservation activity for one year.

In August 1987, we started a survey, and we submitted a report of egg laying to the City, and in September they consigned us to make a hatching survey. And they wanted to take a data so that they can make the loggerhead as the national treasure. And at the same time the Mayor asked the City Council to make a preservation principles of the loggerheads in Hamamatsu City.

This is the article on the newspaper. And this is such a big topic in Hamamatsu. In order to pre-



serve loggerheads in Hamamatsu City, they are going to make available 300,000 Yen for the Survey of the hatching. This shows the evidence of Hamamatsu City is now taking a very positive step for preservation.

In November 1987 we reported the results of the hatching in this year. This is the table which we submitted to the City as to the hatching. There were cases of stealing eggs, so therefore we sometimes do not have the data of eggs.

In December 1987, only a few months after we started our activities, there were so many things we did not understand. Therefore, we asked Dr. Uchida to come to Hamamatsu to give us education. And since that time we learned many things from Dr. Uchida. And in April 1988, WWF Japan asked our Association for the project of the survey of loggerheads, and WWF Japan started to take a positive step in Hamamatsu City. Citizens of Hamamatsu recognized the importance of preservation of loggerheads.

In May 1988, the City consigned us for the survey as to breeding, and WWF Japan, TRAFFIC Japan, held the exhibition of the sea turtles, and they also reported about CITES, and there was a lecture meeting of the sea turtles at that time.

In May 1988, in Shizuoka Prefecture, this is a natural phenomena since there is a strong west wind, sand was blown up from the seashore. In order to prevent this situation, they wanted to make an artificial dune, and they asked the situation for us, but the Association submitted the request to postpone this project, because this was the season of the egg laying, and yesterday I got the news from the newspaper that the construction of the artificial dune will be postponed. And the egg laying season lasts for a long time, therefore they would wait for the construction of the dune until that time. So they are quite helpful for our activities.

In May of 1988, in Hamamatsu City there were so many problems of preserving sea turtles that in order to protect eggs, it was necessary for us to set up a place where we have an artificial incubation place. This is the example of it.

We wanted to make this equipment, which is close to the natural environment. However, in Hamamatsu City four wheel drives and bulldozers would come into the seashore, and they would break the eggs. In order to protect the eggs from such activities, we set up such an equipment with nets. And we put the eggs into these nets, or cage. And we started our survey from 4:00 o'clock in the morning, and we find the eggs, and then we carry the eggs into this cage. We do not want to do this, but we have to. And there is a lock on the door. And this is a symbol of the morals of human beings, but this is the reality.

On the 11th of May 1988 the City asked us to start the survey of loggerheads, and at the same time we started the survey of WWF Japan and the survey covers 50 kilometres of Enshunada.

And in June 1988, Enshunada seashore there was leatherbacks and also green turtles arrived. And they were dead already. And I asked Dr. Uchida to come to Hamamatsu City and we dissected the leatherback and we found vinyls from the intestines, and we found vinyls in the intestines, and the characters of the vinyls were in Japanese. Unfortunately, the vinyls were made in Japan. But we have to use this example for better use in order to prevent the pollution of the ocean, taking this example is a good case.

July 1988, we made the second hatching place. And last year 30 were the number of the turtles which succeeded in egg laying. But this year more than 50 turtles succeeded in egg laying. Therefore, we had to have a second one. And in July more than 100 turtles arrived to lay eggs. And Enshunada has a very wide land and where four-wheel drive could come into and many young people driving four-wheel drive will come to Hamamatsu and enjoy driving. And there are many cases of accidents of four-wheel drives in Hamamatsu City.

And fishermen today would come to the seashore by cars, and from the cars they would enjoy fishing, listening to the radio, drinking beer. And I feel the change at the age. And as a result of the discussion with those people, with the fishermen saying, "you are doing very good things and I understand your activities, but what we would like to do is just enjoy driving."

So, we have to have legal regulations. They do not have a voluntary will to stop driving in the seashore. They ask us to make a legal regulation. If we make such a legal regulation and that regulation will last forever, and then the people will think that people in the past had very bad manners. So rather than making a legal regulation, I wanted them to make a voluntary restriction of driving four-wheel drive, but actually it did not work out.

In August 1988 the 10th of August the Council asked the Cultural Assets Committee to come to Hamamatsu City to see the seashore, and as a result they would decide whether Hamamatsu City to see the seashore, and as a result they would decide whether Hamamatsu City would become the Cultural Asset or not.

And what would be the countermeasures of the preservation of the loggerheads? The City made up Preservation Principles, and they started a survey of loggerheads, and they asked us to conduct the survey. And they set up a Council to study the preservation of the loggerheads and the seashore, including the military, and the Agency who is in charge of the



parks and natural environment set up a Council like this. And the City also set up a Notice Board in the entrance of the dune. And they had a meeting with the four-wheel drive drivers. And we are doing the activities as the natural preservation association we encounter some problems. In the seashore we are picking up the dirt. However, there are some cases of drifting woods would fill up the seashore, and there is a discussion whether driftwoods would become the waste or not. We cannot pick up all the waste or woods drifting woods in our activities. Therefore, I will say to my members "that is not the waste, because that is the natural phenomena. In Hamamatsu City, using the bulldozers to clean up the driftwood, and they will dig up the seashore in order to fill the drifting woods into the seashore. And the sea turtles would avoid the drifting woods in order to find the appropriate place for laying eggs. Therefore, our definition is that "drifting woods" are not waste, so we would not pick up. But we would pick up plastics, vinyls, and tires, all those artificial things should be picked up, and therefore we will clean up the seashore picking up such waste.

And we also set up a hatching place which is close to the natural environment. And we were asked by WWF Japan for the survey of the sea turtles. And what we should not forget is that there was a cooperation by the citizens. There was full support by the mass media. The newspapers and the TV stations would not take any photographs or films having lights when sea turtles are laying eggs. And they have a full understanding of the sensitiveness of the sea turtles. And the cameramen and the animal lovers would come to the seashore, and Hamamatsu has 500,000 population. There are so many people who have cameras, therefore we would not allow anyone to take photographs or films when sea turtles are laying eggs. Therefore, we only provide photographs to the mass media.

And this time the newspaper man accompanied me for this symposium, and the situation is going to be reported to Hamamatsu City for several times. And there was a Guidance from many places of egg layings, and this March I visited Hiwasa Plan, and also I had guidance from Dr. Uchida.

As to the egg laying of the loggerheads, I would protect the over exploitation of Enshunada seashore.

And what are the problems of the loggerheads? We should prevent the four-wheel drive cars into the dunes. The cars would be driving all day long from morning till night, and they will break the eggs in the seashore, and also they would deteriorate the sea plants in the seashore. And therefore it will cause the disappearance of the dunes when the west wind is very strong. And the wind design of the dune is so beautiful in this area, but we are losing such beauty. And also it closes the path of the baby turtles for the sea. When the four-wheel drives are

driving in the seashore, and when baby turtles would get into such a path then they would not succeed to go back to the ocean, and they cannot succeed in going back to the sea.

As to the cleaning up methods of the waste at the seashore, which is conducted by the City, they will use bulldozers which will break the eggs. And they also use sand cleaners which will pick up very small waste. And they will pick up crabs and small micro-organisms and shells will be collected by the sand cleaner. And then in that case we cannot maintain the natural seashore, if they use the sand cleaner. And also the other problem is the stealing of eggs.

Six turtles arrived at the seashore, and five turtles laid eggs, but the eggs were stolen. And since the jeeps go into the seashore, they will catch the turtles.

And this is the night news in Enshunada seashore, there are natural wild foxes living, and they would eat the eggs. I wrote down that it is a predation, but I do not think it is a predation. We can say that we still have nature in this area. Therefore, we would like to have a good coexistence with foxes.

There is a relationship with the fishing industry. There are many ships going into the ocean. When the baby turtles go into the ocean, adult turtles have a chance to be caught in the nets.

This is in Nakadajima dune. This is the seashore of Enshunada Sea. In the wintertime plan to go to Hamago will become like this, and the seashore and the loggerheads will return to the ocean. In the seashore green turtles and leatherbacks arrive. This is the leatherback turtles. This is a side view. The survey member watched this leatherback turtle and she said that the carapaces are taken off because it was the first time for her to see the leatherback.

This is the green turtle. I don't know the reason for that, about 10 metres away from here we found two dead turtles on the same day.

This is the Notice Board put on by the City to prevent the four-wheel drives and sea fire prevention of sea fires at the entrance of the sightseeing place, the City set up such a Notice Board.

This is a four-wheel drive car. Look at this. You cannot see any wind designs. The eggs, the turtles would come and lay eggs and the baby turtles who have to go back to the ocean, and the baby turtles have to follow this way and they cannot succeed to go back to the sea.

This is the print of the four-wheel drives. So you can see that was not a way. For this is a four-



wheel drive running so many times they made up a road like this.

This is the situation where they do the cleaning up, using the bulldozers in the dune. They will dig up a hole, and they will fill it up with the waste into the dune, and when the typhoon comes all the waste will appear again.

This is the evidence which shows eating of eggs by foxes. If you cover them with a net then the fox will later dig a hole from the side. Foxes can smell the eggs. It is quite natural. It is ok for the foxes to eat the eggs of the turtles. Therefore, we placed the eggs of the chicken. For the first day the foxes would not eat the eggs, but the second day they ate them and we repeated many times. On the first day they would not eat them, but the second day they would eat them. For two days we lost 50 chicken eggs, so we can protect our sea turtle eggs.

This is the way of the fireworks. The serious problem is the seventh one. As I said before, we will not show anyone the fact of egg laying because we do not make it as a sightseeing event. Omaezaki is the place where loggerheads would lay eggs, and at Omaezaki they would have lighting so that the people can see the laying of eggs, and they would collect money when people would see the egg laying. And therefore we had a discussion with the City. We would not use the seashore for sightseeing purpose, and the purpose of the natural environment is to inherit the nature to the next generation. And through nature we can educate people. Therefore in Hamamatsu City, egg laying would not be shown to the people.

My purpose is not to show such egg laying. The turtles are quite dull when they are laying eggs, but I do not think that is the truth. I watched my wife bear a baby. While I was watching, my wife could not do anything. She was so eager to have a baby. When I watched the laying of eggs of a loggerhead, she could not do anything else. She uses all her strength to bear the eggs, therefore she will not do anything. It doesn't mean that she is dull; she is not sensitive. It does not mean so. I cannot understand such a situation. While laying eggs, she cannot do anything to anything else. We should understand that situation.

There may be some time where the sea turtles will not come back to the seashore to lay eggs. We have to take the responsibility for our future. We should understand the laying of eggs of turtles at the seashore most seriously.

...the city of Hamamatsu... the fact of egg laying... the purpose of the natural environment... the next generation... through nature we can educate people... therefore in Hamamatsu City, egg laying would not be shown to the people.

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INTERNATIONAL SYMPOSIUM ON SEA TURTLES IN '88

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GREEN SEA TURTLES (CHELONIA MYDAS)  
IN THE OGASAWARA ISLANDS

1988 REVIEW

by

HIROYUKI SUGANUMA

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JULY 30 - AUGUST 3, 1988

## PRESENTATION

### "Green Sea Turtles in the Ogasawara Islands"

MR. HIROYUKI SUGANUMA

Good morning ladies and gentlemen. Before I go into the main portion of my presentation, I would like to make a correction of the Abstract which has been distributed to you. Well, the correction is just necessary for the Japanese version. Not for the English version.

The latter upper portion of the area where the word "two" was mentioned, and the last portion of this paragraph is several dozens per annum of sea turtles were captured.

So let's go into the main portion of my presentation. At this moment the Ogasawara Islands are known as the largest nesting area of the sea turtles, and the history of the local people and the green turtles and the status report will be presented to you.

The history of Ogasawara Islands has already been mentioned briefly by Dr. Uchida. Therefore, I think that you have already understood the history to some extent. Let us now use the overhead projector.

This is the Ogasawara Islands, about 1,000 kilometres south from Tokyo is the location. These islands are made up of about 30 different islands. To be more specific, there are four chains of islands, and three independent islands. From the north, we have Ruko chain, Chichijima chain, Hahajima chain, and a volcano chain including Yo Island. And the eggs are mainly laid in the Chichijima Island here and Hahajima chain of islands.

At Ogasawara Islands other small what we call pocket beaches, and there are quite a few of small beaches: 35 in Chichijima Island and 10 of this kind in Hahajima Island. And the largest sand beach is only 30 metres, and the Green turtles come ashore of the Ogasawara Island in May for breeding and they start laying from May to August. And the Chichijima and Hahajima chains are apart from each other by about 50 kilometres.

This shows the record of the capture since 1880. Up until 1830 these islands were unhabited, and in 1930 the European and American people brought about 20 of the Kaneka tribe people, Hawaiian tribe. This is the beginning of the habitation, and with the start of the immigration, the capture of the sea turtles started. This has been succeeded.

In 1976 these islands became under Japanese territory, and for the development of the industry, the local branch of the Ministry of Home Affairs encouraged the capture of sea turtles. At that time the annual catch was about 3,000 sea turtles.

As you can see from this record, at the outset we had about 1800 turtles captured. As of 1900 the number came down to less than 500. It is clearly due to the over exploitation.

The capturing of sea turtles was stopped in 1941 because of the World War II, and in 1945 this area, this blank area the Ogasawara Islands, came under American control up until 1968.

In the course of this period, and unfortunately we do not have any record, probably several dozens of turtles were captured per annum during the course of the American control and only collecting eggs was prohibited.

In 1968 there was the time of the revision of Ogasawara Islands to the Japanese government. Then it was under the control of the Tokyo Prefecture Fisheries Control. So only those fishermen who had a license given by the Governor of Tokyo Prefecture could fish. But still collecting eggs were prohibited and collecting or capturing the carapace lengths less than 17 centimetres was prohibited. Therefore, the green turtles which were mainly captured at the time of the nesting season because mainly they were kept in March or April period, and other than that the sea turtles which were in the period of laying eggs in mid-May was captured.

This is a magnified view, or the magnified period of the right hand side of the previous slide. This year we have not come up with the final figure. But probably 180 turtles will be captured. Later I will come back to this subject by graph. But by and by it seems that the number of the sea turtles is going up. Well this is not proved yet.

About 90 per cent of the sea turtles captured were captured at Hahajima Island, the Hahajima chain of islands. And it accounts for about 10 per cent of annual takings of Hahajima Islands fishermen union, and it amounts to about 100 million yen, and 10 per cent of which was accounted for by capturing sea turtles.

And since immigration the green turtles seem to have been eaten by the local people. This is the unique local dishes on the occasion of the festival of Shintoism or the celebration of ships newly built. Or for the other commemorative occasions, people never fail to eat sea turtles.

And without any regard to the number of the captured sea turtles, about 80 sea turtles per annum have been consumed by the islanders. In other words, the sea turtles, other than those 80, have been consumed by the other areas, but there is no proof that the consumption will further go up. But in any event, we would like to prevent the capture of those 80 sea turtles which have been consumed in the islands. In other words, putting a limit of 80,



and we should try to prevent and refrain from capturing.

And as I told you, the sea turtles which have landed are captured, and mind you the Ogasawara Islands are designated as a National Park and due to the National Park Act, animals which land are regarded as terrestrial animals. In other words, they should not be taken as sea animals. Yet, Tokyo Prefectural Government tacitly admit their capturing. And since 1978 to 1980, in the course of 3 years, even during the time of the closed season, upon the request of the fishermen, Tokyo Prefecture admitted and approved the capture of sea turtles. This kind of complete ignorance, and neglect of the natural resources has been conducted and this has been regarded as the existing FACT. Under these circumstances, I think it is very difficult for the authorities to ban the capturing the fishing.

This shows the mean of the body weight of the sea turtles which have been captured for the past 13 years. This is quite protruding. At that time, we didn't have enough number of the samples, the number of the samples was only 13. As you can see from this total view, this is a female, and that is a male, and gradually you can see that the weight is on the increase. And another characteristic of Ogasawara Island is that the females are larger than the males.

This shows the numbers of nests in Chichijima chain of islands. It does not include Hahajima chain of islands. Since 1978 we have been collecting records and as far as Chichijima chain of islands is concerned, as I told you the number of the capture is quite small. In 1984, which had the largest number, but it was still 19 sea turtles.

And this is the number of sea turtles captured under the natural circumstances, and out of net 19 was captured.

In 1979, which was the second record high, but still 16. And in other years than those two, always the number of the sea turtles captured has been less than 10. And as of the 22nd of July this year they record 253 clutches, and the pace is quite higher than the previous year by 20 clutches. So it is estimated that the total number of clutches this year would be 330 to 340. So as far as the sea turtles coming into this Chichijima chain of islands are concerned, they are still on the course of increase.

The Ogasawara Islands, since 1910, I think this is the first in the world but since 1910 when the Ogasawara Islands administration authorities started the artificial incubation and up until 1930, in the course of 30 years, this area is what I have been talking about, 38,971 sea turtles were released, and the hatching rate, the average of hatching rate was 25.1 per cent, quite low. I think this is due to the small number of released sea turtles. But at this

moment, as yet we have not completely recovered the natural resources.

In 1973 Ogasawara officially started on a trial basis the artificial release. Since 1982 this has been taken over by the Foundation of Ogasawara Island Marine Centre, and they have succeeded in the hatching and release. From 1975 to 1987, a course of 13 years, the total number of the hatchlings released was 133,276.

And let me briefly talk about the artificial hatching, and the release of Ogasawara Islands. At this moment, we do not collect eggs from the natural beach. Rather we put adults or turtles in the artificial corral, and so that we can collect eggs. And this has been conducted, as I told you before, that first of all fishermen capture those sea turtles and traders, the restaurant owners, purchase those sea turtles. And Kai Marine Centre keeps the females for some time and we incubate the eggs. Therefore, after laying eggs season is completed, then the adult sea turtles are slaughtered and they were eaten. Eggings start from early May, and with the interval of 11 to 25 days, they lay eggs. And the average number of laying eggs is four times. And immediately after laying eggs, we collect those eggs and bury those eggs in the hatching grounds. The incubation days is varied from 45 to 65 days. This is due to the variation of the temperature of the ground. It varies from 24 to 32 degrees centigrade. And the hatchlings are released within one to three days. And recently the hatching rate is 80 per cent.

In the interest of time I would like to end my presentation. This is the total of the Ogasawara Marine Centre. This is the area -- this is the corral, and this is the laying period. And at nighttime the sea turtles come up shore for laying eggs, and the eggs are transformed to the hatching area, and we bury those eggs in this area.

This is the nesting beach. At nighttime we collect eggs directly on the beach. This is the same. And adults, as you can see has got tags on its rear limbs to identify the individual sea turtle. This is the time when people are burying eggs, and it just so happened that they laid eggs in the morning.

This is the hatching area. Each label identifies a clutch of eggs. This is an adult area, but this is a total view of the hatching area, incubation area.

This is what we call the incubation box. We would like to protect the natural eggs, not from the old eggs but from the beach where the average hatching rate is 5 per cent, we try to protect the eggs. And the rate is quite low due to the high tide.

This is the water pool where the hatchlings are nurtured, and for about a year those are ranched. In the natural land area we are putting tags. We are putting what is recorded here is the carapaces and



tags and the condition of the sea turtles, and now that person completes tagging.

This is a two-year old turtle. In the rear limb you can see the small tag. These are two kinds of plastic tags being currently applied and used at the Ogasawara Islands. These are the tags used for the sea turtles whose weight is higher than two kilograms. These are for sea turtles whose weight is less than one kilogram. 640 grams of hatchlings were reported in Japan as the lightest weight. When it comes to this group, the smallest sea turtles weighed 1, 840 kilograms. This is the daytime research, and the study of the natural egg laying period.

This is quite a small area. Now people are studying eggs. After identifying the location of the eggs, we put a mark on the tree. Now I think people were checking eggs.

So far I have shown some of the slides that I thought that my presentation would be covered. And when it comes to headstarting, as Dr. Bjorndal told us yesterday, we believe that headstarting does not directly lead us to the idea of proliferation of the natural resources. In other words that we cannot justify that only because of headstarting, we are free to capture sea turtles. However, we should never forget that headstarting is one of the integral parts of our activity. The most important point of headstarting is imprinting, to ensure imprinting. This issue has not been resolved in the world at all. But it is necessary for us to conduct a long term study on the issue of imprinting.

In order to do it, what should be done? First of all it is necessary for us to improve the taggings. The tags which I have shown you last only as long as 7 years at most.

And another issue related to imprinting is that of the release by stage of life. At this moment, here at Ogasawara we release the yearlings, two years old, and three years old. And when we release hatchlings, what is reported is that Chiba, Okinawa, and even Taiwan and China, when it comes to yearlings, the recapturing rate is 5 per cent, and 17.10 per cent for two years old, and 23.1 per cent of three years old. So these are quite high as a rate of recapture.

You may wonder why we release by stage of life. We at Ogasawara I believe that we should appreciate the location, and it is very difficult for us to capture juveniles, or the sub-adults. Well if somebody is cooperative to put the tags to juveniles or the sub-adults in the area of Japan, that might be easier for us to identify the ecology of sea turtles. Up until now all of those tags have been called "external taggings," but concurrently it is necessary for us to use internal taggings as we understand in the Caribbean sea they are using inserted tags for Kemp Ridley, 8 digit figures are put in the stainless

bars and covered by glass and those bars are implanted by syringe, and the people have found a way to read those 8 digit figures.

What has been studied at Ogasawara is using the rear as element. Rear as element is mixed with feed for sea turtles and in the year or two years later, we use radioactivity to detect it. Then with that method we cannot identify individual sea turtles. But it is quite effective for us to know the effectiveness of the group of each year. This is called "active level tracer techniques."

And another possibility is TSD, the temperature dependent sex determination. There is an issue here. This is the sex ratio here. This is the sex ratio in the natural environment. For the past 13 years we have investigated the sex ratio of the sea turtles which have been captured. The sex ratio is 4.9. In other words, the ratio to sex is about one to one where the total sample number is 120.

And at this moment we release a large amount of sea turtles, it is necessary for us to identify the physiology of the sea turtles, and this year we are in the process of conducting TSD test. So imprinting and TSD are two most important issues for headstarting.

Besides headstarting there is another very important issue. As I told you, we release yearlings two years old, and three years old, and 48 per cent of those released hatchlings were dead because of the entanglement in set nets. This is quite a high ratio. The time has come for us to be serious about the issue of set nets.

Thank you very much for your attention.



INTERNATIONAL SYMPOSIUM ON SEA TURTLES IN '88

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STEALING OF EGGS AND IMPLEMENT OF PREFECTURE REGULATIONS

1988 REVIEW

by

EIICHIRO DEGUCHI

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JULY 30 - AUGUST 3, 1988



## PANEL DISCUSSION

### "The Present Situation of Protecting Sea Turtles by TED and the Problems Being Encountered"

#### MR. EIICHIRO DEGUCHI

Good morning ladies and gentlemen. I am Deguchi, Manager of Environmental Control Department of Kagoshima Prefecture. It is indeed my great pleasure and honour for me to be invited to this international symposium, and also to be given the opportunity to make a presentation.

First of all, I would like to take this opportunity to render my appreciation to Mayor Kida and all the other people related for their efforts. And also I would like to pay my warmest tribute to the local people in Hiwasa who have put a lot of effort in order to preserve and protect sea turtles.

Like Australia, Japan is regarded as one of foremost nesting beaches in the world in the Pacific area. And our prefecture, Kagoshima, is also one of the most prominent nesting beaches in Japan.

Sea turtles come ashore to lay eggs, and there are other prefectures as well, such as Hiwasa, and in those areas they have already complied with other cultural assets: protection laws and so on to protect those sea turtles. But in the past, unfortunately, our Kagoshima Prefecture didn't have any action at all. So, even if people collected eggs, we couldn't take any action. In other words, we didn't take any action. All we could do was just the dissemination of the enlightenment. And this time Kagoshima Prefecture set up the Ordinance to protect the sea turtles which was enacted as of the first of June of this year. Therefore, I think that I can share some of the backgrounds and outline of this Ordinance with you.

The location of Kagoshima should first be explained. This is the far south Prefecture of Kyushu Island. But Loggerhead turtles come to the shore of this Prefecture on the black current from the warm sea areas of the south part of the world. And our Prefecture is located rather in the southern part of this country. Therefore, I think this is the optimum place for nesting. And the sea turtles tend to lay eggs in the large area of the beaches, but they are now endangered partly because there are very few sea beaches remaining intact, suitable for laying eggs because of the reclamation and reinforcement of beaches. But fortunately in our Prefecture we still have quite a few natural beaches. The rate of sea beaches is 78.3 per cent. We are ranked as the third, following Iwate and Shimane Prefectures. And the length of the extension of the sea beach is 292.2 kilometres. Again, this is the third, following Hokkaido and Okinawa Prefectures, and so I can tell you that we are still blessed with the suitable environment for sea turtles to lay eggs.

Now, how many sea turtles normally comes ashore in our Prefecture. Last year we conducted a survey, and this survey covered 66 towns and cities which face the beaches out of 96 cities and towns in total. Then the red dotted areas are the beaches or the towns where people have identified the landing of the sea turtles, the number is 38. The total number of sea turtles which have already landed is 2300.

But sea turtles come ashore only at the night period of time in the remote area where not many people visit. And also actually all over the Prefecture the sea turtles come ashore. That means that probably there are a larger number of sea turtles which have landed, however which have not yet been identified. But in any event, Kagoshima is one of the best nesting beaches for Loggerhead turtles for sure.

Now, let me talk about the background, social background of the Ordinances. In part of the Prefecture we found that people were still engaged in the commercial capture of sea turtle eggs. And the issue of the collection of the laid eggs was originally taken up in 1981 in this Prefecture.

In the west part of this Prefecture there is the beach or the dune named Fukiyagihama, and this is the dune which I have just mentioned which faces the East China Sea. This is the area of the beach where we raised the issue of collecting eggs. This beach extends about 50 kilometres, and it covers the two towns and the five local areas, and this beach is blessed with beauty and a spectacular view. Therefore, this is one of the three most beautiful dunes in Japan, following Tottori and Kujukurihama.

This area is surrounded by beautiful nature. In 1953, this beach was designated as the Prefectural Natural Park. Up until the present time, the natural environment has been successfully preserved. For this reason this is one of the many areas of nesting for sea turtles. And the issue of collection of eggs was raised in 1981. At that time the local fishermen's association was engaged in the collection of eggs. And sometimes they collected as many as 2,000 eggs with the price of 100 Yen per egg. That fact was identified. However, the Prefecture was very quick in taking action, and they persuaded the Fishermen's Association to cease this engagement.

After that the Prefecture also solicited the cooperation of the local towns and the cities and the villages to be engaged in enlightenment for the protection of the sea turtles, and also as is shown by this picture, the Prefecture also set up the Workshop for the appreciation of nature and also people who are engaged in the patrol.

On the Fukiyage beach, the area where the number of the launching is quite high and the people collect eggs quite a lot are Fukiyage, Hiyoshi,



and Kimpo, those three towns. Therefore, in these particular areas, the students of Kagoshima University and the local young people were encouraged to be engaged in the protection. Particularly in the town, Fukiyage, in 1985 the town actually set up the Marine Protection Ordinance, so they were quite furious. In the course of this period, the local mass media had taken up the endangered sea turtles to a great extent.

Thanks to this kind of effort, I think that the ordinary people in this Prefecture have enhanced their conscience towards the importance of the protection of the sea turtles. But, conversely, we found that still the eggs were traded with high prices, and still some inconsiderate people continued to collect eggs. I was told that originally on the beach the price of one egg is 200 Yen or so, and one sea turtle lays more than 100 eggs. That means that if people find only one sea turtle, they can make as much as 20,000 Yen or so.

Eggs are not just consumed in the Prefecture alone. Now people enjoy a lot of good food. Therefore, even outside this Prefecture, for the consumption of the metropolitan area, eggs are traded. Sometimes the street price in Tokyo is more than 10 times higher than the beach prices.

Coming back to the Ordinance of Fukiyage town, unfortunately they didn't have any punitive rules. And also the neighbourhood towns and villages didn't have any Ordinances and still they haven't.

The local volunteers and the people say that although they are putting a lot of effort in order to protect sea turtles, but in the neighbourhood they watch and they just see the people collecting the eggs, and they cannot do anything. They cannot help it. And up until last year, 60 per cent of the eggs were taken out of this area. Although people are engaged in such a protective activities, but still we cannot completely cover it. If we had not conducted any activities at all, probably all of the eggs might have been taken and stolen.

Last year those people who stole eggs broke the window glasses or the rear lights of the automobiles of the volunteer people. And also some of the volunteer people who are engaged in the protection are actually threatened by the people with hatchets. And therefore in our Prefecture, we don't think that just the dissemination effort is not alone. We have to do something more. That is why we decided to set up the Ordinance. We were quite aware of the voice of the people who demanded for the legal restriction in the Prefecture, and last December in the Prefectural Assembly the Governor put up a suggestion and he made a Declaration that this Prefecture would set up the Ordinance.

In the process of setting up the Ordinance, first of all we reviewed the existing laws, such as the cultural asset protection and the natural protection laws, but they are not enough. In other words, we did not depend upon them.

Here is shown the legal system of this country in terms of protection of the sea turtles. To name a few, for example when it comes to the fishery co-ordination laws, the capturing of sea turtles or the collection of eggs are not done by the local people in the way that is expressed in this particular law. And we have another law, such as the Natural Environment Protection Law.

Of course we have co-ordinated with the local authorities, but still we find it very difficult for us to adapt to the situations which are stated by the laws which have already existed. And also probably the number of areas which can be covered by those national laws will be quite limited. In other words, they won't be enough.

Our Prefecture is unique, in that in the entire Prefecture there are many beaches where sea turtles land for nesting. Therefore, it is not enough for us to protect only a certain number of the areas as sanctuaries. Rather, it is better for us to have the broader action so that we will be able to protect both sea turtles and eggs. Therefore, we decided to set up the Sea Turtles Protection Ordinance, based upon the local autonomy law.

Let me briefly outline the Ordinance. We have already distributed this hand-out with the title of "Sea Turtle." Please refer to Page 9. Here is stated the content of the Ordinance. The purpose of the Ordinance is first stipulated. We put out utmost effort in stipulating the first Article. This is the objective, this Ordinance.

We must take into consideration the relationship between the sea turtles and the local people, and up until the last minute of our efforts, we put a lot of effort to complete it. As is stated here, the sea turtle is a very valuable wild animal which makes the beautiful natural environment, and also it is quite valuable in terms of the academic and cultural asset. And therefore it is necessary for us to protect, succeed it as the common asset. And in the Fifth Article, it stipulates the banning of the recapture of sea turtles. This Article covers the entire beaches of this Prefecture. The recapture of the sea turtles which have landed is banned, which includes the slaughtering. And also the collection of the eggs were completely prohibited.

And this Article does not prohibit or stipulate the action under the sea. But it is necessary for us to have the co-ordination with the fishermen. But up until now our restriction covers only the activity on the land.



The Ninth Article stipulates the punitive actions. The Prefecture can place an Order to stop the activities. And the 11th to 14th Articles stipulates the punishment.

In order to secure and ensure the compliance, we set up the punitive rules, such as the imprisonment of less than one year, or the fine of less than 100 Yen, or the imprisonment of less than six month, or the fine of less than 100,000 Yen. That's all about the Ordinance.

Even if we have the Ordinance, unless people comply with this Ordinance, it doesn't work at all. Therefore, this year in order to encourage this, the Prefecture appropriated about 7 million Yen of budget, and part of the budget is spent for making the brochures, some of which has been distributed today, and also we make posters so that we will encourage people to comply with the Ordinance. And we are going to use mass media, the TV to promote the compliance of this Ordinance.

And, also, we put up the kind of sign board and Notice Board in the main nesting beaches. And Dr. Uchida was also invited by us, and he kindly gave us lectures.

This is the picture. This is the integral activity of this year's Environment Protection activity. And he gave us a lecture.

From now to August is the season of the nesting. Therefore in the course of this period, we would like to release hatchlings.

When it comes to monitoring, we picked up 16 towns and cities which have important beaches, and the Prefecture is also going to help those areas. And the Prefecture itself has a fixed rate number of people who will be engaged in the patrol.

For protecting the sea turtles, it is necessary for us to be aware of the ecology. This year we consigned the research activity to Kagoshima Prefecture Natural Preservation Association. This group is made up of the faculty members of Kagoshima University. Since we started the season of nesting, we have been putting our effort for the protection up until last year at Fukiyage Beach. We identified the collection of eggs, but fortunately this year not a single trace has been identified so far so we quite appreciate the effectiveness of this Ordinance.

At this moment the population of Kagoshima is 530,000, and the sea bathing area - we have only one sea bathing area, Iso Beach. Like last year, this year also we have already identified sea turtles landing, and almost in the same area they have already laid eggs. So the Kagoshima Prefecture and the local people are quite excited about the good news for two years.

There is another city, Tarumiya, in Kagoshima Prefecture. It also has the beach, and according to the senior people of this area, for the first time in their history they have identified the sea turtles which have landed.

In Fukiyage town, this year schools participated in the sea turtle's festival which will further enhance and encourage the conscience of the local people. So, on the entire Prefecture basis, we are now quite excited about the protection of sea turtles.

So much for the activities of our Prefecture to protect sea turtles, and this is quite relevant to the symbiosis between human beings and the sea turtles. This is the very title of this symposium. And I am sure that we will be a part of this activity.

I myself have been engaged in the protection of sea turtles this year. Compared with the previous year, we have been enjoying very good news, and we will not limit ourselves to the protection of the sea turtles. Rather, we would like to put further effort in order to protect every kind and every species of natural and wild animals. With the efforts of the local people, I'd like to solicit your cooperation and advice in advance.

Thank you very much.



INTERNATIONAL SYMPOSIUM ON SEA TURTLES IN HIMEJI

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PRESENTATIONS  
AND  
PANEL DISCUSSION

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JULY 30 - AUGUST 3, 1988

**CHAIRMAN:** Now it's past 10:00 o'clock, we would like to start the session at Himeji. Of those members of the MTSG seated nearby, you may be a little bit tired of having meetings every day. But for the session at Himeji we are going to discuss a very important issue for Japan. Therefore, I would like your cooperation for the constructive discussion.

And before going into the discussion, for those members for the IUCN you may already know each other. However, there are some members who only attend for the Himeji Session, therefore I would like to introduce briefly -- I would like you to introduce yourself. First of all, the Chairman of SSC, Dr. Karen Bjorndal.

For the members from Japan, would you like to introduce yourselves? Or would you like to state your name when you speak up? Is that ok? How about the members of SSC? Is that good enough? Now, I would like you to state your name and your affiliation.

**KITAZAWA:** My name is Kitazawa from MITI.

**OSAWA:** My name is Osawa from Beco Industry.

**MIYAMOTO:** My name is Miyamoto from Beco Industry.

**IWAMI:** My name is Iwami from Osaka Beco Association.

**NAKAKOGA:** My name is Nakakoga, the President of Nagasaki Beco Association.

**TERUYA:** My name is Teruya from Okinawa Marine Museum.

**TOKUNAGA:** My name is Tokunaga from Kyushu University. I am studying the difference of the sex.

**SUGANUMA:** My name is Suganuma from Ogasawara.

**TACHIKAWA:** From Ogasawara, my name is Tachikawa.

**KIMURA:** From Nagoya, my name is Kimura.  
**TOKUNAGA:** Tokunaga from TRAFFIC, Japan.

**TOKUNAGA:** I'm not a relative of his, but I come from the same place.

**TOM MILLIKEN:** My name is Tom Milliken from TRAFFIC.

**KANEKO:** My name is Kaneko.

**CHAIRMAN:** So, those are all the members from Japan.

**UCHIDA:** My name is Uchida from Himeji Aquarium. I'm a member of SSC.

**Chairman:** Here at the session at Himeji we are going to discuss the issue of Beco and this was planned for the discussion as the issue of Beco. In the SSC IUCN, we have the Chairman, Karen Bjorndal who would like to make a brief statement, and after that short statement we would like to have our discussion. Dr. Karen, please.

**DR. BJORNDAL:** I would like to thank all of you for making this meeting in Himeji possible. Although Dr. Uchida has expressed his concern that the members of the Marine Turtle Specialist Group may be a little tired from the meeting in Hiwasa, I can assure you that we are all very anxious to participate in this meeting today. The subject of the meeting, that of the Beco trade and the biology of the Hawksbill is one of great interest and grave concern to all of us in the Specialist Group. And so we welcome this opportunity to meet with you and to discuss the many aspects of their biology and of the trade.

I come from the east coast of the United States, and so I am most familiar with the Hawksbill situation in the Atlantic and the Caribbean, and I can assure you that all of us who work in the Caribbean system are gravely concerned about the future of the Hawksbill turtle there. All of our nesting populations are showing dramatic declines, and we are concerned that in the near future the Hawksbill will be gone from our waters. And so it is for this reason that we welcome this opportunity today to discuss the biology of Hawksbills with you and to learn more from you about the trade in Beco. Again, I would like to thank the sponsors of this meeting for making this possible, and I look forward to a very productive meeting. Thank you.

**CHAIRMAN:** Now for the session of Himeji, I will briefly explain how we are going to proceed with our session today. As from now until 11:20, for about an hour we would like to discuss the issues of Japan as well as the international issues from the perspective of CITES as to the trading of Beco, and the preservation of sea turtles. We would like to have opinion from Dr. Kaneko.

Probably we will be having a coffee break after the presentation by Dr. Kaneko, and then we would like to resume our discussion from 11:40 until lunch. And then in the afternoon we would like to start our meeting from 1:30 until 3:00 o'clock. We would like to discuss the issues in Japan related to the Beco Industry. Since we have the representatives of Beco Industry in Japan, we would like to have their positions. And then after that we would like to have a presentation on the situation in Indonesia, where we had a close trade of Beco. We would like to hear the present situation of Beco in Indonesia. We would like to have a presentation



from Mr. Suwelo. And then after his presentation, from TRAFFIC Japan, Tom Milligan would like to make a statement related to the Ottawa Statement. As to the trading of Beco in Japan since 1970 to 1986, there is a report during that time. It is translated into Japanese. Therefore, Tom would be mentioning this portion.

And of course we still have plenty of time left, and we would like to have a presentation from Dr. Limpus from Australia, and also from Dr. Karen Bjorndal who will be speaking on the Caribbean Sea. And there may be some special situation in Mexico since it is close to Cuba. And in Japan we are importing from some countries. And in Southeast Asian countries, there are many countries who signed the CITES. Therefore, Japan is importing Beco from the countries in the Caribbean sea. And the import from Cuba is increasing in a constant manner.

As to the quantity of the import from Cuba, it is quite surprising that quite a significant quantity is coming from the Caribbean sea, and it is surprising how much resources the Caribbean sea countries have. And Dr. Karen is also acquainted with the situation. Therefore, we would like to have opinions from those people as to the issues in the Caribbean sea.

And, as for myself, of course for the members from Japan understand the situation of Japan, I would like to explain briefly about the situation in Japan to the overseas participants.

At Himeji, the significance of the meeting of convening the session at Himeji, from the conference held in Buenos Aires, which was the Fifth Convention, I attended the international conference since that time for the CITES conference. For such a big scale international conference, they would not specify the issues of Hawksbill alone, and I feel very sorry for not having enough time for discussing Hawksbill matter for such a big conference.

But for such an issue, it is very important for us to discuss with our own intentions honestly, frankly. If you do not speak honestly or frankly, you are trying to ease the part where it itches from overcoat, or the heavy coat. And I do not have any intention of leading to some conclusion, but rather we would like to have a discussion in a frank manner, in an honest way. And we ratify the CITES, and the quantity quota is 30 ton for the Beco imports. But looking at the present situation of processing Beco in the Beco industry in Japan, is it necessary to have such a quantity? And also, we have a responsibility of gathering the data, scientific data for CITES, whether it is really necessary for us to import such a big quantity. Or is it possible for the Japanese industry to reduce the numbers of Beco imports? And we never had a discussion in an honest and frank manner. Therefore, the issue is so

vague, and we never understand the real situation. And in the SSC, we never have any intention of uniforming the opinions.

In Costa Rica I attended the workshop. Especially there was a workshop related to the breeding headstarting, and at that time among the scientists I attended the workshop. And among the members of SSC, there are some people who have an opinion not to utilize Hawksbill for any purposes. But if we can have a good management of the Hawksbill, we are allowed to utilize Beco in a very careful manner. But there are many opinions as to this issue. So in that sense, it is very important for us to speak honestly, frankly, as to the problem of Beco import in Japan. Now, therefore, we would like to have fruitful discussion today in that sense.

As to the issues of Japan, we still have a reservation as to some species, and specifically Hawksbill. We have a Japanese law. It does not allow everything, but it will limit the quantity within the range of 30 tons. So for the present time we cannot import Beco more than 30 tons. But as to the quantity, 30 tons, is it an appropriate quantity? There may be some discussion, controversy as to this quantity.

In 1958, there was a discussion in Washington as to sizes, and as to the import quantity of Japan it is shown in the statistics. Therefore, there is a Treaty such as CITES which would limit the quantity of the import. In 1973 there was a situation at the Beco industry to try to import Beco in a hurried manner, and they tried to protect their industry. They imported such a big quantity of Beco, and in this year in 1973 they increased the quantity of import of Beco as twice as much as in the year before CITES. They imported 80 thousand Hawksbills equivalent Beco from Southeast Asian countries, especially from Indonesia.

However, there was an arrangement that the regulations or law in Japan; until 1980 the Japanese government postponed the ratification of CITES. And during that time they were searching for some ways to improve the situation of Beco industry, and I was asked by the government to study the situation of Beco and I visited Indonesia many times for the survey.

In 1980, again the Japanese government was going to ratify CITES, and knowing that fact the Japanese industry increased the number of import of Beco. And in that year they imported 53.5 tons. For example, in Indonesia when you look at the resources by the import of such a big quantity for two times it gave such a big impact to the natural resources in Indonesia. And as to that situation, we would like to have an opinion from Ismu Suwelo.

So, looking at the situation in Japan, with this situation, if continued, they have to quit their indus-



try. If they cannot increase the quantity of import, they cannot survive in the industry. However, they are trying to look for a way to survive in this industry without increasing the import of Beco. But since 1973 I urged the Japanese industry for this, but now it is too late. However, it's better than nothing. We should do something in order to recover the natural resources. We would like to give our hands so that we can help to preserve the natural resources. And this is the very positive step that the Japanese Beco industry is trying to take.

And in a realistic way, we are looking for the way to recover the natural resources in Indonesia, which is a very close country to Japan, and Japan gave such a big impact to Indonesia. Therefore, we are trying to find a way to recover the resources in Indonesia.

And Japanese Beco Industry, the scale or size is not so big. However, the members of the Beco industry are now trying to seek for the way to recover the natural resources with the sacrifice of their life. And they are making such a positive attitude, proposing to recover the natural resources, and they are offering the money for the recovery of the natural resources, maybe annual amount of 3 million yen will be the level that they can afford. And also I would like to have assistance or help from the Japanese government. As to the specific detailed information, we will have some report from the representative of the Japanese Beco industry.

As I said in the Hiwasa session, we should not deprive the wealth from Beco. We should increase the natural resources. We should increase the wealth of the natural resources, and still we should utilize the natural resources. Simply when you have a deposit in the bank, you should not use the original deposit. But you should fully utilize the interest portion, so that we still can survive in the Beco industry. If we can realize this, that must be the wonderful situation.

As for the methods of SSC, many of you are worried that the original bank deposit is in a risk. If you are using the original deposit in a bank, you are losing everything in a short period of time. So for a full day, today, we would like to have a discussion with our real intention, in an honest and frank manner. And I would like to use my statement as a chance for the honest discussion, and from Mr. Kaneko we would like to have statements from a scientist's point of view. And then if the time is left, we would like to have statement from Mr. Osawa, and then going into free discussion. Dr. Kaneko, please.

**DR. KANEKO:** I would like to express my thanks to Dr. Uchida who invited me to attend this symposium. And my thanks are given also to the government of Japan, which enabled me to come to Japan financially. Well, we had the first portion of

the symposium in Hiwasa, and I think it was very excellent. From CITES' point of view the second portion of the symposium in Himeji is more important.

First I would like to explain about CITES history in relation to the Hawksbill turtle, and then wish to make some comments on trade in Beco.

In 1973 many countries gathered in Washington to sign the Convention on International Trade Endangered Species of world fauna and flora. At that time, they listed one sub-species of the Hawksbill turtle in Appendix I. And another sub-species in Appendix II. The former is *Eretmochelys imbricata* which occurred in the Mediterranean and Atlantic oceans. The latter is *Eretmochelys imbricata* *visa* which occurs in the Pacific and Indian Ocean.

In 1975 the Convention came into effect. In 1976 at the first meeting of the Conference of the party, Switzerland submitted a proposal to transfer the sub-species, *Eretmochelys imbricata* *visa* from Appendix II to Appendix I. This proposal was submitted not for biological reasons, but for look-alike reasons. In the meantime, the United Kingdom proposed the listing of all *Chelonia* species in Appendix I because the United Kingdom considered all species as threatened with extinction. These proposals were accepted by the Conference of Parties. As a result, the species was listed in Appendix I as a whole in 1977.

In 1978, France acceded to the Convention and entered a reservation with regard to this species. In 1980, Japan acceded to the Convention as the 60th member, but entered a reservation with regard to the Hawksbill.

In 1983 the party faith met in Gaborone, Botswana, and adopted Resolution Conf. 4.25. which recommends that any party having entered reservation with regard to any species listed on Appendix I treat that species as if it were listed on Appendix II for all purposes, including documentation and control.

This means that if a reserving country, like Japan, observes this resolution it cannot trade with party faith. They also accepted an amendment of the text of the Convention to enable EC countries to accede to CITES as a unit. However, this amendment has not yet come into effect as of today.

On the 1st of January 1984, as a result of the entry into force of the EC regulation, France withdrew its reservation with regard to the Hawksbill turtle. In 1987 the Sixth meeting of the conference of the parties was held in Ottawa, Canada. For consideration at that meeting, the Government of Indonesia submitted to the CITES Secretariat a proposal to transfer the Indonesian population of the Hawksbill turtle from Appendix II to Appendix I.



However, this proposal was withdrawn by Indonesia before this was discussed by the Conference of the Parties.

The CITES Secretariat conducted a study of the Green turtle and the Hawksbill turtle, and the results were presented at the meeting. Also, at the Sixth meeting, the Conference of the Parties recommended that a Working Group be established to prepare guidelines for CITES through luncheon.

In January 1988, the Working Group met in Costa Rica, as Dr. Uchida told you, and discussed this matter in that meeting. The Guidelines are under preparation, and I hope they will be made available soon for circulation properly.

As mentioned already, Japan acceded to CITES in 1980 with a reservation on the Hawksbill turtle. This reservation was taken in order to protect its internal industry, mainly for Beco Industries. Before Japan acceded to the Convention, the Japan General Merchandise Importer Association established the Beco Division. For your information I wish to say that this Association also includes the Ivory Division, which is co-operating very closely with CITES.

Resolution Conf. 4.25 was adopted at the Fourth meeting of the Conference of the Parties in Botswana, and Japanese Beco traders accepted the principle of this resolution. As a result, they had to shift their trade to non-party states. Currently almost all trade is with non-party states, which means that the trade in Beco is not in contravention of CITES. I would like to emphasize this point. In addition, they have made financial contributions to several projects on the Hawksbill turtle since 1981, including contribution to WWF.

There is a fear that the acceptance of Resolution Conf. 4.25 may lead to a serious decline in local population of the Hawksbill turtle. This is because as the number of Party states increases, traders will be restricted in trade to the limited number of Non-Party states. So we must avoid such a situation, otherwise some local populations of the Hawksbill will become extinct, either commercially or biologically. Indeed the CITES Secretariat has received some complaint from NGOs. It is unfortunate that bonafide traders and manufacturers are criticized because they followed the CITES Resolution. So I recommend that all parties concerned work together closely. The Beco industry wishes to utilize the Hawksbill on a sustainable basis. CITES, RUTN and other conservationist organizations wish to protect the Hawksbill.

Some developing countries with a Hawksbill population are eager to utilize them on a sustainable basis. In other words, we have the same goal. Many of the countries with large population of the Hawksbill are developing countries. If the Hawks-

bill can be utilized on a sustainable basis with or without safeguards, this renewable resource could bring tremendous profit to local people. And also for the management of the Hawksbill turtle.

Well 1977 when the species was listed in Appendix I, sufficient information was not available on the status of the Hawksbill. As I told you, the CITES Secretariat carried out a study on the Green turtle and Hawksbill turtle on a global scale, and its results were presented at the Sixth Meeting of the Conference of the Parties. In that report, it was recommended that additional studies be conducted on the Hawksbill turtle.

The utilization of the sea turtle has been subject to much debate, and it has been very controversial. There are different opinions, even among the scientists. For example, some scientists are against any type of exploitation of the sea turtle. They believe that sea turtles are on the verge of extinction. On the other hand, some scientists believe that some species of the sea turtle could be utilized on a sustainable basis.

I'm not an expert on sea turtles. Therefore, I don't know whether the Hawksbill turtle is indeed endangered or not. However, I feel that if a delicate safeguard is established, the Hawksbill turtle could be utilized on a sustainable basis. Such safeguards may include an overall management programme: launching operations, harvesting or export quota, education of local people, and so on. I have met members of the Beco Division, and also met members of the Beco Manufacturers Association many times, and felt that they are not unscrupulous. If we can get them involved in the conservation of the Hawksbill turtle, and if scientists can support them, I think this would be the best way to conserve the species. By doing so, the government of Japan will be persuaded to make a financial contribution to the Hawksbill turtle conservation programme.

The CITES Secretariat is negotiating with the Government of Japan for financial contribution to a study of the Hawksbill turtle in Asia and Oceania. In addition, the Beco industry is going to fund a project in Indonesia, which will be supervised by Dr. Uchida.

In conclusion, we must do something for the Hawksbill turtle. We must take some action for the Hawksbill turtle. I feel that the status quo is the worst solution. In this regard, I hope that the second portion of this symposium could provide a good opportunity for us to informally discuss the Beco issue. This is the main reason why we are here, and I feel that this kind of meeting should have been held before. Thank you, Mr. Chairman.

**CHAIRMAN:** Thank you very much for your excellent proposal and recommendations. We are getting more and more excited. Perhaps we should



delay our coffee break. We had a very good proposal and recommendation, so perhaps I should like to ask Mr. Osawa to talk on behalf of the Beco industry. Please let us know your comments on your future and present activities.

**MR. OSAWA:** Thank you very much for your introduction. It is indeed a great pleasure and honour for me to know the fact that the Sea Turtle Conference on the international basis was being held in Himeji and Hiwasa. And also I am very happy to be part of it. Dr. Uchida put up a suggestion that it might be a good idea for us to share our opinions with those people, so that we have opportunity to be educated and learn more how we should deal with our industry in the future. Thank you very much for your invitation.

At this moment, the Beco works has been appreciated as the uniquely Japanese craftworks, and they are ornaments for several hundred years. We have still preserved the techniques and the skills of this work.

From now on, in the future also we would like to sustain our industry and it is us who would be in trouble if we have a limited number of resources. Therefore, we would like to put our effort in order to increase the resources. This is a historical traditional workcraft. It is our good desire that we will be able to continue this craftwork. We must do something from our own effort in order to increase the number of the sea turtles.

And also we would like to have them return to the sea at this moment, and for this purpose we are making the comprehensive efforts, gathering all the people in Japan. In the country, Palau, we have been engaged in ranching for seven years. Up until the third year since we started, we were just reported that people started looking at hatchlings, many hatchlings. But this March I remember Mr. Sony who is responsible for ranching reported to us that recently divers observed in the sea in Palau about 40 to 60 centimeter tagged hawksbill hatchlings, and it is good news for us all. We are very pleased with the fact that our direction is quite promising.

There is another project going on in Indonesia. As early as possible we would like to have the cooperation with the Fisheries Centre in Bali so that we will be able to start the ranching.

Dr. Uchida has been very cooperative to realize this project. And fortunately we are almost at the finance stage of our project, and Beco Industries Association are ready to provide our financial support to this project. When it comes to the issue of the habitats of the sea turtles, it is necessary for us to conduct a survey to know the situation more so that we will be able to identify the status quo on this issue. Under the instruction and help of Dr. Uchida,

and all the other experts, we would like to further proceed with our effort.

We the members of industry do understand the significance of CITES very well so that we do not waste limited resources. Also, we solicit the cooperation of the prefectures and other areas of Japan to enhance the understanding on the traditional workcraft so that they will be more cooperative.

We, the Beco Association, believe that the stuffed sea turtles should not be imported. In other words, the imports of stuffed sea turtles should be banned. And if we may, we would like to have the advice and suggestion from experts who are present today so that we will be relieved and we are assured to proceed with our project in our industry.

May I conclude by expressing my wish for your continued health and activities and development. Thank you very much.

**CHAIRMAN:** Thank you very much. I feel you're a little bit tense and get nervous. Your speech sounds rather formal though, but probably when we go into the discussion portion you will share your candid and frank opinions so that we will have more active discussions. But, as Dr. Kaneko suggested, several issues, and I would like to clarify some of them.

The important matter, having heard your representation, I feel is that at this moment in Japan, the government authorities such as the Ministry of International Trade and Industry is quite strong in putting the request, and you cannot import the materials from the Parties of CITES. This is the direction that you are requested by the authority, and you try to be very cooperative and try to restrict your imports from non-member countries of CITES.

I think this is a good sign for me to see that the situation is getting better. Now, if that is the case, at this moment Japan is importing Beco materials from non-party countries of CITES. In other words, we do not violate CITES at all as long as we import the materials from those non-member countries. But Dr. Kaneko said although it is not the violation, but I wonder if it can be continued or not? The countries which supply the Beco material are rather poor countries in economic terms; they are still in the process of development. Then to those countries we say that your country does not ratify the CITES. Your country is not a member country of CITES, so you can export the materials to us, and we have the quota of 30 tons. As long as we comply with this quota, we are free to import the materials. But Dr. Kaneko said if that kind of attitude continues, then the local population, which means that a limited number of the resources will be affected to a great extent if such an attitude remains intact. So, in this connection, it might be neces-



sary for us to have discipline and sensitivity so that we will be able to maintain the level.

Now, my question is the appropriateness of the 30 ton quota. I wonder if it is appropriate or not. If we continue that kind of trading, then I'm afraid that the limited resources of the smaller countries will be deteriorated. Our principle is that as long as you are not members of CITES, we can import the materials from your country, but I wonder if that kind of attitude can be continued over the many years to come. This is my big question. So in this connection, I'd like to have you discuss this. Anybody will do. The members of SCU and all the people are welcome. But if you want to say something, please raise your hand. If all of you turn on the microphones all at once, then the interpreters will have difficulty in interpreting your speech. Dr. Limpus, please.

**DR. LIMPUS:** For me 30 tons I can't imagine. I can't imagine 30 tons. However, one adult female hawksbill turtle produces approximately 1 kilo of beko. 30 tons of beko to me is 30,000 adult female Hawksbills or adult Hawksbills a year. And that is a lot. I will have to think about the consequence of this for the turtle population in the wild.

**CHAIRMAN:** From one adult female the weight of the carapace is about 1 kilogram, so what's the reaction of the industrial people? Do you think the weight is getting smaller and smaller, to 700 or 900 grams?

What about the total quantity? Then I think they can get idea of the use of quantities. But on average, 1 kilogram is about the right figure? What do you think about that? Do you agree with that figure?

According to the survey of TRAFFIC Japan, on the previous occasion we knew that one sea turtle weighs 1,200 grams. 1 kilogram and 200, and recently almost all the sea turtles are about the same size. This is what the report revealed. Thank you very much.

**MR. MILLIKEN:** Correct. The overall average for all of the trade was 1.06 kilograms. So basically one kilogram is the correct figure to use, not 1.2. But there were very significant differences from region to region. And, for example, Indonesia's trade represented some of the smallest hawksbills with an average of somewhere around .75 kilograms. Not even a full kilogram.

**CHAIRMAN:** Thank you very much. So that means that Dr. Limpus, your suggestion is quite correct. 30,000 sea turtles or somewhere around 32,000 sea turtles. That's all about it, I guess. For those of you who are not Japanese, it's very difficult for you to imagine, but don't you think it's a lot?

Please, anybody will do. Do you have any comments or opinions in this connection?

**DR. BJORN DAL:** I know that, speaking for the Caribbean region where approximately half of the beko is imported from, if we take 15,000 adult Hawksbills from that region this is a level that cannot be long supported. The numbers are rapidly dwindling. This trade will not be able to be supported at this level from the Caribbean for a very much time longer.

**FAO:** I'm happy to hear that the Japan Beco Association and the Japanese government is trying, putting money on the conservation of Hawksbill turtle. As has been mentioned by the other scientists, the quantity of the turtles involved is actually very big, and the matter of reproduction definitely cannot sustain such a production need of Japan.

I would like to quote an example in the Philippines. I was in the Philippines in 1975, and I did make a small study on the Hawksbill trade in the Philippines, and subsequently I submitted a report to the World Wildlife Fund and also to my sponsor, which is FAO. At that time I realized that Japan imports a lot of Hawksbill from the Philippines, mainly from two areas, that is in Cebu and also in Mindoro Island, but those Hawksbills are coming from the south. And the scale of the industry was quite big at that time, and I put out a recommendation over there. I said that if no action is being taken to conserve the Hawksbills, there the population will disappear very soon. And at that time I did appeal to the Japanese Turtle Shell Association to put in money to do research and conservation work so that it can be a sustainable resource, what the Association wanted, as has been mentioned by Mr. Osawa.

Now the question is that since the Japanese Government and also the Association is sponsoring some conservation or some project in Indonesia and also in other places, I wonder whether a proper study has been made? And whether that conservation effort will be able to produce or to replenish the stock? And to produce, about 30,000 hawksbills need to be killed every year. So I hope that, you know, such a study can be done and then at least that number should be reproduced, or I mean that number should be sustainable. I don't mean that, you know, you release another 30,000 baby turtles and expect all the baby turtles to come out. There we have to study about the survival rate. Maybe only 1 per cent. Maybe only zero point one per cent. Then if the baby turtle needs to be reproduced, and to be released into a natural environment it's going to be a big figure. So I'd like to have some sort of a proper study to be made so that the common objective; the conservation and also the objective of the Beco to preserve their trade and craft be achieved. Thank you very much Mr. Chairman.



**CHAIRMAN:** I thank you very much.

**DR. MARQUEZ:** I would like to give an example: in Mexico we have about 20 years ago the work in two nesting beaches, and we are producing, increasing the number of hatchlings that we are producing every year. The last three years we were producing in two nesting beaches, north of Yucatan and in the east coast of Campeche, about 30,000 of hatchlings. And in the few former years we have observed around the area juveniles. Those juveniles were tagged, and from those juveniles we got recoveries from several countries, for example, from Cuba. I think if we do a correct work I think we will be able to increase the existence. Also, now is the idea between the scientific that it's better to conserve the adults, the big animals to produce more hatchlings and to exploit sizes between pre-adult. Then we need to decide the best possible plan in those areas that now are producing Hawksbills. Thank you.

**CHAIRMAN:** Well, we heard Dr. Marquez. In the case of sea turtles, they are reproducible animals. If you catch the adult turtles, it is a problem. If you try to catch sea turtles, you should catch sub-adult sea turtles, and that is the opinion of Dr. Marquez. You should not catch the adult sea turtles, but the sea turtles before the full adult should be caught. So for the sea turtles who do not have a capability of breeding or laying eggs, could be caught. If the adult sea turtles are caught they cannot be able to lay eggs, so therefore we should not hurt the adult sea turtles. I think that is a new way of thinking of preservation.

But in order to avoid too many opinions going to different directions, I would like to make some arrangement here. We had an opinion from Dr. Limpus. He thinks that the quantity of 30 tons is too big, and from Dr. Karen, in the Caribbean sea, if Japan is importing 30 tons of sea turtles, and according to the official record, she thinks that almost half of the sea turtles are exported to Japan, and if we are importing such big quantity from Caribbean seas, the sources in the Caribbean sea will be in risk in the near future. And when you look at the present situation at the import, the import from southeast Asian countries for the most part. However, the Southeast Asian countries have signed CITES, so therefore Japan shifted the origin of import to the Caribbean countries. And we had such a report from the Caribbean countries. So now I would like to have some opinion from the Beco Industry. How about Mr. Nakakoma?

**MR. NAKAKOGA:** I am the President of Nagasaki Beco Association. My name is Nakakoma. Well, 50 per cent of the resources in the Caribbean, CEI exported to Japan, was pointed out by Dr. Uchida. However, as a matter of fact, in 1965 or 1970 that is the statistics from that year. And since that time 50 per cent of the sea turtles are

exported to Japan. And as to the quantity of 30 tons, well if you study the statistics, since 1961 the 30 tons came into Japan in a continuous manner for more than 25 years. Therefore, due to the ratification of CITES we do not decrease the numbers from 40 tons to 30 tons. But, rather, 30 tons, that quantity continuously came into Japan for more than 20 years.

And the second point I would like to mention is that since that is manual work, when you make Beco art, you have to use many people to do the manual works. And when you have a machining, or if you have a machine processes it takes more than 50 years for the workers to train to make a Beco. So the average age of Beco workers are 40 years old now. And what we are worried about is that if your father is a Beco worker, and the son is going to succeed, and he wonders whether he should inherit or succeed his business to his son after his son has graduated from high school because he has a worry about the future of the Beco industry.

So as to the quantity of 30 tons, it did not come out suddenly, but 30 tons or 40 tons continuously came into Japan, and considering the economic scale of Japan, the economic scale has been increased by 10 times. However, the quantity of Beco did not increase ten times. And we tried not to increase the numbers of the workers, and we would try to limit ourselves as to the size of our industry. We do not try to increase the number of the workers. And I would like you to understand our efforts in our industry.

**CHAIRMAN:** Well, Mr. Nakakoga has explained that since 1961 Japan constantly imported 30 tons of Beco. And he tried to say that Japan is not disturbing the natural resources of Hawksbill. In fact what you tried to mention -- well I have some question as to the items which are imported to Japan. It's so complicated work to Beco, or many items or classifications of Beco are included. It's so complicated, and compared with the years in the past, the content of the items are the same, as the figures that you mentioned are comparable to the previous years. Do you have any opinion from TRAFFIC Japan?

**MR. MILLIKEN:** I think it can be said that trade volumes have remained fairly constant. In the period that we examined in our report, and I'll discuss this later. From 1970s to 1986, within that period, the 1970s to 1979, an average of 38,700 Kg. was imported every year. In 1980, after Japan joined CITES, the following year, it has remained constant at the 30,000 ton level. However, the other consideration here is where is the Beco coming from? And we can see definite changes in the trade patterns. And the biologists here can maybe interpret this data in ways that I can't. I can just look at the customs figures and say where it is coming from. But in fact we are seeing the Asian trade drop significantly, and



trade patterns do change. This could mean that populations are being over-exploited when it's no longer profitable to continue harvesting from those populations: that people simply move elsewhere as Dr. Uchida and others have pointed out has been documented with respect to the Balinese green sea turtle trade. They simply, when certain areas are harvested out, they move to further away from Bali.

I guess that's all I have to say at this time, but trade patterns are shifting and it could mean that populations are being exhausted.

**CHAIRMAN:** George Balazs-san?

**DR. BALAZS:** Yes, I'd be interested to know what the status of the Beco industry was before 1961. 1961 is a very short time ago comparatively. What was the import before '61? What was the status of the industry before 1961?

**CHAIRMAN:** I think that is a good question.

**MR. OSAWA:** Prior to 1961, since 1955 the Beco industry recovered. During the Wartime until 1950 the import of Beco stopped prior to the Second World War. And in 1939 to 1955, the import of Beco stopped during that time. Due to that fact, the numbers of the workers decreased because some of them died during the War, or some of them shifted to other jobs, and the numbers of the workers decreased. And since 1958 the Beco industry started to recover and introducing new workers in Beco industry. In 1955 to 1960, 22-23 tons of Beco were imported.

**CHAIRMAN:** Dr. Balazs, did you understand? Are you satisfied? Related to this point, do you have any questions?

**MR. de SILVA:** What I wanted to comment on was that, as it was said, the Malaysian figures here do not show, in my opinion, might not show the exact amount of hawksbills that are slaughtered and exported. The Philippine fishermen are now very active in the sulevesco (phonetic) the cella VC (phonetic). They probably take their kill back to the Philippines, process the shell and get it into Pulau Liberan which is presently Federal Territory. It is also a free port, and it might be that when the barter traders bring it in, it might be re-exported to some areas and then taken to another country. There is a possibility.

In the 1960s we seized a consignment of turtle shell and skin. An attempt was made to illegally send it to Japan to a corporation called "Nassi" or "Nissi" Corporation. The Philippines issued an illegal permit and it was issued by the Fisheries Inspector in Zambanga. Later on they took the consignment back to the Philippines, and where they sent it we don't know. So I am not very sure whether the figures representing the trade here are

correct. I'm not casting any aspersions on it, but it may be that the shell is being exported to Japan from somewhere else. Thank you, Mr. Chairman.

**CHAIRMAN:** Thank you very much. Related to this issue, is there anyone who would like to make a statement? Yes, Dr. Karen.

**DR. BJORN DAL:** I think Mr. De Silvas' point is very well taken, and it underscores other problems that we have with the hawksbill trade. We all appreciate the efforts that have been made by the Beco Association to comply with Conf. 4.25, and we take it as a show of good faith that they have made these efforts to cease trading with party states to CITES. However, as we know and has been discussed during the Hiwasa Conference, sea turtle resources are a shared resource, and when one is trading with a party or a non-party to CITES, many other countries are involved. For example, a non-party nation adjacent to a party nation, when that non-party nation harvests and exports its hawksbills, it is exporting the same hawksbill resource of its neighbouring countries. This is one of the underlying problems of the fact that sea turtles cross international boundaries.

This of course is no reflection on the importing of hawksbill by the Beco industry from these non-party countries. I am just trying to underscore the problems that the complexity of the biology of hawksbills raise.

The other problem is one that we are well aware of in the Caribbean is that many party nations export their tortoise shell to non-party countries so that it can be traded to Japan. We see this in the records that many non-party countries in the Caribbean have rapidly increasing Beco exports. Many of these countries have almost no hawksbills left in their waters, and what is happening is that traders are going out to other neighbouring countries, collecting the Beco, and then exporting it through these few non-party nations.

Again, there is nothing that can be done by the Beco industry in Japan about this. But it is something to be aware of as we look at the numbers that TRAFFIC Japan has supplied us: that much of the trade with non-party nations actually represents the harvest in party nations, and Mr. De Silva has given us an excellent example of that from his region of the world. Thank you.

**CHAIRMAN:** Thank you very much for your comments. Let me summarize these points that have been raised. Japan acceded to the Resolution 4.25 and the import of Beco is now limited to non-party countries. As the SSE member mentioned, you are not doing anything against the CITES, but the sea turtles cross over the boundaries. That means if you continue your import of Beco from non-party countries, because sea turtles do not know the



national boundaries, you are importing sea turtles from the party countries as well. The hawksbill preserved in Sabah are now harvested in the Philippines. In 1973 I met Dr. Bastard, and we worked together. He started ranching in the form of turtle farm very early in his experience, and even doing a lot of efforts together with the Aborigines, he mentioned that most of the sea turtles go to Indonesia and they are captured in Indonesia. That was his worry. He wondered if his efforts really led to the increase of the resource in Australia, because the sea turtles are taken by the Indonesians. That was one comment he made which impressed me very much.

As it has been mentioned in Hiwasa, the sea turtle does not know the difference between the nations. The boundaries are not recognized by the turtles. Therefore, continuous import from a non-party country is of significance, importance, I suppose. Are there any more comments from SSC members on this item? Mr. McCoy, please.

**MR. MCCOY:** Thank you Mr. Chairman. First of all, I must express a fairly high degree of ignorance about the Beco industry, and the economics of the industry in Japan. My question, therefore, is directed towards other people in the industry. Regarding the 30 ton figure, and the comments made by Dr. Marquez about managing this resource. If the Beco industry approaches the hawksbill turtle from a management standpoint, I would like to know; 30 tons can be made up of many small turtles, fewer larger adult turtles, or a mixture in-between. And because of my ignorance, I do not know, in the economics of the industry, if what the composition of sizes (which obviously is critical to the biology and the management) the composition of this 30 tons, if it is constant in terms of sizes; if it is changing over time in terms of sizes, and what the desirability of the industry is? Would the industry need 50 tons of smaller turtles? Or 10 tons of only large turtles? And all of these things must influence the management of the resource, if that's the approach that you are using.

I know this may not be a simple question, and I don't want to take a lot of time in the answer, but because of my ignorance, I think it would help to understand from the industry their needs. Thank you.

**CHAIRMAN:** Thank you very much. I think your question is very significant. And Mr. McCoy's question is the content of this 30 tons is his question.

You need 30 tons of 1 kilo turtles? Or you want a variety of sizes? Or if you have 30 ton, single turtle, you just want one. That is kind of extreme, but I would like to have answers from the Association, please.

**MR. OSAWA:** This is a traditional Japanese industry involving a very fine craftsmanship. We need large ones, and also when we make a very fine or small decoration, we cannot use a large shell. So when the ones we import from Indonesia are sometimes very small in size of 5 or 6 centimeters of carapace they are also useful from our point of view. But also we need 60 or 70 kilos of carapace. It all depends on what we produce, or what we manufacture. So when you ask me if we need small ones or if we need large ones, we cannot give you a simple answer.

If it is large, we use large ones to make a large decoration. If we have small ones, we can have a different way of utilizing it. If we are aiming to make a small one, and if we get a large shell it becomes useless. Our aim is to make a small one, if we get a large shell. So if we have a combination, then perhaps in the industry we can allocate different sizes for different objectives. Or different manufacturers can get together to talk about whether they need large ones or small ones, and we allocate the resources we import. But perhaps we can say that the large ones might be rather better. That is as much as I can say.

**CHAIRMAN:** Well, is this answer satisfactory to you? Mr. Nakakoma, will you . . .

**MR. NAKAKOGA:** I would like to supplement the answer. Beco work is hand work. If we just have small ones, the labour wages become very high. But if we only have large ones, we have to cut the large ones into many small pieces, and this is rather a waste. So we need large ones as well as small ones.

Ever since 30 years ago when we look at the contents of the import, I think we have a very good balance of equal amount of large ones and small ones, and we just have a kind of a bid among ourselves to share the necessary sizes among ourselves. So our trade is very well balanced. Therefore, 30 tons is equivalent to about 60 tons of trade. We are trying to make the least waste as possible. Thank you.

**CHAIRMAN:** Thank you. Dr. Balazs, please.

**DR. BALAZS:** I'd like to pursue the earlier question I asked, because something has come up. There's no doubt that the Beco craft is of historical and cultural significance. But how long has it actually been in industry, a commercial industry? What was the status before 1939? Did your organizations and industries as commercial enterprises exist as a unit before 1939? That is my question.

**CHAIRMAN:** May I have the answer, please, from the industry?



**MR. OSAWA:** About 1,200 years ago Beco was first imported to Japan, and they came in a shape of special treasure boxes and special lute, and they are now exhibited in Kyoto. And Beco work started 600 years ago, and it was very prosperous 400 years ago. It was a very precious item of decoration. And the industry was very prosperous 400 years ago. And 400 years ago, for example, when we just talk about the Tokyo area, there are about 400 manufacturers. Now, due to the natural decrease, we only have 120 or 130 shops. The industry is decreasing in scale. This is a very brief history.

**CHAIRMAN:** Dr. Balazs, does that satisfy your question?

**DR. BALAZS:** Well, I was trying to distinguish between artisans, individual craftsmen that may have made their treasures in an actual commercial industry that dealt in commercial in export and modernized industry as we know business today. I'm not sure the 400 years ago was the same type of business. Was it a commercial trade? Do you understand, Dr. Uchida, the difference I'm trying to determine?

Did these trade industries, did the centers, the businesses exist before 1939. The gentlemen that are sitting here, did their companies exist before 1939? That's really all. But I would be interested to know if the company, enterprises as they exist now trace their roots back before 1939 or were they started in 1939 when world trade became more prevalent?

**CHAIRMAN:** Did you understand the question?

**MR. OSAWA:** The Association did exist before 1930. In Nagasaki we had one association which integrated into our industry, and also there were times in which we had more than one association, but we did have an association before World War II.

**CHAIRMAN:** Mr. Kojima, I think you raised your hand. Please make your comment.

**MR. SHIMADA:** My name is Shimada. There are many significant comments and opinions. I would like to talk about the issue that follows your discussion. I'd like to give one example related to the conservation of wild life.

In Japan the Treaty is not yet fully ratified, and even the 30 tons is allowed, even if the Japanese dealer is not prohibited or banned at hunting or -- and we had a modification amendment of the Treaty of the trade of the wild life last December. And because of these differences in the Treaties or amendments, the poaching has increased to a large extent. When it comes to the sea turtle WWF and TRAFFIC Japan has been making great efforts, and we have been discussing about this matter very eagerly. But somewhere, we do not know, there is a

route for the demand and the need, there is a route in which these precious wildlives are traded. I do feel very sorry for these illegal routes that exist, no matter how eagerly we discuss about these matters, there is always an illegal route and I am very regretful to see these situations.

**CHAIRMAN:** Are there any comments on this? If not, I would like to have a coffee break, and I would like to continue discussing this item after the coffee break. We'd like to have a coffee break for -- well, let's have 15 minutes. We'd like to resume at 11:55. Please come back to this room at five minutes to twelve. The coffee or tea are supplied in the next room.

#### COFFEE BREAK

**CHAIRMAN:** So, we're slightly behind schedule, but let us resume this session.

This is going to be the last session this morning. A lot of issues have been taken up so far for Japan. The country of Indonesia up until very recent period has been very important supplier of Beco materials, and the situation of Indonesia should be presented. Today we have two representatives from this nation, Dr. Suwelo, you are in the position of PHP. This handles the natural resources such as sea turtles, and others as well.

Mr. Suwelo, I understand that you became the member of SSC at the very early period. Therefore, I am sure that you are having difficulty between the Indonesian situation and SSC. And would you kindly share the situation of your nation, and after that I would like to have discussion in a little bit deep way.

I must apologize, first of all. The video system here is quite limited in a sense. We cannot focus transparencies very well, so I must apologize beforehand for unclear pictures. But I would like to hope that you will kindly understand the information. Now Dr. Suwelo, please.

**MR. SUWELO:** Thank you, Mr. Chairman. I have only two transparencies to be shown to you. And I want to discuss about the hawksbill turtles, the conservation and utilization.

When in Hiwasa I have presented the conservation and the utilization for turtles. But now my discussion will concentrate on the Hawksbill turtles.

Within Indonesia, there has been increasing concern for the turtle conservation. Certain turtle management measures have already been undertaken. These are first: The complete protection by law of three non-commercial turtle species: The Loggerhead, the Leatherback, and the Olive ridley turtle.



Second: The inclusion of turtle beaches within 21 protected areas. In the next Five Year Development Plan, another, about 150 more of turtle nesting beaches will have been identified; will be included as a marine reserve, marine park or marine national park.

The third: Protective regulation by local governments in some areas in controlling the hunting of turtles and regulate turtle eggs harvesting.

The fourth: The increased efforts of the Director General of PHPA, where I'm working with, to control international trade of turtle products in conformance with the regulation of CITES, to which Indonesia is a signatory.

And five: The development of hatcheries outside the protected beaches to improve hatching success. We have some experience in Kopulon Patou (phonetic), and the west coast of Sumatra. In Kopulon Ceribu (phonetic) in the north of Jakarta, and in Pelitung (phonetic) and South Salowski (phonetic).

This hatchery is done by the local people. They are experimenting with long distance translocation of eggs to restock and hatch, starting at Kopulon Ceribu (Phonetic). This is another action has been undertaken by our Director General.

And the next, the launching of public awareness programmes throughout Indonesia, as well as in Bali, several years ago. Several years ago we had a conservation education programme, supported by the Frankfurt Zoological Society.

And the next, the cooperation through IUCN and WWF and CITES with the foreign experts to analyse and resolve some of the sea turtles conservation issues. As I mentioned before, we have already some data on turtles. This is because of the assistance of the foreign experts coming to Indonesia.

Dealing with the turtle problem is immensely difficult in a country as large as Indonesia, where there is at present an increasingly excessive overharvest outside the protected areas. This is a map I showed in Hiwasa. This map showed the three species of turtles in Indonesia: We have the Leatherback, the Hawksbill, and the Green turtle.

The Hawksbill turtle is widely distributed throughout Indonesia wherever coral reefs occur. Concentration of the species are found in the West Coast of North Sumatra. And in Real and in Jakasi (phonetic), and there's a large population of hawksbill in south of Sulansi (phonetic) and southeast of Sulansi, and also in Malucup (phonetic). But we don't know yet the breeding populations in Malucup, and also in Singasal (phonetic).

But this first nesting habit of the species makes the question of nesting densities still more as of

those for the Green turtle. In western part nests are dispersed along many hundreds of kilometres of undisturbed beaches. In 1984, Dr. Salm estimated the population of Hawksbills is more than 1 million. But Dr. Schulz in his report in 1987 estimated 100 thousand major female nests for all known nesting sites in Indonesia.

I just mention the conservation of hawksbill mentioned in Dr. Schulz's report last year.

The primary product of Hawksbills is eggs and scutes. The latter is used as a handicraft industry to produce house tools. Carapace and smaller specimens are typically preserved and stuffed by taxidermists.

The exports of turtles of Indonesia can consist of skuts or silk or stuffed animals. The stuff of the animals by the local people inserted inside may be cloth or paper. And by the statistical data, several things may be mentioned as a -- maybe not in its correct name. And also the export of turtle shells from Indonesia is not only the Hawksbill, but also the Green turtle.

So I think if we imagine the estimation of the export or the killing of turtles from Indonesia to be calculated from the export of the stuffed, maybe this is not a correct figure. So I hope that a survey on the turtle trade in Indonesia it must be done, and we'd like to have a correct data on this utilization of the Hawksbill as well as the Green turtle.

As I mentioned before, the Green turtle is caught and then killed by people because of the flesh, but the Hawksbill, no, especially by the people for the stuff, and if the turtles are large so they take the silts.

But I have mentioned that the eggs of the Hawksbill is also consumed by the local people. You know that the Hawksbill is not under Indonesia's list of protected species. However, this turtle is listed in Appendix 1 of the CITES. There is indication that boats of Hawksbill goes to abroad without CITES recommended documentation rates. But the government actually does not issue permits for Green turtle and for Hawksbill turtle.

Therefore, Report by Mr. Reichart, WWF representative of Indonesia, in his report he estimated 70,000 adult turtles, mainly Hawksbill and Green are killed throughout Indonesia. They can be captured and killed anywhere except in protected areas. And also, there's a data that 6 to 7 million turtle eggs are harvested.

The regulation of the re-utilization of sea turtles in Indonesia is now being applied, is in the phase with the aim of stopping direct harvests from the wild. At this time several projects to release sea turtles, the green and the hawksbill, are being initi-



ated in several places, beginning by picking eggs and hatching them and raise the hatchlings to a certain size before they can be harvesting.

This activity, which is still in the early stage, has already attracted the interest of several businesses. It is planned that this operation will be expanded to other areas, so supply the need of skuts will be covered by this activity.

Those hatching total eggs is obliged to release to the wilds 20 to 30 per cent of the hatchlings. The Indonesian Government seems to be interested in sea turtle ranching; to have Indonesia develop a comprehensive sea turtle conservation management programme. In the sea turtle ranching, can be played an important role of CITES approval can be obtained.

This is a chart of the protection and utilization of sea turtles in Indonesia that we will introduce to our country. That is two sides of utilization, and going together with protection. We call in Indonesia "ponangkaran." This is the protection and utilization. Not the breeding, but breeding with the condition to release the baby turtles to the sea. This is an example of Green turtle that we have done to supply the demand of Green turtle in Bali. This is the CITES, Bali, and the other side is the breeding site, the breeding area.

I had mentioned that our government has planned to expand the conservation areas for sea turtles. But you may have known that not so many breeding beaches of turtles will be included in the native conservation, because when an area becomes a native conservation nobody can enter this area, and nobody can trap the animals if the animals are declared as protected animals.

So we make two efforts that the main of the breeding population should have been in the protection forest. But the other, we will oblige for the people to utilize. That means the eggs could be taken like now in all of the breeding areas outside the protection area, the eggs could be taken by the people, and this will be regulated by the local government.

The condition now is all of the eggs taken by the people, but next we prepare the Regulation to regulate this harvesting of turtles outside the harvesting of eggs of turtles, outside the conservation areas. But we don't know how many eggs could be consumed. We get many advice from Dr. Schulz and also from Dr. Reichart that the sustainable of the eggs is if the people only take about, I don't remember it exactly, but about 50 per cent.

In this example, the beautiful area where the nesting beach of turtles divided into the political boundary, then the protected area, this wildlife reserve of Chibabumi (phonetic), and the other side

is the utilized area, this area is contracted by private enterprise to take, up to now to take all of the eggs. But we want to regulate not all of the take of those eggs, but we presume that only 50 per cent of the eggs can be taken from this area, and the rest, 50 per cent, must be left on the beach, or to make a hatchery and the hatchlings should be released directly after hatch.

And the rest, the eggs could be bring for the ranching. And in this case, we make a pilot project in Bali because Bali is the, consumes so many Green turtles. So this is the long distance hatchling, and we have several times to do this as a pilot project. And as I mentioned in the last, when in Hiwasa, sometimes we succeed with the transporting of eggs, but sometimes it is not a success.

This, Panoncarung, I've been in Pasing Indonesia. Therefore, two main objectives. One is the protection, means that we must do on this project, we must do the rehabilitation or restocking in the original area of the source of the eggs. And the ranching, we put closer to the market. That means, here in Bali.

So I do hope this concept will be discussed, and I cannot be sure of what the percentage of these figures, 50 or 70 or 50 per cent. It must be checked and re-checked. We used 50 per cent because we have to make an estimation of the population of the turtles landed in this area. The proportion of egg laying turtles, according to Dr. Schulz was of the turtles raised outside of the natural reserve. 70 per cent of the population of the turtles raised outside of the reserve. The balance, 30 per cent is in the reserve.

Yes, it is more better if this area could be also declared as a natural reserve, but you may understand that in Indonesia it is not so simple to declare an area as a natural reserve. So by this concept, maybe we can make a sustainable of the turtles by as to the contractor of the beach, of the egg laying beach, to do the hatchling and ask him to release the hatchlings to the original habitat.

The Prononkarun (phonetic) I just mentioned is not the same, or really parallel with the ranching what I know. And I got many information, from Henry Reichart and Dr. Schulz because those gentlemen are experienced with the Surinam turtle.

Dr. Reichart in his report this year stated that Indonesia must take some important and drastic steps to convince the other CITES member states of its sincerity to manage the country's sea turtle resource on a sustainable basis without delay. A legal framework must be established to implement and enforce the following recommendations:

One, locate and protect major sea turtle nesting sites. This implies the stationing of personnel of



these beaches for at least the height of the nesting season.

**Secondly,** locate and identify major feeding grounds of sea turtles and establish legislation for their protection.

**Third,** allow only closely supervised egg harvests of at most 30 per cent of the nests. Eggs to be taken from rook nests as much as possible, and juristic compliance with this quota regulation. Eliminate egg harvests by outsiders.

**Fourth:** All eggs taken for any ranching population must come out of this 30 per cent eggs limit quota.

**Fifth:** Prohibit the taking or killing of any sea turtles while on land, or, if at sea, within the radius of 20 kilometres from a nesting beach or protected area. Restrict fishermen's use of such nests near beaches during the nesting season.

May I make a statement that actually the hunting of turtles' eggs in Indonesia is not allowed in accordance with animal hunting regulations. But there is still poaching and hunting in Indonesia.

**Sixth:** Prohibit the sale and/or consumption of adult sea turtles or products thereof in all public places. Therefore, I just mention that several years ago we have made an education to, not for our people but for foreign tourists who come in Bali not to buy and bring the stuffed turtles abroad.

**Seven:** The size of 500 metres allowed to be taken for consumption shall be no longer than 80 centimeter curve carapace length. You know that our pilot project of breeding Green turtles not smooth running because hunting still occurs, and so the ranching, that's expensive, get the flesh of the turtles of the ranching cannot be sold to the market because the price is higher than turtles come from hunting. So this is the other side that we want to do something with the local governments, and to all of the districts throughout Indonesia to control the hunting. Because if hunting without anyone paying tax to the government, the fishermen can sell the turtles cheap.

Also propose in establishing a 10-year moratorium on the harvesting of all sizes and status of *Eretmochelys imbricata*; allow only limited egg harvests to stock recognized ranches.

**Nine:** Establish government law enforcement teams with full power to act at the major sea turtle landing site throughout Bali, Djubandang and also Jakarta and Surabaya.

**Ten:** All the receptives of sea turtles, including three stripe and all stuffed whole specimen in shops and storage areas must be confiscated. Some of

these materials would be distributed to educational institutes, and the remainder to be destroyed.

In addition to these mostly legal measures, a number of other conservation management procedures could be provided, such as non-human regato control, hatcheries for dune mass; elimination of sand mining, and all offshore near the nesting beaches suited to education for local communities etc. This suggestion to make our section conservation the sub-territory of marine conservation of the directorate in our forest protection more powerful to conserve this nation under conservation of natural resources. Thank you.

**CHAIRMAN:** Well, since the time is quite limited, from WWF from Indonesia there was a proposal from Indonesia, and there were many good aspects in the proposal. But there is a problem of feasibility of such proposals. In Indonesia, they have many problems.

Mr. Nuitja has reported and there are some proposals made in Indonesia, and many of them are very good proposals, and of course there are so many good proposals. So to realize that Indonesia has very serious and severe problems, and it is quite difficult to make any priority of all those proposals because you cannot do all the proposals to be materialized. And Norman Nuitja is a scientist in the university and taking a very objective perspective, and we would like to know what is the priority, in those proposals. I would like to have your opinion. Nuitja, please, I would like to have your opinion.

**MR. NUITJA:** Thank you very much for giving me the opportunity to comment maybe about the, especially about the Hawksbill resource living in Indonesia.

We, all the members of Marine Turtle's Group maybe we must be objective to decide something. We cannot control the hunting of the turtle, and we don't know how many numbers the stocking in the ocean. Until now impossible to estimate the objective data of the Hawksbill around Indonesia. So first we need maybe to study about the ecology of the turtle. Before, maybe five years ago, Dr. Uchida and me to try the study of ecology, but I think we need more about it, not enough.

But another side, I think Japanese Beco industries they are so willing, so aware about this resource, especially in Indonesia, because I think if this resource is decreasing more decreasing and not let Indonesia, so they think their industry will also stop. So I think their opinion, that's also true. And we, I am until now so very few know about the ecology of Hawksbill because until now I study so much Green turtles.

So I think very important we more study about it, and also priority make the conservation pilot pro-



ject in Indonesia. I think the first we must take the pilot project for the Hawksbill in Indonesia, and also to record all the data around Indonesia. I don't know all of ours believe this turtle migrate around the world, but I don't know from where the turtle come to Indonesia. Dr. Limpus said he come from Australia. I don't know where Dr. Limpus record that data, maybe only one sample only? I don't know, but that's not except, only one sample maybe. So my opinion, so this turtle must be we record more about the migration, about the ecology, and also we must restock this resource in Indonesia if you want to have much number in the ocean.

For example, if we only conserve this turtle like Java tiger. You know, Java tiger before only five number, five in the world. So the people to educate "don't kill, don't" so until now no something there. No individual there. So, the Java tiger in Indonesia we don't have. Now we also to consume only no cats, no, no. So I afraid the Hawksbill after that we don't have many. So we must take a pilot project maybe, also study the ecology more and more because the Hawksbill, there are not so many in Indonesia. Thank you very much.

**CHAIRMAN:** I thank you very much. It's time for lunch. So probably after lunch we would like to have further discussion which was brought up in the morning as to the importing of the Beco from non-member countries. We would like to have further discussion in the afternoon. So for lunch, we would like to spend about 40 minutes, and we would like to come back here about 1:40, and we would like you to take lunch at the cafeteria on the first floor on left hand side of the gate. It is a cafeteria self-service style. I hope you will enjoy the lunch. Please come back here at 1:40. Thank you very much for your cooperation.

#### LUNCH BREAK

**CHAIRMAN:** I'm sorry for keeping you waiting. We would like to start our afternoon session. But prior to opening up the afternoon session, I would like to introduce two representatives who came a little late. I would like to introduce Dr. Sato from Japan Wildlife Association. And the other person who came late from SSC IUCN, Dr. Edward. Now, we had issues brought up by Indonesia. We would like to have an opinion from TRAFFIC Japan.

**MR. MILLIKEN:** I would like to give a report that we prepared for the Sixth Conference of the Parties to CITES for the 1987 meeting in Ottawa, Canada. That report was originally issued in English. We have now completed a Japanese translation. For our foreign visitors, an English copy has been distributed to you. For the Japanese participants at this conference, you should have a Japanese version.

This report covers all of Japan's sea turtle trades from 1970 to 1986. Today I will limit my discussion only to that trade which deals with Hawksbill sea turtles. And before I begin the substantive part of this talk, I would like to thank the Beco Association which is here today, and many of the individual dealers who cooperated with us to produce this report, shared with us their data and their observations which was very important to us to be able to analyze the trade effectively.

This report is based upon five sources of data. The first source are Japanese customs statistics. In Japan, unlike most other countries, we are very fortunate in that Japan's various sea turtles trades have specific categories in the customs data. So, for example, when Japan imports Beco, the shell from the Hawksbill, it is only recorded in an exclusive category. If shell comes in from a Green sea turtle, it is put into another exclusive category. So there is no overlap of data. The same can be said for trade in stuffed specimens. Stuffed Hawksbill turtles will be reported in a customs category called "Worked Beco." Stuffed Green turtles will be recorded in a category called "Worked Other Tortoise" or "Worked Other Marine Turtles." So it's very easy to determine at a species level Japan's trade in Hawksbills.

Today's talk we'll use the customs statistics for Beco which are in Appendix I of this report, and also the statistics for worked Beco, which are in Appendix III. These statistics are compiled by country and in the weight of kilograms.

Our second source of important data came from the dealers themselves. We circulated a comprehensive questionnaire to all of the members of the Beco Association, and they reviewed their own company's imports for the years 1984, 1985 and 1986.

This chart shows a comparison of the dealer's data with the customs statistics. The print is the dealer's data, and in general we were very fortunate that there was a high degree of correlation, between 75 and 85 per cent of the customs data.

Many of the companies estimated the number of sea turtles their individual shipments represented, and that data was very important for us in determining how many sea turtles, how many Hawksbills are actually represented by these figures in kilograms. I'll discuss that later on in more detail.

Our third source of data came from our own direct monitoring and inspection activities. Many or some of the Beco importers invited myself or Tokunaga-san to come over and examine shipments that had been recently imported. We would weigh all the shell, and then we would count each individual skate, dividing the weight by 13 skates per animal. We were able to arrive at average weights of the animals represented in that shipment.



A fourth source of data stemmed from interviews with the Beco dealers themselves. They know, they are sensitive to shifts in trade patterns; to changes in the quality or size of the Beco they are importing, and this kind of anecdotal information was very important.

And, finally, we did rely upon some published materials that are noted in the bibliography. But I should say we did not do or attempt, with the time framework we were working with, to do a comprehensive literature search.

So the trade in Beco up until 1980 when Japan imposed a 30 ton, that's 30,000 kilo, limit on importation, an average of 38,700 Kg. was imported every year. Most of the trade remained in the range of this figure, except for two years, 1973 and 1979. The extraordinary increase in imports to around 70 tons resulted from the fear of the industry of what CITES controls would do to their supply of Beco, and these years clearly represented stockpiling efforts.

The imposition of the 30 ton limit has been effectively maintained. It's never been exceeded in any year when you review the data in terms of the Japanese fiscal year, which runs from April until March. If you look at the data just for the calendar year, one year, 1985, seems to go over that 30-ton limit. In fact it doesn't when measured by the fiscal year.

So, the limit has been strictly maintained. But the point to emphasize here is that the 30 ton limit was not based upon a biological appraisal of the status of the species, and what a level of sustainable utilization would be. It was simply based upon previous levels of importation, and then arbitrarily reduced by about 8 tons.

Where is this Beco coming from? This chart, this graph analysed the trade in terms of regions. The most important region for the industry is the Caribbean region, and that is these first lines here. As you can see, it represents almost half of the trade every year. The second most important region has been Asia, the blue lines here. And overall the Asian percentage of the trade has been about 30 per cent.

During the years that we mentioned where stockpiling occurred, it is the bulk of the stockpiled stock came from Asia. As you can see in 1973, the portion of the Asian trade, the same in 1979, increased rather dramatically. But overall it's represented about 30 per cent.

Next in importance is the Indian Ocean and Africa. And Africa here refers to the trade from Kenya and Tanzania, countries which border the Indian ocean. In general, Beco from here also includes Seychelles, Comoros, and the Maldives represents

about 12 per cent of the trade. And finally the green here represents Oceania, which is generally Solomon Islands, Fiji, and points in the Pacific.

Finally, a little bit of trade, particularly in the earlier years, came from North America or European sources. Generally this, we believe, was re-exported stock, much of which probably originated from the Caribbean. At any rate, it's a very small part of the trade.

This chart that I'm showing you on the screen here includes the year 1987. When we did our report (the report is based on data only through 1986), we've added this extra year and I think it's very important because it shows a very different pattern. The Caribbean trade last year still was approximately half of the trade. But Asia, imports from Asia, dropped to just about 1 per cent of the total trade. At the same time, trade from Oceania, this end of the graph, increased to 23 per cent, and trade from Africa and the Indian Ocean increased to 24 per cent. So, countries which previously have not been part of the Japanese trade are now the major suppliers for Africa and the Indian Ocean trade, the Comoro islands near Madagascar and the Maldives are now the major sources, and in Oceania imports from the Solomon Islands and Fiji increased.

One of the reasons for the shift in trade is that virtually all of the trade coming into Japan now is coming from non-parties. So overall, if we look at the legal issue and examine Japan's trade under CITES, the year 1987 represents a total break virtually with traditional patterns in that only 1.8 per cent of the trade came from CITES countries.

Now, as my colleague, Mr. Kaneko, explained at the Fourth Conference of the Parties to CITES, a resolution was passed which stated that countries with a reservation on Appendix I species should not import from another CITES party unless that party issues valid export permits. Between 1980 and 1985, between 40 and 60 per cent, roughly, of Japan's trade was coming from CITES parties, and most of this trade was not accompanied by valid CITES export documents. This issue was raised on a number of occasions in a very critical way. What has happened is that the Beco industry themselves have unilaterally moved to implement CITES with respect to Conf. 4.25. The government of Japan is not requiring this. This is an expression of co-operation coming from the dealers themselves. They said they would stop importing from CITES parties, and indeed the 1987 data reflects that very strongly. However, we have heard in earlier discussions today that oftentimes, I mean one of the limitations of customs data is that you cannot be sure that Beco, or any commodity which is exported from one country, actually was harvested there.

So, in terms of the permit coverage of these imports, it does not represent CITES violations in



terms of actual harvesting of the Hawksbills themselves. It is no guarantee, that some of the trade represents Hawksbills that were taken in the waters of CITES parties which wish to protect them. This problem is probably quite acute in the Caribbean region. We have received some rather solid information which indicates that a lot of the trade coming from Jamaica is in fact coming out of Panamanian ports, out of Panama, which is not legally exporting. But the documentation says Jamaica, which is a non-party. So, anyway, in terms of the documentation, CITES is being complied with. How accurately that represents patterns of harvest remain to be examined.

There is another industry which exploits Hawksbill turtles in Japan, and it is unrelated, certainly at this point in time, with the Beco industry. However, the trade in stuffed Hawksbills relies on exploitation of the same natural resource. So I'd like to examine that trade a little bit with you here.

The customs data: between 1970 and 1986, Japan imported a total of 664,245 kilos of stuffed Hawksbills. This trade represented rapid growth in the early 70s. Previous to that, if I had a chart that went back to 1960, you would find that there was virtually no importation of stuffed Hawksbill turtles into Japan prior to 1971. The earlier data just simply is down and around, you know, the zero position.

So this is an industry which was born in the early 1970s during a period when Japan experienced rapid economic growth. The sea turtle is a symbol of longevity in Japan as in other Asian cultures, and it became very fashionable during these years to have lacquered stuffed Hawksbill, also Green sea turtles on one's wall as a decoration.

The trade in worked Beco has stemmed almost exclusively from Asia. During these years 90% of the imports came from Indonesia and Singapore alone. In terms of CITES, since 1981 virtually, well no less than 98%, of the trade has come from CITES parties, again Indonesia and Singapore, and is illegal under the Convention.

Another issue here is that most of the imports which come from Indonesia come with documents which say the turtles are captive bred. Under CITES, the term "captive bred" has been very precisely defined in Conf. Resolution 2.1.2, and under CITES this exemption only applies to F2, second generation in captivity bred animals. No place in the world has ever produced second generation in captivity Hawksbill sea turtles. Indonesia's issuance of captive bred documents for this trade is totally in violation of CITES. At any rate this trade has decreased from the earlier years. At the 1987 CITES Conference, there was a lot of pressure to end this trade completely, and in fact Japanese authorities at that meeting indicated that trade would be diminish-

ing. Unfortunately, 1987 data shows a slight increase in the number of stuffed Hawksbills imported into Japan. Whether this trend will continue, we cannot say, but it is alarming.

We can talk about sea turtle trade from a legal standpoint. We also have to talk about it from a biological standpoint. And that's really the most important issue in the long term.

What is the impact of Japan's trade in Hawksbills on wild populations? How many turtles are we talking about? One of the major results of our report was to be able to estimate average weights for shell originating from individual turtles in different countries in different regions. In the reports that have been distributed: if you have an English report, the chart on Page 16 and Page 17 please look at it. If you have a Japanese language report, please look at the chart on Page 13 and Page 14. These data derive from both the dealers, interviews with dealers, traffic observations and other references provide average weights for shell for Beco coming from different countries. The countries are coded. The A-G-B-S-V-B, those are all country codes. If you look on Page 6 in the English version, or Page 4 of the Japanese versions, you will be able to decipher what those codes represent.

This data provides a look at 42 different countries. The 3-year average for all data from the Caribbean, all dealers' data from the Caribbean, indicated an average weight of 1.34 Kg. per Hawksbill coming from that region. In contrast, the total for Asia, the 3-year total shows the average Hawksbill yielding only 750 grams - that's .75 kilos of shell. Similarly, from the Indian Ocean and African region, the figure was .74 Kg. per animal. Oceania, based on Fiji and Solomon Island data, it was .88. And there are a few other figures given there for other areas.

So, it's now, I think, this metamorphic data that we provided here, I'm very interested in what the comments of the scientific community will be. The different size of the Hawksbills that are being harvested at different places in the world may be one clue whether exploitation is excessive in some areas or not. On the other hand, it could indicate that just Caribbean Hawksbills are larger than Hawksbills are in other regions. At any rate, I think this is very interesting data, and for the first time it allows us to translate into real numbers how many Hawksbills are being affected by the Japanese trade for different regions.

Over all, the average for all the data was 1.06 Kg., and for the period of time we studied from 1970 to 1986, that represents more than 600,000 adult Hawksbills.

With the present 30-ton import limit in effect, we are essentially talking about 28,000 to roughly



30,000 Hawksbills a year. This Report gives a country-by-country summary, well, a prospectus of the data for each individual country. So, if you're interested in looking at the data for any particular country, you can find it in this report. Since Indonesia is one of the topics here, I'd like to address a few remarks about the situation we found with respect to trade from Indonesia.

In the dealer's data, the overall average weight for shell from Indonesia was calculated at .78 Kg. per animal. The shell from Indonesia is generally smaller than shell coming from most other countries. This represents, since 1970, well 1970 to 1986, a harvest of 135,000 adult Hawksbills. But, that's not the total story for Indonesia. The second largest exporter of Hawksbill shell to Japan was Singapore. As you all know, Singapore is a large city and does not have their own populations of Hawksbills to exploit. We believe that virtually all of the Singapore trade also represents Indonesian Hawksbills. There probably, I should qualify that and say probably some Hawksbills harvested in Malaysian waters also end up in Singapore. But for the purposes of a discussion right now, if we assume that most of what is coming from Singapore is from Indonesia, that represents another 65,300 adult Hawksbills during this period.

So, a total of over 200,000 Hawksbills have been harvested during this 17 year period for the trade in Japan from Indonesian populations, and this represents an average of about 12,000 animals. But Indonesia is not only the major source of Beco for Japan, it also provides almost all of the trade in stuffed Hawksbills. If we calculate the average stuffed Hawksbill at 1.15 Kg. per specimen, as our data indicated, the Indonesian trade represents an additional 428,000 juvenile Hawksbills. If we also assume that Singapore's traffic in stuffed Hawksbills is derived from Indonesian populations, another, almost 90,000 juvenile Hawksbills were exploited during this time. So well over half a million juvenile Hawksbills in addition to over 200,000 adult Hawksbills have been imported by Japan from Indonesia during this time. As we've heard today from our Indonesian colleagues, there are really no hard biological data for the status of Hawksbills in Indonesia. We have some estimates from some studies, but there's been no real comprehensive look at the situation.

From the standpoint of CITES and illegal trade monitoring, we are very concerned at the lax atmosphere with respect to law enforcement in Indonesia. I realize that a country of so many miles of islands is very difficult to police, and it's an enormous task, but we are concerned at times when it's very clear that much of this trade works hand-in-hand with government accomplices. We have had documents that we have sent to the Indonesian Government on occasion. They have first indicated that they were illegal documents, not acceptable. Then we have

been able to identify who in the government signed these documents after the Indonesian authorities have told us that they are illegal documents. Unfortunately, many of those people who sign these documents are still there, at their desks, performing their jobs, and it is very worrying from the standpoint of proper law enforcement for the future.

At any rate, we have seen last year the Indonesian trade diminished to only a mere 25 kilos. Now, since Indonesia is a CITES party, and the industry here has said they will not import from CITES parties, we attribute this reduction in Indonesian traffic to the goodwill of the industry here, not to an improvement in terms of CITES law enforcement in Indonesia.

There is speculation that the major dealers in Punjum Pandang in Sulawesi are continuing to stockpile Beco. It is a commodity that can be stockpiled and held for many years, and there is always the fear that Indonesian turtles, Hawksbills, will continue to be exploited and the Beco simply laundered through other countries and moved elsewhere where it can be exported into Japan or someplace else.

But the point of this data is that in the face of not knowing what the biological status of Hawksbills is in Indonesia, the trade with Japan has obviously taken considerable numbers of adult breeding animals out of the population every year. At the same time, there has been a steady exploitation of juvenile animals that are below breeding age. So the resource has been very heavily exploited at both ends, and the future results of that may not become apparent to us for another 10 or 20 years, given the long maturation period of time required for the species. As has been demonstrated elsewhere, it is possible that we could witness the total collapse of the species in Indonesia at some point in the future.

So I really hope that something, some major improvement in the situation in terms of our level of knowledge and status of wild populations of Hawksbills in Indonesia can improve and that the cooperation of the industry, and, hopefully, the Indonesian Government, will improve so that we can properly monitor the trade.

The recommendations and conclusions of our report you can read for yourself here. But one of our recommendations is that the Government of Japan should officially ban all trade in stuffed Hawksbills. This is not protecting a traditional industry. This is contrary to the whole emphasis of protecting a traditional industry. At the same time, we would like to see the Reservations withdrawn. We would like to see continued compliance with Conf. Resolution 4.25. And also more stringent guarantees that the stocks that are being imported into Japan are not derived from populations which are harvested in the



waters of countries which have policies of protecting those animals when they are in their waters.

As has been pointed out by a number of speakers, we're talking about a shared resource. We would ask that the Beco Industry continue to share their data with us and help us monitor the average size, or average weight of shell coming from Hawksbills. Over time if we can routinely get this data, we will be able to note any changes in size. It potentially can tell us a lot of information about the status of the resource.

And, finally, we would hope that all existing quotas and regulatory policies be examined for their sustainability against the available biological data, and that in the future that the trade be regulated according to the biological data, and not previous trade data, which doesn't really relate to the status of the species. And I think that sums it up.

For those of us here today who are scientists looking at other species as well, this report examines the Japanese trade in Green turtles, and the Japanese leather trade in Olive ridleys as well. And the overall conclusion of our report is that there is no country in the world that exploits these three species of sea turtles more heavily than Japan, and certainly well over 2 million Hawksbill, Green, and Olive ridley sea turtles have been imported by Japan since 1970. And these figures are conservative estimates in our opinion. Thank you.

**CHAIRMAN:** Thank you very much. Several very important issues have just been pointed out and suggested. In particular, when it comes to the trade of the stuffed turtles, those of you who are the representatives of the Beco industry are well aware of, they have completely nothing to do with the traditional work of Beco. As Mr. Osawa, the President of Beco Association, has already mentioned, the Beco traders are well aware of this fact. In other words, that at the earliest time possible they would like to have the stop of the importation of stuffed turtles because they don't find them necessary any longer.

I wonder why those stuffed turtles still are imported into this country, although they say that they do not need them any longer. So in this connection, I'd like to entertain the comments or the opinions, or the questions in connection with the presentation of TRAFFIC Japan. Dr. Kaneko, please.

**DR. KANEKO:** I'd like to make some comments on the presentations made by the Indonesian colleagues, and made by TRAFFIC Japan. Concerning Indonesia, Mr. Reichart made ten recommendations. The CITES Secretariat does not agree to points Nos. 6, 8 and 10.

I think they sound very ideal, but I think it's impractical. I'm fully aware that Indonesia is mak-

ing efforts towards the conservation of sea turtles. In spite of their intention, it is unfortunate that their objectives have not been achieved so far because of lack of funding. And also lack of human resources. Therefore, we need the cooperation from Beco traders in Japan. And also from scientists, sea turtle scientists both financially and in kind.

Concerning the presentation made by my colleague, Mr. Milligan, I fully agree with his statement. The trade in stuffed Hawksbill turtles should be prohibited strictly because the imports of the stuffed Hawksbill turtle does not comply with Conf. 4.25. Therefore, I would like to urge that the Government of Japan take strong action against the import of the stuffed Hawksbill turtle. Thank you, Mr. Chairman.

**CHAIRMAN:** Thank you very much. From the Japanese Government, we have the representatives from MITI and the Environmental Agency. Can we expect any remarks from those representatives?

**MR. KITAZAWA:** As to the maintenance of the importation of the stuffed turtles, it was already pointed out on the Sixth Conference of CITES. In Japan in 1987 the Japanese Government cut the number or the volume of the importation to a great extent. When it comes to the quick banning and prohibition, this concerns it is necessary for us to take co-ordination and consideration of a lot of other aspects, such as the traders and so on. Therefore, I am not in a position of making a commitment. But I appreciate the points raised here, and I do realize that there are quite a few strict opinions on this matter.

**CHAIRMAN:** Thank you very much. Dr. Kaneko mentioned that the Indonesian Government is lacking the funds and also human resources. In other words, they do not have enough number of the people who can take an initiative on this matter. Do you have any comments from Hawksbill Association?

**MR. OSAWA:** In Indonesia they do not have enough funds. This is what has been raised by Dr. Reichart and Dr. Suwelo.

Yes, we, as the Association of Beco, would like to have the discussion and consultation with the Indonesian Government for future action. And also, whether it is the occasion of the Ottawa Conference or the conference of this time, anyway it is necessary for us to inform the current situation to those people who are in charge of the action in Indonesia. Therefore, we, as members of our Association, would like to make utmost effort to collect enough funds, and to have the cooperation of the Indonesian Government.

**CHAIRMAN:** Thank you very much. When it comes to the stuffed turtles issue, I hope that the



representative of MITI will recognize to a great extent, and he said they have recognized this issue, and also the traders of the Beco industry said they no longer need stuffed turtles. So I think the time has come for us to put it into practice. In other words, that the importation should be prohibited in a practical manner, because it has nothing to do with the traditional work. And also, mainly, the young generation turtles are slaughtered to be stuffed turtles. And it implies a lot of negative aspects in terms of the preservation of the resources. Therefore, by all means, it is necessary for you the authorities to take an action.

Are there any opinions or questions in connection with the presentation on the part of TRAFFIC Japan? Dr. Balazs, please.

**DR. BALAZS:** Thank you. I would just like to reiterate and point out that the recommendation for cessation of the juvenile stuffed turtle trade has been, at least nine years ago, was made by the World Conference on Sea Turtle Conservation, which was held in Washington, D.C. 350 participants from over 40 countries, including Japan. And the recommendation appears as Recommendation "D" on Page 6. I read:

"Trade in Stuffed Juvenile Sea Turtles.

This totally unnecessary luxury trade is having a serious impact on populations of *Eretmochelys*. It should cease, and all measures should be taken to achieve this end."

This was the formal recommendation nine years ago of that very historic conference. The same conference also had a recommendation on the trade in tortoise shell in Beco. I read that for the history:

"The trade in tortoise shell should cease in those countries where it has no special traditional cultural significance. Those countries where tortoise shell has a cultural value, for example in marriage ceremonies, should be encouraged to preserve and recycle antique supplies; to promote the use of synthetic substances; and with all dispatch to phase out the importation of new materials."

So I wonder if any efforts have been made these last nine years to preserve and recycle antique supplies, and also perhaps to look at the use of synthetic substances as a alternative to the live animal product.

Also, I think, from the biological standpoint, it would be very important to present perhaps Dr. Limpus could make a comment or two on how long it takes in Southeast Asia or in his Australian area, for an adult Hawksbill to reach a breeding size. Thank you.

**CHAIRMAN:** Thank you very much.

**MR. OSAWA:** It was this year, already the members of the ISU and SSC had a conference. I remember it, and Dr. Karen Bjorndal was a speaker to suggest a big direction, and already at that time those issues were raised and the recommendations. But many years have passed since then, and finally we have reached the stage that we are beginning to be aware of this issue. But, by and by I feel that we are making progress. That is particularly so in the issue of the stuffed turtles. And when it comes to Beco, I must admit that we have not probably made enough progress yet.

**CHAIRMAN:** I still would like to invite the questions and the comments on this issue.

**DR. LIMPUS:** We have a very large amount of Beco that is required each year under the current importing system. We have a proposal to shift the emphasis to replacing that from Indonesia with a captive rearing of Hawksbill turtles to produce the Beco from animals grown in captivity.

I have no information to be able to judge whether the captive rearing can produce a product that is satisfactory to the industry. My experience with captive rearing of turtles is largely with Green turtles. And with Green turtles, the skutes, the scales from the carapace are very different in the texture to that of the wild turtles. And I have been led to believe that within the tortoise shell industry that the captive reared Green turtle scales is unsatisfactory for the industry. Would someone from the industry be able to tell us whether they have any information on how suitable captive reared Beco is to their industry. Have they researched this question? Thank you.

**CHAIRMAN:** Anyone from Beco industry? Do you have any answer to the captive bred. The question is whether Japanese Beco traders are satisfied with captive bred type? Do they meet your satisfaction?

**MR. OSAWA:** I do not understand the question.

**CHAIRMAN:** What Dr. Limpus would like to know is that the captive bred in Beco might be very difficult to be accepted as far as the Beco industries are concerned. Green turtles might be ok, but it is very difficult for people to breed those Becos, and he knew that in a certain area the people artificially breed those turtles, then they are not satisfied with the textures, or the hardness or the softness. So the question is whether you are satisfied, you will be able to satisfy with the quality of not? And his question is whether you have some kind of experience or evidence on this matter. I think that's the point of the question. Mr. Nakakoma, please.

**MR. NAKAKOMA:** Well, to be honest, I have never seen the actual material which has been brought up after seven dozen years of breeding. And



in my house we have sea turtles in a pond, and as far as my observation is concerned, I think I'll be able to be satisfied with the carapaces. I think they will be the same, whether they are cultured or the natural type, although I do not have any intention to try it. But I do not have enough data to tell you more about the difference of the quality in terms of the feeding and so on. But as far as quality is concerned, I don't think there is much difference.

**CHAIRMAN:** Well, at his home, probably in his pond he has sea turtles, and as far as appearances are concerned, they may be feasible. That's his answer. Do you have any follow up points from SSC members?

**MR. SUWELo:** I go back to the data on the importing of stuffed animals to Japan, the skutes of the sea turtle. In Indonesia, the data from Indonesia must I just told it must be checked, the export of turtle skutes from Indonesia, because in my feelings there are misuse of terminology and misunderstanding of the regulation. The first one the misuse of terminology is that we in Indonesia, the effort in Basai, Indonesia. The Punyuseesay (phonetic) means the Hawksbill turtle, but the seesay (phonetic) Punyuu (phonetic) is the skutes of the turtles. So the skutes of the turtles is not only from the Hawksbill, but also from the Green turtle.

So the export of turtle shells I believe is not only from the Hawksbill but also from the Green turtles. That may be mixed by the exporters, and I am afraid that our Customs Official is not, because he doesn't know about turtles, so maybe he misunderstand or that way, so he put in his document like "Turtle Shells," or Hawksbill CC Penu (phonetic), and then translated into English becomes Hawksbill skutes.

And I also mentioned that the export of the skute is not in the form of skutes, but also the stuff and silts, just silt, the export of this from Indonesia. So, as I stated just now, this must be checked. What are the trade of Hawksbill turtles.

I understand that the green turtles, yes. I believe that this is very dangerous for us to say about the hunting of Green turtles, but not Hawksbill. The colleagues from CITES Japan has just mentioned also that the import also consists of young Hawksbills. That is a reel, a reel by a fisherman, not from the hunting. So the hunting may be not so much as we, as maybe from that figures here. But, yes, I understand that this must be checked, and must be reduced, and must be stopped, and through this paper, through my paper, that must be if we want to make a supply continuously, we must make a ranching, you know. Ranching on Hawksbill turtles in Indonesia, and the source of the eggs are not come from the protected areas, but outside of the protected areas. These areas can be managed and sustainable too.

So, the cooperation of Japan and Indonesia on the Hawksbill should be one parcel: the protection and utilization must be one parcel, not only the utilization but also the protection. And the cooperation should be based on the study through our pilot project which I suggested to be carried out by both sides. So, from the Japanese scientists and also from Indonesian scientists. Mr. Patmunjani maybe can help us to do this research, survey, and this must be supervised by IUCN Turtle Specialist Group.

The pilot project should be started with a study of the population of the Hawksbill itself. We know we have no data on the population of Hawksbills, so we must study how large or how many, or how rare is the Hawksbill in our country, and then to select the appropriate location for ranching and restocking. This is two parcels that must be in one activity. And then the protection measures of the Hawksbill in its natural habitat should be included in the pilot project by means of supporting the management of the nesting beach. So we also ask in the cooperation between Japan and Indonesia, it must also included how to support our governments in management, in managing the nesting beach of the Hawksbill and also for the other turtles in Indonesia. That's all, thank you.

**CHAIRMAN:** Sorry, but in the interest of time, to be honest we are rather behind the schedule. We're almost running out. And if you speak too many things at once, we will rather get confused, so it's better first to concentrate upon one subject at one time. Dr. Ismu raised the point that in Indonesia, although we say that carapace is from Indonesia, but it includes Green turtles as well. So the figures as reported by TRAFFIC Japan may include other species than Hawksbill with high probability. So his presentation may be something wrong. If that is the case the situation may be totally different. So here I would like to invite the comment from TRAFFIC Japan for our interest.

**MR. MILLIKEN:** I think the dealers can tell you better than I, that the category "Beco" is 100 per cent shell from the Hawksbill sea turtle. In our interviews with the Japanese industry, they very clearly stated to us that the shell of Green sea turtles is not a substitute for Hawksbill shells. Their industry depends on the shell of the Hawksbill. And I think in the Japanese Customs Data, in that category for Beco, reflect only imports of Hawksbill shell. If green sea turtle shell comes in it is placed in a different customs category. Because there is no utilitarian need for green shell, the dealers can't use it. They don't want it. I don't think it's being substituted for Hawksbill shell. Maybe some of you who know about the situation in Indonesia can say something. But I don't think you're cheated very often when you order a shipment of Beco and you end up receiving a whole shipment of green sea turtle shell.



**CHAIRMAN:** Mr. Osawa.

**MR. OSAWA:** While listening to the discussion, there may be some misunderstanding. In Indonesia it is the ratified signed country. Up until the time that there is a valid export permission, we do not import from Indonesia. Well, if you have any further information, I would like to know, but for the time being we do not import from Indonesia.

As for the green turtles, if it is included in the Beco it must be sold to other companies other than our Beco industry. Maybe he was talking about the stuffed sea turtles. But we are now talking about the Beco turtle shells we are not importing from Indonesia for the time being.

**CHAIRMAN:** Well, do you have any other opinions as to this point? Well, as Mr. Osawa said, we are not importing from Indonesia. As to the green turtles, we withdrew the reservation. Therefore, we are not importing the green sea turtles. So we are not importing stuffed sea turtles, nor the turtle shells. Since we withdrew the reservation, we are not importing green turtles.

As Mr. Tom has mentioned, this is there is a very serious Guideline from MITI, the Japanese industry is not importing turtle shells of Hawksbill from Indonesia. Therefore, the industry in Japan is importing Hawksbills, not including the green turtles.

Now, then, as to Beco which are the captive bred, there may be some opinion from Okinawa.

**MR. TERUYA:** Well, I am working in the aquarium museum, and I do not have enough knowledge of this matter. However, in Okinawa stuffed animals are well accepted by the sightseeing people that come to Okinawa. Since they are souvenirs, we cannot sell Hawksbill stuffed sea turtles, but the 30 centimetres or 40 centimetres Hawksbill are better sold as souvenirs. And there are some which are the imported stuffed animals. They are the captive bred ones. However, the colour is a little bit white, and the front limbs, the portion of the nails would be cut off. Therefore, the shape of the front limbs are not well accepted as the souvenirs. Therefore, the captive bred Hawksbills are not well accepted by the people as souvenirs. And industries making stuffed sea turtles in Okinawa I sometimes heard what they feel about the economics of selling the stuffed animals in Okinawa.

**CHAIRMAN:** Is there any other opinion? Yes, please.

**MR. SUWEL:** For the present time, the countries which are exporting to Japan are six countries. And there are some countries which are prohibited exporting. Maybe in those countries, the numbers of the sea turtles are increasing and we would appre-

ciate if there is any evidence of increasing in numbers in those countries. For example in Indonesia, if Indonesia is prohibited to export Hawksbill and then maybe in 20 years from now there may be increasing numbers, and there may be some countries which are prohibited from exporting. Maybe the situation is that the numbers of sea turtles will be increasing. I would like some Association to make such a survey.

**CHAIRMAN:** Do you have any opinion as members of the SSC?

**DR. BJORN DAL:** Clearly if we lower the harvest of sea turtles in the oceans of the world, the populations will begin to recover. However, we must be prepared for a very long wait until we see the signs of these recoveries.

Just as sea turtles have been slow to show the signs of over exploitation, they will also be slow to show the sign of recovery. This is because sea turtles take a very long time to reach the age of breeding. They grow very slowly. And so protecting the reproductive output, increasing the reproductive output of sea turtles will result in an increase, but it will be a long time to be seen.

We also have to remember that if only certain countries limit the export of sea turtles, and other countries increase it or maintain the same high levels of harvest, they are in fact often harvesting those same populations. So, as Mr. de Silva has informed us, all of his very good efforts over the years in Sabah to protect their sea turtle resource have often gone for naught because these turtles leave the Sabah waters, go to the Philippines where they are very heavily exploited. So, that is the conservation of one effort go only to feed the exploitation of another country's efforts.

So, our management scheme as we called for in Hiwasa must be on an international basis. It must be on a basis of sustained yield for the entire population, regardless of what international boundaries it crosses. So certainly the Marine Turtle Specialist Group has had for many years a top priority of trying to decrease the harvest of Hawksbill turtles in order to allow the species to recover to the point where it could be exploited on a sustainable basis, and we would support any efforts made by the Beco industry to support such a decrease in the harvest.

**CHAIRMAN:** Well in case of Hawksbills, as well as the Green turtles, we cannot easily treat them. Mr. Bannard has mentioned that he worked with the sea turtles for many years, and after he passes away from this world, maybe he will see the result of what he is doing. And Mr. Limpus is now making a survey, and 20 years from now or 30 years from now he would consequently see the result. Therefore, the animal which we are dealing with is a



very tough animal which we cannot manage so easily. And it is clear to all of us.

As members of SSC who attended the Hiwasa meeting, and there were some members who did not attend Hiwasa meeting, I would like to have your opinions. In Mexico, Mr. Marquez has made a study of the natural resources point of view.

**DR. MARQUEZ:** I would like to say something about the Hime umi game, the Atlantic Ridley. We are working there about 23 years, and the nesting beach we are releasing more than 30,000 hatchlings until '77, and after this time we were releasing more than 5,000 hatchlings every year. But, we do not see any improvement, any increase in the nesting population until now. Just we know that there are more juveniles than usual in East Coast of the U.S. So it is the natural distribution area. This Hime umi game, this is a smaller turtle of the marine turtles. It reaches 40 kilos. It has a high protein diet, and we suppose that this animal grows more quick than other turtles.

The next one is the Hawksbill, the natural situation, is also a high protein diet eater. So we suppose also that the Hawksbill will grow more rapidly than the Green, for example in natural conditions. But we do not know exactly how long time it will take to reach maturity or to reach the proper size for exploitation. Thank you.

**CHAIRMAN:** Hawksbill Association, do you have any opinion?

**MR. OSAWA:** Well, I think this is a good opportunity. I would like to explain what we have done in our industry. In order for the sea turtles to migrate in the ocean, from the non-signed countries to the signed countries, and while we are observing the possibility that the sea turtles are migrating from non-signed-countries to the signed countries, we surveyed the sea turtles in the Bahamas, and in 1983 Bahama has signed CITES. And until that time 1 ton to 1.7 tons have been imported to Japan. We can distinguish the turtles from the Bahamas because the quality is high, good. And for the present time, the past five years we are not importing these turtles, and we never see the sea turtles of Bahama, because in that region the sea turtles of the Bahamas would not migrate to any other area. And I also have some other examples of the sea turtles who are not migrating all over the place in the world.

Mr. Nakakoga who is the President of the Nagasaki Industries Association. He continued importing sea turtles in Bahama with a size of 1.7 to 1.8 kilograms and he could distinguish the sea turtles from the Bahamas by just looking at the carapace because of the high quality. And when he looks at the skate one piece of a skate of a sea turtle he can tell that is from the Bahamas. But in 1983,

for five years, they never imported sea turtles from the Bahamas.

If the sea turtles from Bahamas have the possibility of migrating to other countries, then the Japanese industry will be getting or seeing the sea turtles which come from the Bahamas. What do you think of this situation?

**DR. BJORN DAL:** I have worked in the Bahamas since 1974. That is the country where I do the majority of my sea turtle research. We have tagged many green turtles in the Bahamas, and we have also tagged some Hawksbills. We tag most of our turtles in the Southern Bahamas. And we have received tagged returns from Hawksbills that we have tagged in the Bahamas from different countries. But Hawksbills have left the Bahamas and have travelled to Cuba, to Turksenkakos, to the Dominican Republic, and to Jamaica. So we know that the Hawksbill population in the Bahamas do move to other countries.

We also suspect that many of the juvenile turtles that we find in Bahamian waters travel to other countries to nest, perhaps most likely to Cuba. This is because there is very very little nesting of Hawksbills in the Bahamas. But they have fairly large numbers of juvenile turtles, compared with other countries in the Caribbean. So we suspect that these juveniles, if they reach the age of sexual maturity, go to other countries to nest.

**CHAIRMAN:** Thank you very much. Dr. Karen reported based on the tagging method, and she has the evidence as to the Hawksbill migrating to other countries. Therefore, sea turtles are migrating all over the place in the world. And as the members of SSC, probably they will agree with Dr. Karen. Is there any other opinion from SSC members?

**DR. LIMPUS:** There are very few studies of the Hawksbill turtle in any part of the world, and only small numbers have been tagged to allow us to study their migrations. However, even though there have been only small numbers tagged, we do have tagged recoveries that indicate that the Hawksbill turtle migrates. For example, Mr. de Silva, tagging hawksbill turtles in Sabah has tag recoveries from the Philippines, a distance of some 1700 kilometres between the nesting beach and the feeding ground. In the Coral Sea region, we have tag recoveries of turtles that live in feeding grounds in Toro Strait that nest in the Solomon islands. There's a tag recovery of a turtle which lived in a feeding ground in Southern New Guinea that was nesting in the Solomon Islands. These are very large migration distances, and given that so few have ever been tagged, we must accept that the Hawksbill turtles are migrating as much as the other species which are better studied. Thank you.



**CHAIRMAN:** Yes, that is quite true. The report was just excellent. I can recall that report. Since the percentage of collecting the tags is quite limited, there is evidence that the hawksbill is migrating in the ocean.

And then the Resolution 4.25, Japanese industry is trying to comply with this Resolution. And the Japanese industry is not importing from the signed countries, according to the guideline of MITL. And that is the position that the Japanese industry is taking. However, the range of imports which is 30 tons, Japanese industry is allowed to take that quantity from non-signed countries as well. And 30 tons from non-signed countries may be the sea turtles from the signed countries, because the sea turtles are migrating in international boundaries. And this situation is quite clear to us. And then from the non-signed countries, if the Japanese industry is importing 30 tons, then the sea turtles or Hawksbills from the signed countries may be migrating to the non-signed countries. So that may be the case. And then in that case, when you take a wider view, the resource of Hawksbill in the ocean is decreasing, and this is what we found out from our discussion.

And then the quantity, 30 ton, is this an appropriate level? We should discuss this point.

I would like to have your opinion, from those who are trying to maintain the Beco tradition. I would like you to state your honest and frank opinion. The conference of CITES was such a big scale, and we did not have an opportunity to speak frankly. But here today I would like you to speak honestly, frankly. Is it the situation that you should have 30 tons, or is it possible for you to decrease the numbers from 30 tons. I would like to discuss the ranching problem later on. But I would like to discuss the quantity, 30 tons level.

As to this matter, I would like to have your frank opinion. And members of the SSC would appreciate the frank opinion. Maybe it is very difficult to speak up frankly.

**MR. OSAWA:** Well, 42 tons were imported to Japan, and there was a very severe Guideline from MITI, and 40 per cent was cut down to 30 tons. The material of 42 tons were decreased to 30 tons. But in any industry, they may have a difficulty if it is a decreased material, quantity is decreased by 40 per cent. But our industry appreciates the situation of the sea turtles in the world. And I accompanied Dr. Uchida in case of the survey at Indonesia and Micronesia, and as Mr. Suwelo has mentioned, it is such a wide area. It is quite difficult for us to grasp the present situation. We do not have a correct understanding in the past, and in the present time. But we recognize that it is a country, a large country where there are many sea turtles. As to the level of 30 tons, Nagasaki Prefecture and Osaka Prefecture and the Japanese government should make further

analysis so that we can fully utilize the material of 30 tons. So with the 30-ton level, we are trying to survive in this present situation.

**MR. NAKAKOGA:** I would like to say that tag recoveries does not represent that the Hawksbill turtle constantly migrates. It is just indicative that the Hawksbill turtles moves to other countries. Thank you.

**CHAIRMAN:** Just a moment please, does this relate to this issue, then please.

**MR. NAKAKOGA:** What I cannot be convinced is that I do understand that when the turtles recovered from somewhere that means it moves, but I am not very clear that there are a certain population of Hawksbill in the Bahamas.

**MR. SUWELO:** Could you repeat please? Please repeat in English.

**MR. NAKAKOGA:** In the Bahamas, we are not importing from Bahamas. But when the sea turtles read the tag recovered from some other countries, it is possible that the sea turtle did move to other countries. But I do not understand. We cannot say that all the Hawksbills move to other countries. Some Hawksbills do stay in Bahama Islands. That's what I want to point out.

**CHAIRMAN:** Is that clear? Explain this to Mr. Nakagoro.

**MR. OSAWA:** Hawksbills, even you, well Hawksbill do not know that you stopped importing Hawksbills from the Bahamas.

**MR. McCOY:** There is one thing that concerns me a bit in listening to the Beco Association, and looking at some of the data presented in the report by TRAFFIC. That is that there may be some attitude, or mentality, if I could use that word in the industry that there may be, for example in the South Pacific, additional islands or additional countries or areas where there are unexploited resources. And I say this after looking at the sharp increase in imports from Fiji and Solomon Islands. I've been in the Pacific for 20 years, and like some of my friends have travelled to almost all of the islands there. I can offer at this point no scientific data covering the entire region. However, from a personal standpoint, I can assure you there is no place in that region, and for that matter probably in the world, where there is a magical country with a potentially large population of Hawksbill turtle.

Dr. Uchida has asked us to speak frankly and discuss frankly the situation, and I think frankly the situation is we're getting to the end of the road in looking at the areas where we can stop getting from CITES country and find some non-CITES country.



It just doesn't exist. The resource is interdependent in these countries. I know, and to add one more thing about Fiji, for example, I know that the availability of Beco shell in the last couple of years is directly related to the economic situation brought about by a change in government and complete collapse of the tourist industry, which made available for export shells that might have gone into cruise boats and tourist related sales in Fiji. And that you're not dealing, for example, in Fiji with a new source of Beco.

I just wanted to speak frankly about that, and make that clear. Thank you.

**CHAIRMAN:** Thank you very much. Dr. Ismu, please.

**MR. SUWELO:** I have been reminded by Joe Schulz about the resolution of the CITES on ranching. Why we don't we go to that direction? Ranching, what is ranching? And the ranching is a solution of how we can utilize wildlife on a sustainable basis. We already have another CITES Resolution on that, just now mentioned, 5.15 on the importing among CITES countries. But we have also a resolution on ranching of turtles that up to now we don't succeed with the formulation of this ranching. What and how or what to do, or how is the ranching is? So I ask your support for us to make some pilot project that we will try to follow up the ranching. And of course we need the support of other scientists from the SSC. Thank you.

**CHAIRMAN:** On this subject, I understand there has been a deep discussion on this matter in Costa Rica. Dr. Edwards, could you give us your comments?

**DR. EDWARDS:** Well, you're absolutely correct. There was extensive discussion on this subject in San Jose, Costa Rica. But I am at this point unable to give you the final deliberations of the group.

I would like to, however, point out that this group of some 17 specialists in marine turtles from around the world were brought together in response to a Resolution passed by the Parties to CITES calling for the preparation of Guidelines to advise the parties on how to evaluate a marine turtle ranching proposal.

Now, I happen not to be a marine turtle biologist, so that gives me somewhat of a distance to the problem. I happen to be a herpetologist, which gives me a little bit of experience with marine turtles. And I want to say that after sitting and listening to these people, people that are experts in the biology, in the management of marine turtle ranching facilities, and in the enforcement aspects associated with controlling trade in marine turtle products. That this is NO simple issue that we are pursuing. It is fraught with ignorance. As I have sat here I

have heard virtually everyone in this room that has spoken express their concerns about their lack of knowledge. This to means that we need to invest in gaining knowledge: RESEARCH! It must be supported.

The second thing we can all agree to is that the supply is reduced! It is not what it was yesterday. 25 years from now, if things are left unchecked, there will be fewer and the industry will not exist.

Thirdly, the laws required to handle a commodity such as marine turtle product are very complex. We're talking about using a resource that spends 95 per cent of its time in another country's waters. Whose product is it that we are marketing? And how do we provide reasonable balance? It's very easy to talk about the elephants that strayed across the border between Botswana in Zimbabwe. It's very easy to talk about crocodiles that have a relatively easily identified or proscribed range. Marine turtles do not behave that way. We've heard varying comments here this afternoon.

And, finally, from a social standpoint, the human beings that live in these regions must find a way to make ends meet: food, protein, is the bottom line. They must be able to support themselves. Marine turtles in many cultures are part of that system. How do we provide this balance?

Now I have just touched on a few of the stickier issues that we've debated at length for three or four days, three days, I guess. The product of that exercise will be made available to the parties of CITES I believe before the end of October, and at that point I am sure it will be shared with all interested parties.

I am assuming at this point that we will be able to reach some sense of consensus in that product. But if not, we'll keep trying. I think I've said enough. Thank you, Mr. Chairman.

**CHAIRMAN:** Dr. Karen.

**DR. BJORN DAL:** Thank you very much. I would like to underscore the initial point of Dr. Edwards of our need for research. And I have been very pleased this morning to hear that both the Japanese Government and the Beco Industry is willing to support such needed research. However, I would make a call and strongly urge that any such research programme employs recognized experts in sea turtle biology. As Dr. Suwelo has suggested for Indonesia, I feel that all such projects should be reviewed by the Marine Turtle Specialist Group. This has been a serious problem in the past in which precious funds, funds that are too few, have been delegated to people who have not had the experience in sea turtle biology to bring them to good conclusion. And so I would urge all of you who have the ability or the authority to oversee the



expenditure of these funds to ensure that appropriate people are asked to conduct this work. Thank you.

**CHAIRMAN:** Thank you very much. I completely agree with the comment. Even if you invest a certain amount of money, sometimes you cannot get good fruit. Then money should be a nutrition to a fruit. If it's not like that, it is a complete waste. So whatever the programme, it should be reviewed by the SSC members, and I am sure that if you can support such a programme we can have a very good fruit or result.

Now I think we are moving a little bit toward the direction of research. We are far behind our schedule in terms of coffee break. So we would like to have a coffee break for about 15 minutes. And then we would like to continue our discussion probably until about 5:30, we'd like to have a coffee break for 15 minutes. Please return to this room at 3:50.

#### COFFEE BREAK

**CHAIRMAN:** We do not have much time left, so I would like to resume as soon as possible. My previous information is that we would like to keep this conference up until 5:30, but because of the arrangement of this hall, I'm afraid that we won't be able to continue up until 5:30. It might be possible for us to close a little bit earlier than 5:30. This is the very last session of this conference. We have about another hour and a half. I hope and would like to conduct as much discussion as possible. Dr. George Balazs from Hawaii would like to say something, I understand. Please be brief. Your brief comment will be highly appreciated.

**DR. BALAZS:** I think we've reached the stage in the hours of the day and in the discussions where it might be appropriate to make a proposal, or at least a suggestion for serious consideration to the Beco industry. We've all agreed that information is lacking and that more research is needed. And I think that there is also a somewhat agreement that the Hawksbill resources have declined. That the species is listed as an endangered species in many areas and that some relief for the animal is needed.

So I would like to suggest for serious consideration that in the best interest of the Hawksbill turtle, and the best interest of the Beco industries long term viability, that a 10% reduction, that is down to 27 tons be seriously considered for the next fiscal year's operation of the Beco industry. And I would appreciate hearing comments back on the possibility of that actually happening for the industry itself, and for the turtle which is in trouble. Thank you.

**CHAIRMAN:** I think now we have come up with a very specific proposal. How about a reduc-

tion of 10 per cent out of 30 ton of quota. This is the suggestion raised by Dr. George Balazs from Hawaii. I think this is a very specific figure taken up, and I'd like to have the reaction from the Beco industry in Japan.

**MR. IWAMI:** Well, this is my first occasion to state my position. I am Hiroshi Iwami, the Director of the Osaka Beco Association. Dr. Balazs has put up the suggestion of 10 per cent reduction from 30 ton. Mr. Milligan has composed the data from 1970 to 1988. When it comes to the data of 1974 from Indonesia and Japan had a large market amount of the import, about 80 tons, and in 1978, somewhere around 1978, again we marketed 63 tons. So once again we decreased the level at the time. In the past, somewhere from 1960, the tonnage we needed has been about 40 to 45 tons across the nation. This is the volume which has been required on the part of the Japanese traders. But after Japan has ratified the Treaty, we have had the Administrative Guidance to comply with 30 per cent. So out of hardship, we tried to maintain that level through our mutual cooperation, and also through our lengthy and meticulous study of the location of the limited materials. This is the current situation.

And another point should be mentioned here. Up until 1978, the stock or material out of 48 to 80 tons has been consumed up until now since our nation ratified the CITES. Therefore, at this moment we can afford to comply with the quota of 30 ton or so.

And another point is that the industry has difficulty at this moment in that the quality of materials and the sizes of those materials are quite limited in terms of supply because we get the supply only from six Non-Parties. To be honest with you, we'd like to have more well-balanced supply from different parts of the world, so that we wish for the situation when there was nothing like CITES. But thinking about the protection and the conservation of the wildlife and animals in the wild, we know that we must agree with a given situation, so that out of hardship we are trying to do our best effort to make our business viable. And the Secretariat of CITES and the experts from SSC, to you I have a request that you please understand our current situation: That we are making our utmost efforts, and I hope we will make a continuous effort for the research and investigation of the sea turtle all over the world.

And on our side, we will try to protect the limited materials. And while at the same time we would like to maintain our traditional works and arts, we'd like to pass on our technologies and skills to the next generation. So those of you who are experts in this area, I hope that you will collect as much data as possible so that you will let us know exactly whether we do not have enough number of sea turtles existing, or in some area of the world



there are more numbers of sea turtles, so that we may be able to balance those supplies.

So, even under the situation of CITES, we may be able to reserve some allocation so that always our supply will be well balanced, and also those materials can be protected. In other words, while complying with the natural law, we'd like to cooperate, to maintain the well balanced supply. So the 30 ton, to be honest with you, is our limit. As the representative of the Nagasaki Association has already told you, when it comes to other industries, since the 1970s all the other industries have grown up ten times as much. But that is not the case for us. The Beco industry we are still trying to cut down by 40 per cent, partly because we cannot recruit more people and we do not have so many young generations. So we are doing our best under a given situation, and I hope you understand our situation.

**CHAIRMAN:** Dr. Kaneko, please.

**DR. KANEKO:** The CITES Secretariat is going to start the negotiation with the Beco traders in order to reduce the amount of import to 27 ton. However, I am not sure whether I succeeded in this deal or not. Before negotiating with Beco traders, the government of Japan should prohibit the import of stuffed sea turtles. Thank you Mr. Chairman.

**CHAIRMAN:** Well, thank you very much. Dr. Schulz.

**DR. SCHULZ:** I want to refer to just now, I think the Beco industry in Japan has decided to keep the tradition, and they in the end want to maintain the 30 ton limit, although this CITES would like to reduce. And also the amount has been suggested by George Balazs. But I think from the discussion by the other members as well, you are so sure that you know the natural supply, the population? You may not be able even to maintain that 27 thousand exploitation throughout. And then, say in the beginning, the Beco industry may be getting the majority of the supply from Southeast Asia, then in turn they will find the need to expand the area so that's going further away, and now even go to the extent to go to the Caribbean and to the South Pacific. And you have already complied with the requirement of the CITES. That is, you do not import from the signatory countries of the CITES. So you go to the countries which are not signatories.

But as time goes by, more and more of these countries will become signatories of CITES, then your supply is going to be diminishing, getting smaller and getting smaller. Now you are very good businessmen. You have decided to keep the business going. Now I believe that you have something in your mind, or you have some proposals or some ideas that you would like to keep this industry going, and at the same time help to conserve these

natural resources. Maybe you cannot try to express your ideas, and let's see what's going to be done. Thank you.

**NEW SPEAKER:** I am not dealing with the Beco industry and I am not a biologist. So let me deal with my very primitive question. 30 ton quota, does it include stuffed turtles or not? It does not.

Then the issue of 30 ton is not the main point. Rather it should be discussed by including the stuffed turtles, otherwise we won't be able to solve the issue at all. And if something like this can be preserved, well even as I as a layman think it is important to preserve something like that, and I know it is necessary, but I don't know anything about the figures. When it comes to stuffed sea turtles, they are just ornaments, being decorations. So, we might be better off to start off with those ornaments. To proceed, those goods be able to clear the tax or customs clearance office? It might be easier for us to start out with something like ornaments. And then we can think about the Beco industry, how they can be viable.

If we concentrate our efforts on Beco industry alone, it might be tough, and it might be painful. But thinking about other industries in Japan, although somebody said that other industries have grown up by ten times, but we should never forget that there are other industries which are on the way of decline, such as the coal and mining industries. Now their production is almost zero.

How about the shipbuilding industries? They are having difficulty. And when it comes to more basic industries, such as agriculture, they have a lot of problems.

Of course the government is taking care of the coal and mining industry, and if the same thing can be applied to the Beco industry, then it might be of some help. But this is another issue apart from the situation of the industry alone. But as long as we put these matters into perspective, it might be rather difficult for us to consider the point of viability of the industry to deal with this issue. And also we should never forget the issue such as stuffed turtles, which has nothing to do with the preservation of the traditional work of Japan. That kind of thing should be prohibited and banned as soon as possible.

My point is that it is necessary for us to deal with the matter in detailed manner.

**CHAIRMAN:** I appreciate a lot of opinions, and Dr. Schulz said now you are importing from the non-parties, but the number of non-parties will come down to a great extent, and what are you going to do with it? This is quite a severe remark, we must take note of it. Do you have any other opinion or comments. Mr. Milligan, please.



**MR. MILLIKEN:** In TRAFFIC we don't just deal with the sea turtle trade issue. We are dealing with all of the different industries in Japan which are involved in the importation of wildlife covered by CITES. But my own experience with the Beco industry, I feel that we are dealing with very honourable people, a very honest industry. Every promise you have made to us, to me, you have always kept it. You said you would stop importing from CITES parties and you have done that.

I feel something from all of this because it's not the case with other industries that we have worked with. So I feel your dilemma very strongly. At the same time, it's so clear that your fate is tied to the fate of the sea turtle. If, despite everybody's efforts, if sea turtle populations collapse, your industry will collapse. And you're also, your fate is tied to a biologically, extremely complicated animal, that even our experts here do not know everything about. You are businessmen, and I am not. I don't think I can tell you what you should do. But sometimes I try to put myself in your shoes, and I think "what would I do if I were one of you facing this problem?" And when I do that, I think we listen to the experts, and there is so much we don't know. So we have to start with basic research. And then once we have some degree of knowledge from that basic research, then we have to move towards managing the resource.

In your industry, I mean you're importing now, maybe some of you have ideas where there are still good populations of Hawksbills. We have heard of the situation in the Bahamas, for example, discussed. I look at the trade data: Solomon islands is now emerging as a major source. I think if I were you I would identify in several different regions of the world populations that you think are still healthy and good, and you know that from the quality and size of shell that you're getting. I would look, you know, on the basis of the special kind of knowledge you have. I would identify several places in the world that look like there still may be good populations of Beco. And then I would go to these people and say "Let's study these. Let's do a research programme. Let's make it comprehensive." It has to go on minimally for at least 10 years I'm sure. And then out of that research programme, out of the information we find out where they migrate; which countries are involved; how to define the population. Then maybe a model can be developed that would say OK, every year you take 10 turtles; 15 turtles, 20 turtles, 100 turtles. This model could form the basis for a sustainable utilization of a population. We don't have any models now, not at all, anywhere! But I think it's clear to everybody, we've got to go back to basic research, and then we have to let the results of that basic research speak for themselves. Maybe you will invest for 10 years in a research project and the end, the bottom line, the conclusion is this population is depleted. It cannot stand any more exploitation.

So, for the moment, it has to be left alone. But maybe some of these research projects will say a very limited amount of exploitation is possible, and then you can regulate it accordingly. If Solomon Islands represents a population where you can be guaranteed a hundred turtles every year or something, OK, don't take any more above that limit that the scientists tell you. But allow them to continue monitoring the situation and maybe the model will expand and a little more utilization will be possible. But to me, anyway, if I think of myself in your shoes, that is the course of action that I would take.

**CHAIRMAN:** Thank you very much. Dr. Siow, would you like to say something.

**MR. SIOW:** Just now I put out the question, I haven't got any response from the Association yet. But Tom has suggested something which is very good. And I can say that, you know, now Japanese technology development is fantastic, and it never ceases. I mean they found that, you know, in Japan they spend the most money in the R&D, research and development, and that is the main reason for Japanese technology which is, you know, surpassing all the other countries. They spend the most. It seems that about 40 per cent of the money has been channelled back to R&D. Now I think such things are not done in industries of Beco industry, which is related to capture. It's not backed by any research development program in a serious way. So I would like to get some response from the Association on the question which I pose. You want to keep the industry going; you know that also the time, if you allow the situation to go on like that, your time is limited. And as what Tom was saying, the turtles limit is going to be diminished, and yours, your industry, is going to be diminished. And you don't want to see it diminished. Then, being good businessmen, you have a very good forecast. I think you definitely have some ideas what you want to do for your own future, and the future of the turtle, which is related.

**CHAIRMAN:** Well, first of all, Mr. Osawa, has explained the necessity of taking some steps and looking at the present situation. And the industry is spending 3 million Yen to make an investment so that they could solve the problems of the basic problems, and they had contacted me and there are so many problems that we do not know. And at what age we should release to the sea. Of course we better wait for many years so that they are grown up when they are to be released.

However, it is very costly, but we feel that it is necessary for us to start such a survey. And the Hawksbill industry in Japan started to take a positive action in solving the problems in the present time, taking the initiative, and the government is now following the actions made by the Beco indus-



try in Japan. And also I meant what I have just said, do you have anything to supplement.

**MR. OSAWA:** Well, in such a place, and discussion of decreasing the numbers of sea turtles is not appropriate to be discussed at such a place. And Tom has mentioned, when decreasing the numbers of sea turtles, the industry will be affected by the decrease. On the one hand, as an industry it is very important, that is the problem of survival. And there are many other adverse effects. And of course we have to solve the problems in various areas, and we are now following the Guidelines set by the government and we are taking a very upright situation that we are importing from the allowable countries.

And we are now taking a position that we are preserving the immature sea turtles, and we are taking very positive steps to make surveys on such an area, having the assistance with Dr. Uchida, and we are willing to spend money for such a survey. Therefore, we should not to be asked to decrease the numbers from the government or from someone else.

Dr. Uchida is taking the initiative, and we would like to seriously consider the present situation, and we would like to find out the ways to survive, competing with the other industries. And we would of course like to take a guidance or support from CITES, and as well as the Guideline from the government.

We are now taking a very serious, honest attitude for solving the problems and I would like you to understand the attitude that we are taking.

**CHAIRMAN:** Would you like to continue this discussion? For the members from SSC, Tom has proposed that we should have more research. And it's rather a very intensive research which is necessary for us. And we would like to set up a model from such a research. That is the first step that we should take. And as for the members of the SSC, where is the most appropriate part, region where you can set up such a good model? Which is the area, appropriate area that we should make such an investment to set up a model? How about Ms. Bjørndal?

**DR. BJØRNDAL:** Thank you Dr. Uchida. This is a question that cannot be answered rapidly, and I would think that the Marine Turtle Specialist Group should consider the answer carefully, and more of the members be involved before any answer is given.

One thing that would be very clear is that the models will vary from place to place. The population's model for a population that is stable, that is neither decreasing or increasing in number, will be very different from the model that would be derived

from a population that is crashing, that is rapidly decreasing in number, or from one that is recovering.

And so depending on where your research was conducted, you would get a different response. Certainly it should be an area in the world where sufficient numbers of Hawksbills remain that would allow such a study to be conducted, and that alone would limit the geographic possibilities. But at this time, I don't think any of us would want to propose a specific site.

The other problem is that in many areas, only certain portions of a population are represented. That is, where I work in the Bahamas, primarily I only see small immature Hawksbills. Dr. Limpus has described an area in Australia now where he has only large animals. You cannot establish, or can only do so with great difficulty, and by making very large assumptions. You cannot establish a good population model if you are only working with one piece of it.

Perhaps following tagging work, the different pieces of a population could be pieced together, and thereby in a number of geographic regions a good model could be assembled. I know that time is growing short this afternoon as our deadline approaches, and in case I do not have the opportunity again to address this group, I would like to take this opportunity to thank, on behalf of myself and on behalf of the Marine Turtle Specialist Group of the IUCN, to thank all of you for coming today and sharing with us your experience. I have certainly learned a lot about the Japanese Beco industry, and I go away a wiser person. And I'm sure all of the other members will agree with me.

I would like to underscore the comments of Mr. Milligan that the results of research will not be rapid. That sea turtles are complex animals, and because their lifespan is very long, working out their biology takes a very long time. And even if you are able to support a good research programme, the results will not be rapid forthcoming.

Also, I would like to take this time to stress that, as has been stated by many of the members here today, there are many aspects of sea turtle conservation upon which the sea turtle biologists do not agree. But one aspect upon which most of us do agree is that headstarting of sea turtles, that is the raising of small sea turtles for a year or two, cannot at this time be used to justify the harvest of sea turtles. We do not know if this is a technique that works. It is an experimental technique. We know that we can raise hatchlings to a year or two of age and release them, but we do not know if these animals will successfully grow up and reproduce. And so at this point, headstarting turtles cannot be used as a justification. One cannot say "I will harvest 100 Hawksbills for Beco in this area, and I



will replace those animals with either 100 or 200 or 500 headstarted animals." We do not know if that is a successful replacement.

Again, I would like to thank all of you for what I think has been a very valuable discussion this afternoon, and to thank you for allowing me to participate.

**CHAIRMAN:** We still have time left. Related to this, do you have any opinion, Mr. Limpus?

**DR. LIMPUS:** I would like to share with you some of the things that I have learned of the Hawksbill turtles that are living in the Southern Great Barrier Reef in Queensland. I have been visiting this particular group of turtles since 1974. We have tagged them, and we have been measuring them. We have, since 1982, been examining a number of them internally with a labroscope. That is an instrument that was invented for looking at the interior of people, particularly women, to examine their reproductive organs, and we have developed this for internal examination of our turtles, so that each of our turtles, even as a little one, we can tell what sex it is. We can tell whether it is immature, or whether it is an adult. And for the adult turtles, we can also tell whether they are going to breed this year, or whether they bred last year, or even the year before. We have been catching a number of these turtles over and over again over these years.

These Hawksbill turtles appear to live in our reefs, at about 35 centimetres, 35 to 40 centimetres. We don't see them any smaller. They arrive at about that size, and having arrived they grow up. And they are growing to adulthood.

When I started this study I thought it would only take about 6 or maybe 10 years to grow to that. At the end of 14 years, the smallest turtles that I had measured about 14 years ago are still only partly grown. In calculating how long it will take to grow from 35 centimetres to adult, I find that the average turtle will take 28 years to grow to a breeding adult. So, when I am talking to my government department back in Australia, I am saying to them that I am looking after these turtles not for me, not for my son, but for his children, because it will be my grandchildren who will see the results of my conservation efforts today. I will not live long enough to see the consequences of what I achieved.

The next thing that I would like to share with you is that when we look at the turtles living on the reef, we find that the one turtle, the one adult female, does not breed every year. She only breeds once every few years. And so if I want to have adult females on my beach every year I have to have many more adults than just the number that visit in the one year.

I also must have the males as well as the females to keep my population functioning. And I must have the young turtles and all the intermediate sizes through to the adults. I have come to realize that if I was to be foolish enough back in this area of the Barrier Reef to say "let us harvest the turtles as they come up to lay;" if I was foolish enough to kill the females as they come up to lay their eggs and do that every year, I could kill all the turtles this year. There would be more turtles next year; and if I was to kill them; there would be more turtles the next year; and if I were to kill them, there would still be more turtles the next year, because I have several decades of turtles out there growing up now and the consequence of killing the turtles year after year will not become obvious for some decades. And this is why we have had so many problems in our turtle management: That we, as people trying to manage our turtles, have not lived long enough to learn from our mistakes. And it has only been in the last few years that we have started to realize just how long the turtles live for. Just how many animals have to be out there so we can have even a small number of females visiting the beach to lay eggs each year.

It is further complicated by what we call "developmental migration." Karen has spoken about in her area she has small Hawksbill turtles, and they're going somewhere else. For me in the Great Barrier Reef, I find that in the Southern Barrier Reef, it is mostly little Hawksbill turtles. If I go to the Northern Barrier Reef, it is mostly large Hawksbill turtles.

What few taggings we have been able to do, what they've told us is that probably these Hawksbills are laying their eggs in the Solomon Islands. And so, if we are going to have some research, as Karen has said, it cannot be a single study at one location. It is going to require some integrated work at a number of locations, not in one country, but in several countries, and it will take some time. But if we begin now, we will be able to improve on our knowledge.

And while I may not see the benefit of it, I am confident that if we act now, at least my grandchildren will enjoy the things that I have been able to enjoy as a young man in the Great Barrier Reef. Thank you.

**CHAIRMAN:** Thank you very much. Mr. Marquez would like to make a statement.

**DR. MARQUEZ:** I agree with Dr. Carl Limpus. But we have not so much time to wait until a good model is completed. Then we need to go directly now where the turtles are making reproduction, where the turtles are nesting. For example, Dr. Bjorndal says that in the Bahamas they have juveniles. Dr. Carl Limpus says that in the East Coast of Australia there are juveniles. So where they



come from those animals, we need to go to these places to save the animals. This is a good task, but immediately we must do. Thank you.

**CHAIRMAN:** Yes, Mr. McCoy.

**MR. McCOY:** On the Beco industry, a question relating to assistance for research. It's a small industry in terms of people that are employed. I understand that. And perhaps a small industry in terms of companies that are involved, and maybe even in terms of turnover or profit, or however you want to measure things in present day Japan.

But from everything that we've learned, and what we know, the work and the handicraft work, is very important to Japanese culture. That is something that I've gotten from this experience. Now, in other industries that I've been involved with, the Japanese government has assisted these other industries when they have problems, or assisting in the research, such as our colleague from Malaysia has suggested. And for such a small industry in terms of capital and people, to try and tackle such a big problem seems to me a very difficult undertaking. And I would like to know, hopefully before I leave Japan, what the feeling of the government is? I know that the government of Japan has greatly increased its international aid in the last few years. I know that the countries where most of the Hawksbill turtles are living are not developed countries. They're underdeveloped countries. So is there anybody here, either from the industry or representative of the government that might give some indication of the attitude, official attitude, of the government, and not, I don't mean just the industry itself's 3 million Yen, but the government itself stepping in and speeding up this process. Thank you.

**CHAIRMAN:** From the government agency, the MITI and the Environmental Agency, and we invited the Ministry of Foreign Affairs, but the staff was too busy to attend this meeting. Therefore, two people from the Environmental Agency and MITI, I do not know whether they can make such official statement. Whether he has the authority to make an official statement, but I would like to have your personal opinion as to what Mr. McCoy has just asked. I would like to have your personal opinion.

And from the Environmental Agency, I would like to have your opinion.

**MR. MIYAJI:** My name is Miyaji. Well, fortunately as for the Environmental Agency, it is not the authority to administer CITES in terms of the sea turtle. Therefore, I cannot make such an official statement in that position. However, listening to the discussion today, the countermeasures, based on the biological point of view, scientific point of view, is necessary, and you have agreed to this opinion. And I think that is a very good sign for us. Therefore, in a direct manner we may not be able to

make any aid for such a research. However, in terms of ODA, the Environmental Agency may have an authority to make full support to the industry.

**CHAIRMAN:** Thank you very much for your comment. If you have an opportunity, please give us your support. We will appreciate it. May I ask the comment from MITI, your personal opinion would be appreciated.

**MR. KITAZAWA:** Well, even if you say it is a personal opinion, I am in a very difficult position to say something. We also are involved directly, not directly involved in ODA advisory things, so we cannot give official comments. But, personally, with this conference as an impetus, we hope that we have now recognized the importance of ecological survey on sea turtles. When I return to my office, I would like to report this to my superiors.

**CHAIRMAN:** Mr. Siow, please.

**MR. SIOW:** I just like to now reiterate what my colleagues saying you know. We have some example, for example, say, Japan needs a lot of shrimps to be importing to Japan for consumption. But for that Japan is giving aid in the developing country to develop the farm shrimping industry. One example I would like to give is Japan under JAICA (phonetic) has given to Malaysia to establish a prawn reproduction and research centre: that's costing 5 million US dollars. And this is just one of the grants. Of course you know if we develop it, and we are successful breeding these, in fact we are successful now, and we are now exporting those shrimps, which have been grown in our country, to Japan.

Well, the same thing in the case of the turtles. I mean this Beco industry, which is unique requirement of the Japanese. So maybe you can take the similar stand by giving the support to this industry. Well, it might be that if enough research and development work is carried out, then there may come a day that the Hawksbill is removed from the CITES list. Then your industry and the Hawksbill can both survive very well.

I'm very happy to learn that, you know, you have really initially granted 3 million yen from the Association. Maybe you have also contributed some other money before. But the 3 million yen, although it's quite a big sum, it only represents about 100 Yen per kilogram of the Beco that you are importing into this country. Maybe we can suggest some way that, you know, you can plow back. That's what you have done in the other industries, that a certain portion of your turnover as an R&D Fund. Then, in that case, maybe one day both can co-exist very well, as the team, you know joined up by Dr. Uchida in the Himeji, is a symbiosis be-



tween the turtle and man. So I believe, you know, this can be considered. Thank you.

**CHAIRMAN:** Thank you very much for your comment. Are there any comments from the Association? Please go ahead.

**MR. NAKAKOGA:** During the Symposium there was a discussion on the reduction of the 30 tons, but putting that subject aside we would first like to know what kind of research we should carry out to see the present situation of the research. Please let us know what is the most effective survey. Even if the Japanese Government doesn't grant us financial aid, we can also approach the Congressmen, Diet Members. Although the industry is a small one, as a local industry, Nagasaki, the Beco industry is very efficient. And Mr. Kuranari, the Minister of Foreign Affairs, was born in our hometown, and our industry is the sub-chairman of his supporting association. So we can put pressure on him. This is one example.

So if SCC members can tell us what program is most effective, and how much fund is necessary, even if we cannot support it fully in terms of financial amount, if we know that program, we can approach Mr. Kuranari or other Diet members. We are able to make some kind of assistance. This is what I believe. Thank you.

**CHAIRMAN:** Thank you very much. Any more comments from Mr. Osawa?

**MR. OSAWA:** As you all know, the sea turtle moves very slowly. Our industry is making efforts, but also we cannot move very fast. But as Mr. Nakakoga mentioned, generally speaking in Japan first industries make moves and then after that we have a follow-up by the government. The government just follows industries. So, and those members from the government may not be able to give you very clear answers. But even if we make small steps, finally if our steps are correct the government I'm sure will assist us in the end. Therefore, in a variety of fields, we would like to make appeals to the government to support our industry. At this moment we cannot say how much we need or what we can do, but we'd like to move step-by-step to approach the government as closely as possible and I welcome any advice from the specialists.

**CHAIRMAN:** Mr. Kaneko, please, or from Environmental Agency?

**DR. KANEKO:** I'd like to repeat what Mr. Nakakoga just mentioned. Today now that we have specialists of the sea turtle, we would like to know how we can prioritize the survey programs? If that can be clarified, I'm sure this Symposium will be very fruitful.

**CHAIRMAN:** Thank you very much. Any more comments?

**DR. SUWELo:** Indonesia is also concerned with the utilization of the wildlife, also the Green as well as the Hawksbill. You know in Bali, also in other places, there are what is the ornamental goods that are made of wildlife, so the utilization of the Hawksbill is also in the strategy of our conservation of turtles. We have a report done by Dr. Schulz to BHPA and for the WWF and IUCN, and this report also reflects on the utilization of the turtles. And Dr. Schulz, in his two reports, and also by Henry Reichart, make some suggestion on the utilization on the ranching and rehabilitating of the turtles in our countries. Here I will quote Dr. Schulz's report of 1984 concerning the research to be done by Indonesia to support the conservation of our turtles.

The research project, here he classified into five main categories:

One: Surface of stock and identification of major nesting sites and foraging areas.

Secondly: Identification of migratory routes and geographical ranges of populations.

Third: Conservation practices on nesting beaches.

Four: Captive breeding.

Five: Trade monitoring.

So, as was mentioned, that in the cooperation between Japan and Indonesia I would like to also include the research as a part of this cooperation. Thank you.

**CHAIRMAN:** Thank you very much. Dr. Karen, please.

**DR. BJORN DAL:** I think that there is no shortage of ideas for the research that should be done with Hawksbills. And I know that our Group stands ready to develop a research programme offering you our ideas of what should first be done.

I think the critical aspects to be done, some of these Dr. Suwelo has just mentioned. We need to have a better understanding of the present population levels throughout the world of Hawksbills. And we need to have a better understanding of the interdependence of the different populations of Hawksbills, so that we understand if we harvest Hawksbills in the Solomon Islands what other populations, what other nations are we affecting? We need to have a better understanding of the reproductive biology, and the productivity of Hawksbills.

I cannot at this moment provide you, we do not have the time, with a coherent Plan. But I can assure you that we are very willing, very happy to assemble a Sub-Committee of our Specialist Group to deal with such a problem; to develop a research Plan if you would find this useful. Thank you.



**CHAIRMAN:** Thank you very much. Dr. George Balazs, do you have any comment?

**DR. BALAZS:** Just a brief comment. Let us not forget what Dr. Limpus has just explained to us. It is exceedingly valuable information that has come from his research since 1973 and '74. So, well we may strive to do more research that is necessary, we do have the tremendously valuable piece of information that he's drawn up on the chalk board. And as we are talking and winding down here, we should continue to look at it and let the full ramifications of the very protracted length of time to sexual maturity sink in. And no comments were actually made from the Beco Association after Dr. Limpus's talk, but I'm sure that they are giving serious thought to the results of his research, the valid results that he has shown on the blackboard. Thank you.

**CHAIRMAN:** Dr. Marquez, please.

**DR. MARQUEZ:** I know that if we analyse the imports of Beco, you will know, the Beco Association will know, where the biggest animals are coming, which places are coming. In which places the quantity was going down. And also in these same places, most of the nesting areas, and in that place I think most of the priority work. If you have importation of Beco, and the skutes are small, that area must be the growing area or feeding grounds. Then we need to go to exactly to the more important places, and after expand the investigation and protection of those territories. Some of them could be in between several countries. Thank you.

**CHAIRMAN:** Mr. McCoy, please.

**MR. MCCOY:** I would just like to thank the individuals who responded to my question about assistance in the future, and I appreciate that at this point they speak only personally and probably not officially. But it is unfortunate that an invitation was extended to Foreign Affairs and they could not come, because all of us are from foreign countries, even though some of us may not represent officially those countries here, nevertheless, almost all of us are working in official capacities. I know we all are back in our own countries. And those of us from developing countries, it would have been very valuable.

In this regard, I just wanted to point out one thing without centering on any country or area, and that is that I have some understanding of how the foreign aid system works. And I think that if Gaimusho, or the Foreign Affairs people were here, they would, from probably other countries as well, they would do the same thing. They would say "Well, you have to ask us for something, and then we will respond."

The reality in the developing countries, the ones I've worked in, is that frankly speaking there are hospitals, roads, large infrastructure projects that take priority over sea turtle research. And I think that in looking at how the Japanese governments can assist, it will be necessary, and probably most desirable to work through the Japanese industry here. I think in my work with Fisheries, I found that's true. If you simply wait for the underdeveloped country to request the aid, it may never come, because of the other priorities, necessary priorities, in the country.

So, I think not only do we ourselves have to push for more Japanese government involvement, but like the gentleman at the end of the table, I think the industry has to push from their side and to be actively involved in it. I just wanted to make that one point about the possibility of aid. Thank you.

**CHAIRMAN:** Thank you very much. Dr. Marquez.

**DR. MARQUEZ:** Well, the same question that was put here by Mr. McCoy. For example, in Mexico we have too bigness in beaches of Hawksbill. Last year we have enough money for to work those beaches, but this year we have not enough money and then we reduce our work. Then we are releasing at that place about 30,000 hatchlings of Hawksbill without any profits because we are not exporting Beco. So that way, it's possible to help those countries in those places that needs to increase the hatchlings.

**CHAIRMAN:** Dr. Edwards.

**DR. EDWARDS:** Thank you Mr. Chairman. As I've heard the debate unfold this afternoon, I have the sense that there is a preoccupation with research. But I've also heard comments about the ranching option, almost as if the concept of ranching presupposes or circumvents the research need, or it just does not depend upon the research need. This is absolutely not true. The basic need is research. The ranching, as a concept, is so new as a concept, and actually is a total misnomer.

When CITES put forward the resolution several years ago providing for ranching, under the leadership of the Zimbabwe Government, they were preoccupied with crocodiles. Somehow turtles were associated or attached to this, and several cycles since, proposals, have gone forward to establish marine turtle ranching facilities. Heretofore, none have been accepted. So we can learn from this that the actual process of obtaining a legitimately recognized ranch is more than just the process of digging a pit and throwing some turtles in and assuming a product would come out the other end. It will require considerable research. And the meeting that was held earlier this year, it was estimated by the people that



had established ranches that it would cost no less than 2 million dollars, and no less than 3 to 5 years to actually work from ground zero to the point of having a functional marine turtle ranching facility. And, so, as we come back we have come full circle. We're still back at the basic need for research.

Whatever parameter you wish to pursue, whether it's population, dynamics, population in genetics, nutrition, the global distribution of the species. I will point out that there is another aspect that you must consider. Simply the co-ordination of the research activities around the world, the centralization of the data that are acquired will help develop your knowledge. There must be some central facility in which data are managed on marine turtles, so that comparisons can be made.

And finally, these data must be available to the research community, as well as to the industry to help guide both communities in their planning for their future.

IUCN -- I'm wearing my IUCN hat, not my Executive Officer for the Species Survival Commission, but as a representative of our Director General of IUCN, we would welcome the opportunity to work with industry to develop an integrated "Action Plan" to serve for the better utilization of Hawksbills in so far as that Plan was focussed on a solid cooperative research program. Such a research program would be coordinated through the IUCN, SSC Marine Turtle Specialist Group. And I would suggest that such an activity would involve some representation from industry and other parties in terms of developing broader policy guidelines, that is selection of areas that are amongst those put forward by the Group; where is the industry particularly interested in working? Balanced again, what the research community is particularly interested in pursuing as a research agenda. But it would become a cooperative program in which IUCN would provide a coordinating role. Thank you, Mr. Chairman.

**CHAIRMAN:** Thank you very much for your comments. Dr. Stefan Edwards has made the final presentation. I must say that we as IUCN, SSC members must admit that we must take an initiative to make a reply and answer in order to solve this mysterious and still unknown animal. So I hope that all of the member of IUCN take this opportunity to recognize these issues so that you will make a lot of efforts to present the biological and the scientific or academic answer to this issue. And that kind of suggestion, answer should be shared by everybody concerned as one of the Action Plans.

And what is identified so far in this session is that Hawksbills, included all of other species of sea turtles is somewhat complicated, and it is rather inflexible, and quite tough. So I hope that all of you, including those who use those Hawksbill do recognize this point so that you will be more pru-

dent and careful in taking an action. Then I hope that this Conference is of great help and meaningful to all of you. And I wish you all have another opportunity to discuss this matter again.

I thank you very much for your cooperation and patience over many hours, and I must apologize because I could not co-ordinate this issue very well, so that our discussion has rather been disorganized. But I hope that all of you will keep those issues raised in your mind. Then I think that this Conference would be very significant. Thank you very much for your cooperation.

Also, the members of IUCN, this is an announcement. The bus is ready for you and for the others another big bus is waiting for you so that I hope all of you will get on that bus. So the buses will pass Himeji station to go to the hotel, and at 6:30 on the 6th floor of Okuchi we'll have a banquet and final reception. I hope that all of you would join us, so that you will take another opportunity to cover the unsolved issues and something which you have left unsaid.

Thank you very much for your attention.

----- END -----



A) TRANSPACIFIC MIGRATION OF A TAGGED  
LOGGERHEAD, CARETTA CARETTA

B) TAG-RETURN RESULT OF LOGGERHEAD RELEASED  
FROM OKINAWA ISLANDS, JAPAN

by

Okinawa Expo-Aquarium

S. UCHIDA, H. TERUYA

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JULY 30 - AUGUST 3, 1988



## A) TRANSPACIFIC MIGRATION OF A TAGGED LOGGERHEAD, CARETTA CARETTA

Okinawa Expo-Aquarium  
S. Uchida, H. Teruya

A tagged Loggerhead was found dead in the gill net of a fishing vessel operating off San Diego, California, U.S.A. during the third week of November, 1987.

By its metal tag, No.488, sent to the authors, it could be concluded that this turtle was one of 100 tagged pups released by them Is. on July 22, 1985.

The data on this release and recapture, and the presumed migrating course are shown in Table 1. and Figure 1. The Distance of 10,600 km was taken from a map along the presumed course (not direct course between release and recapture sites). A day in the middle of the week informed, November 18, was adopted as the date of recapture to arrive at the interval of 850 days. The speed was calculated from the interval and distance, assuming immediate capture on arrival at the capture site.

This long distance migration may be a rather unusual one for Loggerhead turtles hatched in Okinawa Archipelago.

However, this transpacific turtle record suggests the possibility that Loggerheads born in the Japanese Archipelago can reach the west coast of the U.S.A. if they enter the Kuroshio current.

The informer, Dr. Fritzsche, reported additional interesting facts: a turtle without a tag was also entangled in the net at the time, and the next day 12 to 15 turtles were noticed in the area 70-80 km off San Diego. Where did they come from?

Table. 1

Fig. 2

## B) TAG-RETURN RESULT OF LOGGERHEAD RELEASED FROM OKINAWA IS., JAPAN

### Materials and Methods

During 5 years from 1983 to 1987, 416 Loggerheads were tagged and released from Okinawa Is., Japan. They were mainly about 1 year old pups at that time which had been collected as eggs from laying sites in Okinawa Island, hatched in Okinawa Expo Aquarium and kept there (Table 2).

The release sites were the beach near the Aquarium on the west coast of the island, points off shore but outside the Kuroshio current, and point within the current.

Twice drift bottles were released together with the turtles to study the relationship between migration of the turtles and the currents concerned (Tables 7 and 8).

### Result

Number of tag-returns for 416 released turtles was 24 and the recovery ratio was 5.8% (Table 3). All the tags returned were from the northern area of the release sites, that is, nothing from the south (Figure 1). The shortest interval and distance was 5 days and 45 km from Okinawa Archipelago, and the longest 850 days and 10,600 km from the U.S.A. reported in A) (Table 4).

Excluding the shortest case from the recapture site (far south of the turning point of Kuroshio and Tsushima currents near Tokara Is.) 7 turtles (30%) were recaptured in Kuroshio system and 16 turtles (70%) in Tsushima system.

The average speeds were 1.76 km/hr in the Kuroshio system and 0.63 km/hr in Tsushima system. They may reflect the difference in current speeds between the Kuroshio and Tsushima. The speed of the Kuroshio current in the main stream belt is 5.6 - 9.3 km an hour and that of the Tsushima current 1.8 km an hour (Table 5). Seventy-two turtles were released from the beach, 244 from points outside the Kuroshio and 100 from a point within it. No turtles released from the beach were recaptured in the Tsushima system (Table 6). Recovery numbers and ratios according to release points are shown in Table 6.

The turtles of drift bottle return in the first release together with of turtles are shown in Table 7. At this time all recaptures of turtles occurred north of the releasing site outside the Kuroshio; on the contrary 92% of the recovered bottles was from the south.



The bottles may have been carried away by the counter currents branching from the main stream of the Kuroshio and heading south, while turtles may have swum against these counter currents and head northward.

The drift bottles released from within the Kuroshio current showed movements different from the first release (Table 8).

In this second simultaneous releasing of turtles and bottles, behaviors were almost the same for both, and especially in the Tsushima system their behaviors were surprisingly similar in interval, distance and speed.

Discussion) Since the turtles tagged and released in this study were mainly ca. one year old pups reared in captivity, it is difficult for us to predict the behavior or migration of just-hatched turtles or pups grown in the wild from the results of this research.

We can conclude, however, that if we release ca. one year old pups kept in captivity from Okinawa, they head north or northwest, swimming actively at least until they reach Kuroshio current.

The result of simultaneous release of turtles and drift bottles showed similar behavior in migration.

This may mean the turtles migrated northward taking advantage of the currents, because the drift bottles are thought to reflect the currents in direction and speed.

The numbers of recapture of turtles and recover of bottles in the Tsushima system were much more than those in Kuroshio system. This does not signify that the number of those which entered the Tsushima system was more than the Kuroshio system, but signifies the difference in conditions for recoveries between the two currents.

If turtles or bottles come into the Tsushima current, they go through water with many islands off the west coast of Kyushu and the narrow Tsushima strait where they may be easily found, if they come into the Sea of Japan from autumn to winter, they will be swept away to the Japanese Archipelago to be washed ashore by the periodic winds northwest, and may finally die because of the cold winter climate.

However, if the turtles enter the Kuroshio, they go through the vast water off the south coast of Japan and will be driven away by the wind far to the open sea in winter season, to go out of sight.

#### Acknowledgements)

The author wish to express their sincere thanks to Dr. I. Uchida of Himeji City Aquarium who kindly gave them tags for the first and second release of this study and also gave valuable suggestion: we thank Kanazawa Aquarium; Sun Piazza Aquarium; Oga Aquarium; Suma Aquarium Park; Shirahama Aquarium Kyoto University; and Inubosaki Marine Park for their kind cooperation in receiving living tagged turtles, keeping and re-releasing them.

We acknowledge the cooperation of fishermen, ordinary citizens, fisheries experimental stations, and town and city offices concerned in informing us about recoveries of tagged turtles and drift bottles, and of our aquarium staffs in collecting eggs, keeping turtles and releasing them.



DATA ON TRANSPACIFIC MIGRATION OF A TAGGED LOGGERHEAD

Tab.1

1. Place of egg-Sampling	: Okinawa Is., Japan
2. Data of hatching out	: Aug 1-17, 1984
3. Data of release	: Jul 22, 1985
	Released as one of 100 pups at the time
4. Place of release	: 115km NW of Okinawa Is. 26°46'N, 126°50'E
5. Size at release	: Carapace length 17.5cm
	Carapace width 15.2cm
	Body weight 1,200g
6. Data of recapture	: Nov 15-21, 1987
7. Place of recapture	: Off San Diego, Ca., U. S. A. 32°39'N, 117°58'W
8. Interval	: 2 years 4 month (850 days)
9. Approximate distance	: 10,600km
10. Average speed	: 0.5km/h
11. Size at recapture	: Not measured.
	Estimated carapace width 68.6cm
12. Method of recapture	: Drift gill net with 56cm stretch mesh
13. Name of catcher	: Christopher Golden, student Humboldt State University and fisherman
14. Name of informer	: Dr. Ronald A. Fritzsche, Associate Professor, Humboldt State University



Fig. 2 PRESUMED TRANSPACIFIC MIGRATION ROUTE OF TAGGED LOGGRHEAD

Fig. 2



Fig. 1      MIGRATION OF TAGGED TURTLES AND DRIFT BOTTLES



Tab. 2 RELEASE RECORDS OF TURTLE (CARETTA CARETTA) FROM OKINAWA IS., 1983~1987

RELEASE POINT	DATE	N	BODY WEIGHT (g)		CARAPACE LENGTH (cm)			AGE (yr.)
			AVERAGE	RANGE	AVERAGE	RANGE	AGE (yr.)	
A	18, IX, '83	50 (75)	2,027	1,315 ~ 2,900	22.4	18.7 ~ 22.5	1.1	
B	27, III, '84	76	4,556	1,350 ~ 6,150	29.4	18.3 ~ 33.5	1.6	
C	22, VI, '85	55	673	350 ~ 1,070	14.6	11.5 ~ 17.2	0.9	
D	10, VII, '85	100	956	420 ~ 1,320	16.8	13.4 ~ 19.5	1.0	
E	22, VII, '85	100	900	250 ~ 1,400	16.2	10.3 ~ 19.7	1.0	
F	13, VIII, '86	5	1,000	600 ~ 1,800	16.6	15.0 ~ 18.5	1.0	
		5	6,100	4,100 ~ 8,200	32.6	29.0 ~ 30.0	2.0	
		1	45,000	-----	68.0	-----	4.0	
		7	114,000	95,000 ~ 140,000	92.0	82.0 ~ 102.0	8.0 ~ ?	
G	9, IV, '87	14	610	250 ~ 1,070	14.1	10.5 ~ 17.1	0.6	
		2	4,400	4,200 ~ 4,600	26.7	25.5 ~ 28.0	1.6	
		1	23,000	-----	48.0	-----	2.6	

PLACES OF EGG-LAYING : IRIZUNA ISLAND, TONAKI ISLAND, OKINAWA ISLAND  
 PLACE OF HATCHING : OKINAWA EXPO AQUARIUM AND ELSEWHERE, OKINAWA



Tab. 3

TAG RECOVERIES OF CARETTA CARETTA, 1983-1987 (1)

RELEASE POINT	RELEASE DATE	NUMBER RELEASED	NUMBER RECOVERED	RECOVERY RATIO
A. 6 KM W OF OKINAWA IS 26°38'N 127°50'E	18, IX, '83	50 (75)	1	2.0 %
B. 20 KM NW OF OKINAWA IS 26°49'N 127°47'E	27, III, '84	76	8	10.5
C. EXPO AQUARIUM BEACH 26°43'N 127°53'E	22, VI, '85	55	1	1.8
D. 40 KM NW OF OKINAWA IS 26°45'N 127°39'E	10, VII, '85	100	3	3.0
E. 115 KM WNW OF OKINAWA IS 26°46'N 127°50'E	22, VII, '85	100	7	7.0
F. 30 KM NW OF OKINAWA IS 26°48'N 127°40'E	13, VIII, '86	18	2	11.1
G. EXPO AQUARIUM BEACH 26°43'N 127°53'E	9, IV, '87	17	2	11.8
	TOTAL	146 (441)	24	5.8

A, B, C, D, F, G : OUTSIDE KUROSHIO (NEARSHORE OKINAWA) E : WITHIN KUROSHIO  
 FIGURES IN PARENTHESES : INCLUDING 25 TURTLES WITHOUT TAGS



TAG RECOVERIES OF CARETTA CARETTA, 1983 ~ 1987 (11)

RELEASE DATE AND POINT	RECAPTURE DATE	LOCATIONS	INTERVAL DAYS	DISTANCE KM	SPEED KM/HR	REMARKS
18, IX, 1983 <u>6Km W OF OKINAWA Is.</u>	5, X, '83	OFF TOSE, KOCHI	18	840	1.9	
27, III, 1984 <u>20Km NW OF OKINAWA Is.</u>	31, III, '84	OFF INEYA Is., NAGASAKI	5	45	0.4	DN.RR
	12, IV, '84	OFF MIE, NAGASAKI	17	690	1.7	
	13, IV, '84	OFF ASIZURI PEN., KOCHI	18	790	1.8	DN.RR
	26, IV, '84	OFF HIRADO, NAGASAKI	31	750	1.0	
	14, V, '84	OFF GOTSU, SHIMANE	49	1140	1.0	
	23, V, '84	OFF UPPURUI, SHIMANE	58	1160	0.8	
	28, V, '84	OFF OKI, SHIMANE	63	1255	0.8	
	3, XI, '84	OFF FRAUSU, HOKKAIDO	222	3000	0.6	GN.FD
22, VI, 1985 <u>EXPO AQUARIUM BEACH</u>	2, VIII, '85	OFF IZU Arch., TOKYO	42	1553	1.5	DN.RR
10, VII, 1985 <u>40Km NW OF OKINAWA Is.</u>	4, VIII, '85	OFF FUKUE Is., NAGASAKI	26	720	1.2	DN.RR
	19, VIII, '85	OFF NAKADORI Is., NAGASAKI	40	708	0.7	DN.RR
	20, XII, '85	OFF OTOBE, HOKKAISO	164	2200	0.5	WA.FD
22, VII, 1985 <u>115Km WNW OF OKINAWA Is.</u>	21, VIII, '85	OFF KII Pen., WAKAYAMA	31	1165	1.5	DN.RR
	4, IX, '85	OFF IKI Is., NAGASAKI	45	850	0.8	DN.RR
	17, XII, '85	OFF OTOBE, HOKKAIDO	149	2200	0.6	WA.FD
	5, I, '86	OFF NOTO Pen., ISIKAWA	168	1580	0.4	WA.RR
	15, I, '86	OFF OGA Pen., AKITA	178	1970	0.5	WA.RR
	15, I, '86	OFF AKITA, AKITA	178	1970	0.5	WA.FD
	18, XI, '87	OFF SAN DIEGO, USA	850	10600	0.5	GN.FD
13, VIII, 1986 <u>39Km NW OF OKINAWA Is.</u>	31, X, '86	OFF FUKUSIMA, HOKKAIDO	80	2100	1.1	DN.RR
	19, XI, '87	OFF HIRADO Is., NAGASAKI	464	760	0.07	SN.RR
9, IV, 1987 <u>EXPO AQUARIUM BEACH</u>	1, V, '87	OFF ASIZURI, KOCHI	23	960	1.7	DN.RR
	30, VI, '87	OFF KOBE, HYOGO	83	1360	0.7	DN.RR

NOTE: DN-DIP NET GN-GILL NET WA-WASHED ASHORE RR-RERELEASED FD-POUND DEAD



Tab. 5

## RESULTS OF TAG RECOVERY BY CURRENT AND INTERVAL

CURRENT	N	INTERVAL (DAYS)		DISTANCE (KM)		SPEED (KM/HR)	
		AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE
KUROSHIO N = 7, 30%	7	152	18 ~ 850	2,493	790 ~ 10,600	0.68	0.1 ~ 1.9
	5 <sup>1)</sup>	26	18 ~ 42	1,099	790 ~ 1,553	1.76	1.7 ~ 1.9
		5	26	18 ~ 42	1,099	790 ~ 1,553	1.76
	2	467	83 ~ 850	5,980	1,360 ~ 10,600	0.53	0.5 ~ 0.7
TOTAL	{						
TUSHIMA MN = 16, 70%	16	121	17 ~ 464	1,436	690 ~ 3,000	0.50	0.1 ~ 1.7
	15 <sup>2)</sup>	98	17 ~ 222	1,481	690 ~ 3,000	0.63	0.4 ~ 1.7
		7	38	17 ~ 58	860	690 ~ 1,160	1.76
	8	150	83 ~ 850	5,980	1,360 ~ 3,000	0.56	0.4 ~ 1.0
TOTAL	{						

1) Excluding exceptional two cases, one reaching the U. S. A and another straying into Inland sea.

2) Excluding an exceptionally old individual at the age of eight.



Tab. 6

## RESULTS OF TAG RECOVERY BY CURRENT AND RELEASE POINT

CURRENT	RELEASE POINT	N	INTERVAL (DAYS)		DISTANCE (KM)		SPEED (KM/HR)	
			AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE
KUROSHIO N=7	BEACH	3	49	23 ~ 83	1,291	960 ~ 1,553	1.01	0.7 ~ 1.5
		2 <sup>1)</sup>	33	23 ~ 42	1,257	960 ~ 1,553	1.60	1.5 ~ 1.7
	OFF SHORE OUTSIDE KUROSHIO	2	18	----	815	790 ~ 840	1.89	1.8 ~ 1.9
	OFF SHORE WITHIN KUROSHIO	2	441	31 ~ 850	5,975	1,350 ~ 10,600	0.57	0.5 ~ 1.8
		1 <sup>2)</sup>	31	----	1,350	----	1.81	----
THUSHIMA	BEACH	----	----	----	----	----	----	----
	OFF SHORE	11	110	17 ~ 464	1,308	690 ~ 3,000	0.48	0.1 ~ 1.7
	OUTSIDE KUROSHIO	10 <sup>3)</sup>	75	17 ~ 222	1,362	690 ~ 3,000	0.76	0.6 ~ 1.7
	OFF SHOER WITHIN KUROSHIO	5	143	45 ~ 178	1,718	850 ~ 2,200	0.50	0.4 ~ 0.8
				RECOVERY RATIO BY RELEASE POINT		BEACH		
						OUTSIDE KUROSHIO	4.2%	(N=3)
						WITHIN KUROSHIO	5.3	(N=13)
							7.0	(N=7)

1) EXCLUDING A CASE OF STRAYING INTO THE INLAND SEA

2) EXCLUDING A CASE OF REACHING U. S. A

3) EXCLUDING AN EXCEPTIONALLY OLD INDIVIDUAL, EIGHT YEARS OLD



Tab. 7 RECOVERIES OF TURTLES AND DRIFT BOTTLES RELEASED UNDER THE SAME CONDITIONS (1)

• RELEASE POINT : 20KM NW OF OKINAWA IS. , 26°49'N, 127°47'E, OUTSIDE KUROSHIO  
 • RELEASE DATE : MARCH 27, 1984

	NUMBER RELEASED	NUMBER RECOVERED	RECOVERY RATIO	NUMBER AND PERCENTAGE OF BOTTLES RECOVERED, BY DIRECTION		
				SOUTH	NORTH	UNKNOWN
TURTLES	76	8	10.5	0 (0)	8 (100)	
BOTTLE	70	39	55.7	36(920)	2 (6)	1 (3)

★ FIGURES IN PARENTHESES : PERCENT OF TOTAL NUMBER RECOVERED



Tab. 7 RECOVERIES OF TURTLES AND DRIFT BOTTLES RELEASED UNDER THE SAME CONDITIONS (II)

· RELEASE POINT : 20KM NW OF OKINAWA IS., 26°49'N, 127°47'E, OUTSIDE KUROSHIO  
 · RELEASE DATE : JULY 22, 1985

A)	NUMBER RELEASED	NUMBER RECOVERED	RECOVERY RATIO	NUMBER AND PERCENTAGE OF BOTTLES RECOVERED, BY DIRECTION	KUROSHIO		TSUSHIMA	
					7	7 %	2 (29)	5 (71)
TURTLES	100	7						
BOTTLE	50	11	22	2 (18)			9 (82)	

★ FIGURES IN PARENTHESES : PERCENT OF TOTAL NUMBER RECOVERED

B)	CURRENT	RELEASE POINT	N	INTERVAL (DAYS)		DISTANCE (KM)		SPEED (KM/HR)	
				AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE
TOTAL	TURTLES		7	228	31 ~ 850	2,934	850 ~ 10,600	0.54	0.4 ~ 1.8
	BOTTLES		6 <sup>1)</sup>	125	31 ~ 178	1,657	850 ~ 2,200	0.55	0.4 ~ 1.8
KUROSHIO	TURTLES		2	441	31 ~ 850	5,975	1,350 ~ 10,600	0.57	0.2 ~ 1.0
	BOTTLES		1 <sup>1)</sup>	31	-----	1,350	-----	1.81	-----
			2	67	36 ~ 98	883	825 ~ 940	0.54	0.4 ~ 1.0
TSUSHIMA	TURTLES		5	143	45 ~ 178	1,718	850 ~ 2,200	0.50	0.4 ~ 0.8
	BOTTLES		9	147	44 ~ 335	1,582	970 ~ 2,017	0.45	0.2 ~ 0.9

1) EXCLUDING ONE CASE OF REACHING U. S. A



