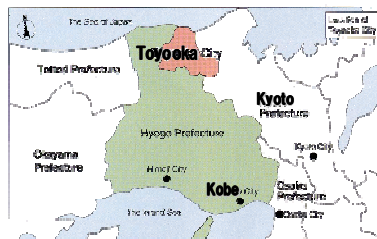
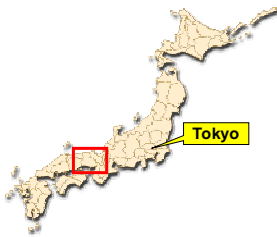


Coexistence between the human community and the Oriental White Storks— Challenge of Toyooka City—

Muneharu NAKAGAI, Mayor of Toyooka

<The Maruyama River and the Toyooka Basin>

Toyooka is a city facing the Sea of Japan, in northern Hyogo, western Japan. With an area of about 700 square kilometers, the city has a population of approximately 90,000. The Maruyama River runs through the middle of the city.



The slope of the Maruyama River is very gradual, with an inclination of only one-ten thousandth. Its usual gentle flow also means that its drainage is poor. When there is a rainstorm, water from upstream collects in the Maruyama, triggering rapid swelling. In 2004, Typhoon No. 23 immersed all of Toyooka City under muddy water from the overflowing river.

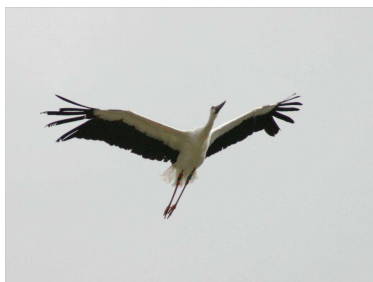
Toyooka has suffered numerous floods, and the basin stretching beside the Maruyama River is low and swampy.



<Wildlife in swamps>

Although these geographic features may be inconvenient for humans, some living things do love, and are nurtured by, swamps. One typical such living thing in Toyooka is a type of willow called Koriyanagi. Early on, people in Toyooka began to make yanagi-gori, a willow basket trunk, of Koriyanagi, which grew into the bag industry of the modern era and contributed to the development of Toyooka. The natural environment of Toyooka, which has given us many floods, thus also gave us a local industry.

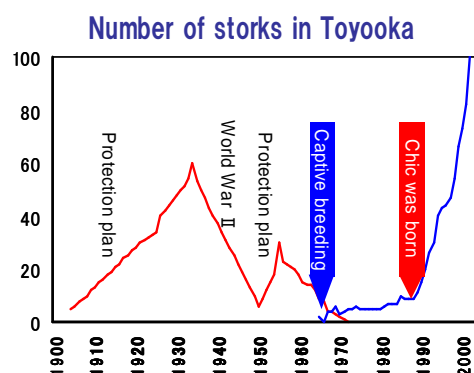




Another typical living thing that loves the wetlands is the stork. The stork is a large bird, with a wingspread of two meters. Storks are fully carnivorous, and at the summit of their food chain. Large swamps and paddy fields are their preferred feeding grounds. Toyooka is an ideal habitat for them.

<The extinction and the reintroduction of storks>

Storks used to be very common throughout Japan. However, their number declined as hunting commenced during the Meiji era, followed by the felling of pine forests during World War II, which deprived storks of their home. In the post-war era, their number further diminished rapidly due to environmental destruction, including the use of pesticides, as well as the reduction of swamps as a result of the modification of rivers and land. The last wild stork died in Toyooka in 1971. Storks thus became extinct in Japan.



Prior to their extinction, we had undertaken the captive breeding of storks in 1965. Not one egg had hatched for many years. It was not until the spring of the 25th year of our desperate efforts, like struggling in the dark, that a stork chick was born. Following this first birth in 1989, the number of chicks increased smoothly, till now there are 134 storks in Toyooka.



On September 24, 2005, five incubated storks were returned to the wild in the skies of Toyooka, following all the painstaking efforts of Toyooka people, who had persistently pursued their hope of seeing storks again in the sky, and preventing the elimination of storks in Japan. It had been 34 years since the storks' extinction, 40 years since the start of captive

breeding, and 50 years since the start of organized activities for stork preservation.

On May 20, 2007, a chick was born in the wild.

<Aims of returning storks to the wild>

It took us enormous energy, cost and time to return storks to the wild; the same will be true of the future. Why should we pursue the return of storks to the wild, in the face of so much difficulty? There are three reasons.

First, we want to keep our promise to the storks, to return them to the sky.

Second, we want to make a contribution to the preservation of wildlife, which will benefit the whole world.

Third, we want to create a rich environment, in which even such big carnivorous birds as storks can live.

If these large birds can survive in the wild, such an environment would also be extremely beneficial to us humans. We need to create and re-create that environment. In addition, to bring storks back into our lives, we must review our lifestyle and culture. Our highest goal is to create a natural and cultural environment that is ideal for humans, through our efforts toward returning storks to the wild.

We are pushing forward with diverse measures toward realizing this goal.

Aims of returning storks to wild

1) Promise to the storks

2) Contribution to the preservation of wildlife

3) Create a rich environment in which storks can live

<Specific measures>

1) Establishing facilities for breeding and reintroducing storks

1999 Hyogo Prefectural Homeland for the Oriental White Stork

2000 Toyooka Municipal Museum of the Oriental White Stork



Homeland for the Oriental White Stork



Municipal Museum of the Oriental White Stork



Municipal Museum of the Oriental White Stork

2) Review of paddy field farming, and natural restoration of paddy fields

- Promoting “duck farming,” which uses hybrids of the mallard and the domestic duck, instead of using pesticides (6ha in Toyooka)
- Developing “biotopes of paddy fields,” using fallow fields (12ha)
- Promoting paddy fields containing water as home for wild life, even during the winter season (65ha)
- Establishing “fish ladders to paddy fields” to restore the life cycle between paddy fields and waterways (110sites)
- Organizing seminars, such as “How to make paddy fields co-exist with storks” and “Survey of life in paddy fields.”



Biotopes of paddy fields



Containing water during the winter season



Fish ladders to paddy fields

3) Nature restoration of river area

Expanding the wetland area around rivers to approx. 200ha, three times larger than at present, through the ten-year “Nature Restoration Plans for the Maruyama River Area”



Nature restoration of river area

4) Arranging hills, development of beautiful landscape around farming villages

- Arranging red pine forests
- Burying electric wires underground
- Planting flowers along farming roads



5) Awareness enhancement, fostering of culture

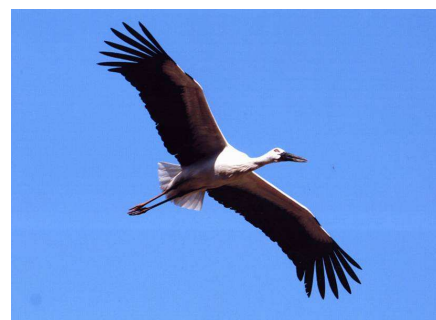
- Pictures and monuments of storks all around the city
- Musical plays featuring storks
- The “Stork Rangers” of Toyooka, among other emotional as well as intellectual appeals



<Gift from God>

On August 5, 2002, one wild stork happened to land in Toyooka.

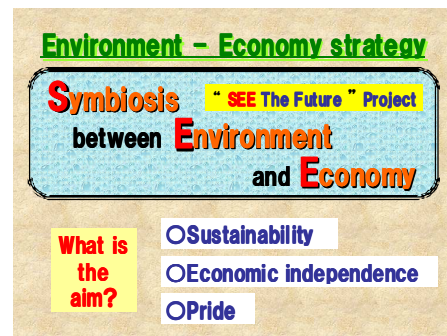
We had pushed forward many measures toward returning storks to the wild, but few people remembered any longer what it was like to live with storks. The stray stork flew around Toyooka, giving Toyooka people a concrete image of life with storks. The stork also flew to the biotopes of paddy fields we had set up, to feed. We became convinced that we were on the right track.



This wild stork settled in Toyooka. It is a gift from God for us.

<Environment-Economy strategy>

Now that the return of incubated storks to nature has started, we are ready to open the next door, that of a sustainable economy. We seek to establish a harmonious cycle of environment and economy, in which environment-friendly activities stimulate the economy, in turn helping further environment-friendly activities. We have three aims in this endeavor:



First, to make environmental activities sustainable.

Second, to realize economic independence for the local area and the municipal government.

Third, to establish our pride.

In March 2005, we laid out the Toyooka Strategy for Environment-Economy. We are already seeing some results.

1) Expanded production by a solar battery maker

A Toyooka-based manufacturer with the world's largest production capacity for film-type amorphous solar batteries has expanded its facility. As the shift to solar batteries proceeds, greenhouse effect gas diminishes, environmental measures become easier, while related firms prosper and employment increases.



2) Developing dog snacks from processed sardine waste

A plastic processor in Toyooka developed a supplement food for dogs, using processed sardine waste formerly disposed of by a fish processing company in its neighborhood. Waste thus became a commercial product.



3) Promoting stork tourism

The number of visitors to the Hyogo Prefectural Homeland has tripled since the return of incubated storks to the wild. In 2008, 420,000 people visited the Homeland. A new sector of tourism is developing, with storks at the center.



4) Promoting environmentally creative farming, and marketing it

●Promoting...

• The Agricultural Method that Helps the Oriental White Stork Survive

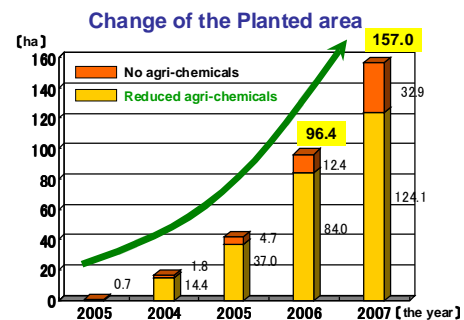
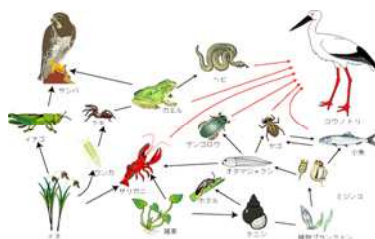
This way of farming uses the food chain of nature, and decreases the amount of agricultural chemicals.

If we don't use agricultural chemicals, harmful insects would increase in number. But creatures that eat those insects increase at the same time. As the Oriental White Storks are at the top of that food chain, this farming helps the Oriental White Storks survive.

Not using agricultural chemicals and having a rich nature full of living things allows the Oriental White Storks to grow as its result.

This method is rapidly spreading out as the symbol of the Oriental White Storks.

The way of farming
using a food chain of nature



●Marketing...

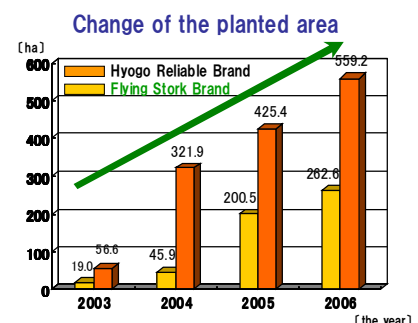
• Hyogo Reliable Brand (Hyogo prefectural government)

This brand is accredited to farming products if 1) less chemical pesticides and fertilizers are used, 2) the level of residual pesticides is less than one-tenth the national standard, 3) the above standards can be self-inspected by farmers, and 4) the farming history and the results of farmers' self-inspection can be published.

• "Flying Stork" certification system (Toyooka municipal government)

Adding "appropriate fertilization based on soil analysis" to the requirements for the certification of Hyogo Reliable Brand.

The farming area qualified for Hyogo Reliable Brand and Flying Stork is rapidly expanding across Toyooka City. Environment-friendly farming is no longer "an eccentricity." Consumers are also accepting the added value of the "Stork Brand."



<Co-exist with nature>

This is a photo shot in Toyooka City in 1960. It shows the back of a female farmer, seven Tajima cows and twelve storks, in a shoal of the Izushi River. They are a very short distance from each other.

Fifteen years ago, when we made this photo into a promotion poster, we searched for this woman and interviewed her. During the interview woman recalled that “The photo was taken 35 years ago, and I’m not sure if that’s me, from the back only. But it should be me because the cow next to me was mine.”

She didn’t mention the storks, but continued to talk about the cows. In the end, she muttered, “We were rich at heart in those days.”

I think this photo symbolizes what we have lost and what we want to recover.

This photo, together with that of the terrible flood in 2004, may be asking us how we should co-exist with nature.

We at Toyooka want to find an answer to this question. If people in different areas seek their own answers, through their own activities toward the preservation, restoration and wise use of wetlands, the sum total of such activities will lead to the improvement of the world.



Photo :Fuji Kougeisha

In 1960