

A

[From protection to coexistence and to the future]

In the past, Toki (Crested ibis) were a common sight across Japan and East Asia. During the Meiji era, the ban on catching Toki was lifted at that time. Toki were seen as causing damage to the agriculture and forestry businesses. Many Toki were hunted and the trading of their feathers became a profitable business. Toki were designated as a special natural treasure in 1952. The birds drew worldwide attention when they were internationally designated as endangered species of birds in the world in 1960.

Why did Toki survive on Sado Island? Compared to other areas, Sado Island was a good habitat and there were people who worked to help Toki. We wish for visitors to understand the history of Toki and humans. It's our goal to visualize a world in which humans can coexist peacefully with not just Toki, but all animals.

B

Despite the popular opinion that Toki were pests that damaged rice paddies, Takaji Takano considered ways to live alongside Toki.

As he grew up on Sado Island, Takano had felt closely connected to Toki.

Around 1948 he began to notice that the number of Toki was declining.

As he observed Toki frantically searching for food in the snow, Takano wondered if there was anything he could do to help. When Toki came to the rice paddies, Takano would feed them frogs and river crabs that he caught over the summer.

The Japanese crested ibis conservation center continues to carry out preservation activities like this.

Takano's son, Takeshi, continues his legacy of conservation by working toward preserving the Toki.

O

[People who have contributed to preservation]

Haruo Sato was a pioneer of ecology investigation regarding Toki. He carried out a pioneering study about the changing plumage color of the Toki.

Hisataka Kawakami formed a foundation for the protection of Toki and promoted protection activities with local residents.

Kouki Chikatsuji took the leadership of captive breeding and artificial breeding as the first director of the Japanese crested ibis conservation center until he retired.

Yoshinori Kaneko, an aviary veterinarian specialized in Toki, was engaged in the captive breeding and artificial breeding of Toki.

Kanzaemon Kikuchi conducted public awareness activities to promote the creation of an environment suitable for Toki.

Tadamichi Koga is the first director of Ueno Zoological Gardens. He made lectures regarding the necessity of the protection and artificial breeding of Toki.

Yoshimaro Yamashina contributed to the establishment of the Japanese crested ibis conservation center.

Yoshio Muramoto furthered the protection and study of Toki in the Noto Peninsula. When he learned that there were Toki living in China, he supported the conservation of Toki living in China.

C

In 1967, one Toki strayed into Mano Town, Niigata Prefecture. Kintaro Uji became an observer of the Toki and fed it. The Toki became attached to Uji and came to eat food from his hands. Through this, a bond between human and animal was formed, and Uji couldn't help feeling as if this Toki was his own child. It snowed a lot in the winter that year and the board of education decided to protect the Toki so it would not starve to death. The board of education tried to catch the Toki several times without luck. Eventually, the board asked Uji to capture the Toki. This request troubled Uji, who thought, "How can I betray the trust this Toki has in me by catching it?" While coming to terms with his moral dilemma, the deadline for the capture drew near. As usual, the Toki approached Uji, and after eating, it sat next to him as if it were cuddling up to him. While warmly embracing the Toki, Uji he captured it without using force. Uji, with diligent care as if he were handling his own child, embraced the Toki before handing it over to the institution. It is said that Uji continued to regret his choice to capture the Toki that day. This Toki, which was named Kin, would be the last wild Toki in Japan.

D

[Doomed to extinction]

While hunting was the original cause for the decrease in the Toki population, there were various environmental changes that caused the Toki to go extinct in Japan. For example, deforestation led to a decrease in nesting trees; cultivation of fields and usage of chemical fertilizers or pesticides resulted in less food for Toki; and adjustments in rice production made feeding sites scarce. In response to this, activities to promote lifestyles that protected Toki were conducted in various areas in Sado. Rice paddies were used as feeding sites so Toki would have more places to find food.

Shiitake mushroom cultivation was postponed in Tatsuma, since very loud noises are made when carrying out the work. The work is postponed until fledgling Toki leave the nest. In Noura, farmers stopped using agricultural chemicals and began to pull weeds by hand in order

to preserve the feeding sites for Toki. Through these activities, we can see that many people across Sado Island have been actively aiding efforts to reintroduce Toki.

E

[Trial and error of protection and breeding]

In 1967, The Sado Japanese Crested ibis Conservation Center was completed as a facility for captive breeding. When captive breeding of Toki started, the center encountered various problems. People did not know what food Toki eat as they did not know the biology of Toki at all. Two Toki died after eating fish contaminated with parasites. Artificial feed was then developed in 1981 after trial and error.

G

[Trial and error of breeding]

The former Ministry of the Environment, residents of Niigata Prefecture and the Ueno Zoological Gardens all worked together to successfully create an artificial breeding program. The Japanese Crested ibis Conservation Center was raising Toki and the Ueno Zoological Gardens was raising black-headed ibises and scarlet ibises (species which are similar to Toki) and they decided to exchange information and techniques on raising these birds. In addition to this information exchange, the associations engaged in other efforts to improve breeding techniques. After receiving Hoa Hoa from China, he was paired with Kin in hopes that the two would begin to produce offspring. Efforts went so far as to bring in a pair of black-headed ibises so the Toki might learn and imitate mating habits. Unfortunately, the two never produced an egg together. In 2003, Yu Yu and Mei Mei laid two eggs. In an attempt to provide practice for raising a chick, a northern bald ibis chick was placed in the nest as well. However, this also did not lead to any success.

F

[Kin in the conservation center]

The Toki caught by Uji came to the Sado Japanese Crested ibis Conservation Center in 1968. The Toki was named Kin, after Kintaro Uji, and was loved by many people. After being caught at a young age, Kin lived in captivity. The information gathered from observing Kin over her life was utilized for artificial breeding programs in China. Kin died in 2003. She was estimated to be 36 years old - over 100 years old in human years.

H

[Plan to reintroduce Toki to nature]

The Ministry of the Environment, various people and associations, are carrying out reintroducing Toki to nature. These efforts to reintroduce Toki include: making rules in the community; agricultural land improvement and consolidation to create habitat and terrace paddy fields for Toki; development of woodlands and prevention of pine wilt nematode to protect the forest; ecological education at elementary schools and junior high schools; and development of local products useful for developing an environment suitable for Toki.

K

[Last Toki on the main island of Japan]

Toki used to live in the Noto Peninsula. Along with local residents, Yoshio Muramoto continued efforts to preserve the Toki of Noto Peninsula. However, the population of the Toki finally decreased to only one in the early 1960s. Then, Muramoto and others thought it would be better to catch the Toki and transfer it to Sado Island. They asked the former Ministry of Education and the Ishikawa Prefecture Board of Education for permission, and after the request was accepted, they caught and transferred the Toki. At present, dispersed breeding is conducted in various places besides Sado Island in order to prevent extinction by infectious disease. These places are: Tama Zoological Park, Ishikawa Zoo, Izumo Japanese Crested ibis Breeding Center, and Nagaoka City Regional Toki Breeding Center.

P

[No borders for Toki]

In 1981, seven Toki were found in China, and five wild Toki were caught in Sado. In order to save the Toki, Japan and China agreed to cooperate. Three members of the Chinese Academy of Sciences Institute of Zoology visited Japan and there was a promising exchange of ideas and techniques between the countries. Owing to the efforts of the governor of Niigata Prefecture at that time, Ikuo 615654 Crested ibis museum draft0208Hirayama, Youyou and Yangyang were given to Japan.

L

[Chinese Toki]

Toki used to inhabit various regions across East Asia, including Japan, the Russian Far East, northern and central China, the Korean Peninsula, and Taiwan. Although considered to be extinct in China, some Toki were found in Yangxian County, Shaanxi Province in 1981. This discovery was great news for many people across the world.

[Korean Toki]

South Korea designated Toki as natural treasure in 1968 and began to undertake conservation efforts, but wild Toki have not been seen in South Korea since 1980. For this reason, Toki are considered extinct on the Korean Peninsula.

[Russian Toki]

In Russia, marshy places near Khabarovsk used to be nesting places for herons and Toki, but now Toki are considered to be extinct.

I

[Globally Important Agricultural Heritage Systems]

"Farming methods for nurturing living creatures" are implemented throughout Sado Island. The goal of such methods is for Toki and humans to live in harmony on Sado Island. The rice grown with this method is branded as "Toki Brand Rice: Rice grown in Sado's Satoyama in Harmony with Japanese Crested Ibis." It is produced while making the environment a suitable habitat for Toki. The rice is allowed to grow for a whole year, and the focus is on maintaining a habitable environment - production efficiency is not critical. Part of the sales profit is applied to the conservation efforts. Through this example, methods for sustainable farming methods and coexistence with living creatures are continuing to be developed. These efforts were recognized and Sado was designated as a Globally Important Agricultural Heritage Systems (GIAHS).

J

[Basic characteristics of Toki]

A male Toki is bigger than a female Toki. From its beak to tail feather, the average male is 772 mm and the average female is 731 mm. The wingspan of the average male is 1234 mm, and the wingspan of the average female is 1235 mm. On average, a male Toki weighs 1776 g and a female Toki weighs 1545 g. You can hold the doll to feel how heavy an average Toki is. It has a black beak with a red tip. There is a sensory organ located inside its beak. When it hunts for food, it is thought to search beneath the surface of the ground or water and catches its prey with its sharp senses. The crest of its head extends when the Toki gets excited. During the breeding period, from February to May, its feathers from its head to back become black. During the non-breeding period, from September to January, its plumage changes to the beautiful colors that are characteristic of Toki.

Q

[Let's look at the plants and animals that live alongside Toki]

Sado wrinkled frog "Thanks to these rice fields, we can live peacefully along with the many other animals that call these fields home.

"Family of Toki "We are happy that there are more trees now! We can lay eggs and raise our children quietly and calmly.

"Participant of living observation "How is this ecosystem performing? Is specie diversity increasing? Are animal populations increasing?

"Lumber industry professional "By using locally grown lumber, mountain forests can be renewed. And by managing these forests, we are seeing an increase in various animals and plants.

"Farmer "Toki came to the fields to find something to eat, so maybe it's a good idea for me to take a break too.

"Tourist and bird watcher "It's the breeding season for Toki right now. I want to come back here and see Toki in the summer.

"Crow "I want a new nest... Maybe I'll take that Toki's nest for myself!"

N

[The bond between Toki and people will continue to strengthen]

What will become of Sado in the future with Toki? What does the future hold for Sado and Toki? It is our hope that Sado will become a community where people and animals and plants can live together in harmony. For example, through efforts such as enhancement of local branding power, improvement of river and farmland biodiversity, reduction of society's burden on the environment by managing forest resources, and recovery of fishery resources by implementing reforestation, we hope to create such community.

R

[Four crises regarding biodiversity]

There are four crises facing biodiversity.

First crisis. Due to development and exploitation of human beings, species are declining and becoming extinct, and habitable environments are decreasing.

Second crisis. Due to human negligence, the environment of the Satoyama landscape has been deteriorating. Because of this, animals and plants that live in Satoyama are at risk of extinction.

Third crisis. Ecological disturbances are occurring due to invasion of non-native species. Genetic disturbance is brought about by non-native species eating indigenous species, displacing the indigenous species, and interbreeding.

Fourth crisis. Crisis due to the changing global environment. Global warming is a big challenge facing all nations. It is said that the extinction risk of animals and plants has increased by 20 to 30%.

M

[What individuals can do (efforts in Sado)]

The following are some activities that Sado City is carrying out in order to create a community with diverse wildlife, aiming to live together with Toki. Residents are studying Toki and other living creatures so that each citizen can understand the natural environment created by the biodiversity of Sado. They are making feeding sites by implementing forestry control. In order to prevent biodiversity from decreasing and to restore Sado's indigenous ecosystem, people and corporations are working together with the same goal. To establish a sustainable community which can enjoy the benefits of biodiversity, they are pursuing the implementation of rice production that is considerate of Toki and living creatures. In addition, nature tourism and green tourism are being promoted throughout the region